```
#S1; #09  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:07 PM
#S1; #09  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:07 PM
#S1; #09  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:07 PM
```

```
                    #S1; #09  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:07 PM
                    #S1; #09  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:07 PM
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```

```
                                #S1; #09  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:07 PM
                                #S1; #09  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:07 PM
                                #S1; #09  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:07 PM
```

```
                                                      #S1; #09  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:07 PM
                                                      #S1; #09  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:07 PM
                                                      #S1; #09  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:07 PM
```

```
SPL-II/3000 X.1.14 (17OCT80)  (C) HEWLETT-PACKARD 1980
THU, JUN  1, 1995,  6:07 PM
    5.000 000000  0 $CONTROL USLINIT,PRIVILEGED,CODE,MAP,XREF,NOWARN,NODYNREF
   10.000 000000  0 <<-------------------------------------------------------->>
   15.000 000000  0 <<                                                        >>
   20.000 000000  0 <<              HP 3000 SERIES 33 CHANGES                 >>
   25.000 000000  0 <<              =========================                 >>
   30.000 000000  0 <<                                                        >>
   35.000 000000  0 <<  The version number was increased to .10 to            >><<0.10>>
   40.000 000000  0 <<  reflect the fact that this version of the             >>
   45.000 000000  0 <<  ADCC diagnostic was created from scratch using        >>
   50.000 000000  0 <<  a newer version of SPLII.                             >>
   55.000 000000  0 <<                                                        >>
   60.000 000000  0 <<  Modified 3/26/80                                      >><<0.29>>
   65.000 000000  0 <<   1) Pause at startup deleted to reduce op interaction >>
   70.000 000000  0 <<   2) Row of dots displayed to indicated pgm activity.  >>
   75.000 000000  0 <<   3) Eliminated occassional underflow from "RUN" cmd.  >>
   80.000 000000  0 <<   4) More comb. of modem status cond. added to sect 8. >>
   85.000 000000  0 <<   5) UART master reset test added to step 15.          >>
   90.000 000000  0 <<   6) Unexpected int ck (when mask dsbld) add to step 10>>
   95.000 000000  0 <<   7) Spurious ext interrupts will no longer hang pgm.  >>
  100.000 000000  0 <<   8) New STATE cmd allows user to view pgm status.     >>
  105.000 000000  0 <<   9) Leading spaces now allowed on command input.      >>
  110.000 000000  0 <<  10) Lower case letters now accepted in commands.      >>
  115.000 000000  0 <<  11) Test cmd now works properly with all its paramtrs.>>
  120.000 000000  0 <<  12) Input of chan 9,10 or 11 not mistaken for 7 or 8. >>
  125.000 000000  0 <<  13) Added checks for spurious int to most sections.   >>
  130.000 000000  0 <<  14) Byte count check added to step 49.               >>
  135.000 000000  0 <<  15) Section 16 cks sw pos 0 & allows any # of non    >>
  140.000 000000  0 <<      zero channels to be installed.                   >>
  145.000 000000  0 <<  PROCEDURE DODELAY WAS CHANGED TO CALL IIX'TIMER      >>
  150.000 000000  0 <<  IN DUS.                                              >><<0.29>>
  155.000 000000  0 <<                                                       >>
  160.000 000000  0 <<  Modified 4/2/80                                      >><<0.30>>
  165.000 000000  0 <<                                                       >>
  170.000 000000  0 <<  Corrected problem of "system failure" when ENTER     >>
  175.000 000000  0 <<  key is pressed after ">" prompt.                     >><<0.30>>
  180.000 000000  0 <<                                                       >><<1.31>>
  185.000 000000  0 <<  Modified 3/11/81                                     >><<1.31>>
  190.000 000000  0 <<                                                       >><<1.31>>
  195.000 000000  0 <<  Added "EXTND15" command, causing Section 15, Step 52 >><<1.31>>
  200.000 000000  0 <<  (Extended Baud Rate Test) to run only on devices 3-7 >><<1.31>>
  205.000 000000  0 <<  if the Extended board is present.  This allows mfg to>><<1.31>>
  210.000 000000  0 <<  save time when testing ADCC Extended boards.         >><<1.31>>
  215.000 000000  0 <<                                                       >><<1.31>>
  220.000 000000  0 <<-------------------------------------------------------->>
```

```
  230.000 000000  0
  235.000 000000  0 BYTE ARRAY
  240.000 000000  0 copyright:="(C) Hewlett-Packard 1980";
  245.000 000000  0 BYTE ARRAY ADCC(18):="ADCCDIAG 01.31    ";                    <<1.31>>
  250.000 000000  0
  255.000 000000  0 INTEGER
  260.000 000000  0 A,
  265.000 000000  0 ADR'B,
  270.000 000000  0 ADR'LIM,
  275.000 000000  0 B,
  280.000 000000  0 BAUD,
  285.000 000000  0 C,
  290.000 000000  0 CHNL,
  295.000 000000  0 CONSOLE:=0,
  300.000 000000  0 D,
  305.000 000000  0 DEV,
  310.000 000000  0 DOT'CNT:=0,
  315.000 000000  0 DVN,
  320.000 000000  0 E,
  325.000 000000  0 F,
  330.000 000000  0 G,
  335.000 000000  0 K,
  340.000 000000  0 M,
  345.000 000000  0 MAX'DEV:=-1,
  350.000 000000  0 NUM'CHARS,
  355.000 000000  0 PNTR,
  360.000 000000  0 T'CHNL,
  365.000 000000  0 TEM'DEV,
  370.000 000000  0 ZENDINT;
  375.000 000000  0
  380.000 000000  0 LOGICAL
  385.000 000000  0 ADD'SUB,
  390.000 000000  0 ADDR,
  395.000 000000  0 CF'DONE,
  400.000 000000  0 CHNLBIT,
  405.000 000000  0 CONCHNLBIT,
  410.000 000000  0 DESIRED'DEV,
  415.000 000000  0 DISC:=0,
  420.000 000000  0 DNV,
  425.000 000000  0 ENDPASSCOUNTER:=1,
  430.000 000000  0 EPAUSEOK,
  435.000 000000  0 EPRINTOK,
  440.000 000000  0 ERR,
  445.000 000000  0 EXTND,
  450.000 000000  0 EXTND15:=FALSE,                                            <<1.31>>
  455.000 000000  0 IRQ',
  460.000 000000  0 LA,
  465.000 000000  0 LB,
  470.000 000000  0 LC,
  475.000 000000  0 LOOP,
  480.000 000000  0 MAIN'BOARD,
  485.000 000000  0 MAS,
  490.000 000000  0 NMBROFCHNLS,
  495.000 000000  0 NO'ERROR,
  500.000 000000  0 PAUSEOK,
```

```
  505.000 000000  0 PRINT'ERRORS:=FALSE,
  510.000 000000  0 PRINTER:=0,
  515.000 000000  0 PRINTOK,
  520.000 000000  0 REF,
  525.000 000000  0 STP,
  530.000 000000  0 T'CHNLBIT,
  535.000 000000  0 TESTNR,
  540.000 000000  0 TOS',
  545.000 000000  0 TOS'1,
  550.000 000000  0 XX,
  555.000 000000  0 XY,
  560.000 000000  0 ZENDLOG;
```

```
  570.000 000000  0 DEFINE
  575.000 000000  0 ABS'ADDR(ARAY,INDX)=LOGICAL
  580.000 000000  0 ASSEMBLE(
  585.000 000000  0  PUSH INDX;
  590.000 000000  0  STAX;
  595.000 000000  0  LRA ARAY,I,X;
  600.000 000000  0  PSHR %100;          <<REPLACED AMIGO CLAA INSTRUCTION>>      <<0.29>>
  605.000 000000  0  DELB,LADD)#,        <<ADDED LADD INSTRUCTION>>               <<0.29>>
  610.000 000000  0
  615.000 000000  0 ASMB=ASSEMBLE#,
  620.000 000000  0
  625.000 000000  0 CHECK'DNV=DNV:=0; ASMB(LOAD CHNL; RIOC; BGE *+3;
  630.000 000000  0                       LDNI 1; STOR DNV; DEL)#,
  635.000 000000  0
  640.000 000000  0 CHNL'INIT=
  645.000 000000  0 ASMB(LOAD CHNL; INIT; BG P+2);
  650.000 000000  0 WRITEFAIL#,
  655.000 000000  0
  660.000 000000  0 CLEAR'UNX'DEV=ASMB(LDXN 2; ZERO; PSTA)#,
  665.000 000000  0
  670.000 000000  0 CLEAR'UNX'IRQ=ASMB(LDXN 2; ZERO; PSTA; LDXN 3; ZERO; PSTA)#,
  675.000 000000  0
  680.000 000000  0 CLEARIRQ=ASMB(ZERO; LDXN 1; PSTA)#,
  685.000 000000  0
  690.000 000000  0 CLEARMASK=ASMB(LOAD CONCHNLBIT; SMSK)#,
  695.000 000000  0
  700.000 000000  0 DELAY1SECOND=DODELAY(STARTIME,1000)#,
  705.000 000000  0
  710.000 000000  0 DELTA'P=LOGICAL ASSEMBLE(LOAD Q-2)#,
  715.000 000000  0
  720.000 000000  0 DISABLE'RTN'INTRPS=
  725.000 000000  0 ASSEMBLE(
  730.000 000000  0  PSHR %100;   <<LOAD DB BANK AND DB>>                          <<0.29>>
  735.000 000000  0  PSHR 2;      <<LOAD Q (DELTA Q OF LAST STACK MARKER)>>        <<0.29>>
  740.000 000000  0  LADD,        <<TOS EQUALS DB REL ADDR OF LAST MARKER>>        <<0.29>>
  745.000 000000  0  STAX;        <<ABSOLUTE ADDR OF PREV STACK MARKER>>           <<0.29>>
  750.000 000000  0  DECX,        <<SET TO STATUS WORD OF STACK MARKER>>           <<0.29>>
  755.000 000000  0  DEL;         <<DELETE BANK>>                                  <<0.29>>
  760.000 000000  0  PLDA;        <<LOAD STATUS WORD ON TOS>>                      <<0.29>>
  765.000 000000  0  LDI 0;                                                        <<0.29>>
  770.000 000000  0  DPF (1:1);   <<SET INTERRUPT BIT (1) TO ZERO>>                <<0.29>>
  775.000 000000  0  PSTA)#,      <<RESTORE STATUS WORD IN PREVIOUS STACK MARKER>> <<0.29>>
  780.000 000000  0 << THESE
  785.000 000000  0          LINES
  790.000 000000  0               ARE BEING
  795.000 000000  0                        DELETED
  800.000 000000  0                               FOR
  805.000 000000  0                                   SERIES 33>>                  <<0.29>>
  810.000 000000  0
  815.000 000000  0 DO'PSIOP=ASMB(LOAD TOS'1; LOAD TOS'; WIOC)#,
  820.000 000000  0
  825.000 000000  0 DO'SIOP=ASMB(LOAD TOS'1; LOAD TOS'; SIOP)#,
  830.000 000000  0 DRT'PLABEL'OF(procedur)=LOGICAL
  835.000 000000  0 ASSEMBLE(
  840.000 000000  0  LLBL procedur)#,                                             <<0.29>>
```

```
  845.000 000000  0 <<THESE LINES
  850.000 000000  0           ARE BEING DELETED
  855.000 000000  0                 FOR SERIES 33. THEY WERE
  860.000 000000  0                       USED FOR AMIGO 2 WORD
  865.000 000000  0                                P LABELS. >>                    <<0.29>>
  870.000 000000  0
  875.000 000000  0 GET'UNX'IRQ=ASMB(LDXN 2; PLDA; STOR TOS'; LDXN 3;
  880.000 000000  0                 PLDA; STOR TOS'1)#,
  885.000 000000  0
  890.000 000000  0 GETIRQ=ASMB(LDXN 1; PLDA; STOR IRQ')#,
  895.000 000000  0
  900.000 000000  0 INT'EXIT=ASMB(IXIT)#,
  905.000 000000  0
  910.000 000000  0 INTPSYS'OFF=ASMB(IOFF)#,
  915.000 000000  0
  920.000 000000  0 INTPSYS'ON=ASMB(ION)#,
  925.000 000000  0
  930.000 000000  0 IPOLL=
  935.000 000000  0 ASMB(LDI 8; CSL 12; RIOC; BNE P+3;
  940.000 000000  0      STOR TOS'; BR P+2);
  945.000 000000  0 READFAIL#,
  950.000 000000  0
  955.000 000000  0 MEM'GETS'V(MEMLOC,VARABLE)=
  960.000 000000  0 ASSEMBLE(
  965.000 000000  0  PUSH VARABLE;
  970.000 000000  0  PUSH MEMLOC;
  975.000 000000  0  STAX;
  980.000 000000  0  PSTA)#,
  985.000 000000  0
  990.000 000000  0 OBII=
  995.000 000000  0 ASMB(LOAD CHNL; LDI 2; CSL 12; OR; RIOC;
 1000.000 000000  0      BNE P+3; STOR TOS'; BR P+2);
 1005.000 000000  0 READFAIL#,
 1010.000 000000  0
 1015.000 000000  0 OBSI=
 1020.000 000000  0 ASMB(LOAD CHNL; LDI 4; CSL 12; OR; RIOC;
 1025.000 000000  0      BNE P+3; STOR TOS'; BR P+2);
 1030.000 000000  0 READFAIL#,
 1035.000 000000  0
 1040.000 000000  0 RAW'CLOCK=LOGICAL ASSEMBLE (RCCR)#,  <<CHANGED RCLK TO RCCR>>   <<0.29>>
 1045.000 000000  0
 1050.000 000000  0 READKBD=READ#,
 1055.000 000000  0
 1060.000 000000  0 READREG(K)=
 1065.000 000000  0 ASSEMBLE(
 1070.000 000000  0  LOAD CHNL;
 1075.000 000000  0  PUSH K;
 1080.000 000000  0  CSL 8;
 1085.000 000000  0  OR;
 1090.000 000000  0  RIOC;
 1095.000 000000  0  BNE P+3;
 1100.000 000000  0  STOR TOS';
 1105.000 000000  0  BR P+2);
 1110.000 000000  0 READFAIL#,
 1115.000 000000  0
 1120.000 000000  0 RESTART=LOOP'BACK(0)#,
```

```
 1125.000 000000  0
 1130.000 000000  0 ROLLCALL=
 1135.000 000000  0 ASSEMBLE(
 1140.000 000000  0  LDI !A;
 1145.000 000000  0  CSR 4; <<MAKES !A000>>
 1150.000 000000  0  RIOC;
 1155.000 000000  0  STOR TOS')#,
 1160.000 000000  0
 1165.000 000000  0 SAVESTART=STORE'MARK(0)#,
 1170.000 000000  0
 1175.000 000000  0 SECTION(sectno)=LOGICAL
 1180.000 000000  0 ASSEMBLE(
 1185.000 000000  0  LDD SECTIONS'TO'RUN;                                    <<0.29>>
 1190.000 000000  0  PUSH sectno;
 1195.000 000000  0  STAX;
 1200.000 000000  0  DCSL 1,X; DELB,NOP)#,   <<REPLACED AMIGO INSTR (LBIT 0,X)>>    <<0.29>>
 1205.000 000000  0
 1210.000 000000  0 SETMASK=
 1215.000 000000  0 ASSEMBLE(
 1220.000 000000  0  LOAD CHNLBIT;
 1225.000 000000  0  LOAD CONCHNLBIT;
 1230.000 000000  0  OR;
 1235.000 000000  0  SMSK)#,
 1240.000 000000  0
 1245.000 000000  0 SPOLL1=
 1250.000 000000  0 ASSEMBLE(
 1255.000 000000  0  LDI 12;
 1260.000 000000  0  CSL 12;
 1265.000 000000  0  RIOC;
 1270.000 000000  0  BNE P+3;
 1275.000 000000  0  STOR TOS';
 1280.000 000000  0  BR P+2);
 1285.000 000000  0 READFAIL#,
 1290.000 000000  0
 1295.000 000000  0 STARTIME=RAW'CLOCK#,
 1300.000 000000  0
 1305.000 000000  0 STUFF(NUM)=
 1310.000 000000  0 ASSEMBLE(
 1315.000 000000  0  LDXN 1;
 1320.000 000000  0  PLDA;
 1325.000 000000  0  LDI 1;
 1330.000 000000  0  DPF(NUM:1);
 1335.000 000000  0  PSTA)#,
 1340.000 000000  0
 1345.000 000000  0 TRAP(NUM)=
 1350.000 000000  0 ASSEMBLE(
 1355.000 000000  0  LDXN 2;
 1360.000 000000  0  PLDA;
 1365.000 000000  0  LDI 1;
 1370.000 000000  0  DPF(NUM:1);
 1375.000 000000  0  PSTA)#,
 1380.000 000000  0
 1385.000 000000  0 TROF'=
 1390.000 000000  0 ASSEMBLE(
 1395.000 000000  0   PSHR %10; LDI 0; DPF(2:1); SETR %10)#, <<SET TRAPS BIT TO 0>> <<0.29>>
 1400.000 000000  0
```

```
 1405.000 000000  0 V'GETS'MEM(VARABLE,MEMLOC)=
 1410.000 000000  0 ASSEMBLE(
 1415.000 000000  0  PUSH MEMLOC;
 1420.000 000000  0  STAX;
 1425.000 000000  0  PLDA;
 1430.000 000000  0  POP VARABLE)#,
 1435.000 000000  0
 1440.000 000000  0 WRITEREG(K)=
 1445.000 000000  0 ASMB(LOAD CHNL; PUSH K; CSL 8; OR; LOAD TOS';
 1450.000 000000  0      WIOC; BE P+2);
 1455.000 000000  0 WRITEFAIL#,
 1460.000 000000  0
 1465.000 000000  0 ZENDEF=END#;
```

```
 1475.000 000000  0 DOUBLE
 1480.000 000000  0 SECTIONS'TO'RUN:=[16/!7FFC,16/0],
 1485.000 000000  0 DEFAULT'SECTS:=[16/!7FFC,16/0],
 1490.000 000000  0 ZENDOUBLE;
 1495.000 000000  0
 1500.000 000000  0 EQUATE
 1505.000 000000  0 CTCBP=!0004,     <<@ Mem Loc>>
 1510.000 000000  0 LAST'SECT=17,
 1515.000 000000  0 MASK=!007,       <<@ Mem Loc>>
 1520.000 000000  0 QI=!0005,        <<@ Mem Loc>>
 1525.000 000000  0 SCST'BANK=!0000, <<@ Mem Loc>>
 1530.000 000000  0 SCSTP=!0001,     <<@ Mem Loc>>
 1535.000 000000  0 UCST'BANK=!0002, <<@ Mem Loc>>
 1540.000 000000  0 UCSTP=!0003,     <<@ Mem Loc>>
 1545.000 000000  0 ZI=!0006;        <<@ Mem Loc>>
```

```
 1555.000 000000  0 BYTE ARRAY CLEARBUF(80):=(80(" "));
 1560.000 000000  0
 1565.000 000000  0 BYTE ARRAY
 1570.000 000000  0 MSG'OUT(80):=(80(" "));
 1575.000 000000  0
 1580.000 000000  0 BYTE ARRAY
 1585.000 000000  0 PERIOD(1):=".";
 1590.000 000000  0
 1595.000 000000  0 BYTE ARRAY TEMPBUF(80);
 1600.000 000000  0
 1605.000 000000  0 BYTE ARRAY LIST'COM:=(
 1610.000 000000  0  "Name    Parameter(s)    Meaning",!D,
 1615.000 000000  0  "----    ------------    -------",!D,
 1620.000 000000  0  "DEV     device         Select only device specified",!D,
 1625.000 000000  0  "EEPR                   Enable error messages",!D,
 1630.000 000000  0  "EEPS                   Enable error pauses",!D,
 1635.000 000000  0  "ENPR                   Enable non-error messages",!D,
 1640.000 000000  0  "EXIT                   Return to DUS",!D,
 1645.000 000000  0  "GO                     Resume diagnostic execution",!D,
 1650.000 000000  0  "LOOP                   Loop on selected test sections",!D,
 1655.000 000000  0  "LOOPOFF                Stop loop",!D,
 1660.000 000000  0  "PRINTER                Display errors on printer",!D,
 1665.000 000000  0  "RST                    Enable Pauses and Messages,",!D,
 1670.000 000000  0  "                       also Suppress Printer",!D,
 1675.000 000000  0  "RUN                    Restart diagnostic execution",!D,
 1680.000 000000  0  "SEPR                   Suppress error messages",!D,
 1685.000 000000  0  "SEPS                   Suppress error pauses",!D,
 1690.000 000000  0  "SNPR                   Suppress non-error messages",!D,
 1695.000 000000  0  "STATE                  Lists status of program",!D,
 1700.000 000000  0  <<**"SO                     Stop DUS Stream Facility",!D,**>>
 1705.000 000000  0  "TEST    section        Alter section selection",!D,
 1710.000 000000  0  !FF);
```

```
 1720.000 000000  0 LOGICAL ARRAY
 1725.000 000000  0 DELAYBUF(16):=(0,0,300,200,110,75,25,7,2,3,8,12,7,50,100,140);
 1730.000 000000  0
 1735.000 000000  0 LOGICAL ARRAY BAUDARRAY(4):=(0,!55,!AA,!CC);
 1740.000 000000  0
 1745.000 000000  0 LOGICAL ARRAY
 1750.000 000000  0 BAUDS(16):=(0,0,50,75,134,200,600,2400,9600,4800,
 1755.000 000000  0            1800,1200,2400,300,150,110);
 1760.000 000000  0
 1765.000 000000  0 LOGICAL ARRAY DCSRQBUF1(4):=(!4030,!4032,!4034,!4036);
 1770.000 000000  0
 1775.000 000000  0 LOGICAL ARRAY DCSRQBUF2(8):=
 1780.000 000000  0        (!4071,!4073,!4075,!4077,!4079,!407B,!407D,!407F);
 1785.000 000000  0
 1790.000 000000  0 LOGICAL ARRAY ENCSRQBUF1(9):=
 1795.000 000000  0        (!4020,!4021,!4022,!4023,!4024,!4025,!4026,!4027,!403F);
 1800.000 000000  0
 1805.000 000000  0 LOGICAL ARRAY ENCSRQBUF2(9):=
 1810.000 000000  0        (!4060,!4061,!4062,!4063,!4064,!4065,!4066,!4067,!4070);
 1815.000 000000  0
 1820.000 000000  0 LOGICAL ARRAY UARTCNTRL(24):=
 1825.000 000000  0  (!80,  <<1 start bit, 5 data bits, odd parity,  1 stop bit>>
 1830.000 000000  0   !81,  <<1 start bit, 5 data bits, no parity,   1 stop bit>>
 1835.000 000000  0   !82,  <<1 start bit, 5 data bits, even parity, 1 stop bit>>
 1840.000 000000  0   !84,  <<1 start bit, 5 data bits, odd parity,  1.5 stop bits>>
 1845.000 000000  0   !85,  <<1 start bit, 5 data bits, no parity,   1.5 stop bits>>
 1850.000 000000  0   !86,  <<1 start bit, 5 data bits, even parity, 2 stop bits>>
 1855.000 000000  0   !88,  <<1 start bit, 6 data bits, odd parity,  1 stop bit>>
 1860.000 000000  0   !89,  <<1 start bit, 6 data bits, no parity,   1 stop bit>>
 1865.000 000000  0   !8A,  <<1 start bit, 6 data bits, even parity, 1 stop bit>>
 1870.000 000000  0   !8C,  <<1 start bit, 6 data bits, odd parity,  2 stop bits>>
 1875.000 000000  0   !8D,  <<1 start bit, 6 data bits, no parity,   2 stop bits>>
 1880.000 000000  0   !8E,  <<1 start bit, 6 data bits, even parity, 2 stop bits>>
 1885.000 000000  0   !90,  <<1 start bit, 7 data bits, odd parity,  1 stop bit>>
 1890.000 000000  0   !91,  <<1 start bit, 7 data bits, no parity,   1 stop bit>>
 1895.000 000000  0   !92,  <<1 start bit, 7 data bits, even parity, 1 stop bit>>
 1900.000 000000  0   !94,  <<1 start bit, 7 data bits, odd parity,  2 stop bits>>
 1905.000 000000  0   !95,  <<1 start bit, 7 data bits, no parity,   2 stop bits>>
 1910.000 000000  0   !96,  <<1 start bit, 7 data bits, even parity, 2 stop bits>>
 1915.000 000000  0   !98,  <<1 start bit, 8 data bits, odd parity,  1 stop bit>>
 1920.000 000000  0   !99,  <<1 start bit, 8 data bits, no parity,   1 stop bit>>
 1925.000 000000  0   !9A,  <<1 start bit, 8 data bits, even parity, 1 stop bit>>
 1930.000 000000  0   !9C,  <<1 start bit, 8 data bits, odd parity,  2 stop bits>>
 1935.000 000000  0   !9D,  <<1 start bit, 8 data bits, no parity,   2 stop bits>>
 1940.000 000000  0   !9E); <<1 start bit, 8 data bits, even parity, 2 stop bits>>
 1945.000 000000  0
 1950.000 000000  0 LOGICAL ARRAY MDCSRQBUF1(4):=(16,18,20,22);
 1955.000 000000  0
 1960.000 000000  0 LOGICAL ARRAY MDCSRQBUF2(8):=(17,19,21,23,25,27,29,31);
 1965.000 000000  0
 1970.000 000000  0 LOGICAL ARRAY MENCSRQBUF1(9):=(0,1,2,3,4,5,6,7,31);
 1975.000 000000  0
 1980.000 000000  0 LOGICAL ARRAY MENCSRQBUF2(9):=(0,1,2,3,4,5,6,7,16);
 1985.000 000000  0
 1990.000 000000  0 LOGICAL ARRAY
```

```
 1995.000 000000  0 SAVE'MARK(10):=(10(0));
 2000.000 000000  0
 2005.000 000000  0 LOGICAL ARRAY TSTBUF(35);
 2010.000 000000  0
 2015.000 000000  0 LOGICAL ARRAY TSTBUF'(35):=
 2020.000 000000  0  (!0000,!FFFF,!FFFF,!FFFF,!FFFF,!FFFF,!FFFF,!FFFF,!FFFF,!FFFF,
 2025.000 000000  0   !FFFF,!FFFF,!FFFF,!FFFF,!0000,!0000,!0000,!0000,!0000,!0000,
 2030.000 000000  0   !0000,!0000,!0000,!0000,!0000,!0000,!0000,!0000,!0000,!0000,
 2035.000 000000  0   !0000,!0000,!0000,!0000,!0000);
 2040.000 000000  0
 2045.000 000000  0 LOGICAL ARRAY RG2'CHNL'PGM(5):=
 2050.000 000000  0      (!0B02,   <<RREG 2>>
 2055.000 000000  0       !0000,   <<Reserved word for read>>
 2060.000 000000  0       !0182,   <<INT w/HALT>>
 2065.000 000000  0       !00FF,   <<Interrupt code>>
 2070.000 000000  0       !FFFF);  <<End-of-code>>
 2075.000 000000  0
 2080.000 000000  0 LOGICAL ARRAY
 2085.000 000000  0 ID'CHNL'PGM(5):=(!0600,  <<Identify>>
 2090.000 000000  0                  !0000,  <<Reserved for I.D. return>>
 2095.000 000000  0                  !0182,  <<Interrupt w/halt>>
 2100.000 000000  0                  !00FF,  <<Interrupt code for cpva>>
 2105.000 000000  0                  !FFFF); <<End-of-code>>
 2110.000 000000  0
 2115.000 000000  0 LOGICAL ARRAY ADDARRAY(8):=
 2120.000 000000  0       (!F000,!F080,!F100,!F180,!F200,!F280,!F300,!F380);
 2125.000 000000  0
 2130.000 000000  0 LOGICAL ARRAY CPVAARRAY(8):=
 2135.000 000000  0       (!D000,!D008,!D010,!D018,!D020,!D028,!D030,!D038);
 2140.000 000000  0
 2145.000 000000  0 LOGICAL ARRAY TEMPARRAY(8);
 2150.000 000000  0
 2155.000 000000  0 LOGICAL ARRAY CHG'ADDR'ARRAY(16):=
 2160.000 000000  0    <<DEVICE 0>>  (!E085,!E106,
 2165.000 000000  0    <<DEVICE 1>>   !E107,!E188,
 2170.000 000000  0    <<DEVICE 2>>   !E189,!E20A,
 2175.000 000000  0    <<DEVICE 3>>   !E20B,!E28C,
 2180.000 000000  0    <<DEVICE 4>>   !E28D,!E30E,
 2185.000 000000  0    <<DEVICE 5>>   !E30F,!E390,
 2190.000 000000  0    <<DEVICE 6>>   !E391,!E412,
 2195.000 000000  0    <<DEVICE 7>>   !E413,!E494);
 2200.000 000000  0
 2205.000 000000  0 LOGICAL ARRAY MEMAP(133):=
 2210.000 000000  0  (!9E00,!0401,!0600,!0102,!0304,!0506,!0708,!090A,!0B0C,
 2215.000 000000  0   !0D0E,!0F10,!1112,!1314,!1516,!1718,!191A,!1B1C,!1D1E,
 2220.000 000000  0   !1F20,!2122,!2324,!2526,!2728,!292A,!2B2C,!2D2E,!2F30,
 2225.000 000000  0   !3132,!3334,!3536,!3738,!393A,!3B3C,!3D3E,!3F40,!4142,
 2230.000 000000  0   !4344,!4546,!4748,!494A,!4B4C,!4D4E,!4F50,!5152,!5354,
 2235.000 000000  0   !5556,!5758,!595A,!5B5C,!5D5E,!5F60,!6162,!6364,!6566,
 2240.000 000000  0   !6768,!696A,!6B6C,!6D6E,!6F70,!7172,!7374,!7576,!7778,
 2245.000 000000  0   !797A,!7B7C,!7D7E,!7F80,!8182,!8384,!8586,!8788,!898A,
 2250.000 000000  0   !8B8C,!8D8E,!8F90,!9192,!9394,!9596,!9798,!999A,!9B9C,
 2255.000 000000  0   !9D9E,!9FA0,!A1A2,!A3A4,!A5A6,!A7A8,!A9AA,!ABAC,!ADAE,
 2260.000 000000  0   !AFB0,!B1B2,!B3B4,!B5B6,!B7B8,!B9BA,!BBBC,!BDBE,!BFC0,
 2265.000 000000  0   !C1C2,!C3C4,!C5C6,!C7C8,!C9CA,!CBCC,!CDCE,!CFD0,!D1D2,
 2270.000 000000  0   !D3D4,!D5D6,!D7D8,!D9DA,!DBDC,!DDDE,!DFE0,!E1E2,!E3E4,
```

```
 2275.000 000000  0   !E5E6,!E7E8,!E9EA,!EBEC,!EDEE,!EFF0,!F1F2,!F3F4,!F5F6,
 2280.000 000000  0   !F7F8,!F9FA,!FBFC,!FDFE,!FFFF,!1707,!2000);
 2285.000 000000  0
 2290.000 000000  0 LOGICAL ARRAY ADCC'CHNL'PGM(115):=
 2295.000 000000  0  <<000>> (!0401,      <<Write modifier 1 - UART control>>
 2300.000 000000  0           !0001,
 2305.000 000000  0           !0001,
 2310.000 000000  0           !A000,
 2315.000 000000  0           !E000,
 2320.000 000000  0
 2325.000 000000  0           !0402,      <<Write modifier 2 - I/F control>>
 2330.000 000000  0           !0001,
 2335.000 000000  0           !0001,
 2340.000 000000  0           !E000,
 2345.000 000000  0           !E000,
 2350.000 000000  0
 2355.000 000000  0  <<010>>  !0403,      <<Write modifier 3 - svc. conditions>>
 2360.000 000000  0           !0001,
 2365.000 000000  0           !0001,          <<request for TB not full>>
 2370.000 000000  0           !A000,
 2375.000 000000  0           !E001,
 2380.000 000000  0
 2385.000 000000  0           !0403,      <<Write modifier 3>>
 2390.000 000000  0           !0001,
 2395.000 000000  0           !0001,          <<no request for TBE>>
 2400.000 000000  0           !C000,
 2405.000 000000  0           !E001,
 2410.000 000000  0
 2415.000 000000  0  <<020>>  !0403,      <<Write modifier 3>>
 2420.000 000000  0           !0001,
 2425.000 000000  0           !0001,          <<request when byte received>>
 2430.000 000000  0           !A000,
 2435.000 000000  0           !E002,
 2440.000 000000  0
 2445.000 000000  0           !0404,      <<Write modifier 4>>
 2450.000 000000  0           !0100,
 2455.000 000000  0           !0001,          <<Clear special character RAM>>
 2460.000 000000  0           !E000,
 2465.000 000000  0           !E002,
 2470.000 000000  0
 2475.000 000000  0  <<030>>  !0000,      <<Jump *+2>>
 2480.000 000000  0           !0004,
 2485.000 000000  0
 2490.000 000000  0           !0200,      <<Wait>>
 2495.000 000000  0           !0000,
 2500.000 000000  0
 2505.000 000000  0           !0000,      <<Jump *-11>>
 2510.000 000000  0           !FFF5,
 2515.000 000000  0
 2520.000 000000  0           !0405,      <<Write modifier 5>>
 2525.000 000000  0           !0001,
 2530.000 000000  0           !0001,         <<Set the special character RAM>>
 2535.000 000000  0           !E000,
 2540.000 000000  0  <<040>>  !E082,
 2545.000 000000  0
 2550.000 000000  0           !0406,      <<Write modifier 6>>
```

```
 2555.000 000000  0            !0002,
 2560.000 000000  0            !0001,         <<Set the baud rates>>
 2565.000 000000  0            !A000,
 2570.000 000000  0            !E083,         <<to 2400>>
 2575.000 000000  0
 2580.000 000000  0            !0000,      <<Jump *+ 2>>
 2585.000 000000  0            !0002,
 2590.000 000000  0
 2595.000 000000  0            !0000,      <<Jump *-9>>
 2600.000 000000  0            !FFF7,
 2605.000 000000  0
 2610.000 000000  0  <<050>>   !0407,      <<Write modifier 7>>
 2615.000 000000  0            !0001,
 2620.000 000000  0            !0001,         <<Clear modem line status>>
 2625.000 000000  0            !A000,
 2630.000 000000  0            !E084,
 2635.000 000000  0
 2640.000 000000  0            !0400,      <<Write modifier 0>>
 2645.000 000000  0            !0100,
 2650.000 000000  0            !0001,          <<Write the test bytes>>
 2655.000 000000  0            !E000,
 2660.000 000000  0            !E002,
 2665.000 000000  0
 2670.000 000000  0  <<060>>   !0000,      <<Jump *+ 9>>
 2675.000 000000  0            !000A,
 2680.000 000000  0
 2685.000 000000  0            !0200,      <<Wait>>
 2690.000 000000  0            !0000,
 2695.000 000000  0
 2700.000 000000  0            !0503,      <<DSJ max = 3>>
 2705.000 000000  0            !0000,      <<return word>>
 2710.000 000000  0            !0009,      <<if read + 7>>
 2715.000 000000  0            !FFF1,      <<if write -15>>
 2720.000 000000  0            !001A,      <<if status + 26>>
 2725.000 000000  0            !0000,      <<If bad DSJ return>>
 2730.000 000000  0
 2735.000 000000  0  <<070>>   !0182,      <<Interrupt for bad DSJ value>>
 2740.000 000000  0            !0030,      <<!30 for CPVA word>>
 2745.000 000000  0
 2750.000 000000  0            !0403,      <<Write modifier 3>>
 2755.000 000000  0            !0001,
 2760.000 000000  0            !0001,           <<disable XMIT REQ's>>
 2765.000 000000  0            !E000,
 2770.000 000000  0            !E084,
 2775.000 000000  0
 2780.000 000000  0            !0000,      <<Jump to the wait>>
 2785.000 000000  0            !0007,
 2790.000 000000  0
 2795.000 000000  0            !0300,      <<Read the byte in the UART>>
 2800.000 000000  0  <<080>>   !0100,
 2805.000 000000  0            !0001,
 2810.000 000000  0            !C000,
 2815.000 000000  0            !E085,
 2820.000 000000  0
 2825.000 000000  0            !0182,      <<Interrupt if special character>>
 2830.000 000000  0            !0050,      <<Halt code for correct termination>>
```

```
 2835.000 000000  0
 2840.000 000000  0            !0200,      <<Wait>>
 2845.000 000000  0            !0000,
 2850.000 000000  0
 2855.000 000000  0            !0503,      <<DSJ  max = 3>>
 2860.000 000000  0            !0000,      <<reserved return word>>
 2865.000 000000  0  <<090>>   !FFF1,      <<if read   - 14>>
 2870.000 000000  0            !FFD9,      <<if write  - 39>>
 2875.000 000000  0            !0002,      <<if status + 2>>
 2880.000 000000  0            !0000,      <<If bad DSJ return>>
 2885.000 000000  0
 2890.000 000000  0            !0182,      <<Interrupt if unexpected DSJ return>>
 2895.000 000000  0            !0030,      <<Halt code for the CPVA area>>
 2900.000 000000  0
 2905.000 000000  0            !0302,      <<Read the modem status>>
 2910.000 000000  0            !0001,
 2915.000 000000  0            !0001,
 2920.000 000000  0            !8000,
 2925.000 000000  0  <<100>>   !E086,
 2930.000 000000  0
 2935.000 000000  0            !0301,      <<Read the UART status>>
 2940.000 000000  0            !0002,
 2945.000 000000  0            !0001,
 2950.000 000000  0            !C000,
 2955.000 000000  0            !E086,
 2960.000 000000  0
 2965.000 000000  0            !0182,      <<Interrupt if>>
 2970.000 000000  0            !0010,      <<break caused termination>>
 2975.000 000000  0
 2980.000 000000  0            !0182,      <<Interrupt if the termination>>
 2985.000 000000  0            !0020,      <<was caused by an overrun or PE>>
 2990.000 000000  0
 2995.000 000000  0  <<110>>   !FFFF);     <<End-of-code>>
 3000.000 000000  0
 3005.000 000000  0 LOGICAL ARRAY
 3010.000 000000  0 DSJ'CH'PROG(170):=(
 3015.000 000000  0          <<@ array+0, channel program, device 0>>
 3020.000 000000  0  !0F03, <<Write rel immediate +3>>
 3025.000 000000  0  !0000, <<Clear DSJ return byte>>
 3030.000 000000  0  !0200, <<WAIT>>
 3035.000 000000  0  !0000,
 3040.000 000000  0  !0503, <<DSJ, 3 max>>
 3045.000 000000  0  !0000, <<DSJ return byte @ chan prog +5>>
 3050.000 000000  0  !0002, <<If READ, 0, then +2>>
 3055.000 000000  0  !0004, <<If WRITE, 1, then +4>>
 3060.000 000000  0  !0006, <<If STATUS, 2, then +6>>
 3065.000 000000  0  !0008, <<If no request, 3, then +8>>
 3070.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3075.000 000000  0  !0004, <<Interrupt code, DSJ error, to CPVA 4th word>>
 3080.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3085.000 000000  0  !0000, <<Interrupt code, READ, to CPVA 4th word>>
 3090.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3095.000 000000  0  !0001, <<Interrupt code, WRITE, to CPVA 4th word>>
 3100.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3105.000 000000  0  !0002, <<Interrupt code, STATUS, to CPVA 4th word>>
 3110.000 000000  0  !0183, <<INTERRUPT/HALT>>
```

```
 3115.000 000000  0  !0003, <<Interrupt code, no request, to CPVA 4th word>>
 3120.000 000000  0  !FFFF, <<End of channel program, device 0>>
 3125.000 000000  0         <<@ array+21, channel program, device 1>>
 3130.000 000000  0  !0F03, <<Write rel immediate +3>>
 3135.000 000000  0  !0000, <<Clear DSJ return byte>>
 3140.000 000000  0  !0200, <<WAIT>>
 3145.000 000000  0  !0000,
 3150.000 000000  0  !0503, <<DSJ, 3 max>>
 3155.000 000000  0  !0000, <<DSJ return byte @ chan prog +5>>
 3160.000 000000  0  !0002, <<If READ, 0, then +2>>
 3165.000 000000  0  !0004, <<If WRITE, 1, then +4>>
 3170.000 000000  0  !0006, <<If STATUS, 2, then +6>>
 3175.000 000000  0  !0008, <<If no request, 3, then +8>>
 3180.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3185.000 000000  0  !0004, <<Interrupt code, DSJ error, to CPVA 4th word>>
 3190.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3195.000 000000  0  !0000, <<Interrupt code, READ, to CPVA 4th word>>
 3200.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3205.000 000000  0  !0001, <<Interrupt code, WRITE, to CPVA 4th word>>
 3210.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3215.000 000000  0  !0002, <<Interrupt code, STATUS, to CPVA 4th word>>
 3220.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3225.000 000000  0  !0003, <<Interrupt code, no request, to CPVA 4th word>>
 3230.000 000000  0  !FFFF, <<End of channel program, device 1>>
 3235.000 000000  0         <<@ array+42,, channel program, device 2>>
 3240.000 000000  0  !0F03, <<Write rel immediate +3>>
 3245.000 000000  0  !0000, <<Clear DSJ return byte>>
 3250.000 000000  0  !0200, <<WAIT>>
 3255.000 000000  0  !0000,
 3260.000 000000  0  !0503, <<DSJ, 3 max>>
 3265.000 000000  0  !0000, <<DSJ return byte @ chan prog +5>>
 3270.000 000000  0  !0002, <<If READ, 0, then +2>>
 3275.000 000000  0  !0004, <<If WRITE, 1, then +4>>
 3280.000 000000  0  !0006, <<If STATUS, 2, then +6>>
 3285.000 000000  0  !0008, <<If no request, 3, then +8>>
 3290.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3295.000 000000  0  !0004, <<Interrupt code, DSJ error, to CPVA 4th word>>
 3300.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3305.000 000000  0  !0000, <<Interrupt code, READ, to CPVA 4th word>>
 3310.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3315.000 000000  0  !0001, <<Interrupt code, WRITE, to CPVA 4th word>>
 3320.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3325.000 000000  0  !0002, <<Interrupt code, STATUS, to CPVA 4th word>>
 3330.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3335.000 000000  0  !0003, <<Interrupt code, no request, to CPVA 4th word>>
 3340.000 000000  0  !FFFF, <<End of channel program, device 2>>
 3345.000 000000  0         <<@ array+63, channel program, device 3>>
 3350.000 000000  0  !0F03, <<Write rel immediate +3>>
 3355.000 000000  0  !0000, <<Clear DSJ return byte>>
 3360.000 000000  0  !0200, <<WAIT>>
 3365.000 000000  0  !0000,
 3370.000 000000  0  !0503, <<DSJ, 3 max>>
 3375.000 000000  0  !0000, <<DSJ return byte @ chan prog +5>>
 3380.000 000000  0  !0002, <<If READ, 0, then +2>>
 3385.000 000000  0  !0004, <<If WRITE, 1, then +4>>
 3390.000 000000  0  !0006, <<If STATUS, 2, then +6>>
```

```
 3395.000 000000  0  !0008, <<If no request, 3, then +8>>
 3400.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3405.000 000000  0  !0004, <<Interrupt code, DSJ error, to CPVA 4th word>>
 3410.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3415.000 000000  0  !0000, <<Interrupt code, READ, to CPVA 4th word>>
 3420.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3425.000 000000  0  !0001, <<Interrupt code, WRITE, to CPVA 4th word>>
 3430.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3435.000 000000  0  !0002, <<Interrupt code, STATUS, to CPVA 4th word>>
 3440.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3445.000 000000  0  !0003, <<Interrupt code, no request, to CPVA 4th word>>
 3450.000 000000  0  !FFFF, <<End of channel program, device 3>>
 3455.000 000000  0         <<@ array+84, channel program, device 4>>
 3460.000 000000  0  !0F03, <<Write rel immediate +3>>
 3465.000 000000  0  !0000, <<Clear DSJ return byte>>
 3470.000 000000  0  !0200, <<WAIT>>
 3475.000 000000  0  !0000,
 3480.000 000000  0  !0503, <<DSJ, 3 max>>
 3485.000 000000  0  !0000, <<DSJ return byte @ chan prog +5>>
 3490.000 000000  0  !0002, <<If READ, 0, then +2>>
 3495.000 000000  0  !0004, <<If WRITE, 1, then +4>>
 3500.000 000000  0  !0006, <<If STATUS, 2, then +6>>
 3505.000 000000  0  !0008, <<If no request, 3, then +8>>
 3510.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3515.000 000000  0  !0004, <<Interrupt code, DSJ error, to CPVA 4th word>>
 3520.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3525.000 000000  0  !0000, <<Interrupt code, READ, to CPVA 4th word>>
 3530.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3535.000 000000  0  !0001, <<Interrupt code, WRITE, to CPVA 4th word>>
 3540.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3545.000 000000  0  !0002, <<Interrupt code, STATUS, to CPVA 4th word>>
 3550.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3555.000 000000  0  !0003, <<Interrupt code, no request, to CPVA 4th word>>
 3560.000 000000  0  !FFFF, <<End of channel program, device 4>>
 3565.000 000000  0         <<@ array+105, channel program, device 5>>
 3570.000 000000  0  !0F03, <<Write rel immediate +3>>
 3575.000 000000  0  !0000, <<Clear DSJ return byte>>
 3580.000 000000  0  !0200, <<WAIT>>
 3585.000 000000  0  !0000,
 3590.000 000000  0  !0503, <<DSJ, 3 max>>
 3595.000 000000  0  !0000, <<DSJ return byte @ chan prog +5>>
 3600.000 000000  0  !0002, <<If READ, 0, then +2>>
 3605.000 000000  0  !0004, <<If WRITE, 1, then +4>>
 3610.000 000000  0  !0006, <<If STATUS, 2, then +6>>
 3615.000 000000  0  !0008, <<If no request, 3, then +8>>
 3620.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3625.000 000000  0  !0004, <<Interrupt code, DSJ error, to CPVA 4th word>>
 3630.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3635.000 000000  0  !0000, <<Interrupt code, READ, to CPVA 4th word>>
 3640.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3645.000 000000  0  !0001, <<Interrupt code, WRITE, to CPVA 4th word>>
 3650.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3655.000 000000  0  !0002, <<Interrupt code, STATUS, to CPVA 4th word>>
 3660.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3665.000 000000  0  !0003, <<Interrupt code, no request, to CPVA 4th word>>
 3670.000 000000  0  !FFFF, <<End of channel program, device 5>>
```

```
 3675.000 000000  0         <<@ array+126, channel program, device 6>>
 3680.000 000000  0  !0F03, <<Write rel immediate +3>>
 3685.000 000000  0  !0000, <<Clear DSJ return byte>>
 3690.000 000000  0  !0200, <<WAIT>>
 3695.000 000000  0  !0000,
 3700.000 000000  0  !0503, <<DSJ, 3 max>>
 3705.000 000000  0  !0000, <<DSJ return byte @ chan prog +5>>
 3710.000 000000  0  !0002, <<If READ, 0, then +2>>
 3715.000 000000  0  !0004, <<If WRITE, 1, then +4>>
 3720.000 000000  0  !0006, <<If STATUS, 2, then +6>>
 3725.000 000000  0  !0008, <<If no request, 3, then +8>>
 3730.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3735.000 000000  0  !0004, <<Interrupt code, DSJ error, to CPVA 4th word>>
 3740.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3745.000 000000  0  !0000, <<Interrupt code, READ, to CPVA 4th word>>
 3750.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3755.000 000000  0  !0001, <<Interrupt code, WRITE, to CPVA 4th word>>
 3760.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3765.000 000000  0  !0002, <<Interrupt code, STATUS, to CPVA 4th word>>
 3770.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3775.000 000000  0  !0003, <<Interrupt code, no request, to CPVA 4th word>>
 3780.000 000000  0  !FFFF, <<End of channel program, device 6>>
 3785.000 000000  0         <<@ array+147, channel program, device 7>>
 3790.000 000000  0  !0F03, <<Write rel immediate +3>>
 3795.000 000000  0  !0000, <<Clear DSJ return byte>>
 3800.000 000000  0  !0200, <<WAIT>>
 3805.000 000000  0  !0000,
 3810.000 000000  0  !0503, <<DSJ, 3 max>>
 3815.000 000000  0  !0000, <<DSJ return byte @ chan prog +5>>
 3820.000 000000  0  !0002, <<If READ, 0, then +2>>
 3825.000 000000  0  !0004, <<If WRITE, 1, then +4>>
 3830.000 000000  0  !0006, <<If STATUS, 2, then +6>>
 3835.000 000000  0  !0008, <<If no request, 3, then +8>>
 3840.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3845.000 000000  0  !0004, <<Interrupt code, DSJ error, to CPVA 4th word>>
 3850.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3855.000 000000  0  !0000, <<Interrupt code, READ, to CPVA 4th word>>
 3860.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3865.000 000000  0  !0001, <<Interrupt code, WRITE, to CPVA 4th word>>
 3870.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3875.000 000000  0  !0002, <<Interrupt code, STATUS, to CPVA 4th word>>
 3880.000 000000  0  !0183, <<INTERRUPT/HALT>>
 3885.000 000000  0  !0003, <<Interrupt code, no request, to CPVA 4th word>>
 3890.000 000000  0  !FFFF, <<End of channel program, device 7>>
 3895.000 000000  0  !FFFF);
 3900.000 000000  0
 3905.000 000000  0 LOGICAL ARRAY
 3910.000 000000  0 CPVA(32);
```

```
 3920.000 000000  0 PROCEDURE CLEAROFFLINE;
 3925.000 000000  0 EXTERNAL;
 3930.000 000000  0
 3935.000 000000  0 PROCEDURE CRLF;
 3940.000 000000  0 EXTERNAL;
 3945.000 000000  0
 3950.000 000000  0 PROCEDURE CRTOUT(BUFFR,LENGTH);
 3955.000 000000  0 VALUE INTEGER LENGTH; BYTE ARRAY BUFFR;
 3960.000 000000  0 FORWARD;
 3965.000 000000  0
 3970.000 000000  0 PROCEDURE DODELAY(STAR'CLOCK,MIL'SEC);
 3975.000 000000  0 VALUE LOGICAL STAR'CLOCK,MIL'SEC;
 3980.000 000000  0 FORWARD;
 3985.000 000000  0
 3990.000 000000  0 PROCEDURE ERROROUT(LEN,DVN);
 3995.000 000000  0 VALUE INTEGER LEN;
 4000.000 000000  0 VALUE LOGICAL DVN;
 4005.000 000000  0 FORWARD;
 4010.000 000000  0
 4015.000 000000  0 LOGICAL PROCEDURE FMGR(N,BUF,SADR,B1,B2,B3,B4);
 4020.000 000000  0 VALUE INTEGER N,B1,B2,B3,B4; INTEGER ARRAY SADR;
 4025.000 000000  0 BYTE ARRAY BUF;
 4030.000 000000  0 EXTERNAL,VARIABLE;
 4035.000 000000  0
 4040.000 000000  0 PROCEDURE GET'INPUT(WHERE); VALUE LOGICAL WHERE;
 4045.000 000000  0 FORWARD;
 4050.000 000000  0
 4055.000 000000  0 INTEGER PROCEDURE GET'MESSAGE(SELECT);
 4060.000 000000  0 VALUE INTEGER SELECT;
 4065.000 000000  0 FORWARD;
 4070.000 000000  0
 4075.000 000000  0 LOGICAL PROCEDURE GETIO(N); VALUE INTEGER N;
 4080.000 000000  0 EXTERNAL;
 4085.000 000000  0
 4090.000 000000  0 PROCEDURE INT'RECV;
 4095.000 000000  0 INTERRUPT,     <<ADDED FOR SPLII VERSION 2.03>>                <<0.29>>
 4100.000 000000  0 FORWARD;
 4105.000 000000  0
 4110.000 000000  0 PROCEDURE IIX'TIMER(TIMES);                                  <<0.29>>
 4115.000 000000  0 VALUE LOGICAL TIMES;                                         <<0.29>>
 4120.000 000000  0 EXTERNAL;                                                    <<0.29>>
 4125.000 000000  0
 4130.000 000000  0 PROCEDURE LIST'PROG'STAT;
 4135.000 000000  0 FORWARD;
 4140.000 000000  0
 4145.000 000000  0 PROCEDURE LOOP'BACK(INDEX);
 4150.000 000000  0 VALUE INTEGER INDEX;
 4155.000 000000  0 FORWARD;
 4160.000 000000  0
 4165.000 000000  0 PROCEDURE NUM2ASC(INDEX,COUNT,BASE,NUMBER);
 4170.000 000000  0 VALUE INTEGER INDEX,BASE,COUNT; VALUE LOGICAL NUMBER;
 4175.000 000000  0 FORWARD;
 4180.000 000000  0
 4185.000 000000  0 PROCEDURE PRINT(MSG,LEN,CNTL);
 4190.000 000000  0 BYTE ARRAY MSG; VALUE INTEGER LEN,CNTL;
```

```
 4195.000 000000  0 EXTERNAL;
 4200.000 000000  0
 4205.000 000000  0 INTEGER PROCEDURE READ(MSG,MAXLEN);
 4210.000 000000  0 BYTE ARRAY MSG; VALUE INTEGER MAXLEN;
 4215.000 000000  0 EXTERNAL;
 4220.000 000000  0
 4225.000 000000  0 PROCEDURE READFAIL;
 4230.000 000000  0 FORWARD;
 4235.000 000000  0
 4240.000 000000  0 PROCEDURE SETOFFLINE;
 4245.000 000000  0 EXTERNAL;
 4250.000 000000  0
 4255.000 000000  0 PROCEDURE STARTIDLE;
 4260.000 000000  0 EXTERNAL;
 4265.000 000000  0
 4270.000 000000  0 LOGICAL PROCEDURE TEST'COMMAND'OK(INBUFFER,LAST'ELEMENT);
 4275.000 000000  0 BYTE ARRAY INBUFFER;
 4280.000 000000  0 VALUE INTEGER LAST'ELEMENT;
 4285.000 000000  0 FORWARD;
 4290.000 000000  0
 4295.000 000000  0 PROCEDURE WRITEFAIL;
 4300.000 000000  0 FORWARD;
```

```
 4310.000 000000  0 <<------------------------------------------------------------>>
 4315.000 000000  0 PROCEDURE CHECKYTRAP;
 4320.000 000000  0  BEGIN
 4325.000 000000  1
 4330.000 000000  1 INTEGER
 4335.000 000000  1 CA,
 4340.000 000000  1 SAVE'CHARS;
 4345.000 000000  1
 4350.000 000000  1 BYTE ARRAY
 4355.000 000000  1 SAVE'MSG(80);
 4360.000 000000  1
 4365.000 000000  1 DEFINE
 4370.000 000000  1 UNMASK'CONS=
 4375.000 000000  1 ASSEMBLE(
 4380.000 000000  1  LOAD CONCHNLBIT;
 4385.000 000000  1  RMSK;
 4390.000 000000  1  OR;
 4395.000 000000  1  SMSK)#; <<UNMASK CONSOLE CHANNEL>>
 4400.000 000000  1
 4405.000 000000  1   UNMASK'CONS;
 4410.000 000007  1   INTPSYS'ON;
 4415.000 000010  1   IF GETIO(6)
 4420.000 000014  1    THEN
 4425.000 000014  1     BEGIN
 4430.000 000014  2      INTPSYS'OFF;
 4435.000 000017  2      IF PRINT'ERRORS THEN CLEAROFFLINE;
 4440.000 000022  2      SAVE'CHARS:=NUM'CHARS; <<Retain message in case of GO>>
 4445.000 000024  2      MOVE MSG'OUT TO SAVE'MSG FOR NUM'CHARS ITEMS;
 4450.000 000030  2      CRLF; <<Break was detected, clear input>>
 4455.000 000031  2      NUM'CHARS:=GET'MESSAGE(74);
 4460.000 000035  2      MOVE ("   ") TO MSG'OUT(23);
 4465.000 000043  2      CA:=(IF STP > 99 THEN 3 ELSE 2);
 4470.000 000053  2      NUM2ASC(23,CA,10,STP); <<Put step # in message>>
 4475.000 000062  2      PRINT(MSG'OUT,-NUM'CHARS,%201);
 4480.000 000067  2      GET'INPUT(0); <<Now go see what the operator wants>>
 4485.000 000071  2      NUM'CHARS:=SAVE'CHARS;
 4490.000 000073  2      MOVE SAVE'MSG TO MSG'OUT FOR NUM'CHARS ITEMS;
 4495.000 000077  2     END;
 4500.000 000077  1  END; <<CHECKYTRAP>>

IDENTIFIER       TYPE        CLASS         ADDRESS

CA               INTEGER     SIMPLE        Q+ 2
SAVE'CHARS       INTEGER     SIMPLE        Q+ 3
SAVE'MSG         BYTE        ARRAY         Q+ 1,I,X
UNMASK'CONS      DEFINE



00000  171404 .. LRA  Q+ 004           00006  030100 0@ SMSK                00014  140002 .. BR   P+ 002
00001  010201 .. LSL  1 BIT            00007  030041 0! SED  1              00015  000062 .2 NOP ,LMPY
00002  035052 :* ADDS 42               00010  000600 .. ZERO,NOP           00016  030040 0  SED  0
00003  041035 B. LOAD DB 035           00011  021006 ". LDI  6             00017  041061 B1 LOAD DB 061
00004  030120 0P RMSK                  00012  000000 .. PCAL GETIO          00020  013702 .. BRE  P+2
00005  006500 .@ OR  ,NOP              00013  017702 .. BRE  P+2,I           00021  000000 .. PCAL CLEAROFFLINE
```

```
00022  041024 B. LOAD DB 024          00042  020043  # MVB  PB-DB,3          00062  173104 .D LRA  DB 104,I
00023  051403 S. STOR Q+ 003          00043  041065 B5 LOAD DB 065          00063  041024 B. LOAD DB 024
00024  173401 .. LRA  Q+ 001,I        00044  021143 "c LDI  99             00064  002400 .. NEG ,NOP
00025  173104 .D LRA  DB 104,I        00045  005700 .. LCMP,NOP            00065  021201 ". LDI  129
00026  041024 B. LOAD DB 024          00046  141303 .. BLE  P+ 003         00066  000000 .. PCAL PRINT
00027  020063  3 MVB  DB-DB,3         00047  021003 ". LDI  3              00067  021000 ". LDI  0
00030  000000 .. PCAL CRLF            00050  140002 .. BR   P+ 002         00070  000000 .. PCAL GET'INPUT
00031  000600 .. ZERO,NOP             00051  021002 ". LDI  2              00071  041403 C. LOAD Q+ 003
00032  021112 "J LDI  74              00052  051402 S. STOR Q+ 002         00072  051024 R. STOR DB 024
00033  000000 .. PCAL GET'MESSAGE     00053  140002 .. BR   P+ 002         00073  173104 .D LRA  DB 104,I
00034  051024 R. STOR DB 024          00054  000024 .. NOP ,NEG            00074  173401 .. LRA  Q+ 001,I
00035  021427 #. LDXI 23              00055  021027 ". LDI  23             00075  041024 B. LOAD DB 024
00036  177104 .D LRA  DB 104,I,X      00056  041402 C. LOAD Q+ 002         00076  020063  3 MVB  DB-DB,3
00037  170041 .! LRA  P+ 041          00057  021012 ". LDI  10             00077  031400 3. EXIT 0
00040  010201 .. LSL  1 BIT           00060  041065 B5 LOAD DB 065         00100  020040    MVB  PB-DB,0
00041  021003 ". LDI  3               00061  000000 .. PCAL NUM2ASC        00101  020000  . MOVE PB-DB,0
```

```
 4510.000 000000  0 <<------------------------------------------------------------>>
 4515.000 000000  0 PROCEDURE CHK'UNEXP'I(CHK'DEV); <<Looks to see if INT'RECV>>
 4520.000 000000  0 INTEGER CHK'DEV; <<put a device # in CPVA 3rd word.>>
 4525.000 000000  0  BEGIN
 4530.000 000000  1 LOGICAL
 4535.000 000000  1 D;
 4540.000 000001  1   IF (D:=CPVA(CHK'DEV*4+2))<>0 <<Interrupt?>>
 4545.000 000013  1    THEN <<Uh-oh>>
 4550.000 000013  1     BEGIN
 4555.000 000013  2      NUM'CHARS:=GET'MESSAGE(84);
 4560.000 000017  2      NUM2ASC(16,2,16,CPVA(CHK'DEV*4+3).(8:8)); <<DSJ byte>>
 4565.000 000031  2      NUM2ASC(35,2,10,D.(8:5)); <<Interrupting channel>>
 4570.000 000040  2      NUM2ASC(39,1,10,D AND 7); <<Interrupting device>>
 4575.000 000050  2      NUM2ASC(62,1,10,DEV); <<Tested device>>
 4580.000 000055  2      ERROROUT(-NUM'CHARS,0);
 4585.000 000061  2     END;
 4590.000 000061  1  END; <<CHK'UNEXP'I>>

IDENTIFIER       TYPE        CLASS         ADDRESS

CHK'DEV          INTEGER     SIMPLE        Q- 4,I
D                LOGICAL     SIMPLE        Q+ 1



00000  035001 :. ADDS 1                 00021  021020 ". LDI  16                00042  021012 ". LDI  10
00001  043604 G. LOAD Q- 004,I          00022  043604 G. LOAD Q- 004,I          00043  041401 C. LOAD Q+ 001
00002  023404 '. MPYI 4                 00023  023404 '. MPYI 4                00044  037407 ?. ANDI 7
00003  022402 %. ADDI 2                 00024  022403 %. ADDI 3                00045  140002 .. BR   P+ 002
00004  004300 .. STAX,NOP               00025  004300 .. STAX,NOP              00046  000013 .. NOP ,MPYL
00005  047140 N' LOAD DB 140,I,X        00026  047140 N' LOAD DB 140,I,X       00047  000010 .. PCAL NUM2ASC
00006  004500 .@ DUP ,NOP               00027  037777 ?. ANDI 255              00050  021076 "> LDI  62
00007  051401 S. STOR Q+ 001            00030  000000 .. PCAL NUM2ASC          00051  021001 ". LDI  1
00010  021000 ". LDI  0                 00031  021043 "# LDI  35               00052  021012 ". LDI  10
00011  005700 .. LCMP,NOP               00032  021002 ". LDI  2                00053  041013 B. LOAD DB 013
00012  145234 .. BE   P+ 034,I          00033  021012 ". LDI  10               00054  000005 .. PCAL NUM2ASC
00013  000600 .. ZERO,NOP               00034  041401 C. LOAD Q+ 001           00055  041024 B. LOAD DB 024
00014  021124 "T LDI  84                00035  010303 .. LSR  3 BITS           00056  002400 .. NEG ,NOP
00015  000000 .. PCAL GET'MESSAGE       00036  037437 ?. ANDI 31               00057  021000 ". LDI  0
00016  051024 R. STOR DB 024            00037  000007 .. PCAL NUM2ASC          00060  000000 .. PCAL ERROROUT
00017  021020 ". LDI  16                00040  021047 "' LDI  39               00061  031401 3. EXIT 1
00020  021002 ". LDI  2                 00041  021001 ". LDI  1


 4595.000 000000  0 <<------------------------------------------------------------>>
 4600.000 000000  0 PROCEDURE CRTOUT(BUFFR,LENGTH);
 4605.000 000000  0 VALUE INTEGER LENGTH; BYTE ARRAY BUFFR;
 4610.000 000000  0  BEGIN
 4615.000 000000  1 BYTE ARRAY SUBBUF(80);
 4620.000 000003  1   MOVE BUFFR TO SUBBUF FOR -LENGTH ITEMS;
 4625.000 000010  1   CHECKYTRAP;
 4630.000 000011  1   PRINT(SUBBUF,LENGTH,%201);
 4635.000 000015  1   STARTIDLE;
 4640.000 000016  1   DODELAY(STARTIME,50);
 4645.000 000022  1   CHECKYTRAP;
```

```
 4650.000 000023  1  END; <<CRTOUT>>

IDENTIFIER       TYPE        CLASS         ADDRESS

BUFFR            BYTE        ARRAY         Q- 5,I,X
LENGTH           INTEGER     SIMPLE        Q- 4
SUBBUF           BYTE        ARRAY         Q+ 1,I,X


00000  171402 .. LRA  Q+ 002           00007  020063  3 MVB  DB-DB,3          00016  020104  D IOOP 32 BIT OP
00001  010201 .. LSL  1 BIT            00010  000000 .. PCAL CHECKYTRAP       00017  000000 .. NOP ,NOP
00002  035050 :( ADDS 40               00011  173401 .. LRA  Q+ 001,I        00020  021062 "2 LDI  50
00003  173401 .. LRA  Q+ 001,I         00012  041604 C. LOAD Q- 004          00021  000000 .. PCAL DODELAY
00004  173605 .. LRA  Q- 005,I         00013  021201 ". LDI  129            00022  000012 .. PCAL CHECKYTRAP
00005  041604 C. LOAD Q- 004           00014  000000 .. PCAL PRINT          00023  031402 3. EXIT 2
00006  002400 .. NEG ,NOP              00015  000000 .. PCAL STARTIDLE


 4655.000 000000  0 <<-------------------------------------------------------->>
 4660.000 000000  0 PROCEDURE DO'RIOC0;
 4665.000 000000  0  BEGIN
 4670.000 000000  1 DEFINE
 4675.000 000000  1 DORIOC=
 4680.000 000000  1 ASSEMBLE(
 4685.000 000000  1  LOAD CHNL;
 4690.000 000000  1  RIOC;
 4695.000 000000  1  BNE P+3; <<Branch over RETURN if error>>
 4700.000 000000  1  STOR TOS')#;
 4705.000 000000  1
 4710.000 000000  1  <<Read contents of REG>>
 4715.000 000000  1   DORIOC;
 4720.000 000005  1   RETURN;
 4725.000 000006  1   TOS':=DELTA'P; <<Get the read failure address>>
 4730.000 000010  1   READFAIL; <<and pass to the reporting routine>>
 4735.000 000011  1   NO'ERROR:=FALSE;
 4740.000 000013  1  END; <<DO'RIOC0>>

IDENTIFIER       TYPE        CLASS         ADDRESS

DORIOC           DEFINE


00000  041010 B. LOAD DB 010           00004  051070 R8 STOR DB 070          00010  000000 .. PCAL READFAIL
00001  020302  . IOOP 32 BIT OP        00005  031400 3. EXIT 0               00011  021000 ". LDI  0
00002  000002 .. NOP ,DDEL             00006  041602 C. LOAD Q- 002          00012  051057 R/ STOR DB 057
00003  141503 .C BNE  P+ 003           00007  051070 R8 STOR DB 070          00013  031400 3. EXIT 0


 4745.000 000000  0 <<-------------------------------------------------------->>
 4750.000 000000  0 PROCEDURE DO'WIOC0(WRITE'WORD);
 4755.000 000000  0 VALUE LOGICAL
 4760.000 000000  0 WRITE'WORD;
 4765.000 000000  0  BEGIN
 4770.000 000000  1 DEFINE
```

```
 4775.000 000000  1 DOWIOC=
 4780.000 000000  1 ASSEMBLE(
 4785.000 000000  1  LOAD CHNL;
 4790.000 000000  1  LOAD WRITE'WORD;
 4795.000 000000  1  WIOC;
 4800.000 000000  1  BNE P+2)#; <<Branch over RETURN if error>>
 4805.000 000000  1
 4810.000 000000  1  <<Write content of WRITE'WORD to REG>>
 4815.000 000000  1   DOWIOC;
 4820.000 000005  1   RETURN;
 4825.000 000006  1   TOS':=DELTA'P; <<Get the write failure address>>
 4830.000 000010  1   WRITEFAIL; <<and pass to the reporting routine>>
 4835.000 000011  1   NO'ERROR:=FALSE;
 4840.000 000013  1  END; <<DO'WIOC0>>
```

IDENTIFIER	TYPE	CLASS	ADDRESS
DOWIOC	DEFINE		
WRITE'WORD	LOGICAL	SIMPLE	Q- 4

```
00000  041010 B. LOAD DB 010          00004  141502 .B BNE  P+ 002          00010  000000 .. PCAL WRITEFAIL
00001  041604 C. LOAD Q- 004          00005  031401 3. EXIT 1              00011  021000 ". LDI  0
00002  020302  . IOOP 32 BIT OP       00006  041602 C. LOAD Q- 002          00012  051057 R/ STOR DB 057
00003  000003 .. NOP ,ZROX            00007  051070 R8 STOR DB 070          00013  031401 3. EXIT 1
```

```
 4845.000 000000  0 <<-------------------------------------------------------->>
 4850.000 000000  0 PROCEDURE DODELAY(STAR'CLOCK,MIL'SEC);
 4855.000 000000  0  <<1000 milliseconds/91.43 usec, 89.3 nsec CPU, =10937>>
 4860.000 000000  0 VALUE LOGICAL
 4865.000 000000  0 STAR'CLOCK,
 4870.000 000000  0 MIL'SEC;
 4875.000 000000  0  BEGIN <<Accuracy is +/-0.01%, +5.7uSec/-85.7uSec>>
 4880.000 000000  1   WHILE INTEGER(MIL'SEC:=MIL'SEC-2000) > 0 DO                  <<0.29>>
 4885.000 000006  1    BEGIN                                                      <<0.29>>
 4890.000 000006  2       IIX'TIMER(21875);  <<2000 * 10.9375  (2 SECONDS)>>     <<0.29>>
 4895.000 000010  2    END;                                                       <<0.29>>
 4900.000 000011  1    IF (MIL'SEC:=MIL'SEC+2000) <> 0 THEN                       <<0.29>>
 4905.000 000020  1       IIX'TIMER (MIL'SEC/0.09142857);                         <<0.29>>
 4910.000 000031  1 << THESE LINES
 4915.000 000031  1       ARE DELETED
 4920.000 000031  1         FOR THIS VERSION>>                                    <<0.29>>
 4925.000 000031  1  END; <<DODELAY>>
```

IDENTIFIER	TYPE	CLASS	ADDRESS
MIL'SEC	LOGICAL	SIMPLE	Q- 4
STAR'CLOCK*	LOGICAL	SIMPLE	Q- 5

```
00000  041604 C. LOAD Q- 004          00003  051604 S. STOR Q- 004          00006  040025 @. LOAD P+ 025
00001  040031 @. LOAD P+ 031          00004  022000 $. CMPI 0              00007  000000 .. PCAL IIX'TIMER
00002  006145 .e LSUB,DUP             00005  141304 .. BLE  P+ 004          00010  140410 .. BR   P- 010
```

```
00011  041604 C. LOAD Q- 004          00021  000632 .. ZERO,XCH            00031  031402 3. EXIT 2
00012  040020 @. LOAD P+ 020          00022  003000 .. DFLT,NOP            00032  003720 .. ADXA,ADD
00013  006045 .% LADD,DUP             00023  021401 #. LDXI 1              00033  052563 Us MTBA P- 163
00014  051604 S. STOR Q- 004          00024  040011 @. LOAD P+ 011         00034  000001 .. NOP ,DELB
00015  021000 ". LDI  0               00025  044010 H. LOAD P+ 010,X       00035  037435 ?. ANDI 29
00016  005700 .. LCMP,NOP             00026  005471 .9 FDIV,FIXT          00036  117563 .s MPYM Q+ 163,I,X
00017  141212 .. BE   P+ 012          00027  000100 .@ DELB,NOP
00020  041604 C. LOAD Q- 004          00030  000021 .. PCAL IIX'TIMER

 4930.000 000000  0 <<-------------------------------------------------------------->>
 4935.000 000000  0 PROCEDURE DOPAUSE;
 4940.000 000000  0  BEGIN
 4945.000 000000  1  GET'INPUT(0);
 4950.000 000002  1    CHECKYTRAP;
 4955.000 000003  1  END;

00000  021000 ". LDI  0               00002  000000 .. PCAL CHECKYTRAP
00001  000000 .. PCAL GET'INPUT       00003  031400 3. EXIT 0

 4960.000 000000  0 <<-------------------------------------------------------------->>
 4965.000 000000  0 PROCEDURE DOT;
 4970.000 000000  0  BEGIN
 4975.000 000000  1   CHECKYTRAP;
 4980.000 000001  1   IF PRINTOK
 4985.000 000003  1    THEN
 4990.000 000003  1     BEGIN
 4995.000 000003  2      PRINT(PERIOD,-1,IF (DOT'CNT:=DOT'CNT+1)<50
 5000.000 000003  2                      THEN %320 <<Stay on this line>>
 5005.000 000003  2                      ELSE %201); <<Advance to next line>>
 5010.000 000015  2      STARTIDLE;
 5015.000 000016  2      IF DOT'CNT>=50 THEN DOT'CNT:=0;
 5020.000 000023  2     END;
 5025.000 000023  1  END; <<DOT>>


00000  000000 .. PCAL CHECKYTRAP       00007  022062 $2 CMPI 50              00016  041014 B. LOAD DB 014
00001  041063 B3 LOAD DB 063          00010  141603 .. BGE  P+ 003          00017  022062 $2 CMPI 50
00002  013721 .. BRE  P+21            00011  021320 ". LDI  208            00020  141103 .C BL   P+ 003
00003  173105 .E LRA  DB 105,I        00012  140002 .. BR   P+ 002          00021  021000 ". LDI  0
00004  025001 *. LDNI 1               00013  021201 ". LDI  129            00022  051014 R. STOR DB 014
00005  120014 .. INCM DB 014          00014  000000 .. PCAL PRINT           00023  031400 3. EXIT 0
00006  041014 B. LOAD DB 014          00015  000000 .. PCAL STARTIDLE

 5030.000 000000  0 <<-------------------------------------------------------------->>
 5035.000 000000  0 PROCEDURE DRT'INIT;
 5040.000 000000  0  BEGIN
 5045.000 000000  1 INTEGER
 5050.000 000000  1 INFO,                                                <<0.29>>
 5055.000 000000  1 TEM'DEV:=-1;
 5060.000 000000  1 LOGICAL
 5065.000 000000  1 DRT'ADDR,
 5070.000 000000  1 INT'RCV'LABEL;
```

```
 5075.000 000006  1   INT'RCV'LABEL:=DRT'PLABEL'OF(INT'RECV);
 5080.000 000010  1   WHILE (TEM'DEV:=TEM'DEV+1)<=7
 5085.000 000014  1    DO
 5090.000 000014  1     BEGIN
 5095.000 000014  2      MEM'GETS'V((DRT'ADDR:=(CHNL+TEM'DEV)*4),0);
 5100.000 000026  2      INFO:=ABS'ADDR(CPVA,(TEM'DEV*4));<<ADDED FOR SPLII (2.03)>><<0.29>>
 5105.000 000035  2      MEM'GETS'V(DRT'ADDR+1,INFO);                              <<0.29>>
 5110.000 000043  2      MEM'GETS'V(DRT'ADDR+2,INT'RCV'LABEL);
 5115.000 000051  2      MEM'GETS'V(DRT'ADDR+3,0);
 5120.000 000057  2     END;
 5125.000 000060  1  END; <<DRT'INIT>>
```

IDENTIFIER	TYPE	CLASS	ADDRESS
DRT'ADDR	LOGICAL	SIMPLE	Q+ 2
INFO	INTEGER	SIMPLE	Q+ 1
INT'RCV'LABEL	LOGICAL	SIMPLE	Q+ 3
TEM'DEV	INTEGER	SIMPLE	Q+ 4

```
00000  177777 .. LRA  S- 077,I,X        00021  023404 '. MPYI 4                00042  020321  . PSTA
00001  035004 :. ADDS 4                 00022  004500 .@ DUP ,NOP             00043  041403 C. LOAD Q+ 003
00002  171404 .. LRA  Q+ 004            00023  051402 S. STOR Q+ 002           00044  041402 C. LOAD Q+ 002
00003  170403 .. LRA  P- 003            00024  004300 .. STAX,NOP             00045  021002 ". LDI  2
00004  021001 ". LDI  1                 00025  020321  . PSTA                 00046  006000 .. LADD,NOP
00005  020003  . MOVE PB-DB,3           00026  041404 C. LOAD Q+ 004           00047  004300 .. STAX,NOP
00006  100000 .. LLBL INT'RECV          00027  023404 '. MPYI 4                00050  020321  . PSTA
00007  051403 S. STOR Q+ 003            00030  004300 .. STAX,NOP             00051  021000 ". LDI  0
00010  120404 .. INCM Q+ 004            00031  177140 .' LRA  DB 140,I,X      00052  041402 C. LOAD Q+ 002
00011  041404 C. LOAD Q+ 004            00032  024500 )@ PSHR %100            00053  021003 ". LDI  3
00012  022007 $. CMPI 7                 00033  000160 .p DELB,LADD            00054  006000 .. LADD,NOP
00013  145402 .. BG   P+ 002,I          00034  051401 S. STOR Q+ 001          00055  004300 .. STAX,NOP
00014  140002 .. BR   P+ 002            00035  041401 C. LOAD Q+ 001          00056  020321  . PSTA
00015  000043 .# NOP ,STAX              00036  041402 C. LOAD Q+ 002          00057  140447 .' BR   P- 047
00016  021000 ". LDI  0                 00037  021001 ". LDI  1               00060  031400 3. EXIT 0
00017  041010 B. LOAD DB 010            00040  006000 .. LADD,NOP
00020  071404 s. ADDM Q+ 004            00041  004300 .. STAX,NOP
```

```
 5130.000 000000  0 <<-------------------------------------------------------->>
 5135.000 000000  0 PROCEDURE ERROROUT(LEN,DVN);
 5140.000 000000  0 VALUE INTEGER LEN;
 5145.000 000000  0 VALUE LOGICAL DVN;
 5150.000 000000  0  BEGIN
 5155.000 000000  1 LOGICAL COUNT;
 5160.000 000000  1 BYTE ARRAY SUBBUF(80);
 5165.000 000003  1   MOVE MSG'OUT TO SUBBUF FOR -LEN ITEMS;
 5170.000 000010  1   IF EPRINTOK
 5175.000 000012  1    THEN
 5180.000 000012  1     BEGIN
 5185.000 000012  2      NUM'CHARS:=GET'MESSAGE(79);
 5190.000 000016  2      MOVE(!20,!20,!20) TO MSG'OUT(14);
 5195.000 000024  2      COUNT:=(IF STP > 99
 5200.000 000024  2                THEN 3
 5205.000 000024  2                ELSE 2);
```

```
 5210.000 000034  2      NUM2ASC(14,COUNT,10,STP);
 5215.000 000041  2
 5220.000 000041  2      IF PRINT'ERRORS THEN SETOFFLINE ELSE CRLF;
 5225.000 000052  2      CRTOUT(MSG'OUT,-NUM'CHARS);
 5230.000 000056  2      PRINT(SUBBUF,LEN,%320);
 5235.000 000062  2      IF DVN
 5240.000 000064  2       THEN
 5245.000 000064  2         BEGIN
 5250.000 000064  3          NUM'CHARS:=GET'MESSAGE(80);
 5255.000 000070  3          MSG'OUT(18):=!30+DEV;
 5260.000 000075  3          PRINT(MSG'OUT,-NUM'CHARS,%320);
 5265.000 000102  3         END;
 5270.000 000102  2      CRLF;
 5275.000 000103  2      CLEAROFFLINE;
 5280.000 000104  2      STARTIDLE;
 5285.000 000105  2      IF EPAUSEOK THEN DOPAUSE ELSE DODELAY(STARTIME,50);
 5290.000 000117  2     END;
 5295.000 000117  1   CHECKYTRAP;
 5300.000 000120  1  END; <<ERROROUT>>

IDENTIFIER       TYPE        CLASS         ADDRESS

COUNT            LOGICAL     SIMPLE        Q+ 2
DVN              LOGICAL     SIMPLE        Q- 4
LEN              INTEGER     SIMPLE        Q- 5
SUBBUF           BYTE        ARRAY         Q+ 1,I,X
```

```
00000  171403 .. LRA  Q+ 003          00033  051402 S. STOR Q+ 002          00066  000052 .* PCAL GET'MESSAGE
00001  010201 .. LSL  1 BIT           00034  021016 ". LDI  14             00067  051024 R. STOR DB 024
00002  035051 :) ADDS 41              00035  041402 C. LOAD Q+ 002         00070  021060 "0 LDI  48
00003  173401 .. LRA  Q+ 001,I        00036  021012 ". LDI  10             00071  041013 B. LOAD DB 013
00004  173104 .D LRA  DB 104,I        00037  041065 B5 LOAD DB 065        00072  006000 .. LADD,NOP
00005  041605 C. LOAD Q- 005          00040  000000 .. PCAL NUM2ASC        00073  021422 #. LDXI 18
00006  002400 .. NEG ,NOP             00041  041061 B1 LOAD DB 061        00074  166104 .D STB  DB 104,I,X
00007  020063  3 MVB  DB-DB,3         00042  013707 .. BRE  P+7            00075  173104 .D LRA  DB 104,I
00010  041043 B# LOAD DB 043          00043  000000 .. PCAL SETOFFLINE     00076  041024 B. LOAD DB 024
00011  017734 .. BRE  P+34,I          00044  140004 .. BR   P+ 004         00077  002400 .. NEG ,NOP
00012  000600 .. ZERO,NOP             00045  000052 .* NOP ,FSUB           00100  021320 ". LDI  208
00013  021117 "O LDI  79              00046  000053 .+ NOP ,FMPY           00101  000020 .. PCAL PRINT
00014  000000 .. PCAL GET'MESSAGE     00047  000002 .. NOP ,DDEL           00102  000031 .. PCAL CRLF
00015  051024 R. STOR DB 024          00050  140002 .. BR   P+ 002         00103  000000 .. PCAL CLEAROFFLINE
00016  021416 #. LDXI 14              00051  000000 .. PCAL CRLF           00104  000000 .. PCAL STARTIDLE
00017  177104 .D LRA  DB 104,I,X      00052  173104 .D LRA  DB 104,I       00105  041042 B" LOAD DB 042
00020  170101 .A LRA  P+ 101          00053  041024 B. LOAD DB 024         00106  013703 .. BRE  P+3
00021  010201 .. LSL  1 BIT           00054  002400 .. NEG ,NOP            00107  000000 .. PCAL DOPAUSE
00022  021003 ". LDI  3               00055  000000 .. PCAL CRTOUT         00110  140007 .. BR   P+ 007
00023  020043  # MVB  PB-DB,3         00056  173401 .. LRA  Q+ 001,I        00111  140002 .. BR   P+ 002
00024  041065 B5 LOAD DB 065          00057  041605 C. LOAD Q- 005         00112  000005 .. NOP ,DECX
00025  021143 "c LDI  99              00060  021320 ". LDI  208            00113  020104  D IOOP 32 BIT OP
00026  005700 .. LCMP,NOP             00061  000000 .. PCAL PRINT          00114  000000 .. NOP ,NOP
00027  141303 .. BLE  P+ 003          00062  041604 C. LOAD Q- 004         00115  021062 "2 LDI  50
00030  021003 ". LDI  3               00063  013717 .. BRE  P+17           00116  000000 .. PCAL DODELAY
00031  140002 .. BR   P+ 002          00064  000600 .. ZERO,NOP            00117  000000 .. PCAL CHECKYTRAP
00032  021002 ". LDI  2               00065  021120 "P LDI  80             00120  031402 3. EXIT 2
```

```
00121  020040    MVB  PB-DB,0          00122  020000  . MOVE PB-DB,0


 5305.000 000000  0 <<-------------------------------------------------------->>
 5310.000 000000  0 PROCEDURE EXIT'TO'DUS;
 5315.000 000000  0  BEGIN
 5320.000 000000  1  <<** Add code to halt all channel progs and to save
 5325.000 000000  1       and restore entire DRT **>>
 5330.000 000000  1   STARTIDLE; <<Clears Break>>
 5335.000 000001  1   CRTOUT(MSG'OUT,-GET'MESSAGE(4));
 5340.000 000007  1   CRLF;
 5345.000 000010  1   MAX'DEV:=-1;
 5350.000 000012  1   SECTIONS'TO'RUN:=DEFAULT'SECTS;
 5355.000 000014  1   FMGR(6); <<Return to the File Manager>>
 5360.000 000022  1  END; <<EXIT'TO'DUS>>


00000  000000 .. PCAL STARTIDLE        00007  000000 .. PCAL CRLF             00016  035006 :. ADDS 6
00001  173104 .D LRA  DB 104,I         00010  025001 *. LDNI 1               00017  021100 "@ LDI  64
00002  000600 .. ZERO,NOP              00011  051023 R. STOR DB 023          00020  000000 .. PCAL FMGR
00003  021004 ". LDI  4                00012  151077 .? LDD  DB 077          00021  004000 .. DEL ,NOP
00004  000000 .. PCAL GET'MESSAGE      00013  161075 .= STD  DB 075          00022  031400 3. EXIT 0
00005  002400 .. NEG ,NOP              00014  000600 .. ZERO,NOP
00006  000000 .. PCAL CRTOUT           00015  021006 ". LDI  6


 5365.000 000000  0 <<-------------------------------------------------------->>
 5370.000 000000  0 PROCEDURE FLY'CATCHER;
 5375.000 000000  0  INTERRUPT;
 5380.000 000000  0  BEGIN
 5385.000 000000  1   MEM'GETS'V(!FFFD,PARMQPLUS3);
 5390.000 000004  1   DISABLE'RTN'INTRPS;
 5395.000 000014  1   INT'EXIT;
 5400.000 000015  1  END; <<FLY'CATCHER>>

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3       LOGICAL     SIMPLE        Q+ 3


00000  041403 C. LOAD Q+ 003           00005  024402 ). PSHR %002            00012  027021 .. DPF  (1:1)
00001  025003 *. LDNI 3                00006  006043 .# LADD,STAX           00013  020321  . PSTA
00002  004300 .. STAX,NOP              00007  000540 .' DECX,DEL            00014  020360  . IXIT
00003  020321  . PSTA                  00010  020320  . PLDA               00015  020360  . IXIT
00004  024500 )@ PSHR %100             00011  021000 ". LDI  0


 5405.000 000000  0 <<-------------------------------------------------------->>
 5410.000 000000  0 PROCEDURE GET'INPUT(WHERE);  VALUE LOGICAL WHERE;
 5415.000 000000  0  BEGIN
 5420.000 000000  1 LOGICAL INPUTOK,GO'FLAG;
 5425.000 000000  1 INTEGER INDEX:=0;
 5430.000 000000  1 INTEGER COUNT:=0;
```

```
5435.000 000000  1
5440.000 000007  1   GO'FLAG:=0;
5445.000 000011  1   WHILE GO'FLAG=0
5450.000 000015  1    DO
5455.000 000015  1     BEGIN
5460.000 000015  2 PSTRT:
5465.000 000015  2      PRINT(MSG'OUT,-GET'MESSAGE(71),%320); <<Prompt>>
5470.000 000024  2      INPUTOK:=FALSE;
5475.000 000026  2      WHILE INPUTOK=FALSE
5480.000 000032  2       DO
5485.000 000032  2        BEGIN
5490.000 000032  3         MOVE CLEARBUF TO TEMPBUF FOR 80 ITEMS; <<CLEAR TEMPBUF>>
5495.000 000036  3         IF (COUNT:=READKBD(TEMPBUF,-80))<=0 THEN GO PSTRT;
5500.000 000052  3         STARTIDLE;
5505.000 000053  3
5510.000 000053  3         IF (INDEX:=SCAN TEMPBUF WHILE !0D20)>0 <<Pass leading spaces>>
5515.000 000067  3          THEN
5520.000 000067  3           MOVE TEMPBUF(INDEX) TO TEMPBUF
5525.000 000067  3             FOR (COUNT:=COUNT-INDEX) ITEMS;
5530.000 000077  3         INDEX:=IF TEMPBUF=1 THEN 1 ELSE 0; <<Sec code?>>
5535.000 000106  3         MOVE TEMPBUF(INDEX) TO TEMPBUF(INDEX) WHILE ALPHA SHIFT;
5540.000 000113  3
5545.000 000113  3  <<LC  -  Display Set of commands>>
5550.000 000113  3         IF TEMPBUF="LC"
5555.000 000124  3          THEN
5560.000 000124  3           BEGIN
5565.000 000124  4            INDEX:=0;
5570.000 000126  4            REPEAT
5575.000 000126  4             BEGIN
5580.000 000126  5              COUNT:=SCAN LIST'COM(INDEX) UNTIL !DFF;
5585.000 000140  5             END;
5590.000 000140  4            WHILE CARRY
5595.000 000141  4             DO
5600.000 000141  4              BEGIN
5605.000 000141  5               CRTOUT(LIST'COM(INDEX),-COUNT);
5610.000 000146  5               INDEX:=INDEX+COUNT+1;
5615.000 000152  5              END;
5620.000 000153  4            GO PSTRT;
5625.000 000156  4           END;
5630.000 000156  3
5635.000 000156  3 <<LOOP  -  Sets variable name LOOP>>
5640.000 000156  3          IF TEMPBUF<>"LOOPOFF"
5645.000 000164  3           THEN
5650.000 000164  3            BEGIN
5655.000 000164  4             IF TEMPBUF="LOOP"
5660.000 000172  4              THEN
5665.000 000172  4               BEGIN
5670.000 000172  5                LOOP:=TRUE; <<Setup to loop>>
5675.000 000174  5                INPUTOK:=TRUE; <<Set input ok flag>>
5680.000 000176  5               END;
5685.000 000176  4             END;
5690.000 000176  3
5695.000 000176  3 <<LOOPOFF  -  Resets variable name LOOP>>
5700.000 000176  3        IF (TEMPBUF="LOOPOFF")OR(TEMPBUF="NOLOOP")
5705.000 000213  3         THEN
5710.000 000213  3          BEGIN
```

```
 5715.000 000213  4          LOOP:=FALSE; <<Setup not to loop>>
 5720.000 000215  4          INPUTOK:=TRUE; <<Set input ok flag>>
 5725.000 000223  4          END;
 5730.000 000223  3
 5735.000 000223  3 <<PRINTER, ON ERRORS ONLY>>
 5740.000 000223  3      IF TEMPBUF="PRINTER" THEN BEGIN
 5745.000 000231  4       PRINT'ERRORS:=TRUE;
 5750.000 000233  4       INPUTOK:=TRUE;
 5755.000 000235  4       END;
 5760.000 000235  3
 5765.000 000235  3 <<RST       -   >>
 5770.000 000235  3       IF TEMPBUF="RST" THEN BEGIN
 5775.000 000243  4          EPRINTOK:=TRUE;  PRINTOK:=TRUE;
 5780.000 000247  4          EPAUSEOK:=TRUE;  PAUSEOK:=TRUE;
 5785.000 000253  4          INPUTOK:=TRUE; PRINT'ERRORS:=FALSE;
 5790.000 000257  4          END;
 5795.000 000257  3
 5800.000 000257  3 <<SEPR      -     Suppress error prints>>
 5805.000 000257  3       IF TEMPBUF="SEPR" THEN BEGIN
 5810.000 000271  4          EPRINTOK:=FALSE;   INPUTOK:=TRUE;
 5815.000 000275  4          END;
 5820.000 000275  3
 5825.000 000275  3 <<EEPR      -     Enable error prints>>
 5830.000 000275  3       IF TEMPBUF="EEPR" THEN BEGIN
 5835.000 000303  4          EPRINTOK:=TRUE;   INPUTOK:=TRUE;
 5840.000 000307  4          END;
 5845.000 000307  3
 5850.000 000307  3 <<SEPS      -     Suppress error pauses>>
 5855.000 000307  3       IF TEMPBUF="SEPS" THEN BEGIN
 5860.000 000315  4          EPAUSEOK:=FALSE;  INPUTOK:=TRUE;
 5865.000 000321  4          END;
 5870.000 000321  3
 5875.000 000321  3 <<EEPS      -     Enable error pauses>>
 5880.000 000321  3       IF TEMPBUF="EEPS" THEN BEGIN
 5885.000 000333  4          EPAUSEOK:=TRUE;   INPUTOK:=TRUE;
 5890.000 000337  4          END;
 5895.000 000337  3
 5900.000 000337  3 <<SNPR      -     Suppress non error prints>>
 5905.000 000337  3       IF TEMPBUF="SNPR" THEN BEGIN
 5910.000 000345  4          PRINTOK:=FALSE;   INPUTOK:=TRUE;
 5915.000 000351  4          END;
 5920.000 000351  3
 5925.000 000351  3 <<ENPR      -     Enable non error prints>>
 5930.000 000351  3       IF TEMPBUF="ENPR" THEN BEGIN
 5935.000 000357  4          PRINTOK:=TRUE;    INPUTOK:=TRUE;
 5940.000 000363  4          END;
 5945.000 000363  3
 5950.000 000363  3 <<EXIT>>
 5955.000 000363  3     IF TEMPBUF="EXIT" THEN EXIT'TO'DUS;
 5960.000 000376  3
 5965.000 000376  3 <<SO        -  Stop DUS stream facility>>
 5970.000 000376  3  <<~IF (TEMPBUF="SO")OR(TEMPBUF="STREAMOFF") THEN FMGR(13);~>>
 5975.000 000376  3
 5980.000 000376  3 <<GO    -     continue execution from point of interruption>>
 5985.000 000376  3   IF TEMPBUF="GO"
 5990.000 000404  3    THEN
```

```
 5995.000 000404  3     IF NOT WHERE
 6000.000 000406  3      THEN
 6005.000 000406  3       BEGIN
 6010.000 000406  4        STARTIDLE; <<Restart the input driver>>
 6015.000 000407  4        RETURN; <<Return to caller address>>
 6020.000 000413  4       END
 6025.000 000413  3      ELSE
 6030.000 000414  3       BEGIN
 6035.000 000414  4        INPUTOK:=TRUE;
 6040.000 000416  4        A:=GO'FLAG:=1;
 6045.000 000422  4        B:=(IF TEMPBUF="GO,1" THEN 1 ELSE 0);
 6050.000 000434  4       END;
 6055.000 000434  3
 6060.000 000434  3 <<DEV       -     Select only one device to be tested>>
 6065.000 000434  3       IF TEMPBUF="DEV" THEN BEGIN
 6070.000 000442  4          IF !30<=TEMPBUF(4)<=!37 THEN BEGIN
 6075.000 000456  5             DESIRED'DEV:=TEMPBUF(4) AND !7;
 6080.000 000467  5             MAX'DEV:=DESIRED'DEV; <<Range of one>>
 6085.000 000471  5             INPUTOK:=TRUE;
 6090.000 000473  5             EXTND:=IF DESIRED'DEV>3
 6095.000 000473  5                      THEN
 6100.000 000473  5                       TRUE
 6105.000 000473  5                      ELSE
 6110.000 000473  5                       FALSE;
 6115.000 000503  5             END ELSE CRTOUT(MSG'OUT,-GET'MESSAGE(8));
 6120.000 000512  4          END;
 6125.000 000512  3
 6130.000 000512  3 <<EXTND15  - Limits Section 15 (Extended baud rate/UARTS) to  >><<1.31>>
 6135.000 000512  3 <<           devices 4-7.  Applies only to Section 15 and     >><<1.31>>
 6140.000 000512  3 <<           only if the Extended board is present and the    >><<1.31>>
 6145.000 000512  3 <<           DEV command is not used.                         >><<1.31>>
 6150.000 000512  3       IF TEMPBUF="EXTND15" THEN EXTND15 := INPUTOK := TRUE;     <<1.31>>
 6155.000 000524  3
 6160.000 000524  3  <<TEST  -  Alter test section selection>>
 6165.000 000524  3 <<THE CHECK FOR
 6170.000 000524  3      AMIGO SECURITY WAS
 6175.000 000524  3          REMOVED >>                                            <<0.29>>
 6180.000 000524  3      IF TEMPBUF="TEST"                                         <<0.29>>
 6185.000 000535  3        THEN INPUTOK:=TEST'COMMAND'OK(TEMPBUF,COUNT-1);
 6190.000 000543  3  <<REMOVED (END;) AS PART OF LINE 259/261 CHANGE>>            <<0.29>>
 6195.000 000543  3
 6200.000 000543  3 <<RUN   -  Begin diagnostic execution>>
 6205.000 000543  3    IF TEMPBUF="RUN"
 6210.000 000551  3     THEN
 6215.000 000551  3      BEGIN
 6220.000 000551  4       INPUTOK:=TRUE;
 6225.000 000553  4       RESTART;
 6230.000 000555  4      END;
 6235.000 000555  3
 6240.000 000555  3  <<STATE  -  List status of program>>
 6245.000 000555  3    IF TEMPBUF="STATE"
 6250.000 000563  3     THEN
 6255.000 000563  3      BEGIN
 6260.000 000563  4       LIST'PROG'STAT;
 6265.000 000564  4       GOTO PSTRT;
 6270.000 000571  4      END;
```

```
 6275.000 000571  3
 6280.000 000571  3   IF NOT INPUTOK
 6285.000 000573  3    THEN
 6290.000 000573  3     BEGIN
 6295.000 000573  4      CRTOUT(MSG'OUT,-GET'MESSAGE(72));
 6300.000 000601  4      PRINT(MSG'OUT,-GET'MESSAGE(71),%320);
 6305.000 000610  4     END;
 6310.000 000610  3      END;
 6315.000 000611  2     END;
 6320.000 000612  1   CHECKYTRAP; <<Check for operator interrupt request>>
 6325.000 000613  1  END; <<GET'INPUT>>
```

IDENTIFIER	TYPE	CLASS	ADDRESS
COUNT	INTEGER	SIMPLE	Q+ 4
GO'FLAG	LOGICAL	SIMPLE	Q+ 2
INDEX	INTEGER	SIMPLE	Q+ 3
INPUTOK	LOGICAL	SIMPLE	Q+ 1
PSTRT		LABEL	PB 15
WHERE	LOGICAL	SIMPLE	Q- 4

```
00000  000000 .. NOP ,NOP              00041  000000 .. PCAL READ             00102  021001 ". LDI  1
00001  000000 .. NOP ,NOP              00042  004500 .@ DUP ,NOP             00103  140002 .. BR   P+ 002
00002  035004 :. ADDS 4                00043  051404 S. STOR Q+ 004          00104  021000 ". LDI  0
00003  171403 .. LRA  Q+ 003           00044  022000 $. CMPI 0                00105  051403 S. STOR Q+ 003
00004  170404 .. LRA  P- 004           00045  141405 .. BG   P+ 005          00106  131403 .. LDX  Q+ 003
00005  021002 ". LDI  2                00046  140431 .. BR   P- 031          00107  177106 .F LRA  DB 106,I,X
00006  020003  . MOVE PB-DB,3          00047  000543 .c DECX,STAX            00110  131403 .. LDX  Q+ 003
00007  021000 ". LDI  0                00050  000541 .a DECX,ZROB            00111  177106 .F LRA  DB 106,I,X
00010  051402 S. STOR Q+ 002           00051  000001 .. NOP ,DELB            00112  020216  . MVBW AS,2
00011  041402 C. LOAD Q+ 002           00052  000000 .. PCAL STARTIDLE        00113  173106 .F LRA  DB 106,I
00012  021000 ". LDI  0                00053  173106 .F LRA  DB 106,I         00114  170006 .. LRA  P+ 006
00013  005700 .. LCMP,NOP              00054  004500 .@ DUP ,NOP             00115  010201 .. LSL  1 BIT
00014  145533 .[ BNE  P+ 033,I         00055  040044 @$ LOAD P+ 044          00116  021002 ". LDI  2
00015  173104 .D LRA  DB 104,I         00056  020121  Q SCW  1               00117  020243  . CMPB PB-DB,3
00016  000600 .. ZERO,NOP              00057  024410 ). PSHR %010            00120  140003 .. BR   P+ 003
00017  021107 "G LDI  71               00060  004332 .. STAX,XCH             00121  006440 .  NOT ,DEL
00020  000000 .. PCAL GET'MESSAGE      00061  006144 .d LSUB,LDXA            00122  046103 LC LOAD P+ 103,I,X
00021  002400 .. NEG ,NOP              00062  027410 /. SETR %010            00123  141533 .[ BNE  P+ 033
00022  021320 ". LDI  208              00063  004500 .@ DUP ,NOP             00124  021000 ". LDI  0
00023  000000 .. PCAL PRINT            00064  051403 S. STOR Q+ 003          00125  051403 S. STOR Q+ 003
00024  021000 ". LDI  0                00065  022000 $. CMPI 0                00126  131403 .. LDX  Q+ 003
00025  051401 S. STOR Q+ 001           00066  141311 .. BLE  P+ 011          00127  177107 .G LRA  DB 107,I,X
00026  041401 C. LOAD Q+ 001           00067  173106 .F LRA  DB 106,I         00130  004500 .@ DUP ,NOP
00027  021000 ". LDI  0                00070  131403 .. LDX  Q+ 003          00131  040024 @. LOAD P+ 024
00030  005700 .. LCMP,NOP              00071  177106 .F LRA  DB 106,I,X       00132  020161  q SCU  1
00031  145517 .O BNE  P+ 017,I         00072  041404 C. LOAD Q+ 004          00133  024410 ). PSHR %010
00032  173106 .F LRA  DB 106,I         00073  101403 .. SUBM Q+ 003          00134  004332 .. STAX,XCH
00033  173103 .C LRA  DB 103,I         00074  004500 .@ DUP ,NOP             00135  006144 .d LSUB,LDXA
00034  021120 "P LDI  80               00075  051404 S. STOR Q+ 004          00136  027410 /. SETR %010
00035  020063  3 MVB  DB-DB,3          00076  020063  3 MVB  DB-DB,3         00137  051404 S. STOR Q+ 004
00036  000600 .. ZERO,NOP              00077  152106 .F LDB  DB 106,I         00140  011513 .K BNCY P+13
00037  173106 .F LRA  DB 106,I         00100  022001 $. CMPI 1              00141  131403 .. LDX  Q+ 003
00040  025120 *P LDNI 80               00101  141503 .C BNE  P+ 003          00142  177107 .G LRA  DB 107,I,X
```

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00143  041404 C. LOAD Q+ 004          00233  025001 *. LDNI 1              00323  140004 .. BR   P+ 004
00144  002400 .. NEG ,NOP            00234  051401 S. STOR Q+ 001         00324  000311 .. ZROX,DADD
00145  000000 .. PCAL CRTOUT         00235  173106 .F LRA  DB 106,I       00325  000312 .. ZROX,DSUB
00146  041403 C. LOAD Q+ 003          00236  170373 .. LRA  P+ 373         00326  000313 .. ZROX,MPYL
00147  071404 s. ADDM Q+ 004          00237  010201 .. LSL  1 BIT          00327  010201 .. LSL  1 BIT
00150  022401 %. ADDI 1               00240  021003 ". LDI  3             00330  021004 ". LDI  4
00151  051403 S. STOR Q+ 003          00241  020243  . CMPB PB-DB,3        00331  020243  . CMPB PB-DB,3
00152  140424 .. BR   P- 024          00242  141515 .M BNE  P+ 015         00332  141505 .E BNE  P+ 005
00153  140536 .^ BR   P- 136          00243  025001 *. LDNI 1              00333  025001 *. LDNI 1
00154  000002 .. NOP ,DDEL           00244  051043 R# STOR DB 043         00334  051042 R" STOR DB 042
00155  006777 .. AND ,ADXB           00245  025001 *. LDNI 1              00335  025001 *. LDNI 1
00156  173106 .F LRA  DB 106,I       00246  051063 R3 STOR DB 063         00336  051401 S. STOR Q+ 001
00157  172037 .. LRA  P+ 037,I       00247  025001 *. LDNI 1              00337  173106 .F LRA  DB 106,I
00160  010201 .. LSL  1 BIT          00250  051042 R" STOR DB 042         00340  170303 .. LRA  P+ 303
00161  021007 ". LDI  7              00251  025001 *. LDNI 1              00341  010201 .. LSL  1 BIT
00162  020243  . CMPB PB-DB,3        00252  051060 R0 STOR DB 060         00342  021004 ". LDI  4
00163  141213 .. BE   P+ 013          00253  025001 *. LDNI 1              00343  020243  . CMPB PB-DB,3
00164  173106 .F LRA  DB 106,I       00254  051401 S. STOR Q+ 001         00344  141505 .E BNE  P+ 005
00165  172031 .. LRA  P+ 031,I       00255  021000 ". LDI  0              00345  021000 ". LDI  0
00166  010201 .. LSL  1 BIT          00256  051061 R1 STOR DB 061         00346  051063 R3 STOR DB 063
00167  021004 ". LDI  4              00257  173106 .F LRA  DB 106,I       00347  025001 *. LDNI 1
00170  020243  . CMPB PB-DB,3        00260  170353 .. LRA  P+ 353         00350  051401 S. STOR Q+ 001
00171  141505 .E BNE  P+ 005          00261  010201 .. LSL  1 BIT          00351  173106 .F LRA  DB 106,I
00172  025001 *. LDNI 1              00262  140004 .. BR   P+ 004         00352  170273 .. LRA  P+ 273
00173  051053 R+ STOR DB 053          00263  000342 .. ZROX,LDXB          00353  010201 .. LSL  1 BIT
00174  025001 *. LDNI 1              00264  000345 .. ZROX,DUP           00354  021004 ". LDI  4
00175  051401 S. STOR Q+ 001          00265  000346 .. ZROX,DDUP          00355  020243  . CMPB PB-DB,3
00176  173106 .F LRA  DB 106,I       00266  021004 ". LDI  4              00356  141505 .E BNE  P+ 005
00177  172017 .. LRA  P+ 017,I       00267  020243  . CMPB PB-DB,3        00357  025001 *. LDNI 1
00200  010201 .. LSL  1 BIT          00270  141505 .E BNE  P+ 005         00360  051063 R3 STOR DB 063
00201  021007 ". LDI  7              00271  021000 ". LDI  0              00361  025001 *. LDNI 1
00202  020243  . CMPB PB-DB,3        00272  051043 R# STOR DB 043         00362  051401 S. STOR Q+ 001
00203  141502 .B BNE  P+ 002          00273  025001 *. LDNI 1              00363  173106 .F LRA  DB 106,I
00204  140007 .. BR   P+ 007          00274  051401 S. STOR Q+ 001         00364  170263 .. LRA  P+ 263
00205  173106 .F LRA  DB 106,I       00275  173106 .F LRA  DB 106,I       00365  140004 .. BR   P+ 004
00206  172011 .. LRA  P+ 011,I       00276  170337 .. LRA  P+ 337         00366  000255 .. DDEL,FNEG
00207  010201 .. LSL  1 BIT          00277  010201 .. LSL  1 BIT          00367  000256 .. DDEL,CAB
00210  021006 ". LDI  6              00300  021004 ". LDI  4              00370  000257 .. DDEL,LCMP
00211  020243  . CMPB PB-DB,3        00301  020243  . CMPB PB-DB,3        00371  010201 .. LSL  1 BIT
00212  141511 .I BNE  P+ 011          00302  141505 .E BNE  P+ 005         00372  021004 ". LDI  4
00213  021000 ". LDI  0              00303  025001 *. LDNI 1              00373  020243  . CMPB PB-DB,3
00214  051053 R+ STOR DB 053          00304  051043 R# STOR DB 043         00374  141502 .B BNE  P+ 002
00215  140004 .. BR   P+ 004          00305  025001 *. LDNI 1              00375  000000 .. PCAL EXIT'TO'DUS
00216  000400 .. INCX,NOP            00306  051401 S. STOR Q+ 001         00376  173106 .F LRA  DB 106,I
00217  000403 .. INCX,ZROX           00307  173106 .F LRA  DB 106,I       00377  170011 .. LRA  P+ 011
00220  000003 .. NOP ,ZROX           00310  170327 .. LRA  P+ 327         00400  010201 .. LSL  1 BIT
00221  025001 *. LDNI 1              00311  010201 .. LSL  1 BIT          00401  021002 ". LDI  2
00222  051401 S. STOR Q+ 001          00312  021004 ". LDI  4              00402  020243  . CMPB PB-DB,3
00223  173106 .F LRA  DB 106,I       00313  020243  . CMPB PB-DB,3        00403  141531 .Y BNE  P+ 031
00224  172037 .. LRA  P+ 037,I       00314  141505 .E BNE  P+ 005         00404  041604 C. LOAD Q- 004
00225  010201 .. LSL  1 BIT          00315  021000 ". LDI  0              00405  013607 .. BRO  P+7
00226  021007 ". LDI  7              00316  051042 R" STOR DB 042         00406  000334 .. PCAL STARTIDLE
00227  020243  . CMPB PB-DB,3        00317  025001 *. LDNI 1              00407  031401 3. EXIT 1
00230  141505 .E BNE  P+ 005          00320  051401 S. STOR Q+ 001         00410  043517 GO LOAD Q+ 117,I
00231  025001 *. LDNI 1              00321  173106 .F LRA  DB 106,I       00411  000023 .. NOP ,DIV
00232  051061 R1 STOR DB 061          00322  170317 .. LRA  P+ 317         00412  000002 .. NOP ,DDEL
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00413  140021 .. BR   P+ 021          00503  140007 .. BR   P+ 007          00573  173104 .D LRA  DB 104,I
00414  025001 *. LDNI 1              00504  173104 .D LRA  DB 104,I        00574  000600 .. ZERO,NOP
00415  051401 S. STOR Q+ 001         00505  000600 .. ZERO,NOP            00575  021110 "H LDI  72
00416  021001 ". LDI  1              00506  021010 ". LDI  8              00576  000067 .7 PCAL GET'MESSAGE
00417  004500 .@ DUP ,NOP            00507  000467 .7 PCAL GET'MESSAGE     00577  002400 .. NEG ,NOP
00420  051402 S. STOR Q+ 002         00510  002400 .. NEG ,NOP            00600  000067 .7 PCAL CRTOUT
00421  051002 R. STOR DB 002         00511  000344 .. PCAL CRTOUT         00601  173104 .D LRA  DB 104,I
00422  173106 .F LRA  DB 106,I       00512  173106 .F LRA  DB 106,I       00602  000600 .. ZERO,NOP
00423  170226 .. LRA  P+ 226         00513  170142 .b LRA  P+ 142         00603  021107 "G LDI  71
00424  010201 .. LSL  1 BIT          00514  010201 .. LSL  1 BIT          00604  000006 .. PCAL GET'MESSAGE
00425  021004 ". LDI  4              00515  021007 ". LDI  7              00605  002400 .. NEG ,NOP
00426  020243  . CMPB PB-DB,3        00516  020243  . CMPB PB-DB,3        00606  021320 ". LDI  208
00427  141503 .C BNE  P+ 003         00517  141505 .E BNE  P+ 005         00607  000564 .t PCAL PRINT
00430  021001 ". LDI  1              00520  025001 *. LDNI 1              00610  142004 .. BR   P+ 004,I
00431  140002 .. BR   P+ 002         00521  004500 .@ DUP ,NOP            00611  142004 .. BR   P+ 004,I
00432  021000 ". LDI  0              00522  051401 S. STOR Q+ 001         00612  000000 .. PCAL CHECKYTRAP
00433  051005 R. STOR DB 005         00523  051046 R& STOR DB 046         00613  031401 3. EXIT 1
00434  173106 .F LRA  DB 106,I       00524  173106 .F LRA  DB 106,I       00614  177212 .. LRA  DB 212,I,X
00435  170216 .. LRA  P+ 216         00525  170134 .\ LRA  P+ 134         00615  177174 .| LRA  DB 174,I,X
00436  010201 .. LSL  1 BIT          00526  010201 .. LSL  1 BIT          00616  046117 LO LOAD P+ 117,I,X
00437  021003 ". LDI  3              00527  021004 ". LDI  4              00617  047520 OP LOAD Q+ 120,I,X
00440  020243  . CMPB PB-DB,3        00530  020243  . CMPB PB-DB,3        00620  047506 OF LOAD Q+ 106,I,X
00441  145522 .R BNE  P+ 022,I       00531  140003 .. BR   P+ 003         00621  043125 FU LOAD DB 125,I
00442  021060 "0 LDI  48             00532  000123 .S DELB,DIV            00622  047117 NO LOAD DB 117,I,X
00443  021404 #. LDXI 4              00533  000126 .V DELB,STBX           00623  046117 LO LOAD P+ 117,I,X
00444  156106 .F LDB  DB 106,I,X     00534  141507 .G BNE  P+ 007         00624  047520 OP LOAD Q+ 120,I,X
00445  004500 .@ DUP ,NOP            00535  000600 .. ZERO,NOP            00625  050122 PR TBA  P+ 122
00446  021067 "7 LDI  55             00536  173106 .F LRA  DB 106,I       00626  044516 IN LOAD P- 116,X
00447  005700 .. LCMP,NOP            00537  041404 C. LOAD Q+ 004         00627  052105 TE MTBA P+ 105
00450  141404 .. BG   P+ 004         00540  023001 &. SUBI 1              00630  051125 RU STOR DB 125
00451  005700 .. LCMP,NOP            00541  000000 .. PCAL TEST'COMMAND'OK 00631  051123 RS STOR DB 123
00452  141304 .. BLE  P+ 004         00542  051401 S. STOR Q+ 001         00632  052105 TE MTBA P+ 105
00453  140031 .. BR   P+ 031         00543  173106 .F LRA  DB 106,I       00633  051505 SE STOR Q+ 105
00454  035402 ;. SUBS 2              00544  170117 .O LRA  P+ 117         00634  050122 PR TBA  P+ 122
00455  140027 .. BR   P+ 027         00545  010201 .. LSL  1 BIT          00635  042505 EE LOAD P- 105,I
00456  021404 #. LDXI 4              00546  021003 ". LDI  3              00636  050122 PR TBA  P+ 122
00457  156106 .F LDB  DB 106,I,X     00547  020243  . CMPB PB-DB,3        00637  051505 SE STOR Q+ 105
00460  140005 .. BR   P+ 005         00550  141505 .E BNE  P+ 005         00640  050123 PS TBA  P+ 123
00461  000170 .x DELB,FIXR           00551  025001 *. LDNI 1              00641  042505 EE LOAD P- 105,I
00462  000171 .y DELB,FIXT           00552  051401 S. STOR Q+ 001         00642  050123 PS TBA  P+ 123
00463  000027 .. NOP ,DTST           00553  021000 ". LDI  0              00643  051516 SN STOR Q+ 116
00464  000020 .. NOP ,ADD            00554  000000 .. PCAL LOOP'BACK      00644  050122 PR TBA  P+ 122
00465  037407 ?. ANDI 7              00555  173106 .F LRA  DB 106,I       00645  042516 EN LOAD P- 116,I
00466  051036 R. STOR DB 036         00556  170107 .G LRA  P+ 107         00646  050122 PR TBA  P+ 122
00467  041036 B. LOAD DB 036         00557  010201 .. LSL  1 BIT          00647  042530 EX LOAD P- 130,I
00470  051023 R. STOR DB 023         00560  021005 ". LDI  5              00650  044524 IT LOAD P- 124,X
00471  025001 *. LDNI 1              00561  020243  . CMPB PB-DB,3        00651  043517 GO LOAD Q+ 117,I
00472  051401 S. STOR Q+ 001         00562  141507 .G BNE  P+ 007         00652  026061 ,1 CMPN 49
00473  041036 B. LOAD DB 036         00563  000000 .. PCAL LIST'PROG'STAT 00653  042105 DE LOAD P+ 105,I
00474  021003 ". LDI  3              00564  142004 .. BR   P+ 004,I       00654  053105 VE STOR DB 105,I
00475  005700 .. LCMP,NOP            00565  000076 .> NOP ,ADBX           00655  042530 EX LOAD P- 130,I
00476  141303 .. BLE  P+ 003         00566  000077 .? NOP ,ADXB           00656  052116 TN MTBA P+ 116
00477  025001 *. LDNI 1              00567  000002 .. NOP ,DDEL           00657  042061 D1 LOAD P+ 061,I
00500  140002 .. BR   P+ 002         00570  177225 .. LRA  DB 225,I,X     00660  032525 5U ADXI 85
00501  021000 ". LDI  0              00571  041401 C. LOAD Q+ 001         00661  052105 TE MTBA P+ 105
00502  051045 R% STOR DB 045         00572  013616 .. BRO  P+16           00662  051524 ST STOR Q+ 124
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00663  051125 RU STOR DB 125          00665  051524 ST STOR Q+ 124          00667  042520 EP LOAD P- 120,I
00664  047105 NE LOAD DB 105,I,X      00666  040524 AT LOAD P- 124

 6330.000 000000  0 <<-------------------------------------------------------------->>
 6335.000 000000  0 INTEGER PROCEDURE GET'MESSAGE(SELECT);
 6340.000 000000  0 VALUE INTEGER SELECT;
 6345.000 000000  0  <<Puts SELECTed message in global buffer MSG'OUT
 6350.000 000000  0    and returns byte length.  Some message lines
 6355.000 000000  0    have variables in the string. Any change there may
 6360.000 000000  0    need a change where the variables are stuffed.>>
 6365.000 000000  0  BEGIN
 6370.000 000000  1 BYTE CONSTANT ARRAY MESSAGES:=(                  <<message SELECT #>>
 6375.000 000000  1 "Asynchronous Data Communication Channel Diagnostic",!D,       <<0>>
 6380.000 000000  1 " Revision",!D,
 6385.000 000000  1 "Type GO to continue (LC for List Commands)",!D,
 6390.000 000000  1 "Replace ADCC cable(s) with test connector(s).",!D,
 6395.000 000000  1 "Replace test connector(s) with ADCC cable(s).",!D,
 6400.000 000000  1 "What is the CHANNEL address of ADCC under test? ",!D,         <<5>>
 6405.000 000000  1 "Is the extended ADCC present?(Y/N) ",!D,
 6410.000 000000  1 "1<=channel number<=15",!D,
 6415.000 000000  1 "0<=device number<=7",!D,
 6420.000 000000  1 "ADCC Diagnostic Pass XXXX",!D,
 6425.000 000000  1
 6430.000 000000  1 "ADCC under test did not respond to Roll Call",!D,            <<10>>
 6435.000 000000  1 "Register 2 read is !XXXX expected !800A",!D,
 6440.000 000000  1 "Register 14 read is !XXXX expected !80N1",!D,
 6445.000 000000  1 "Please set processor select switch to CPU, respond 'GO'",!D,
 6450.000 000000  1 "OBXI returned YY expected ZZ",!D,
 6455.000 000000  1 "Interrupt queue not cleared by INIT",!D,                      <<15>>
 6460.000 000000  1 "Interrupt queue is X expected Y",!D,
 6465.000 000000  1 "Queued device D did not cause interrupt",!D,
 6470.000 000000  1 "Unexpected interrupt from device D",!D,
 6475.000 000000  1 "Device X did not hold off interrupt from device Y",!D,
 6480.000 000000  1
 6485.000 000000  1 "IPOLL returns !XXXX expected !YYYY",!D,                      <<20>>
 6490.000 000000  1 "Register XX returned !YYYY expected !0000",!D,
 6495.000 000000  1 "Write to register XX changed register YY",!D,
 6500.000 000000  1 "Character transmitted is !XX, received !YY",!D,
 6505.000 000000  1 " XX incorrectly tagged as special character",!D,
 6510.000 000000  1 " XX not tagged as special character",!D,                      <<25>>
 6515.000 000000  1 "UART control=!XX.  Sent !AA received !BB, baud=XXXXX",!D,
 6520.000 000000  1 "!55 not received after 300 msec.  Baud=XXXXX",!D,
 6525.000 000000  1 "Device Specified Jump returned XX expected 0Y",!D,
 6530.000 000000  1 "Device D UART did not detect parity error",!D,
 6535.000 000000  1
 6540.000 000000  1 "Device D modifier 1 did not report parity error",!D,         <<30>>
 6545.000 000000  1 "Device D UART did not detect overrun error",!D,
 6550.000 000000  1 "Device D modifier 1 did not report overrun",!D,
 6555.000 000000  1 "Device D UART did not detect break",!D,
 6560.000 000000  1 "Device D modifier 1 did not report break",!D,
 6565.000 000000  1 "EOT not appended at detected break",!D,                      <<35>>
 6570.000 000000  1 "TBE not returned as X",!D,
 6575.000 000000  1 "Modem status change did not set DSJ byte=2",!D,
 6580.000 000000  1 "DSJ did not report modem status change",!D,
 6585.000 000000  1 "Modifier 2 did not report status change",!D,
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 6590.000 000000  1
 6595.000 000000  1 "Modifier 2 read is !XX expected !YY",!D,                    <<40>>
 6600.000 000000  1 "DSJ returned !XX expected !YY",!D,
 6605.000 000000  1 "Special Character RAM address XXXX affected YYYY",!D,
 6610.000 000000  1 "DSJ return byte, chan prog 6th word, is !nn, expect !nn",!D,
 6615.000 000000  1 "How many channels of all types are there installed? ",!D,
 6620.000 000000  1 "Primary XX, secondary YY do not disable CSRQ",!D,           <<45>>
 6625.000 000000  1 "INIT does not re-enable CSRQ.  Primary XX, secondary YY",!D,
 6630.000 000000  1 "Primary XX, secondary YY do not re-enable CSRQ",!D,
 6635.000 000000  1 "Register 2 read is !XXXX expected !802A",!D,
 6640.000 000000  1 "Identify device D returned !XXXX expected !4080",!D,
 6645.000 000000  1
 6650.000 000000  1 "DNV not asserted for Identify",!D,                          <<50>>
 6655.000 000000  1 "Channel program did not start",!D,
 6660.000 000000  1 "Channel program stuck in wait",!D,
 6665.000 000000  1 "Unexpected value !XXXX found in DRT",!D,
 6670.000 000000  1 "Break detected -",!D,
 6675.000 000000  1 "Overrun detected",!D,                                       <<55>>
 6680.000 000000  1 "Parity error detected",!D,
 6685.000 000000  1 "Unexpected value !XXXX found in CPVA",!D,
 6690.000 000000  1 "Unexpected DSJ value returned",!D,
 6695.000 000000  1 "Channel program aborted by CPU, CPVA=!XXXX",!D,
 6700.000 000000  1
 6705.000 000000  1 "Byte !XX is !XX, expected !ZZ",!D,                          <<60>>
 6710.000 000000  1 "Set Thumbwheel of ADCC under test to channel xx",!D,
 6715.000 000000  1 "1<=number of CHANNELS<=15",!D,
 6720.000 000000  1 "Roll Call responses = xx, expected xx channel responses",!D,
 6725.000 000000  1 "What is device number associated with the cable under test? ",!D,
 6730.000 000000  1 "Channel XX did not respond to Roll Call",!D,                <<65>>
 6735.000 000000  1 "Place RS-232C 'D' loop on cable jack.",!D,
 6740.000 000000  1 "OBSI return is !XXXX expected !YYYY",!D,
 6745.000 000000  1 "SPOLL1 return is !XXXX expected !YYYY",!D,
 6750.000 000000  1 "1 <= test SECTION <= nn",!D,
 6755.000 000000  1
 6760.000 000000  1 "Thumbwheel switch of ADCC under test is supposed to be on 0.",!D,
 6765.000 000000  1 ">",!D,                                                      <<71>>
 6770.000 000000  1 "Input incorrect, re-enter, or type 'LC' for list of valid commands",!D,
 6775.000 000000  1 "All other channels except Console must be switched to 0",!D,
 6780.000 000000  1 "Break detected in Step XX",!D,
 6785.000 000000  1 "Read failed P=!XXXX",!D,                                    <<75>>
 6790.000 000000  1 "Unexpected DEVICE D Interrupt",!D,
 6795.000 000000  1 "Unexpected Interrupt from CHANNEL XX DEVICE Y ",!D,
 6800.000 000000  1 "Write failed P=!XXXX",!D,
 6805.000 000000  1 "Error in step 00 ",!D,
 6810.000 000000  1
 6815.000 000000  1 ", testing DEVICE# d",!D,                                   <<80>>
 6820.000 000000  1 "Respond GO",!D,
 6825.000 000000  1 "Interrupted before MASK enabled",!D,
 6830.000 000000  1 "UART did not MASTER RESET",!D,
 6835.000 000000  1 "Unexpected DSJ !bb, INTERRUPT from cc, d while testing DEVICE d",!D,
 6840.000 000000  1 "No interrupt from modem status change",!D,                  <<85>>
 6845.000 000000  1 "Read  nnn bytes, expected nnn",!D,
 6850.000 000000  1 "Cannot test Console Channel.",!D,
 6855.000 000000  1 "WARNING: Attempting to test Channel with Disc.   ",7,!D,
 6860.000 000000  1
 6865.000 000000  1   !FF,"** MESSAGE NUMBER TOO BIG **",!D,!FF);      <<LAST MESSAGE>>
```

```
 6870.000 003243  1 <<LINE 391 MOVED 2 SPACES. COMPILER DOESN'T LIKE ! (SPECIAL
 6875.000 003243  1   CHARACTER) IN THE FIRST SPACE.>>                          <<0.29>>
 6880.000 003243  1 INTEGER
 6885.000 003243  1 COUNT:=0,
 6890.000 003243  1 INDEX:=0;
 6895.000 003243  1
 6900.000 003252  1   REPEAT
 6905.000 003252  1    BEGIN
 6910.000 003252  2 SCANIT:
 6915.000 003252  2     COUNT:=SCAN MESSAGES(INDEX) UNTIL !DFF; <<looking for CR or DEL>>
 6920.000 003306  2    END;
 6925.000 003306  1   WHILE CARRY
 6930.000 003307  1    DO <<CR(!D) @ end of line>>
 6935.000 003307  1     IF (SELECT:=SELECT-1)<0
 6940.000 003315  1      THEN <<This is the message>>
 6945.000 003315  1       BEGIN
 6950.000 003315  2        MOVE MESSAGES(INDEX) TO MSG'OUT FOR COUNT ITEMS;
 6955.000 003324  2        GET'MESSAGE:=COUNT;
 6960.000 003326  2        RETURN;
 6965.000 003333  2       END
 6970.000 003333  1      ELSE <<This ain't the message yet.>>
 6975.000 003334  1       INDEX:=INDEX+COUNT+1;
 6980.000 003341  1
 6985.000 003341  1    INDEX:=INDEX+1; <<SELECT too big, found DEL(!FF)>>
 6990.000 003342  1    SELECT:=0;
 6995.000 003344  1    GO SCANIT; <<to get last message>>
 7000.000 003345  1
 7005.000 003345  1  END; <<GET'MESSAGE>>

IDENTIFIER       TYPE        CLASS         ADDRESS

COUNT            INTEGER     SIMPLE        Q+ 1
INDEX            INTEGER     SIMPLE        Q+ 2
MESSAGES         BYTE        CONST ARRAY   PB 0
SCANIT                       LABEL         PB 3252
SELECT           INTEGER     SIMPLE        Q- 4



00000  040563 As LOAD P- 163          00021  060556 an CMPM P- 156          00042  020164  t SCU  4
00001  074556 yn ADDM P- 156,X        00022  067145 ne CMPM DB 145,I,X      00043  067440 o  CMPM Q+ 040,I,X
00002  061550 ch CMPM Q+ 150          00023  066040 l  CMPM P+ 040,I,X      00044  061557 co CMPM Q+ 157
00003  071157 ro ADDM DB 157          00024  042151 Di LOAD P+ 151,I        00045  067164 nt CMPM DB 164,I,X
00004  067157 no CMPM DB 157,I,X      00025  060547 ag CMPM P- 147          00046  064556 in CMPM P- 156,X
00005  072563 us ADDM P- 163,I        00026  067157 no CMPM DB 157,I,X      00047  072545 ue ADDM P- 145,I
00006  020104  D IOOP 32 BIT OP       00027  071564 st ADDM Q+ 164         00050  020050  ( MVB  PB-DB,0
00007  060564 at CMPM P- 164          00030  064543 ic CMPM P- 143,X       00051  046103 LC LOAD P+ 103,I,X
00010  060440 a  CMPM P- 040          00031  006440 .  NOT ,DEL           00052  020146  f MVLB 6
00011  041557 Co LOAD Q+ 157          00032  051145 Re STOR DB 145         00053  067562 or CMPM Q+ 162,I,X
00012  066555 mm CMPM P- 155,I,X      00033  073151 vi ADDM DB 151,I       00054  020114  L MABS 4
00013  072556 un ADDM P- 156,I        00034  071551 si ADDM Q+ 151         00055  064563 is CMPM P- 163,X
00014  064543 ic CMPM P- 143,X        00035  067556 on CMPM Q+ 156,I,X     00056  072040 t  ADDM P+ 040,I
00015  060564 at CMPM P- 164          00036  006524 .T OR  ,NEG           00057  041557 Co LOAD Q+ 157
00016  064557 io CMPM P- 157,X        00037  074560 yp ADDM P- 160,X       00060  066555 mm CMPM P- 155,I,X
00017  067040 n  CMPM DB 040,I,X      00040  062440 e  CMPM P- 040,I       00061  060556 an CMPM P- 156
00020  041550 Ch LOAD Q+ 150          00041  043517 GO LOAD Q+ 117,I       00062  062163 ds CMPM P+ 163,I
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00063  024415 ). PSHR %015          00153  046040 L  LOAD P+ 040,I,X      00243  041440 C  LOAD Q+ 040
00064  051145 Re STOR DB 145        00154  060544 ad CMPM P- 144          00244  042151 Di LOAD P+ 151,I
00065  070154 pl ADDM P+ 154        00155  062162 dr CMPM P+ 162,I        00245  060547 ag CMPM P- 147
00066  060543 ac CMPM P- 143        00156  062563 es CMPM P- 163,I        00246  067157 no CMPM DB 157,I,X
00067  062440 e  CMPM P- 040,I      00157  071440 s  ADDM Q+ 040          00247  071564 st ADDM Q+ 164
00070  040504 AD LOAD P- 104        00160  067546 of CMPM Q+ 146,I,X      00250  064543 ic CMPM P- 143,X
00071  041503 CC LOAD Q+ 103        00161  020101  A MVBL 1              00251  020120  P SCW  0
00072  020143  c MVLB 3             00162  042103 DC LOAD P+ 103,I        00252  060563 as CMPM P- 163
00073  060542 ab CMPM P- 142        00163  041440 C  LOAD Q+ 040          00253  071440 s  ADDM Q+ 040
00074  066145 le CMPM P+ 145,I,X    00164  072556 un ADDM P- 156,I        00254  054130 XX TBX  P+ 130
00075  024163 (s DIVI 115           00165  062145 de CMPM P+ 145,I        00255  054130 XX TBX  P+ 130
00076  024440 )  PSHR %040          00166  071040 r  ADDM DB 040         00256  006501 .A OR  ,DELB
00077  073551 wi ADDM Q+ 151,I      00167  072145 te ADDM P+ 145,I        00257  042103 DC LOAD P+ 103,I
00100  072150 th ADDM P+ 150,I      00170  071564 st ADDM Q+ 164          00260  041440 C  LOAD Q+ 040
00101  020164  t SCU  4             00171  037440 ?  ANDI 32             00261  072556 un ADDM P- 156,I
00102  062563 es CMPM P- 163,I      00172  006511 .I OR  ,DADD           00262  062145 de CMPM P+ 145,I
00103  072040 t  ADDM P+ 040,I      00173  071440 s  ADDM Q+ 040          00263  071040 r  ADDM DB 040
00104  061557 co CMPM Q+ 157        00174  072150 th ADDM P+ 150,I        00264  072145 te ADDM P+ 145,I
00105  067156 nn CMPM DB 156,I,X    00175  062440 e  CMPM P- 040,I        00265  071564 st ADDM Q+ 164
00106  062543 ec CMPM P- 143,I      00176  062570 ex CMPM P- 170,I        00266  020144  d MVLB 4
00107  072157 to ADDM P+ 157,I      00177  072145 te ADDM P+ 145,I        00267  064544 id CMPM P- 144,X
00110  071050 r( ADDM DB 050        00200  067144 nd CMPM DB 144,I,X     00270  020156  n MDS  6
00111  071451 s) ADDM Q+ 051        00201  062544 ed CMPM P- 144,I        00271  067564 ot CMPM Q+ 164,I,X
00112  027015 .. DPF  (0:13)        00202  020101  A MVBL 1              00272  020162  r SCU  2
00113  051145 Re STOR DB 145        00203  042103 DC LOAD P+ 103,I        00273  062563 es CMPM P- 163,I
00114  070154 pl ADDM P+ 154        00204  041440 C  LOAD Q+ 040          00274  070157 po ADDM P+ 157
00115  060543 ac CMPM P- 143        00205  070162 pr ADDM P+ 162          00275  067144 nd CMPM DB 144,I,X
00116  062440 e  CMPM P- 040,I      00206  062563 es CMPM P- 163,I        00276  020164  t SCU  4
00117  072145 te ADDM P+ 145,I      00207  062556 en CMPM P- 156,I        00277  067440 o  CMPM Q+ 040,I,X
00120  071564 st ADDM Q+ 164        00210  072077 t? ADDM P+ 077,I        00300  051157 Ro STOR DB 157
00121  020143  c MVLB 3             00211  024131 (Y DIVI 89             00301  066154 ll CMPM P+ 154,I,X
00122  067556 on CMPM Q+ 156,I,X    00212  027516 /N SETR %116           00302  020103  C MVBL 3
00123  067145 ne CMPM DB 145,I,X    00213  024440 )  PSHR %040          00303  060554 al CMPM P- 154
00124  061564 ct CMPM Q+ 164        00214  006461 .1 NOT ,LSUB          00304  066015 l. CMPM P+ 015,I,X
00125  067562 or CMPM Q+ 162,I,X    00215  036075 <= ----               00305  051145 Re STOR DB 145
00126  024163 (s DIVI 115           00216  061550 ch CMPM Q+ 150         00306  063551 gi CMPM Q+ 151,I
00127  024440 )  PSHR %040          00217  060556 an CMPM P- 156         00307  071564 st ADDM Q+ 164
00130  073551 wi ADDM Q+ 151,I      00220  067145 ne CMPM DB 145,I,X     00310  062562 er CMPM P- 162,I
00131  072150 th ADDM P+ 150,I      00221  066040 l  CMPM P+ 040,I,X     00311  020062  2 MVB  DB-DB,2
00132  020101  A MVBL 1             00222  067165 nu CMPM DB 165,I,X     00312  020162  r SCU  2
00133  042103 DC LOAD P+ 103,I      00223  066542 mb CMPM P- 142,I,X     00313  062541 ea CMPM P- 141,I
00134  041440 C  LOAD Q+ 040        00224  062562 er CMPM P- 162,I        00314  062040 d  CMPM P+ 040,I
00135  061541 ca CMPM Q+ 141        00225  036075 <= ----               00315  064563 is CMPM P- 163,X
00136  061154 bl CMPM DB 154        00226  030465 15 SCAL 53            00316  020041  ! MVB  PB-DB,1
00137  062450 e( CMPM P- 050,I      00227  006460 .0 NOT ,LADD          00317  054130 XX TBX  P+ 130
00140  071451 s) ADDM Q+ 051        00230  036075 <= ----               00320  054130 XX TBX  P+ 130
00141  027015 .. DPF  (0:13)        00231  062145 de CMPM P+ 145,I        00321  020145  e MVLB 5
00142  053550 Wh STOR Q+ 150,I      00232  073151 vi ADDM DB 151,I       00322  074160 xp ADDM P+ 160,X
00143  060564 at CMPM P- 164        00233  061545 ce CMPM Q+ 145         00323  062543 ec CMPM P- 143,I
00144  020151  i MDS  1             00234  020156  n MDS  6             00324  072145 te ADDM P+ 145,I
00145  071440 s  ADDM Q+ 040        00235  072555 um ADDM P- 155,I        00325  062040 d  CMPM P+ 040,I
00146  072150 th ADDM P+ 150,I      00236  061145 be CMPM DB 145         00326  020470 !8 ----
00147  062440 e  CMPM P- 040,I      00237  071074 r< ADDM DB 074         00327  030060 00 XCHD
00150  041510 CH LOAD Q+ 110        00240  036467 =7 ORI  55            00330  040415 A. LOAD P- 015
00151  040516 AN LOAD P- 116        00241  006501 .A OR  ,DELB          00331  051145 Re STOR DB 145
00152  047105 NE LOAD DB 105,I,X    00242  042103 DC LOAD P+ 103,I      00332  063551 gi CMPM Q+ 151,I
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00333  071564 st ADDM Q+ 164          00423  070145 pe ADDM P+ 145          00513  071162 rr ADDM DB 162
00334  062562 er CMPM P- 162,I        00424  061564 ct CMPM Q+ 164          00514  072560 up ADDM P- 160,I
00335  020061  1 MVB  DB-DB,1         00425  062544 ed CMPM P- 144,I        00515  072015 t. ADDM P+ 015,I
00336  032040 4  SXIT 32              00426  020132  Z MTDS 2              00516  052556 Un MTBA P- 156
00337  071145 re ADDM DB 145          00427  055015 Z. STOR DB 015,X        00517  062570 ex CMPM P- 170,I
00340  060544 ad CMPM P- 144          00430  044556 In LOAD P- 156,X        00520  070145 pe ADDM P+ 145
00341  020151  i MDS  1               00431  072145 te ADDM P+ 145,I        00521  061564 ct CMPM Q+ 164
00342  071440 s  ADDM Q+ 040          00432  071162 rr ADDM DB 162          00522  062544 ed CMPM P- 144,I
00343  020530 !X ----                 00433  072560 up ADDM P- 160,I        00523  020151  i MDS  1
00344  054130 XX TBX  P+ 130          00434  072040 t  ADDM P+ 040,I        00524  067164 nt CMPM DB 164,I,X
00345  054040 X  TBX  P+ 040          00435  070565 qu ADDM P- 165          00525  062562 er CMPM P- 162,I
00346  062570 ex CMPM P- 170,I        00436  062565 eu CMPM P- 165,I        00526  071165 ru ADDM DB 165
00347  070145 pe ADDM P+ 145          00437  062440 e  CMPM P- 040,I        00527  070164 pt ADDM P+ 164
00350  061564 ct CMPM Q+ 164          00440  067157 no CMPM DB 157,I,X     00530  020146  f MVLB 6
00351  062544 ed CMPM P- 144,I        00441  072040 t  ADDM P+ 040,I        00531  071157 ro ADDM DB 157
00352  020041  ! MVB  PB-DB,1         00442  061554 cl CMPM Q+ 154          00532  066440 m  CMPM P- 040,I,X
00353  034060 80 LDPP 48              00443  062541 ea CMPM P- 141,I        00533  062145 de CMPM P+ 145,I
00354  047061 N1 LOAD DB 061,I,X      00444  071145 re ADDM DB 145          00534  073151 vi ADDM DB 151,I
00355  006520 .P OR  ,ADD             00445  062040 d  CMPM P+ 040,I        00535  061545 ce CMPM Q+ 145
00356  066145 le CMPM P+ 145,I,X      00446  061171 by CMPM DB 171          00536  020104  D IOOP 32 BIT OP
00357  060563 as CMPM P- 163          00447  020111  I MABS 1              00537  006504 .D OR  ,INCX
00360  062440 e  CMPM P- 040,I        00450  047111 NI LOAD DB 111,I,X     00540  062566 ev CMPM P- 166,I
00361  071545 se ADDM Q+ 145          00451  052015 T. MTBA P+ 015          00541  064543 ic CMPM P- 143,X
00362  072040 t  ADDM P+ 040,I        00452  044556 In LOAD P- 156,X        00542  062440 e  CMPM P- 040,I
00363  070162 pr ADDM P+ 162          00453  072145 te ADDM P+ 145,I        00543  054040 X  TBX  P+ 040
00364  067543 oc CMPM Q+ 143,I,X      00454  071162 rr ADDM DB 162          00544  062151 di CMPM P+ 151,I
00365  062563 es CMPM P- 163,I        00455  072560 up ADDM P- 160,I        00545  062040 d  CMPM P+ 040,I
00366  071557 so ADDM Q+ 157          00456  072040 t  ADDM P+ 040,I        00546  067157 no CMPM DB 157,I,X
00367  071040 r  ADDM DB 040          00457  070565 qu ADDM P- 165          00547  072040 t  ADDM P+ 040,I
00370  071545 se ADDM Q+ 145          00460  062565 eu CMPM P- 165,I        00550  064157 ho CMPM P+ 157,X
00371  066145 le CMPM P+ 145,I,X      00461  062440 e  CMPM P- 040,I        00551  066144 ld CMPM P+ 144,I,X
00372  061564 ct CMPM Q+ 164          00462  064563 is CMPM P- 163,X        00552  020157  o MDS  7
00373  020163  s SCU  3               00463  020130  X MTDS 0              00553  063146 ff CMPM DB 146,I
00374  073551 wi ADDM Q+ 151,I        00464  020145  e MVLB 5              00554  020151  i MDS  1
00375  072143 tc ADDM P+ 143,I        00465  074160 xp ADDM P+ 160,X        00555  067164 nt CMPM DB 164,I,X
00376  064040 h  CMPM P+ 040,X        00466  062543 ec CMPM P- 143,I        00556  062562 er CMPM P- 162,I
00377  072157 to ADDM P+ 157,I        00467  072145 te ADDM P+ 145,I        00557  071165 ru ADDM DB 165
00400  020103  C MVBL 3               00470  062040 d  CMPM P+ 040,I        00560  070164 pt ADDM P+ 164
00401  050125 PU TBA  P+ 125          00471  054415 Y. TBX  P- 015          00561  020146  f MVLB 6
00402  026040 ,  CMPN 32              00472  050565 Qu TBA  P- 165          00562  071157 ro ADDM DB 157
00403  071145 re ADDM DB 145          00473  062565 eu CMPM P- 165,I        00563  066440 m  CMPM P- 040,I,X
00404  071560 sp ADDM Q+ 160          00474  062544 ed CMPM P- 144,I        00564  062145 de CMPM P+ 145,I
00405  067556 on CMPM Q+ 156,I,X      00475  020144  d MVLB 4              00565  073151 vi ADDM DB 151,I
00406  062040 d  CMPM P+ 040,I        00476  062566 ev CMPM P- 166,I        00566  061545 ce CMPM Q+ 145
00407  023507 'G MPYI 71              00477  064543 ic CMPM P- 143,X        00567  020131  Y MTDS 1
00410  047447 O' LOAD Q+ 047,I,X      00500  062440 e  CMPM P- 040,I        00570  006511 .I OR  ,DADD
00411  006517 .O OR  ,CMP             00501  042040 D  LOAD P+ 040,I        00571  050117 PO TBA  P+ 117
00412  041130 BX LOAD DB 130          00502  062151 di CMPM P+ 151,I        00572  046114 LL LOAD P+ 114,I,X
00413  044440 I  LOAD P- 040,X        00503  062040 d  CMPM P+ 040,I        00573  020162  r SCU  2
00414  071145 re ADDM DB 145          00504  067157 no CMPM DB 157,I,X     00574  062564 et CMPM P- 164,I
00415  072165 tu ADDM P+ 165,I        00505  072040 t  ADDM P+ 040,I        00575  072562 ur ADDM P- 162,I
00416  071156 rn ADDM DB 156          00506  061541 ca CMPM Q+ 141          00576  067163 ns CMPM DB 163,I,X
00417  062544 ed CMPM P- 144,I        00507  072563 us ADDM P- 163,I        00577  020041  ! MVB  PB-DB,1
00420  020131  Y MTDS 1               00510  062440 e  CMPM P- 040,I        00600  054130 XX TBX  P+ 130
00421  054440 Y  TBX  P- 040          00511  064556 in CMPM P- 156,X        00601  054130 XX TBX  P+ 130
00422  062570 ex CMPM P- 170,I        00512  072145 te ADDM P+ 145,I        00602  020145  e MVLB 5
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00603  074160 xp ADDM P+ 160,X      00673  066551 mi CMPM P- 151,I,X      00763  020143  c MVLB 3
00604  062543 ec CMPM P- 143,I      00674  072164 tt ADDM P+ 164,I        00764  067556 on CMPM Q+ 156,I,X
00605  072145 te ADDM P+ 145,I      00675  062544 ed CMPM P- 144,I        00765  072162 tr ADDM P+ 162,I
00606  062040 d  CMPM P+ 040,I      00676  020151  i MDS  1              00766  067554 ol CMPM Q+ 154,I,X
00607  020531 !Y ----               00677  071440 s  ADDM Q+ 040          00767  036441 =! ORI  33
00610  054531 YY TBX  P- 131        00700  020530 !X ----                 00770  054130 XX TBX  P+ 130
00611  054415 Y. TBX  P- 015        00701  054054 X, TBX  P+ 054         00771  027040 .  DPF  (2:0)
00612  051145 Re STOR DB 145        00702  020162  r SCU  2              00772  020123  S SCW  3
00613  063551 gi CMPM Q+ 151,I      00703  062543 ec CMPM P- 143,I        00773  062556 en CMPM P- 156,I
00614  071564 st ADDM Q+ 164        00704  062551 ei CMPM P- 151,I        00774  072040 t  ADDM P+ 040,I
00615  062562 er CMPM P- 162,I      00705  073145 ve ADDM DB 145,I       00775  020501 !A ----
00616  020130  X MTDS 0             00706  062040 d  CMPM P+ 040,I        00776  040440 A  LOAD P- 040
00617  054040 X  TBX  P+ 040        00707  020531 !Y ----                 00777  071145 re ADDM DB 145
00620  071145 re ADDM DB 145        00710  054415 Y. TBX  P- 015          01000  061545 ce CMPM Q+ 145
00621  072165 tu ADDM P+ 165,I      00711  020130  X MTDS 0              01001  064566 iv CMPM P- 166,X
00622  071156 rn ADDM DB 156        00712  054040 X  TBX  P+ 040          01002  062544 ed CMPM P- 144,I
00623  062544 ed CMPM P- 144,I      00713  064556 in CMPM P- 156,X        01003  020041  ! MVB  PB-DB,1
00624  020041  ! MVB  PB-DB,1      00714  061557 co CMPM Q+ 157          01004  041102 BB LOAD DB 102
00625  054531 YY TBX  P- 131        00715  071162 rr ADDM DB 162          01005  026040 ,  CMPN 32
00626  054531 YY TBX  P- 131        00716  062543 ec CMPM P- 143,I        01006  061141 ba CMPM DB 141
00627  020145  e MVLB 5             00717  072154 tl ADDM P+ 154,I        01007  072544 ud ADDM P- 144,I
00630  074160 xp ADDM P+ 160,X      00720  074440 y  ADDM P- 040,X       01010  036530 =X ORI  88
00631  062543 ec CMPM P- 143,I      00721  072141 ta ADDM P+ 141,I        01011  054130 XX TBX  P+ 130
00632  072145 te ADDM P+ 145,I      00722  063547 gg CMPM Q+ 147,I        01012  054130 XX TBX  P+ 130
00633  062040 d  CMPM P+ 040,I      00723  062544 ed CMPM P- 144,I        01013  006441 .! NOT ,ZROB
00634  020460 !0 ----               00724  020141  a MVLB 1              01014  032465 55 ADXI 53
00635  030060 00 XCHD               00725  071440 s  ADDM Q+ 040          01015  020156  n MDS  6
00636  030015 0. LST  13            00726  071560 sp ADDM Q+ 160          01016  067564 ot CMPM Q+ 164,I,X
00637  053562 Wr STOR Q+ 162,I      00727  062543 ec CMPM P- 143,I        01017  020162  r SCU  2
00640  064564 it CMPM P- 164,X      00730  064541 ia CMPM P- 141,X        01020  062543 ec CMPM P- 143,I
00641  062440 e  CMPM P- 040,I      00731  066040 l  CMPM P+ 040,I,X     01021  062551 ei CMPM P- 151,I
00642  072157 to ADDM P+ 157,I      00732  061550 ch CMPM Q+ 150          01022  073145 ve ADDM DB 145,I
00643  020162  r SCU  2             00733  060562 ar CMPM P- 162          01023  062040 d  CMPM P+ 040,I
00644  062547 eg CMPM P- 147,I      00734  060543 ac CMPM P- 143          01024  060546 af CMPM P- 146
00645  064563 is CMPM P- 163,X      00735  072145 te ADDM P+ 145,I       01025  072145 te ADDM P+ 145,I
00646  072145 te ADDM P+ 145,I      00736  071015 r. ADDM DB 015         01026  071040 r  ADDM DB 040
00647  071040 r  ADDM DB 040        00737  020130  X MTDS 0              01027  031460 30 EXIT 48
00650  054130 XX TBX  P+ 130        00740  054040 X  TBX  P+ 040          01030  030040 0  SED  0
00651  020143  c MVLB 3             00741  067157 no CMPM DB 157,I,X      01031  066563 ms CMPM P- 163,I,X
00652  064141 ha CMPM P+ 141,X      00742  072040 t  ADDM P+ 040,I        01032  062543 ec CMPM P- 143,I
00653  067147 ng CMPM DB 147,I,X    00743  072141 ta ADDM P+ 141,I        01033  027040 .  DPF  (2:0)
00654  062544 ed CMPM P- 144,I      00744  063547 gg CMPM Q+ 147,I        01034  020102  B MVBL 2
00655  020162  r SCU  2             00745  062544 ed CMPM P- 144,I        01035  060565 au CMPM P- 165
00656  062547 eg CMPM P- 147,I      00746  020141  a MVLB 1              01036  062075 d= CMPM P+ 075,I
00657  064563 is CMPM P- 163,X      00747  071440 s  ADDM Q+ 040          01037  054130 XX TBX  P+ 130
00660  072145 te ADDM P+ 145,I      00750  071560 sp ADDM Q+ 160          01040  054130 XX TBX  P+ 130
00661  071040 r  ADDM DB 040        00751  062543 ec CMPM P- 143,I        01041  054015 X. TBX  P+ 015
00662  054531 YY TBX  P- 131        00752  064541 ia CMPM P- 141,X        01042  042145 De LOAD P+ 145,I
00663  006503 .C OR  ,ZROX          00753  066040 l  CMPM P+ 040,I,X     01043  073151 vi ADDM DB 151,I
00664  064141 ha CMPM P+ 141,X      00754  061550 ch CMPM Q+ 150          01044  061545 ce CMPM Q+ 145
00665  071141 ra ADDM DB 141        00755  060562 ar CMPM P- 162          01045  020123  S SCW  3
00666  061564 ct CMPM Q+ 164        00756  060543 ac CMPM P- 143          01046  070145 pe ADDM P+ 145
00667  062562 er CMPM P- 162,I      00757  072145 te ADDM P+ 145,I       01047  061551 ci CMPM Q+ 151
00670  020164  t SCU  4             00760  071015 r. ADDM DB 015         01050  063151 fi CMPM DB 151,I
00671  071141 ra ADDM DB 141        00761  052501 UA MTBA P- 101          01051  062544 ed CMPM P- 144,I
00672  067163 ns CMPM DB 163,I,X    00762  051124 RT STOR DB 124         01052  020112  J MABS 2
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01053  072555 um ADDM P- 155,I      01143  062562 er CMPM P- 162,I      01233  072040 t  ADDM P+ 040,I
01054  070040 p  ADDM P+ 040        01144  071157 ro ADDM DB 157        01234  062145 de CMPM P+ 145,I
01055  071145 re ADDM DB 145        01145  071015 r. ADDM DB 015        01235  072145 te ADDM P+ 145,I
01056  072165 tu ADDM P+ 165,I      01146  042145 De LOAD P+ 145,I      01236  061564 ct CMPM Q+ 164
01057  071156 rn ADDM DB 156        01147  073151 vi ADDM DB 151,I      01237  020142  b MVLB 2
01060  062544 ed CMPM P- 144,I      01150  061545 ce CMPM Q+ 145        01240  071145 re ADDM DB 145
01061  020130  X MTDS 0             01151  020104  D IOOP 32 BIT OP     01241  060553 ak CMPM P- 153
01062  054040 X  TBX  P+ 040        01152  020125  U SCW  5            01242  006504 .D OR  ,INCX
01063  062570 ex CMPM P- 170,I      01153  040522 AR LOAD P- 122        01243  062566 ev CMPM P- 166,I
01064  070145 pe ADDM P+ 145        01154  052040 T  MTBA P+ 040       01244  064543 ic CMPM P- 143,X
01065  061564 ct CMPM Q+ 164        01155  062151 di CMPM P+ 151,I      01245  062440 e  CMPM P- 040,I
01066  062544 ed CMPM P- 144,I      01156  062040 d  CMPM P+ 040,I      01246  042040 D  LOAD P+ 040,I
01067  020060  0 MVB  DB-DB,0       01157  067157 no CMPM DB 157,I,X    01247  066557 mo CMPM P- 157,I,X
01070  054415 Y. TBX  P- 015        01160  072040 t  ADDM P+ 040,I      01250  062151 di CMPM P+ 151,I
01071  042145 De LOAD P+ 145,I      01161  062145 de CMPM P+ 145,I      01251  063151 fi CMPM DB 151,I
01072  073151 vi ADDM DB 151,I      01162  072145 te ADDM P+ 145,I      01252  062562 er CMPM P- 162,I
01073  061545 ce CMPM Q+ 145        01163  061564 ct CMPM Q+ 164       01253  020061  1 MVB  DB-DB,1
01074  020104  D IOOP 32 BIT OP     01164  020157  o MDS  7            01254  020144  d MVLB 4
01075  020125  U SCW  5             01165  073145 ve ADDM DB 145,I      01255  064544 id CMPM P- 144,X
01076  040522 AR LOAD P- 122        01166  071162 rr ADDM DB 162        01256  020156  n MDS  6
01077  052040 T  MTBA P+ 040        01167  072556 un ADDM P- 156,I      01257  067564 ot CMPM Q+ 164,I,X
01100  062151 di CMPM P+ 151,I      01170  020145  e MVLB 5            01260  020162  r SCU  2
01101  062040 d  CMPM P+ 040,I      01171  071162 rr ADDM DB 162       01261  062560 ep CMPM P- 160,I
01102  067157 no CMPM DB 157,I,X    01172  067562 or CMPM Q+ 162,I,X    01262  067562 or CMPM Q+ 162,I,X
01103  072040 t  ADDM P+ 040,I      01173  006504 .D OR  ,INCX          01263  072040 t  ADDM P+ 040,I
01104  062145 de CMPM P+ 145,I      01174  062566 ev CMPM P- 166,I      01264  061162 br CMPM DB 162
01105  072145 te ADDM P+ 145,I      01175  064543 ic CMPM P- 143,X      01265  062541 ea CMPM P- 141,I
01106  061564 ct CMPM Q+ 164        01176  062440 e  CMPM P- 040,I      01266  065415 k. CMPM Q+ 015,X
01107  020160  p SCU  0             01177  042040 D  LOAD P+ 040,I      01267  042517 EO LOAD P- 117,I
01110  060562 ar CMPM P- 162        01200  066557 mo CMPM P- 157,I,X    01270  052040 T  MTBA P+ 040
01111  064564 it CMPM P- 164,X      01201  062151 di CMPM P+ 151,I      01271  067157 no CMPM DB 157,I,X
01112  074440 y  ADDM P- 040,X      01202  063151 fi CMPM DB 151,I      01272  072040 t  ADDM P+ 040,I
01113  062562 er CMPM P- 162,I      01203  062562 er CMPM P- 162,I      01273  060560 ap CMPM P- 160
01114  071157 ro ADDM DB 157        01204  020061  1 MVB  DB-DB,1      01274  070145 pe ADDM P+ 145
01115  071015 r. ADDM DB 015        01205  020144  d MVLB 4            01275  067144 nd CMPM DB 144,I,X
01116  042145 De LOAD P+ 145,I      01206  064544 id CMPM P- 144,X      01276  062544 ed CMPM P- 144,I
01117  073151 vi ADDM DB 151,I      01207  020156  n MDS  6            01277  020141  a MVLB 1
01120  061545 ce CMPM Q+ 145        01210  067564 ot CMPM Q+ 164,I,X    01300  072040 t  ADDM P+ 040,I
01121  020104  D IOOP 32 BIT OP     01211  020162  r SCU  2            01301  062145 de CMPM P+ 145,I
01122  020155  m MDS  5             01212  062560 ep CMPM P- 160,I      01302  072145 te ADDM P+ 145,I
01123  067544 od CMPM Q+ 144,I,X    01213  067562 or CMPM Q+ 162,I,X    01303  061564 ct CMPM Q+ 164
01124  064546 if CMPM P- 146,X      01214  072040 t  ADDM P+ 040,I      01304  062544 ed CMPM P- 144,I
01125  064545 ie CMPM P- 145,X      01215  067566 ov CMPM Q+ 166,I,X    01305  020142  b MVLB 2
01126  071040 r  ADDM DB 040        01216  062562 er CMPM P- 162,I      01306  071145 re ADDM DB 145
01127  030440 1  SCAL 32            01217  071165 ru ADDM DB 165        01307  060553 ak CMPM P- 153
01130  062151 di CMPM P+ 151,I      01220  067015 n. CMPM DB 015,I,X    01310  006524 .T OR  ,NEG
01131  062040 d  CMPM P+ 040,I      01221  042145 De LOAD P+ 145,I      01311  041105 BE LOAD DB 105
01132  067157 no CMPM DB 157,I,X    01222  073151 vi ADDM DB 151,I      01312  020156  n MDS  6
01133  072040 t  ADDM P+ 040,I      01223  061545 ce CMPM Q+ 145        01313  067564 ot CMPM Q+ 164,I,X
01134  071145 re ADDM DB 145        01224  020104  D IOOP 32 BIT OP     01314  020162  r SCU  2
01135  070157 po ADDM P+ 157        01225  020125  U SCW  5            01315  062564 et CMPM P- 164,I
01136  071164 rt ADDM DB 164        01226  040522 AR LOAD P- 122        01316  072562 ur ADDM P- 162,I
01137  020160  p SCU  0             01227  052040 T  MTBA P+ 040        01317  067145 ne CMPM DB 145,I,X
01140  060562 ar CMPM P- 162        01230  062151 di CMPM P+ 151,I      01320  062040 d  CMPM P+ 040,I
01141  064564 it CMPM P- 164,X      01231  062040 d  CMPM P+ 040,I      01321  060563 as CMPM P- 163
01142  074440 y  ADDM P- 040,X      01232  067157 no CMPM DB 157,I,X    01322  020130  X MTDS 0
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01323  006515 .M OR  ,DNEG          01413  072165 tu ADDM P+ 165,I       01503  060546 af CMPM P- 146
01324  067544 od CMPM Q+ 144,I,X    01414  071440 s  ADDM Q+ 040         01504  063145 fe CMPM DB 145,I
01325  062555 em CMPM P- 155,I      01415  061550 ch CMPM Q+ 150         01505  061564 ct CMPM Q+ 164
01326  020163  s SCU  3             01416  060556 an CMPM P- 156         01506  062544 ed CMPM P- 144,I
01327  072141 ta ADDM P+ 141,I      01417  063545 ge CMPM Q+ 145,I       01507  020131  Y MTDS 1
01330  072165 tu ADDM P+ 165,I      01420  006515 .M OR  ,DNEG          01510  054531 YY TBX  P- 131
01331  071440 s  ADDM Q+ 040        01421  067544 od CMPM Q+ 144,I,X    01511  054415 Y. TBX  P- 015
01332  061550 ch CMPM Q+ 150        01422  064546 if CMPM P- 146,X      01512  042123 DS LOAD P+ 123,I
01333  060556 an CMPM P- 156        01423  064545 ie CMPM P- 145,X      01513  045040 J  LOAD DB 040,X
01334  063545 ge CMPM Q+ 145,I      01424  071040 r  ADDM DB 040       01514  071145 re ADDM DB 145
01335  020144  d MVLB 4             01425  031040 2  PCAL 32           01515  072165 tu ADDM P+ 165,I
01336  064544 id CMPM P- 144,X      01426  071145 re ADDM DB 145       01516  071156 rn ADDM DB 156
01337  020156  n MDS  6             01427  060544 ad CMPM P- 144        01517  020142  b MVLB 2
01340  067564 ot CMPM Q+ 164,I,X    01430  020151  i MDS  1             01520  074564 yt ADDM P- 164,X
01341  020163  s SCU  3             01431  071440 s  ADDM Q+ 040        01521  062454 e, CMPM P- 054,I
01342  062564 et CMPM P- 164,I      01432  020530 !X ----               01522  020143  c MVLB 3
01343  020104  D IOOP 32 BIT OP    01433  054040 X  TBX  P+ 040        01523  064141 ha CMPM P+ 141,X
01344  051512 SJ STOR Q+ 112        01434  062570 ex CMPM P- 170,I      01524  067040 n  CMPM DB 040,I,X
01345  020142  b MVLB 2             01435  070145 pe ADDM P+ 145        01525  070162 pr ADDM P+ 162
01346  074564 yt ADDM P- 164,X      01436  061564 ct CMPM Q+ 164        01526  067547 og CMPM Q+ 147,I,X
01347  062475 e= CMPM P- 075,I      01437  062544 ed CMPM P- 144,I      01527  020066  6 MVB  DB-DB,2
01350  031015 2. PCAL 13            01440  020041  ! MVB  PB-DB,1      01530  072150 th ADDM P+ 150,I
01351  042123 DS LOAD P+ 123,I      01441  054531 YY TBX  P- 131        01531  020167  w SCU  7
01352  045040 J  LOAD DB 040,X      01442  006504 .D OR  ,INCX         01532  067562 or CMPM Q+ 162,I,X
01353  062151 di CMPM P+ 151,I      01443  051512 SJ STOR Q+ 112        01533  062054 d, CMPM P+ 054,I
01354  062040 d  CMPM P+ 040,I      01444  020162  r SCU  2             01534  020151  i MDS  1
01355  067157 no CMPM DB 157,I,X    01445  062564 et CMPM P- 164,I      01535  071440 s  ADDM Q+ 040
01356  072040 t  ADDM P+ 040,I      01446  072562 ur ADDM P- 162,I      01536  020556 !n ----
01357  071145 re ADDM DB 145        01447  067145 ne CMPM DB 145,I,X    01537  067054 n, CMPM DB 054,I,X
01360  070157 po ADDM P+ 157        01450  062040 d  CMPM P+ 040,I      01540  020145  e MVLB 5
01361  071164 rt ADDM DB 164        01451  020530 !X ----               01541  074160 xp ADDM P+ 160,X
01362  020155  m MDS  5             01452  054040 X  TBX  P+ 040        01542  062543 ec CMPM P- 143,I
01363  067544 od CMPM Q+ 144,I,X    01453  062570 ex CMPM P- 170,I      01543  072040 t  ADDM P+ 040,I
01364  062555 em CMPM P- 155,I      01454  070145 pe ADDM P+ 145        01544  020556 !n ----
01365  020163  s SCU  3             01455  061564 ct CMPM Q+ 164        01545  067015 n. CMPM DB 015,I,X
01366  072141 ta ADDM P+ 141,I      01456  062544 ed CMPM P- 144,I      01546  044157 Ho LOAD P+ 157,X
01367  072165 tu ADDM P+ 165,I      01457  020041  ! MVB  PB-DB,1      01547  073440 w  ADDM Q+ 040,I
01370  071440 s  ADDM Q+ 040        01460  054531 YY TBX  P- 131        01550  066541 ma CMPM P- 141,I,X
01371  061550 ch CMPM Q+ 150        01461  006523 .S OR  ,DIV          01551  067171 ny CMPM DB 171,I,X
01372  060556 an CMPM P- 156        01462  070145 pe ADDM P+ 145        01552  020143  c MVLB 3
01373  063545 ge CMPM Q+ 145,I      01463  061551 ci CMPM Q+ 151        01553  064141 ha CMPM P+ 141,X
01374  006515 .M OR  ,DNEG          01464  060554 al CMPM P- 154        01554  067156 nn CMPM DB 156,I,X
01375  067544 od CMPM Q+ 144,I,X    01465  020103  C MVBL 3             01555  062554 el CMPM P- 154,I
01376  064546 if CMPM P- 146,X      01466  064141 ha CMPM P+ 141,X      01556  071440 s  ADDM Q+ 040
01377  064545 ie CMPM P- 145,X      01467  071141 ra ADDM DB 141       01557  067546 of CMPM Q+ 146,I,X
01400  071040 r  ADDM DB 040        01470  061564 ct CMPM Q+ 164        01560  020141  a MVLB 1
01401  031040 2  PCAL 32           01471  062562 er CMPM P- 162,I      01561  066154 ll CMPM P+ 154,I,X
01402  062151 di CMPM P+ 151,I      01472  020122  R SCW  2             01562  020164  t SCU  4
01403  062040 d  CMPM P+ 040,I      01473  040515 AM LOAD P- 115        01563  074560 yp ADDM P- 160,X
01404  067157 no CMPM DB 157,I,X    01474  020141  a MVLB 1            01564  062563 es CMPM P- 163,I
01405  072040 t  ADDM P+ 040,I      01475  062144 dd CMPM P+ 144,I      01565  020141  a MVLB 1
01406  071145 re ADDM DB 145        01476  071145 re ADDM DB 145        01566  071145 re ADDM DB 145
01407  070157 po ADDM P+ 157        01477  071563 ss ADDM Q+ 163        01567  020164  t SCU  4
01410  071164 rt ADDM DB 164        01500  020130  X MTDS 0            01570  064145 he CMPM P+ 145,X
01411  020163  s SCU  3             01501  054130 XX TBX  P+ 130        01571  071145 re ADDM DB 145
01412  072141 ta ADDM P+ 141,I      01502  054040 X  TBX  P+ 040        01572  020151  i MDS  1
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01573  067163 ns CMPM DB 163,I,X      01663  050162 Pr TBA  P+ 162          01753  062040 d  CMPM P+ 040,I
01574  072141 ta ADDM P+ 141,I        01664  064555 im CMPM P- 155,X       01754  020530 !X ----
01575  066154 ll CMPM P+ 154,I,X      01665  060562 ar CMPM P- 162         01755  054130 XX TBX  P+ 130
01576  062544 ed CMPM P- 144,I        01666  074440 y  ADDM P- 040,X       01756  054040 X  TBX  P+ 040
01577  037440 ?  ANDI 32              01667  054130 XX TBX  P+ 130          01757  062570 ex CMPM P- 170,I
01600  006520 .P OR  ,ADD             01670  026040 ,  CMPN 32             01760  070145 pe ADDM P+ 145
01601  071151 ri ADDM DB 151          01671  071545 se ADDM Q+ 145         01761  061564 ct CMPM Q+ 164
01602  066541 ma CMPM P- 141,I,X      01672  061557 co CMPM Q+ 157         01762  062544 ed CMPM P- 144,I
01603  071171 ry ADDM DB 171          01673  067144 nd CMPM DB 144,I,X     01763  020041  ! MVB  PB-DB,1
01604  020130  X MTDS 0               01674  060562 ar CMPM P- 162         01764  032060 40 SXIT 48
01605  054054 X, TBX  P+ 054          01675  074440 y  ADDM P- 040,X       01765  034060 80 LDPP 48
01606  020163  s SCU  3               01676  054531 YY TBX  P- 131          01766  006504 .D OR  ,INCX
01607  062543 ec CMPM P- 143,I        01677  020144  d MVLB 4              01767  047126 NV LOAD DB 126,I,X
01610  067556 on CMPM Q+ 156,I,X      01700  067440 o  CMPM Q+ 040,I,X     01770  020156  n MDS  6
01611  062141 da CMPM P+ 141,I        01701  067157 no CMPM DB 157,I,X     01771  067564 ot CMPM Q+ 164,I,X
01612  071171 ry ADDM DB 171          01702  072040 t  ADDM P+ 040,I       01772  020141  a MVLB 1
01613  020131  Y MTDS 1               01703  071145 re ADDM DB 145         01773  071563 ss ADDM Q+ 163
01614  054440 Y  TBX  P- 040          01704  026545 -e EXF  (6:5)          01774  062562 er CMPM P- 162,I
01615  062157 do CMPM P+ 157,I        01705  067141 na CMPM DB 141,I,X     01775  072145 te ADDM P+ 145,I
01616  020156  n MDS  6               01706  061154 bl CMPM DB 154         01776  062040 d  CMPM P+ 040,I
01617  067564 ot CMPM Q+ 164,I,X      01707  062440 e  CMPM P- 040,I       01777  063157 fo CMPM DB 157,I
01620  020144  d MVLB 4               01710  041523 CS LOAD Q+ 123         02000  071040 r  ADDM DB 040
01621  064563 is CMPM P- 163,X        01711  051121 RQ STOR DB 121         02001  044544 Id LOAD P- 144,X
01622  060542 ab CMPM P- 142          01712  006522 .R OR  ,MPY             02002  062556 en CMPM P- 156,I
01623  066145 le CMPM P+ 145,I,X      01713  062547 eg CMPM P- 147,I       02003  072151 ti ADDM P+ 151,I
01624  020103  C MVBL 3               01714  064563 is CMPM P- 163,X        02004  063171 fy CMPM DB 171,I
01625  051522 SR STOR Q+ 122          01715  072145 te ADDM P+ 145,I        02005  006503 .C OR  ,ZROX
01626  050415 Q. TBA  P- 015          01716  071040 r  ADDM DB 040         02006  064141 ha CMPM P+ 141,X
01627  044516 IN LOAD P- 116,X        01717  031040 2  PCAL 32            02007  067156 nn CMPM DB 156,I,X
01630  044524 IT LOAD P- 124,X        01720  071145 re ADDM DB 145         02010  062554 el CMPM P- 154,I
01631  020144  d MVLB 4               01721  060544 ad CMPM P- 144         02011  020160  p SCU  0
01632  067545 oe CMPM Q+ 145,I,X      01722  020151  i MDS  1             02012  071157 ro ADDM DB 157
01633  071440 s  ADDM Q+ 040          01723  071440 s  ADDM Q+ 040         02013  063562 gr CMPM Q+ 162,I
01634  067157 no CMPM DB 157,I,X      01724  020530 !X ----                02014  060555 am CMPM P- 155
01635  072040 t  ADDM P+ 040,I        01725  054130 XX TBX  P+ 130         02015  020144  d MVLB 4
01636  071145 re ADDM DB 145          01726  054040 X  TBX  P+ 040         02016  064544 id CMPM P- 144,X
01637  026545 -e EXF  (6:5)           01727  062570 ex CMPM P- 170,I       02017  020156  n MDS  6
01640  067141 na CMPM DB 141,I,X      01730  070145 pe ADDM P+ 145         02020  067564 ot CMPM Q+ 164,I,X
01641  061154 bl CMPM DB 154          01731  061564 ct CMPM Q+ 164         02021  020163  s SCU  3
01642  062440 e  CMPM P- 040,I        01732  062544 ed CMPM P- 144,I       02022  072141 ta ADDM P+ 141,I
01643  041523 CS LOAD Q+ 123          01733  020041  ! MVB  PB-DB,1       02023  071164 rt ADDM DB 164
01644  051121 RQ STOR DB 121          01734  034060 80 LDPP 48            02024  006503 .C OR  ,ZROX
01645  027040 .  DPF  (2:0)           01735  031101 2A PCAL 65            02025  064141 ha CMPM P+ 141,X
01646  020120  P SCW  0               01736  006511 .I OR  ,DADD           02026  067156 nn CMPM DB 156,I,X
01647  071151 ri ADDM DB 151          01737  062145 de CMPM P+ 145,I       02027  062554 el CMPM P- 154,I
01650  066541 ma CMPM P- 141,I,X      01740  067164 nt CMPM DB 164,I,X     02030  020160  p SCU  0
01651  071171 ry ADDM DB 171          01741  064546 if CMPM P- 146,X       02031  071157 ro ADDM DB 157
01652  020130  X MTDS 0               01742  074440 y  ADDM P- 040,X       02032  063562 gr CMPM Q+ 162,I
01653  054054 X, TBX  P+ 054          01743  062145 de CMPM P+ 145,I       02033  060555 am CMPM P- 155
01654  020163  s SCU  3               01744  073151 vi ADDM DB 151,I       02034  020163  s SCU  3
01655  062543 ec CMPM P- 143,I        01745  061545 ce CMPM Q+ 145         02035  072165 tu ADDM P+ 165,I
01656  067556 on CMPM Q+ 156,I,X      01746  020104  D IOOP 32 BIT OP      02036  061553 ck CMPM Q+ 153
01657  062141 da CMPM P+ 141,I        01747  020162  r SCU  2             02037  020151  i MDS  1
01660  071171 ry ADDM DB 171          01750  062564 et CMPM P- 164,I       02040  067040 n  CMPM DB 040,I,X
01661  020131  Y MTDS 1               01751  072562 ur ADDM P- 162,I       02041  073541 wa ADDM Q+ 141,I
01662  054415 Y. TBX  P- 015          01752  067145 ne CMPM DB 145,I,X     02042  064564 it CMPM P- 164,X
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02043  006525 .U OR  ,TEST          02133  054130 XX TBX  P+ 130          02223  061564 ct CMPM Q+ 164
02044  067145 ne CMPM DB 145,I,X    02134  054040 X  TBX  P+ 040          02224  062544 ed CMPM P- 144,I
02045  074160 xp ADDM P+ 160,X      02135  063157 fo CMPM DB 157,I        02225  020041  ! MVB  PB-DB,1
02046  062543 ec CMPM P- 143,I      02136  072556 un ADDM P- 156,I        02226  055132 ZZ STOR DB 132,X
02047  072145 te ADDM P+ 145,I      02137  062040 d  CMPM P+ 040,I        02227  006523 .S OR  ,DIV
02050  062040 d  CMPM P+ 040,I      02140  064556 in CMPM P- 156,X        02230  062564 et CMPM P- 164,I
02051  073141 va ADDM DB 141,I      02141  020103  C MVBL 3              02231  020124  T SCW  4
02052  066165 lu CMPM P+ 165,I,X    02142  050126 PV TBA  P+ 126          02232  064165 hu CMPM P+ 165,X
02053  062440 e  CMPM P- 040,I      02143  040415 A. LOAD P- 015          02233  066542 mb CMPM P- 142,I,X
02054  020530 !X ----               02144  052556 Un MTBA P- 156          02234  073550 wh ADDM Q+ 150,I
02055  054130 XX TBX  P+ 130        02145  062570 ex CMPM P- 170,I        02235  062545 ee CMPM P- 145,I
02056  054040 X  TBX  P+ 040        02146  070145 pe ADDM P+ 145          02236  066040 l  CMPM P+ 040,I,X
02057  063157 fo CMPM DB 157,I      02147  061564 ct CMPM Q+ 164          02237  067546 of CMPM Q+ 146,I,X
02060  072556 un ADDM P- 156,I      02150  062544 ed CMPM P- 144,I        02240  020101  A MVBL 1
02061  062040 d  CMPM P+ 040,I      02151  020104  D IOOP 32 BIT OP      02241  042103 DC LOAD P+ 103,I
02062  064556 in CMPM P- 156,X      02152  051512 SJ STOR Q+ 112          02242  041440 C  LOAD Q+ 040
02063  020104  D IOOP 32 BIT OP     02153  020166  v SCU  6              02243  072556 un ADDM P- 156,I
02064  051124 RT STOR DB 124        02154  060554 al CMPM P- 154          02244  062145 de CMPM P+ 145,I
02065  006502 .B OR  ,DDEL          02155  072545 ue ADDM P- 145,I        02245  071040 r  ADDM DB 040
02066  071145 re ADDM DB 145        02156  020162  r SCU  2              02246  072145 te ADDM P+ 145,I
02067  060553 ak CMPM P- 153        02157  062564 et CMPM P- 164,I        02247  071564 st ADDM Q+ 164
02070  020144  d MVLB 4             02160  072562 ur ADDM P- 162,I        02250  020164  t SCU  4
02071  062564 et CMPM P- 164,I      02161  067145 ne CMPM DB 145,I,X      02251  067440 o  CMPM Q+ 040,I,X
02072  062543 ec CMPM P- 143,I      02162  062015 d. CMPM P+ 015,I        02252  061550 ch CMPM Q+ 150
02073  072145 te ADDM P+ 145,I      02163  041550 Ch LOAD Q+ 150          02253  060556 an CMPM P- 156
02074  062040 d  CMPM P+ 040,I      02164  060556 an CMPM P- 156          02254  067145 ne CMPM DB 145,I,X
02075  026415 -. EXF  (0:13)        02165  067145 ne CMPM DB 145,I,X      02255  066040 l  CMPM P+ 040,I,X
02076  047566 Ov LOAD Q+ 166,I,X    02166  066040 l  CMPM P+ 040,I,X      02256  074170 xx ADDM P+ 170,X
02077  062562 er CMPM P- 162,I      02167  070162 pr ADDM P+ 162          02257  006461 .1 NOT ,LSUB
02100  071165 ru ADDM DB 165        02170  067547 og CMPM Q+ 147,I,X      02260  036075 <= ----
02101  067040 n  CMPM DB 040,I,X    02171  071141 ra ADDM DB 141        02261  067165 nu CMPM DB 165,I,X
02102  062145 de CMPM P+ 145,I      02172  066440 m  CMPM P- 040,I,X      02262  066542 mb CMPM P- 142,I,X
02103  072145 te ADDM P+ 145,I      02173  060542 ab CMPM P- 142          02263  062562 er CMPM P- 162,I
02104  061564 ct CMPM Q+ 164        02174  067562 or CMPM Q+ 162,I,X      02264  020157  o MDS  7
02105  062544 ed CMPM P- 144,I      02175  072145 te ADDM P+ 145,I        02265  063040 f  CMPM DB 040,I
02106  006520 .P OR  ,ADD           02176  062040 d  CMPM P+ 040,I        02266  041510 CH LOAD Q+ 110
02107  060562 ar CMPM P- 162        02177  061171 by CMPM DB 171          02267  040516 AN LOAD P- 116
02110  064564 it CMPM P- 164,X      02200  020103  C MVBL 3              02270  047105 NE LOAD DB 105,I,X
02111  074440 y  ADDM P- 040,X      02201  050125 PU TBA  P+ 125          02271  046123 LS LOAD P+ 123,I,X
02112  062562 er CMPM P- 162,I      02202  026040 ,  CMPN 32             02272  036075 <= ----
02113  071157 ro ADDM DB 157        02203  041520 CP LOAD Q+ 120          02273  030465 15 SCAL 53
02114  071040 r  ADDM DB 040        02204  053101 VA STOR DB 101,I        02274  006522 .R OR  ,MPY
02115  062145 de CMPM P+ 145,I      02205  036441 =! ORI  33             02275  067554 ol CMPM Q+ 154,I,X
02116  072145 te ADDM P+ 145,I      02206  054130 XX TBX  P+ 130          02276  066040 l  CMPM P+ 040,I,X
02117  061564 ct CMPM Q+ 164        02207  054130 XX TBX  P+ 130          02277  041541 Ca LOAD Q+ 141
02120  062544 ed CMPM P- 144,I      02210  006502 .B OR  ,DDEL           02300  066154 ll CMPM P+ 154,I,X
02121  006525 .U OR  ,TEST          02211  074564 yt ADDM P- 164,X       02301  020162  r SCU  2
02122  067145 ne CMPM DB 145,I,X    02212  062440 e  CMPM P- 040,I        02302  062563 es CMPM P- 163,I
02123  074160 xp ADDM P+ 160,X      02213  020530 !X ----                 02303  070157 po ADDM P+ 157
02124  062543 ec CMPM P- 143,I      02214  054040 X  TBX  P+ 040          02304  067163 ns CMPM DB 163,I,X
02125  072145 te ADDM P+ 145,I      02215  064563 is CMPM P- 163,X        02305  062563 es CMPM P- 163,I
02126  062040 d  CMPM P+ 040,I      02216  020041  ! MVB  PB-DB,1        02306  020075  = MVB  DB-DB,1
02127  073141 va ADDM DB 141,I      02217  054130 XX TBX  P+ 130          02307  020170  x MFDS 0
02130  066165 lu CMPM P+ 165,I,X    02220  026040 ,  CMPN 32             02310  074054 x, ADDM P+ 054,X
02131  062440 e  CMPM P- 040,I      02221  062570 ex CMPM P- 170,I        02311  020145  e MVLB 5
02132  020530 !X ----               02222  070145 pe ADDM P+ 145          02312  074160 xp ADDM P+ 160,X
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02313  062543 ec CMPM P- 143,I        02403  067144 nd CMPM DB 144,I,X      02473  020145  e MVLB 5
02314  072145 te ADDM P+ 145,I        02404  020164  t SCU  4              02474  074160 xp ADDM P+ 160,X
02315  062040 d  CMPM P+ 040,I        02405  067440 o  CMPM Q+ 040,I,X     02475  062543 ec CMPM P- 143,I
02316  074170 xx ADDM P+ 170,X        02406  051157 Ro STOR DB 157         02476  072145 te ADDM P+ 145,I
02317  020143  c MVLB 3               02407  066154 ll CMPM P+ 154,I,X     02477  062040 d  CMPM P+ 040,I
02320  064141 ha CMPM P+ 141,X        02410  020103  C MVBL 3              02500  020531 !Y ----
02321  067156 nn CMPM DB 156,I,X      02411  060554 al CMPM P- 154         02501  054531 YY TBX  P- 131
02322  062554 el CMPM P- 154,I        02412  066015 l. CMPM P+ 015,I,X     02502  054415 Y. TBX  P- 015
02323  020162  r SCU  2               02413  050154 Pl TBA  P+ 154         02503  030440 1  SCAL 32
02324  062563 es CMPM P- 163,I        02414  060543 ac CMPM P- 143         02504  036075 <= ----
02325  070157 po ADDM P+ 157          02415  062440 e  CMPM P- 040,I       02505  020164  t SCU  4
02326  067163 ns CMPM DB 163,I,X      02416  051123 RS STOR DB 123         02506  062563 es CMPM P- 163,I
02327  062563 es CMPM P- 163,I        02417  026462 -2 EXF  (3:2)          02507  072040 t  ADDM P+ 040,I
02330  006527 .W OR  ,DTST            02420  031462 32 EXIT 50            02510  051505 SE STOR Q+ 105
02331  064141 ha CMPM P+ 141,X        02421  041440 C  LOAD Q+ 040         02511  041524 CT LOAD Q+ 124
02332  072040 t  ADDM P+ 040,I        02422  023504 'D MPYI 68            02512  044517 IO LOAD P- 117,X
02333  064563 is CMPM P- 163,X        02423  023440 '  MPYI 32            02513  047040 N  LOAD DB 040,I,X
02334  020144  d MVLB 4               02424  066157 lo CMPM P+ 157,I,X     02514  036075 <= ----
02335  062566 ev CMPM P- 166,I        02425  067560 op CMPM Q+ 160,I,X     02515  020156  n MDS  6
02336  064543 ic CMPM P- 143,X        02426  020157  o MDS  7             02516  067015 n. CMPM DB 015,I,X
02337  062440 e  CMPM P- 040,I        02427  067040 n  CMPM DB 040,I,X     02517  052150 Th MTBA P+ 150
02340  067165 nu CMPM DB 165,I,X      02430  061541 ca CMPM Q+ 141         02520  072555 um ADDM P- 155,I
02341  066542 mb CMPM P- 142,I,X      02431  061154 bl CMPM DB 154         02521  061167 bw CMPM DB 167
02342  062562 er CMPM P- 162,I        02432  062440 e  CMPM P- 040,I       02522  064145 he CMPM P+ 145,X
02343  020141  a MVLB 1               02433  065141 ja CMPM DB 141,X      02523  062554 el CMPM P- 154,I
02344  071563 ss ADDM Q+ 163          02434  061553 ck CMPM Q+ 153         02524  020163  s SCU  3
02345  067543 oc CMPM Q+ 143,I,X      02435  027015 .. DPF  (0:13)         02525  073551 wi ADDM Q+ 151,I
02346  064541 ia CMPM P- 141,X        02436  047502 OB LOAD Q+ 102,I,X     02526  072143 tc ADDM P+ 143,I
02347  072145 te ADDM P+ 145,I        02437  051511 SI STOR Q+ 111         02527  064040 h  CMPM P+ 040,X
02350  062040 d  CMPM P+ 040,I        02440  020162  r SCU  2             02530  067546 of CMPM Q+ 146,I,X
02351  073551 wi ADDM Q+ 151,I        02441  062564 et CMPM P- 164,I       02531  020101  A MVBL 1
02352  072150 th ADDM P+ 150,I        02442  072562 ur ADDM P- 162,I       02532  042103 DC LOAD P+ 103,I
02353  020164  t SCU  4               02443  067040 n  CMPM DB 040,I,X     02533  041440 C  LOAD Q+ 040
02354  064145 he CMPM P+ 145,X        02444  064563 is CMPM P- 163,X       02534  072556 un ADDM P- 156,I
02355  020143  c MVLB 3               02445  020041  ! MVB  PB-DB,1       02535  062145 de CMPM P+ 145,I
02356  060542 ab CMPM P- 142          02446  054130 XX TBX  P+ 130         02536  071040 r  ADDM DB 040
02357  066145 le CMPM P+ 145,I,X      02447  054130 XX TBX  P+ 130         02537  072145 te ADDM P+ 145,I
02360  020165  u SCU  5               02450  020145  e MVLB 5             02540  071564 st ADDM Q+ 164
02361  067144 nd CMPM DB 144,I,X      02451  074160 xp ADDM P+ 160,X      02541  020151  i MDS  1
02362  062562 er CMPM P- 162,I        02452  062543 ec CMPM P- 143,I       02542  071440 s  ADDM Q+ 040
02363  020164  t SCU  4               02453  072145 te ADDM P+ 145,I       02543  071565 su ADDM Q+ 165
02364  062563 es CMPM P- 163,I        02454  062040 d  CMPM P+ 040,I       02544  070160 pp ADDM P+ 160
02365  072077 t? ADDM P+ 077,I        02455  020531 !Y ----                02545  067563 os CMPM Q+ 163,I,X
02366  020015  . MOVE PB-DB,1         02456  054531 YY TBX  P- 131         02546  062544 ed CMPM P- 144,I
02367  041550 Ch LOAD Q+ 150          02457  054415 Y. TBX  P- 015         02547  020164  t SCU  4
02370  060556 an CMPM P- 156          02460  051520 SP STOR Q+ 120         02550  067440 o  CMPM Q+ 040,I,X
02371  067145 ne CMPM DB 145,I,X      02461  047514 OL LOAD Q+ 114,I,X     02551  061145 be CMPM DB 145
02372  066040 l  CMPM P+ 040,I,X      02462  046061 L1 LOAD P+ 061,I,X     02552  020157  o MDS  7
02373  054130 XX TBX  P+ 130          02463  020162  r SCU  2             02553  067040 n  CMPM DB 040,I,X
02374  020144  d MVLB 4               02464  062564 et CMPM P- 164,I       02554  030056 0. SED  14
02375  064544 id CMPM P- 144,X        02465  072562 ur ADDM P- 162,I       02555  006476 .> NOT ,ADBX
02376  020156  n MDS  6               02466  067040 n  CMPM DB 040,I,X     02556  006511 .I OR  ,DADD
02377  067564 ot CMPM Q+ 164,I,X      02467  064563 is CMPM P- 163,X       02557  067160 np CMPM DB 160,I,X
02400  020162  r SCU  2               02470  020041  ! MVB  PB-DB,1       02560  072564 ut ADDM P- 164,I
02401  062563 es CMPM P- 163,I        02471  054130 XX TBX  P+ 130         02561  020151  i MDS  1
02402  070157 po ADDM P+ 157          02472  054130 XX TBX  P+ 130         02562  067143 nc CMPM DB 143,I,X
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02563  067562 or CMPM Q+ 162,I,X      02653  030015 0. LST  13             02743  054130 XX TBX  P+ 130
02564  071145 re ADDM DB 145          02654  041162 Br LOAD DB 162         02744  020104  D IOOP 32 BIT OP
02565  061564 ct CMPM Q+ 164          02655  062541 ea CMPM P- 141,I       02745  042526 EV LOAD P- 126,I
02566  026040 ,  CMPN 32             02656  065440 k  CMPM Q+ 040,X       02746  044503 IC LOAD P- 103,X
02567  071145 re ADDM DB 145          02657  062145 de CMPM P+ 145,I       02747  042440 E  LOAD P- 040,I
02570  026545 -e EXF  (6:5)          02660  072145 te ADDM P+ 145,I       02750  054440 Y  TBX  P- 040
02571  067164 nt CMPM DB 164,I,X      02661  061564 ct CMPM Q+ 164         02751  006527 .W OR  ,DTST
02572  062562 er CMPM P- 162,I        02662  062544 ed CMPM P- 144,I       02752  071151 ri ADDM DB 151
02573  026040 ,  CMPN 32             02663  020151  i MDS  1             02753  072145 te ADDM P+ 145,I
02574  067562 or CMPM Q+ 162,I,X      02664  067040 n  CMPM DB 040,I,X     02754  020146  f MVLB 6
02575  020164  t SCU  4              02665  051564 St STOR Q+ 164         02755  060551 ai CMPM P- 151
02576  074560 yp ADDM P- 160,X        02666  062560 ep CMPM P- 160,I       02756  066145 le CMPM P+ 145,I,X
02577  062440 e  CMPM P- 040,I        02667  020130  X MTDS 0             02757  062040 d  CMPM P+ 040,I
02600  023514 'L MPYI 76              02670  054015 X. TBX  P+ 015         02760  050075 P= TBA  P+ 075
02601  041447 C' LOAD Q+ 047          02671  051145 Re STOR DB 145         02761  020530 !X ----
02602  020146  f MVLB 6              02672  060544 ad CMPM P- 144         02762  054130 XX TBX  P+ 130
02603  067562 or CMPM Q+ 162,I,X      02673  020146  f MVLB 6             02763  054015 X. TBX  P+ 015
02604  020154  l MDS  4              02674  060551 ai CMPM P- 151         02764  042562 Er LOAD P- 162,I
02605  064563 is CMPM P- 163,X        02675  066145 le CMPM P+ 145,I,X     02765  071157 ro ADDM DB 157
02606  072040 t  ADDM P+ 040,I        02676  062040 d  CMPM P+ 040,I       02766  071040 r  ADDM DB 040
02607  067546 of CMPM Q+ 146,I,X      02677  050075 P= TBA  P+ 075         02767  064556 in CMPM P- 156,X
02610  020166  v SCU  6              02700  020530 !X ----                 02770  020163  s SCU  3
02611  060554 al CMPM P- 154          02701  054130 XX TBX  P+ 130         02771  072145 te ADDM P+ 145,I
02612  064544 id CMPM P- 144,X        02702  054015 X. TBX  P+ 015         02772  070040 p  ADDM P+ 040
02613  020143  c MVLB 3              02703  052556 Un MTBA P- 156         02773  030060 00 XCHD
02614  067555 om CMPM Q+ 155,I,X      02704  062570 ex CMPM P- 170,I       02774  020015  . MOVE PB-DB,1
02615  066541 ma CMPM P- 141,I,X      02705  070145 pe ADDM P+ 145         02775  026040 ,  CMPN 32
02616  067144 nd CMPM DB 144,I,X      02706  061564 ct CMPM Q+ 164         02776  072145 te ADDM P+ 145,I
02617  071415 s. ADDM Q+ 015          02707  062544 ed CMPM P- 144,I       02777  071564 st ADDM Q+ 164
02620  040554 Al LOAD P- 154          02710  020104  D IOOP 32 BIT OP      03000  064556 in CMPM P- 156,X
02621  066040 l  CMPM P+ 040,I,X      02711  042526 EV LOAD P- 126,I       03001  063440 g  CMPM Q+ 040,I
02622  067564 ot CMPM Q+ 164,I,X      02712  044503 IC LOAD P- 103,X       03002  042105 DE LOAD P+ 105,I
02623  064145 he CMPM P+ 145,X        02713  042440 E  LOAD P- 040,I       03003  053111 VI STOR DB 111,I
02624  071040 r  ADDM DB 040          02714  042040 D  LOAD P+ 040,I       03004  041505 CE LOAD Q+ 105
02625  061550 ch CMPM Q+ 150          02715  044556 In LOAD P- 156,X       03005  021440 #  LDXI 32
02626  060556 an CMPM P- 156          02716  072145 te ADDM P+ 145,I       03006  062015 d. CMPM P+ 015,I
02627  067145 ne CMPM DB 145,I,X      02717  071162 rr ADDM DB 162         03007  051145 Re STOR DB 145
02630  066163 ls CMPM P+ 163,I,X      02720  072560 up ADDM P- 160,I       03010  071560 sp ADDM Q+ 160
02631  020145  e MVLB 5              02721  072015 t. ADDM P+ 015,I       03011  067556 on CMPM Q+ 156,I,X
02632  074143 xc ADDM P+ 143,X        02722  052556 Un MTBA P- 156         03012  062040 d  CMPM P+ 040,I
02633  062560 ep CMPM P- 160,I        02723  062570 ex CMPM P- 170,I       03013  043517 GO LOAD Q+ 117,I
02634  072040 t  ADDM P+ 040,I        02724  070145 pe ADDM P+ 145         03014  006511 .I OR  ,DADD
02635  041557 Co LOAD Q+ 157          02725  061564 ct CMPM Q+ 164         03015  067164 nt CMPM DB 164,I,X
02636  067163 ns CMPM DB 163,I,X      02726  062544 ed CMPM P- 144,I       03016  062562 er CMPM P- 162,I
02637  067554 ol CMPM Q+ 154,I,X      02727  020111  I MABS 1             03017  071165 ru ADDM DB 165
02640  062440 e  CMPM P- 040,I        02730  067164 nt CMPM DB 164,I,X     03020  070164 pt ADDM P+ 164
02641  066565 mu CMPM P- 165,I,X      02731  062562 er CMPM P- 162,I       03021  062544 ed CMPM P- 144,I
02642  071564 st ADDM Q+ 164          02732  071165 ru ADDM DB 165         03022  020142  b MVLB 2
02643  020142  b MVLB 2              02733  070164 pt ADDM P+ 164         03023  062546 ef CMPM P- 146,I
02644  062440 e  CMPM P- 040,I        02734  020146  f MVLB 6             03024  067562 or CMPM Q+ 162,I,X
02645  071567 sw ADDM Q+ 167          02735  071157 ro ADDM DB 157         03025  062440 e  CMPM P- 040,I
02646  064564 it CMPM P- 164,X        02736  066440 m  CMPM P- 040,I,X     03026  046501 MA LOAD P- 101,I,X
02647  061550 ch CMPM Q+ 150          02737  041510 CH LOAD Q+ 110         03027  051513 SK STOR Q+ 113
02650  062544 ed CMPM P- 144,I        02740  040516 AN LOAD P- 116         03030  020145  e MVLB 5
02651  020164  t SCU  4              02741  047105 NE LOAD DB 105,I,X     03031  067141 na CMPM DB 141,I,X
02652  067440 o  CMPM Q+ 040,I,X      02742  046040 L  LOAD P+ 040,I,X     03032  061154 bl CMPM DB 154
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03033  062544 ed CMPM P- 144,I        03123  067544 od CMPM Q+ 144,I,X      03213  066040 l  CMPM P+ 040,I,X
03034  006525 .U OR  ,TEST            03124  062555 em CMPM P- 155,I        03214  073551 wi ADDM Q+ 151,I
03035  040522 AR LOAD P- 122          03125  020163  s SCU  3               03215  072150 th ADDM P+ 150,I
03036  052040 T  MTBA P+ 040          03126  072141 ta ADDM P+ 141,I        03216  020104  D IOOP 32 BIT OP
03037  062151 di CMPM P+ 151,I        03127  072165 tu ADDM P+ 165,I        03217  064563 is CMPM P- 163,X
03040  062040 d  CMPM P+ 040,I        03130  071440 s  ADDM Q+ 040         03220  061456 c. CMPM Q+ 056
03041  067157 no CMPM DB 157,I,X      03131  061550 ch CMPM Q+ 150          03221  020040    MVB  PB-DB,0
03042  072040 t  ADDM P+ 040,I        03132  060556 an CMPM P- 156          03222  020007  . MOVE PB-DB,3
03043  046501 MA LOAD P- 101,I,X      03133  063545 ge CMPM Q+ 145,I        03223  006777 .. AND ,ADXB
03044  051524 ST STOR Q+ 124          03134  006522 .R OR  ,MPY             03224  025052 ** LDNI 42
03045  042522 ER LOAD P- 122,I        03135  062541 ea CMPM P- 141,I        03225  020115  M MABS 5
03046  020122  R SCW  2               03136  062040 d  CMPM P+ 040,I        03226  042523 ES LOAD P- 123,I
03047  042523 ES LOAD P- 123,I        03137  020156  n MDS  6               03227  051501 SA STOR Q+ 101
03050  042524 ET LOAD P- 124,I        03140  067156 nn CMPM DB 156,I,X      03230  043505 GE LOAD Q+ 105,I
03051  006525 .U OR  ,TEST            03141  020142  b MVLB 2               03231  020116  N MABS 6
03052  067145 ne CMPM DB 145,I,X      03142  074564 yt ADDM P- 164,X        03232  052515 UM MTBA P- 115
03053  074160 xp ADDM P+ 160,X        03143  062563 es CMPM P- 163,I        03233  041105 BE LOAD DB 105
03054  062543 ec CMPM P- 143,I        03144  026040 ,  CMPN 32              03234  051040 R  STOR DB 040
03055  072145 te ADDM P+ 145,I        03145  062570 ex CMPM P- 170,I        03235  052117 TO MTBA P+ 117
03056  062040 d  CMPM P+ 040,I        03146  070145 pe ADDM P+ 145         03236  047440 O  LOAD Q+ 040,I,X
03057  042123 DS LOAD P+ 123,I        03147  061564 ct CMPM Q+ 164          03237  041111 BI LOAD DB 111
03060  045040 J  LOAD DB 040,X        03150  062544 ed CMPM P- 144,I        03240  043440 G  LOAD Q+ 040,I
03061  020542 !b ----                 03151  020156  n MDS  6               03241  025052 ** LDNI 42
03062  061054 b, CMPM DB 054          03152  067156 nn CMPM DB 156,I,X      03242  006777 .. AND ,ADXB
03063  020111  I MABS 1               03153  006503 .C OR  ,ZROX            03243  000000 .. NOP ,NOP
03064  047124 NT LOAD DB 124,I,X      03154  060556 an CMPM P- 156          03244  000000 .. NOP ,NOP
03065  042522 ER LOAD P- 122,I        03155  067157 no CMPM DB 157,I,X      03245  035002 :. ADDS 2
03066  051125 RU STOR DB 125          03156  072040 t  ADDM P+ 040,I        03246  171401 .. LRA  Q+ 001
03067  050124 PT TBA  P+ 124          03157  072145 te ADDM P+ 145,I        03247  170404 .. LRA  P- 004
03070  020146  f MVLB 6               03160  071564 st ADDM Q+ 164          03250  021002 ". LDI  2
03071  071157 ro ADDM DB 157          03161  020103  C MVBL 3               03251  020003  . MOVE PB-DB,3
03072  066440 m  CMPM P- 040,I,X      03162  067556 on CMPM Q+ 156,I,X      03252  131402 .. LDX  Q+ 002
03073  061543 cc CMPM Q+ 143          03163  071557 so ADDM Q+ 157         03253  172054 ., LRA  P+ 054,I
03074  026040 ,  CMPN 32              03164  066145 le CMPM P+ 145,I,X      03254  010201 .. LSL  1 BIT
03075  062040 d  CMPM P+ 040,I        03165  020103  C MVBL 3               03255  003700 .. ADXA,NOP
03076  073550 wh ADDM Q+ 150,I        03166  064141 ha CMPM P+ 141,X        03256  040052 @* LOAD P+ 052
03077  064554 il CMPM P- 154,X        03167  067156 nn CMPM DB 156,I,X      03257  004503 .C DUP ,ZROX
03100  062440 e  CMPM P- 040,I        03170  062554 el CMPM P- 154,I        03260  010310 .. LSR  8 BITS
03101  072145 te ADDM P+ 145,I        03171  027015 .. DPF  (0:13)         03261  012210 .. DLSL 8 BITS
03102  071564 st ADDM Q+ 164          03172  053501 WA STOR Q+ 101,I        03262  024410 ). PSHR %010
03103  064556 in CMPM P- 156,X        03173  051116 RN STOR DB 116          03263  013305 .. TRBC BIT 5
03104  063440 g  CMPM Q+ 040,I        03174  044516 IN LOAD P- 116,X        03264  000600 .. ZERO,NOP
03105  042105 DE LOAD P+ 105,I        03175  043472 G: LOAD Q+ 072,I        03265  171700 .. LRA  S- 000
03106  053111 VI STOR DB 111,I        03176  020101  A MVBL 1               03266  010201 .. LSL  1 BIT
03107  041505 CE LOAD Q+ 105          03177  072164 tt ADDM P+ 164,I        03267  177705 .. LRA  S- 005,I,X
03110  020144  d MVLB 4               03200  062555 em CMPM P- 155,I        03270  021001 ". LDI  1
03111  006516 .N OR  ,DXCH            03201  070164 pt ADDM P+ 164         03271  020043  # MVB  PB-DB,3
03112  067440 o  CMPM Q+ 040,I,X      03202  064556 in CMPM P- 156,X        03272  004504 .D DUP ,INCX
03113  064556 in CMPM P- 156,X        03203  063440 g  CMPM Q+ 040,I        03273  061704 c. CMPM S- 004
03114  072145 te ADDM P+ 145,I        03204  072157 to ADDM P+ 157,I        03274  141205 .. BE   P+ 005
03115  071162 rr ADDM DB 162          03205  020164  t SCU  4               03275  061702 c. CMPM S- 002
03116  072560 up ADDM P- 160,I        03206  062563 es CMPM P- 163,I        03276  141552 .j BNE  P- 012
03117  072040 t  ADDM P+ 040,I        03207  072040 t  ADDM P+ 040,I        03277  013405 .. TSBC BIT 5
03120  063162 fr CMPM DB 162,I        03210  041550 Ch LOAD Q+ 150          03300  000600 .. ZERO,NOP
03121  067555 om CMPM Q+ 155,I,X      03211  060556 an CMPM P- 156          03301  004005 .. DEL ,DECX
03122  020155  m MDS  5               03212  067145 ne CMPM DB 145,I,X      03302  027410 /. SETR %010
```

```
03303  004002 .. DEL ,DDEL          03317  172010 .. LRA  P+ 010,I        03333  140005 .. BR   P+ 005
03304  004400 .. LDXA,NOP           03320  010201 .. LSL  1 BIT           03334  041402 C. LOAD Q+ 002
03305  051401 S. STOR Q+ 001        03321  003700 .. ADXA,NOP             03335  071401 s. ADDM Q+ 001
03306  011533 .[ BNCY P+33          03322  041401 C. LOAD Q+ 001          03336  022401 %. ADDI 1
03307  041604 C. LOAD Q- 004        03323  020043  # MVB  PB-DB,3         03337  051402 S. STOR Q+ 002
03310  023001 &. SUBI 1             03324  041401 C. LOAD Q+ 001          03340  140466 .6 BR   P- 066
03311  004500 .@ DUP ,NOP           03325  051605 S. STOR Q- 005          03341  120402 .. INCM Q+ 002
03312  051604 S. STOR Q- 004        03326  031401 3. EXIT 1               03342  021000 ". LDI  0
03313  022000 $. CMPI 0             03327  174451 .) LRA  P- 051,X        03343  051604 S. STOR Q- 004
03314  141620 .. BGE  P+ 020        03330  006777 .. AND ,ADXB            03344  140472 .: BR   P- 072
03315  173104 .D LRA  DB 104,I      03331  000010 .. NOP ,DCMP            03345  031401 3. EXIT 1
03316  131402 .. LDX  Q+ 002        03332  000002 .. NOP ,DDEL


 7010.000 000000  0 <<-------------------------------------------------------->>
 7015.000 000000  0 PROCEDURE INT'RECV;
 7020.000 000000  0 INTERRUPT;
 7025.000 000000  0  BEGIN
 7030.000 000000  1 DEFINE
 7035.000 000000  1 SAVE'DEV=
 7040.000 000000  1 ASSEMBLE(
 7045.000 000000  1  LOAD PARMQPLUS3;
 7050.000 000000  1  STOR DB+2)#;
 7055.000 000000  1
 7060.000 000000  1   SAVE'DEV; <<Put channel, device # into CPVA 3rd word>>
 7065.000 000002  1   DISABLE'RTN'INTRPS;
 7070.000 000012  1   INT'EXIT;
 7075.000 000013  1  END; <<INT'RECV>>

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3       LOGICAL     SIMPLE        Q+ 3
SAVE'DEV         DEFINE



00000  041403 C. LOAD Q+ 003          00004  006043 .# LADD,STAX            00010  027021 .. DPF  (1:1)
00001  051002 R. STOR DB 002          00005  000540 .' DECX,DEL           00011  020321  . PSTA
00002  024500 )@ PSHR %100            00006  020320  . PLDA               00012  020360  . IXIT
00003  024402 ). PSHR %002            00007  021000 ". LDI  0             00013  020360  . IXIT


 7080.000 000000  0 <<-------------------------------------------------------->>
 7085.000 000000  0 PROCEDURE INTTRAP0;
 7090.000 000000  0  INTERRUPT;
 7095.000 000000  0 BEGIN   TRAP(0);
 7100.000 000005  1 DISABLE'RTN'INTRPS;
 7105.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3
```

```
00000  025402 +. LDXN 2              00005  024500 )@ PSHR %100          00012  021000 ". LDI  0
00001  020320  . PLDA                00006  024402 ). PSHR %002          00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1              00007  006043 .# LADD,STAX          00014  020321  . PSTA
00003  027001 .. DPF  (0:1)          00010  000540 .' DECX,DEL          00015  020360  . IXIT
00004  020321  . PSTA                00011  020320  . PLDA              00016  020360  . IXIT

 7110.000 000000  0 <<-------------------------------------------------------->>
 7115.000 000000  0 PROCEDURE INTTRAP1;
 7120.000 000000  0  INTERRUPT;
 7125.000 000000  0 BEGIN   TRAP(1);      DISABLE'RTN'INTRPS;
 7130.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3
```


```
00000  025402 +. LDXN 2              00005  024500 )@ PSHR %100          00012  021000 ". LDI  0
00001  020320  . PLDA                00006  024402 ). PSHR %002          00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1              00007  006043 .# LADD,STAX          00014  020321  . PSTA
00003  027021 .. DPF  (1:1)          00010  000540 .' DECX,DEL          00015  020360  . IXIT
00004  020321  . PSTA                00011  020320  . PLDA              00016  020360  . IXIT
```


```
 7135.000 000000  0 <<-------------------------------------------------------->>
 7140.000 000000  0 PROCEDURE INTTRAP2;
 7145.000 000000  0  INTERRUPT;
 7150.000 000000  0 BEGIN   TRAP(2); DISABLE'RTN'INTRPS;
 7155.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3

00000  025402 +. LDXN 2              00005  024500 )@ PSHR %100          00012  021000 ". LDI  0
00001  020320  . PLDA                00006  024402 ). PSHR %002          00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1              00007  006043 .# LADD,STAX          00014  020321  . PSTA
00003  027041 .! DPF  (2:1)          00010  000540 .' DECX,DEL          00015  020360  . IXIT
00004  020321  . PSTA                00011  020320  . PLDA              00016  020360  . IXIT

 7160.000 000000  0 <<-------------------------------------------------------->>
 7165.000 000000  0 PROCEDURE INTTRAP3;
 7170.000 000000  0  INTERRUPT;
 7175.000 000000  0 BEGIN    TRAP(3); DISABLE'RTN'INTRPS;
```

```
 7180.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3


00000  025402 +. LDXN 2               00005  024500 )@ PSHR %100            00012  021000 ". LDI  0
00001  020320  . PLDA                 00006  024402 ). PSHR %002            00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1               00007  006043 .# LADD,STAX            00014  020321  . PSTA
00003  027061 .1 DPF  (3:1)           00010  000540 .' DECX,DEL             00015  020360  . IXIT
00004  020321  . PSTA                 00011  020320  . PLDA                00016  020360  . IXIT


 7185.000 000000  0 <<-------------------------------------------------------->>
 7190.000 000000  0 PROCEDURE INTTRAP4;
 7195.000 000000  0  INTERRUPT;
 7200.000 000000  0 BEGIN    TRAP(4);    DISABLE'RTN'INTRPS;
 7205.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3


00000  025402 +. LDXN 2               00005  024500 )@ PSHR %100            00012  021000 ". LDI  0
00001  020320  . PLDA                 00006  024402 ). PSHR %002            00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1               00007  006043 .# LADD,STAX            00014  020321  . PSTA
00003  027101 .A DPF  (4:1)           00010  000540 .' DECX,DEL             00015  020360  . IXIT
00004  020321  . PSTA                 00011  020320  . PLDA                00016  020360  . IXIT


 7210.000 000000  0 <<-------------------------------------------------------->>
 7215.000 000000  0 PROCEDURE INTTRAP5;
 7220.000 000000  0  INTERRUPT;
 7225.000 000000  0 BEGIN    TRAP(5); DISABLE'RTN'INTRPS;
 7230.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3


00000  025402 +. LDXN 2               00004  020321  . PSTA                 00010  000540 .' DECX,DEL
00001  020320  . PLDA                 00005  024500 )@ PSHR %100            00011  020320  . PLDA
00002  021001 ". LDI  1               00006  024402 ). PSHR %002            00012  021000 ". LDI  0
00003  027121 .Q DPF  (5:1)           00007  006043 .# LADD,STAX            00013  027021 .. DPF  (1:1)
```

```
00014  020321  . PSTA                  00015  020360  . IXIT                  00016  020360  . IXIT


 7235.000 000000  0 <<-------------------------------------------------------->>
 7240.000 000000  0 PROCEDURE INTTRAP6;
 7245.000 000000  0  INTERRUPT;
 7250.000 000000  0 BEGIN     TRAP(6); DISABLE'RTN'INTRPS;
 7255.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3



00000  025402 +. LDXN 2                 00005  024500 )@ PSHR %100             00012  021000 ". LDI  0
00001  020320  . PLDA                  00006  024402 ). PSHR %002             00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1                00007  006043 .# LADD,STAX            00014  020321  . PSTA
00003  027141 .a DPF  (6:1)            00010  000540 .' DECX,DEL             00015  020360  . IXIT
00004  020321  . PSTA                  00011  020320  . PLDA                  00016  020360  . IXIT


 7260.000 000000  0 <<-------------------------------------------------------->>
 7265.000 000000  0 PROCEDURE INTTRAP7;
 7270.000 000000  0  INTERRUPT;
 7275.000 000000  0 BEGIN     TRAP(7); DISABLE'RTN'INTRPS;
 7280.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3



00000  025402 +. LDXN 2                 00005  024500 )@ PSHR %100             00012  021000 ". LDI  0
00001  020320  . PLDA                  00006  024402 ). PSHR %002             00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1                00007  006043 .# LADD,STAX            00014  020321  . PSTA
00003  027161 .q DPF  (7:1)            00010  000540 .' DECX,DEL             00015  020360  . IXIT
00004  020321  . PSTA                  00011  020320  . PLDA                  00016  020360  . IXIT


 7285.000 000000  0 <<-------------------------------------------------------->>
 7290.000 000000  0 PROCEDURE INTHNDLR0;
 7295.000 000000  0  INTERRUPT;
 7300.000 000000  0 BEGIN     STUFF(0); DISABLE'RTN'INTRPS;
 7305.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3
```

```
00000  025401 +. LDXN 1              00005  024500 )@ PSHR %100          00012  021000 ". LDI  0
00001  020320  . PLDA                00006  024402 ). PSHR %002          00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1              00007  006043 .# LADD,STAX          00014  020321  . PSTA
00003  027001 .. DPF  (0:1)          00010  000540 .' DECX,DEL          00015  020360  . IXIT
00004  020321  . PSTA                00011  020320  . PLDA              00016  020360  . IXIT

 7310.000 000000  0 <<-------------------------------------------------------->>
 7315.000 000000  0 PROCEDURE INTHNDLR1;
 7320.000 000000  0  INTERRUPT;
 7325.000 000000  0 BEGIN    STUFF(1); DISABLE'RTN'INTRPS;
 7330.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3
```


```
00000  025401 +. LDXN 1              00005  024500 )@ PSHR %100          00012  021000 ". LDI  0
00001  020320  . PLDA                00006  024402 ). PSHR %002          00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1              00007  006043 .# LADD,STAX          00014  020321  . PSTA
00003  027021 .. DPF  (1:1)          00010  000540 .' DECX,DEL          00015  020360  . IXIT
00004  020321  . PSTA                00011  020320  . PLDA              00016  020360  . IXIT
```


```
 7335.000 000000  0 <<-------------------------------------------------------->>
 7340.000 000000  0 PROCEDURE INTHNDLR2;
 7345.000 000000  0  INTERRUPT;
 7350.000 000000  0 BEGIN    STUFF(2);
 7355.000 000005  1 DISABLE'RTN'INTRPS;
 7360.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3
```


```
00000  025401 +. LDXN 1              00005  024500 )@ PSHR %100          00012  021000 ". LDI  0
00001  020320  . PLDA                00006  024402 ). PSHR %002          00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1              00007  006043 .# LADD,STAX          00014  020321  . PSTA
```


```
00003  027041 .! DPF  (2:1)          00010  000540 .' DECX,DEL          00015  020360  . IXIT
00004  020321  . PSTA                00011  020320  . PLDA              00016  020360  . IXIT

 7365.000 000000  0 <<-------------------------------------------------------->>
 7370.000 000000  0 PROCEDURE INTHNDLR3;
 7375.000 000000  0  INTERRUPT;
```

```
 7380.000 000000  0 BEGIN    STUFF(3);
 7385.000 000005  1 DISABLE'RTN'INTRPS;
 7390.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3



00000  025401 +. LDXN 1                00005  024500 )@ PSHR %100            00012  021000 ". LDI  0
00001  020320  . PLDA                 00006  024402 ). PSHR %002            00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1                00007  006043 .# LADD,STAX           00014  020321  . PSTA
00003  027061 .1 DPF  (3:1)            00010  000540 .' DECX,DEL            00015  020360  . IXIT
00004  020321  . PSTA                 00011  020320  . PLDA                 00016  020360  . IXIT


 7395.000 000000  0 <<-------------------------------------------------------->>
 7400.000 000000  0 PROCEDURE INTHNDLR4;
 7405.000 000000  0  INTERRUPT;
 7410.000 000000  0 BEGIN    STUFF(4);
 7415.000 000005  1 DISABLE'RTN'INTRPS;
 7420.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3



00000  025401 +. LDXN 1                00005  024500 )@ PSHR %100            00012  021000 ". LDI  0
00001  020320  . PLDA                 00006  024402 ). PSHR %002            00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1                00007  006043 .# LADD,STAX           00014  020321  . PSTA
00003  027101 .A DPF  (4:1)            00010  000540 .' DECX,DEL            00015  020360  . IXIT
00004  020321  . PSTA                 00011  020320  . PLDA                 00016  020360  . IXIT


 7425.000 000000  0 <<-------------------------------------------------------->>
 7430.000 000000  0 PROCEDURE INTHNDLR5;
 7435.000 000000  0  INTERRUPT;
 7440.000 000000  0 BEGIN    STUFF(5);
 7445.000 000005  1 DISABLE'RTN'INTRPS;
 7450.000 000015  1 INT'EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3
```

```
00000  025401 +. LDXN 1              00005  024500 )@ PSHR %100          00012  021000 ". LDI  0
00001  020320  . PLDA                00006  024402 ). PSHR %002          00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1              00007  006043 .# LADD,STAX          00014  020321  . PSTA
00003  027121 .Q DPF  (5:1)          00010  000540 .‘ DECX,DEL          00015  020360  . IXIT
00004  020321  . PSTA                00011  020320  . PLDA              00016  020360  . IXIT


 7455.000 000000  0 <<-------------------------------------------------------->>
 7460.000 000000  0 PROCEDURE INTHNDLR6;
 7465.000 000000  0  INTERRUPT;
 7470.000 000000  0 BEGIN    STUFF(6);
 7475.000 000005  1 DISABLE’RTN’INTRPS;
 7480.000 000015  1 INT’EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3


00000  025401 +. LDXN 1              00005  024500 )@ PSHR %100          00012  021000 ". LDI  0
00001  020320  . PLDA                00006  024402 ). PSHR %002          00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1              00007  006043 .# LADD,STAX          00014  020321  . PSTA
00003  027141 .a DPF  (6:1)          00010  000540 .‘ DECX,DEL          00015  020360  . IXIT
00004  020321  . PSTA                00011  020320  . PLDA              00016  020360  . IXIT


 7485.000 000000  0 <<-------------------------------------------------------->>
 7490.000 000000  0 PROCEDURE INTHNDLR7;
 7495.000 000000  0  INTERRUPT;
 7500.000 000000  0 BEGIN    STUFF(7);
 7505.000 000005  1 DISABLE’RTN’INTRPS;
 7510.000 000015  1 INT’EXIT;   END;

IDENTIFIER       TYPE        CLASS         ADDRESS

PARMQPLUS1*      LOGICAL     SIMPLE        Q+ 1
PARMQPLUS2*      LOGICAL     SIMPLE        Q+ 2
PARMQPLUS3*      LOGICAL     SIMPLE        Q+ 3


00000  025401 +. LDXN 1              00005  024500 )@ PSHR %100          00012  021000 ". LDI  0
00001  020320  . PLDA                00006  024402 ). PSHR %002          00013  027021 .. DPF  (1:1)
00002  021001 ". LDI  1              00007  006043 .# LADD,STAX          00014  020321  . PSTA
00003  027161 .q DPF  (7:1)          00010  000540 .‘ DECX,DEL          00015  020360  . IXIT
00004  020321  . PSTA                00011  020320  . PLDA              00016  020360  . IXIT


 7515.000 000000  0 <<-------------------------------------------------------->>
 7520.000 000000  0 PROCEDURE LIST’PROG’STAT; <<lists diagnostic status>>
 7525.000 000000  0  BEGIN
 7530.000 000000  1 INTEGER
```

```
 7535.000 000000  1 COUNT:=0,
 7540.000 000000  1 INDEX:=0,
 7545.000 000000  1 SECTNR:=0;
 7550.000 000000  1
 7555.000 000010  1   MOVE "CHAN =" TO MSG'OUT;
 7560.000 000015  1   NUM2ASC(7,2,10,CHNL.(9:4));
 7565.000 000024  1   CRTOUT(MSG'OUT,-9);
 7570.000 000027  1
 7575.000 000027  1   MOVE "DEVN =" TO MSG'OUT;
 7580.000 000034  1   NUM2ASC(8,1,10,DEV);
 7585.000 000041  1   CRTOUT(MSG'OUT,-9);
 7590.000 000044  1
 7595.000 000044  1   MOVE "EEPR : false" TO MSG'OUT;
 7600.000 000051  1   IF EPRINTOK THEN MOVE " true " to MSG'OUT(6);
 7605.000 000061  1   CRTOUT(MSG'OUT,-12);
 7610.000 000064  1
 7615.000 000064  1   MOVE "EEPS : false" TO MSG'OUT;
 7620.000 000071  1   IF EPAUSEOK THEN MOVE " true " to MSG'OUT(6);
 7625.000 000101  1   CRTOUT(MSG'OUT,-12);
 7630.000 000112  1
 7635.000 000112  1   MOVE "ENPR : false" TO MSG'OUT;
 7640.000 000117  1   IF PRINTOK THEN MOVE " true " to MSG'OUT(6);
 7645.000 000127  1   CRTOUT(MSG'OUT,-12);
 7650.000 000132  1
 7655.000 000132  1   MOVE "EXTND: false" TO MSG'OUT;
 7660.000 000137  1   IF EXTND THEN MOVE " true " to MSG'OUT(6);
 7665.000 000147  1   CRTOUT(MSG'OUT,-12);
 7670.000 000152  1
 7675.000 000152  1   MOVE "LOOP : false" TO MSG'OUT;
 7680.000 000162  1   IF LOOP THEN MOVE " true " to MSG'OUT(6);
 7685.000 000172  1   CRTOUT(MSG'OUT,-12);
 7690.000 000175  1
 7695.000 000175  1   MOVE "PRINT: false" TO MSG'OUT;
 7700.000 000202  1   IF PRINT'ERRORS THEN MOVE " true " to MSG'OUT(6);
 7705.000 000212  1   CRTOUT(MSG'OUT,-12);
 7710.000 000215  1
 7715.000 000215  1   MOVE "Sections Selected:" TO MSG'OUT;
 7720.000 000225  1   CRTOUT(MSG'OUT,-18);
 7725.000 000230  1   MOVE CLEARBUF TO MSG'OUT FOR 80 ITEMS;
 7730.000 000234  1   WHILE (SECTNR:=SECTNR+1)<=31
 7735.000 000240  1    DO
 7740.000 000240  1     IF SECTION(SECTNR)
 7745.000 000251  1      THEN
 7750.000 000251  1       BEGIN
 7755.000 000251  2        INDEX:=INDEX+COUNT+1;
 7760.000 000255  2        NUM2ASC(INDEX,COUNT:=(IF SECTNR<10 THEN 1 ELSE 2),10,SECTNR);
 7765.000 000271  2        IF INDEX>1 THEN MSG'OUT(INDEX-1):=",";
 7770.000 000301  2       END;
 7775.000 000302  1   CRTOUT(MSG'OUT,-(INDEX+COUNT));
 7780.000 000307  1
 7785.000 000307  1   NUM'CHARS:=GET'MESSAGE(9);
 7790.000 000313  1   NUM2ASC(21,4,10,ENDPASSCOUNTER);
 7795.000 000320  1   CRTOUT(MSG'OUT,-NUM'CHARS);
 7800.000 000324  1
 7805.000 000324  1  END; <<LIST'PROG'STAT>>
```

IDENTIFIER	TYPE	CLASS	ADDRESS
COUNT	INTEGER	SIMPLE	Q+ 1
INDEX	INTEGER	SIMPLE	Q+ 2
SECTNR	INTEGER	SIMPLE	Q+ 3

```
00000  000000 .. NOP ,NOP          00060  020043  # MVB  PB-DB,3        00140  013707 .. BRE  P+7
00001  000000 .. NOP ,NOP          00061  173104 .D LRA  DB 104,I       00141  021406 #. LDXI 6
00002  000000 .. NOP ,NOP          00062  025014 *. LDNI 12             00142  177104 .D LRA  DB 104,I,X
00003  035003 :. ADDS 3            00063  000020 .. PCAL CRTOUT         00143  170176 .~ LRA  P+ 176
00004  171401 .. LRA  Q+ 001       00064  173104 .D LRA  DB 104,I       00144  010201 .. LSL  1 BIT
00005  170405 .. LRA  P- 005       00065  170257 .. LRA  P+ 257         00145  021006 ". LDI  6
00006  021003 ". LDI  3            00066  010201 .. LSL  1 BIT         00146  020043  # MVB  PB-DB,3
00007  020003  . MOVE PB-DB,3      00067  021014 ". LDI  12            00147  173104 .D LRA  DB 104,I
00010  173104 .D LRA  DB 104,I     00070  020043  # MVB  PB-DB,3       00150  025014 *. LDNI 12
00011  170314 .. LRA  P+ 314       00071  041042 B" LOAD DB 042        00151  000020 .. PCAL CRTOUT
00012  010201 .. LSL  1 BIT        00072  013707 .. BRE  P+7           00152  140003 .. BR   P+ 003
00013  021006 ". LDI  6            00073  021406 #. LDXI 6             00153  000177 .. DELB,ADXB
00014  020043  # MVB  PB-DB,3      00074  177104 .D LRA  DB 104,I,X     00154  000204 .. DDEL,INCX
00015  021007 ". LDI  7            00075  170244 .. LRA  P+ 244         00155  173104 .D LRA  DB 104,I
00016  021002 ". LDI  2            00076  010201 .. LSL  1 BIT         00156  170210 .. LRA  P+ 210
00017  021012 ". LDI  10           00077  021006 ". LDI  6             00157  010201 .. LSL  1 BIT
00020  041010 B. LOAD DB 010       00100  020043  # MVB  PB-DB,3       00160  021014 ". LDI  12
00021  010303 .. LSR  3 BITS       00101  173104 .D LRA  DB 104,I       00161  020043  # MVB  PB-DB,3
00022  037417 ?. ANDI 15           00102  140006 .. BR   P+ 006         00162  041053 B+ LOAD DB 053
00023  000000 .. PCAL NUM2ASC      00103  000222 .. DDEL,MPY           00163  013707 .. BRE  P+7
00024  173104 .D LRA  DB 104,I     00104  000224 .. DDEL,NEG           00164  021406 #. LDXI 6
00025  025011 *. LDNI 9            00105  000226 .. DDEL,STBX          00165  177104 .D LRA  DB 104,I,X
00026  000000 .. PCAL CRTOUT       00106  000233 .. DDEL,INCA          00166  170153 .k LRA  P+ 153
00027  173104 .D LRA  DB 104,I     00107  000235 .. DDEL,XAX           00167  010201 .. LSL  1 BIT
00030  170300 .. LRA  P+ 300       00110  025014 *. LDNI 12             00170  021006 ". LDI  6
00031  010201 .. LSL  1 BIT        00111  000026 .. PCAL CRTOUT         00171  020043  # MVB  PB-DB,3
00032  021006 ". LDI  6            00112  173104 .D LRA  DB 104,I       00172  173104 .D LRA  DB 104,I
00033  020043  # MVB  PB-DB,3      00113  170237 .. LRA  P+ 237         00173  025014 *. LDNI 12
00034  021010 ". LDI  8            00114  010201 .. LSL  1 BIT         00174  000023 .. PCAL CRTOUT
00035  021001 ". LDI  1            00115  021014 ". LDI  12            00175  173104 .D LRA  DB 104,I
00036  021012 ". LDI  10           00116  020043  # MVB  PB-DB,3       00176  170176 .~ LRA  P+ 176
00037  041013 B. LOAD DB 013       00117  041063 B3 LOAD DB 063        00177  010201 .. LSL  1 BIT
00040  000015 .. PCAL NUM2ASC      00120  013707 .. BRE  P+7           00200  021014 ". LDI  12
00041  173104 .D LRA  DB 104,I     00121  021406 #. LDXI 6             00201  020043  # MVB  PB-DB,3
00042  025011 *. LDNI 9            00122  177104 .D LRA  DB 104,I,X     00202  041061 B1 LOAD DB 061
00043  000015 .. PCAL CRTOUT       00123  170216 .. LRA  P+ 216         00203  013707 .. BRE  P+7
00044  173104 .D LRA  DB 104,I     00124  010201 .. LSL  1 BIT         00204  021406 #. LDXI 6
00045  170266 .. LRA  P+ 266       00125  021006 ". LDI  6             00205  177104 .D LRA  DB 104,I,X
00046  010201 .. LSL  1 BIT        00126  020043  # MVB  PB-DB,3       00206  170133 .[ LRA  P+ 133
00047  021014 ". LDI  12           00127  173104 .D LRA  DB 104,I       00207  010201 .. LSL  1 BIT
00050  020043  # MVB  PB-DB,3      00130  025014 *. LDNI 12             00210  021006 ". LDI  6
00051  041043 B# LOAD DB 043       00131  000020 .. PCAL CRTOUT         00211  020043  # MVB  PB-DB,3
00052  013707 .. BRE  P+7          00132  173104 .D LRA  DB 104,I       00212  173104 .D LRA  DB 104,I
00053  021406 #. LDXI 6            00133  170225 .. LRA  P+ 225         00213  025014 *. LDNI 12
00054  177104 .D LRA  DB 104,I,X   00134  010201 .. LSL  1 BIT         00214  000020 .. PCAL CRTOUT
00055  170264 .. LRA  P+ 264       00135  021014 ". LDI  12            00215  140003 .. BR   P+ 003
00056  010201 .. LSL  1 BIT        00136  020043  # MVB  PB-DB,3       00216  000150 .h DELB,FCMP
00057  021006 ". LDI  6            00137  041045 B% LOAD DB 045        00217  000155 .m DELB,FNEG
```

```
00220  173104 .D LRA  DB 104,I      00271  041402 C. LOAD Q+ 002      00342  071165 ru ADDM DB 165
00221  170161 .q LRA  P+ 161        00272  022001 $. CMPI 1          00343  062440 e  CMPM P- 040,I
00222  010201 .. LSL  1 BIT         00273  141306 .. BLE  P+ 006     00344  042505 EE LOAD P- 105,I
00223  021022 ". LDI  18           00274  021054 ", LDI  44         00345  050123 PS TBA  P+ 123
00224  020043  # MVB  PB-DB,3      00275  041402 C. LOAD Q+ 002      00346  020072  : MVB  DB-DB,2
00225  173104 .D LRA  DB 104,I      00276  023001 &. SUBI 1          00347  020146  f MVLB 6
00226  025022 *. LDNI 18           00277  004300 .. STAX,NOP        00350  060554 al CMPM P- 154
00227  000013 .. PCAL CRTOUT        00300  166104 .D STB  DB 104,I,X 00351  071545 se ADDM Q+ 145
00230  173104 .D LRA  DB 104,I      00301  140445 .% BR   P- 045     00352  042516 EN LOAD P- 116,I
00231  173103 .C LRA  DB 103,I      00302  173104 .D LRA  DB 104,I  00353  050122 PR TBA  P+ 122
00232  021120 "P LDI  80           00303  041402 C. LOAD Q+ 002      00354  020072  : MVB  DB-DB,2
00233  020063  3 MVB  DB-DB,3      00304  071401 s. ADDM Q+ 001      00355  020146  f MVLB 6
00234  120403 .. INCM Q+ 003        00305  002400 .. NEG ,NOP        00356  060554 al CMPM P- 154
00235  041403 C. LOAD Q+ 003        00306  000057 ./ PCAL CRTOUT     00357  071545 se ADDM Q+ 145
00236  022037 $. CMPI 31           00307  000600 .. ZERO,NOP        00360  042530 EX LOAD P- 130,I
00237  145403 .. BG   P+ 003,I      00310  021011 ". LDI  9          00361  052116 TN MTBA P+ 116
00240  140003 .. BR   P+ 003        00311  000000 .. PCAL GET'MESSAGE 00362  042072 D: LOAD P+ 072,I
00241  000141 .a DELB,ZROB          00312  051024 R. STOR DB 024      00363  020146  f MVLB 6
00242  000040 .  NOP ,DEL          00313  021025 ". LDI  21         00364  060554 al CMPM P- 154
00243  151075 .= LDD  DB 075        00314  021004 ". LDI  4          00365  071545 se ADDM Q+ 145
00244  041403 C. LOAD Q+ 003        00315  021012 ". LDI  10         00366  046117 LO LOAD P+ 117,I,X
00245  004300 .. STAX,NOP           00316  041041 B! LOAD DB 041    00367  047520 OP LOAD Q+ 120,I,X
00246  016401 .. DCSL 1 BIT ,X      00317  000027 .. PCAL NUM2ASC    00370  020072  : MVB  DB-DB,2
00247  000100 .@ DELB,NOP           00320  173104 .D LRA  DB 104,I   00371  020146  f MVLB 6
00250  013731 .. BRE  P+31          00321  041024 B. LOAD DB 024      00372  060554 al CMPM P- 154
00251  041402 C. LOAD Q+ 002        00322  002400 .. NEG ,NOP        00373  071545 se ADDM Q+ 145
00252  071401 s. ADDM Q+ 001        00323  000015 .. PCAL CRTOUT     00374  050122 PR TBA  P+ 122
00253  022401 %. ADDI 1            00324  031400 3. EXIT 0          00375  044516 IN LOAD P- 116,X
00254  051402 S. STOR Q+ 002        00325  041510 CH LOAD Q+ 110      00376  052072 T: MTBA P+ 072
00255  041402 C. LOAD Q+ 002        00326  040516 AN LOAD P- 116      00377  020146  f MVLB 6
00256  041403 C. LOAD Q+ 003        00327  020075  = MVB  DB-DB,1    00400  060554 al CMPM P- 154
00257  022012 $. CMPI 10           00330  042105 DE LOAD P+ 105,I    00401  071545 se ADDM Q+ 145
00260  141603 .. BGE  P+ 003        00331  053116 VN STOR DB 116,I   00402  051545 Se STOR Q+ 145
00261  021001 ". LDI  1            00332  020075  = MVB  DB-DB,1    00403  061564 ct CMPM Q+ 164
00262  140002 .. BR   P+ 002        00333  042505 EE LOAD P- 105,I   00404  064557 io CMPM P- 157,X
00263  021002 ". LDI  2            00334  050122 PR TBA  P+ 122      00405  067163 ns CMPM DB 163,I,X
00264  004500 .@ DUP ,NOP           00335  020072  : MVB  DB-DB,2    00406  020123  S SCW  3
00265  051401 S. STOR Q+ 001        00336  020146  f MVLB 6          00407  062554 el CMPM P- 154,I
00266  021012 ". LDI  10           00337  060554 al CMPM P- 154      00410  062543 ec CMPM P- 143,I
00267  041403 C. LOAD Q+ 003        00340  071545 se ADDM Q+ 145     00411  072145 te ADDM P+ 145,I
00270  000230 .. PCAL NUM2ASC       00341  020164  t SCU  4          00412  062072 d: CMPM P+ 072,I
```

```
7810.000 000000  0 <<-------------------------------------------------------->>
7815.000 000000  0 PROCEDURE LOAD'INTHNDLRS;
7820.000 000000  0  BEGIN
7825.000 000000  1   TEMPARRAY(0):=DRT'PLABEL'OF(INTHNDLR0);
7830.000 000003  1   TEMPARRAY(1):=DRT'PLABEL'OF(INTHNDLR1);
7835.000 000006  1   TEMPARRAY(2):=DRT'PLABEL'OF(INTHNDLR2);
7840.000 000011  1   TEMPARRAY(3):=DRT'PLABEL'OF(INTHNDLR3);
7845.000 000014  1   TEMPARRAY(4):=DRT'PLABEL'OF(INTHNDLR4);
7850.000 000017  1   TEMPARRAY(5):=DRT'PLABEL'OF(INTHNDLR5);
7855.000 000022  1   TEMPARRAY(6):=DRT'PLABEL'OF(INTHNDLR6);
7860.000 000025  1   TEMPARRAY(7):=DRT'PLABEL'OF(INTHNDLR7);
7865.000 000030  1  END;
```

```
00000  100000 .. LLBL INTHNDLR0        00011  100000 .. LLBL INTHNDLR3        00022  100000 .. LLBL INTHNDLR6
00001  021400 #. LDXI 0                00012  021403 #. LDXI 3                00023  021406 #. LDXI 6
00002  057133 ^[ STOR DB 133,I,X       00013  057133 ^[ STOR DB 133,I,X       00024  057133 ^[ STOR DB 133,I,X
00003  100000 .. LLBL INTHNDLR1        00014  100000 .. LLBL INTHNDLR4        00025  100000 .. LLBL INTHNDLR7
00004  021401 #. LDXI 1                00015  021404 #. LDXI 4                00026  021407 #. LDXI 7
00005  057133 ^[ STOR DB 133,I,X       00016  057133 ^[ STOR DB 133,I,X       00027  057133 ^[ STOR DB 133,I,X
00006  100000 .. LLBL INTHNDLR2        00017  100000 .. LLBL INTHNDLR5        00030  031400 3. EXIT 0
00007  021402 #. LDXI 2                00020  021405 #. LDXI 5
00010  057133 ^[ STOR DB 133,I,X       00021  057133 ^[ STOR DB 133,I,X
```

```
 7870.000 000000  0 <<-------------------------------------------------------->>
 7875.000 000000  0 PROCEDURE LOAD'TRAPS;
 7880.000 000000  0  BEGIN
 7885.000 000000  1   TEMPARRAY(0):=DRT'PLABEL'OF(INTTRAP0);
 7890.000 000003  1   TEMPARRAY(1):=DRT'PLABEL'OF(INTTRAP1);
 7895.000 000006  1   TEMPARRAY(2):=DRT'PLABEL'OF(INTTRAP2);
 7900.000 000011  1   TEMPARRAY(3):=DRT'PLABEL'OF(INTTRAP3);
 7905.000 000014  1   TEMPARRAY(4):=DRT'PLABEL'OF(INTTRAP4);
 7910.000 000017  1   TEMPARRAY(5):=DRT'PLABEL'OF(INTTRAP5);
 7915.000 000022  1   TEMPARRAY(6):=DRT'PLABEL'OF(INTTRAP6);
 7920.000 000025  1   TEMPARRAY(7):=DRT'PLABEL'OF(INTTRAP7);
 7925.000 000030  1
 7930.000 000030  1   DVN:=-1;
 7935.000 000032  1   WHILE (DVN:=DVN+1)<8 DO BEGIN
 7940.000 000036  2   MEM'GETS'V((CHNL+DVN)*4+2,TEMPARRAY(DVN)); <<DRT word 2>>
 7945.000 000050  2  <<Interrupt procedure label>>
 7950.000 000050  2   END; <<Do all eight devices>>
 7955.000 000051  1  END;
```

```
00000  100000 .. LLBL INTTRAP0          00016  057133 ^[ STOR DB 133,I,X       00034  022010 $. CMPI 8
00001  021400 #. LDXI 0                00017  100000 .. LLBL INTTRAP5         00035  141614 .. BGE  P+ 014
00002  057133 ^[ STOR DB 133,I,X       00020  021405 #. LDXI 5                00036  140002 .. BR   P+ 002
00003  100000 .. LLBL INTTRAP1         00021  057133 ^[ STOR DB 133,I,X       00037  000012 .. NOP ,DSUB
00004  021401 #. LDXI 1                00022  100000 .. LLBL INTTRAP6         00040  131015 .. LDX  DB 015
00005  057133 ^[ STOR DB 133,I,X       00023  021406 #. LDXI 6                00041  047133 N[ LOAD DB 133,I,X
00006  100000 .. LLBL INTTRAP2         00024  057133 ^[ STOR DB 133,I,X       00042  041010 B. LOAD DB 010
00007  021402 #. LDXI 2                00025  100000 .. LLBL INTTRAP7         00043  071015 r. ADDM DB 015
00010  057133 ^[ STOR DB 133,I,X       00026  021407 #. LDXI 7                00044  023404 '. MPYI 4
00011  100000 .. LLBL INTTRAP3         00027  057133 ^[ STOR DB 133,I,X       00045  022402 %. ADDI 2
00012  021403 #. LDXI 3                00030  025001 *. LDNI 1                00046  004300 .. STAX,NOP
00013  057133 ^[ STOR DB 133,I,X       00031  051015 R. STOR DB 015           00047  020321  . PSTA
00014  100000 .. LLBL INTTRAP4         00032  120015 .. INCM DB 015           00050  140416 .. BR   P- 016
00015  021404 #. LDXI 4                00033  041015 B. LOAD DB 015           00051  031400 3. EXIT 0
```

```
 7960.000 000000  0 <<-------------------------------------------------------->>
 7965.000 000000  0 PROCEDURE LOOP'BACK(INDEX); <<Causes return to point in program kept>>
 7970.000 000000  0 VALUE INTEGER INDEX; <<       by procedure STORE'MARK no matter how>>
 7975.000 000000  0  BEGIN <<                    many levels of procedures intervene.>>
 7980.000 000000  1 DEFINE
 7985.000 000000  1 LOOPBACK=
 7990.000 000000  1 ASSEMBLE(
 7995.000 000000  1  LOAD INDEX;
```

```
 8000.000 000000  1  MPYI 5; <<Five word entries in array SAVE'MARK>>
 8005.000 000000  1  STAX;
 8010.000 000000  1  LOAD SAVE'MARK,I,X; <<Old Q>>
 8015.000 000000  1  SETR 2; <<Q>>
 8020.000 000000  1  INCX;
 8025.000 000000  1  LOAD SAVE'MARK,I,X; <<Old stack marker>>
 8030.000 000000  1  STOR Q-3;
 8035.000 000000  1  INCX;
 8040.000 000000  1  LOAD SAVE'MARK,I,X;
 8045.000 000000  1  STOR Q-2;
 8050.000 000000  1  INCX;
 8055.000 000000  1  LOAD SAVE'MARK,I,X;
 8060.000 000000  1  STOR Q-1;
 8065.000 000000  1  INCX;
 8070.000 000000  1  LOAD SAVE'MARK,I,X;
 8075.000 000000  1  STOR Q-0)#;
 8080.000 000000  1
 8085.000 000000  1   LOOPBACK; <<Set up & EXIT through recovered stack marker.>>
 8090.000 000021  1
 8095.000 000021  1  END; <<LOOP'BACK>>
```

IDENTIFIER	TYPE	CLASS	ADDRESS
INDEX	INTEGER	SIMPLE	Q- 4
LOOPBACK	DEFINE		

```
00000  041604 C. LOAD Q- 004          00006  047124 NT LOAD DB 124,I,X      00014  047124 NT LOAD DB 124,I,X
00001  023405 '. MPYI 5               00007  051603 S. STOR Q- 003         00015  051601 S. STOR Q- 001
00002  004300 .. STAX,NOP             00010  000400 .. INCX,NOP            00016  000400 .. INCX,NOP
00003  047124 NT LOAD DB 124,I,X      00011  047124 NT LOAD DB 124,I,X      00017  047124 NT LOAD DB 124,I,X
00004  027402 /. SETR %002            00012  051602 S. STOR Q- 002         00020  051600 S. STOR Q- 000
00005  000400 .. INCX,NOP             00013  000400 .. INCX,NOP            00021  031401 3. EXIT 1
```

```
 8100.000 000000  0 <<-------------------------------------------------------->>
 8105.000 000000  0 PROCEDURE MOVE'CHNL'PGM(CHNL'PGM,LEN,ADDR);
 8110.000 000000  0  VALUE INTEGER LEN; LOGICAL ARRAY CHNL'PGM;
 8115.000 000000  0 VALUE LOGICAL ADDR;
 8120.000 000000  0  BEGIN  INTEGER LA;
 8125.000 000001  1   LA:=-1;
 8130.000 000003  1   WHILE (LA:=LA+1)<LEN DO BEGIN
 8135.000 000007  2   MEM'GETS'V(ADDR,CHNL'PGM(LA));
 8140.000 000016  2   ADDR:=ADDR+1;
 8145.000 000022  2   END;
 8150.000 000023  1  END;
```

IDENTIFIER	TYPE	CLASS	ADDRESS
ADDR	LOGICAL	SIMPLE	Q- 4
CHNL'PGM	LOGICAL	ARRAY	Q- 6,I,X
LA	INTEGER	SIMPLE	Q+ 1
LEN	INTEGER	SIMPLE	Q- 5

```
00000  035001 :. ADDS 1              00007  140002 .. BR   P+ 002          00016  041604 C. LOAD Q- 004
00001  025001 *. LDNI 1              00010  000013 .. NOP ,MPYL           00017  021001 ". LDI  1
00002  051401 S. STOR Q+ 001         00011  131401 .. LDX  Q+ 001         00020  006000 .. LADD,NOP
00003  120401 .. INCM Q+ 001         00012  047606 O. LOAD Q- 006,I,X     00021  051604 S. STOR Q- 004
00004  041401 C. LOAD Q+ 001         00013  041604 C. LOAD Q- 004         00022  140417 .. BR   P- 017
00005  061605 c. CMPM Q- 005         00014  004300 .. STAX,NOP           00023  031403 3. EXIT 3
00006  141615 .. BGE  P+ 015         00015  020321  . PSTA
```

```
 8155.000 000000  0 <<------------------------------------------------------------>>
 8160.000 000000  0 PROCEDURE NUM2ASC(INDEX,COUNT,BASE,NUMBER);
 8165.000 000000  0 VALUE INTEGER INDEX,BASE,COUNT;
 8170.000 000000  0 VALUE LOGICAL NUMBER;
 8175.000 000000  0  BEGIN
 8180.000 000000  1 LOGICAL REMAINDER;
 8185.000 000001  1   WHILE NUMBER>0
 8190.000 000005  1    DO
 8195.000 000005  1     BEGIN
 8200.000 000005  2      REMAINDER:=NUMBER MOD LOGICAL(BASE);
 8205.000 000012  2      NUMBER:=NUMBER/LOGICAL(BASE);
 8210.000 000017  2      IF COUNT>0
 8215.000 000022  2       THEN
 8220.000 000022  2        BEGIN
 8225.000 000022  3         MSG'OUT(INDEX+(COUNT:=COUNT-1)):=
 8230.000 000022  3          IF (BASE=16) AND (REMAINDER>9)
 8235.000 000022  3           THEN
 8240.000 000022  3            REMAINDER+!37
 8245.000 000022  3           ELSE
 8250.000 000022  3            REMAINDER+!30;
 8255.000 000053  3        END;
 8260.000 000053  2     END;
 8265.000 000054  1
 8270.000 000054  1   WHILE COUNT>0
 8275.000 000057  1    DO
 8280.000 000057  1     BEGIN <<Fill with leading zeros>>
 8285.000 000057  2      MSG'OUT(INDEX+(COUNT:=COUNT-1)):="0";
 8290.000 000067  2     END;
 8295.000 000070  1
 8300.000 000070  1   IF BASE=8 THEN MSG'OUT(INDEX-1):="%";
 8305.000 000100  1   IF BASE=16 THEN MSG'OUT(INDEX-1):="!";
 8310.000 000110  1   IF BASE=10 THEN MSG'OUT(INDEX-1):=" ";
 8315.000 000120  1
 8320.000 000120  1  END; <<NUM2ASC>>
```

IDENTIFIER	TYPE	CLASS	ADDRESS
BASE	INTEGER	SIMPLE	Q- 5
COUNT	INTEGER	SIMPLE	Q- 6
INDEX	INTEGER	SIMPLE	Q- 7
NUMBER	LOGICAL	SIMPLE	Q- 4
REMAINDER	LOGICAL	SIMPLE	Q+ 1

```
00000  035001 :. ADDS 1              00001  041604 C. LOAD Q- 004          00002  021000 ". LDI  0
```

```
00003  005700 .. LCMP,NOP          00035  041401 C. LOAD Q+ 001        00067  140413 .. BR   P- 013
00004  145334 .. BLE  P+ 034,I     00036  021060 "0 LDI  48           00070  041605 C. LOAD Q- 005
00005  041604 C. LOAD Q- 004       00037  140004 .. BR   P+ 004       00071  022010 $. CMPI 8
00006  000632 .. ZERO,XCH          00040  000014 .. NOP ,DIVL         00072  141506 .F BNE  P+ 006
00007  041605 C. LOAD Q- 005       00041  000012 .. NOP ,DSUB         00073  021045 "% LDI  37
00010  006301 .. LDIV,DELB         00042  000002 .. NOP ,DDEL         00074  041607 C. LOAD Q- 007
00011  051401 S. STOR Q+ 001       00043  006000 .. LADD,NOP          00075  023001 &. SUBI 1
00012  041604 C. LOAD Q- 004       00044  041607 C. LOAD Q- 007       00076  004300 .. STAX,NOP
00013  000632 .. ZERO,XCH          00045  041606 C. LOAD Q- 006       00077  166104 .D STB  DB 104,I,X
00014  041605 C. LOAD Q- 005       00046  023001 &. SUBI 1           00100  041605 C. LOAD Q- 005
00015  006340 .. LDIV,DEL          00047  004500 .@ DUP ,NOP          00101  022020 $. CMPI 16
00016  051604 S. STOR Q- 004       00050  051606 S. STOR Q- 006       00102  141506 .F BNE  P+ 006
00017  041606 C. LOAD Q- 006       00051  002043 .# ADD ,STAX         00103  021041 "! LDI  33
00020  022000 $. CMPI 0            00052  166104 .D STB  DB 104,I,X   00104  041607 C. LOAD Q- 007
00021  141332 .. BLE  P+ 032       00053  140452 .* BR   P- 052       00105  023001 &. SUBI 1
00022  041605 C. LOAD Q- 005       00054  041606 C. LOAD Q- 006       00106  004300 .. STAX,NOP
00023  022020 $. CMPI 16           00055  022000 $. CMPI 0            00107  166104 .D STB  DB 104,I,X
00024  141511 .I BNE  P+ 011       00056  141312 .. BLE  P+ 012       00110  041605 C. LOAD Q- 005
00025  041401 C. LOAD Q+ 001       00057  021060 "0 LDI  48           00111  022012 $. CMPI 10
00026  021011 ". LDI  9            00060  041607 C. LOAD Q- 007       00112  141506 .F BNE  P+ 006
00027  005700 .. LCMP,NOP          00061  041606 C. LOAD Q- 006       00113  021040 "  LDI  32
00030  141305 .. BLE  P+ 005       00062  023001 &. SUBI 1           00114  041607 C. LOAD Q- 007
00031  041401 C. LOAD Q+ 001       00063  004500 .@ DUP ,NOP          00115  023001 &. SUBI 1
00032  021067 "7 LDI  55           00064  051606 S. STOR Q- 006       00116  004300 .. STAX,NOP
00033  006000 .. LADD,NOP          00065  002043 .# ADD ,STAX         00117  166104 .D STB  DB 104,I,X
00034  140010 .. BR   P+ 010       00066  166104 .D STB  DB 104,I,X   00120  031404 3. EXIT 4
```

```
 8325.000 000000  0 <<-------------------------------------------------------->>
 8330.000 000000  0 PROCEDURE READFAIL;
 8335.000 000000  0  BEGIN
 8340.000 000000  1   NUM'CHARS:=GET'MESSAGE(75);
 8345.000 000004  1   NUM2ASC(15,4,16,TOS');
 8350.000 000011  1   ERROROUT(-NUM'CHARS,IF DEV<=MAX'DEV THEN TRUE ELSE FALSE);
 8355.000 000022  1  END; <<READFAIL>>
```

```
00000  000600 .. ZERO,NOP            00007  041070 B8 LOAD DB 070        00016  025001 *. LDNI 1
00001  021113 "K LDI  75             00010  000000 .. PCAL NUM2ASC       00017  140002 .. BR   P+ 002
00002  000000 .. PCAL GET'MESSAGE    00011  041024 B. LOAD DB 024        00020  021000 ". LDI  0
00003  051024 R. STOR DB 024         00012  002400 .. NEG ,NOP           00021  000000 .. PCAL ERROROUT
00004  021017 ". LDI  15             00013  041013 B. LOAD DB 013        00022  031400 3. EXIT 0
00005  021004 ". LDI  4              00014  061023 b. CMPM DB 023
00006  021020 ". LDI  16             00015  141403 .. BG   P+ 003
```

```
 8360.000 000000  0 <<-------------------------------------------------------->>
 8365.000 000000  0 PROCEDURE REP'ILL'INT;
 8370.000 000000  0  BEGIN
 8375.000 000000  1   GET'UNX'IRQ;
 8380.000 000006  1   LA:=TRUE;
 8385.000 000010  1   WHILE (LA:=LA+1)<8 DO BEGIN
 8390.000 000017  2   IF TOS'.(0:1) THEN BEGIN
 8395.000 000022  3 NUM'CHARS:=GET'MESSAGE(76);
 8400.000 000026  3      MSG'OUT(18):=!30+LA;
 8405.000 000033  3      ERROROUT(-NUM'CHARS,0);
```

```
 8410.000 000037  3      END;
 8415.000 000037  2   TOS'=:TOS' CSL (1);
 8420.000 000042  2   END;
 8425.000 000043  1  IF TOS'1 <> 0 THEN BEGIN
 8430.000 000047  2 NUM'CHARS:=GET'MESSAGE(77);
 8435.000 000055  2     NUM2ASC(34,2,10,TOS'1.(9:4));
 8440.000 000064  2     NUM2ASC(44,1,10,TOS'1.(13:3));
 8445.000 000072  2     ERROROUT(-NUM'CHARS,0);
 8450.000 000076  2     END;
 8455.000 000076  1  CLEAR'UNX'IRQ;
 8460.000 000104  1
 8465.000 000104  1  END;
```

```
00000  025402 +. LDXN 2              00027  041050 B( LOAD DB 050          00056  021002 ". LDI  2
00001  020320  . PLDA                00030  006000 .. LADD,NOP           00057  021012 ". LDI  10
00002  051070 R8 STOR DB 070         00031  021422 #. LDXI 18            00060  041071 B9 LOAD DB 071
00003  025403 +. LDXN 3              00032  166104 .D STB  DB 104,I,X     00061  010303 .. LSR  3 BITS
00004  020320  . PLDA                00033  041024 B. LOAD DB 024        00062  037417 ?. ANDI 15
00005  051071 R9 STOR DB 071         00034  002400 .. NEG ,NOP          00063  000000 .. PCAL NUM2ASC
00006  025001 *. LDNI 1              00035  021000 ". LDI  0             00064  021054 ", LDI  44
00007  051050 R( STOR DB 050         00036  000000 .. PCAL ERROROUT      00065  021001 ". LDI  1
00010  041050 B( LOAD DB 050         00037  041070 B8 LOAD DB 070        00066  021012 ". LDI  10
00011  021001 ". LDI  1              00040  010401 .. CSL  1 BIT         00067  041071 B9 LOAD DB 071
00012  006045 .% LADD,DUP            00041  051070 R8 STOR DB 070        00070  037407 ?. ANDI 7
00013  051050 R( STOR DB 050         00042  140432 .. BR   P- 032        00071  000006 .. PCAL NUM2ASC
00014  021010 ". LDI  8              00043  041071 B9 LOAD DB 071        00072  041024 B. LOAD DB 024
00015  005700 .. LCMP,NOP            00044  021000 ". LDI  0             00073  002400 .. NEG ,NOP
00016  141625 .. BGE  P+ 025         00045  005700 .. LCMP,NOP          00074  021000 ". LDI  0
00017  041070 B8 LOAD DB 070         00046  141230 .. BE   P+ 030        00075  000037 .. PCAL ERROROUT
00020  010317 .. LSR  15 BITS        00047  000600 .. ZERO,NOP          00076  025402 +. LDXN 2
00021  013716 .. BRE  P+16           00050  021115 "M LDI  77            00077  000600 .. ZERO,NOP
00022  000600 .. ZERO,NOP            00051  140002 .. BR   P+ 002        00100  020321  . PSTA
00023  021114 "L LDI  76             00052  000024 .. NOP ,NEG          00101  025403 +. LDXN 3
00024  000000 .. PCAL GET'MESSAGE    00053  000027 .. PCAL GET'MESSAGE   00102  000600 .. ZERO,NOP
00025  051024 R. STOR DB 024         00054  051024 R. STOR DB 024        00103  020321  . PSTA
00026  021060 "0 LDI  48             00055  021042 "" LDI  34            00104  031400 3. EXIT 0
```

```
 8470.000 000000  0 <<-------------------------------------------------------->>
 8475.000 000000  0 PROCEDURE SET'CPVA;
 8480.000 000000  0  BEGIN
 8485.000 000000  1   ADDR:=!CFFF;
 8490.000 000002  1   WHILE (ADDR:=ADDR+1)<!D040 DO BEGIN
 8495.000 000011  2   MEM'GETS'V(ADDR,0); <<ZERO THE CPVA AREA>>
 8500.000 000021  2   END;
 8505.000 000022  1
 8510.000 000022  1   DVN:=-1;
 8515.000 000024  1   WHILE (DVN:=DVN+1)<8 DO BEGIN
 8520.000 000030  2   MEM'GETS'V((CHNL+DVN)*4+1,CPVAARRAY(DVN));
 8525.000 000042  2  <<Put the CPVA pointer in the DRT>>
 8530.000 000042  2   END;
 8535.000 000043  1  END;
```

```
00000  040012 @. LOAD P+ 012          00001  051032 R. STOR DB 032          00002  041032 B. LOAD DB 032
```

```
00003  021001 ". LDI  1              00016  041032 B. LOAD DB 032          00031  000012 .. NOP ,DSUB
00004  006045 .% LADD,DUP            00017  004300 .. STAX,NOP            00032  131015 .. LDX  DB 015
00005  051032 R. STOR DB 032         00020  020321  . PSTA                00033  047132 NZ LOAD DB 132,I,X
00006  040005 @. LOAD P+ 005         00021  140417 .. BR   P- 017         00034  041010 B. LOAD DB 010
00007  005700 .. LCMP,NOP            00022  025001 *. LDNI 1              00035  071015 r. ADDM DB 015
00010  141612 .. BGE  P+ 012         00023  051015 R. STOR DB 015         00036  023404 '. MPYI 4
00011  140004 .. BR   P+ 004         00024  120015 .. INCM DB 015         00037  022401 %. ADDI 1
00012  147777 .. BR   S- 077,I,X     00025  041015 B. LOAD DB 015         00040  004300 .. STAX,NOP
00013  150100 .@ LDB  DB 100         00026  022010 $. CMPI 8              00041  020321  . PSTA
00014  000006 .. NOP ,ZERO           00027  141614 .. BGE  P+ 014         00042  140416 .. BR   P- 016
00015  021000 ". LDI  0              00030  140002 .. BR   P+ 002         00043  031400 3. EXIT 0
```

```
 8540.000 000000  0 <<-------------------------------------------------------->>
 8545.000 000000  0 PROCEDURE SETUP'DRT(DVN); VALUE INTEGER DVN;
 8550.000 000000  0  BEGIN
 8555.000 000000  1   LOAD'TRAPS;
 8560.000 000001  1   LOAD'INTHNDLRS;
 8565.000 000002  1   MEM'GETS'V((CHNL+DVN)*4+2,TEMPARRAY(DVN)); <<DRT word 2>>
 8570.000 000012  1  <<Gets Address of interrupt handler>>
 8575.000 000012  1  END;
```

```
IDENTIFIER       TYPE        CLASS         ADDRESS

DVN              INTEGER     SIMPLE        Q- 4
```

```
00000  000000 .. PCAL LOAD'TRAPS        00004  041010 B. LOAD DB 010          00010  004300 .. STAX,NOP
00001  000000 .. PCAL LOAD'INTHNDLRS    00005  071604 s. ADDM Q- 004          00011  020321  . PSTA
00002  131604 .. LDX  Q- 004            00006  023404 '. MPYI 4               00012  031401 3. EXIT 1
00003  047133 N[ LOAD DB 133,I,X        00007  022402 %. ADDI 2
```

```
 8580.000 000000  0 <<-------------------------------------------------------->>
 8585.000 000000  0 PROCEDURE ST'DSJ'CH'PROGS; <<Start channel programs for all devices>>
 8590.000 000000  0  BEGIN
 8595.000 000000  1 INTEGER
 8600.000 000000  1 TEM'DEV:=-1;
 8605.000 000000  1
 8610.000 000006  1   WHILE (TEM'DEV:=TEM'DEV+1)<=7
 8615.000 000012  1    DO
 8620.000 000012  1     BEGIN
 8625.000 000012  2      TOS'1:=CHNL+TEM'DEV;
 8630.000 000015  2      TOS':= ABS'ADDR(DSJ'CH'PROG,TEM'DEV*21);
 8635.000 000026  2      DO'SIOP;
 8640.000 000032  2     END;
 8645.000 000033  1
 8650.000 000033  1  END; <<ST'DSJ'CH'PROGS>>
```

```
IDENTIFIER       TYPE        CLASS         ADDRESS

TEM'DEV          INTEGER     SIMPLE        Q+ 1
```

```
00000  177777 .. LRA  S- 077,I,X        00012  041010 B. LOAD DB 010           00024  000160 .p DELB,LADD
00001  035001 :. ADDS 1                 00013  071401 s. ADDM Q+ 001           00025  051070 R8 STOR DB 070
00002  171401 .. LRA  Q+ 001            00014  051071 R9 STOR DB 071           00026  041071 B9 LOAD DB 071
00003  170403 .. LRA  P- 003            00015  140002 .. BR   P+ 002           00027  041070 B8 LOAD DB 070
00004  021001 ". LDI  1                 00016  000015 .. NOP ,DNEG            00030  020302  . IOOP 32 BIT OP
00005  020003  . MOVE PB-DB,3           00017  041401 C. LOAD Q+ 001           00031  000000 .. NOP ,NOP
00006  120401 .. INCM Q+ 001            00020  023425 '. MPYI 21              00032  140424 .. BR   P- 024
00007  041401 C. LOAD Q+ 001            00021  004300 .. STAX,NOP             00033  031400 3. EXIT 0
00010  022007 $. CMPI 7                 00022  177137 ._ LRA  DB 137,I,X
00011  141422 .. BG   P+ 022            00023  024500 )@ PSHR %100
```

```
 8655.000 000000  0 <<-------------------------------------------------------->>
 8660.000 000000  0 PROCEDURE STORE'MARK(INDEX); <<Saves stack marker for use by>>
 8665.000 000000  0 VALUE INTEGER INDEX; <<procedure LOOP'BACK>>
 8670.000 000000  0  BEGIN
 8675.000 000000  1 DEFINE
 8680.000 000000  1 STOREMARK=
 8685.000 000000  1 ASSEMBLE(
 8690.000 000000  1  LOAD INDEX;
 8695.000 000000  1  MPYI 5; <<Five word entries in array SAVE'MARK>>
 8700.000 000000  1  STAX;
 8705.000 000000  1  PSHR 2; <<Q>>
 8710.000 000000  1  STOR SAVE'MARK,I,X; <<This Q>>
 8715.000 000000  1  INCX;
 8720.000 000000  1  LOAD Q-3; <<This stack marker>>
 8725.000 000000  1  STOR SAVE'MARK,I,X;
 8730.000 000000  1  INCX;
 8735.000 000000  1  LOAD Q-2;
 8740.000 000000  1  STOR SAVE'MARK,I,X;
 8745.000 000000  1  INCX;
 8750.000 000000  1  LOAD Q-1;
 8755.000 000000  1  STOR SAVE'MARK,I,X;
 8760.000 000000  1  INCX;
 8765.000 000000  1  LOAD Q-0;
 8770.000 000000  1  STOR SAVE'MARK,I,X)#;
 8775.000 000000  1
 8780.000 000000  1   STOREMARK; <<Keep Q & stack marker.>>
 8785.000 000021  1
 8790.000 000021  1  END; <<STORE'MARK>>
```

IDENTIFIER	TYPE	CLASS	ADDRESS
INDEX	INTEGER	SIMPLE	Q- 4
STOREMARK	DEFINE		

```
00000  041604 C. LOAD Q- 004            00006  041603 C. LOAD Q- 003           00014  041601 C. LOAD Q- 001
00001  023405 '. MPYI 5                 00007  057124 ^T STOR DB 124,I,X       00015  057124 ^T STOR DB 124,I,X
00002  004300 .. STAX,NOP               00010  000400 .. INCX,NOP            00016  000400 .. INCX,NOP
00003  024402 ). PSHR %002              00011  041602 C. LOAD Q- 002           00017  041600 C. LOAD Q- 000
00004  057124 ^T STOR DB 124,I,X        00012  057124 ^T STOR DB 124,I,X       00020  057124 ^T STOR DB 124,I,X
00005  000400 .. INCX,NOP               00013  000400 .. INCX,NOP            00021  031401 3. EXIT 1
```

```
 8795.000 000000  0 <<-------------------------------------------------------------->>
 8800.000 000000  0 LOGICAL PROCEDURE TEST'COMMAND'OK(INBUFFER,LAST'ELEMENT);
 8805.000 000000  0 BYTE ARRAY INBUFFER;
 8810.000 000000  0 VALUE INTEGER LAST'ELEMENT;
 8815.000 000000  0  <<
 8820.000 000000  0
 8825.000 000000  0   Deleted references
 8830.000 000000  0     to the AMIGO (HP 300)
 8835.000 000000  0       security for the
 8840.000 000000  0         Test command.                                    (0.29)
 8845.000 000000  0          INBUFFER=working buffer
 8850.000 000000  0          LAST'ELEMENT=# of last valid element
 8855.000 000000  0
 8860.000 000000  0  uses global: DEFAULT'SECTS
 8865.000 000000  0               LAST'SECT
 8870.000 000000  0               SECTIONS'TO'RUN
 8875.000 000000  0  >>
 8880.000 000000  0  BEGIN
 8885.000 000000  1
 8890.000 000000  1 DEFINE
 8895.000 000000  1 SET'SECTION(sectno)=
 8900.000 000000  1 ASSEMBLE(
 8905.000 000000  1  LDD TEMP'SECT'2'RUN;                                    <<0.29>>
 8910.000 000000  1  PUSH SECTNO; STAX,NOP;                                  <<0.29>>
 8915.000 000000  1  DCSL 1,X; ORI 1;                                       <<0.29>>
 8920.000 000000  1  DCSR 1,X;                                              <<0.29>>
 8925.000 000000  1  STD TEMP'SECT'2'RUN)#;                                 <<0.29>>
 8930.000 000000  1
 8935.000 000000  1 DOUBLE TEMP'SECT'2'RUN:=0;
 8940.000 000000  1
 8945.000 000000  1 INTEGER ACTION:=0, <<action flag; +1=add,-1=delete,0=replace>>
 8950.000 000000  1         CHAR'PNTR:=4, <<points to next valid char in buffer>>   <<0.29>>
 8955.000 000000  1         <<Changed 5 to 4 in line 747 for Series 30/33 systems>> <<0.29>>
 8960.000 000000  1         FRST'BYTE, <<first byte of number for subroutine>>
 8965.000 000000  1         LST'BYTE, <<last byte of number for subroutine>>
 8970.000 000000  1         NUMBER, <<converted number for subroutine>>
 8975.000 000000  1         PREVIOUS'NUMBER,
 8980.000 000000  1         TEMP'CNTR;
 8985.000 000000  1
 8990.000 000012  1 LOGICAL SUBROUTINE IT'S'A'NUMBER;
 8995.000 000012  1  BEGIN
 9000.000 000012  2   IF INBUFFER(CHAR'PNTR)=NUMERIC
 9005.000 000016  2    THEN
 9010.000 000016  2     BEGIN
 9015.000 000016  3      IF (LST'BYTE:=MOVE INBUFFER(CHAR'PNTR) TO
 9020.000 000016  3       INBUFFER(CHAR'PNTR) WHILE NUMERIC)>2
 9025.000 000031  3       THEN RETURN;
 9030.000 000035  3      NUMBER:=TEMP'CNTR:=0;
 9035.000 000041  3      FRST'BYTE:=(CHAR'PNTR:=LST'BYTE+CHAR'PNTR)-1;
 9040.000 000047  3      WHILE LST'BYTE>0
 9045.000 000052  3       DO
 9050.000 000052  3        BEGIN
 9055.000 000052  4         NUMBER:=NUMBER+
 9060.000 000052  4                 (LOGICAL(INBUFFER(FRST'BYTE)) AND %17)*
 9065.000 000052  4                 (IF TEMP'CNTR=0 THEN 1 ELSE 10);
```

```
 9070.000 000067  4         FRST'BYTE:=FRST'BYTE-1;
 9075.000 000072  4         LST'BYTE:=LST'BYTE-1;
 9080.000 000075  4         TEMP'CNTR:=TEMP'CNTR+1;
 9085.000 000076  4       END;
 9090.000 000077  3     IT'S'A'NUMBER:=TRUE;
 9095.000 000101  3    END;
 9100.000 000101  2 END; <<IT'S'A'NUMBER>>
 9105.000 000102  1
 9110.000 000102  1 <<"TEST" only-use default set>>
 9115.000 000102  1 IF LAST'ELEMENT=3     <<CHANGED FROM 4 FOR SERIES 30/33 SYS>>  <<0.29>>
 9120.000 000105  1   THEN
 9125.000 000105  1    BEGIN
 9130.000 000105  2     TEMP'SECT'2'RUN:=DEFAULT'SECTS;
 9135.000 000107  2     GOTO PROCESS'INPUT;
 9140.000 000112  2    END;
 9145.000 000112  1 <<ignores blanks between "TEST" & test list>>
 9150.000 000112  1  WHILE INBUFFER(CHAR'PNTR)=" "
 9155.000 000116  1   DO
 9160.000 000116  1    IF (CHAR'PNTR:=CHAR'PNTR+1)>LAST'ELEMENT
 9165.000 000122  1     THEN
 9170.000 000122  1      GOTO PROCESS'INPUT; <<blanks only in test list>>
 9175.000 000127  1 <<eats "+" or "-" and sets action flag>>
 9180.000 000127  1  IF INBUFFER(CHAR'PNTR)="+"
 9185.000 000133  1   THEN
 9190.000 000133  1    BEGIN
 9195.000 000133  2     ACTION:=1;
 9200.000 000135  2     IF (CHAR'PNTR:=CHAR'PNTR+1)>LAST'ELEMENT THEN RETURN;
 9205.000 000144  2    END
 9210.000 000144  1   ELSE
 9215.000 000145  1    IF INBUFFER(CHAR'PNTR)="-"
 9220.000 000151  1     THEN
 9225.000 000151  1      BEGIN
 9230.000 000151  2       ACTION:=-1;
 9235.000 000153  2       IF (CHAR'PNTR:=CHAR'PNTR+1)>LAST'ELEMENT THEN RETURN;
 9240.000 000163  2      END;
 9245.000 000163  1
 9250.000 000163  1 NUMBER0: <<expecting #>>
 9255.000 000163  1
 9260.000 000163  1  IF IT'S'A'NUMBER AND 1<=NUMBER<=LAST'SECT
 9265.000 000174  1   THEN
 9270.000 000174  1    BEGIN <<test section w/in valid limits>>
 9275.000 000174  2     SET'SECTION(NUMBER);
 9280.000 000205  2    END
 9285.000 000205  1   ELSE <<expecting #>>
 9290.000 000206  1    BEGIN
 9295.000 000206  2     NUM'CHARS:=GET'MESSAGE(69);
 9300.000 000212  2     NUM2ASC(21,2,10,LAST'SECT);
 9305.000 000217  2     CRTOUT(MSG'OUT,-NUM'CHARS);
 9310.000 000223  2     RETURN;
 9315.000 000225  2    END;
 9320.000 000225  1  IF CHAR'PNTR>LAST'ELEMENT THEN GOTO PROCESS'INPUT;
 9325.000 000233  1 <<test list terminated w/ #>>
 9330.000 000233  1  IF INBUFFER(CHAR'PNTR)="/"
 9335.000 000237  1   THEN <<eat "/" & ck for 2nd #>>
 9340.000 000237  1    BEGIN
 9345.000 000237  2     IF (CHAR'PNTR:=CHAR'PNTR+1)>LAST'ELEMENT
```

```
 9350.000 000243  2       THEN RETURN; <<not valid to terminate test list w/ "/">>
 9355.000 000246  2      PREVIOUS'NUMBER:=NUMBER; <<save 1st # of "/" # pair>>
 9360.000 000250  2      IF IT'S'A'NUMBER AND PREVIOUS'NUMBER<=NUMBER<=LAST'SECT
 9365.000 000261  2       THEN <<valid #>>
 9370.000 000261  2        WHILE (PREVIOUS'NUMBER:=PREVIOUS'NUMBER+1)<=NUMBER
 9375.000 000265  2         DO
 9380.000 000265  2           BEGIN
 9385.000 000265  3             SET'SECTION(PREVIOUS'NUMBER);
 9390.000 000277  3           END
 9395.000 000300  2       ELSE RETURN;
 9400.000 000303  2      IF CHAR'PNTR>LAST'ELEMENT THEN GOTO PROCESS'INPUT;
 9405.000 000311  2  <<test list terminated w/ "/" # pair>>
 9410.000 000311  2     END;
 9415.000 000311  1   IF INBUFFER(CHAR'PNTR)=","
 9420.000 000315  1    THEN
 9425.000 000315  1     IF (CHAR'PNTR:=CHAR'PNTR+1)>LAST'ELEMENT
 9430.000 000321  1      THEN RETURN; <<not valid to terminate test list w/ ",">>
 9435.000 000324  1   GOTO NUMBER0;
 9440.000 000325  1 PROCESS'INPUT: <<TEST command is valid>>
 9445.000 000325  1
 9450.000 000325  1   IF ACTION=1
 9455.000 000330  1    THEN
 9460.000 000330  1     BEGIN
 9465.000 000330  2      SECTIONS'TO'RUN.(0:16):=
 9470.000 000330  2       SECTIONS'TO'RUN.(0:16) OR TEMP'SECT'2'RUN.(0:16);
 9475.000 000340  2      SECTIONS'TO'RUN.(16:16):=
 9480.000 000340  2       SECTIONS'TO'RUN.(16:16) OR TEMP'SECT'2'RUN.(16:16);
 9485.000 000347  2     END
 9490.000 000347  1    ELSE
 9495.000 000350  1     IF ACTION=0
 9500.000 000353  1      THEN SECTIONS'TO'RUN:=TEMP'SECT'2'RUN
 9505.000 000355  1      ELSE
 9510.000 000356  1       BEGIN <<assumes ACTION=-1>>
 9515.000 000356  2        SECTIONS'TO'RUN.(0:16):=
 9520.000 000356  2         SECTIONS'TO'RUN.(0:16) AND
 9525.000 000356  2         (NOT (TEMP'SECT'2'RUN.(0:16)));
 9530.000 000372  2        SECTIONS'TO'RUN.(16:16):=
 9535.000 000372  2         SECTIONS'TO'RUN.(16:16) AND
 9540.000 000372  2         (NOT (TEMP'SECT'2'RUN.(16:16)));
 9545.000 000401  2       END;
 9550.000 000401  1   IF SECTIONS'TO'RUN=0
 9555.000 000407  1    THEN SECTIONS'TO'RUN:=DEFAULT'SECTS;
 9560.000 000411  1   TEST'COMMAND'OK:=TRUE;
 9565.000 000413  1  END; <<TEST'COMMAND'OK>>
```

IDENTIFIER	TYPE	CLASS	ADDRESS
ACTION	INTEGER	SIMPLE	Q+ 10
CHAR'PNTR	INTEGER	SIMPLE	Q+ 11
FRST'BYTE	INTEGER	SIMPLE	Q+ 1
INBUFFER	BYTE	ARRAY	Q- 5,I,X
IT'S'A'NUMBER	LOGICAL	SUBROUTINE	PB 12
LAST'ELEMENT	INTEGER	SIMPLE	Q- 4
LST'BYTE	INTEGER	SIMPLE	Q+ 2
NUMBER	INTEGER	SIMPLE	Q+ 3
NUMBER0		LABEL	PB 163

```
PREVIOUS'NUMBER  INTEGER     SIMPLE        Q+ 4
PROCESS'INPUT                LABEL         PB 325
SET'SECTION      DEFINE
TEMP'CNTR        INTEGER     SIMPLE        Q+ 5
TEMP'SECT'2'RUN  DOUBLE      SIMPLE        Q+ 6
```

```
00000  000000 .. NOP ,NOP              00060  141503 .C BNE  P+ 003          00140  141304 .. BLE  P+ 004
00001  000000 .. NOP ,NOP              00061  021001 ". LDI  1              00141  031402 3. EXIT 2
00002  000000 .. NOP ,NOP              00062  140002 .. BR   P+ 002          00142  000003 .. NOP ,ZROX
00003  000004 .. NOP ,INCX             00063  021012 ". LDI  10             00143  000001 .. NOP ,DELB
00004  035011 :. ADDS 9                00064  006201 .. LMPY,DELB          00144  140017 .. BR   P+ 017
00005  171406 .. LRA  Q+ 006           00065  006000 .. LADD,NOP           00145  131411 .. LDX  Q+ 011
00006  170406 .. LRA  P- 006           00066  051403 S. STOR Q+ 003        00146  156605 .. LDB  Q- 005,I,X
00007  021004 ". LDI  4                00067  041401 C. LOAD Q+ 001        00147  022055 $- CMPI 45
00010  020003  . MOVE PB-DB,3          00070  023001 &. SUBI 1            00150  141513 .K BNE  P+ 013
00011  140071 .9 BR   P+ 071           00071  051401 S. STOR Q+ 001        00151  025001 *. LDNI 1
00012  131411 .. LDX  Q+ 011           00072  041402 C. LOAD Q+ 002        00152  051410 S. STOR Q+ 010
00013  156605 .. LDB  Q- 005,I,X       00073  023001 &. SUBI 1            00153  120411 .. INCM Q+ 011
00014  004000 .. DEL ,NOP              00074  051402 S. STOR Q+ 002        00154  041411 C. LOAD Q+ 011
00015  145316 .. BLE  P+ 016,I         00075  120405 .. INCM Q+ 005        00155  061604 c. CMPM Q- 004
00016  131411 .. LDX  Q+ 011           00076  140427 .. BR   P- 027        00156  141305 .. BLE  P+ 005
00017  177605 .. LRA  Q- 005,I,X       00077  025001 *. LDNI 1            00157  031402 3. EXIT 2
00020  004500 .@ DUP ,NOP              00100  051702 S. STOR S- 002        00160  000003 .. NOP ,ZROX
00021  131411 .. LDX  Q+ 011           00101  032000 4. SXIT 0            00161  000002 .. NOP ,DDEL
00022  177605 .. LRA  Q- 005,I,X       00102  041604 C. LOAD Q- 004        00162  000001 .. NOP ,DELB
00023  020221  . MVBW N,1              00103  022003 $. CMPI 3            00163  000600 .. ZERO,NOP
00024  003261 .. XCH ,LSUB             00104  141506 .F BNE  P+ 006        00164  170002 .. LRA  P+ 002
00025  004500 .@ DUP ,NOP              00105  151077 .? LDD  DB 077        00165  140553 .k BR   P- 153
00026  051402 S. STOR Q+ 002           00106  161406 .. STD  Q+ 006        00166  013720 .. BRE  P+20
00027  022002 $. CMPI 2                00107  140216 .. BR   P+ 216        00167  021001 ". LDI  1
00030  141305 .. BLE  P+ 005           00110  000002 .. NOP ,DDEL          00170  021021 ". LDI  17
00031  032000 4. SXIT 0                00111  000214 .. DDEL,DIVL          00171  131403 .. LDX  Q+ 003
00032  000050 .( NOP ,FCMP             00112  131411 .. LDX  Q+ 011        00172  012602 .. CPRB P+2
00033  000046 .& NOP ,DDUP             00113  156605 .. LDB  Q- 005,I,X    00173  140013 .. BR   P+ 013
00034  000001 .. NOP ,DELB             00114  022040 $  CMPI 32           00174  140002 .. BR   P+ 002
00035  021000 ". LDI  0                00115  141512 .J BNE  P+ 012        00175  000011 .. NOP ,DADD
00036  004500 .@ DUP ,NOP              00116  120411 .. INCM Q+ 011        00176  151406 .. LDD  Q+ 006
00037  051405 S. STOR Q+ 005           00117  041411 C. LOAD Q+ 011        00177  041403 C. LOAD Q+ 003
00040  051403 S. STOR Q+ 003           00120  061604 c. CMPM Q- 004        00200  004300 .. STAX,NOP
00041  041402 C. LOAD Q+ 002           00121  141305 .. BLE  P+ 005        00201  016401 .. DCSL 1 BIT ,X
00042  071411 s. ADDM Q+ 011           00122  140203 .. BR   P+ 203        00202  036401 =. ORI  1
00043  004500 .@ DUP ,NOP              00123  000004 .. NOP ,INCX          00203  016501 .A DCSR 1 BIT ,X
00044  051411 S. STOR Q+ 011           00124  000002 .. NOP ,DDEL          00204  161406 .. STD  Q+ 006
00045  023001 &. SUBI 1                00125  000200 .. DDEL,NOP           00205  140020 .. BR   P+ 020
00046  051401 S. STOR Q+ 001           00126  140414 .. BR   P- 014        00206  000600 .. ZERO,NOP
00047  041402 C. LOAD Q+ 002           00127  131411 .. LDX  Q+ 011        00207  021105 "E LDI  69
00050  022000 $. CMPI 0                00130  156605 .. LDB  Q- 005,I,X    00210  000000 .. PCAL GET'MESSAGE
00051  141326 .. BLE  P+ 026           00131  022053 $+ CMPI 43           00211  051024 R. STOR DB 024
00052  041403 C. LOAD Q+ 003           00132  141513 .K BNE  P+ 013        00212  021025 ". LDI  21
00053  131401 .. LDX  Q+ 001           00133  021001 ". LDI  1            00213  021002 ". LDI  2
00054  156605 .. LDB  Q- 005,I,X       00134  051410 S. STOR Q+ 010        00214  021012 ". LDI  10
00055  037417 ?. ANDI 15               00135  120411 .. INCM Q+ 011        00215  021021 ". LDI  17
00056  041405 C. LOAD Q+ 005           00136  041411 C. LOAD Q+ 011        00216  000000 .. PCAL NUM2ASC
00057  022000 $. CMPI 0                00137  061604 c. CMPM Q- 004        00217  173104 .D LRA  DB 104,I
```

```
00220  041024 B. LOAD DB 024          00273  016401 .. DCSL 1 BIT ,X       00346  161075 .= STD  DB 075
00221  002400 .. NEG ,NOP             00274  036401 =. ORI  1              00347  140032 .. BR   P+ 032
00222  000000 .. PCAL CRTOUT          00275  016501 .A DCSR 1 BIT ,X       00350  041410 C. LOAD Q+ 010
00223  031402 3. EXIT 2               00276  161406 .. STD  Q+ 006         00351  022000 $. CMPI 0
00224  000001 .. NOP ,DELB            00277  140416 .. BR   P- 016         00352  141504 .D BNE  P+ 004
00225  041411 C. LOAD Q+ 011          00300  140003 .. BR   P+ 003         00353  151406 .. LDD  Q+ 006
00226  061604 c. CMPM Q- 004          00301  031402 3. EXIT 2              00354  161075 .= STD  DB 075
00227  141304 .. BLE  P+ 004          00302  000001 .. NOP ,DELB           00355  140024 .. BR   P+ 024
00230  140075 .= BR   P+ 075          00303  041411 C. LOAD Q+ 011         00356  151075 .= LDD  DB 075
00231  000002 .. NOP ,DDEL            00304  061604 c. CMPM Q- 004         00357  003200 .. XCH ,NOP
00232  000073 .; NOP ,INCB            00305  141304 .. BLE  P+ 004         00360  151075 .= LDD  DB 075
00233  131411 .. LDX  Q+ 011          00306  140017 .. BR   P+ 017         00361  004000 .. DEL ,NOP
00234  156605 .. LDB  Q- 005,I,X      00307  000002 .. NOP ,DDEL           00362  140003 .. BR   P+ 003
00235  022057 $/ CMPI 47              00310  000015 .. NOP ,DNEG           00363  000016 .. NOP ,DXCH
00236  145506 .F BNE  P+ 006,I        00311  131411 .. LDX  Q+ 011         00364  000015 .. NOP ,DNEG
00237  120411 .. INCM Q+ 011          00312  156605 .. LDB  Q- 005,I,X     00365  151406 .. LDD  Q+ 006
00240  041411 C. LOAD Q+ 011          00313  022054 $, CMPI 44            00366  004064 .4 DEL ,NOT
00241  061604 c. CMPM Q- 004          00314  141510 .H BNE  P+ 010         00367  006701 .. AND ,DELB
00242  141304 .. BLE  P+ 004          00315  120411 .. INCM Q+ 011         00370  003200 .. XCH ,NOP
00243  031402 3. EXIT 2               00316  041411 C. LOAD Q+ 011         00371  161075 .= STD  DB 075
00244  000045 .% NOP ,DUP             00317  061604 c. CMPM Q- 004         00372  151075 .= LDD  DB 075
00245  000001 .. NOP ,DELB            00320  141304 .. BLE  P+ 004         00373  151075 .= LDD  DB 075
00246  041403 C. LOAD Q+ 003          00321  031402 3. EXIT 2              00374  000100 .@ DELB,NOP
00247  051404 S. STOR Q+ 004          00322  000002 .. NOP ,DDEL           00375  151406 .. LDD  Q+ 006
00250  000600 .. ZERO,NOP             00323  000001 .. NOP ,DELB           00376  000164 .t DELB,NOT
00251  170002 .. LRA  P+ 002          00324  140541 .a BR   P- 141         00377  006701 .. AND ,DELB
00252  140640 .. BR   P- 240          00325  041410 C. LOAD Q+ 010         00400  161075 .= STD  DB 075
00253  013726 .. BRE  P+26            00326  022001 $. CMPI 1              00401  151075 .= LDD  DB 075
00254  041404 C. LOAD Q+ 004          00327  141521 .Q BNE  P+ 021         00402  021401 #. LDXI 1
00255  021021 ". LDI  17              00330  151075 .= LDD  DB 075         00403  040012 @. LOAD P+ 012
00256  131403 .. LDX  Q+ 003          00331  003200 .. XCH ,NOP           00404  044011 H. LOAD P+ 011,X
00257  012602 .. CPRB P+2             00332  151075 .= LDD  DB 075         00405  001000 .. DCMP,NOP
00260  140021 .. BR   P+ 021          00333  004000 .. DEL ,NOP           00406  141503 .C BNE  P+ 003
00261  120404 .. INCM Q+ 004          00334  151406 .. LDD  Q+ 006         00407  151077 .? LDD  DB 077
00262  041404 C. LOAD Q+ 004          00335  004065 .5 DEL ,OR            00410  161075 .= STD  DB 075
00263  061403 c. CMPM Q+ 003          00336  000132 .Z DELB,XCH           00411  025001 *. LDNI 1
00264  141414 .. BG   P+ 014          00337  161075 .= STD  DB 075         00412  051606 S. STOR Q- 006
00265  140003 .. BR   P+ 003          00340  151075 .= LDD  DB 075         00413  031402 3. EXIT 2
00266  000013 .. NOP ,MPYL            00341  151075 .= LDD  DB 075         00414  000001 .. NOP ,DELB
00267  000011 .. NOP ,DADD            00342  000100 .@ DELB,NOP           00415  000000 .. NOP ,NOP
00270  151406 .. LDD  Q+ 006          00343  151406 .. LDD  Q+ 006         00416  000000 .. NOP ,NOP
00271  041404 C. LOAD Q+ 004          00344  000165 .u DELB,OR
00272  004300 .. STAX,NOP             00345  000100 .@ DELB,NOP


 9570.000 000000  0 <<-------------------------------------------------------------->>
 9575.000 000000  0 PROCEDURE WRITEFAIL;
 9580.000 000000  0  BEGIN
 9585.000 000000  1   NUM'CHARS:=GET'MESSAGE(78);
 9590.000 000004  1   NUM2ASC(16,4,16,TOS');
 9595.000 000011  1   ERROROUT(-NUM'CHARS,IF DEV<=MAX'DEV THEN TRUE ELSE FALSE);
 9600.000 000022  1  END; <<WRITEFAIL>>


00000  000600 .. ZERO,NOP             00002  000000 .. PCAL GET'MESSAGE     00004  021020 ". LDI  16
00001  021116 "N LDI  78              00003  051024 R. STOR DB 024          00005  021004 ". LDI  4
```

```
00006  021020 ". LDI  16              00013  041013 B. LOAD DB 013          00020  021000 ". LDI  0
00007  041070 B8 LOAD DB 070          00014  061023 b. CMPM DB 023          00021  000000 .. PCAL ERROROUT
00010  000000 .. PCAL NUM2ASC         00015  141403 .. BG   P+ 003          00022  031400 3. EXIT 0
00011  041024 B. LOAD DB 024          00016  025001 *. LDNI 1
00012  002400 .. NEG ,NOP             00017  140002 .. BR   P+ 002


 9605.000 000000  0 <<-------------------------------------------------------->>
 9610.000 000000  0 PROCEDURE ZERO'CPVA;
 9615.000 000000  0  BEGIN
 9620.000 000000  1   CPVA:=0;
 9625.000 000002  1   MOVE CPVA TO CPVA(1) FOR 31 ITEMS;
 9630.000 000007  1  END; <<ZERO'CPVA>>


00000  021000 ". LDI  0               00003  177140 .' LRA  DB 140,I,X       00006  020023  . MOVE DB-DB,3
00001  053140 V' STOR DB 140,I        00004  173140 .' LRA  DB 140,I         00007  031400 3. EXIT 0
00002  021401 #. LDXI 1               00005  021037 ". LDI  31
```

```
 9640.000 000000  0 PROCEDURE ADCCDIAG;
 9645.000 000000  0 MAIN;
 9650.000 000000  0 BEGIN
 9655.000 000000  1      FMGR(5,ADCC); <<This is the required call to FMGR>>
 9660.000 000007  1      SAVESTART; <<RUN restarts from here>>
 9665.000 000011  1      TROF';
 9670.000 000015  1      STARTIDLE; <<Startup for the input console driver>>
 9675.000 000016  1   <<-------------------------------------------------------->>
 9680.000 000016  1   <<The following sets up the default diagnostic run time
 9685.000 000016  1      parameters (the same as the RST command)>>
 9690.000 000016  1      EPRINTOK:=PRINTOK:=EPAUSEOK:=PAUSEOK:=TRUE;
 9695.000 000026  1      PRINT'ERRORS:=FALSE;
 9700.000 000030  1   <<-------------------------------------------------------->>
 9705.000 000030  1   <<The following lines are required for compatability with
 9710.000 000030  1       the Stand-Alone File Manager>>
 9715.000 000030  1      V'GETS'MEM(ADDR,QI);
 9720.000 000034  1     MEM'GETS'V(ADDR,0); <<Clear QI>>
 9725.000 000040  1      V'GETS'MEM(TOS',!200+(4*!C)+3);
 9730.000 000046  1      MEM'GETS'V(CTCBP,TOS'); ADDR:=TOS';
 9735.000 000054  1  A:=0;
 9740.000 000056  1  WHILE (A:=A+1)<5 DO BEGIN
 9745.000 000062  2            TOS':=(IF A<3 THEN !4009 ELSE !4008);
 9750.000 000071  2            MEM'GETS'V(ADDR,TOS');
 9755.000 000101  2            ADDR:=ADDR+1;   END;
 9760.000 000106  1   <<-------------------------------------------------------->>
 9765.000 000106  1
 9770.000 000106  1     <<The next line gets the console channel from FMGR>>
 9775.000 000106  1      CONSOLE:=IF (D:=GETIO(0))=0 THEN GETIO(2) ELSE D;
 9780.000 000123  1      CONCHNLBIT:=(!8000) LSR (CONSOLE.(9:4));
 9785.000 000132  1  <<then the Printer & disc.>>
 9790.000 000132  1      PRINTER:=GETIO(1);
 9795.000 000136  1      DISC:=GETIO(3);
 9800.000 000142  1
 9805.000 000142  1   <<The following stuffs the DRT of un-used
 9810.000 000142  1     channel/devices with the label of the unexpected
 9815.000 000142  1      interrupt handler>>
 9820.000 000142  1      TOS':=DRT'PLABEL'OF(FLY'CATCHER);
 9825.000 000146  1   TEM'DEV:=7;
 9830.000 000150  1   WHILE (TEM'DEV:=TEM'DEV+1)<%200
 9835.000 000155  1    DO
 9840.000 000155  1     BEGIN
 9845.000 000155  2      IF TEM'DEV<>CONSOLE OR TEM'DEV<>DISC OR TEM'DEV<>PRINTER
 9850.000 000172  2       THEN MEM'GETS'V(TEM'DEV*4+2,TOS');
 9855.000 000203  2     END;
 9860.000 000204  1
 9865.000 000204  1      MOVE TSTBUF' TO TSTBUF FOR 35 ITEMS;
 9870.000 000210  1      CLEAR'UNX'IRQ; <<Zero unexpected interrupt holder>>
 9875.000 000216  1      ENDPASSCOUNTER:=1; <<Initialize the end-of-pass counter>>
 9880.000 000220  1
 9885.000 000220  1      EXTND:=0;
 9890.000 000222  1     EXTND15 := FALSE;  <<DUS doesn't load prog when rerun>>     <<1.31>>
 9895.000 000224  1  DESIRED'DEV:=STP:=0;
 9900.000 000230  1      PRINT(MSG'OUT,-GET'MESSAGE(0),%320);
 9905.000 000237  1      NUM'CHARS:=GET'MESSAGE(1);
 9910.000 000243  1      MOVE ADCC(8) TO MSG'OUT(NUM'CHARS) FOR 8 ITEMS; <<Revision #>>
```

```
 9915.000 000251  1      NUM'CHARS:=NUM'CHARS+8;
 9920.000 000254  1      CRTOUT(MSG'OUT,-NUM'CHARS);
 9925.000 000260  1      CRTOUT(MSG'OUT,-GET'MESSAGE(2));
 9930.000 000266  1  A:=B:=0;
 9935.000 000272  1  WHILE A=0 DO BEGIN
 9940.000 000275  2      GET'INPUT(1); <<Get run parameters>>
 9945.000 000277  2      END;
 9950.000 000300  1  <<"GO" POINT>>
 9955.000 000300  1
 9960.000 000300  1   <<-------------------------------------------------------->>
 9965.000 000300  1
 9970.000 000300  1   <<If Section 16 has been selected, go directly to TS16,
 9975.000 000300  1      (the begining of this Section) bypassing the channel
 9980.000 000300  1      number request etc.>>
 9985.000 000300  1      IF SECTION(16) THEN GO START16;
 9990.000 000311  1
 9995.000 000311  1   <<-------------------------------------------------------->>
10000.000 000311  1   <<If GO,1 was input, skip the operator instruction to replace
10005.000 000311  1      the RS 232C cable with the test connector>>
10010.000 000311  1      IF NOT B THEN BEGIN
10015.000 000313  2      IF PRINTOK THEN CRTOUT(MSG'OUT,-GET'MESSAGE(3));
10020.000 000323  2      END;
10025.000 000323  1
10030.000 000323  1   <<-------------------------------------------------------->>
10035.000 000323  1   <<The following accepts the reply to the question which
10040.000 000323  1      channel is to be tested, and checks that the reply is
10045.000 000323  1      within the range 1-15>>
10050.000 000323  1 GET'CHANNEL:
10055.000 000323  1   B:=1;
10060.000 000325  1   WHILE B=1
10065.000 000330  1    DO
10070.000 000330  1     BEGIN
10075.000 000330  2      A:=C:=0;
10080.000 000334  2      PRINT(MSG'OUT,-GET'MESSAGE(5),%320);
10085.000 000343  2      MOVE CLEARBUF TO TEMPBUF FOR 10 ITEMS;
10090.000 000351  2      B:=(IF READKBD(TEMPBUF,-3)>2 THEN 1 ELSE 0);
10095.000 000363  2      CHECKYTRAP;
10100.000 000364  2      STARTIDLE;
10105.000 000365  2
10110.000 000365  2      IF (A:=TEMPBUF(1))<>" "
10115.000 000373  2       THEN
10120.000 000373  2        BEGIN
10125.000 000373  3         B:=(IF !30<=A<=!39 THEN B ELSE 1);
10130.000 000414  3         B:=(IF !30<=(C:=TEMPBUF(0))<=!39 THEN B ELSE 1);
10135.000 000436  3        END
10140.000 000436  2       ELSE
10145.000 000437  2        B:=(IF !30<=(A:=TEMPBUF(0))<=!39 THEN B ELSE 1);
10150.000 000461  2
10155.000 000461  2      A:=(A AND !F);
10160.000 000464  2      C:=(C AND !F)*10;
10165.000 000471  2      B:=(IF 1<=(A:=A+C)<=15 THEN B ELSE 1);
10170.000 000506  2      IF B THEN CRTOUT(MSG'OUT,-GET'MESSAGE(7));
10175.000 000516  2     END;
10180.000 000517  1
10185.000 000517  1   <<-------------------------------------------------------->>
10190.000 000517  1   <<The following sets up the channel bit for use when comparing
```

```
10195.000 000517  1      the results of a roll call, or when setting or clearing the
10200.000 000517  1      interrupt mask etc.>>
10205.000 000517  1   CHNLBIT:=(!8000) CSR (A);
10210.000 000523  1   CHNL:=A CSL (3);
10215.000 000526  1   CHECKYTRAP; <<Check for operator interrupt request>>
10220.000 000527  1
10225.000 000527  1   <<-------------------------------------------------------->>
10230.000 000527  1   <<The following checks for conflict in Channel numbers.>>
10235.000 000527  1   IF CHNL=(CONSOLE AND !F8)
10240.000 000534  1    THEN
10245.000 000534  1     BEGIN
10250.000 000534  2      CRTOUT(MSG'OUT,-GET'MESSAGE(87));
10255.000 000542  2      GO GET'CHANNEL;
10260.000 000545  2     END;
10265.000 000545  1   IF CHNL=(DISC AND !F8) OR CHNL=(PRINTER AND !F8)
10270.000 000560  1    THEN
10275.000 000560  1     BEGIN
10280.000 000560  2      NUM'CHARS:=GET'MESSAGE(88);
10285.000 000564  2      CRTOUT(MSG'OUT,-NUM'CHARS);
10290.000 000570  2      IF CHNL=(PRINTER AND !F8)
10295.000 000575  2       THEN
10300.000 000575  2        BEGIN
10305.000 000575  3         MOVE("Printer.") TO MSG'OUT(41);
10310.000 000603  3         CRTOUT(MSG'OUT,-NUM'CHARS);
10315.000 000613  3        END;
10320.000 000613  2      DOPAUSE;
10325.000 000614  2     END;
10330.000 000614  1
10335.000 000614  1   <<-------------------------------------------------------->>
10340.000 000614  1   <<The following determines whether or not the ADCC-Extended
10345.000 000614  1      is present>>
10350.000 000614  1 GET'EXTND:
10355.000 000614  1   IF DESIRED'DEV<=3
10360.000 000620  1    THEN
10365.000 000620  1     BEGIN
10370.000 000620  2      PRINT(MSG'OUT,-GET'MESSAGE(6),%320);
10375.000 000627  2      READKBD(TEMPBUF,-2);
10380.000 000634  2      CHECKYTRAP;
10385.000 000635  2      STARTIDLE;
10390.000 000636  2      IF (TEMPBUF(0) AND !DF)="Y"
10395.000 000644  2       THEN
10400.000 000644  2        EXTND:=TRUE
10405.000 000646  2       ELSE
10410.000 000647  2        IF (TEMPBUF(0) AND !DF)="N"
10415.000 000660  2         THEN
10420.000 000660  2          EXTND:=FALSE
10425.000 000662  2         ELSE
10430.000 000663  2          GO GET'EXTND;
10435.000 000665  2      IF MAX'DEV=-1
10440.000 000670  2       THEN <<Not initialized>>
10445.000 000670  2        BEGIN
10450.000 000670  3         MAX'DEV:=(IF EXTND THEN 7 ELSE 3);
10455.000 000676  3        END;
10460.000 000676  2      IF NOT EXTND AND MAX'DEV>=4 THEN MAX'DEV:=3;
10465.000 000705  2      CHECKYTRAP; <<Check for operator interrupt request>>
10470.000 000706  2     END;
```

```
10480.000 000706  1 TS0: <<Begin execution of diagnostic here>>
10485.000 000706  1 IF SECTION(1) THEN BEGIN
10490.000 000714  2
10495.000 000714  2   COMMENT
10500.000 000714  2   SECTION 1   -   Roll call and Register 2,14 reads
10505.000 000714  2         Places the command decode logic, the channel recognition
10510.000 000714  2         logic, the global response logic, the register decoding
10515.000 000714  2         logic and the handshake control logic under test.
10520.000 000714  2         Register 2
10525.000 000714  2   +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
10530.000 000714  2   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |10 |11 |12 |13 |14 |15 |
10535.000 000714  2   |---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
10540.000 000714  2   | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |   | 0 | 1 | 0 | 1 | 0 |
10545.000 000714  2   +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
10550.000 000714  2       Bit 0               - The 'OR' of the other bits in this
10555.000 000714  2                             word.
10560.000 000714  2
10565.000 000714  2       Bits 1-9            - These bits have no meaning on an
10570.000 000714  2                             ADCC, but defined as all zeroes for
10575.000 000714  2                         use by the channel program microcode.
10580.000 000714  2
10585.000 000714  2       Bit 10              - Poll response.  This bit will be set
10590.000 000714  2                             to a one whenever the ADCC asserts
10595.000 000714  2                             CSRQ on the IMB.
10600.000 000714  2
10605.000 000714  2       Bits 11-15          - These bits have no meaning on an
10610.000 000714  2                             ADCC, but are defined as !A for use
10615.000 000714  2                               by the channel program microcode.
10620.000 000714  2         Register 14
10625.000 000714  2   +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
10630.000 000714  2   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |10 |11 |12 |13 |14 |15 |
10635.000 000714  2   |---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
10640.000 000714  2   | 1 | 0 |   | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |   | 0 | 0 | 0 | 1 |
10645.000 000714  2   +---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+---+
10650.000 000714  2       Bit 0                       -   always a one on an ADCC
10655.000 000714  2
10660.000 000714  2       Bit 1   AMIGO/HYBRID        -   always a zero on an ADCC
10665.000 000714  2
10670.000 000714  2       Bit 2   CPU/CPP             -   zero if the processor select
10675.000 000714  2                                       switch is set to the 'CPU'
10680.000 000714  2                                       position, one if it is set
10685.000 000714  2                                       to the 'CPP' position.
10690.000 000714  2
10695.000 000714  2       Bits 12 thru 15 CHANNEL TYPE -  these bits indicate that the
10700.000 000714  2                                       channel is an ADCC.  (a CIC
10705.000 000714  2                                       returns a zero in this
10710.000 000714  2                                       nibble);
```

```
10720.000 000714  2  <<- STEP 1      -      Roll Call  (ROCL)
10725.000 000714  2
10730.000 000714  2        The ability of the ADCC under test to respond to the global
10735.000 000714  2        I/O instruction ROCL is tested.  A ROCL is issued, and the
10740.000 000714  2        resulting retuned word is tested to verify that the bit
10745.000 000714  2        which corresponds to the ADCC channel number is set to a
10750.000 000714  2        one.>>
10755.000 000714  2
10760.000 000714  2      STP:=1;
10765.000 000716  2      ROLLCALL;
10770.000 000725  2      IF (TOS' AND CHNLBIT)<>CHNLBIT
10775.000 000733  2       THEN
10780.000 000733  2        BEGIN
10785.000 000733  3         ERROROUT(-GET'MESSAGE(10),0);
10790.000 000741  3         GO GET'CHANNEL; <<Don't continue this way.>>
10795.000 000744  3        END;
10800.000 000744  2
10805.000 000744  2   <<- STEP 2      -      Read Register 2
10810.000 000744  2
10815.000 000744  2       The ability of the ADCC under test to return the correct
10820.000 000744  2       value in response to a Register 2 read is verified.  A
10825.000 000744  2       register 2 read is issued, and the value of the resulting
10830.000 000744  2       returned word is verified to be !800A, the expected value
10835.000 000744  2       of register 2 at this time.  A further test of this register
10840.000 000744  2       is done in Section eleven.>>
10845.000 000744  2
10850.000 000744  2      STP:=2;
10855.000 000746  2      READREG(2);
10860.000 000760  2
10865.000 000760  2      IF TOS'<>!800A THEN BEGIN
10870.000 000764  3         NUM'CHARS:=GET'MESSAGE(11);
10875.000 000770  3         NUM2ASC(20,4,16,TOS');
10880.000 000775  3         ERROROUT(-NUM'CHARS,0);
10885.000 001001  3         END;
10890.000 001001  2
10895.000 001001  2  <<- STEP 3      -      Channel Configuration Register 'CPP'
10900.000 001001  2
10905.000 001001  2         The contents of Register 14 are read and the sense of
10910.000 001001  2         bit 2 is tested.  If the sense of bit 2 is one, indicating
10915.000 001001  2         that the ADCC is using the CPP, the operator is asked to
10920.000 001001  2         set the processor select switch to the CPU position.
10925.000 001001  2         There is a message displayed as a reminder to reset this
10930.000 001001  2         switch at the end of the diagnostic.>>
10935.000 001001  2
10940.000 001001  2      STP:=3;
10945.000 001003  2      READREG(14);
10950.000 001017  2      IF TOS'.(2:1) THEN BEGIN
10955.000 001023  3         CRTOUT(MSG'OUT,-GET'MESSAGE(13));
10960.000 001031  3  DOPAUSE;
10965.000 001032  3         END;
```

```
10975.000 001032  2   <<- STEP 4      -      Channel Configuration Register - CPU
10980.000 001032  2
10985.000 001032  2       The value of Register 14 is read, and the returned word
10990.000 001032  2       is verified to be !80n1.>>
10995.000 001032  2
11000.000 001032  2      STP:=4;
11005.000 001034  2      READREG(14);
11010.000 001046  2  A:=INTEGER(IF NOT EXTND THEN !8001 ELSE !8011);
11015.000 001054  2      IF TOS'<>A THEN BEGIN
11020.000 001060  3         NUM'CHARS:=GET'MESSAGE(12);
11025.000 001064  3         NUM2ASC(21,4,16,TOS');
11030.000 001071  3         NUM2ASC(36,4,16,A);
11035.000 001076  3         ERROROUT(-NUM'CHARS,0);
11040.000 001102  3         END;
11045.000 001102  2
11050.000 001102  2   REP'ILL'INT;
11055.000 001106  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
11060.000 001107  2 END;
```

```
11070.000 001107  1 IF SECTION(2) THEN BEGIN
11075.000 001115  2
11080.000 001115  2    <<SECTION 2   -   OBII, OBSI and INTERRUPTS
11085.000 001115  2
11090.000 001115  2      Section two places the interrupt queue, priority encoding,
11095.000 001115  2      interrupt mask and the global response logic function blocks
11100.000 001115  2      under test.>>
11105.000 001115  2
11110.000 001115  2
11115.000 001115  2      LOAD'TRAPS; <<Load up the interrupt trap addresses in DRT>>
11120.000 001116  2      CLEAR'UNX'IRQ;
11125.000 001126  2
11130.000 001126  2   <<- STEP 5      -      Obtain Interrupt Information (OBII)
11135.000 001126  2
11140.000 001126  2            OBII is a command issued by the interrupt processing
11145.000 001126  2            micro-code.  Step 5 issues a register 0 read with a
11150.000 001126  2            special command code to emulate OBII.  The resulting
11155.000 001126  2            returned word, bits 9 thru 12 are verified to contain
11160.000 001126  2            the value of the channel address of the ADCC under
11165.000 001126  2            test.>>
11170.000 001126  2
11175.000 001126  2      STP:=5;
11180.000 001130  2      OBII; <<ISSUE OBII>>
11185.000 001142  2      IF TOS'.(9:4)<>CHNL.(9:4) THEN BEGIN
11190.000 001152  3         NUM'CHARS:=GET'MESSAGE(14);
11195.000 001156  3         MSG'OUT(2):="I";
11200.000 001161  3         NUM2ASC(14,2,10,TOS'.(9:4));
11205.000 001170  3         NUM2ASC(26,2,10,CHNL.(9:4));
11210.000 001177  3         ERROROUT(-NUM'CHARS,0);
11215.000 001203  3         END;
11220.000 001203  2
11225.000 001203  2
11230.000 001203  2   <<- STEP 6      -      Obtain Service Information (OBSI)
11235.000 001203  2
11240.000 001203  2            OBSI is a command issued by the channel service process
11245.000 001203  2            micro-code.  Step 6 issues a register 0 read with a
11250.000 001203  2            speical command code to emulate OBSI.  The resulting
11255.000 001203  2            returned word, bits 9 thru 12 are verified to contain
11260.000 001203  2            the value of the channel address of the ADCC under
11265.000 001203  2            test.>>
11270.000 001203  2
11275.000 001203  2      STP:=6;
11280.000 001205  2      OBSI;     <<ISSUE OBSI>>
11285.000 001217  2      IF TOS'.(9:4)<>CHNL.(9:4) THEN BEGIN
11290.000 001227  3         NUM'CHARS:=GET'MESSAGE(14);
11295.000 001233  3         MSG'OUT(2):="S";
11300.000 001236  3         NUM2ASC(14,2,10,TOS'.(9:4));
11305.000 001245  3         NUM2ASC(26,2,10,CHNL.(9:4));
11310.000 001254  3         ERROROUT(-NUM'CHARS,0);
11315.000 001260  3         END;
```

```
11325.000 001260  2   <<- STEP 7      -      Interrupt Queue - cleared by INIT
11330.000 001260  2
11335.000 001260  2            Because the interrupt queue may be in a random state
11340.000 001260  2            initially, an INIT is issued followed by a software
11345.000 001260  2            equivalent OBII.  The resulting returned word is then
11350.000 001260  2            verified to be the value of the channel address in bits
11355.000 001260  2            9 thru 12, and a seven (the default case when no
11360.000 001260  2            interrupts are queued) in bits 13,14,15.>>
11365.000 001260  2
11370.000 001260  2       STP:=7;    <<Interrupt queue - cleared by INIT>>
11375.000 001262  2       CHNL'INIT;
11380.000 001267  2       OBII;
11385.000 001301  2       IF TOS'.(13:3)<>7 THEN ERROROUT(-GET'MESSAGE(15),0);
11390.000 001314  2
11395.000 001314  2   <<- STEP 8       -      Interrupt Queue
11400.000 001314  2
11405.000 001314  2            The interrupt queue for all eight device numbers is
11410.000 001314  2            present on the ADCC-Main, so all eight are tested
11415.000 001314  2            regardless of the absence of the ADCC-Extended.  An
11420.000 001314  2            interrupt is queued by a write to register 12 with
11425.000 001314  2            bit 12 set to a one, and the device number of the device
11430.000 001314  2            to be queued in bits 13,14,15.  The test sequence is, all
11435.000 001314  2            devices are queued (then OBII is issued to check bits
11440.000 001314  2            13,14,15 of the returned byte) one at a time 0 thru 7.>>
11445.000 001314  2
11450.000 001314  2       STP:=8;
11455.000 001316  2       SETMASK;
11460.000 001322  2   DEV:=-1;
11465.000 001324  2   WHILE (DEV:=DEV+1)<8 DO BEGIN
11470.000 001330  3
11475.000 001330  3       CLEAR'UNX'IRQ;     <<CLEAR UNEXPECTED INTERRUPT HOLDER>>
11480.000 001340  3
11485.000 001340  3       TOS':=!8+DEV;
11490.000 001344  3   WRITEREG(12);
11495.000 001355  3       OBII;
11500.000 001367  3       IF TOS'.(13:3)<>DEV THEN BEGIN
11505.000 001374  4          NUM'CHARS:=GET'MESSAGE(16);
11510.000 001400  4          MSG'OUT(19):=TOS'.(13:3)+!30;
11515.000 001406  4          MSG'OUT(30):=DEV+!30;
11520.000 001413  4          ERROROUT(-NUM'CHARS,0);
11525.000 001417  4          END;
11530.000 001417  3
11535.000 001417  3       REP'ILL'INT; <<Check for unexpected interrupt occurance>>
11540.000 001420  3       TOS':=DEV; <<Unqueue>>
11545.000 001422  3       WRITEREG(12);     <<interrupts>>
11550.000 001433  3       END; <<for next test>>
11555.000 001434  2       CLEARMASK; <<And then clear the mask bit>>
11560.000 001436  2
11565.000 001436  2    <<- STEP 9      -      Interrupt Queue cleared by INIT
11570.000 001436  2
11575.000 001436  2            Assured by Step 7 that the interrupt queue is not in a
11580.000 001436  2            random state, it is now necessary to insure that INIT will
11585.000 001436  2            indeed set the Interrupt Queue to the default condition (all
11590.000 001436  2            zeroes in the queue, but inverted when read by the priority
11595.000 001436  2            encoder).  An interrupt for device 0 is queued, then an INIT
```

```
11600.000 001436  2           is issued and OBII used to verify bits 13,14,15 are reset
11605.000 001436  2           to all ones.>>
11610.000 001436  2
11615.000 001436  2      STP:=9;
11620.000 001440  2      TOS':=!8; <<Device 0 and the set bit>>
11625.000 001442  2      WRITEREG(12); <<Queue interrupt for device 0>>
11630.000 001453  2      CHNL'INIT; <<Initialize the channel>>
11635.000 001460  2      OBII; <<Now read and test the interrupt queue>>
11640.000 001472  2      IF TOS'.(13:3)<>7 THEN ERROROUT(-GET'MESSAGE(15),0);
11645.000 001505  2
11650.000 001505  2  << - STEP 10     -      Queued Interrupts and IRQ
11655.000 001505  2
11660.000 001505  2       Being assured by Step 8 that interrupts can be queued,
11665.000 001505  2       Step 10 sets the interrupt mask bit for the ADCC under test
11670.000 001505  2       and allows external interrupts with the execution of an ION
11675.000 001505  2       instruction.  A short wait loop is employed to allow the
11680.000 001505  2       CPU to process the expected IRQ, then the program verifies
11685.000 001505  2       that the interrupt was requested by the ADCC under test.
11690.000 001505  2
11695.000 001505  2       Two error conditions are possible as a result of Step 10,
11700.000 001505  2       no interrupt occurred, or an unexpected device was the
11705.000 001505  2       cause of the interrupt.>>
11710.000 001505  2
11715.000 001505  2      STP:=10;
11720.000 001507  2      DEV:=-1;
11725.000 001511  2      WHILE (DEV:=DEV+1)<8
11730.000 001515  2       DO
11735.000 001515  2        BEGIN <<Make device under test loop>>
11740.000 001515  3         SETUP'DRT(DEV);
11745.000 001517  3         CLEARIRQ; <<Clear out the IRQ save word>>
11750.000 001524  3         CLEAR'UNX'IRQ; <<Clear the unexp int. word>>
11755.000 001532  3         INTPSYS'ON; <<Allow external interrupts>>
11760.000 001533  3         TOS':=!8+DEV; <<Device number + set bit>>
11765.000 001537  3         WRITEREG(12); <<Queue interrupt this device>>
11770.000 001550  3         A:=(!7FFF) CSR (DEV); <<Make compare word>>
11775.000 001554  3         B:=(!8000) CSR (DEV); <<Make another compare word>>
11780.000 001560  3         DODELAY(STARTIME,10);
11785.000 001567  3         GETIRQ;
11790.000 001572  3         IF IRQ'=B THEN ERROROUT(-GET'MESSAGE(82),1);
11795.000 001604  3         SETMASK;
11800.000 001610  3         DODELAY(STARTIME,10); <<Short wait>>
11805.000 001614  3         INTPSYS'OFF; <<disallow external interrupts>>
11810.000 001615  3         CLEARMASK; <<Mask bit for this channel off>>
11815.000 001617  3         GETIRQ; <<Get the IRQ word>>
11820.000 001622  3         IF (A AND IRQ')<>0
11825.000 001630  3          THEN
11830.000 001630  3           BEGIN    <<Check unexpected intps>>
11835.000 001630  4            NUM'CHARS:=GET'MESSAGE(18);
11840.000 001634  4            MSG'OUT(33):=DEV+!30;
11845.000 001641  4            ERROROUT(-NUM'CHARS,0);
11850.000 001645  4           END;
11855.000 001645  3
11860.000 001645  3         IF IRQ'<>B
11865.000 001651  3          THEN
11870.000 001651  3           BEGIN
11875.000 001651  4            NUM'CHARS:=GET'MESSAGE(17);
```

```
11880.000 001655  4           MSG'OUT(14):=!30+DEV;
11885.000 001662  4           ERROROUT(-NUM'CHARS,0);
11890.000 001670  4          END;
11895.000 001670  3
11900.000 001670  3        REP'ILL'INT;     <<Check for unexpected interrupts>>
11905.000 001671  3        TOS':=DEV; <<Now unqueue interrupt for>>
11910.000 001673  3        WRITEREG(12); <<device number under test>>
11915.000 001704  3       END; <<Do for all eight devices>>
11920.000 001705  2   <<- STEP 11     -     Priority Encoder
11925.000 001705  2
11930.000 001705  2    The priority encoder is tested by queuing interrupts for
11935.000 001705  2    all devices, OBII is then used to insure that the correct
11940.000 001705  2    device has priority in the queue, holding off interrupts
11945.000 001705  2    from lower priority devices.  The highest priority device is
11950.000 001705  2    then removed from the interrupt queue, and the next highest
11955.000 001705  2    priority device is tested.  The step is completed when all
11960.000 001705  2    all eight device numbers are tested.>>
11965.000 001705  2
11970.000 001705  2     STP:=11;
11975.000 001707  2  DEV:=-1;
11980.000 001711  2  WHILE (DEV:=DEV+1)<8 DO BEGIN
11985.000 001715  3      TOS':=!8+DEV;
11990.000 001721  3  WRITEREG(12); <<Queue all 8 devices>>
11995.000 001734  3      END;
12000.000 001735  2
12005.000 001735  2  DEV:=-1;
12010.000 001737  2  WHILE (DEV:=DEV+1)<8 DO BEGIN
12015.000 001743  3      OBII; <<Issue OBII>>
12020.000 001757  3      IF TOS'.(13:3)<>DEV.(13:3) THEN BEGIN
12025.000 001765  4         NUM'CHARS:=GET'MESSAGE(19);
12030.000 001771  4         MSG'OUT(48):=TOS'.(13:3) + !30;
12035.000 001777  4         MSG'OUT(7):=DEV + !30;
12040.000 002004  4         ERROROUT(-NUM'CHARS,0);
12045.000 002010  4         END;
12050.000 002010  3
12055.000 002010  3      TOS':=DEV;
12060.000 002012  3   WRITEREG(12); <<Unqueue this device>>
12065.000 002023  3      END;
12070.000 002024  2
12075.000 002024  2    REP'ILL'INT;
12080.000 002025  2    DOT; <<Check ATTN/CNTL Y then print 'period'>>
12085.000 002026  2 END;
```

```
12095.000 002026  1 IF SECTION(3) THEN BEGIN
12100.000 002034  2
12105.000 002034  2   <<SECTION 3  -  Channel Address Recognition
12110.000 002034  2
12115.000 002034  2  Section three gives a more extensive test of the Channel
12120.000 002034  2  Address recognition logic than Section 1, and places a subset
12125.000 002034  2  of the interrupt queue, device address latches, priority encoding
12130.000 002034  2  and interrupt mask under test.  This Section is directed at
12135.000 002034  2  the case of one channel responding to a Roll Call, Interrupt Poll
12140.000 002034  2  or Service Poll as more than one channel.
12145.000 002034  2
12150.000 002034  2  - STEP 12     -
12155.000 002034  2
12160.000 002034  2   A test is made by queueing an interrupt, and enabling the
12165.000 002034  2   mask for only the channel number under test, keeping the
12170.000 002034  2   external interrupt system off.  An IPOLL at this time should
12175.000 002034  2   return only the channel number of the ADCC under test.>>
12180.000 002034  2
12185.000 002034  2      STP:=12;
12190.000 002036  2      INTPSYS'OFF; <<Disallow external interrupts>>
12195.000 002041  2      SETMASK; <<Set mask for ADCC under test>>
12200.000 002045  2      TOS':=!8; <<Queue interrupt>>
12205.000 002047  2      WRITEREG(12); <<for device 0>>
12210.000 002060  2
12215.000 002060  2      IPOLL; <<Poll channels>>
12220.000 002070  2      IF TOS'<>CHNLBIT THEN BEGIN
12225.000 002074  3         NUM'CHARS:=GET'MESSAGE(20);
12230.000 002100  3         NUM2ASC(15,4,16,TOS');
12235.000 002105  3         NUM2ASC(30,4,16,CHNLBIT);
12240.000 002112  3         ERROROUT(-NUM'CHARS,0);
12245.000 002116  3         END;
12250.000 002116  2
12255.000 002116  2   CLEAR'UNX'DEV;
12260.000 002121  2   REP'ILL'INT;
12265.000 002122  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
12270.000 002123  2 END;
```

```
12280.000 002123  1 IF SECTION(4) THEN BEGIN
12285.000 002131  2
12290.000 002131  2  <<SECTION 4  -  Register 1 thru 15 integrity
12295.000 002131  2
12300.000 002131  2    Section 4 places the register decoding logic under test by
12305.000 002131  2    verifying that registers 1, 3 thru 13 and 15 return all zeros as
12310.000 002131  2    the result of a register read, and then verifies that write to
12315.000 002131  2    any register 1 thru 15 will not alter contents of any register.>>
12320.000 002131  2
12325.000 002131  2  <<- STEP 13     -     Registers 1, 3 thru 13 and 15 return zeros
12330.000 002131  2
12335.000 002131  2    Registers 1, 3 thru 13 and 15 are read, and the returned
12340.000 002131  2    words verified to be zero.  (Registers 2 and 14 were
12345.000 002131  2    previously tested for correct value in Section 1)>>
12350.000 002131  2
12355.000 002131  2      STP:=13;
12360.000 002133  2      CHNL'INIT;
12365.000 002142  2     CLEARMASK;
12370.000 002144  2    DEV:=DESIRED'DEV-1;
12375.000 002150  2    WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
12380.000 002154  3       DO'WIOC0(!4040+DEV); <<Address Device under test>>
12385.000 002160  3      LA:=0;
12390.000 002162  3      WHILE (LA:=LA+1)<16 DO BEGIN
12395.000 002171  4         READREG(LA); <<Read register LA>>
12400.000 002207  4         IF LA<>2 AND LA<>14 THEN BEGIN
12405.000 002217  5            IF TOS'<>0 THEN BEGIN
12410.000 002223  6            NUM'CHARS:=GET'MESSAGE(21);
12415.000 002227  6            MOVE (!20,!20) TO MSG'OUT(9);
12420.000 002235  6            NUM2ASC(9,2,10,LA);
12425.000 002242  6            NUM2ASC(22,4,16,TOS');
12430.000 002253  6            ERROROUT(-NUM'CHARS,1);
12435.000 002257  6            END;
12440.000 002257  5            END;
12445.000 002257  4
12450.000 002257  4      B:=(IF LA=2 THEN TOS' ELSE B);
12455.000 002267  4      C:=(IF LA=14 THEN TOS' ELSE C);
12460.000 002277  4      END; <<Next register number>>
12465.000 002300  3      END; <<Next device number>>
```

```
12475.000 002301  2  <<- STEP 14     -      Registers affected by write register
12480.000 002301  2
12485.000 002301  2    An all ones pattern is written into each register 1 thru 15.
12490.000 002301  2    After each write, all registers 1 thru 15 are read, and the
12495.000 002301  2    returned values tested to verify that the contents are
12500.000 002301  2    unaffected by the write.
12505.000 002301  2
12510.000 002301  2    Note that the all ones write into Register 12 will queue
12515.000 002301  2    an interrupt, but the interrupt will not be processed
12520.000 002301  2    because external interrupts are disallowed at this time.
12525.000 002301  2    The queued interrupt will be cleared at the end of this
12530.000 002301  2    step.>>
12535.000 002301  2
12540.000 002301  2      STP:=14;
12545.000 002303  2  DEV:=DESIRED'DEV-1;
12550.000 002307  2  WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
12555.000 002313  3      LA:=0;
12560.000 002315  3      WHILE (LA:=LA+1)<16 DO BEGIN
12565.000 002326  4      TOS':=TRUE; <<Write an all ones pattern>>
12570.000 002330  4      WRITEREG(LA); <<to register (LA)>>
12575.000 002343  4
12580.000 002343  4      D:=0;
12585.000 002345  4      WHILE (D:=D+1)<16 DO BEGIN
12590.000 002351  5      DO'WIOC0(4040+DEV); <<Address Device under test>>
12595.000 002354  5      E:=0;
12600.000 002356  5      READREG(D);
12605.000 002373  5      IF D<>2 AND D<>14 THEN E:=(IF TOS'=0 THEN E ELSE -1);
12610.000 002411  5      IF D=2 THEN E:=(IF TOS'=B THEN E ELSE -1);
12615.000 002424  5      IF D =14 THEN E:=(IF TOS'=C THEN E ELSE -1);
12620.000 002441  5
12625.000 002441  5      IF E THEN BEGIN
12630.000 002443  6         NUM'CHARS:=GET'MESSAGE(22);
12635.000 002447  6         NUM2ASC(18,2,10,LA);
12640.000 002454  6         NUM2ASC(38,2,10,D);
12645.000 002461  6         ERROROUT(-NUM'CHARS,1);
12650.000 002465  6         END;
12655.000 002465  5
12660.000 002465  5      END; <<Read next register>>
12665.000 002466  4      END; <<Write next register>>
12670.000 002467  3      END; <<Do next device number>>
12675.000 002470  2    CHNL'INIT;
12680.000 002475  2   CLEAR'UNX'DEV;
12685.000 002500  2   REP'ILL'INT;
12690.000 002501  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
12695.000 002502  2 END;
```

```
12705.000 002502  1 IF SECTION(5)
12710.000 002510  1  THEN
12715.000 002510  1   BEGIN
12720.000 002510  2
12725.000 002510  2  <<SECTION 5   -   Baud Rate Clock and UARTS
12730.000 002510  2
12735.000 002510  2   Step 15 verifies correct operation of the Baud Rate Clock
12740.000 002510  2   logic, the device address latches logic and a subset of
12745.000 002510  2   the UART logic.>>
12750.000 002510  2
12755.000 002510  2  <<Each device is individually initialized to transmit and
12760.000 002510  2    receive a test byte at the various baud rates shown in
12765.000 002510  2    figure 5.4  A test byte (!55) is transmitted, and the program
12770.000 002510  2    waits approximately 300 milliseconds to allow the looped-back
12775.000 002510  2    test byte to be received by the UART.  The UART's receive
12780.000 002510  2    buffer is read, and the contents are verified to be !55.
12785.000 002510  2    (the value of the byte transmitted)  The test connector shown
12790.000 002510  2    in part by figure 4.3, on the J2 edge connector, provides
12795.000 002510  2    the data paths required to loop the UART's output to it's
12800.000 002510  2    input.
12805.000 002510  2
12810.000 002510  2    Once it has been established that the UART is capable of
12815.000 002510  2    transmitting and receiving data, test byte characters with
12820.000 002510  2    various bit patterns are transmitted, received and verified
12825.000 002510  2    allowing between transmit and receive, a delay time
12830.000 002510  2    sufficient for one character.  The test bytes used are 0,!55,
12835.000 002510  2    !AA and !CC.>>
12840.000 002510  2
12845.000 002510  2    STP:=15;
12850.000 002512  2    CLEARMASK;
12855.000 002516  2    CHNL'INIT;
12860.000 002523  2    DEV:=DESIRED'DEV-1;
12865.000 002527  2    WHILE (DEV:=DEV+1)<=MAX'DEV
12870.000 002533  2     DO
12875.000 002533  2      BEGIN
12880.000 002533  3       DO'WIOC0(!4040+DEV); <<Address device under test>>
12885.000 002537  3       DO'WIOC0(!4061); <<Send modifier one>>
12890.000 002541  3       DO'WIOC0(!DE); <<UART control byte>>
12895.000 002543  3       BAUD:=1;
12900.000 002545  3       WHILE (BAUD:=BAUD+1)<!10
12905.000 002552  3        DO
12910.000 002552  3         BEGIN
12915.000 002552  4          DO'WIOC0(!4066); <<Send Baud Rate Modifier>>
12920.000 002554  4          DO'WIOC0(BAUD); <<Send transmit baud rate>>
12925.000 002556  4          DO'WIOC0(BAUD+!10); <<Send receive baud rate>>
12930.000 002562  4          DO'WIOC0(!4060); <<Send modifier zero>>
12935.000 002564  4          DO'WIOC0(!55); <<Send test byte to UART>>
12940.000 002574  4          DODELAY(STARTIME,300); <<Wait ~ 300 msec>>
12945.000 002600  4          DO'RIOC0; <<Read UART receive buffer>>
12950.000 002601  4          IF TOS'.(8:8)<>!55
12955.000 002606  4           THEN
12960.000 002606  4            BEGIN
12965.000 002606  5             C:=3;
12970.000 002610  5             C:=(IF 7<=BAUD<=12 THEN 4 ELSE C);
12975.000 002621  5             C:=(IF 2<=BAUD<=3 THEN 2 ELSE C);
```

```
12980.000 002632  5            NUM'CHARS:=GET'MESSAGE(27)-1;
12985.000 002637  5            NUM'CHARS:=(IF 7<=BAUD<=12
12990.000 002637  5                        THEN NUM'CHARS+1
12995.000 002637  5                        ELSE NUM'CHARS);
13000.000 002654  5            NUM'CHARS:=(IF 2<=BAUD<=3
13005.000 002654  5                        THEN NUM'CHARS-1
13010.000 002654  5                        ELSE NUM'CHARS);
13015.000 002666  5            NUM'CHARS:=(IF BAUD=4
13020.000 002666  5                        THEN NUM'CHARS+1
13025.000 002666  5                        ELSE NUM'CHARS);
13030.000 002676  5            MOVE (!20,!20,!20,!20,!20) TO MSG'OUT(39);
13035.000 002704  5            NUM2ASC(39,C,10,BAUDS(BAUD));
13040.000 002712  5            IF BAUD=4 THEN MOVE (".5") TO MSG'OUT(42);
13045.000 002723  5            ERROROUT(-NUM'CHARS,1);
13050.000 002732  5           END;
13055.000 002732  4
13060.000 002732  4         B:=-1;
13065.000 002734  4         WHILE (B:=B+1)<4
13070.000 002740  4          DO
13075.000 002740  4           BEGIN
13080.000 002740  5            DO'WIOC0(BAUDARRAY(B)); <<Write the test byte>>
13085.000 002743  5            DODELAY(STARTIME,DELAYBUF(BAUD)); <<Wait time, this baud>>
13090.000 002752  5            DO'RIOC0; <<Read the UART receive buffer>>
13095.000 002753  5            IF TOS'.(8:8)<>BAUDARRAY(B).(8:8)
13100.000 002762  5             THEN
13105.000 002762  5              BEGIN
13110.000 002762  6               C:=3;
13115.000 002764  6               C:=(IF 7<=BAUD<=12 THEN 4 ELSE C);
13120.000 002775  6               C:=(IF 2<=BAUD<=3 THEN 2 ELSE C);
13125.000 003006  6               NUM'CHARS:=GET'MESSAGE(26)-2;
13130.000 003013  6               NUM'CHARS:=(IF 7<=BAUD<=12
13135.000 003013  6                           THEN NUM'CHARS+1
13140.000 003013  6                           ELSE NUM'CHARS);
13145.000 003027  6               NUM'CHARS:=(IF 2<=BAUD<=3
13150.000 003027  6                           THEN NUM'CHARS-1
13155.000 003027  6                           ELSE NUM'CHARS);
13160.000 003041  6               NUM'CHARS:=(IF BAUD=4
13165.000 003041  6                           THEN NUM'CHARS+2
13170.000 003041  6                           ELSE NUM'CHARS);
13175.000 003051  6               MOVE (!20,!20,!20,!20,!20) TO MSG'OUT(47);
13180.000 003057  6               NUM2ASC(25,2,16,BAUDARRAY(B));
13185.000 003065  6               NUM2ASC(38,2,16,TOS'.(8:8));
13190.000 003073  6               NUM2ASC(47,C,10,BAUDS(BAUD));
13195.000 003101  6               IF BAUD=4 THEN MOVE (".5") TO MSG'OUT(50);
13200.000 003112  6               NUM2ASC(14,2,16,!DE);
13205.000 003117  6               ERROROUT(-NUM'CHARS,1);
13210.000 003123  6              END;
13215.000 003123  5            END; <<DO NEXT CHARACTER IN BAUDARRAY>>
13220.000 003124  4          DOT; <<Check ATTN/CNTL Y then print 'period'>>
13225.000 003125  4         END; <<DO NEXT BAUD RATE>>
13230.000 003126  3
13235.000 003126  3  <<UART MASTER RESET test>>
13240.000 003126  3       DO'WIOC0(!4040+DEV); <<Address device under test>>
13245.000 003132  3       DO'WIOC0(!4061); <<Send modifier one>>
13250.000 003134  3       DO'WIOC0(!DE); <<UART control byte>>
13255.000 003136  3       DO'WIOC0(!4060); <<Send modifier zero>>
```

```
13260.000 003142  3       DO'RIOC0; <<Read UART receive buffer>>
13265.000 003143  3       IF TOS'.(8:8)<>0 THEN ERROROUT(-GET'MESSAGE(83),1);
13270.000 003156  3
13275.000 003156  3     END; <<DO NEXT DEVICE NUMBER>>
13280.000 003157  2   CLEAR'UNX'DEV;
13285.000 003164  2   REP'ILL'INT;
13290.000 003165  2   END;
```

```
13300.000 003165  1 IF SECTION(6) THEN BEGIN
13305.000 003173  2
13310.000 003173  2  <<SECTION 6   -   Special Character Detection
13315.000 003173  2
13320.000 003173  2      This Section verifies correct operation of the Special
13325.000 003173  2      Character Detection logic.  Note that although the function
13330.000 003173  2      under test is special character detection, the command decoding,
13335.000 003173  2      channel address recognition, device address latch, baud rate
13340.000 003173  2      clock and UART logic functions must all work.>>
13345.000 003173  2
13350.000 003173  2  <<- STEP 16      -      Clear Special Character RAM
13355.000 003173  2
13360.000 003173  2            Bytes written with a modifier 4 are removed from the device's
13365.000 003173  2            list of special characters.  All 256 special character RAM
13370.000 003173  2            addresses (for each device) are cleared.  This is done
13375.000 003173  2            with a modifier 4 write (to each device on the ADCC) with all
13380.000 003173  2            data bytes 0-255.  Then a modifier 0 write is performed
13385.000 003173  2            for all data bytes 0-255.  Following each modifier 0 write,
13390.000 003173  2            the loop-back path described in in Section 5 is used to
13395.000 003173  2            transmit and received the character.  Each test byte is then
13400.000 003173  2            read and verified to have no special character tag appended.
13405.000 003173  2
13410.000 003173  2            The step is complete when all addresses of the special
13415.000 003173  2            character RAM (all data bytes 0-255) for each device
13420.000 003173  2            have been tested.
13425.000 003173  2
13430.000 003173  2            There are two possible error conditions in this step.  The
13435.000 003173  2            test byte received by the UART does not match the test
13440.000 003173  2            byte transmitted, or the test byte was incorrectly tagged
13445.000 003173  2            as a special character.
13450.000 003173  2
13455.000 003173  2            Please note Section 13 is the Extended Special
13460.000 003173  2            Character RAM Test.  The time required to further test
13465.000 003173  2            crosstalk, interference, etc in the special character
13470.000 003173  2            ram is several minutes per board.  If an
13475.000 003173  2            interference problem is suspected, the operator must
13480.000 003173  2            specifically select Section 13, otherwise, it
13485.000 003173  2            will NOT be executed.
```

```
13495.000 003173  2
13500.000 003173  2      - STEP 17      -      Set Special Character RAM
13505.000 003173  2
13510.000 003173  2            Bytes written with a modifier 5 are tagged by a device
13515.000 003173  2            on the ADCC as a special character.  All 256 special
13520.000 003173  2            character RAM addresses (for each device) are set to
13525.000 003173  2            one.  This is accomplished by a modifier 5 write for
13530.000 003173  2            all data bytes 0-255.  The test method is the same as
13535.000 003173  2            is described in Step 16, except that each received test
13540.000 003173  2            byte is verified to have the special character tag
13545.000 003173  2            appended.
13550.000 003173  2
13555.000 003173  2            Step 17 is complete when all addresses of the special
13560.000 003173  2            character ram space for all devices present on the
13565.000 003173  2            ADCC have been tested.  As in Step 16, there are two
13570.000 003173  2            possible error conditions.  The wrong character is
13575.000 003173  2            received or the character was not tagged as a special
13580.000 003173  2            character.>>
13585.000 003173  2
13590.000 003173  2   STP:=16;
13595.000 003175  2    DEV:=DESIRED'DEV-1;
13600.000 003201  2    WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
13605.000 003205  3      DO'WIOC0(!4040+DEV); <<Address device under test>>
13610.000 003211  3      DO'WIOC0(!4061); <<Send UART modifier>>
13615.000 003213  3      DO'WIOC0(!DE); <<Send UART setup byte>>
13620.000 003215  3      DO'WIOC0(!4066); <<Send baud rate modifier>>
13625.000 003217  3      DO'WIOC0(!8); <<Send transmit baud rate>>
13630.000 003221  3      DO'WIOC0(!18); <<Send receive baud rate>>
13635.000 003223  3
13640.000 003223  3      M:=!4063;
13645.000 003225  3      WHILE (M:=M+1)<!4066 DO BEGIN
13650.000 003240  4      STP:=(IF M=!4064 THEN 16 ELSE 17);
13655.000 003250  4      K:=(IF M=!4064 THEN 0 ELSE !4000);
13660.000 003260  4      DO'WIOC0(M); <<Send set/clear modifier>>
13665.000 003262  4      A:=-1;
13670.000 003264  4      WHILE (A:=A+1)<=255 DO BEGIN
13675.000 003270  5      DO'WIOC0(A); <<Write set/clear address>>
13680.000 003272  5      END; <<Do all address/this dev>>
13685.000 003300  4
13690.000 003300  4      DO'WIOC0(!4060); <<Send modifier zero>>
13695.000 003302  4      A:=-1;
13700.000 003304  4      WHILE (A:=A+1)<=255 DO BEGIN
13705.000 003310  5      DO'WIOC0(A); <<Write test byte>>
13710.000 003312  5      DODELAY(STARTIME,2); <<9600 Baud wait loop>>
13715.000 003321  5      DO'RIOC0; <<Now read byte back>>
13720.000 003322  5      IF TOS'.(8:8)<>A.(8:8) THEN BEGIN
13725.000 003330  6         NUM'CHARS:=GET'MESSAGE(23);
13730.000 003334  6         NUM2ASC(40,2,16,TOS'.(8:8));
13735.000 003342  6         NUM2ASC(26,2,16,A.(8:8));
13740.000 003350  6         ERROROUT(-NUM'CHARS,1);
13745.000 003354  6         END;
13750.000 003354  5
13755.000 003354  5      IF (TOS' AND !7F00)<>K THEN BEGIN
13760.000 003362  6      IF M=!4064 THEN BEGIN
13765.000 003371  7         NUM'CHARS:=GET'MESSAGE(24);
```

```
13770.000 003375  7          NUM2ASC(1,2,16,TOS'.(8:8));
13775.000 003403  7          ERROROUT(-NUM'CHARS,1);
13780.000 003407  7          END ELSE BEGIN
13785.000 003410  7          NUM'CHARS:=GET'MESSAGE(25);
13790.000 003414  7          NUM2ASC(1,2,16,TOS'.(8:8));
13795.000 003422  7          ERROROUT(-NUM'CHARS,1);
13800.000 003430  7          END;
13805.000 003430  6          END;
13810.000 003430  5
13815.000 003430  5       END; <<Do next test character>>
13820.000 003431  4
13825.000 003431  4       END; <<Do next mod 5/6>>
13830.000 003432  3    DOT; <<Check ATTN/CNTL Y then print 'period'>>
13835.000 003433  3       END; <<Do next device number>>
13840.000 003434  2    CLEAR'UNX'DEV;
13845.000 003437  2    REP'ILL'INT;
13850.000 003440  2 END;
```

```
13860.000 003440  1 IF SECTION(7) THEN BEGIN
13865.000 003446  2
13870.000 003446  2  <<SECTION 7  -  Device Specified Jump  (DSJ)
13875.000 003446  2
13880.000 003446  2      This Section places under test, the device specified jump
13885.000 003446  2      logic, a part of the UART's control and status logic and the
13890.000 003446  2      break detection logic.  It verifies the ability of the DSJ
13895.000 003446  2      logic to return the correct value to the CPU according to the
13900.000 003446  2      applied stimulus.  The test is run on all device numbers present
13905.000 003446  2      on the ADCC.
13910.000 003446  2
13915.000 003446  2      A zero is returned if the ADCC is requesting service because the
13920.000 003446  2      UART receive buffer of the device under test contains a character
13925.000 003446  2      which may be read.
13930.000 003446  2
13935.000 003446  2      A one is returned if the ADCC is requesting service because the
13940.000 003446  2      UART transmit buffer of the device under test may be loaded with
13945.000 003446  2      a character to be transmitted.
13950.000 003446  2
13955.000 003446  2      A two is returned if the ADCC device status should be read.(In
13960.000 003446  2      case of an overrun or parity error, or a modem status line has
13965.000 003446  2      changed from reference.)
13970.000 003446  2
13975.000 003446  2      A three is returned if no device is requesting service.
13980.000 003446  2      This test section also tests the ability of the ADCC to return
13985.000 003446  2      the end (EOT) message when a break is detected, also the ability
13990.000 003446  2      to return the transmit buffer empty (TBE) status bit for a
13995.000 003446  2      modifier one read.>>
14000.000 003446  2
14005.000 003446  2
14010.000 003446  2      STP:=18;
14015.000 003450  2      CHNL'INIT; <<Do initialize on this channel>>
14020.000 003457  2      DEV:=DESIRED'DEV-1;
14025.000 003463  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
14030.000 003467  3      DO'WIOC0(!4040+DEV); <<Address the device under test>>
14035.000 003473  3      DO'WIOC0(!4061); <<Send UART modifier>>
14040.000 003475  3      DO'WIOC0(!DE); <<Set up UART for this test>>
14045.000 003477  3      DO'WIOC0(!4066); <<Send baud rate select modifier>>
14050.000 003501  3      DO'WIOC0(!8); <<Set to transmit at 9600 baud>>
14055.000 003503  3      DO'WIOC0(!18); <<Set to receive  at 9600 baud>>
14060.000 003505  3      DO'WIOC0(!4067);
14065.000 003507  3      DO'WIOC0(!0);
14070.000 003511  3      END; <<Do for all devices present>>
14075.000 003512  2
14080.000 003512  2      DEV:=DESIRED'DEV-1;
14085.000 003516  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
14090.000 003524  3      DO'WIOC0(!4040+DEV); <<Address the device under test>>
14095.000 003530  3      DO'WIOC0(!4063); <<Send service condition mod.>>
14100.000 003532  3      DO'WIOC0(!6); <<Request for byte in buffer>>
14105.000 003534  3      DO'WIOC0(!4070); <<Issue DSJ command>>
14110.000 003536  3      DO'RIOC0; <<Read resulting byte>>
14115.000 003537  3      IF TOS'.(8:8)<>3 THEN BEGIN
14120.000 003544  4         NUM'CHARS:=GET'MESSAGE(28);
14125.000 003550  4         NUM2ASC(31,2,10,TOS'.(8:8));
14130.000 003556  4         MSG'OUT(44):="3";
```

```
14135.000 003565  4          ERROROUT(-NUM'CHARS,1);
14140.000 003571  4          END;
14145.000 003571  3       END; <<Place the next device number under test>>
14150.000 003572  2           CHECKYTRAP; <<Check for operator interrupt request>>
14155.000 003573  2
14160.000 003573  2
14165.000 003573  2  <<- STEP 19     -      Board is requesting service because the
14170.000 003573  2                           receive buffer contains a character which
14175.000 003573  2                           may be read.
14180.000 003573  2
14185.000 003573  2             Each device on the ADCC is set up to request service when
14190.000 003573  2             a character has been received.  A character is then trans-
14195.000 003573  2             mitted and received (using the loop back connector described
14200.000 003573  2             in Section 2)  The DSJ is issued, and the returned
14205.000 003573  2             byte is verified to be a zero.>>
14210.000 003573  2
14215.000 003573  2       STP:=19;
14220.000 003575  2       DEV:=DESIRED'DEV-1;
14225.000 003601  2       WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
14230.000 003605  3       DO'WIOC0(!4040+DEV); <<Address device under test>>
14235.000 003611  3       DO'WIOC0(!4063); <<Service condition mod.>>
14240.000 003613  3       DO'WIOC0(!6); <<Request when byte received>>
14245.000 003615  3       DO'WIOC0(!4060); <<Send modifier zero>>
14250.000 003617  3       DO'WIOC0(!41); <<Send byte to transmit buffer>>
14255.000 003621  3       DODELAY(STARTIME,5); <<Short wait to receive byte>>
14260.000 003630  3       DO'WIOC0(!4070); <<Issue the DSJ command>>
14265.000 003632  3       DO'RIOC0; <<Read the resulting DSJ byte>>
14270.000 003633  3       IF TOS'.(8:8)<>0 THEN BEGIN
14275.000 003640  4          NUM'CHARS:=GET'MESSAGE(28);
14280.000 003644  4          NUM2ASC(31,2,10,TOS'.(8:8));
14285.000 003652  4          MSG'OUT(44):="0";
14290.000 003655  4          ERROROUT(-NUM'CHARS,1);
14295.000 003661  4          END;
14300.000 003661  3       DO'WIOC0(!4060); <<Send modifier zero and>>
14305.000 003663  3       DO'RIOC0; <<read the byte in the buffer>>
14310.000 003664  3       END; <<Place the next device number under test>>
14315.000 003665  2           CHECKYTRAP; <<Check for operator interrupt request>>
14320.000 003666  2
14325.000 003666  2
14330.000 003666  2
14335.000 003666  2  <<- STEP 20     -      Board is requesting service because a
14340.000 003666  2                           character may be loaded into the UART
14345.000 003666  2                           transmit buffer.
14350.000 003666  2
14355.000 003666  2             Each device on the ADCC is set up to request service when
14360.000 003666  2             the transmit buffer is empty.  The DSJ is issued, and the
14365.000 003666  2             returned byte is verified to be a one.>>
14370.000 003666  2
14375.000 003666  2       STP:=20;
14380.000 003670  2       DEV:=DESIRED'DEV-1;
14385.000 003674  2       WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
14390.000 003700  3       DO'WIOC0(!4040+DEV); <<Address the device under test>>
14395.000 003704  3       DO'WIOC0(!4063); <<Send service cond. modifier>>
14400.000 003706  3       DO'WIOC0(!2); <<NO request for byte received>>
14405.000 003710  3       DO'WIOC0(!4); <<Request for xmit buffer not full>>
14410.000 003712  3       DO'WIOC0(!4070); <<Send the DSJ command>>
```

```
14415.000 003714  3      DO'RIOC0; <<Read the DSJ byte>>
14420.000 003715  3      IF TOS'.(8:8)<>1 THEN BEGIN
14425.000 003722  4         NUM'CHARS:=GET'MESSAGE(28);
14430.000 003726  4         NUM2ASC(31,2,10,TOS'.(8:8));
14435.000 003740  4         MSG'OUT(44):="1";
14440.000 003743  4         ERROROUT(-NUM'CHARS,1);
14445.000 003747  4         END;
14450.000 003747  3      END; <<Place the next device number under test>>
14455.000 003750  2
14460.000 003750  2  <<- STEP 21     -      Board is requesting service - parity error
14465.000 003750  2
14470.000 003750  2           A parity error is induced by setting each device to transmit
14475.000 003750  2           at 9600 baud and receive at 4800 baud.  A character (chosen
14480.000 003750  2           to generate a parity error with this set up) is transmitted
14485.000 003750  2           and received.  A UART status (modifier 1) read is done to
14490.000 003750  2           verify the parity error is detected by the UART.  Then a
14495.000 003750  2           DSJ is issued, and the resulting returned byte is verified
14500.000 003750  2           to be a 2.>>
14505.000 003750  2
14510.000 003750  2      STP:=21;
14515.000 003752  2      DEV:=DESIRED'DEV-1;
14520.000 003756  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
14525.000 003762  3      DO'WIOC0(!4040+DEV); <<Address the device under test>>
14530.000 003766  3      DO'WIOC0(!4061); <<Send UART control modifier>>
14535.000 003770  3      DO'WIOC0(!DE); <<Send control byte ..>>
14540.000 003772  3      DO'WIOC0(!4063); <<Send service cond. modifier>>
14545.000 003774  3      DO'WIOC0(!6); <<Request when byte received>>
14550.000 003776  3      DO'WIOC0(!4066); <<Send baud select modifier>>
14555.000 004000  3      DO'WIOC0(!8); <<Transmit at 9600 baud>>
14560.000 004002  3      DO'WIOC0(!19); <<Receive at 4800  baud>>
14565.000 004004  3      DO'WIOC0(!4060); <<Send modifier zero>>
14570.000 004006  3      DO'WIOC0(!E0); <<Send byte to cause parity error>>
14575.000 004010  3      DODELAY(STARTIME,5); <<Wait for byte to be received>>
14580.000 004021  3      DO'WIOC0(!4061); <<Send modifier one>>
14585.000 004023  3      DO'RIOC0; A:=TOS'; <<Read the UART's status>>
14590.000 004026  3      DO'WIOC0(!4070); <<Send the DSJ command>>
14595.000 004030  3      DO'RIOC0; <<Read the DSJ byte>>
14600.000 004031  3      B:=0;
14605.000 004033  3      IF NOT A.(14:1) THEN BEGIN
14610.000 004037  4      IF TOS'.(8:8)<>2 THEN BEGIN
14615.000 004044  5         NUM'CHARS:=GET'MESSAGE(29);
14620.000 004050  5         MSG'OUT(7):=DEV+!30;
14625.000 004055  5         ERROROUT(-NUM'CHARS,0);
14630.000 004061  5         B:=-1;
14635.000 004063  5         END ELSE BEGIN
14640.000 004064  5         NUM'CHARS:=GET'MESSAGE(30);
14645.000 004070  5         MSG'OUT(7):=DEV+!30;
14650.000 004100  5         ERROROUT(-NUM'CHARS,0);
14655.000 004104  5         END;
14660.000 004104  4      END;
14665.000 004104  3
14670.000 004104  3      IF NOT B THEN BEGIN
14675.000 004106  4      IF TOS'.(8:8)<>2 THEN BEGIN
14680.000 004113  5         NUM'CHARS:=GET'MESSAGE(28);
14685.000 004117  5         NUM2ASC(31,2,10,TOS'.(8:8));
14690.000 004125  5         MSG'OUT(44):="2";
```

```
14695.000 004130  5         ERROROUT(-NUM'CHARS,1);
14700.000 004134  5         END;
14705.000 004134  4      END;
14710.000 004134  3          CHECKYTRAP; <<Check for operator interrupt request>>
14715.000 004135  3
14720.000 004135  3      END; <<Place the next device number under test>>
14725.000 004136  2
14730.000 004136  2  <<- STEP 22     -      Board is requesting service - overrun error
14735.000 004136  2
14740.000 004136  2            An overrun condition occurs when a character is received
14745.000 004136  2            by the UART while a valid character exists in the UART
14750.000 004136  2            receive buffer.
14755.000 004136  2
14760.000 004136  2            Since the UART has a one character receive buffer, two
14765.000 004136  2            characters are transmitted and looped back to the UART's
14770.000 004136  2            receiver (without reading the first.)   The UART should
14775.000 004136  2            provide 'overrun' status.  A UART status(modifier 1) read
14780.000 004136  2            is done to verify that the overrun was detected.  Then a DSJ
14785.000 004136  2            is issued and the resulting returned byte is verified to be
14790.000 004136  2            a two.>>
14795.000 004136  2
14800.000 004136  2      STP:=22;
14805.000 004140  2      DEV:=DESIRED'DEV-1;
14810.000 004144  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
14815.000 004150  3      DO'WIOC0(!4040+DEV); <<Address the device under test>>
14820.000 004154  3      DO'WIOC0(!4066); <<Send baud select modifier>>
14825.000 004156  3      DO'WIOC0(!8); <<Set receive to 9600 baud>>
14830.000 004160  3      DO'WIOC0(!4060); <<Send modifier zero>>
14835.000 004162  3      DO'WIOC0(!55); <<Send test byte to cause O.E.>>
14840.000 004164  3      DODELAY(STARTIME,5); <<Wait to byte to be received>>
14845.000 004172  3      DO'WIOC0(!4061); <<Send modifier one and>>
14850.000 004174  3      DO'RIOC0; A:=TOS'; <<read the UART status>>
14855.000 004177  3      DO'WIOC0(!4070); <<Send the DSJ command code>>
14860.000 004201  3      DO'RIOC0; <<Read the DSJ returned byte>>
14865.000 004202  3      B:=0;
14870.000 004204  3      IF NOT A.(13:1) THEN BEGIN
14875.000 004210  4      IF TOS'.(8:8)<>2 THEN BEGIN
14880.000 004215  5         NUM'CHARS:=GET'MESSAGE(31);
14885.000 004221  5         MSG'OUT(7):=!30+DEV;
14890.000 004226  5         ERROROUT(-NUM'CHARS,0);
14895.000 004232  5         B:=-1;
14900.000 004234  5         END ELSE BEGIN
14905.000 004235  5         NUM'CHARS:=GET'MESSAGE(32);
14910.000 004241  5         MSG'OUT(7):=!30+DEV;
14915.000 004252  5         ERROROUT(-NUM'CHARS,0);
14920.000 004256  5         END;
14925.000 004256  4         END;
14930.000 004256  3      IF NOT B THEN BEGIN
14935.000 004260  4      IF TOS'.(8:8)<>2 THEN BEGIN
14940.000 004265  5         NUM'CHARS:=GET'MESSAGE(28);
14945.000 004271  5         MSG'OUT(44):="2";
14950.000 004274  5         NUM2ASC(31,2,10,TOS'.(8:8));
14955.000 004302  5         ERROROUT(-NUM'CHARS,1);
14960.000 004306  5         END;
14965.000 004306  4         END;
14970.000 004306  3
```

```
14975.000 004306  3   DO'WIOC0(!4060); <<Send modifier zero>>
14980.000 004310  3   DO'RIOC0;
14985.000 004311  3   DO'WIOC0(!4061); <<Send modifier one>>
14990.000 004313  3   DO'RIOC0;
14995.000 004314  3   IF NOT TOS'.(13:1) <<Is OE still there?>>
15000.000 004320  3    THEN
15005.000 004320  3     BEGIN <<No, modifier zero cleared it>>
15010.000 004320  4      NUM'CHARS:=GET'MESSAGE(32);
15015.000 004324  4      MSG'OUT(7):=!30+DEV;
15020.000 004331  4      ERROROUT(-NUM'CHARS,0);
15025.000 004335  4     END;
15030.000 004335  3
15035.000 004335  3         CHECKYTRAP; <<Check for operator interrupt request>>
15040.000 004336  3
15045.000 004336  3     END; <<Place the next device number under test>>
15050.000 004337  2  <<- STEP 23     -      Board is requesting service - break detected
15055.000 004337  2
15060.000 004337  2           A break condition is emulated by setting the UART to receive
15065.000 004337  2           at a much faster baud rate than is transmitted, then an
15070.000 004337  2           all zeroes character is sent.  A UART status (modifier 1)
15075.000 004337  2
15080.000 004337  2           read is executed to verify that the break condition was
15085.000 004337  2           detected, then a DSJ is issued, and the resulting returned
15090.000 004337  2           byte is verified to be a two.>>
15095.000 004337  2
15100.000 004337  2     STP:=23;
15105.000 004341  2     DEV:=DESIRED'DEV-1;
15110.000 004345  2     WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
15115.000 004351  3     DO'WIOC0(!4040+DEV); <<Address the device under test>>
15120.000 004360  3     DO'WIOC0(!4063); <<Send service condition modifier>>
15125.000 004362  3     DO'WIOC0(!6); <<Request when byte received>>
15130.000 004364  3     DO'WIOC0(!4066); <<Send baud rate select modifier>>
15135.000 004366  3     DO'WIOC0(!7); <<Set to transmit @ 4800 baud>>
15140.000 004370  3     DO'WIOC0(!18); <<Set to receive  @ 9600 baud>>
15145.000 004372  3     DO'WIOC0(!4060); <<Send modifier zero>>
15150.000 004374  3     DO'WIOC0(!0); <<Send a zero byte>>
15155.000 004376  3     DODELAY(STARTIME,25); <<Wait to receive the byte>>
15160.000 004404  3     DO'WIOC0(!4061); <<Send modifier one to read>>
15165.000 004406  3     DO'RIOC0; A:=TOS'; <<the UART status byte>>
15170.000 004411  3     DO'WIOC0(!4070); <<Now send the DSJ command code>>
15175.000 004413  3     DO'RIOC0; <<and then read the DSJ byte>>
15180.000 004414  3     B:=0;
15185.000 004416  3     IF NOT A.(12:1) THEN BEGIN
15190.000 004422  4     IF TOS'.(8:8)<>2 THEN BEGIN
15195.000 004427  5        NUM'CHARS:=GET'MESSAGE(33);
15200.000 004433  5        MSG'OUT(7):=!30+DEV;
15205.000 004440  5        ERROROUT(-NUM'CHARS,0);
15210.000 004444  5        B:=1;
15215.000 004446  5        END ELSE BEGIN
15220.000 004447  5        NUM'CHARS:=GET'MESSAGE(34);
15225.000 004453  5        MSG'OUT(7):=!30+DEV;
15230.000 004463  5        ERROROUT(-NUM'CHARS,0);
15235.000 004467  5        END;
15240.000 004467  4        END;
15245.000 004467  3
15250.000 004467  3     IF NOT B THEN BEGIN
```

```
15255.000 004471  4      IF TOS'.(8:8)<>2 THEN BEGIN
15260.000 004476  5         NUM'CHARS:=GET'MESSAGE(28);
15265.000 004502  5         MSG'OUT(44):=!32;
15270.000 004505  5         NUM2ASC(31,2,10,TOS'.(8:8));
15275.000 004513  5         ERROROUT(-NUM'CHARS,1);
15280.000 004517  5         END;
15285.000 004517  4         END;
15290.000 004517  3
15295.000 004517  3          CHECKYTRAP; <<Check for operator interrupt request>>
15300.000 004520  3
15305.000 004520  3      END; <<Place the next device number under test>>
15310.000 004521  2  <<- STEP 24
15315.000 004521  2           A break condition is again emulated using the method
15320.000 004521  2           described in the previous step.  At this time, the END
15325.000 004521  2           message (or EOT) is verified to be a one.>>
15330.000 004521  2      STP:=24;
15335.000 004523  2      DEV:=DESIRED'DEV-1;
15340.000 004527  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
15345.000 004533  3      DO'WIOC0(!4040+DEV); <<Address the device under test>>
15350.000 004537  3      DO'WIOC0(!4063); <<Send service condition modifier>>
15355.000 004541  3      DO'WIOC0(!6); <<Request when byte received>>
15360.000 004543  3      DO'WIOC0(!4066); <<Send baud rate select modifier>>
15365.000 004545  3      DO'WIOC0(!7); <<Set to transmit @ 4800 baud>>
15370.000 004547  3      DO'WIOC0(!18); <<Set to receive  @ 9600 baud>>
15375.000 004551  3      DO'WIOC0(!4060); <<Send modifier zero>>
15380.000 004553  3      DO'WIOC0(!0); <<Send a zero byte>>
15385.000 004555  3      DODELAY(STARTIME,5); <<Wait to receive the byte>>
15390.000 004565  3      DO'WIOC0(!4061); <<Send modifier one to read>>
15395.000 004567  3      DO'RIOC0; <<the UART status byte>>
15400.000 004570  3      IF NOT TOS'.(1:1) THEN ERROROUT(-GET'MESSAGE(35),1);
15405.000 004602  3          CHECKYTRAP; <<Check for operator interrupt request>>
15410.000 004603  3
15415.000 004603  3      END; <<Place next device number under test>>
15420.000 004604  2
15425.000 004604  2  <<- Step 25  -  TBE status=1
15430.000 004604  2           With service request condition 2 enabled, bit 15 of the
15435.000 004604  2           word returned as the result of a modifier one read, when
15440.000 004604  2           the UART transmit buffer is empty , should be set to a
15445.000 004604  2           one.  This step issues an initialize, sets up service
15450.000 004604  2           request condition 2, executes a modifier one read and
15455.000 004604  2           verifies the state of this bit.  If an error is detected
15460.000 004604  2           in this step, the message
15465.000 004604  2
15470.000 004604  2             "TBE not returned as 1  Dev=D"
15475.000 004604  2
15480.000 004604  2           is displayed.>>
15485.000 004604  2
15490.000 004604  2       STP:=25;
15495.000 004606  2      CHNL'INIT;
15500.000 004615  2      DEV:=DESIRED'DEV-1;
15505.000 004621  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
15510.000 004625  3      DO'WIOC0(!4040+DEV); <<Address the device under test>>
15515.000 004631  3      DO'WIOC0(!4063); <<Enable request condition>>
15520.000 004633  3      DO'WIOC0(!5); <<1 for this test>>
15525.000 004635  3      DO'WIOC0(!4061); <<Send modifier one>>
15530.000 004637  3      DO'WIOC0(!DE); <<Setup UART conditions>>
```

```
15535.000 004641  3      DO'RIOC0; <<Read UART status>>
15540.000 004642  3      IF NOT TOS'.(15:1) THEN BEGIN
15545.000 004645  4         NUM'CHARS:=GET'MESSAGE(36);
15550.000 004651  4         MSG'OUT(20):="1";
15555.000 004654  4         ERROROUT(-NUM'CHARS,1);
15560.000 004663  4         END;
15565.000 004663  3          CHECKYTRAP; <<Check for operator interrupt request>>
15570.000 004664  3      END; <<Place next device number under test>>
```

```
15580.000 004665  2
15585.000 004665  2  <<- Step 26  -  TBE status=0
15590.000 004665  2           With service request condition 2 enabled, bit 15 of the
15595.000 004665  2           word returned as the result of a modifier one read, should
15600.000 004665  2           be set to zero if the UART transmit buffer is not empty.
15605.000 004665  2           This condition is set by setting the UART to transmit
15610.000 004665  2           at 4800 baud, sending a character to the buffer and then
15615.000 004665  2           verifying that bit 15 of the resulting returned word to be
15620.000 004665  2           a zero.  If an error is detected in this step, the message
15625.000 004665  2
15630.000 004665  2             "TBE not returned as 0  Dev=D"
15635.000 004665  2
15640.000 004665  2           is displayed.>>
15645.000 004665  2
15650.000 004665  2       STP:=26;
15655.000 004667  2      CHNL'INIT;
15660.000 004674  2      DEV:=DESIRED'DEV-1;
15665.000 004700  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
15670.000 004704  3      DO'WIOC0(!4040+DEV); <<Address the device under test>>
15675.000 004710  3      DO'WIOC0(!4063); <<Set service request condition>>
15680.000 004712  3      DO'WIOC0(!5); <<1 for this test>>
15685.000 004714  3      DO'WIOC0(!4061); <<Send modifier one>>
15690.000 004716  3      DO'WIOC0(!DE); <<Setup UART conditions>>
15695.000 004720  3      DO'WIOC0(!4066); <<Send modifier six>>
15700.000 004722  3      DO'WIOC0(!9); <<Set xmit at 4800 baud>>
15705.000 004724  3      DO'WIOC0(!19); <<Set recv at 4800 baud>>
15710.000 004726  3      DO'WIOC0(!4060); <<Send modifier zero>>
15715.000 004730  3      DO'WIOC0(!55); <<Send a character>>
15720.000 004732  3      DO'WIOC0(!4061); <<Send modifier one>>
15725.000 004734  3      DO'RIOC0; <<Read UART status>>
15730.000 004735  3      IF TOS'.(15:1) THEN BEGIN
15735.000 004742  4         NUM'CHARS:=GET'MESSAGE(36);
15740.000 004746  4         MSG'OUT(20):="0";
15745.000 004751  4         ERROROUT(-NUM'CHARS,1);
15750.000 004755  4         END;
15755.000 004755  3       CHECKYTRAP; <<Check for operator interrupt request>>
15760.000 004756  3      END; <<Place next device number under test>>
15765.000 004757  2   REP'ILL'INT;
15770.000 004760  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
15775.000 004761  2 END;
15780.000 004761  1
```

```
15790.000 004761  1 IF SECTION(8)
15795.000 004767  1  THEN
15800.000 004767  1   BEGIN
15805.000 004767  2
15810.000 004767  2   <<SECTION 8  -  Modem Status and Device Specified Jump
15815.000 004767  2
15820.000 004767  2   Section 8 places under test the modem controls and the
15825.000 004767  2   modem status monitor logic function blocks along with the poll and
15830.000 004767  2   device specified jump logic function blocks.  This is done by
15835.000 004767  2   testing for the RS-232-C output lines CA(request to send),
15840.000 004767  2   CD (data terminal ready), CH (speed select) and SCA (secondary
15845.000 004767  2   request to send) of each device on the ADCC, which are looped-
15850.000 004767  2   back via the J2 test connector to the modem
15855.000 004767  2   status lines, CB(clear to send), CC(data set ready), CE(ring
15860.000 004767  2   detect), CF(signal detect) and SCF(secondary signal detect) and
15865.000 004767  2   then verifying the ability of the device specified jump logic to
15870.000 004767  2   detect the change in the modem status lines.
15875.000 004767  2
15880.000 004767  2   TEST CONDITION 1 for each output/modem status line is set by
15885.000 004767  2   sending a byte, written with modifier 7, to establish the
15890.000 004767  2   reference at one for each line under test, then setting the
15895.000 004767  2   mask bit for that line, enabling the modem status monitor.  The
15900.000 004767  2   stimulus is provided by writing a data byte, with modifier 2,
15905.000 004767  2   having the bit corresponding to the line under test equal to
15910.000 004767  2   zero, thus causing the desired deviation from reference.  The
15915.000 004767  2   result of the test is determined by a modifier 2 (modem status)
15920.000 004767  2   read, verifying that the returned byte has the correct value,
15925.000 004767  2   thereby verifying that the correct line responded correctly to
15930.000 004767  2   the applied stimulus.  At this time, the ability of the Device
15935.000 004767  2   Specified Jump logic to recognize a deviation of modem status
15940.000 004767  2   lines from reference is tested.
15945.000 004767  2
15950.000 004767  2   TEST CONDITION 2 for each output/modem status line is set using
15955.000 004767  2   similiar test sequences as described in test condition 1, but
15960.000 004767  2   using the reverse sense of the reference and stimulus(ie. the
15965.000 004767  2   reference=0, and the stimulus=1) for each line, then verifying
15970.000 004767  2   that the Device Specified Jump logic also detects this deviation>>
15975.000 004767  2   <<- STEP 27     -      CA - CB or CF    (reference=1)
15980.000 004767  2
15985.000 004767  2    The procedure described as test condition 1 is used to test
15990.000 004767  2    the circuitry for each device associated with the lines
15995.000 004767  2    CA, and CB or CF.>>
16000.000 004767  2
16005.000 004767  2    STP:=27;
16010.000 004771  2    MAS:=!30; <<For CB>>
16015.000 004773  2    REF:=!10;
16020.000 004775  2    CF'DONE:=FALSE;
16025.000 004777  2    WHILE CF'DONE=FALSE
16030.000 005003  2     DO
16035.000 005003  2      BEGIN
16040.000 005003  3       INTPSYS'OFF;
16045.000 005007  3       CHNL'INIT;
16050.000 005014  3       DEV:=DESIRED'DEV-1;
16055.000 005020  3       WHILE (DEV:=DEV+1)<=MAX'DEV
16060.000 005024  3        DO
```

```
16065.000 005024  3         BEGIN
16070.000 005024  4          SETMASK;
16075.000 005032  4          D:=-1;
16080.000 005034  4          WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
16085.000 005045  4           DO
16090.000 005045  4            BEGIN
16095.000 005045  5             DO'WIOC0(!4040+D); <<Address device>>
16100.000 005051  5             DO'WIOC0(!4067); <<Send modifier seven>>
16105.000 005053  5             DO'WIOC0(!20); <<Set masks=0>>
16110.000 005055  5             DO'WIOC0(!1F); <<Set references=1>>
16115.000 005057  5             DO'WIOC0(!4062); <<Send modifier two>>
16120.000 005061  5             DO'WIOC0(!F); <<Set statuses=1>>
16125.000 005063  5            END;
16130.000 005064  4          DRT'INIT;
16135.000 005065  4          ZERO'CPVA;
16140.000 005066  4          ST'DSJ'CH'PROGS;
16145.000 005067  4          INTPSYS'ON;
16150.000 005074  4          D:=-1;
16155.000 005076  4          WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
16160.000 005107  4           DO
16165.000 005107  4            BEGIN
16170.000 005107  5             DO'WIOC0(!4040+D); <<Address device>>
16175.000 005113  5             DO'WIOC0(!4067); <<Send modifier seven>>
16180.000 005115  5             DO'WIOC0(!3F); <<Set masks=1>>
16185.000 005117  5            END;
16190.000 005120  4          DODELAY(STARTIME,5); <<Short wait>>
16195.000 005124  4          CHK'UNEXP'I(DEV);
16200.000 005126  4          DO'WIOC0(!4040+DEV); <<Address the device under test>>
16205.000 005132  4          DO'WIOC0(!4067); <<Send modifier seven>>
16210.000 005134  4          DO'WIOC0(!20); <<Set device mask 0>>
16215.000 005136  4          DO'WIOC0(REF); <<Set reference for CB or CF=1>>
16220.000 005140  4          DO'WIOC0(!4062); <<Send modifier two>>
16225.000 005142  4          DO'WIOC0(!7); <<CA=0, CD,CH,SCA=1 for CB,CF status change>>
16230.000 005144  4          DODELAY(STARTIME,5); <<Short wait>>
16235.000 005150  4          A:=B:=0;
16240.000 005154  4          DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
16245.000 005157  4          DO'WIOC0(!4070); <<Send the DSJ command code>>
16250.000 005161  4          DO'RIOC0; <<Read the DSJ returned byte>>
16255.000 005162  4          C:=!9; <<CC & SCF>>
16260.000 005164  4          IF EXTND THEN C:=LOGICAL(C) OR !04; <<CE is there too>>
16265.000 005172  4          IF A.(11:5)<>C
16270.000 005177  4           THEN
16275.000 005177  4            BEGIN
16280.000 005177  5             IF A.(11:5)<>7
16285.000 005204  5              THEN
16290.000 005204  5               BEGIN
16295.000 005204  6                NUM'CHARS:=GET'MESSAGE(40);
16300.000 005210  6                NUM2ASC(20,2,16,A.(11:5));
16305.000 005216  6                NUM2ASC(33,2,16,C);
16310.000 005227  6                ERROROUT(-NUM'CHARS,1);
16315.000 005233  6               END
16320.000 005233  5              ELSE ERROROUT(-GET'MESSAGE(39),1);
16325.000 005242  5            END
16330.000 005242  4           ELSE
16335.000 005243  4            BEGIN <<Continue the test case.>>
16340.000 005243  5             IF TOS'.(8:8)<>3 <<Expect no DSJ yet>>
```

```
16345.000 005250  5              THEN
16350.000 005250  5               BEGIN
16355.000 005250  6                NUM'CHARS:=GET'MESSAGE(41);
16360.000 005254  6                NUM2ASC(14,2,16,TOS'.(8:8));
16365.000 005262  6                NUM2ASC(27,2,16,0);
16370.000 005267  6                ERROROUT(-NUM'CHARS,1);
16375.000 005273  6               END;
16380.000 005273  5             CHK'UNEXP'I(DEV);
16385.000 005275  5             DO'WIOC0(!4067); <<Send modifier 7>>
16390.000 005277  5             DO'WIOC0(MAS); <<Mask on for CB or CF>>
16395.000 005301  5             DODELAY(STARTIME,5); <<DSJ'CH'PROG should interrupt now>>
16400.000 005307  5             IF (B:=DSJ'CH'PROG(DEV*!15+5))<>2
16405.000 005321  5              THEN
16410.000 005321  5               BEGIN
16415.000 005321  6                NUM'CHARS:=GET'MESSAGE(43);
16420.000 005325  6                NUM2ASC(42,2,16,B);
16425.000 005332  6                NUM2ASC(54,1,16,2);
16430.000 005337  6                ERROROUT(-NUM'CHARS,1);
16435.000 005343  6               END;
16440.000 005343  5             IF CPVA(DEV*4+2)<>CHNL+DEV <<Interrupt?>>
16445.000 005354  5              THEN
16450.000 005354  5               ERROROUT(-GET'MESSAGE(85),1); <<No.>>
16455.000 005362  5           END;
16460.000 005362  4         D:=-1;
16465.000 005364  4         INTPSYS'ON; <<INT'RECV disabled interrupts>>
16470.000 005365  4         WHILE (D:=D+1)<=7
16475.000 005371  4          DO <<Any other device interrupt?>>
16480.000 005371  4            IF D<>DEV THEN CHK'UNEXP'I(D);
16485.000 005377  4           CHNL'INIT;
16490.000 005404  4           CHECKYTRAP; <<Check for operator interrupt request>>
16495.000 005405  4          END; <<Place the next device number under test>>
16500.000 005406  3        IF REF=!10
16505.000 005412  3         THEN
16510.000 005412  3          BEGIN
16515.000 005412  4           MAS:=!22; <<For CF>>
16520.000 005414  4           REF:=!02;
16525.000 005416  4          END
16530.000 005416  3         ELSE CF'DONE:=TRUE;
16535.000 005421  3       END;
```

```
16545.000 005422  2   <<- STEP 28     -      CA - CB or CF    (reference=0)
16550.000 005422  2
16555.000 005422  2       The procedure described as test condition 2 is used to test
16560.000 005422  2       the circuitry for each device associated with the lines
16565.000 005422  2       CA, and CB or CF.>>
16570.000 005422  2
16575.000 005422  2    STP:=28;
16580.000 005424  2    MAS:=!30; <<For CB>>
16585.000 005426  2    REF:=!0F;
16590.000 005430  2    CF'DONE:=FALSE;
16595.000 005432  2    WHILE CF'DONE=FALSE
16600.000 005436  2     DO
16605.000 005436  2      BEGIN
16610.000 005436  3       INTPSYS'OFF;
16615.000 005442  3       CHNL'INIT;
16620.000 005447  3       DEV:=DESIRED'DEV-1;
16625.000 005453  3       WHILE (DEV:=DEV+1)<=MAX'DEV
16630.000 005457  3        DO
16635.000 005457  3         BEGIN
16640.000 005457  4          SETMASK;
16645.000 005465  4          D:=-1;
16650.000 005467  4          WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
16655.000 005500  4           DO
16660.000 005500  4            BEGIN
16665.000 005500  5             DO'WIOC0(!4040+D); <<Address device>>
16670.000 005504  5             DO'WIOC0(!4067); <<Send modifier seven>>
16675.000 005506  5             DO'WIOC0(!20); <<Set masks=0>>
16680.000 005510  5             DO'WIOC0(!00); <<Set references=0>>
16685.000 005512  5             DO'WIOC0(!4062); <<Send modifier two>>
16690.000 005514  5             DO'WIOC0(!0); <<Set statuses=0>>
16695.000 005516  5            END;
16700.000 005517  4          DRT'INIT;
16705.000 005520  4          ZERO'CPVA;
16710.000 005521  4          ST'DSJ'CH'PROGS;
16715.000 005522  4          INTPSYS'ON;
16720.000 005527  4          D:=-1;
16725.000 005531  4          WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
16730.000 005542  4           DO
16735.000 005542  4            BEGIN
16740.000 005542  5             DO'WIOC0(!4040+D); <<Address device>>
16745.000 005546  5             DO'WIOC0(!4067); <<Send modifier seven>>
16750.000 005550  5             DO'WIOC0(!3F); <<Set masks=1>>
16755.000 005552  5            END;
16760.000 005553  4          DODELAY(STARTIME,5); <<Short wait>>
16765.000 005557  4          CHK'UNEXP'I(DEV);
16770.000 005561  4          DO'WIOC0(!4040+DEV); <<Address the device under test>>
16775.000 005565  4          DO'WIOC0(!4067); <<Send modifier seven>>
16780.000 005567  4          DO'WIOC0(!20); <<Set device mask 0>>
16785.000 005571  4          DO'WIOC0(REF); <<Set reference for CB or CF=0>>
16790.000 005573  4          DO'WIOC0(!4062); <<Send modifier two>>
16795.000 005575  4          DO'WIOC0(!8); <<CA=1, CD,CH,SCA=0 for CB,CF status change>>
16800.000 005577  4          DODELAY(STARTIME,5); <<Short wait>>
16805.000 005603  4          A:=B:=0;
16810.000 005607  4          DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
16815.000 005612  4          DO'WIOC0(!4070); <<Send the DSJ command code>>
```

```
16820.000 005614  4          DO'RIOC0; <<Read the DSJ returned byte>>
16825.000 005615  4          IF A.(11:5)<>!12 <<CB & CF>>
16830.000 005622  4           THEN
16835.000 005622  4            BEGIN
16840.000 005622  5             IF A.(11:5)<>!8
16845.000 005627  5              THEN
16850.000 005627  5               BEGIN
16855.000 005627  6                NUM'CHARS:=GET'MESSAGE(40);
16860.000 005633  6                NUM2ASC(20,2,16,A.(11:5));
16865.000 005641  6                NUM2ASC(33,2,16,!12);
16870.000 005646  6                ERROROUT(-NUM'CHARS,1);
16875.000 005652  6               END
16880.000 005652  5              ELSE ERROROUT(-GET'MESSAGE(39),1);
16885.000 005664  5            END
16890.000 005664  4           ELSE
16895.000 005665  4            BEGIN <<Continue the test case.>>
16900.000 005665  5             IF TOS'.(8:8)<>3 <<Expect no DSJ yet>>
16905.000 005672  5              THEN
16910.000 005672  5               BEGIN
16915.000 005672  6                NUM'CHARS:=GET'MESSAGE(41);
16920.000 005676  6                NUM2ASC(14,2,16,TOS'.(8:8));
16925.000 005704  6                NUM2ASC(27,2,16,0);
16930.000 005711  6                ERROROUT(-NUM'CHARS,1);
16935.000 005715  6               END;
16940.000 005715  5              CHK'UNEXP'I(DEV);
16945.000 005717  5              DO'WIOC0(!4067); <<Send modifier 7>>
16950.000 005721  5              DO'WIOC0(MAS); <<Mask on for CB or CF>>
16955.000 005723  5              DODELAY(STARTIME,5); <<DSJ'CH'PROG should interrupt now>>
16960.000 005731  5              IF (B:=DSJ'CH'PROG(DEV*!15+5))<>2
16965.000 005743  5               THEN
16970.000 005743  5                BEGIN
16975.000 005743  6                 NUM'CHARS:=GET'MESSAGE(43);
16980.000 005747  6                 NUM2ASC(42,2,16,B);
16985.000 005754  6                 NUM2ASC(54,1,16,2);
16990.000 005761  6                 ERROROUT(-NUM'CHARS,1);
16995.000 005765  6                END;
17000.000 005765  5              IF CPVA(DEV*4+2)<>CHNL+DEV <<Interrupt?>>
17005.000 005776  5               THEN
17010.000 005776  5                ERROROUT(-GET'MESSAGE(85),1); <<No.>>
17015.000 006004  5             END;
17020.000 006004  4           D:=-1;
17025.000 006006  4           INTPSYS'ON; <<INT'RECV disabled interrupts>>
17030.000 006007  4           WHILE (D:=D+1)<=7
17035.000 006013  4            DO <<Any other device interrupt?>>
17040.000 006013  4             IF D<>DEV THEN CHK'UNEXP'I(D);
17045.000 006021  4           CHNL'INIT;
17050.000 006026  4           CHECKYTRAP; <<Check for operator interrupt request>>
17055.000 006027  4          END; <<Place the next device number under test>>
17060.000 006030  3        IF REF=!10
17065.000 006034  3         THEN
17070.000 006034  3          BEGIN
17075.000 006034  4           MAS:=!22; <<For CF>>
17080.000 006036  4           REF:=!1D;
17085.000 006040  4          END
17090.000 006040  3         ELSE CF'DONE:=TRUE;
17095.000 006043  3       END;
```

```
17105.000 006044  2  <<- STEP 29     -      CD - CC    (reference=1)
17110.000 006044  2
17115.000 006044  2    The procedure described as test condition 1 is used to test
17120.000 006044  2    the circuitry for each device associated with the lines
17125.000 006044  2    CD, and CC.>>
17130.000 006044  2
17135.000 006044  2    STP:=29;
17140.000 006046  2    INTPSYS'OFF;
17145.000 006051  2    CHNL'INIT;
17150.000 006056  2    DEV:=DESIRED'DEV-1;
17155.000 006062  2    WHILE (DEV:=DEV+1)<=MAX'DEV
17160.000 006066  2     DO
17165.000 006066  2      BEGIN
17170.000 006066  3       SETMASK;
17175.000 006074  3       D:=-1;
17180.000 006076  3       WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
17185.000 006107  3        DO
17190.000 006107  3         BEGIN
17195.000 006107  4          DO'WIOC0(!4040+D); <<Address device>>
17200.000 006113  4          DO'WIOC0(!4067); <<Send modifier seven>>
17205.000 006115  4          DO'WIOC0(!20); <<Set masks=0>>
17210.000 006117  4          DO'WIOC0(!1F); <<Set references=1>>
17215.000 006121  4          DO'WIOC0(!4062); <<Send modifier two>>
17220.000 006123  4          DO'WIOC0(!F); <<Set statuses=1>>
17225.000 006125  4         END;
17230.000 006126  3       DRT'INIT;
17235.000 006127  3       ZERO'CPVA;
17240.000 006130  3       ST'DSJ'CH'PROGS;
17245.000 006131  3       INTPSYS'ON;
17250.000 006132  3       D:=-1;
17255.000 006134  3       WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
17260.000 006145  3        DO
17265.000 006145  3         BEGIN
17270.000 006145  4          DO'WIOC0(!4040+D); <<Address device>>
17275.000 006151  4          DO'WIOC0(!4067); <<Send modifier seven>>
17280.000 006153  4          DO'WIOC0(!3F); <<Set masks=1>>
17285.000 006155  4         END;
17290.000 006156  3       DODELAY(STARTIME,5); <<Short wait>>
17295.000 006165  3       CHK'UNEXP'I(DEV);
17300.000 006167  3       DO'WIOC0(!4040+DEV); <<Address the device under test>>
17305.000 006173  3       DO'WIOC0(!4067); <<Send modifier seven>>
17310.000 006175  3       DO'WIOC0(!20); <<Set device mask 0>>
17315.000 006177  3       DO'WIOC0(!08); <<Set reference for CC=1>>
17320.000 006201  3       DO'WIOC0(!4062); <<Send modifier two>>
17325.000 006203  3       DO'WIOC0(!B); <<CA=1, CD=0, CH,SCA=1 for CC status change>>
17330.000 006205  3       DODELAY(STARTIME,5); <<Short wait>>
17335.000 006213  3       A:=B:=0;
17340.000 006217  3       DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
17345.000 006222  3       DO'WIOC0(!4070); <<Send the DSJ command code>>
17350.000 006224  3       DO'RIOC0; <<Read the DSJ returned byte>>
17355.000 006225  3       C:=!13; <<CB,CF & SCF>>
17360.000 006227  3       IF EXTND THEN C:=LOGICAL(C) OR !04; <<CE is there too>>
17365.000 006235  3       IF A.(11:5)<>C
17370.000 006242  3        THEN
17375.000 006242  3         BEGIN
```

```
17380.000 006242  4          IF A.(11:5)<>!B
17385.000 006247  4           THEN
17390.000 006247  4            BEGIN
17395.000 006247  5             NUM'CHARS:=GET'MESSAGE(40);
17400.000 006253  5             NUM2ASC(20,2,16,A.(11:5));
17405.000 006261  5             NUM2ASC(33,2,16,C);
17410.000 006272  5             ERROROUT(-NUM'CHARS,1);
17415.000 006276  5            END
17420.000 006276  4           ELSE ERROROUT(-GET'MESSAGE(39),1);
17425.000 006305  4         END
17430.000 006305  3        ELSE
17435.000 006306  3         BEGIN <<Continue the test case.>>
17440.000 006306  4          IF TOS'.(8:8)<>3 <<Expect no DSJ yet>>
17445.000 006313  4           THEN
17450.000 006313  4            BEGIN
17455.000 006313  5             NUM'CHARS:=GET'MESSAGE(41);
17460.000 006317  5             NUM2ASC(14,2,16,TOS'.(8:8));
17465.000 006325  5             NUM2ASC(27,2,16,0);
17470.000 006332  5             ERROROUT(-NUM'CHARS,1);
17475.000 006336  5            END;
17480.000 006336  4          CHK'UNEXP'I(DEV);
17485.000 006340  4          DO'WIOC0(!4067); <<Send modifier 7>>
17490.000 006342  4          DO'WIOC0(!28); <<Mask on for CC>>
17495.000 006344  4          DODELAY(STARTIME,5); <<DSJ'CH'PROG should interrupt now>>
17500.000 006352  4          IF (B:=DSJ'CH'PROG(DEV*!15+5))<>2
17505.000 006364  4           THEN
17510.000 006364  4            BEGIN
17515.000 006364  5             NUM'CHARS:=GET'MESSAGE(43);
17520.000 006370  5             NUM2ASC(42,2,16,B);
17525.000 006375  5             NUM2ASC(54,1,16,2);
17530.000 006402  5             ERROROUT(-NUM'CHARS,1);
17535.000 006406  5            END;
17540.000 006406  4          IF CPVA(DEV*4+2)<>CHNL+DEV <<Interrupt?>>
17545.000 006417  4           THEN
17550.000 006417  4            ERROROUT(-GET'MESSAGE(85),1); <<No.>>
17555.000 006425  4          END;
17560.000 006425  3        D:=-1;
17565.000 006427  3        INTPSYS'ON; <<INT'RECV disabled interrupts>>
17570.000 006430  3        WHILE (D:=D+1)<=7
17575.000 006434  3         DO <<Any other device interrupt?>>
17580.000 006434  3          IF D<>DEV THEN CHK'UNEXP'I(D);
17585.000 006442  3        CHNL'INIT;
17590.000 006447  3        CHECKYTRAP; <<Check for operator interrupt request>>
17595.000 006450  3       END; <<Place the next device number under test>>
```

```
17605.000 006451  2   <<- STEP 30     -      CD - CC    (reference=0)
17610.000 006451  2
17615.000 006451  2       The procedure described as test condition 2 is used to test
17620.000 006451  2       the circuitry for each device associated with the lines
17625.000 006451  2       CD, and CC.>>
17630.000 006451  2
17635.000 006451  2    STP:=30;
17640.000 006453  2    INTPSYS'OFF;
17645.000 006454  2    CHNL'INIT;
17650.000 006461  2    DEV:=DESIRED'DEV-1;
17655.000 006465  2    WHILE (DEV:=DEV+1)<=MAX'DEV
17660.000 006471  2     DO
17665.000 006471  2      BEGIN
17670.000 006471  3       SETMASK;
17675.000 006477  3       D:=-1;
17680.000 006501  3       WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
17685.000 006512  3        DO
17690.000 006512  3         BEGIN
17695.000 006512  4          DO'WIOC0(!4040+D); <<Address device>>
17700.000 006516  4          DO'WIOC0(!4067); <<Send modifier seven>>
17705.000 006520  4          DO'WIOC0(!20); <<Set masks=0>>
17710.000 006522  4          DO'WIOC0(!00); <<Set references=0>>
17715.000 006524  4          DO'WIOC0(!4062); <<Send modifier two>>
17720.000 006526  4          DO'WIOC0(!0); <<Set statuses=0>>
17725.000 006530  4         END;
17730.000 006531  3       DRT'INIT;
17735.000 006532  3       ZERO'CPVA;
17740.000 006533  3       ST'DSJ'CH'PROGS;
17745.000 006534  3       INTPSYS'ON;
17750.000 006535  3       D:=-1;
17755.000 006537  3       WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
17760.000 006550  3        DO
17765.000 006550  3         BEGIN
17770.000 006550  4          DO'WIOC0(!4040+D); <<Address device>>
17775.000 006554  4          DO'WIOC0(!4067); <<Send modifier seven>>
17780.000 006556  4          DO'WIOC0(!3F); <<Set masks=1>>
17785.000 006560  4         END;
17790.000 006561  3       DODELAY(STARTIME,5); <<Short wait>>
17795.000 006565  3       CHK'UNEXP'I(DEV);
17800.000 006567  3       DO'WIOC0(!4040+DEV); <<Address the device under test>>
17805.000 006573  3       DO'WIOC0(!4067); <<Send modifier seven>>
17810.000 006575  3       DO'WIOC0(!20); <<Set device mask 0>>
17815.000 006577  3       DO'WIOC0(!17); <<Set reference for CC=0>>
17820.000 006601  3       DO'WIOC0(!4062); <<Send modifier two>>
17825.000 006603  3       DO'WIOC0(!4); <<CA=0, CD=1, CH,SCA=0 for CC status change>>
17830.000 006605  3       DODELAY(STARTIME,5); <<Short wait>>
17835.000 006614  3       A:=B:=0;
17840.000 006620  3       DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
17845.000 006623  3       DO'WIOC0(!4070); <<Send the DSJ command code>>
17850.000 006625  3       DO'RIOC0; <<Read the DSJ returned byte>>
17855.000 006626  3       IF A.(11:5)<>!08 <<CC>>
17860.000 006633  3        THEN
17865.000 006633  3         BEGIN
17870.000 006633  4          IF A.(11:5)<>!4
17875.000 006640  4           THEN
```

```
17880.000 006640  4            BEGIN
17885.000 006640  5             NUM'CHARS:=GET'MESSAGE(40);
17890.000 006644  5             NUM2ASC(20,2,16,A.(11:5));
17895.000 006652  5             NUM2ASC(33,2,16,!08);
17900.000 006657  5             ERROROUT(-NUM'CHARS,1);
17905.000 006663  5            END
17910.000 006663  4           ELSE ERROROUT(-GET'MESSAGE(39),1);
17915.000 006675  4         END
17920.000 006675  3        ELSE
17925.000 006676  3         BEGIN <<Continue the test case.>>
17930.000 006676  4          IF TOS'.(8:8)<>3 <<Expect no DSJ yet>>
17935.000 006703  4           THEN
17940.000 006703  4            BEGIN
17945.000 006703  5             NUM'CHARS:=GET'MESSAGE(41);
17950.000 006707  5             NUM2ASC(14,2,16,TOS'.(8:8));
17955.000 006715  5             NUM2ASC(27,2,16,0);
17960.000 006722  5             ERROROUT(-NUM'CHARS,1);
17965.000 006726  5            END;
17970.000 006726  4          CHK'UNEXP'I(DEV);
17975.000 006730  4          DO'WIOC0(!4067); <<Send modifier 7>>
17980.000 006732  4          DO'WIOC0(!32); <<Mask on for CC>>
17985.000 006734  4          DODELAY(STARTIME,5); <<DSJ'CH'PROG should interrupt now>>
17990.000 006742  4          IF (B:=DSJ'CH'PROG(DEV*!15+5))<>2
17995.000 006754  4           THEN
18000.000 006754  4            BEGIN
18005.000 006754  5             NUM'CHARS:=GET'MESSAGE(43);
18010.000 006760  5             NUM2ASC(42,2,16,B);
18015.000 006765  5              NUM2ASC(54,1,16,2);
18020.000 006772  5             ERROROUT(-NUM'CHARS,1);
18025.000 006776  5            END;
18030.000 006776  4          IF CPVA(DEV*4+2)<>CHNL+DEV <<Interrupt?>>
18035.000 007007  4           THEN
18040.000 007007  4            ERROROUT(-GET'MESSAGE(85),1); <<No.>>
18045.000 007015  4          END;
18050.000 007015  3        D:=-1;
18055.000 007017  3        INTPSYS'ON; <<INT'RECV disabled interrupts>>
18060.000 007020  3        WHILE (D:=D+1)<=7
18065.000 007024  3         DO <<Any other device interrupt?>>
18070.000 007024  3          IF D<>DEV THEN CHK'UNEXP'I(D);
18075.000 007032  3        CHNL'INIT;
18080.000 007037  3        CHECKYTRAP; <<Check for operator interrupt request>>
18085.000 007040  3       END; <<Place the next device number under test>>
```

```
18095.000 007041  2   <<- STEP 31     -      SCA - SCF    (reference=1)
18100.000 007041  2
18105.000 007041  2       The procedure described as test condition 1 is used to test
18110.000 007041  2       the circuitry for each device associated with the lines
18115.000 007041  2       SCA, and SCF.>>
18120.000 007041  2
18125.000 007041  2    STP:=31;
18130.000 007043  2    INTPSYS'OFF;
18135.000 007044  2    CHNL'INIT;
18140.000 007051  2    DEV:=DESIRED'DEV-1;
18145.000 007055  2    WHILE (DEV:=DEV+1)<=MAX'DEV
18150.000 007061  2     DO
18155.000 007061  2      BEGIN
18160.000 007061  3       SETMASK;
18165.000 007067  3       D:=-1;
18170.000 007071  3       WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
18175.000 007102  3        DO
18180.000 007102  3         BEGIN
18185.000 007102  4          DO'WIOC0(!4040+D); <<Address device>>
18190.000 007106  4          DO'WIOC0(!4067); <<Send modifier seven>>
18195.000 007110  4          DO'WIOC0(!20); <<Set masks=0>>
18200.000 007112  4          DO'WIOC0(!1F); <<Set references=1>>
18205.000 007114  4          DO'WIOC0(!4062); <<Send modifier two>>
18210.000 007116  4          DO'WIOC0(!F); <<Set statuses=1>>
18215.000 007120  4         END;
18220.000 007121  3       DRT'INIT;
18225.000 007122  3       ZERO'CPVA;
18230.000 007123  3       ST'DSJ'CH'PROGS;
18235.000 007124  3       INTPSYS'ON;
18240.000 007127  3       D:=-1;
18245.000 007131  3       WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
18250.000 007142  3        DO
18255.000 007142  3         BEGIN
18260.000 007142  4          DO'WIOC0(!4040+D); <<Address device>>
18265.000 007146  4          DO'WIOC0(!4067); <<Send modifier seven>>
18270.000 007150  4          DO'WIOC0(!3F); <<Set masks=1>>
18275.000 007152  4         END;
18280.000 007153  3       DODELAY(STARTIME,5); <<Short wait>>
18285.000 007157  3       CHK'UNEXP'I(DEV);
18290.000 007161  3       DO'WIOC0(!4040+DEV); <<Address the device under test>>
18295.000 007165  3       DO'WIOC0(!4067); <<Send modifier seven>>
18300.000 007167  3       DO'WIOC0(!20); <<Set device mask 0>>
18305.000 007171  3       DO'WIOC0(!01); <<Set reference for SCF=1>>
18310.000 007173  3       DO'WIOC0(!4062); <<Send modifier two>>
18315.000 007175  3       DO'WIOC0(!E); <<CA,CD,CH=1, SCA=0 for SCF status change>>
18320.000 007177  3       DODELAY(STARTIME,5); <<Short wait>>
18325.000 007203  3       A:=B:=0;
18330.000 007207  3       DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
18335.000 007212  3       DO'WIOC0(!4070); <<Send the DSJ command code>>
18340.000 007214  3       DO'RIOC0; <<Read the DSJ returned byte>>
18345.000 007215  3       C:=!1A; <<CB,CC & CF>>
18350.000 007217  3       IF EXTND THEN C:=LOGICAL(C) OR !04; <<CE is there too>>
18355.000 007225  3       IF A.(11:5)<>C
18360.000 007232  3        THEN
18365.000 007232  3         BEGIN
```

```
18370.000 007232  4          IF A.(11:5)<>!E
18375.000 007237  4           THEN
18380.000 007237  4            BEGIN
18385.000 007237  5             NUM'CHARS:=GET'MESSAGE(40);
18390.000 007243  5             NUM2ASC(20,2,16,A.(11:5));
18395.000 007251  5             NUM2ASC(33,2,16,C);
18400.000 007262  5             ERROROUT(-NUM'CHARS,1);
18405.000 007266  5            END
18410.000 007266  4           ELSE ERROROUT(-GET'MESSAGE(39),1);
18415.000 007275  4         END
18420.000 007275  3        ELSE
18425.000 007276  3         BEGIN <<Continue the test case.>>
18430.000 007276  4          IF TOS'.(8:8)<>3 <<Expect no DSJ yet>>
18435.000 007303  4           THEN
18440.000 007303  4            BEGIN
18445.000 007303  5             NUM'CHARS:=GET'MESSAGE(41);
18450.000 007307  5             NUM2ASC(14,2,16,TOS'.(8:8));
18455.000 007315  5             NUM2ASC(27,2,16,0);
18460.000 007322  5             ERROROUT(-NUM'CHARS,1);
18465.000 007326  5            END;
18470.000 007326  4          CHK'UNEXP'I(DEV);
18475.000 007330  4          DO'WIOC0(!4067); <<Send modifier 7>>
18480.000 007332  4          DO'WIOC0(!21); <<Mask on for SCF>>
18485.000 007334  4          DODELAY(STARTIME,5); <<DSJ'CH'PROG should interrupt now>>
18490.000 007343  4          IF (B:=DSJ'CH'PROG(DEV*!15+5))<>2
18495.000 007355  4           THEN
18500.000 007355  4            BEGIN
18505.000 007355  5             NUM'CHARS:=GET'MESSAGE(43);
18510.000 007361  5             NUM2ASC(42,2,16,B);
18515.000 007366  5             NUM2ASC(54,1,16,2);
18520.000 007373  5             ERROROUT(-NUM'CHARS,1);
18525.000 007377  5            END;
18530.000 007377  4          IF CPVA(DEV*4+2)<>CHNL+DEV <<Interrupt?>>
18535.000 007410  4           THEN
18540.000 007410  4            ERROROUT(-GET'MESSAGE(85),1); <<No.>>
18545.000 007416  4          END;
18550.000 007416  3        D:=-1;
18555.000 007420  3        INTPSYS'ON; <<INT'RECV disabled interrupts>>
18560.000 007421  3        WHILE (D:=D+1)<=7
18565.000 007425  3         DO <<Any other device interrupt?>>
18570.000 007425  3          IF D<>DEV THEN CHK'UNEXP'I(D);
18575.000 007433  3        CHNL'INIT;
18580.000 007440  3        CHECKYTRAP; <<Check for operator interrupt request>>
18585.000 007441  3       END; <<Place the next device number under test>>
18590.000 007442  2     DOT; <<Check ATTN/CNTL Y then print 'period'>>
```

```
18600.000 007443  2   <<- STEP 32     -      SCA - SCF    (reference=0)
18605.000 007443  2
18610.000 007443  2       The procedure described as test condition 2 is used to test
18615.000 007443  2       the circuitry for each device associated with the lines
18620.000 007443  2       SCA, and SCF.>>
18625.000 007443  2
18630.000 007443  2    STP:=32;
18635.000 007445  2    INTPSYS'OFF;
18640.000 007446  2    CHNL'INIT;
18645.000 007453  2    DEV:=DESIRED'DEV-1;
18650.000 007457  2    WHILE (DEV:=DEV+1)<=MAX'DEV
18655.000 007463  2     DO
18660.000 007463  2      BEGIN
18665.000 007463  3       SETMASK;
18670.000 007471  3       D:=-1;
18675.000 007473  3       WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
18680.000 007504  3        DO
18685.000 007504  3         BEGIN
18690.000 007504  4          DO'WIOC0(!4040+D); <<Address device>>
18695.000 007510  4          DO'WIOC0(!4067); <<Send modifier seven>>
18700.000 007512  4          DO'WIOC0(!20); <<Set masks=0>>
18705.000 007514  4          DO'WIOC0(!00); <<Set references=0>>
18710.000 007516  4          DO'WIOC0(!4062); <<Send modifier two>>
18715.000 007520  4          DO'WIOC0(!0); <<Set statuses=0>>
18720.000 007522  4         END;
18725.000 007523  3       DRT'INIT;
18730.000 007524  3       ZERO'CPVA;
18735.000 007525  3       ST'DSJ'CH'PROGS;
18740.000 007526  3       INTPSYS'ON;
18745.000 007531  3       D:=-1;
18750.000 007533  3       WHILE (D:=D+1)<=(IF EXTND THEN 7 ELSE 3)
18755.000 007544  3        DO
18760.000 007544  3         BEGIN
18765.000 007544  4          DO'WIOC0(!4040+D); <<Address device>>
18770.000 007550  4          DO'WIOC0(!4067); <<Send modifier seven>>
18775.000 007552  4          DO'WIOC0(!3F); <<Set masks=1>>
18780.000 007554  4         END;
18785.000 007555  3       DODELAY(STARTIME,5); <<Short wait>>
18790.000 007561  3       CHK'UNEXP'I(DEV);
18795.000 007563  3       DO'WIOC0(!4040+DEV); <<Address the device under test>>
18800.000 007567  3       DO'WIOC0(!4067); <<Send modifier seven>>
18805.000 007571  3       DO'WIOC0(!20); <<Set device mask 0>>
18810.000 007573  3       DO'WIOC0(!1E); <<Set reference for SCF=0>>
18815.000 007575  3       DO'WIOC0(!4062); <<Send modifier two>>
18820.000 007577  3       DO'WIOC0(!1); <<CA,CD,CH=0, SCA=1 for SCF status change>>
18825.000 007601  3       DODELAY(STARTIME,5); <<Short wait>>
18830.000 007607  3       A:=B:=0;
18835.000 007613  3       DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
18840.000 007616  3       DO'WIOC0(!4070); <<Send the DSJ command code>>
18845.000 007620  3       DO'RIOC0; <<Read the DSJ returned byte>>
18850.000 007621  3       IF A.(11:5)<>!01 <<SCF>>
18855.000 007626  3        THEN
18860.000 007626  3         BEGIN
18865.000 007626  4          NUM'CHARS:=GET'MESSAGE(40);
18870.000 007632  4          NUM2ASC(20,2,16,A.(11:5));
```

```
18875.000 007640  4          NUM2ASC(33,2,16,!01);
18880.000 007645  4          ERROROUT(-NUM'CHARS,1);
18885.000 007651  4         END
18890.000 007651  3        ELSE
18895.000 007652  3         BEGIN <<Continue the test case.>>
18900.000 007652  4          IF TOS'.(8:8)<>3 <<Expect no DSJ yet>>
18905.000 007657  4           THEN
18910.000 007657  4            BEGIN
18915.000 007657  5             NUM'CHARS:=GET'MESSAGE(41);
18920.000 007666  5             NUM2ASC(14,2,16,TOS'.(8:8));
18925.000 007674  5             NUM2ASC(27,2,16,0);
18930.000 007701  5             ERROROUT(-NUM'CHARS,1);
18935.000 007705  5            END;
18940.000 007705  4          CHK'UNEXP'I(DEV);
18945.000 007707  4          DO'WIOC0(!4067); <<Send modifier 7>>
18950.000 007711  4          DO'WIOC0(!21); <<Mask on for SCF>>
18955.000 007713  4          DODELAY(STARTIME,5); <<DSJ'CH'PROG should interrupt now>>
18960.000 007717  4          IF (B:=DSJ'CH'PROG(DEV*!15+5))<>2
18965.000 007731  4           THEN
18970.000 007731  4            BEGIN
18975.000 007731  5             NUM'CHARS:=GET'MESSAGE(43);
18980.000 007735  5             NUM2ASC(42,2,16,B);
18985.000 007742  5             NUM2ASC(54,1,16,2);
18990.000 007747  5             ERROROUT(-NUM'CHARS,1);
18995.000 007753  5            END;
19000.000 007753  4          IF CPVA(DEV*4+2)<>CHNL+DEV <<Interrupt?>>
19005.000 007764  4           THEN
19010.000 007764  4              ERROROUT(-GET'MESSAGE(85),1); <<No.>>
19015.000 007772  4          END;
19020.000 007772  3        D:=-1;
19025.000 007774  3        INTPSYS'ON; <<INT'RECV disabled interrupts>>
19030.000 007775  3        WHILE (D:=D+1)<=7
19035.000 010001  3         DO <<Any other device interrupt?>>
19040.000 010001  3          IF D<>DEV THEN CHK'UNEXP'I(D);
19045.000 010007  3        CHNL'INIT;
19050.000 010014  3        CHECKYTRAP; <<Check for operator interrupt request>>
19055.000 010015  3       END; <<Place the next device number under test>>
```

```
19065.000 010016  2    IF EXTND
19070.000 010020  2     THEN <<Do steps 33 & 34>>
19075.000 010020  2      BEGIN
19080.000 010020  3   <<- STEP 33     -      CH - CE    (reference=1)>>
19085.000 010020  3
19090.000 010020  3       STP:=33;
19095.000 010022  3       INTPSYS'OFF;
19100.000 010025  3       CHNL'INIT;
19105.000 010032  3       DEV:=DESIRED'DEV-1;
19110.000 010036  3       WHILE (DEV:=DEV+1)<=MAX'DEV
19115.000 010042  3        DO
19120.000 010042  3         BEGIN
19125.000 010042  4          SETMASK;
19130.000 010050  4          D:=-1;
19135.000 010052  4          WHILE (D:=D+1)<=7
19140.000 010056  4           DO
19145.000 010056  4            BEGIN
19150.000 010056  5             DO'WIOC0(!4040+D); <<Address device>>
19155.000 010062  5             DO'WIOC0(!4067); <<Send modifier seven>>
19160.000 010064  5             DO'WIOC0(!20); <<Set masks=0>>
19165.000 010066  5             DO'WIOC0(!1F); <<Set references=1>>
19170.000 010070  5             DO'WIOC0(!4062); <<Send modifier two>>
19175.000 010072  5             DO'WIOC0(!F); <<Set statuses=1>>
19180.000 010074  5            END;
19185.000 010075  4          DRT'INIT;
19190.000 010076  4          ZERO'CPVA;
19195.000 010077  4          ST'DSJ'CH'PROGS;
19200.000 010100  4          INTPSYS'ON;
19205.000 010103  4          D:=-1;
19210.000 010105  4          WHILE (D:=D+1)<=7
19215.000 010111  4           DO
19220.000 010111  4            BEGIN
19225.000 010111  5             DO'WIOC0(!4040+D); <<Address device>>
19230.000 010115  5             DO'WIOC0(!4067); <<Send modifier seven>>
19235.000 010117  5             DO'WIOC0(!3F); <<Set masks=1>>
19240.000 010121  5            END;
19245.000 010122  4          DODELAY(STARTIME,5); <<Short wait>>
19250.000 010126  4          CHK'UNEXP'I(DEV);
19255.000 010130  4          DO'WIOC0(!4040+DEV); <<Address the device under test>>
19260.000 010134  4          DO'WIOC0(!4067); <<Send modifier seven>>
19265.000 010136  4          DO'WIOC0(!20); <<Set device mask 0>>
19270.000 010140  4          DO'WIOC0(!04); <<Set reference for CE=1>>
19275.000 010142  4          DO'WIOC0(!4062); <<Send modifier two>>
19280.000 010144  4          DO'WIOC0(!D); <<CA,CD=1, CH=0, SCA=1 for CE status change>>
19285.000 010146  4          DODELAY(STARTIME,5); <<Short wait>>
19290.000 010154  4          A:=B:=0;
19295.000 010160  4          DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
19300.000 010163  4          DO'WIOC0(!4070); <<Send the DSJ command code>>
19305.000 010165  4          DO'RIOC0; <<Read the DSJ returned byte>>
19310.000 010166  4          IF A.(11:5)<>!1B <<CB,CC,CF & SCF>>
19315.000 010173  4           THEN
19320.000 010173  4            BEGIN
19325.000 010173  5             IF A.(11:5)<>!D
19330.000 010200  5              THEN
19335.000 010200  5               BEGIN
```

```
19340.000 010200  6              NUM'CHARS:=GET'MESSAGE(40);
19345.000 010204  6              NUM2ASC(20,2,16,A.(11:5));
19350.000 010212  6              NUM2ASC(33,2,16,!1B);
19355.000 010217  6              ERROROUT(-NUM'CHARS,1);
19360.000 010223  6             END
19365.000 010223  5            ELSE ERROROUT(-GET'MESSAGE(39),1);
19370.000 010236  5          END
19375.000 010236  4         ELSE
19380.000 010237  4          BEGIN <<Continue the test case.>>
19385.000 010237  5           IF TOS'.(8:8)<>3 <<Expect no DSJ yet>>
19390.000 010244  5            THEN
19395.000 010244  5             BEGIN
19400.000 010244  6              NUM'CHARS:=GET'MESSAGE(41);
19405.000 010250  6              NUM2ASC(14,2,16,TOS'.(8:8));
19410.000 010256  6              NUM2ASC(27,2,16,0);
19415.000 010263  6              ERROROUT(-NUM'CHARS,1);
19420.000 010267  6             END;
19425.000 010267  5           CHK'UNEXP'I(DEV);
19430.000 010271  5           DO'WIOC0(!4067); <<Send modifier 7>>
19435.000 010273  5           DO'WIOC0(!24); <<Mask on for CE>>
19440.000 010275  5           DODELAY(STARTIME,5); <<DSJ'CH'PROG should interrupt now>>
19445.000 010303  5           IF (B:=DSJ'CH'PROG(DEV*!15+5))<>2
19450.000 010315  5            THEN
19455.000 010315  5             BEGIN
19460.000 010315  6              NUM'CHARS:=GET'MESSAGE(43);
19465.000 010321  6              NUM2ASC(42,2,16,B);
19470.000 010326  6              NUM2ASC(54,1,16,2);
19475.000 010333  6              ERROROUT(-NUM'CHARS,1);
19480.000 010337  6             END;
19485.000 010337  5           IF CPVA(DEV*4+2)<>CHNL+DEV <<Interrupt?>>
19490.000 010350  5            THEN
19495.000 010350  5             ERROROUT(-GET'MESSAGE(85),1); <<No.>>
19500.000 010356  5           END;
19505.000 010356  4         D:=-1;
19510.000 010360  4         INTPSYS'ON; <<INT'RECV disabled interrupts>>
19515.000 010361  4         WHILE (D:=D+1)<=7
19520.000 010365  4          DO <<Any other device interrupt?>>
19525.000 010365  4           IF D<>DEV THEN CHK'UNEXP'I(D);
19530.000 010373  4         CHNL'INIT;
19535.000 010400  4         CHECKYTRAP; <<Check for operator interrupt request>>
19540.000 010401  4        END; <<Place the next device number under test>>
```

```
19550.000 010402  3   <<- STEP 34     -      CH - CE    (reference=0)
19555.000 010402  3
19560.000 010402  3       The procedure described as test condition 2 is used to test
19565.000 010402  3       the circuitry for each device associated with the lines
19570.000 010402  3       CH, and CE.>>
19575.000 010402  3
19580.000 010402  3       STP:=34;
19585.000 010404  3       INTPSYS'OFF;
19590.000 010405  3       CHNL'INIT;
19595.000 010412  3       DEV:=DESIRED'DEV-1;
19600.000 010416  3       WHILE (DEV:=DEV+1)<=MAX'DEV
19605.000 010422  3        DO
19610.000 010422  3         BEGIN
19615.000 010422  4          SETMASK;
19620.000 010430  4          D:=-1;
19625.000 010432  4          WHILE (D:=D+1)<=7
19630.000 010436  4           DO
19635.000 010436  4            BEGIN
19640.000 010436  5             DO'WIOC0(!4040+D); <<Address device>>
19645.000 010442  5             DO'WIOC0(!4067); <<Send modifier seven>>
19650.000 010444  5             DO'WIOC0(!20); <<Set masks=0>>
19655.000 010446  5             DO'WIOC0(!00); <<Set references=0>>
19660.000 010450  5             DO'WIOC0(!4062); <<Send modifier two>>
19665.000 010452  5             DO'WIOC0(!0); <<Set statuses=0>>
19670.000 010454  5            END;
19675.000 010455  4          DRT'INIT;
19680.000 010456  4          ZERO'CPVA;
19685.000 010457  4          ST'DSJ'CH'PROGS;
19690.000 010460  4          INTPSYS'ON;
19695.000 010463  4          D:=-1;
19700.000 010465  4          WHILE (D:=D+1)<=7
19705.000 010471  4           DO
19710.000 010471  4            BEGIN
19715.000 010471  5             DO'WIOC0(!4040+D); <<Address device>>
19720.000 010475  5             DO'WIOC0(!4067); <<Send modifier seven>>
19725.000 010477  5             DO'WIOC0(!3F); <<Set masks=1>>
19730.000 010501  5            END;
19735.000 010502  4          DODELAY(STARTIME,5); <<Short wait>>
19740.000 010506  4          CHK'UNEXP'I(DEV);
19745.000 010510  4          DO'WIOC0(!4040+DEV); <<Address the device under test>>
19750.000 010514  4          DO'WIOC0(!4067); <<Send modifier seven>>
19755.000 010516  4          DO'WIOC0(!20); <<Set device mask 0>>
19760.000 010520  4          DO'WIOC0(!1B); <<Set reference for CE=0>>
19765.000 010522  4          DO'WIOC0(!4062); <<Send modifier two>>
19770.000 010524  4          DO'WIOC0(!2); <<CA,CD=0, CH=1, SCA=0 for CE status change>>
19775.000 010526  4          DODELAY(STARTIME,5); <<Short wait>>
19780.000 010534  4          A:=B:=0;
19785.000 010540  4          DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
19790.000 010543  4          DO'WIOC0(!4070); <<Send the DSJ command code>>
19795.000 010545  4          DO'RIOC0; <<Read the DSJ returned byte>>
19800.000 010546  4          IF A.(11:5)<>!04 <<CE>>
19805.000 010553  4           THEN
19810.000 010553  4            BEGIN
19815.000 010553  5             IF A.(11:5)<>!2
19820.000 010560  5              THEN
```

```
19825.000 010560  5              BEGIN
19830.000 010560  6               NUM'CHARS:=GET'MESSAGE(40);
19835.000 010564  6               NUM2ASC(20,2,16,A.(11:5));
19840.000 010572  6               NUM2ASC(33,2,16,!04);
19845.000 010577  6               ERROROUT(-NUM'CHARS,1);
19850.000 010603  6              END
19855.000 010603  5             ELSE ERROROUT(-GET'MESSAGE(39),1);
19860.000 010615  5           END
19865.000 010615  4          ELSE
19870.000 010616  4           BEGIN <<Continue the test case.>>
19875.000 010616  5            IF TOS'.(8:8)<>3 <<Expect no DSJ yet>>
19880.000 010623  5             THEN
19885.000 010623  5              BEGIN
19890.000 010623  6               NUM'CHARS:=GET'MESSAGE(41);
19895.000 010627  6               NUM2ASC(14,2,16,TOS'.(8:8));
19900.000 010635  6               NUM2ASC(27,2,16,0);
19905.000 010642  6               ERROROUT(-NUM'CHARS,1);
19910.000 010646  6              END;
19915.000 010646  5            CHK'UNEXP'I(DEV);
19920.000 010650  5            DO'WIOC0(!4067); <<Send modifier 7>>
19925.000 010652  5            DO'WIOC0(!24); <<Mask on for CE>>
19930.000 010654  5            DODELAY(STARTIME,5); <<DSJ'CH'PROG should interrupt now>>
19935.000 010662  5            IF (B:=DSJ'CH'PROG(DEV*!15+5))<>2
19940.000 010674  5             THEN
19945.000 010674  5              BEGIN
19950.000 010674  6               NUM'CHARS:=GET'MESSAGE(43);
19955.000 010700  6               NUM2ASC(42,2,16,B);
19960.000 010705  6               NUM2ASC(54,1,16,2);
19965.000 010712  6               ERROROUT(-NUM'CHARS,1);
19970.000 010716  6              END;
19975.000 010716  5            IF CPVA(DEV*4+2)<>CHNL+DEV <<Interrupt?>>
19980.000 010727  5             THEN
19985.000 010727  5              ERROROUT(-GET'MESSAGE(85),1); <<No.>>
19990.000 010735  5            END;
19995.000 010735  4          D:=-1;
20000.000 010737  4          INTPSYS'ON; <<INT'RECV disabled interrupts>>
20005.000 010740  4          WHILE (D:=D+1)<=7
20010.000 010744  4           DO <<Any other device interrupt?>>
20015.000 010744  4            IF D<>DEV THEN CHK'UNEXP'I(D);
20020.000 010752  4          CHNL'INIT;
20025.000 010757  4          CHECKYTRAP; <<Check for operator interrupt request>>
20030.000 010760  4         END; <<Place the next device number under test>>
20035.000 010761  3
20040.000 010761  3      END; <<End of Extended ADCC only tests>>
```

```
20050.000 010761  2    STP:=35;
20055.000 010763  2    CHNL'INIT;
20060.000 010770  2    DEV:=DESIRED'DEV-1;
20065.000 010774  2    WHILE (DEV:=DEV+1)<=MAX'DEV
20070.000 011000  2     DO
20075.000 011000  2      BEGIN
20080.000 011000  3       DO'WIOC0(!4040+DEV); <<Address device under test>>
20085.000 011004  3       DO'WIOC0(!4063); <<Send service cond. modifier>>
20090.000 011006  3       DO'WIOC0(!6); <<Request when byte received>>
20095.000 011010  3       DO'WIOC0(!4064); <<Send modifier four>>
20100.000 011012  3
20105.000 011012  3       <<Clear SP Character RAM addresses>>
20110.000 011012  3       <<for all addresses present.>>
20115.000 011012  3       A:=-1;
20120.000 011014  3       WHILE (A:=A+1)<256 DO DO'WIOC0(A);
20125.000 011024  3
20130.000 011024  3       DO'WIOC0(!4061); <<Send UART modifier>>
20135.000 011026  3       DO'WIOC0(!DE); <<Set up UART for this test>>
20140.000 011030  3       DO'WIOC0(!4066); <<Send baud rate select modifier>>
20145.000 011032  3       DO'WIOC0(!8); <<Set to transmit at 9600 baud>>
20150.000 011044  3       DO'WIOC0(!18); <<Set to receive  at 9600 baud>>
20155.000 011046  3
20160.000 011046  3       DO'WIOC0(!4067); <<Set reference at 0>>
20165.000 011050  3       DO'WIOC0(!0); <<Set mask on for all>>
20170.000 011052  3       DO'WIOC0(!20); <<lines for this test>>
20175.000 011054  3
20180.000 011054  3       DO'WIOC0(!4060); <<Send modifier zero>>
20185.000 011056  3       B:=-1;
20190.000 011060  3       WHILE (B:=B+1)<=(IF EXTND THEN 7 ELSE 3)
20195.000 011071  3        DO
20200.000 011071  3         BEGIN
20205.000 011071  4          DO'WIOC0(B); <<Send the test byte>>
20210.000 011073  4          DODELAY(STARTIME,5);
20215.000 011102  4          DO'WIOC0(!4070); <<Send the DSJ command code>>
20220.000 011104  4          DO'RIOC0; <<Read the DSJ returned byte>>
20225.000 011105  4          IF TOS'.(8:8)=2
20230.000 011112  4           THEN
20235.000 011112  4            BEGIN
20240.000 011112  5             C:=TOS';
20245.000 011114  5             DO'WIOC0(!4062); <<set up and read the>>
20250.000 011116  5             DO'RIOC0; <<modem status>>
20255.000 011117  5             IF TOS'.(11:5)=0
20260.000 011124  5              THEN
20265.000 011124  5               BEGIN
20270.000 011124  6                NUM'CHARS:=GET'MESSAGE(41);
20275.000 011130  6                NUM2ASC(14,2,16,C.(8:8));
20280.000 011136  6                NUM2ASC(27,2,16,0);
20285.000 011143  6                ERROROUT(-NUM'CHARS,1);
20290.000 011154  6               END
20295.000 011154  5              ELSE
20300.000 011155  5               BEGIN
20305.000 011155  6                NUM'CHARS:=GET'MESSAGE(40);
20310.000 011161  6                NUM2ASC(20,2,16,TOS'.(11:5));
20315.000 011167  6                NUM2ASC(33,2,16,0);
20320.000 011174  6                ERROROUT(-NUM'CHARS,1);
```

```
20325.000 011200  6              END;
20330.000 011200  5            END;
20335.000 011200  4          END; <<Next test byte>>
20340.000 011201  3        CHECKYTRAP; <<Check for operator interrupt request>>
20345.000 011202  3
20350.000 011202  3       END; <<Next device number>>
20355.000 011203  2
20360.000 011203  2     STP:=36;
20365.000 011205  2     CHNL'INIT;
20370.000 011212  2     DEV:=DESIRED'DEV-1;
20375.000 011216  2     WHILE (DEV:=DEV+1)<=MAX'DEV
20380.000 011222  2      DO
20385.000 011222  2       BEGIN
20390.000 011222  3        DO'WIOC0(!4040+DEV); <<Address device under test>>
20395.000 011226  3        DO'WIOC0(!4063); <<Send service cond. modifier>>
20400.000 011230  3        DO'WIOC0(!6); <<Request when byte received>>
20405.000 011232  3        DO'WIOC0(!4064); <<Send modifier four>>
20410.000 011234  3
20415.000 011234  3        <<Clear SP Character RAM addresses>>
20420.000 011234  3        <<for all addresses present.>>
20425.000 011234  3        A:=-1;
20430.000 011236  3        WHILE (A:=A+1)<256 DO DO'WIOC0(A);
20435.000 011246  3
20440.000 011246  3        DO'WIOC0(!4061); <<Send UART modifier>>
20445.000 011250  3        DO'WIOC0(!DE); <<Set up UART for this test>>
20450.000 011252  3        DO'WIOC0(!4066); <<Send baud rate select modifier>>
20455.000 011254  3        DO'WIOC0(!8); <<Set to transmit at 9600 baud>>
20460.000 011260  3        DO'WIOC0(!18); <<Set to receive  at 9600 baud>>
20465.000 011262  3
20470.000 011262  3        DO'WIOC0(!4067); <<Set reference at 0>>
20475.000 011264  3        DO'WIOC0(!1F); <<Set mask on for all>>
20480.000 011266  3        DO'WIOC0(!20); <<lines for this test>>
20485.000 011270  3
20490.000 011270  3        DO'WIOC0(!4060); <<Send modifier zero>>
20495.000 011272  3        B:=-1;
20500.000 011274  3        WHILE (B:=B+1)<=(IF EXTND THEN 7 ELSE 3)
20505.000 011305  3         DO
20510.000 011305  3          BEGIN
20515.000 011305  4           DO'WIOC0(B); <<Send the test byte>>
20520.000 011307  4           DODELAY(STARTIME,5);
20525.000 011316  4           DO'WIOC0(!4070); <<Send the DSJ command code>>
20530.000 011320  4           DO'RIOC0; <<Read the DSJ returned byte>>
20535.000 011321  4           IF TOS'.(8:8)=2
20540.000 011326  4            THEN
20545.000 011326  4             BEGIN
20550.000 011326  5              C:=TOS';
20555.000 011330  5              DO'WIOC0(!4062); <<set up and read the>>
20560.000 011332  5              DO'RIOC0; <<modem status>>
20565.000 011333  5              D:=(IF NOT EXTND THEN !1B ELSE !1F);
20570.000 011341  5              IF TOS'.(11:5)=D
20575.000 011346  5               THEN
20580.000 011346  5                BEGIN
20585.000 011346  6                 NUM'CHARS:=GET'MESSAGE(41);
20590.000 011352  6                 NUM2ASC(14,2,16,C.(8:8));
20595.000 011360  6                 NUM2ASC(27,2,16,D);
20600.000 011370  6                 ERROROUT(-NUM'CHARS,1);
```

```
20605.000 011374  6              END
20610.000 011374  5             ELSE
20615.000 011375  5              BEGIN
20620.000 011375  6               NUM'CHARS:=GET'MESSAGE(40);
20625.000 011401  6               NUM2ASC(20,2,16,TOS'.(11:5));
20630.000 011407  6               NUM2ASC(33,2,16,D);
20635.000 011414  6               ERROROUT(-NUM'CHARS,1);
20640.000 011420  6              END;
20645.000 011420  5           END;
20650.000 011420  4         END; <<Next test byte>>
20655.000 011421  3       CHECKYTRAP; <<Check for operator interrupt request>>
20660.000 011422  3      END; <<Next device number>>
20665.000 011423  2   CLEAR'UNX'DEV;
20670.000 011426  2   REP'ILL'INT;
20675.000 011427  2    DOT; <<Check ATTN/CNTL Y then print 'period'>>
20680.000 011430  2   END;
```

```
20690.000 011430  1 IF SECTION(9) THEN BEGIN
20695.000 011436  2
20700.000 011436  2  <<SECTION 9  -  DSJ Priority Structure
20705.000 011436  2
20710.000 011436  2      This Section verifies the ADCC Device Specified Jump
20715.000 011436  2      priority structure, which is: (highest priority first)
20720.000 011436  2
20725.000 011436  2          STATUS  should be read
20730.000 011436  2          READ    request pending
20735.000 011436  2          WRITE   request pending
20740.000 011436  2          NO      request pending>>
20745.000 011436  2
20750.000 011436  2
20755.000 011436  2  <<- STEP 37
20760.000 011436  2
20765.000 011436  2    Each device is set up to request service when the transmit
20770.000 011436  2    buffer is empty, a character is present in the UART receive
20775.000 011436  2    buffer, or when a modem status line has changed from
20780.000 011436  2    reference.  A character is transmitted and received (using
20785.000 011436  2    the loop-back connection path described in Section 2).
20790.000 011436  2    This will cause the board (when enabled) to request service
20795.000 011436  2    because the receive buffer has a character to be read.
20800.000 011436  2    Modem status line CC is made to deviate from reference using
20805.000 011436  2    the procedure described in Step 28 to cause the board to
20810.000 011436  2    request service because the modem status line has changed
20815.000 011436  2    from its established reference.
20820.000 011436  2
20825.000 011436  2    A DSJ is issued and the resulting returned byte is verified
20830.000 011436  2    to be a two (highest priority), which is caused by the
20835.000 011436  2    modem status line change.  The condition of the board
20840.000 011436  2    requesting service for a modem status line change is now
20845.000 011436  2    masked off using modifier 7.
20850.000 011436  2
20855.000 011436  2    A DSJ is issued and the resulting returned byte is verified
20860.000 011436  2    to be a zero (next highest priority).  This condition should
20865.000 011436  2    exist because of the character in the UART receive buffer.
20870.000 011436  2    Now the board requesting service due to a character in the
20875.000 011436  2    receive buffer is masked off using Service Condition Modifier
20880.000 011436  2    Three.
20885.000 011436  2
20890.000 011436  2    A DSJ is issued and the resulting returned byte is verified
20895.000 011436  2    to be a one, which is due to the empty UART transmit buffer.
20900.000 011436  2    The request due to this condition is masked off using Service
20905.000 011436  2    Condition Modifier Three.
20910.000 011436  2
20915.000 011436  2    A DSJ is issued and the resulting returned byte is verified
20920.000 011436  2    to be a three, which means there are no requests and is
20925.000 011436  2    the lowest priority.>>
20930.000 011436  2
20935.000 011436  2      STP:=37;
20940.000 011440  2      DEV:=DESIRED'DEV-1;
20945.000 011444  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
20950.000 011450  3      CHNL'INIT;
20955.000 011460  3      DO'WIOC0(!4040+DEV); <<Address the device under test>>
20960.000 011464  3      DO'WIOC0(!4061); <<Set board up to request>>
```

```
20965.000 011466  3      DO'WIOC0(!DE); <<service so as to catch>>
20970.000 011470  3      DO'WIOC0(!4063); <<Send service request modifier>>
20975.000 011472  3      DO'WIOC0(!4); <<Request when xmit buffer not full>>
20980.000 011474  3      DO'WIOC0(!6); <<Request when byte received>>
20985.000 011476  3      DO'WIOC0(!4066); <<Set up UART to xmit/recv at>>
20990.000 011500  3      DO'WIOC0(!8); <<9600 baud>>
20995.000 011502  3      DO'WIOC0(!18);
21000.000 011504  3      DO'WIOC0(!4067); <<Send modifier seven>>
21005.000 011506  3      DO'WIOC0(!17); <<Set reference for CC=0>>
21010.000 011510  3      DO'WIOC0(!32); <<Mask on for this line>>
21015.000 011512  3      DO'WIOC0(!4062); <<Send modifier 2 and>>
21020.000 011514  3      DO'WIOC0(!4); <<wiggle CD to change CC>>
21025.000 011516  3      DODELAY(STARTIME,10);
21030.000 011527  3      DO'RIOC0;  A:=TOS'; <<Read modem status>>
21035.000 011532  3      DO'WIOC0(!4070); <<Send the DSJ command code>>
21040.000 011534  3      DO'RIOC0; <<Read the DSJ returned byte>>
21045.000 011535  3      IF A.(11:5)<>!8 THEN ERROROUT(-GET'MESSAGE(37),1);
21050.000 011550  3      IF TOS'.(8:8)<>2 THEN BEGIN
21055.000 011555  4         NUM'CHARS:=GET'MESSAGE(41);
21060.000 011561  4         NUM2ASC(14,2,16,TOS'.(8:8));
21065.000 011567  4         NUM2ASC(27,2,16,2);
21070.000 011574  4         ERROROUT(-NUM'CHARS,1);
21075.000 011602  4         END;
21080.000 011602  3
21085.000 011602  3      DO'WIOC0(!4067); <<Send modifier seven and>>
21090.000 011604  3      DO'WIOC0(!20); <<mask off for all lines>>
21095.000 011606  3      DO'WIOC0(!4060); <<Send modifier zero>>
21100.000 011610  3      DO'WIOC0(!55); <<Send data to receive buffer>>
21105.000 011612  3      DODELAY(STARTIME,10); <<Wait for byte to be received>>
21110.000 011620  3      DO'WIOC0(!4070); <<Send DSJ command code>>
21115.000 011622  3      DO'RIOC0; <<and read the DSJ byte>>
21120.000 011623  3      IF TOS'.(8:8)<>0 THEN BEGIN
21125.000 011630  4         NUM'CHARS:=GET'MESSAGE(41);
21130.000 011634  4         NUM2ASC(14,2,16,TOS'.(8:8));
21135.000 011642  4         NUM2ASC(27,2,16,0);
21140.000 011647  4         ERROROUT(-NUM'CHARS,1);
21145.000 011653  4         END;
21150.000 011653  3
21155.000 011653  3      DO'WIOC0(!4063); <<Send service condition mod.>>
21160.000 011655  3      DO'WIOC0(!2); <<NO request when byte received>>
21165.000 011657  3      DO'WIOC0(!4070); <<Send the DSJ command code>>
21170.000 011661  3      DO'RIOC0; <<and read the DSJ byte>>
21175.000 011664  3      IF TOS'.(8:8)<>1 THEN BEGIN
21180.000 011671  4         NUM'CHARS:=GET'MESSAGE(41);
21185.000 011675  4         NUM2ASC(14,2,16,TOS'.(8:8));
21190.000 011703  4         NUM2ASC(27,2,16,1);
21195.000 011710  4         ERROROUT(-NUM'CHARS,1);
21200.000 011714  4         END;
21205.000 011714  3
21210.000 011714  3      DO'WIOC0(!4063); <<Send service condition mod.>>
21215.000 011716  3      DO'WIOC0(!0); <<and NO request for buf not full>>
21220.000 011720  3      DO'WIOC0(!4070); <<Send DSJ code>>
21225.000 011722  3      DO'RIOC0; <<Read DSJ byte>>
21230.000 011723  3      IF TOS'.(8:8)<>3 THEN BEGIN
21235.000 011730  4         NUM'CHARS:=GET'MESSAGE(41);
21240.000 011734  4         NUM2ASC(14,2,16,TOS'.(8:8));
```

```
21245.000 011742  4         NUM2ASC(27,2,16,3);
21250.000 011747  4         ERROROUT(-NUM'CHARS,1);
21255.000 011753  4         END;
21260.000 011753  3          CHECKYTRAP; <<Check for operator interrupt request>>
21265.000 011754  3      END; <<Place the next device number under test>>
21270.000 011755  2   CLEAR'UNX'DEV;
21275.000 011760  2   REP'ILL'INT;
21280.000 011761  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
21285.000 011762  2 END;
```

```
21295.000 011762  1 IF SECTION(10) THEN BEGIN
21300.000 011770  2
21305.000 011770  2  <<The ability of the ADCC under test to return the correct response
21310.000 011770  2      to a register 2 read while the ADCC is asserting CSRQ on the IMB
21315.000 011770  2      is verified.  This step cannot be done with a software read, hence
21320.000 011770  2      a channel program instruction read is used to verify the sense
21325.000 011770  2      of bit 10.>>
21330.000 011770  2
21335.000 011770  2   <<- STEP 38     -
21340.000 011770  2
21345.000 011770  2    The channel program instruction READ REGISTER is used to read
21350.000 011770  2    the contents of Register 2.  The channel program is then
21355.000 011770  2    terminated, and the results of the read are verified to be
21360.000 011770  2    !802A.  Note the difference between the software register 2
21365.000 011770  2    read in Step 2 and this channel program instruction read.
21370.000 011770  2    Bit 10 should be a one only while CSRQ is being asserted.>>
21375.000 011770  2
21380.000 011770  2      STP:=38;
21385.000 011772  2      CHNL'INIT;
21390.000 012001  2      DEV:=DESIRED'DEV-1;
21395.000 012005  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
21400.000 012011  3      DO'WIOC0(!4040+DEV); <<Address device under test>>
21405.000 012015  3      DO'WIOC0(!4061); <<Set board up to request>>
21410.000 012017  3      DO'WIOC0(!DE); <<service so as to catch>>
21415.000 012021  3      DO'WIOC0(!4063); <<bit 10 in 'POLL'>>
21420.000 012023  3      DO'WIOC0(!4);
21425.000 012025  3      SETUP'DRT(DEV); <<Set up DRT for this device>>
21430.000 012027  3      SET'CPVA;
21435.000 012030  3      MOVE'CHNL'PGM(RG2'CHNL'PGM,5,!F000); <<Write the program>>
21440.000 012034  3
21445.000 012034  3      TOS'1:=(CHNL+DEV);  TOS':=!F000; DO'SIOP;
21450.000 012050  3      DODELAY(STARTIME,10); <<Wait for chnl pgm completion>>
21455.000 012054  3      V'GETS'MEM(TOS',!F001); <<Get RREG reserved word>>
21460.000 012062  3      IF TOS'<>!802A THEN BEGIN  <<Insure correct value of RREG>>
21465.000 012066  4         NUM'CHARS:=GET'MESSAGE(48);
21470.000 012072  4         NUM2ASC(20,4,16,TOS');
21475.000 012077  4         ERROROUT(-NUM'CHARS,1);
21480.000 012103  4         END;
21485.000 012103  3      END; <<Place the next device number under test>>
21490.000 012104  2   CLEAR'UNX'DEV;
21495.000 012111  2   REP'ILL'INT;
21500.000 012112  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
21505.000 012113  2 END;
```

```
21515.000 012113  1 IF SECTION(11) THEN BEGIN
21520.000 012121  2
21525.000 012121  2  <<SECTION 11  -  Identify
21530.000 012121  2
21535.000 012121  2      Section eleven verifies correct operation of the ADCC identify
21540.000 012121  2      logic to, upon request, provide two bytes (unique to ADCCs) used
21545.000 012121  2      to identify which devices are present.
21550.000 012121  2
21555.000 012121  2      Next, the ability of the ADCC to assert the Data Not Valid line
21560.000 012121  2      for the ADCC-Extended device numbers (3-7) when not present
21565.000 012121  2      during an IDentify sequence is tested.>>
21570.000 012121  2
21575.000 012121  2   <<-STEP 39   -     "software equivalent" Identify
21580.000 012121  2            A direct I/O write with a special opcodeis issued, followed
21585.000 012121  2            by two direct I/O register zero reads which simulates the
21590.000 012121  2            channel program instruction "IDENTIFY".
21595.000 012121  2
21600.000 012121  2            The two returned bytes are then verified to !4080, which is
21605.000 012121  2            the unique identify code of ADCCs.>>
21610.000 012121  2
21615.000 012121  2      STP:=39;
21620.000 012123  2      CHNL'INIT;
21625.000 012132  2      DEV:=DESIRED'DEV-1;
21630.000 012136  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
21635.000 012142  3      DO'WIOC0(!405F); <<Send 'UNTALK'>>
21640.000 012144  3      DO'WIOC0(!4060+DEV); <<Send the 'ID' modifier>>
21645.000 012150  3      DO'RIOC0;    A:=TOS'; <<Read first returned byte>>
21650.000 012153  3      DO'RIOC0;    B:=TOS'; <<Read the second returned byte>>
21655.000 012156  3      A:=(A AND !FF) CSL (8);
21660.000 012162  3      B:=(B AND !FF) + A;
21665.000 012167  3      IF B<>!4080 THEN BEGIN
21670.000 012173  4         NUM'CHARS:=GET'MESSAGE(49);
21675.000 012204  4         MSG'OUT(16):=!30+DEV;
21680.000 012211  4         NUM2ASC(28,4,16,B);
21685.000 012216  4         ERROROUT(-NUM'CHARS,0);
21690.000 012222  4         END;
21695.000 012222  3
21700.000 012222  3          CHECKYTRAP; <<Check for operator interrupt request>>
21705.000 012223  3
21710.000 012223  3      END; <<Place the next device number under test>>
21715.000 012224  2
```

```
21725.000 012224  2   <<- STEP 40     -     Identify each device
21730.000 012224  2
21735.000 012224  2           A channel program identify is executed for each device on the
21740.000 012224  2           ADCC, and the returned bytes are verified to !4080.>>
21745.000 012224  2
21750.000 012224  2      STP:=40;
21755.000 012226  2      DEV:=DESIRED'DEV-1;
21760.000 012232  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
21765.000 012236  3      SET'CPVA;
21770.000 012237  3      SETUP'DRT(DEV); <<Go make DRT for this device>>
21775.000 012241  3      MOVE'CHNL'PGM(ID'CHNL'PGM,5,!F000);
21780.000 012245  3      TOS'1:=(CHNL+DEV);  TOS':=!F000; DO'SIOP;
21785.000 012260  3      DODELAY(STARTIME,10);
21790.000 012264  3      V'GETS'MEM(TOS',!F001);
21795.000 012270  3      IF TOS'<>!4080 THEN BEGIN
21800.000 012274  4         NUM'CHARS:=GET'MESSAGE(49);
21805.000 012300  4         MSG'OUT(16):=!30+DEV;
21810.000 012305  4         NUM2ASC(28,4,16,TOS');
21815.000 012312  4         ERROROUT(-NUM'CHARS,0);
21820.000 012316  4         END;
21825.000 012316  3
21830.000 012316  3      END; <<Place the next device number under test>>
21835.000 012317  2
21840.000 012317  2
21845.000 012317  2  <<STEP 41     -     DNV set for ID of missing device numbers
21850.000 012317  2
21855.000 012317  2       A software equivalent IDentify is issued for each device
21860.000 012317  2       (3-7) of the ADCC-Extended, and a test is made using the
21865.000 012317  2       fact that Data Not Valid being asserted will set condition
21870.000 012317  2       code CCL in the CPU status register.>>
21875.000 012317  2
21880.000 012317  2 IF NOT EXTND THEN BEGIN
21885.000 012321  3      STP:=41;
21890.000 012323  3      DEV:=3;
21895.000 012325  3      WHILE (DEV:=DEV+1)<8 DO BEGIN
21900.000 012333  4      DO'WIOC0(!405F); <<Send 'UNTALK'>>
21905.000 012335  4      DO'WIOC0(!4060+DEV); <<Send 'ID' modifier>>
21910.000 012341  4      CHECK'DNV; <<First check for DNV>>
21915.000 012355  4      B:=(IF DNV THEN 1 ELSE 0);
21920.000 012363  4      CHECK'DNV; <<Second check for DNV>>
21925.000 012374  4      B:=(IF DNV THEN B ELSE 0);
21930.000 012402  4      IF NOT B THEN ERROROUT(-GET'MESSAGE(50),1);
21935.000 012412  4      END; <<Place the next device number under test>>
21940.000 012413  3 END;
21945.000 012413  2   CLEAR'UNX'DEV;
21950.000 012416  2   REP'ILL'INT;
21955.000 012417  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
21960.000 012420  2 END;
```

```
21970.000 012420  1 IF SECTION(12) THEN BEGIN
21975.000 012426  2
21980.000 012426  2      <<The ADCC logic is capable of suppressing the assertion of CSRQ
21985.000 012426  2    on the IMB.  This is done by sending an address to talk or
21990.000 012426  2    listen for any of the following device numbers: 16,18,20 or 22,
21995.000 012426  2    followed by any one of the following secondary addresses: 17,19
22000.000 012426  2    21,23,25,27,29 or 31.
22005.000 012426  2
22010.000 012426  2    Any reset (PON, SRST, etc.) of the ADCC will re-enable CSRQ
22015.000 012426  2    assertion.  Also, CSRQ assertion can be re-enabled by sending an
22020.000 012426  2    address to talk or listen for any of the following device numbers:
22025.000 012426  2    0,1,2,3,4,5,6,7 or 31, followed by any of the following secondary
22030.000 012426  2    addresses: 0,1,2,3,4,5,6,7 or 16.
22035.000 012426  2
22040.000 012426  2    This Section places this logic under test>>
22045.000 012426  2
22050.000 012426  2       <<- STEP 42 -  Inhibit CSRQ
22055.000 012426  2
22060.000 012426  2       All combinations of the above mentioned primary and
22065.000 012426  2       secondary address commands are used to insure that all of
22070.000 012426  2       these combinations will disable CSRQ assertion.  The
22075.000 012426  2       execution of a channel program using the instructions
22080.000 012426  2       RREG 2 and INT,HLT is attempted.  If, after one of the
22085.000 012426  2       combinations of primary and secondary commands is used to
22090.000 012426  2       disallow CSRQ assertion, the execution is successful, the
22095.000 012426  2       combination will be reported as
22100.000 012426  2
22105.000 012426  2        "Primary XX, secondary YY does not disable CSRQ,  Dev=d"
22110.000 012426  2
22115.000 012426  2       The IMB I/O command initialize will be used to re-enable
22120.000 012426  2       CSRQ after each combination is found to be successful in
22125.000 012426  2       disabling CSRQ assertion.  If the initialize does not
22130.000 012426  2       re-enable CSRQ assertion, the message
22135.000 012426  2
22140.000 012426  2        "INIT does not re-enable CSRQ.  Primary XX, secondary YY"
22145.000 012426  2
22150.000 012426  2       is displayed.>>
22155.000 012426  2
22160.000 012426  2      STP:=42;
22165.000 012430  2      CHNL'INIT;
22170.000 012437  2      DEV:=DESIRED'DEV-1;
22175.000 012443  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
22180.000 012447  3      DO'WIOC0(!4040+DEV); <<Address the device under test>>
22185.000 012453  3      DO'WIOC0(!4067); <<Set reference at 0>>
22190.000 012455  3      DO'WIOC0(!0); <<Set mask on for all>>
22195.000 012457  3      DO'WIOC0(!20); <<lines for this test>>
22200.000 012461  3      CHNL'INIT; <<INITialize the channel>>
22205.000 012472  3      SETUP'DRT(DEV); <<In case of successful execution>>
22210.000 012474  3      MOVE'CHNL'PGM(RG2'CHNL'PGM,5,!F000);
22215.000 012500  3
22220.000 012500  3      A:=-1;
22225.000 012502  3      WHILE (A:=A+1)<4 DO BEGIN <<Primary loop>>
22230.000 012506  4      B:=-1;
22235.000 012510  4      WHILE (B:=B+1)<8 DO BEGIN <<Secondary loop>>
22240.000 012514  5      MEM'GETS'V(!F001,0); <<Clear RREG word>>
```

```
22245.000 012526  5      INTPSYS'ON; <<Allow external interrupts>>
22250.000 012527  5      DO'WIOC0(DCSRQBUF1(A)); <<Send the Primary>>
22255.000 012532  5      DO'WIOC0(DCSRQBUF2(B)); <<Send the Secondary>>
22260.000 012535  5      TOS'1:=(CHNL+DEV);
22265.000 012540  5      TOS':=!F000;
22270.000 012542  5      DO'SIOP;
22275.000 012546  5      DODELAY(STARTIME,10);
22280.000 012552  5      INTPSYS'OFF;
22285.000 012553  5      V'GETS'MEM(TOS',!F001); <<Get RREG word>>
22290.000 012557  5      IF TOS'<>0 THEN BEGIN
22295.000 012563  6         NUM'CHARS:=GET'MESSAGE(45);
22300.000 012567  6         NUM2ASC(8,2,10,MDCSRQBUF1(A));
22305.000 012575  6         NUM2ASC(22,2,10,MDCSRQBUF2(B));
22310.000 012603  6         ERROROUT(-NUM'CHARS,1);
22315.000 012607  6         END;
22320.000 012607  5
22325.000 012607  5      CHNL'INIT; <<INIT to clear CSRQ disable>>
22330.000 012614  5      MEM'GETS'V(!F001,0);
22335.000 012620  5      INTPSYS'ON; <<Allow external interrupts>>
22340.000 012621  5      TOS'1:=(CHNL+DEV);
22345.000 012624  5      TOS':=!F000; DO'SIOP; <<Issue SIOP again>>
22350.000 012632  5      DODELAY(STARTIME,10); <<Wait in case of c.p. execution>>
22355.000 012636  5      INTPSYS'OFF; <<No more external interrupts>>
22360.000 012637  5      V'GETS'MEM(TOS',!F001); <<Get the RREG word>>
22365.000 012643  5      IF TOS'=0 THEN BEGIN
22370.000 012647  6         NUM'CHARS:=GET'MESSAGE(46);
22375.000 012653  6         NUM2ASC(39,2,10,MDCSRQBUF1(A));
22380.000 012661  6         NUM2ASC(53,2,10,MDCSRQBUF2(B));
22385.000 012667  6         ERROROUT(-NUM'CHARS,1);
22390.000 012673  6         END;
22395.000 012673  5
22400.000 012673  5      END; <<Next secondary address>>
22405.000 012674  4      END; <<Next primary address>>
22410.000 012675  3          DOT; <<Check ATTN/CNTL Y then print 'period'>>
22415.000 012676  3      END; <<Place the next device number under test>>
```

```
22425.000 012677  2 <<- STEP 43     -  Re-enable CSRQ
22430.000 012677  2
22435.000 012677  2      The primary/secondary combination, address to talk 16,secondary
22440.000 012677  2      address 17, is used to disable CSRQ assertion, then all combina-
22445.000 012677  2      tions of the above mentions primary and secondart address commands
22450.000 012677  2      are used to insure that all of these combinations will re-enable
22455.000 012677  2      CSRQ assertion.  The channel program used in the previous step
22460.000 012677  2      is used in this step also to insure channel program execution.
22465.000 012677  2
22470.000 012677  2      If one of these combinations proves unsuccessful in re-enabling
22475.000 012677  2      CSRQ assertion, the message
22480.000 012677  2
22485.000 012677  2       "Primary XX, secondary YY do not re-enable CSRQ.  Dev=D"
22490.000 012677  2
22495.000 012677  2      is displayed.>>
22500.000 012677  2
22505.000 012677  2      STP:=43;
22510.000 012701  2      DEV:=DESIRED'DEV-1;
22515.000 012705  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
22520.000 012711  3      CHNL'INIT; <<Do Channel INITialize>>
22525.000 012720  3      SETUP'DRT(DEV); <<Set DRT area>>
22530.000 012722  3      MOVE'CHNL'PGM(RG2'CHNL'PGM,5,!F000);
22535.000 012726  3
22540.000 012726  3      A:=-1;
22545.000 012730  3      WHILE (A:=A+1)<9 DO BEGIN
22550.000 012734  4      B:=-1;
22555.000 012736  4      WHILE (B:=B+1)<9 DO BEGIN
22560.000 012742  5      MEM'GETS'V(!F001,0);
22565.000 012751  5      DO'WIOC0(!4030); <<Address to talk 16>>
22570.000 012753  5      DO'WIOC0(!4071); <<Secondary address 17>>
22575.000 012755  5
22580.000 012755  5      DO'WIOC0(ENCSRQBUF1(A)); <<Send the primary>>
22585.000 012760  5      DO'WIOC0(ENCSRQBUF2(B)); <<Send secondary>>
22590.000 012763  5      TOS':=!F000;  TOS'1:=(CHNL+DEV); DO'SIOP;
22595.000 012777  5      DODELAY(STARTIME,10);
22600.000 013003  5      V'GETS'MEM(TOS',!F001); <<Get the RREG word>>
22605.000 013007  5      IF TOS'=0 THEN BEGIN       <<Test for chnl pgm execution>>
22610.000 013013  6         NUM'CHARS:=GET'MESSAGE(47);
22615.000 013017  6         NUM2ASC(8,2,10,MENCSRQBUF1(A));
22620.000 013025  6         NUM2ASC(22,2,10,MENCSRQBUF2(B));
22625.000 013033  6         ERROROUT(-NUM'CHARS,1);
22630.000 013037  6         END;
22635.000 013037  5
22640.000 013037  5      END; <<Next secondary for combinations>>
22645.000 013040  4      END; <<Next primary for combinations>>
22650.000 013041  3          DOT; <<Check ATTN/CNTL Y then print 'period'>>
22655.000 013042  3      END; <<Place next device number under test>>
```

```
22665.000 013043  2
22670.000 013043  2 <<This section places under test the program status register logic
22675.000 013043  2    and the logic which inhibits CSRQ assertion.  This is done with a
22680.000 013043  2    test for bit 6 of the word returned as a result of an OBSI.
22685.000 013043  2
22690.000 013043  2    This bit is defined to be a one when a service request is due
22695.000 013043  2    to a parallel poll, or when there has been a change in channel
22700.000 013043  2    program running status. The next four steps make a change to
22705.000 013043  2    the channel program run status, and check this bit by inhibiting
22710.000 013043  2    CSRQ assertion (using the method defined in the previous test
22715.000 013043  2    section, then emulating SIOP or HIOP with the set/clear bit
22720.000 013043  2    of the data lines set or clear as necessary to change the
22725.000 013043  2    running status>>
22730.000 013043  2
22735.000 013043  2
22740.000 013043  2
22745.000 013043  2      <<Step 44 - SIOP w/bit set - (should change run status)>>
22750.000 013043  2
22755.000 013043  2      STP:=44;
22760.000 013045  2      CHNL'INIT;
22765.000 013052  2      DEV:=DESIRED'DEV-1;
22770.000 013056  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
22775.000 013062  3      DO'WIOC0(!4040+DEV); <<Address device under test>>
22780.000 013066  3      DO'WIOC0(!4030); <<Address to talk 16>>
22785.000 013070  3      DO'WIOC0(!4071); <<Secondary address 17>>
22790.000 013072  3      SETUP'DRT(DEV); <<Set DRT's and Traps>>
22795.000 013074  3      MOVE'CHNL'PGM(RG2'CHNL'PGM,5,!F000);
22800.000 013100  3      MEM'GETS'V((CHNL+DEV)*4,!F000);
22805.000 013110  3      TOS'1:=(CHNL+!4000); <<SIOP opcode and channel>>
22810.000 013114  3      TOS':=DEV; <<Bit 12 will set new run status>>
22815.000 013116  3      DO'PSIOP; <<Emulate SIOP>>
22820.000 013124  3      DODELAY(STARTIME,10); <<Short wait loop>>
22825.000 013130  3      V'GETS'MEM(TOS',!F001); <<Get RREG word>>
22830.000 013136  3      IF TOS'<>0 THEN BEGIN      <<Channel program must not execute>>
22835.000 013142  4         NUM'CHARS:=GET'MESSAGE(45);
22840.000 013146  4         NUM2ASC(8,2,10,16);
22845.000 013153  4         NUM2ASC(22,2,10,17);
22850.000 013160  4         ERROROUT(-NUM'CHARS,1);
22855.000 013164  4         END;
22860.000 013164  3
22865.000 013164  3      OBSI; <<Read the OBSI word>>
22870.000 013176  3      A:=((CHNL+DEV)+!200);
22875.000 013203  3      IF TOS'<> A THEN BEGIN              <<Check the value>>
22880.000 013207  4         NUM'CHARS:=GET'MESSAGE(67);
22885.000 013213  4         NUM2ASC(16,4,16,TOS');
22890.000 013220  4         NUM2ASC(31,4,16,A);
22895.000 013225  4         ERROROUT(-NUM'CHARS,1);
22900.000 013231  4         END;
22905.000 013231  3      CHNL'INIT;
22910.000 013240  3      END; <<Place the next device number under test>>
22915.000 013241  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
22920.000 013242  2
22925.000 013242  2      STP:=45;
22930.000 013244  2      DEV:=DESIRED'DEV-1;
22935.000 013250  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
```

```
22940.000 013254  3      DO'WIOC0(!4040+DEV); <<Address device under test>>
22945.000 013260  3      DO'WIOC0(!4030); <<Address to talk 16>>
22950.000 013262  3      DO'WIOC0(!4071); <<Secondary address 17>>
22955.000 013264  3      SETUP'DRT(DEV); <<Set DRT's and Traps>>
22960.000 013266  3      MOVE'CHNL'PGM(RG2'CHNL'PGM,5,!F000);
22965.000 013272  3      MEM'GETS'V((CHNL+DEV)*4,!F000);
22970.000 013304  3      TOS'1:=(CHNL+!4000); <<SIOP opcode+chnl>>
22975.000 013310  3      TOS':=!8+DEV; <<Bit 12 will clear new status>>
22980.000 013314  3      DO'PSIOP; <<Emulate SIOP>>
22985.000 013320  3      DODELAY(STARTIME,10); <<Short wait loop>>
22990.000 013324  3      V'GETS'MEM(TOS',!F001); <<Get RREG word>>
22995.000 013330  3      IF TOS'<>0 THEN BEGIN      <<Channel program must not execute>>
23000.000 013334  4         NUM'CHARS:=GET'MESSAGE(45);
23005.000 013340  4         NUM2ASC(8,2,10,16);
23010.000 013345  4         NUM2ASC(22,2,10,17);
23015.000 013352  4         ERROROUT(-NUM'CHARS,1);
23020.000 013356  4         END;
23025.000 013356  3
23030.000 013356  3      A:=CHNL+3; <<Make the compare word>>
23035.000 013361  3      OBSI; <<Read the OBSI word>>
23040.000 013373  3      IF TOS'<>A THEN BEGIN      <<Check the returned value>>
23045.000 013377  4         NUM'CHARS:=GET'MESSAGE(67);
23050.000 013403  4         NUM2ASC(16,4,16,TOS');
23055.000 013410  4         NUM2ASC(31,4,16,A);
23060.000 013415  4         ERROROUT(-NUM'CHARS,1);
23065.000 013421  4         END;
23070.000 013421  3      CHNL'INIT;
23075.000 013426  3          CHECKYTRAP; <<Check for operator interrupt request>>
23080.000 013427  3      END; <<Place the next device number under test>>
23085.000 013430  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
23090.000 013431  2
23095.000 013431  2      STP:=46;
23100.000 013433  2      DEV:=DESIRED'DEV-1;
23105.000 013437  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
23110.000 013443  3      DO'WIOC0(!4040+DEV); <<Address device under test>>
23115.000 013447  3      DO'WIOC0(!4030); <<Address to talk 16>>
23120.000 013451  3      DO'WIOC0(!4071); <<Secondary address 17>>
23125.000 013453  3      SETUP'DRT(DEV); <<Set DRT's and Traps>>
23130.000 013455  3      MOVE'CHNL'PGM(RG2'CHNL'PGM,5,!F000);
23135.000 013461  3      MEM'GETS'V((CHNL+DEV)*4,!F000);
23140.000 013473  3      TOS'1:=(CHNL+!6000); <<HIOP opcode and channel>>
23145.000 013477  3      TOS':=DEV; <<Bit 12 will set new run status>>
23150.000 013501  3      DO'PSIOP; <<Emulate SIOP>>
23155.000 013507  3      DODELAY(STARTIME,10); <<Short wait loop>>
23160.000 013513  3      V'GETS'MEM(TOS',!F001); <<Get RREG word>>
23165.000 013517  3      IF TOS'<>0 THEN BEGIN      <<Channel program must not execute>>
23170.000 013523  4         NUM'CHARS:=GET'MESSAGE(45);
23175.000 013527  4         NUM2ASC(8,2,10,16);
23180.000 013534  4         NUM2ASC(22,2,10,17);
23185.000 013541  4         ERROROUT(-NUM'CHARS,1);
23190.000 013545  4         END;
23195.000 013545  3
23200.000 013545  3      OBSI; <<Read the OBSI word>>
23205.000 013557  3      A:=((CHNL+DEV)+!200); <<Make the compare word>>
23210.000 013564  3      IF TOS'<>A THEN BEGIN          <<ck the returned value>>
23215.000 013570  4         NUM'CHARS:=GET'MESSAGE(67);
```

```
23220.000 013574  4         NUM2ASC(16,4,16,TOS');
23225.000 013601  4         NUM2ASC(31,4,16,A);
23230.000 013606  4         ERROROUT(-NUM'CHARS,1);
23235.000 013612  4         END;
23240.000 013612  3      CHNL'INIT;
23245.000 013617  3          CHECKYTRAP; <<Check for operator interrupt request>>
23250.000 013620  3      END; <<Place the next device number under test>>
23255.000 013621  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
23260.000 013622  2
23265.000 013622  2      STP:=47;
23270.000 013624  2      DEV:=DESIRED'DEV-1;
23275.000 013630  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
23280.000 013634  3      DO'WIOC0(!4040+DEV); <<Address device under test>>
23285.000 013640  3      DO'WIOC0(!4030); <<Address to talk 16>>
23290.000 013642  3      DO'WIOC0(!4071); <<Secondary address 17>>
23295.000 013644  3      SETUP'DRT(DEV); <<Set DRT's and Traps>>
23300.000 013646  3      MOVE'CHNL'PGM(RG2'CHNL'PGM,5,!F000);
23305.000 013652  3      MEM'GETS'V((CHNL+DEV)*4,!F000);
23310.000 013662  3      TOS'1:=(CHNL+!6000); <<HIOP opcode+chnl>>
23315.000 013666  3      TOS':=!8+DEV; <<Bit 12 will clear new status>>
23320.000 013672  3      DO'PSIOP; <<Emulate SIOP>>
23325.000 013676  3      DODELAY(STARTIME,10); <<Short wait loop>>
23330.000 013702  3      V'GETS'MEM(TOS',!F001); <<Get RREG word>>
23335.000 013710  3      IF TOS'<>0 THEN BEGIN      <<Channel program must not execute>>
23340.000 013714  4         NUM'CHARS:=GET'MESSAGE(45);
23345.000 013720  4         NUM2ASC(8,2,10,16);
23350.000 013725  4         NUM2ASC(22,2,10,17);
23355.000 013732  4         ERROROUT(-NUM'CHARS,1);
23360.000 013736  4         END;
23365.000 013736  3
23370.000 013736  3      A:=CHNL+3; <<Make the compare word>>
23375.000 013741  3      OBSI; <<Read the OBSI word>>
23380.000 013753  3      IF TOS'<>A THEN BEGIN      <<Check the returned value>>
23385.000 013757  4         NUM'CHARS:=GET'MESSAGE(67);
23390.000 013763  4         NUM2ASC(16,4,16,TOS');
23395.000 013770  4         NUM2ASC(31,4,16,A);
23400.000 013775  4         ERROROUT(-NUM'CHARS,1);
23405.000 014001  4         END;
23410.000 014001  3      CHNL'INIT;
23415.000 014006  3          CHECKYTRAP; <<Check for operator interrupt request>>
23420.000 014007  3      END; <<Place the next device number under test>>
23425.000 014010  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
```

```
23435.000 014011  2 <<STEP 48 - Correct SPOLL1 response>>
23440.000 014011  2
23445.000 014011  2    <<SIOP is again emulated and while the board is awaiting
23450.000 014011  2       service from the CPU, an SPOLL1 is emulated using the WIOC
23455.000 014011  2       instruction w/ a special opcode>>
23460.000 014011  2
23465.000 014011  2
23470.000 014011  2      STP:=48;
23475.000 014013  2      DEV:=DESIRED'DEV-1;
23480.000 014017  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
23485.000 014023  3      DO'WIOC0(!4040+DEV); <<Address device under test>>
23490.000 014027  3      DO'WIOC0(!4030);
23495.000 014031  3      DO'WIOC0(!4071);
23500.000 014033  3      SETUP'DRT(DEV);
23505.000 014035  3
23510.000 014035  3      TOS'1:=(CHNL+!4000); <<SIOP opcode + channel number>>
23515.000 014041  3      TOS':=DEV; <<Bit 12=0>>
23520.000 014043  3      DO'PSIOP; <<Emulate SIOP>>
23525.000 014053  3      DODELAY(STARTIME,10);
23530.000 014057  3      V'GETS'MEM(TOS',!F001); <<Get RREG word>>
23535.000 014063  3      IF TOS'<>0 THEN BEGIN      <<Channel program must not execute>>
23540.000 014067  4         NUM'CHARS:=GET'MESSAGE(45);
23545.000 014073  4         NUM2ASC(8,2,10,16);
23550.000 014100  4         NUM2ASC(22,2,10,17);
23555.000 014105  4         ERROROUT(-NUM'CHARS,1);
23560.000 014111  4         END;
23565.000 014111  3
23570.000 014111  3      SPOLL1; <<SPOLL1>>
23575.000 014121  3      IF TOS'<>CHNLBIT THEN BEGIN
23580.000 014125  4         NUM'CHARS:=GET'MESSAGE(68);
23585.000 014131  4         NUM2ASC(18,4,16,TOS');
23590.000 014136  4         NUM2ASC(33,4,16,CHNLBIT);
23595.000 014143  4         ERROROUT(-NUM'CHARS,1);
23600.000 014147  4         END;
23605.000 014147  3
23610.000 014147  3      CHNL'INIT;
23615.000 014154  3          CHECKYTRAP; <<Check for operator interrupt request>>
23620.000 014155  3      END; <<Place next device number under test>>
23625.000 014156  2   CLEAR'UNX'DEV;
23630.000 014161  2   REP'ILL'INT;
23635.000 014162  2   DOT; <<Check ATTN/CNTL Y then print 'period'>>
23640.000 014163  2 END;
```

```
23650.000 014163  1   IF SECTION(13)
23655.000 014171  1    THEN
23660.000 014171  1     BEGIN
23665.000 014171  2
23670.000 014171  2  <<SECTION 13  -  ADCC Channel Program
23675.000 014171  2
23680.000 014171  2     Section thirteen heavily employs use of channel program
23685.000 014171  2     processing micro-code, and places the entire ADCC under test.
23690.000 014171  2     Each logic function block has been placed under test one or
23695.000 014171  2     more times by the previous twelve Sections.>>
23700.000 014171  2
23705.000 014171  2
23710.000 014171  2  <<- STEP 49     -
23715.000 014171  2     Using a channel program, this step initializes the ADCC, by
23720.000 014171  2     setting up the various service conditions, baud rates, UART
23725.000 014171  2     control, modem references and defines a special character.  A
23730.000 014171  2     256 byte output transfer is started (for each device) with
23735.000 014171  2     each byte being read (thru the loop back connector described
23740.000 014171  2     in Section Two) and placed in memory.  When the channel
23745.000 014171  2     programs for all devices are complete, the data in the input
23750.000 014171  2     buffers is verified.
23755.000 014171  2     The possible error conditions of this step and probable
23760.000 014171  2     causes if definable, are as follows:
23765.000 014171  2
23770.000 014171  2                                          symptom(probable cause)
23775.000 014171  2
23780.000 014171  2        channel program did not start   -   CSRQ not pulled (ADCC)
23785.000 014171  2                                            not recognized (CPU)
23790.000 014171  2
23795.000 014171  2        channel program did not          -  overrun or parity error
23800.000 014171  2        complete correctly                  break detected,(ADCC)
23805.000 014171  2                                            non-responding module
23810.000 014171  2                                            (memory),  channel
23815.000 014171  2                                            program abort (CPU)
23820.000 014171  2                                            special character
23825.000 014171  2                                            was not detected (ADCC)
23830.000 014171  2
23835.000 014171  2        channel program timed out        -  CSRQ logic
23840.000 014171  2
23845.000 014171  2        data error                       -  missing or extra bits
23850.000 014171  2                                            or bytes.>>
23855.000 014171  2
23860.000 014171  2
23865.000 014171  2      STP:=49;
23870.000 014173  2      CHNL'INIT; <<Initialize the channel>>
23875.000 014202  2      SET'CPVA; <<Clear CPVA's / setup DRT's>>
23880.000 014203  2
23885.000 014203  2      LOAD'TRAPS;
23890.000 014204  2
23895.000 014204  2      LOAD'INTHNDLRS; <<Get Interrupt Handler pointers>>
23900.000 014205  2      DEV:=DESIRED'DEV-1;
23905.000 014211  2      WHILE (DEV:=DEV+1)<=MAX'DEV
23910.000 014215  2       DO
23915.000 014215  2        BEGIN
23920.000 014215  3  <<Get Interrupt routine labels into DRT of each Device>>
```

```
23925.000 014215  3          MEM'GETS'V((CHNL+DEV)*4+2,TEMPARRAY(DEV));
23930.000 014227  3        END;
23935.000 014230  2
23940.000 014230  2
23945.000 014230  2      MOVE'CHNL'PGM(MEMAP,136,!E000);
23950.000 014234  2
23955.000 014234  2      <<STORE CHANNEL PROGRAMS INTO MEMORY>>
23960.000 014234  2
23965.000 014234  2      DEV:=DESIRED'DEV-1;
23970.000 014240  2      WHILE (DEV:=DEV+1)<=MAX'DEV
23975.000 014244  2       DO
23980.000 014244  2        BEGIN
23985.000 014244  3         ADCC'CHNL'PGM(83):=CHG'ADDR'ARRAY(DEV*2);
23990.000 014252  3         ADCC'CHNL'PGM(100):=CHG'ADDR'ARRAY(DEV*2+1);
23995.000 014261  3         ADCC'CHNL'PGM(105):=CHG'ADDR'ARRAY(DEV*2+1);
24000.000 014270  3         <<THESE CODES ARE FOR CPVA(2)>>
24005.000 014270  3         ADCC'CHNL'PGM(85):=!50+DEV; <<OK>>
24010.000 014275  3         ADCC'CHNL'PGM(107):=!10+DEV; <<Break detected>>
24015.000 014305  3         ADCC'CHNL'PGM(109):=!20+DEV; <<Overrun or Parity error>>
24020.000 014312  3         ADCC'CHNL'PGM(71):=!30+DEV; <<Unexpected DSJ value>>
24025.000 014317  3
24030.000 014317  3         MOVE'CHNL'PGM(ADCC'CHNL'PGM,111,ADDARRAY(DEV));
24035.000 014324  3
24040.000 014324  3         <<Clear the input buffer>>
24045.000 014324  3         ADDR:=CHG'ADDR'ARRAY(DEV*2);
24050.000 014331  3         ADR'LIM:=ADDR+127; <<Limit>>
24055.000 014335  3         MEM'GETS'V(ADDR,-1); <<First word=-1>>
24060.000 014341  3         <<Zero in rest of array>>
24065.000 014341  3         WHILE (ADDR:=ADDR+1)<=ADR'LIM
24070.000 014350  3          DO
24075.000 014350  3           BEGIN
24080.000 014350  4            MEM'GETS'V(ADDR,0);
24085.000 014356  4           END;
24090.000 014357  3        END; <<Do for all devices>>
24095.000 014360  2
24100.000 014360  2      CLEARIRQ;
24105.000 014363  2      CLEAR'UNX'IRQ;
24110.000 014371  2      INTPSYS'ON;
24115.000 014372  2      SETMASK;
24120.000 014376  2
24125.000 014376  2  <<Start the channel programs>>
24130.000 014376  2
24135.000 014376  2      DEV:=DESIRED'DEV-1;
24140.000 014402  2      WHILE (DEV:=DEV+1)<=MAX'DEV
24145.000 014406  2       DO
24150.000 014406  2        BEGIN
24155.000 014406  3         TOS'1:=(CHNL+DEV);
24160.000 014411  3         TOS':=ADDARRAY(DEV);
24165.000 014414  3         DO'SIOP;
24170.000 014422  3        END;
24175.000 014423  2
24180.000 014423  2      DELAY1SECOND; <<Wait for channel programs to complete>>
24185.000 014427  2      DELAY1SECOND;
24190.000 014435  2      DOT; <<Check ATTN/CNTL Y then print 'period'>>
24195.000 014436  2
24200.000 014436  2      DEV:=DESIRED'DEV-1;
```

```
24205.000 014442  2      WHILE (DEV:=DEV+1)<=MAX'DEV
24210.000 014446  2       DO
24215.000 014446  2        BEGIN
24220.000 014446  3         ERR:=0;
24225.000 014450  3         V'GETS'MEM(TOS',(CHNL+DEV)*4+3);
24230.000 014461  3         <<Get DRT word three>>
24235.000 014461  3         IF TOS'<>0
24240.000 014465  3          THEN
24245.000 014465  3           BEGIN
24250.000 014465  4            ERR:=1; <<Set the 'any error' bit>>
24255.000 014467  4            IF TOS'=!C000
24260.000 014473  4             THEN
24265.000 014473  4              ERROROUT(-GET'MESSAGE(51),1)
24270.000 014501  4             ELSE
24275.000 014502  4              IF TOS'=!8001
24280.000 014506  4               THEN
24285.000 014506  4                ERROROUT(-GET'MESSAGE(52),1)
24290.000 014514  4               ELSE
24295.000 014515  4                BEGIN
24300.000 014515  5                 NUM'CHARS:=GET'MESSAGE(53);
24305.000 014527  5                 NUM2ASC(18,4,16,TOS');
24310.000 014534  5                 ERROROUT(-NUM'CHARS,1);
24315.000 014540  5                END;
24320.000 014540  4           END;
24325.000 014540  3         CHECKYTRAP; <<Check for operator interrupt request>>
24330.000 014541  3
24335.000 014541  3         V'GETS'MEM(TOS',CPVAARRAY(DEV)+2);
24340.000 014550  3         <<Get the CPVA interrupt code>>
24345.000 014550  3         IF TOS'.(8:8)<>(!50+DEV)
24350.000 014556  3          THEN
24355.000 014556  3           BEGIN
24360.000 014556  4            ERR:=1; <<Set the 'any error' bit>>
24365.000 014560  4            IF TOS'.(8:8)=(!10+DEV)
24370.000 014566  4             THEN
24375.000 014566  4              ERROROUT(-GET'MESSAGE(54),1)
24380.000 014574  4             ELSE
24385.000 014575  4              IF TOS'.(8:8)=(!20+DEV)
24390.000 014603  4               THEN
24395.000 014603  4                BEGIN
24400.000 014603  5                V'GETS'MEM(TOS',CHG'ADDR'ARRAY(2*DEV+1));
24405.000 014620  5                 IF TOS'.(13:1) THEN ERROROUT(-GET'MESSAGE(55),1);
24410.000 014632  5                 IF TOS'.(14:1) THEN ERROROUT(-GET'MESSAGE(56),1);
24415.000 014644  5                 IF TOS'.(13:2)=0
24420.000 014652  5                  THEN
24425.000 014652  5                   BEGIN
24430.000 014652  6                    NUM'CHARS:=GET'MESSAGE(57);
24435.000 014656  6                    NUM2ASC(18,4,16,TOS');
24440.000 014665  6                    ERROROUT(-NUM'CHARS,1);
24445.000 014671  6                   END;
24450.000 014671  5                 END
24455.000 014671  4                ELSE
24460.000 014672  4                 IF TOS'.(8:8)=(!30+DEV)
24465.000 014700  4                  THEN
24470.000 014700  4                   ERROROUT(-GET'MESSAGE(58),1)
24475.000 014706  4                  ELSE
24480.000 014707  4                   BEGIN
```

```
24485.000 014707  5                  NUM'CHARS:=GET'MESSAGE(57);
24490.000 014713  5                  NUM2ASC(18,4,16,TOS');
24495.000 014720  5                  ERROROUT(-NUM'CHARS,1);
24500.000 014724  5                 END;
24505.000 014724  4
24510.000 014724  4            V'GETS'MEM(TOS',CPVAARRAY(DEV));
24515.000 014731  4            <<Get CPVA word zero>>
24520.000 014731  4            IF TOS'<>0
24525.000 014735  4             THEN
24530.000 014735  4               BEGIN
24535.000 014735  5                NUM'CHARS:=GET'MESSAGE(59);
24540.000 014741  5                NUM2ASC(38,4,16,TOS');
24545.000 014746  5                ERROROUT(-NUM'CHARS,1);
24550.000 014752  5               END;
24555.000 014752  4           END;
24560.000 014752  3
24565.000 014752  3         IF NOT ERR
24570.000 014754  3          THEN
24575.000 014754  3           BEGIN
24580.000 014754  4            <<Check Chan Prog byte count>>
24585.000 014754  4            V'GETS'MEM(LA,ADDARRAY(DEV)+80);
24590.000 014765  4            IF LA<>0
24595.000 014771  4             THEN
24600.000 014771  4               BEGIN
24605.000 014771  5                NUM'CHARS:=GET'MESSAGE(86);
24610.000 014775  5                LB:=ADCC'CHNL'PGM(80); <<Original byte count>>
24615.000 015000  5                NUM2ASC(6,3,10,LB-LA);
24620.000 015007  5                NUM2ASC(25,3,10,LB);
24625.000 015014  5                ERROROUT(-NUM'CHARS,1);
24630.000 015020  5               END;
24635.000 015020  4
24640.000 015020  4            B:=INTEGER(!E002); <<Address of the output buffer>>
24645.000 015022  4            ADR'B:=CHG'ADDR'ARRAY(2*DEV); <<Address of input buffer>>
24650.000 015031  4            C:=-1;
24655.000 015033  4            WHILE (C:=C+1)<255
24660.000 015037  4             DO
24665.000 015037  4               BEGIN
24670.000 015037  5                V'GETS'MEM(D,B);
24675.000 015045  5                V'GETS'MEM(E,ADR'B);
24680.000 015051  5                F:=0;
24685.000 015053  5
24690.000 015053  5 T11:           D:=D CSR (8);
24695.000 015056  5                E:=E CSR (8);
24700.000 015061  5
24705.000 015061  5                IF D.(8:8)<>E.(8:8)
24710.000 015067  5                 THEN
24715.000 015067  5                  BEGIN
24720.000 015067  6                   IF C<>0
24725.000 015072  6                    THEN
24730.000 015072  6                     BEGIN
24735.000 015072  7                      NUM'CHARS:=GET'MESSAGE(60);
24740.000 015076  7                      NUM2ASC(6,2,16,(C-1));
24745.000 015104  7                      NUM2ASC(13,2,16,E.(8:8));
24750.000 015112  7                      NUM2ASC(27,2,16,D.(8:8));
24755.000 015120  7                      ERROROUT(-NUM'CHARS,1);
24760.000 015127  7                     END;
```

```
24765.000 015127  6                END;
24770.000 015127  5
24775.000 015127  5              IF NOT F
24780.000 015131  5               THEN
24785.000 015131  5                BEGIN
24790.000 015131  6                 F:=1; C:=C+1;
24795.000 015134  6                 GO T11;
24800.000 015136  6                END;
24805.000 015136  5
24810.000 015136  5              ADR'B:=ADR'B+1; <<Kick the>>
24815.000 015137  5              B:=B+1; <<pointers and>>
24820.000 015140  5             END; <<do all 256 bytes>>
24825.000 015141  4          END;
24830.000 015141  3        CHECKYTRAP; <<Check for operator interrupt request>>
24835.000 015142  3       END; <<Place the next device number under test>>
24840.000 015143  2
24845.000 015143  2     INTPSYS'OFF;
24850.000 015146  2     REP'ILL'INT;
24855.000 015147  2     DOT; <<Check ATTN/CNTL Y then print 'period'>>
24860.000 015150  2    END; <<Section 13>>
```

```
24870.000 015150  1   IF SECTION(14)
24875.000 015156  1    THEN
24880.000 015156  1     BEGIN
24885.000 015156  2
24890.000 015156  2  <<**MAKE IT MARCHING ONE/ZERO TEST EVENTUALLY**>>
24895.000 015156  2  <<SECTION 14 - Extended Special Character RAM (optional)
24900.000 015156  2
24905.000 015156  2      This Section places the special character RAM under test using
24910.000 015156  2      various patterns.  Due to the lengthy execution time required for
24915.000 015156  2      this Section, it will by executed only upon request by the
24920.000 015156  2      operator.>>
24925.000 015156  2
24930.000 015156  2
24935.000 015156  2  <<- STEP 50     -     Walking one
24940.000 015156  2
24945.000 015156  2           The entire special character RAM space is set to zero, and
24950.000 015156  2           while a one is "walked" thru selected locations, all other
24955.000 015156  2           locations are verified to remain at zero.>>
24960.000 015156  2
24965.000 015156  2      STP:=50;
24970.000 015160  2      DEV:=-1;
24975.000 015162  2      WHILE (DEV:=DEV+1)<=(IF EXTND THEN 7 ELSE 3)
24980.000 015173  2       DO
24985.000 015173  2        BEGIN
24990.000 015173  3         DO'WIOC0(!4040+DEV); <<Address device under test>>
24995.000 015177  3         DO'WIOC0(!4061); <<Send UART modifier>>
25000.000 015201  3         DO'WIOC0(!DE); <<Send UART setup byte>>
25005.000 015203  3         DO'WIOC0(!4066); <<Send baud rate modifier>>
25010.000 015205  3         DO'WIOC0(!8); <<Send transmit baud rate>>
25015.000 015207  3         DO'WIOC0(!18); <<Send receive baud rate>>
25020.000 015217  3         DO'WIOC0(!4064); <<Send modifier four>>
25025.000 015221  3         A:=-1;
25030.000 015223  3         WHILE (A:=A+1)<=255
25035.000 015227  3          DO
25040.000 015227  3           BEGIN
25045.000 015227  4            DO'WIOC0(A); <<Clear SP Character RAM addresses>>
25050.000 015231  4           END; <<for all addresses present and>>
25055.000 015232  3        END; <<all device numbers present>>
25060.000 015233  2
25065.000 015233  2      DEV:=-1; A:=0; G:=INTEGER(!8000);
25070.000 015241  2      MAIN'BOARD:=TRUE;
25075.000 015243  2      WHILE (DEV:=DEV+1)<=(IF EXTND THEN 7 ELSE 3)
25080.000 015254  2       DO
25085.000 015254  2        BEGIN
25090.000 015254  3         IF DEV>3 THEN MAIN'BOARD:=FALSE;
25095.000 015266  3         B:=0;
25100.000 015270  3         WHILE B<=255
25105.000 015273  3          DO
25110.000 015273  3           BEGIN
25115.000 015273  4            DO'WIOC0(!4065); <<Send modifier five>>
25120.000 015275  4            DO'WIOC0(B); <<Set the special character bit>>
25125.000 015277  4            C:=0;
25130.000 015301  4            D:=IF MAIN'BOARD THEN -1 ELSE 3;
25135.000 015307  4            WHILE (D:=D+1)<=(IF MAIN'BOARD THEN 3 ELSE 7)
25140.000 015320  4             DO
```

```
25145.000 015320  4              BEGIN
25150.000 015320  5               E:=-1;
25155.000 015322  5               WHILE (E:=E+1)<=255
25160.000 015332  5                DO
25165.000 015332  5                 BEGIN
25170.000 015332  6                  DO'WIOC0(!4060); <<Send modifier zero>>
25175.000 015334  6                  DO'WIOC0(E); <<Write a character>>
25180.000 015336  6                  DODELAY(STARTIME,2); <<Wait loop>>
25185.000 015345  6                  DO'RIOC0; <<Read back the character and tag>>
25190.000 015346  6
25195.000 015346  6                  F:=(IF B=E THEN 0 ELSE 1);
25200.000 015355  6                  IF TOS'.(0:2)<>G.(0:2)
25205.000 015363  6                   THEN
25210.000 015363  6                    BEGIN <<Tag is zero>>
25215.000 015363  7                     IF F
25220.000 015365  7                      THEN
25225.000 015365  7                       BEGIN
25230.000 015365  8                        NUM'CHARS:=GET'MESSAGE(42);
25235.000 015371  8                        NUM2ASC(30,4,10,B);
25240.000 015376  8                        NUM2ASC(44,4,10,E);
25245.000 015403  8                        ERROROUT(-NUM'CHARS,0);
25250.000 015412  8                       END;
25255.000 015412  7                     END;
25260.000 015412  6                   IF TOS'.(8:8)<>E.(8:8)
25265.000 015420  6                    THEN
25270.000 015420  6                     BEGIN
25275.000 015420  7                      NUM'CHARS:=GET'MESSAGE(23);
25280.000 015424  7                      NUM2ASC(26,2,16,E);
25285.000 015431  7                      NUM2ASC(40,2,16,TOS'.(8:8));
25290.000 015437  7                      ERROROUT(-NUM'CHARS,1);
25295.000 015443  7                     END;
25300.000 015443  6
25305.000 015443  6                   DO'WIOC0(!4064); <<Send modifier four>>
25310.000 015445  6                   DO'WIOC0(B); <<Send the byte>>
25315.000 015447  6
25320.000 015447  6                   C:=C+1;
25325.000 015450  6                  END; <<Next read address this device>>
25330.000 015451  5                END; <<Next device>>
25335.000 015452  4
25340.000 015452  4              A:=A+1;
25345.000 015453  4              B:=IF B=0 THEN 1 ELSE B+B; <<Double the address>>
25350.000 015463  4              DOT; <<Check ATTN/CNTL Y then print 'period'>>
25355.000 015464  4             END; <<Next write address this device>>
25360.000 015465  3          END; <<Next device>>
25365.000 015466  2
25370.000 015466  2  <<- STEP 51      -     Walking zero
25375.000 015466  2
25380.000 015466  2              The entire special character RAM space is set to one, and
25385.000 015466  2              while a zero is "walked" thru selected locations, all other
25390.000 015466  2              locations are verified to remain at one.>>
25395.000 015466  2
25400.000 015466  2       STP:=51;
25405.000 015470  2       DEV:=-1;
25410.000 015472  2       WHILE (DEV:=DEV+1)<=(IF EXTND THEN 7 ELSE 3)
25415.000 015503  2        DO
25420.000 015503  2         BEGIN
```

```
25425.000 015503  3         DO'WIOC0(!4061); <<Send UART modifier>>
25430.000 015505  3         DO'WIOC0(!DE); <<Send UART setup byte>>
25435.000 015507  3         DO'WIOC0(!4066); <<Send baud rate modifier>>
25440.000 015513  3         DO'WIOC0(!8); <<Send transmit baud rate>>
25445.000 015515  3         DO'WIOC0(!18); <<Send receive baud rate>>
25450.000 015517  3         DO'WIOC0(!4065); <<Send modifier five>>
25455.000 015521  3         A:=-1;
25460.000 015523  3         WHILE (A:=A+1)<=255
25465.000 015527  3          DO
25470.000 015527  3           BEGIN
25475.000 015527  4            DO'WIOC0(A); <<Set SP Character RAM addresses>>
25480.000 015531  4           END; <<for all addresses present and>>
25485.000 015532  3        END; <<all device numbers present>>
25490.000 015533  2
25495.000 015533  2      DEV:=-1; A:=0; G:=INTEGER(!C000);
25500.000 015541  2      MAIN'BOARD:=TRUE;
25505.000 015543  2      WHILE (DEV:=DEV+1)<=(IF EXTND THEN 7 ELSE 3)
25510.000 015554  2       DO
25515.000 015554  2        BEGIN
25520.000 015554  3         IF DEV>3 THEN MAIN'BOARD:=FALSE;
25525.000 015561  3         B:=0;
25530.000 015566  3         WHILE B<=255
25535.000 015571  3          DO
25540.000 015571  3           BEGIN
25545.000 015571  4            DO'WIOC0(!4064); <<Send modifier four>>
25550.000 015573  4            DO'WIOC0(B); <<Clear special character bit>>
25555.000 015575  4            C:=0;
25560.000 015577  4           D:=IF MAIN'BOARD THEN -1 ELSE 3;
25565.000 015605  4           WHILE (D:=D+1)<=(IF MAIN'BOARD THEN 3 ELSE 7)
25570.000 015616  4            DO
25575.000 015616  4             BEGIN
25580.000 015616  5              E:=-1;
25585.000 015620  5              WHILE (E:=E+1)<=255
25590.000 015627  5               DO
25595.000 015627  5                BEGIN
25600.000 015627  6                 DO'WIOC0(!4060); <<Send modifier zero>>
25605.000 015631  6                 DO'WIOC0(E); <<Write a character>>
25610.000 015633  6                 DODELAY(STARTIME,2); <<Wait loop>>
25615.000 015641  6                 DO'RIOC0; <<Read back the character and tag>>
25620.000 015642  6
25625.000 015642  6                 F:=(IF B=E THEN 0 ELSE 1);
25630.000 015651  6                 IF TOS'.(0:2)<>G.(0:2)
25635.000 015657  6                  THEN
25640.000 015657  6                   BEGIN <<Tag is one>>
25645.000 015657  7                    IF F
25650.000 015661  7                     THEN
25655.000 015661  7                      BEGIN
25660.000 015661  8                       NUM'CHARS:=GET'MESSAGE(42);
25665.000 015665  8                       NUM2ASC(30,4,10,B);
25670.000 015672  8                       NUM2ASC(44,4,10,E);
25675.000 015677  8                       ERROROUT(-NUM'CHARS,0);
25680.000 015706  8                      END;
25685.000 015706  7                    END;
25690.000 015706  6                 IF TOS'.(8:8)<>E.(8:8)
25695.000 015714  6                  THEN
25700.000 015714  6                   BEGIN
```

```
25705.000 015714  7                    NUM'CHARS:=GET'MESSAGE(23);
25710.000 015720  7                    NUM2ASC(26,2,16,E);
25715.000 015725  7                    NUM2ASC(40,2,16,TOS'.(8:8));
25720.000 015733  7                    ERROROUT(-NUM'CHARS,1);
25725.000 015737  7                  END;
25730.000 015737  6
25735.000 015737  6                DO'WIOC0(!4065); <<Send modifier five>>
25740.000 015741  6                DO'WIOC0(B); <<Send the byte>>
25745.000 015743  6
25750.000 015743  6                C:=C+1;
25755.000 015744  6              END; <<Next read address this device>>
25760.000 015745  5            END; <<Next device>>
25765.000 015746  4
25770.000 015746  4          A:=A+1;
25775.000 015751  4          B:=IF B=0 THEN 1 ELSE B+B; <<Double the address>>
25780.000 015761  4          DOT; <<Check ATTN/CNTL Y then print 'period'>>
25785.000 015762  4        END; <<Next write address this device>>
25790.000 015763  3      END; <<Next device>>
25795.000 015764  2  REP'ILL'INT;
25800.000 015765  2    END; <<SECTION 14>>
```

```
25810.000 015765  1 IF SECTION(15) THEN BEGIN
25815.000 015773  2
25820.000 015773  2  <<SECTION 15   -   Baud Rate Clock and UARTS
25825.000 015773  2
25830.000 015773  2   This step verifies correct operation of the Baud Rate Clock
25835.000 015773  2   logic, the device address latches logic and a subset of
25840.000 015773  2   the UART logic.>>
25845.000 015773  2
25850.000 015773  2  <<- STEP 52
25855.000 015773  2
25860.000 015773  2   This step gives a more stringent test of the UART logic.
25865.000 015773  2   In this step, various combinations of baud
25870.000 015773  2   rates and UART control functions are used to provide
25875.000 015773  2   stimulus to each device in the manner described below.
25880.000 015773  2
25885.000 015773  2   The test sequence is to set up the various UART control
25890.000 015773  2   functions then transmitting, receiving
25895.000 015773  2   and verifying the test bytes (or part of the byte in case
25900.000 015773  2   5,6 and 7 data bit words) !0,!55,!AA and !CC.>>
25905.000 015773  2
25910.000 015773  2      STP:=52;
25915.000 015775  2    DEV := IF EXTND AND EXTND15 AND (DESIRED'DEV<>MAX'DEV)       <<1.31>>
25920.000 015775  2           THEN 3 ELSE DESIRED'DEV-1;                           <<1.31>>
25925.000 016013  2      WHILE (DEV:=DEV+1)<=MAX'DEV DO BEGIN
25930.000 016017  3       DO'WIOC0(!4040+DEV); <<Address device under test>>
25935.000 016023  3       A:=-1;
25940.000 016025  3       WHILE (A:=A+1)<24 DO BEGIN
25945.000 016035  4       DO'WIOC0(!4061); <<Send modifier one>>
25950.000 016037  4       DO'WIOC0(UARTCNTRL(A)); <<Send control byte>>
25955.000 016042  4       BAUD:=1;
25960.000 016044  4     WHILE (BAUD:=BAUD+1)<!10 DO BEGIN
25965.000 016051  5       DO'WIOC0(!4066); <<Send baud rate modifier>>
25970.000 016053  5       DO'WIOC0(BAUD); <<Send transmit baud rate>>
25975.000 016055  5       DO'WIOC0(BAUD+!10); <<Issue receive baud rate>>
25980.000 016061  5       DO'WIOC0(!4060); <<Send modifier zero>>
25985.000 016063  5       B:=-1;
25990.000 016065  5       WHILE (B:=B+1)<4 DO BEGIN
25995.000 016077  6       DO'WIOC0(BAUDARRAY(B));
26000.000 016102  6       DODELAY(STARTIME,DELAYBUF(BAUD)); <<WAIT>>
26005.000 016111  6       DO'RIOC0; <<Read byte back>>
26010.000 016112  6      CASE UARTCNTRL(A).(11:2) OF
26015.000 016120  6       BEGIN
26020.000 016120  7       0: TOS'1:=(BAUDARRAY(B) AND !1F);
26025.000 016125  7       1: TOS'1:=(BAUDARRAY(B) AND !3F);
26030.000 016132  7       2: TOS'1:=(BAUDARRAY(B) AND !7F);
26035.000 016137  7       3: TOS'1:=(BAUDARRAY(B) AND !FF);
26040.000 016160  7       END;
26045.000 016160  6
26050.000 016160  6       IF TOS'.(8:8)<>TOS'1.(8:8) THEN BEGIN
26055.000 016166  7        C:=3;
26060.000 016170  7        C:=(IF 7<=BAUD<=12 THEN 4 ELSE C);
26065.000 016201  7        C:=(IF 2<=BAUD<=3 THEN 2 ELSE C);
26070.000 016212  7       NUM'CHARS:=GET'MESSAGE(26);
26075.000 016216  7       NUM'CHARS:=(IF 7<=BAUD<=12
26080.000 016216  7                     THEN NUM'CHARS+1
```

```
26085.000 016216  7                    ELSE NUM'CHARS);
26090.000 016232  7       NUM'CHARS:=(IF 2<=BAUD<=3
26095.000 016232  7                    THEN NUM'CHARS-1
26100.000 016232  7                    ELSE NUM'CHARS);
26105.000 016244  7       NUM'CHARS:=(IF BAUD=4
26110.000 016244  7                    THEN NUM'CHARS+2
26115.000 016244  7                    ELSE NUM'CHARS);
26120.000 016254  7       MOVE (!20,!20,!20,!20,!20) TO MSG'OUT(47);
26125.000 016262  7       NUM2ASC(25,2,16,TOS'1);
26130.000 016267  7        NUM2ASC(38,2,16,TOS'.(8:8));
26135.000 016275  7        NUM2ASC(47,C,10,BAUDS(BAUD));
26140.000 016305  7        IF BAUD=4 THEN MOVE (".5") TO MSG'OUT(50);
26145.000 016316  7        NUM2ASC(14,2,16,UARTCNTRL(A));
26150.000 016324  7        ERROROUT(-NUM'CHARS,1);
26155.000 016330  7        END;
26160.000 016330  6       END; <<Next test character>>
26165.000 016331  5       END; <<Next baud rate>>
26170.000 016332  4      DOT; <<Check ATTN/CNTL Y then print 'period'>>
26175.000 016333  4       END; <<Next control character>>
26180.000 016334  3       END; <<Next device number under test>>
26185.000 016335  2   REP'ILL'INT;
26190.000 016336  2 END;
```

```
26200.000 016336  1 START16:
26205.000 016336  1  IF SECTION(16)
26210.000 016346  1   THEN
26215.000 016346  1    BEGIN
26220.000 016346  2
26225.000 016346  2  <<SECTION 16  -  Channel Address Switch (optional)
26230.000 016346  2
26235.000 016346  2    This Section places the channel address recognition logic
26240.000 016346  2    under test.  This Section is executed ONLY upon request
26245.000 016346  2    by the operator.
26250.000 016346  2    Roll Call, OBII and OBSI are used to verify each setting
26255.000 016346  2    of the channel address switch.  The operator is asked to set
26260.000 016346  2    the channel address of the ADCC under test to all values
26265.000 016346  2    0 thru 15 (except for the channels being used
26270.000 016346  2    by other cards) and the following tests are performed.
26275.000 016346  2
26280.000 016346  2    Since it would mean reloading  this diagnostic
26285.000 016346  2    program to test all 16 positions of the Channel Address
26290.000 016346  2    Switch, positions not tested are the
26295.000 016346  2    ones which correspond to the channel numbers being used
26300.000 016346  2    by other interfaces.>>
26305.000 016346  2
26310.000 016346  2  <<- STEP 53     -     Roll Call
26315.000 016346  2
26320.000 016346  2    The ability of the ADCC under test to respond to the global
26325.000 016346  2    I/O Roll Call is tested.  A Roll Call is issued, and the
26330.000 016346  2    resulting returned word is tested to verify that only the
26335.000 016346  2    bits which correspond to the ADCC channel number under test
26340.000 016346  2    and the channel numbers used by other cards are set.>>
26345.000 016346  2
26350.000 016346  2     D:=0;
26355.000 016350  2     ZENDLOG:=TRUE;
26360.000 016352  2     NMBROFCHNLS:=0;
26365.000 016354  2     T'CHNL:=0;
26370.000 016356  2     T'CHNLBIT:=!8000;
26375.000 016360  2 SWITCH'LOOP:
26380.000 016360  2     WHILE T'CHNL<%200
26385.000 016364  2      DO
26390.000 016364  2       BEGIN
26395.000 016364  3        WHILE (D AND T'CHNLBIT)=T'CHNLBIT
26400.000 016372  3         DO
26405.000 016372  3          BEGIN <<Another channel has this number>>
26410.000 016372  4           IF (T'CHNL:=T'CHNL+%10)>%170 <<Advance to higher channel>>
26415.000 016406  4            THEN GO SWITCH'LOOP;
26420.000 016410  4           T'CHNLBIT:=T'CHNLBIT LSR (1);
26425.000 016413  4          END;
26430.000 016414  3        STP:=53;
26435.000 016416  3
26440.000 016416  3        IF NMBROFCHNLS=0
26445.000 016422  3         THEN
26450.000 016422  3          BEGIN
26455.000 016422  4           B:=1;
26460.000 016424  4           WHILE B=1
26465.000 016427  4            DO
26470.000 016427  4             BEGIN
```

```
26475.000 016427  5              A:=C:=0;
26480.000 016433  5              MOVE ("      ") TO TEMPBUF;
26485.000 016440  5              CRLF;
26490.000 016441  5              PRINT(MSG'OUT,-GET'MESSAGE(44),%320);
26495.000 016450  5              MOVE CLEARBUF TO TEMPBUF FOR 10 ITEMS;
26500.000 016454  5              B:=(IF READKBD(TEMPBUF,-3)>2 THEN 1 ELSE 0);
26505.000 016472  5              CHECKYTRAP;
26510.000 016473  5              STARTIDLE;
26515.000 016474  5
26520.000 016474  5              IF (A:=TEMPBUF(1))<>" "
26525.000 016502  5               THEN
26530.000 016502  5                BEGIN
26535.000 016502  6                 B:=(IF !30<=A<=!39 THEN B ELSE 1);
26540.000 016523  6                 B:=(IF !30<=(C:=TEMPBUF(0))<=!39 THEN B ELSE 1);
26545.000 016545  6                END
26550.000 016545  5               ELSE
26555.000 016546  5                B:=(IF !30<=(A:=TEMPBUF(0))<=!39 THEN B ELSE 1);
26560.000 016570  5
26565.000 016570  5              A:=(A AND !F);
26570.000 016573  5              C:=(C AND !F)*10;
26575.000 016600  5              B:=(IF 1<=(NMBROFCHNLS:=A+C)<=15 THEN B ELSE 1);
26580.000 016622  5              IF B THEN CRTOUT(MSG'OUT,-GET'MESSAGE(62));
26585.000 016632  5            END; <<B=1>>
26590.000 016633  4          END; <<NMBROFCHNLS=0>>
26595.000 016633  3
26600.000 016633  3        CHNL:=T'CHNL;
26605.000 016635  3        CHNLBIT:=T'CHNLBIT;
26610.000 016637  3        NUM'CHARS:=GET'MESSAGE(61);
26615.000 016643  3        NUM2ASC(45,2,10,CHNL.(9:4));
26620.000 016652  3        CRTOUT(MSG'OUT,-NUM'CHARS); <<OUTPUT THE MESSAGE AND HALT>>
26625.000 016656  3        CRTOUT(MSG'OUT,-GET'MESSAGE(81));
26630.000 016664  3        DOPAUSE;
26635.000 016665  3
26640.000 016665  3        ROLLCALL; <<SEND ROLL CALL OP>>
26645.000 016672  3        IF CHNL=0 THEN D:=TOS'; <<Save other channels present>>
26650.000 016677  3        C:=TOS'; <<Save for later test>>
26655.000 016701  3        IF ((TOS' AND CHNLBIT)<>CHNLBIT) AND CHNL<>0
26660.000 016712  3         THEN
26665.000 016712  3          BEGIN <<TEST FOR CHANNEL PRESENT>>
26670.000 016712  4           IF CHNL.(9:4)>7 THEN M:=1 ELSE E:=1;
26675.000 016725  4           NUM'CHARS:=GET'MESSAGE(65);
26680.000 016733  4           NUM2ASC(8,2,10,CHNL.(9:4)); <<CHNLNR IN MSG>>
26685.000 016742  4           ERROROUT(-NUM'CHARS,0);
26690.000 016746  4           GO START16; <<Don't continue this way>>
26695.000 016750  4          END;
26700.000 016750  3
26705.000 016750  3        A:=-1;
26710.000 016752  3        B:=0;
26715.000 016754  3        WHILE (A:=A+1)<16
26720.000 016760  3         DO
26725.000 016760  3          BEGIN
26730.000 016760  4           B:=(IF C.(15:1) THEN B+1 ELSE B);
26735.000 016770  4           C:=C LSR (1);
26740.000 016773  4          END;
26745.000 016774  3
26750.000 016774  3        IF CHNL=0 THEN B:=B+1;
```

```
26755.000 017000  3        IF LOGICAL(B)<>NMBROFCHNLS
26760.000 017004  3         THEN
26765.000 017004  3          BEGIN <<Wrong number of Roll Call responses>>
26770.000 017004  4           IF CHNL=0
26775.000 017007  4            THEN
26780.000 017007  4             BEGIN
26785.000 017007  5              IF (B:=B-1)>(NMBROFCHNLS:=NMBROFCHNLS-1)
26790.000 017024  5               THEN <<Too many responded>>
26795.000 017024  5                CRTOUT(MSG'OUT,-GET'MESSAGE(70));
26800.000 017032  5              END;
26805.000 017032  4           NUM'CHARS:=GET'MESSAGE(63);
26810.000 017036  4           NUM2ASC(22,2,10,B);
26815.000 017043  4           NUM2ASC(35,2,10,NMBROFCHNLS);
26820.000 017050  4           ERROROUT(-NUM'CHARS,0);
26825.000 017054  4           NMBROFCHNLS:=0; <<So operator is asked again>>
26830.000 017056  4           GO START16; <<Don't continue this way>>
26835.000 017057  4          END;
26840.000 017057  3
26845.000 017057  3        IF CHNL<>0
26850.000 017062  3         THEN
26855.000 017062  3          BEGIN
26860.000 017062  4
26865.000 017062  4  <<OBII is a command issued by the interrupt processing
26870.000 017062  4    micro-code.  This step issues a register 0 read with a
26875.000 017062  4    special command code to emulate OBII.  The resulting
26880.000 017062  4    returned word, bits 9 thru 12 are verified to contain
26885.000 017062  4    the value of the channel address of the ADCC under
26890.000 017062  4    test.>>
26895.000 017062  4
26900.000 017062  4           STP:=54;
26905.000 017064  4           OBII; <<ISSUE OBII>>
26910.000 017100  4           IF TOS'.(9:4)<>CHNL.(9:4)
26915.000 017110  4            THEN
26920.000 017110  4             BEGIN
26925.000 017110  5              NUM'CHARS:=GET'MESSAGE(14);
26930.000 017114  5              MSG'OUT(2):="I";
26935.000 017117  5              NUM2ASC(14,2,10,TOS'.(9:4));
26940.000 017126  5              NUM2ASC(26,2,10,CHNL.(9:4));
26945.000 017135  5              ERROROUT(-NUM'CHARS,0);
26950.000 017141  5             END;
26955.000 017141  4
26960.000 017141  4  <<- STEP 55      -      Obtain Service Information (OBSI)
26965.000 017141  4
26970.000 017141  4    OBSI is a command issued by the channel service process
26975.000 017141  4    micro-code.  This step issues a register 0 read with a
26980.000 017141  4    special command code to emulate OBSI.  The resulting
26985.000 017141  4    returned word, bits 9 thru 12 are verified to contain
26990.000 017141  4    the value of the channel address of the ADCC under
26995.000 017141  4    test.>>
27000.000 017141  4
27005.000 017141  4           STP:=55;
27010.000 017143  4           OBSI; <<ISSUE OBSI>>
27015.000 017155  4           IF TOS'.(9:4)<>CHNL.(9:4)
27020.000 017165  4            THEN
27025.000 017165  4             BEGIN
27030.000 017165  5              NUM'CHARS:=GET'MESSAGE(14);
```

```
27035.000 017171  5             MSG'OUT(2):="S";
27040.000 017174  5             NUM2ASC(14,2,10,TOS'.(9:4));
27045.000 017203  5             NUM2ASC(26,2,10,CHNL.(9:4));
27050.000 017212  5             ERROROUT(-NUM'CHARS,0);
27055.000 017216  5            END;
27060.000 017216  4          END; <<End of -comchan tests>>
27065.000 017216  3        CHECKYTRAP; <<Check for operator interrupt request>>
27070.000 017217  3        T'CHNLBIT:=T'CHNLBIT LSR(1);
27075.000 017222  3        T'CHNL:=T'CHNL+%10; <<DO FOR NEXT CHANNEL NUMBER>>
27080.000 017226  3       END;
27085.000 017227  2     REP'ILL'INT;
27090.000 017230  2    END; <<SECTION 16>>
```

```
27100.000 017230  1
27105.000 017230  1 IF SECTION(17) THEN BEGIN
27110.000 017240  2
27115.000 017240  2
27120.000 017240  2  <<This Section places one RS-232C cable under test using the
27125.000 017240  2      RS-232C 'D' loop connector (hp 0960-0475)  Note that this
27130.000 017240  2      Section will be executed ONLY upon request by the operator.>>
27135.000 017240  2
27140.000 017240  2  <<- STEP 56     -
27145.000 017240  2
27150.000 017240  2        A subset of the special
27155.000 017240  2       character ram test described in Section 3, chosen for
27160.000 017240  2       maximum data pattern combinations, is executed for the
27165.000 017240  2       device.>>
27170.000 017240  2
27175.000 017240  2        STP:=56;
27180.000 017242  2      A:=0;
27185.000 017244  2      WHILE A=0 DO BEGIN
27190.000 017247  3      MOVE CLEARBUF TO TEMPBUF FOR 10 ITEMS;
27195.000 017253  3      CHECKYTRAP; <<Check for operator interrupt request>>
27200.000 017254  3      CRLF;
27205.000 017255  3      CRTOUT(MSG'OUT,-GET'MESSAGE(66));
27210.000 017263  3      PRINT(MSG'OUT,-GET'MESSAGE(64),%320);
27215.000 017272  3      READKBD(TEMPBUF,-3);
27220.000 017302  3      CHECKYTRAP;
27225.000 017303  3      STARTIDLE;
27230.000 017304  3      A:=(IF TEMPBUF(1)<>" " THEN 0 ELSE 1); <<More than 1 char?>>
27235.000 017314  3      A:=(IF NOT !30<=TEMPBUF(0)<=!37 THEN 0 ELSE A);
27240.000 017333  3      END; <<Range of input ok when we leave here>>
27245.000 017334  2
27250.000 017334  2      DEV:=(TEMPBUF(0) AND !F);
27255.000 017340  2
27260.000 017340  2      DO'WIOC0(!4040+DEV); <<Address device under test>>
27265.000 017346  2      DO'WIOC0(!4061); <<Send UART modifier>>
27270.000 017350  2      DO'WIOC0(!DE); <<Send UART setup byte>>
27275.000 017352  2      DO'WIOC0(!4066); <<Send baud rate modifier>>
27280.000 017354  2      DO'WIOC0(!8); <<Send transmit baud rate>>
27285.000 017356  2      DO'WIOC0(!18); <<Send receive baud rate>>
27290.000 017360  2      DO'WIOC0(!4064); <<Send modifier four>>
27295.000 017362  2      A:=-1;
27300.000 017364  2      WHILE (A:=A+1)<=255 DO BEGIN
27305.000 017370  3      DO'WIOC0(A); <<Write set/clear address>>
27310.000 017372  3      END; <<Do all address/this dev>>
27315.000 017373  2
27320.000 017373  2      DO'WIOC0(!4060); <<Send modifier zero>>
27325.000 017375  2      A:=-1;
27330.000 017377  2      WHILE (A:=A+1)<=255 DO BEGIN
27335.000 017403  3      DO'WIOC0(A); <<Write test byte>>
27340.000 017405  3      DODELAY(STARTIME,5); <<9600 Baud wait loop>>
27345.000 017417  3      DO'RIOC0; <<Now read byte back>>
27350.000 017420  3      IF TOS'.(8:8)<>A.(8:8) THEN BEGIN
27355.000 017426  4         NUM'CHARS:=GET'MESSAGE(23);
27360.000 017432  4         NUM2ASC(26,2,16,A.(8:8));
27365.000 017440  4         NUM2ASC(40,2,16,TOS'.(8:8));
27370.000 017446  4         ERROROUT(-NUM'CHARS,1);
```

```
27375.000 017452  4         END;
27380.000 017452  3
27385.000 017452  3      IF TOS'.(1:1) THEN BEGIN
27390.000 017456  4         NUM'CHARS:=GET'MESSAGE(24);
27395.000 017464  4         NUM2ASC(1,2,16,TOS'.(8:8));
27400.000 017472  4         ERROROUT(-NUM'CHARS,1);
27405.000 017476  4         END;
27410.000 017476  3      END;
27415.000 017477  2          CHECKYTRAP; <<Check for operator interrupt request>>
27420.000 017500  2
27425.000 017500  2
27430.000 017500  2  <<- STEP 57 >>
27435.000 017500  2
27440.000 017500  2      STP:=57;
27445.000 017502  2      CHNL'INIT;
27450.000 017507  2  <<-              -      CA - CB,CF    (reference=1)>>
27455.000 017507  2
27460.000 017507  2      DO'WIOC0(!4040+DEV); <<Address the device under test>>
27465.000 017513  2      DO'WIOC0(!4067); <<Send modifier seven>>
27470.000 017515  2      DO'WIOC0(!12); <<Set reference for CB,CF=1>>
27475.000 017517  2      DO'WIOC0(!32); <<Set mask on for these lines>>
27480.000 017521  2      DO'WIOC0(!4062); <<Send modifier two>>
27485.000 017523  2      DO'WIOC0(!7); <<Wiggle CA to cause deviation>>
27490.000 017525  2      DODELAY(STARTIME,5); <<Short wait>>
27495.000 017534  2      A:=B:=0;
27500.000 017540  2      DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
27505.000 017543  2      DO'WIOC0(!4070); <<Send the DSJ command code>>
27510.000 017545  2      DO'RIOC0; <<Read the DSJ returned byte>>
27515.000 017546  2      C:=(IF NOT EXTND THEN !9 ELSE !D);
27520.000 017554  2      IF A.(11:5)<>C THEN BEGIN
27525.000 017561  3      IF A.(11:5)<>7 THEN BEGIN
27530.000 017566  4         NUM'CHARS:=GET'MESSAGE(40);
27535.000 017572  4         NUM2ASC(20,2,16,A.(11:5));
27540.000 017600  4         NUM2ASC(33,2,16,C);
27545.000 017611  4         ERROROUT(-NUM'CHARS,1);
27550.000 017615  4         END ELSE BEGIN
27555.000 017616  4         IF TOS'.(8:8)<>2 THEN BEGIN
27560.000 017623  5         ERROROUT(-GET'MESSAGE(37),1);
27565.000 017631  5         B:=-1;
27570.000 017633  5         END ELSE ERROROUT(-GET'MESSAGE(39),1);
27575.000 017642  4         END;
27580.000 017642  3        END;
27585.000 017642  2
27590.000 017642  2      IF NOT B THEN BEGIN
27595.000 017644  3      IF TOS'.(8:8)<>2 THEN ERROROUT(-GET'MESSAGE(38),1);
27600.000 017662  3      END;
27605.000 017662  2          CHECKYTRAP; <<Check for operator interrupt request>>
27610.000 017663  2
27615.000 017663  2  <<-              -      CA - CB,CF    (reference=0)>>
27620.000 017663  2
27625.000 017663  2      DO'WIOC0(!4040+DEV); <<Address device under test>>
27630.000 017667  2      DO'WIOC0(!4067); <<Send modifier seven>>
27635.000 017671  2      DO'WIOC0(!D); <<Set CB,CF reference=0>>
27640.000 017673  2      DO'WIOC0(!32); <<Set mask on for these lines>>
27645.000 017675  2      DO'WIOC0(!4062); <<Send modifier two>>
27650.000 017677  2      DO'WIOC0(!8); <<Wiggle CA to cause change>>
```

```
27655.000 017701  2      DODELAY(STARTIME,5); <<Short wait ..>>
27660.000 017705  2      A:=B:=0;
27665.000 017711  2      DO'RIOC0; A:=TOS'; <<Read the modem status>>
27670.000 017714  2      DO'WIOC0(!4070); <<Send the DSJ command code>>
27675.000 017716  2      DO'RIOC0; <<Read the DSJ returned byte>>
27680.000 017717  2      IF A.(11:5)<>!12 THEN BEGIN
27685.000 017724  3      IF A.(11:5)<>!8 THEN BEGIN
27690.000 017731  4         NUM'CHARS:=GET'MESSAGE(40);
27695.000 017735  4         NUM2ASC(20,2,16,A.(11:5));
27700.000 017743  4         NUM2ASC(33,2,16,!12);
27705.000 017750  4         ERROROUT(-NUM'CHARS,1);
27710.000 017754  4         END ELSE BEGIN
27715.000 017755  4         IF TOS'.(8:8)<>2 THEN BEGIN
27720.000 017765  5         ERROROUT(-GET'MESSAGE(37),1);
27725.000 017773  5         B:=-1;
27730.000 017775  5         END ELSE ERROROUT(-GET'MESSAGE(39),1);
27735.000 020004  4         END;
27740.000 020004  3        END;
27745.000 020004  2
27750.000 020004  2      IF NOT B THEN BEGIN
27755.000 020006  3      IF  TOS'.(8:8)<>2 THEN ERROROUT(-GET'MESSAGE(38),1);
27760.000 020024  3      END;
27765.000 020024  2          CHECKYTRAP; <<Check for operator interrupt request>>
27770.000 020025  2
27775.000 020025  2  <<-             -      CD - CC    (reference=1)>>
27780.000 020025  2
27785.000 020025  2      CHNL'INIT;
27790.000 020032  2      DO'WIOC0(!4040+DEV); <<Address the device under test>>
27795.000 020036  2      DO'WIOC0(!4067); <<Send modifier seven>>
27800.000 020040  2      DO'WIOC0(!8); <<Set reference for CC=1>>
27805.000 020042  2      DO'WIOC0(!28); <<Set mask on for this line>>
27810.000 020044  2      DO'WIOC0(!4062); <<Send modifier two>>
27815.000 020046  2      DO'WIOC0(!B); <<Wiggle CD to cause deviation>>
27820.000 020050  2      DODELAY(STARTIME,5); <<Short wait>>
27825.000 020056  2      A:=B:=0;
27830.000 020062  2      DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
27835.000 020065  2      DO'WIOC0(!4070); <<Send the DSJ command code>>
27840.000 020067  2      DO'RIOC0; <<Read the DSJ returned byte>>
27845.000 020070  2      C:=(IF NOT EXTND THEN !13 ELSE !17);
27850.000 020076  2      IF A.(11:5)<>C THEN BEGIN
27855.000 020103  3      IF A.(11:5)<>!B THEN BEGIN
27860.000 020110  4         NUM'CHARS:=GET'MESSAGE(40);
27865.000 020114  4         NUM2ASC(20,2,16,A.(11:5));
27870.000 020122  4         NUM2ASC(33,2,16,C);
27875.000 020132  4         ERROROUT(-NUM'CHARS,1);
27880.000 020136  4         END ELSE BEGIN
27885.000 020137  4         IF TOS'.(8:8)<>2 THEN BEGIN
27890.000 020144  5         ERROROUT(-GET'MESSAGE(37),1);
27895.000 020152  5         B:=-1;
27900.000 020154  5         END ELSE ERROROUT(-GET'MESSAGE(39),1);
27905.000 020163  4         END;
27910.000 020163  3        END;
27915.000 020163  2
27920.000 020163  2      IF NOT B THEN BEGIN
27925.000 020165  3      IF TOS'.(8:8)<>2 THEN ERROROUT(-GET'MESSAGE(38),1);
27930.000 020203  3      END;
```

```
27935.000 020203  2          CHECKYTRAP; <<Check for operator interrupt request>>
27940.000 020204  2
27945.000 020204  2  <<-       9     -      CD - CC    (reference=0)>>
27950.000 020204  2
27955.000 020204  2      DO'WIOC0(!4040+DEV); <<Address device under test>>
27960.000 020210  2      DO'WIOC0(!4067); <<Send modifier seven>>
27965.000 020212  2      DO'WIOC0(!17); <<Set CC reference=0>>
27970.000 020214  2      DO'WIOC0(!32); <<Set mask on for this line>>
27975.000 020216  2      DO'WIOC0(!4062); <<Send modifier two>>
27980.000 020220  2      DO'WIOC0(!4); <<Wiggle CD to cause change>>
27985.000 020222  2      DODELAY(STARTIME,5); <<Short wait ..>>
27990.000 020231  2      A:=B:=0;
27995.000 020235  2      DO'RIOC0; A:=TOS'; <<Read the modem status>>
28000.000 020240  2      DO'WIOC0(!4070); <<Send the DSJ command code>>
28005.000 020242  2      DO'RIOC0; <<Read the DSJ returned byte>>
28010.000 020243  2      IF A.(11:5)<>!8 THEN BEGIN
28015.000 020250  3      IF A.(11:5)<>4 THEN BEGIN
28020.000 020255  4         NUM'CHARS:=GET'MESSAGE(40);
28025.000 020261  4         NUM2ASC(20,2,16,A.(11:5));
28030.000 020267  4         NUM2ASC(33,2,16,!8);
28035.000 020274  4         ERROROUT(-NUM'CHARS,1);
28040.000 020300  4         END ELSE BEGIN
28045.000 020301  4         IF TOS'.(8:8)<>2 THEN BEGIN
28050.000 020312  5         ERROROUT(-GET'MESSAGE(37),1);
28055.000 020320  5         B:=-1;
28060.000 020322  5         END ELSE ERROROUT(-GET'MESSAGE(39),1);
28065.000 020331  4         END;
28070.000 020331  3        END;
28075.000 020331  2
28080.000 020331  2      IF NOT B THEN BEGIN
28085.000 020333  3      IF TOS'.(8:8)<>2 THEN ERROROUT(-GET'MESSAGE(38),1);
28090.000 020351  3      END;
28095.000 020351  2          CHECKYTRAP; <<Check for operator interrupt request>>
28100.000 020352  2
28105.000 020352  2  <<-       0     -      SCA - SCF    (reference=1)>>
28110.000 020352  2
28115.000 020352  2      CHNL'INIT;
28120.000 020357  2      DO'WIOC0(!4040+DEV); <<Address the device under test>>
28125.000 020363  2      DO'WIOC0(!4067); <<Send modifier seven>>
28130.000 020365  2      DO'WIOC0(!1); <<Set reference for SCF=1>>
28135.000 020367  2      DO'WIOC0(!21); <<Set mask on for these lines>>
28140.000 020371  2      DO'WIOC0(!4062); <<Send modifier two>>
28145.000 020373  2      DO'WIOC0(!E); <<Wiggle SCA to cause deviation>>
28150.000 020375  2      DODELAY(STARTIME,5); <<Short wait>>
28155.000 020401  2      A:=B:=0;
28160.000 020405  2      DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
28165.000 020410  2      DO'WIOC0(!4070); <<Send the DSJ command code>>
28170.000 020412  2      DO'RIOC0; <<Read the DSJ returned byte>>
28175.000 020413  2      C:=(IF NOT EXTND THEN !1A ELSE !1E);
28180.000 020421  2      IF A.(11:5)<>C THEN BEGIN
28185.000 020426  3      IF A.(11:5)<>!E THEN BEGIN
28190.000 020433  4         NUM'CHARS:=GET'MESSAGE(40);
28195.000 020437  4         NUM2ASC(20,2,16,A.(11:5));
28200.000 020445  4         NUM2ASC(33,2,16,C);
28205.000 020455  4         ERROROUT(-NUM'CHARS,1);
28210.000 020461  4         END ELSE BEGIN
```

```
28215.000 020462  4         IF TOS'.(8:8)<>2 THEN BEGIN
28220.000 020467  5         ERROROUT(-GET'MESSAGE(37),1);
28225.000 020475  5         B:=-1;
28230.000 020477  5         END ELSE ERROROUT(-GET'MESSAGE(39),1);
28235.000 020506  4         END;
28240.000 020506  3       END;
28245.000 020506  2
28250.000 020506  2      IF NOT B THEN BEGIN
28255.000 020510  3      IF TOS'.(8:8)<>2 THEN ERROROUT(-GET'MESSAGE(38),1);
28260.000 020526  3      END;
28265.000 020526  2          CHECKYTRAP; <<Check for operator interrupt request>>
28270.000 020527  2
28275.000 020527  2  <<-       1     -      SCA - SCF    (reference=0)>>
28280.000 020527  2
28285.000 020527  2      DO'WIOC0(!4040+DEV); <<Address device under test>>
28290.000 020533  2      DO'WIOC0(!4067); <<Send modifier seven>>
28295.000 020535  2      DO'WIOC0(!1E); <<Set SCF reference=0>>
28300.000 020537  2      DO'WIOC0(!21); <<Set mask on for these lines>>
28305.000 020541  2      DO'WIOC0(!4062); <<Send modifier two>>
28310.000 020543  2      DO'WIOC0(!1); <<Wiggle SCA to cause change>>
28315.000 020545  2      DODELAY(STARTIME,5); <<Short wait ..>>
28320.000 020553  2      A:=B:=0;
28325.000 020557  2      DO'RIOC0; A:=TOS'; <<Read the modem status>>
28330.000 020562  2      DO'WIOC0(!4070); <<Send the DSJ command code>>
28335.000 020564  2      DO'RIOC0; <<Read the DSJ returned byte>>
28340.000 020565  2      IF A.(11:5)<>1 THEN BEGIN
28345.000 020572  3      IF A.(11:5)<>!1E THEN BEGIN
28350.000 020577  4         NUM'CHARS:=GET'MESSAGE(40);
28355.000 020603  4         NUM2ASC(20,2,16,A.(11:5));
28360.000 020611  4         NUM2ASC(33,2,16,1);
28365.000 020616  4         ERROROUT(-NUM'CHARS,1);
28370.000 020622  4         END ELSE BEGIN
28375.000 020623  4         IF TOS'.(8:8)<>2 THEN BEGIN
28380.000 020633  5         ERROROUT(-GET'MESSAGE(37),1);
28385.000 020641  5         B:=-1;
28390.000 020643  5         END ELSE ERROROUT(-GET'MESSAGE(39),1);
28395.000 020652  4         END;
28400.000 020652  3       END;
28405.000 020652  2
28410.000 020652  2      IF NOT B THEN BEGIN
28415.000 020654  3      IF TOS'.(8:8)<>2 THEN ERROROUT(-GET'MESSAGE(38),1);
28420.000 020672  3      END;
28425.000 020672  2          CHECKYTRAP; <<Check for operator interrupt request>>
28430.000 020673  2
28435.000 020673  2      IF MAX'DEV=8 THEN BEGIN
28440.000 020676  3  <<-             -      CH - CE    (reference=1)>>
28445.000 020676  3
28450.000 020676  3      CHNL'INIT;
28455.000 020705  3      DO'WIOC0(!4040+DEV); <<Address the device under test>>
28460.000 020711  3      DO'WIOC0(!4067); <<Send modifier seven>>
28465.000 020713  3      DO'WIOC0(!4); <<Set reference for CE=1>>
28470.000 020715  3      DO'WIOC0(!24); <<Set mask on for these lines>>
28475.000 020717  3      DO'WIOC0(!4062); <<Send modifier two>>
28480.000 020721  3      DO'WIOC0(!1D); <<Wiggle CH to cause deviation>>
28485.000 020723  3      DODELAY(STARTIME,5); <<Short wait>>
28490.000 020732  3      A:=B:=0;
```

```
28495.000 020736  3      DO'RIOC0; A:=TOS'; <<Now read modem status lines>>
28500.000 020741  3      DO'WIOC0(!4070); <<Send the DSJ command code>>
28505.000 020743  3      DO'RIOC0; <<Read the DSJ returned byte>>
28510.000 020744  3      IF A.(11:5)<>!1B THEN BEGIN
28515.000 020751  4      IF A.(11:5)<>!1D THEN BEGIN
28520.000 020756  5         NUM'CHARS:=GET'MESSAGE(40);
28525.000 020762  5         NUM2ASC(20,2,16,A.(11:5));
28530.000 020770  5         NUM2ASC(33,2,16,!1B);
28535.000 020775  5         ERROROUT(-NUM'CHARS,1);
28540.000 021001  5         END ELSE BEGIN
28545.000 021002  5         IF TOS'.(8:8)<>2 THEN BEGIN
28550.000 021013  6         ERROROUT(-GET'MESSAGE(37),1);
28555.000 021021  6         B:=-1;
28560.000 021023  6         END ELSE ERROROUT(-GET'MESSAGE(39),1);
28565.000 021032  5         END;
28570.000 021032  4       END;
28575.000 021032  3
28580.000 021032  3      IF NOT B THEN BEGIN
28585.000 021034  4      IF TOS'.(8:8)<>2 THEN ERROROUT(-GET'MESSAGE(38),1);
28590.000 021052  4      END;
28595.000 021052  3  <<-      CH - CE    (reference=0)>>
28600.000 021052  3
28605.000 021052  3      DO'WIOC0(!4040+DEV); <<Address device under test>>
28610.000 021056  3      DO'WIOC0(!4067); <<Send modifier seven>>
28615.000 021060  3      DO'WIOC0(!B); <<Set CE reference=0>>
28620.000 021062  3      DO'WIOC0(!24); <<Set mask on for these lines>>
28625.000 021064  3      DO'WIOC0(!4062); <<Send modifier two>>
28630.000 021066  3      DO'WIOC0(!2); <<Wiggle CH to cause change>>
28635.000 021070  3      DODELAY(STARTIME,5); <<Short wait ..>>
28640.000 021074  3      A:=B:=0;
28645.000 021100  3      DO'RIOC0; A:=TOS'; <<Read the modem status>>
28650.000 021103  3      DO'WIOC0(!4070); <<Send the DSJ command code>>
28655.000 021105  3      DO'RIOC0; <<Read the DSJ returned byte>>
28660.000 021106  3      IF A.(11:5)<>4 THEN BEGIN
28665.000 021113  4      IF A.(11:5)<>2 THEN BEGIN
28670.000 021120  5         NUM'CHARS:=GET'MESSAGE(40);
28675.000 021124  5         NUM2ASC(20,2,16,A.(11:5));
28680.000 021132  5         NUM2ASC(33,2,16,4);
28685.000 021137  5         ERROROUT(-NUM'CHARS,1);
28690.000 021143  5         END ELSE BEGIN
28695.000 021144  5         IF TOS'.(8:8)<>2 THEN BEGIN
28700.000 021154  6         ERROROUT(-GET'MESSAGE(37),1);
28705.000 021162  6         B:=-1;
28710.000 021164  6         END ELSE ERROROUT(-GET'MESSAGE(39),1);
28715.000 021173  5         END;
28720.000 021173  4       END;
28725.000 021173  3
28730.000 021173  3      IF NOT B THEN BEGIN
28735.000 021175  4      IF TOS'.(8:8)<>2 THEN ERROROUT(-GET'MESSAGE(38),1);
28740.000 021213  4      END;
28745.000 021213  3
28750.000 021213  3      END; <<End of Extended ADCC only tests>>
28755.000 021213  2   REP'ILL'INT;
28760.000 021214  2          CHECKYTRAP; <<Check for operator interrupt request>>
28765.000 021215  2 END;
```

```
28775.000 021215  1
28780.000 021215  1      IF PRINTOK THEN BEGIN
28785.000 021217  2      CRLF;
28790.000 021220  2      NUM'CHARS:=GET'MESSAGE(9);
28795.000 021224  2      NUM2ASC(21,4,10,ENDPASSCOUNTER);
28800.000 021231  2      CRTOUT(MSG'OUT,-NUM'CHARS);
28805.000 021235  2      END;
28810.000 021235  1      DOT'CNT:=0;
28815.000 021237  1      ENDPASSCOUNTER:=(IF ENDPASSCOUNTER>=9999 THEN 1 ELSE
28820.000 021237  1                       ENDPASSCOUNTER+1);
28825.000 021251  1      IF LOOP THEN GO TS0;
28830.000 021260  1
28835.000 021260  1      EXIT'TO'DUS;
28840.000 021261  1
28845.000 021261  1 END; <<ADCCDIAG>>
```

IDENTIFIER	TYPE	CLASS	ADDRESS
GET'CHANNEL		LABEL	PB 323
GET'EXTND		LABEL	PB 614
START16		LABEL	PB 16336
SWITCH'LOOP		LABEL	PB 16360
T11		LABEL	PB 15053
TS0		LABEL	PB 706

```
00000  000600 .. ZERO,NOP          00034  021000 ". LDI  0          00070  051070 R8 STOR DB 070
00001  021005 ". LDI  5            00035  041032 B. LOAD DB 032    00071  140004 .. BR   P+ 004
00002  173001 .. LRA  DB 001,I     00036  004300 .. STAX,NOP       00072  000014 .. NOP  ,DIVL
00003  035005 :. ADDS 5            00037  020321  . PSTA           00073  040011 @. LOAD P+ 011
00004  021140 "' LDI  96           00040  040002 @. LOAD P+ 002    00074  040010 @. LOAD P+ 010
00005  000000 .. PCAL FMGR         00041  140002 .. BR   P+ 002    00075  041070 B8 LOAD DB 070
00006  004000 .. DEL  ,NOP         00042  001063 .3 DCMP,LDIV      00076  041032 B. LOAD DB 032
00007  021000 ". LDI  0            00043  004300 .. STAX,NOP       00077  004300 .. STAX,NOP
00010  000000 .. PCAL STORE'MARK   00044  020320  . PLDA           00100  020321  . PSTA
00011  024410 ). PSHR %010         00045  051070 R8 STOR DB 070    00101  041032 B. LOAD DB 032
00012  021000 ". LDI  0            00046  041070 B8 LOAD DB 070    00102  021001 ". LDI  1
00013  027041 .! DPF  (2:1)        00047  021004 ". LDI  4         00103  006000 .. LADD,NOP
00014  027410 /. SETR %010         00050  004300 .. STAX,NOP       00104  051032 R. STOR DB 032
00015  000000 .. PCAL STARTIDLE    00051  020321  . PSTA           00105  140427 .. BR   P- 027
00016  025001 *. LDNI 1            00052  041070 B8 LOAD DB 070    00106  000600 .. ZERO,NOP
00017  004500 .@ DUP  ,NOP         00053  051032 R. STOR DB 032    00107  021000 ". LDI  0
00020  051060 R0 STOR DB 060       00054  021000 ". LDI  0        00110  000000 .. PCAL GETIO
00021  004500 .@ DUP  ,NOP         00055  051002 R. STOR DB 002    00111  004500 .@ DUP  ,NOP
00022  051042 R" STOR DB 042       00056  120002 .. INCM DB 002    00112  051012 R. STOR DB 012
00023  004500 .@ DUP  ,NOP         00057  041002 B. LOAD DB 002    00113  022000 $. CMPI 0
00024  051063 R3 STOR DB 063       00060  022005 $. CMPI 5        00114  141505 .E BNE  P+ 005
00025  051043 R# STOR DB 043       00061  141625 .. BGE  P+ 025    00115  000600 .. ZERO,NOP
00026  021000 ". LDI  0            00062  041002 B. LOAD DB 002    00116  021002 ". LDI  2
00027  051061 R1 STOR DB 061       00063  022003 $. CMPI 3        00117  000007 .. PCAL GETIO
00030  021005 ". LDI  5            00064  141603 .. BGE  P+ 003    00120  140002 .. BR   P+ 002
00031  004300 .. STAX,NOP          00065  040006 @. LOAD P+ 006    00121  041012 B. LOAD DB 012
00032  020320  . PLDA              00066  140002 .. BR   P+ 002    00122  051011 R. STOR DB 011
00033  051032 R. STOR DB 032       00067  040005 @. LOAD P+ 005    00123  040020 @. LOAD P+ 020
```

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00124  041011 B. LOAD DB 011          00214  000600 .. ZERO,NOP            00304  000100 .@ DELB,NOP
00125  010303 .. LSR  3 BITS          00215  020321  . PSTA                00305  013704 .. BRE  P+4
00126  037417 ?. ANDI 15              00216  021001 ". LDI  1              00306  142002 .. BR   P+ 002,I
00127  004300 .. STAX,NOP             00217  051041 R! STOR DB 041         00307  000002 .. NOP ,DDEL
00130  014300 .. LSR  0 BITS,X        00220  021000 ". LDI  0              00310  016026 .. DASL 22 BITS,X
00131  051035 R. STOR DB 035          00221  051045 R% STOR DB 045         00311  041005 B. LOAD DB 005
00132  000600 .. ZERO,NOP             00222  021000 ". LDI  0              00312  013611 .. BRO  P+11
00133  021001 ". LDI  1               00223  051046 R& STOR DB 046         00313  041063 B3 LOAD DB 063
00134  000015 .. PCAL GETIO           00224  021000 ". LDI  0              00314  013707 .. BRE  P+7
00135  051062 R2 STOR DB 062          00225  004500 .@ DUP ,NOP           00315  173104 .D LRA  DB 104,I
00136  000600 .. ZERO,NOP             00226  051065 R5 STOR DB 065         00316  000600 .. ZERO,NOP
00137  021003 ". LDI  3               00227  051036 R. STOR DB 036         00317  021003 ". LDI  3
00140  000004 .. PCAL GETIO           00230  173104 .D LRA  DB 104,I       00320  000035 .. PCAL GET'MESSAGE
00141  051037 R. STOR DB 037          00231  000600 .. ZERO,NOP           00321  002400 .. NEG ,NOP
00142  140002 .. BR   P+ 002          00232  021000 ". LDI  0              00322  000035 .. PCAL CRTOUT
00143  100000 .. SUBM P+ 000          00233  000000 .. PCAL GET'MESSAGE    00323  021001 ". LDI  1
00144  100000 .. LLBL FLY'CATCHER     00234  002400 .. NEG ,NOP           00324  051005 R. STOR DB 005
00145  051070 R8 STOR DB 070          00235  021320 ". LDI  208            00325  041005 B. LOAD DB 005
00146  021007 ". LDI  7               00236  000000 .. PCAL PRINT          00326  022001 $. CMPI 1
00147  051027 R. STOR DB 027          00237  000600 .. ZERO,NOP           00327  145517 .O BNE  P+ 017,I
00150  120027 .. INCM DB 027          00240  021001 ". LDI  1              00330  021000 ". LDI  0
00151  041027 B. LOAD DB 027          00241  000006 .. PCAL GET'MESSAGE    00331  004500 .@ DUP ,NOP
00152  021200 ". LDI  128             00242  051024 R. STOR DB 024         00332  051007 R. STOR DB 007
00153  005700 .. LCMP,NOP             00243  131024 .. LDX  DB 024         00333  051002 R. STOR DB 002
00154  141630 .. BGE  P+ 030          00244  177104 .D LRA  DB 104,I,X     00334  173104 .D LRA  DB 104,I
00155  041027 B. LOAD DB 027          00245  021410 #. LDXI 8              00335  000600 .. ZERO,NOP
00156  061011 b. CMPM DB 011          00246  177001 .. LRA  DB 001,I,X     00336  021005 ". LDI  5
00157  141202 .. BE   P+ 002          00247  021010 ". LDI  8              00337  000017 .. PCAL GET'MESSAGE
00160  140005 .. BR   P+ 005          00250  020063  3 MVB  DB-DB,3        00340  002400 .. NEG ,NOP
00161  041027 B. LOAD DB 027          00251  041024 B. LOAD DB 024         00341  021320 ". LDI  208
00162  041037 B. LOAD DB 037          00252  022410 %. ADDI 8              00342  000104 .D PCAL PRINT
00163  005700 .. LCMP,NOP             00253  051024 R. STOR DB 024         00343  173106 .F LRA  DB 106,I
00164  141202 .. BE   P+ 002          00254  173104 .D LRA  DB 104,I       00344  173103 .C LRA  DB 103,I
00165  140005 .. BR   P+ 005          00255  041024 B. LOAD DB 024         00345  140002 .. BR   P+ 002
00166  041027 B. LOAD DB 027          00256  002400 .. NEG ,NOP           00346  000151 .i DELB,FADD
00167  041062 B2 LOAD DB 062          00257  000000 .. PCAL CRTOUT         00347  021012 ". LDI  10
00170  005700 .. LCMP,NOP             00260  173104 .D LRA  DB 104,I       00350  020063  3 MVB  DB-DB,3
00171  141212 .. BE   P+ 012          00261  000600 .. ZERO,NOP           00351  000600 .. ZERO,NOP
00172  140003 .. BR   P+ 003          00262  021002 ". LDI  2              00352  173106 .F LRA  DB 106,I
00173  000011 .. NOP ,DADD            00263  000022 .. PCAL GET'MESSAGE    00353  025003 *. LDNI 3
00174  000007 .. NOP ,DZRO            00264  002400 .. NEG ,NOP           00354  000000 .. PCAL READ
00175  041070 B8 LOAD DB 070          00265  000006 .. PCAL CRTOUT         00355  022002 $. CMPI 2
00176  041027 B. LOAD DB 027          00266  021000 ". LDI  0              00356  141303 .. BLE  P+ 003
00177  023404 '. MPYI 4               00267  004500 .@ DUP ,NOP           00357  021001 ". LDI  1
00200  022402 %. ADDI 2               00270  051005 R. STOR DB 005         00360  140002 .. BR   P+ 002
00201  004300 .. STAX,NOP             00271  051002 R. STOR DB 002         00361  021000 ". LDI  0
00202  020321  . PSTA                 00272  041002 B. LOAD DB 002         00362  051005 R. STOR DB 005
00203  140433 .. BR   P- 033          00273  022000 $. CMPI 0              00363  000000 .. PCAL CHECKYTRAP
00204  173125 .U LRA  DB 125,I        00274  141504 .D BNE  P+ 004         00364  000347 .. PCAL STARTIDLE
00205  173126 .V LRA  DB 126,I        00275  021001 ". LDI  1              00365  021401 #. LDXI 1
00206  021043 "# LDI  35              00276  000000 .. PCAL GET'INPUT      00366  156106 .F LDB  DB 106,I,X
00207  020023  . MOVE DB-DB,3         00277  140405 .. BR   P- 005         00367  004500 .@ DUP ,NOP
00210  025402 +. LDXN 2               00300  151075 .= LDD  DB 075         00370  051002 R. STOR DB 002
00211  000600 .. ZERO,NOP             00301  021020 ". LDI  16             00371  022040 $  CMPI 32
00212  020321  . PSTA                 00302  004300 .. STAX,NOP           00372  145220 .. BE   P+ 020,I
00213  025403 +. LDXN 3               00303  016401 .. DCSL 1 BIT ,X       00373  021060 "0 LDI  48
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00374  041002 B. LOAD DB 002          00464  041007 B. LOAD DB 007          00554  041062 B2 LOAD DB 062
00375  004500 .@ DUP ,NOP             00465  037417 ?. ANDI 15             00555  037770 ?. ANDI 248
00376  021071 "9 LDI  57              00466  021012 ". LDI  10             00556  005700 .. LCMP,NOP
00377  005700 .. LCMP,NOP             00467  006201 .. LMPY,DELB           00557  141535 .] BNE  P+ 035
00400  141404 .. BG   P+ 004          00470  051007 R. STOR DB 007          00560  000600 .. ZERO,NOP
00401  005700 .. LCMP,NOP             00471  021001 ". LDI  1              00561  021130 "X LDI  88
00402  141304 .. BLE  P+ 004          00472  021017 ". LDI  15             00562  000023 .. PCAL GET'MESSAGE
00403  140005 .. BR   P+ 005          00473  041002 B. LOAD DB 002          00563  051024 R. STOR DB 024
00404  035402 ;. SUBS 2               00474  071007 r. ADDM DB 007          00564  173104 .D LRA  DB 104,I
00405  140003 .. BR   P+ 003          00475  004500 .@ DUP ,NOP             00565  041024 B. LOAD DB 024
00406  041005 B. LOAD DB 005          00476  051002 R. STOR DB 002          00566  002400 .. NEG ,NOP
00407  140002 .. BR   P+ 002          00477  004300 .. STAX,NOP             00567  000026 .. PCAL CRTOUT
00410  021001 ". LDI  1               00500  012602 .. CPRB P+2             00570  041010 B. LOAD DB 010
00411  140002 .. BR   P+ 002          00501  140003 .. BR   P+ 003          00571  041062 B2 LOAD DB 062
00412  000025 .. NOP ,TEST            00502  041005 B. LOAD DB 005          00572  037770 ?. ANDI 248
00413  051005 R. STOR DB 005          00503  140002 .. BR   P+ 002          00573  005700 .. LCMP,NOP
00414  021060 "0 LDI  48              00504  021001 ". LDI  1              00574  141517 .O BNE  P+ 017
00415  021400 #. LDXI 0               00505  051005 R. STOR DB 005          00575  021451 #) LDXI 41
00416  156106 .F LDB  DB 106,I,X      00506  041005 B. LOAD DB 005          00576  177104 .D LRA  DB 104,I,X
00417  004500 .@ DUP ,NOP             00507  013707 .. BRE  P+7              00577  172010 .. LRA  P+ 010,I
00420  051007 R. STOR DB 007          00510  173104 .D LRA  DB 104,I       00600  010201 .. LSL  1 BIT
00421  004500 .@ DUP ,NOP             00511  000600 .. ZERO,NOP             00601  021010 ". LDI  8
00422  021071 "9 LDI  57              00512  021007 ". LDI  7              00602  020043  # MVB  PB-DB,3
00423  005700 .. LCMP,NOP             00513  000154 .l PCAL GET'MESSAGE     00603  173104 .D LRA  DB 104,I
00424  141404 .. BG   P+ 004          00514  002400 .. NEG ,NOP             00604  140004 .. BR   P+ 004
00425  005700 .. LCMP,NOP             00515  000173 .{ PCAL CRTOUT          00605  000007 .. NOP ,DZRO
00426  141304 .. BLE  P+ 004          00516  140571 .y BR   P- 171          00606  000005 .. NOP ,DECX
00427  140005 .. BR   P+ 005          00517  040754 A. LOAD P- 354          00607  020453 !+ ----
00430  035402 ;. SUBS 2               00520  131002 .. LDX  DB 002          00610  041024 B. LOAD DB 024
00431  140003 .. BR   P+ 003          00521  014500 .@ CSR  0 BITS,X        00611  002400 .. NEG ,NOP
00432  041005 B. LOAD DB 005          00522  051034 R. STOR DB 034          00612  000023 .. PCAL CRTOUT
00433  140002 .. BR   P+ 002          00523  041002 B. LOAD DB 002          00613  000000 .. PCAL DOPAUSE
00434  021001 ". LDI  1               00524  010403 .. CSL  3 BITS          00614  041036 B. LOAD DB 036
00435  051005 R. STOR DB 005          00525  051010 R. STOR DB 010          00615  021003 ". LDI  3
00436  140023 .. BR   P+ 023          00526  000143 .c PCAL CHECKYTRAP      00616  005700 .. LCMP,NOP
00437  021060 "0 LDI  48              00527  041010 B. LOAD DB 010          00617  145434 .. BG   P+ 034,I
00440  021400 #. LDXI 0               00530  041011 B. LOAD DB 011          00620  173104 .D LRA  DB 104,I
00441  156106 .F LDB  DB 106,I,X      00531  037770 ?. ANDI 248            00621  000600 .. ZERO,NOP
00442  004500 .@ DUP ,NOP             00532  005700 .. LCMP,NOP             00622  021006 ". LDI  6
00443  051002 R. STOR DB 002          00533  141512 .J BNE  P+ 012          00623  000041 .! PCAL GET'MESSAGE
00444  004500 .@ DUP ,NOP             00534  173104 .D LRA  DB 104,I        00624  002400 .. NEG ,NOP
00445  021071 "9 LDI  57              00535  000600 .. ZERO,NOP             00625  021320 ". LDI  208
00446  005700 .. LCMP,NOP             00536  021127 "W LDI  87             00626  000264 .. PCAL PRINT
00447  141404 .. BG   P+ 004          00537  000024 .. PCAL GET'MESSAGE     00627  000600 .. ZERO,NOP
00450  005700 .. LCMP,NOP             00540  002400 .. NEG ,NOP             00630  173106 .F LRA  DB 106,I
00451  141304 .. BLE  P+ 004          00541  000024 .. PCAL CRTOUT          00631  025002 *. LDNI 2
00452  140005 .. BR   P+ 005          00542  140002 .. BR   P+ 002          00632  000256 .. PCAL READ
00453  035402 ;. SUBS 2               00543  000002 .. NOP ,DDEL            00633  004000 .. DEL ,NOP
00454  140003 .. BR   P+ 003          00544  140621 .. BR   P- 221          00634  000106 .F PCAL CHECKYTRAP
00455  041005 B. LOAD DB 005          00545  041010 B. LOAD DB 010          00635  000251 .. PCAL STARTIDLE
00456  140002 .. BR   P+ 002          00546  041037 B. LOAD DB 037          00636  021400 #. LDXI 0
00457  021001 ". LDI  1               00547  037770 ?. ANDI 248            00637  156106 .F LDB  DB 106,I,X
00460  051005 R. STOR DB 005          00550  005700 .. LCMP,NOP            00640  037737 ?. ANDI 223
00461  041002 B. LOAD DB 002          00551  141502 .B BNE  P+ 002          00641  021131 "Y LDI  89
00462  037417 ?. ANDI 15              00552  140006 .. BR   P+ 006          00642  005700 .. LCMP,NOP
00463  051002 R. STOR DB 002          00553  041010 B. LOAD DB 010          00643  141504 .D BNE  P+ 004
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00644  025001 *. LDNI 1              00734  021012 ". LDI  10             01024  000600 .. ZERO,NOP
00645  051045 R% STOR DB 045         00735  000112 .J PCAL GET'MESSAGE    01025  021015 ". LDI  13
00646  140017 .. BR   P+ 017         00736  002400 .. NEG ,NOP            01026  000040 .  PCAL GET'MESSAGE
00647  021400 #. LDXI 0              00737  021000 ". LDI  0              01027  002400 .. NEG ,NOP
00650  156106 .F LDB  DB 106,I,X     00740  000000 .. PCAL ERROROUT       01030  000216 .. PCAL CRTOUT
00651  037737 ?. ANDI 223            00741  142002 .. BR   P+ 002,I       01031  000216 .. PCAL DOPAUSE
00652  140003 .. BR   P+ 003         00742  000002 .. NOP ,DDEL           01032  021004 ". LDI  4
00653  000033 .. NOP ,INCA           00743  177360 .. LRA  DB 360,I,X     01033  051065 R5 STOR DB 065
00654  000011 .. NOP ,DADD           00744  021002 ". LDI  2              01034  041010 B. LOAD DB 010
00655  021116 "N LDI  78             00745  051065 R5 STOR DB 065         01035  021016 ". LDI  14
00656  005700 .. LCMP,NOP            00746  041010 B. LOAD DB 010         01036  010410 .. CSL  8 BITS
00657  141504 .D BNE  P+ 004         00747  021002 ". LDI  2              01037  006500 .@ OR  ,NOP
00660  021000 ". LDI  0              00750  010410 .. CSL  8 BITS         01040  020302  . IOOP 32 BIT OP
00661  051045 R% STOR DB 045         00751  006500 .@ OR  ,NOP           01041  000002 .. NOP ,DDEL
00662  140003 .. BR   P+ 003         00752  020302  . IOOP 32 BIT OP      01042  141503 .C BNE  P+ 003
00663  140447 .' BR   P- 047         00753  000002 .. NOP ,DDEL           01043  051070 R8 STOR DB 070
00664  000001 .. NOP ,DELB           00754  141503 .C BNE  P+ 003         01044  140002 .. BR   P+ 002
00665  041023 B. LOAD DB 023         00755  051070 R8 STOR DB 070         01045  000027 .. PCAL READFAIL
00666  026001 ,. CMPN 1              00756  140002 .. BR   P+ 002         01046  041045 B% LOAD DB 045
00667  141507 .G BNE  P+ 007         00757  000000 .. PCAL READFAIL       01047  013603 .. BRO  P+3
00670  041045 B% LOAD DB 045         00760  041070 B8 LOAD DB 070         01050  040033 @. LOAD P+ 033
00671  013703 .. BRE  P+3            00761  040023 @. LOAD P+ 023         01051  140002 .. BR   P+ 002
00672  021007 ". LDI  7              00762  005700 .. LCMP,NOP            01052  040032 @. LOAD P+ 032
00673  140002 .. BR   P+ 002         00763  141216 .. BE   P+ 016         01053  051002 R. STOR DB 002
00674  021003 ". LDI  3              00764  000600 .. ZERO,NOP           01054  041070 B8 LOAD DB 070
00675  051023 R. STOR DB 023         00765  021013 ". LDI  11             01055  041002 B. LOAD DB 002
00676  041045 B% LOAD DB 045         00766  000031 .. PCAL GET'MESSAGE    01056  005700 .. LCMP,NOP
00677  013606 .. BRO  P+6            00767  051024 R. STOR DB 024         01057  141223 .. BE   P+ 023
00700  041023 B. LOAD DB 023         00770  021024 ". LDI  20             01060  000600 .. ZERO,NOP
00701  022004 $. CMPI 4              00771  021004 ". LDI  4              01061  021014 ". LDI  12
00702  141103 .C BL   P+ 003         00772  021020 ". LDI  16             01062  000034 .. PCAL GET'MESSAGE
00703  021003 ". LDI  3              00773  041070 B8 LOAD DB 070         01063  051024 R. STOR DB 024
00704  051023 R. STOR DB 023         00774  000000 .. PCAL NUM2ASC        01064  021025 ". LDI  21
00705  000051 .) PCAL CHECKYTRAP     00775  041024 B. LOAD DB 024         01065  021004 ". LDI  4
00706  151075 .= LDD  DB 075         00776  002400 .. NEG ,NOP           01066  021020 ". LDI  16
00707  021001 ". LDI  1              00777  021000 ". LDI  0              01067  041070 B8 LOAD DB 070
00710  004300 .. STAX,NOP            01000  000040 .  PCAL ERROROUT       01070  000074 .< PCAL NUM2ASC
00711  016401 .. DCSL 1 BIT ,X       01001  021003 ". LDI  3              01071  021044 "$ LDI  36
00712  000100 .@ DELB,NOP            01002  051065 R5 STOR DB 065         01072  021004 ". LDI  4
00713  017704 .. BRE  P+4,I          01003  140002 .. BR   P+ 002         01073  021020 ". LDI  16
00714  021001 ". LDI  1              01004  100012 .. SUBM P+ 012         01074  041002 B. LOAD DB 002
00715  051065 R5 STOR DB 065         01005  041010 B. LOAD DB 010         01075  000005 .. PCAL NUM2ASC
00716  140002 .. BR   P+ 002         01006  021016 ". LDI  14             01076  041024 B. LOAD DB 024
00717  000170 .x DELB,FIXR           01007  010410 .. CSL  8 BITS         01077  002400 .. NEG ,NOP
00720  021012 ". LDI  10             01010  006500 .@ OR  ,NOP           01100  021000 ". LDI  0
00721  010504 .D CSR  4 BITS         01011  020302  . IOOP 32 BIT OP      01101  000101 .A PCAL ERROROUT
00722  020302  . IOOP 32 BIT OP      01012  000002 .. NOP ,DDEL           01102  140003 .. BR   P+ 003
00723  000002 .. NOP ,DDEL           01013  141503 .C BNE  P+ 003         01103  100001 .. SUBM P+ 001
00724  051070 R8 STOR DB 070         01014  051070 R8 STOR DB 070         01104  100021 .. SUBM P+ 021
00725  041070 B8 LOAD DB 070         01015  140002 .. BR   P+ 002         01105  000000 .. PCAL REP'ILL'INT
00726  041034 B. LOAD DB 034         01016  000037 .. PCAL READFAIL       01106  000000 .. PCAL DOT
00727  006700 .. AND ,NOP            01017  041070 B8 LOAD DB 070         01107  151075 .= LDD  DB 075
00730  041034 B. LOAD DB 034         01020  010315 .. LSR  13 BITS        01110  021002 ". LDI  2
00731  005700 .. LCMP,NOP            01021  037401 ?. ANDI 1              01111  004300 .. STAX,NOP
00732  141212 .. BE   P+ 012         01022  013710 .. BRE  P+10           01112  016401 .. DCSL 1 BIT ,X
00733  000600 .. ZERO,NOP            01023  173104 .D LRA  DB 104,I       01113  000100 .@ DELB,NOP
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01114  017703 .. BRE  P+3,I          01204  051065 R5 STOR DB 065        01274  000002 .. NOP ,DDEL
01115  000000 .. PCAL LOAD'TRAPS     01205  041010 B. LOAD DB 010        01275  141503 .C BNE  P+ 003
01116  140002 .. BR   P+ 002         01206  021004 ". LDI  4             01276  051070 R8 STOR DB 070
01117  000707 .. DZRO,DZRO           01207  010414 .. CSL  12 BITS       01277  140002 .. BR   P+ 002
01120  025402 +. LDXN 2              01210  006500 .@ OR  ,NOP           01300  000062 .2 PCAL READFAIL
01121  000600 .. ZERO,NOP            01211  020302  . IOOP 32 BIT OP     01301  041070 B8 LOAD DB 070
01122  020321  . PSTA                01212  000002 .. NOP ,DDEL          01302  037407 ?. ANDI 7
01123  025403 +. LDXN 3              01213  141503 .C BNE  P+ 003        01303  021007 ". LDI  7
01124  000600 .. ZERO,NOP            01214  051070 R8 STOR DB 070        01304  001700 .. CMP ,NOP
01125  020321  . PSTA                01215  140002 .. BR   P+ 002        01305  141207 .. BE   P+ 007
01126  021005 ". LDI  5              01216  000055 .- PCAL READFAIL      01306  000600 .. ZERO,NOP
01127  051065 R5 STOR DB 065         01217  041070 B8 LOAD DB 070        01307  021017 ". LDI  15
01130  041010 B. LOAD DB 010         01220  010303 .. LSR  3 BITS       01310  000057 ./ PCAL GET'MESSAGE
01131  021002 ". LDI  2              01221  037417 ?. ANDI 15            01311  002400 .. NEG ,NOP
01132  010414 .. CSL  12 BITS        01222  041010 B. LOAD DB 010        01312  021000 ". LDI  0
01133  006500 .@ OR  ,NOP            01223  010303 .. LSR  3 BITS       01313  000034 .. PCAL ERROROUT
01134  020302  . IOOP 32 BIT OP      01224  037417 ?. ANDI 15            01314  021010 ". LDI  8
01135  000002 .. NOP ,DDEL           01225  001700 .. CMP ,NOP           01315  051065 R5 STOR DB 065
01136  141503 .C BNE  P+ 003         01226  141232 .. BE   P+ 032        01316  041034 B. LOAD DB 034
01137  051070 R8 STOR DB 070         01227  000600 .. ZERO,NOP           01317  041035 B. LOAD DB 035
01140  140002 .. BR   P+ 002         01230  021016 ". LDI  14            01320  006500 .@ OR  ,NOP
01141  000074 .< PCAL READFAIL       01231  000055 .- PCAL GET'MESSAGE   01321  030100 0@ SMSK
01142  041070 B8 LOAD DB 070         01232  051024 R. STOR DB 024        01322  025001 *. LDNI 1
01143  010303 .. LSR  3 BITS         01233  021123 "S LDI  83            01323  051013 R. STOR DB 013
01144  037417 ?. ANDI 15             01234  021402 #. LDXI 2             01324  120013 .. INCM DB 013
01145  041010 B. LOAD DB 010         01235  166104 .D STB  DB 104,I,X    01325  041013 B. LOAD DB 013
01146  010303 .. LSR  3 BITS         01236  021016 ". LDI  14            01326  022010 $. CMPI 8
01147  037417 ?. ANDI 15             01237  021002 ". LDI  2             01327  145602 .. BGE  P+ 002,I
01150  001700 .. CMP ,NOP            01240  021012 ". LDI  10            01330  140002 .. BR   P+ 002
01151  141232 .. BE   P+ 032         01241  041070 B8 LOAD DB 070        01331  000103 .C DELB,ZROX
01152  000600 .. ZERO,NOP            01242  010303 .. LSR  3 BITS       01332  025402 +. LDXN 2
01153  021016 ". LDI  14             01243  037417 ?. ANDI 15            01333  000600 .. ZERO,NOP
01154  000072 .: PCAL GET'MESSAGE    01244  000046 .& PCAL NUM2ASC       01334  020321  . PSTA
01155  051024 R. STOR DB 024         01245  021032 ". LDI  26            01335  025403 +. LDXN 3
01156  021111 "I LDI  73             01246  021002 ". LDI  2             01336  000600 .. ZERO,NOP
01157  021402 #. LDXI 2              01247  021012 ". LDI  10            01337  020321  . PSTA
01160  166104 .D STB  DB 104,I,X     01250  041010 B. LOAD DB 010        01340  021010 ". LDI  8
01161  021016 ". LDI  14             01251  010303 .. LSR  3 BITS       01341  041013 B. LOAD DB 013
01162  021002 ". LDI  2              01252  037417 ?. ANDI 15            01342  006000 .. LADD,NOP
01163  021012 ". LDI  10             01253  000007 .. PCAL NUM2ASC      01343  051070 R8 STOR DB 070
01164  041070 B8 LOAD DB 070         01254  041024 B. LOAD DB 024        01344  041010 B. LOAD DB 010
01165  010303 .. LSR  3 BITS         01255  002400 .. NEG ,NOP           01345  021014 ". LDI  12
01166  037417 ?. ANDI 15             01256  021000 ". LDI  0             01346  010410 .. CSL  8 BITS
01167  000072 .: PCAL NUM2ASC        01257  000055 .- PCAL ERROROUT      01347  006500 .@ OR  ,NOP
01170  021032 ". LDI  26             01260  021007 ". LDI  7             01350  041070 B8 LOAD DB 070
01171  021002 ". LDI  2              01261  051065 R5 STOR DB 065        01351  020302  . IOOP 32 BIT OP
01172  021012 ". LDI  10             01262  041010 B. LOAD DB 010        01352  000003 .. NOP ,ZROX
01173  041010 B. LOAD DB 010         01263  020302  . IOOP 32 BIT OP     01353  141202 .. BE   P+ 002
01174  010303 .. LSR  3 BITS         01264  000006 .. NOP ,ZERO          01354  000066 .6 PCAL WRITEFAIL
01175  037417 ?. ANDI 15             01265  141402 .. BG   P+ 002        01355  041010 B. LOAD DB 010
01176  000007 .. PCAL NUM2ASC        01266  000000 .. PCAL WRITEFAIL     01356  021002 ". LDI  2
01177  041024 B. LOAD DB 024         01267  041010 B. LOAD DB 010        01357  010414 .. CSL  12 BITS
01200  002400 .. NEG ,NOP            01270  021002 ". LDI  2             01360  006500 .@ OR  ,NOP
01201  021000 ". LDI  0              01271  010414 .. CSL  12 BITS       01361  020302  . IOOP 32 BIT OP
01202  000101 .A PCAL ERROROUT       01272  006500 .@ OR  ,NOP           01362  000002 .. NOP ,DDEL
01203  021006 ". LDI  6              01273  020302  . IOOP 32 BIT OP     01363  141503 .C BNE  P+ 003
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01364  051070 R8 STOR DB 070          01454  020302  . IOOP 32 BIT OP        01544  020302  . IOOP 32 BIT OP
01365  140002 .. BR   P+ 002          01455  000006 .. NOP ,ZERO            01545  000003 .. NOP ,ZROX
01366  000066 .6 PCAL READFAIL        01456  141402 .. BG   P+ 002          01546  141202 .. BE   P+ 002
01367  041070 B8 LOAD DB 070          01457  000005 .. PCAL WRITEFAIL       01547  000070 .8 PCAL WRITEFAIL
01370  037407 ?. ANDI 7               01460  041010 B. LOAD DB 010          01550  040011 @. LOAD P+ 011
01371  041013 B. LOAD DB 013          01461  021002 ". LDI  2               01551  131013 .. LDX  DB 013
01372  001700 .. CMP ,NOP             01462  010414 .. CSL  12 BITS        01552  014500 .@ CSR  0 BITS,X
01373  141224 .. BE   P+ 024          01463  006500 .@ OR  ,NOP             01553  051002 R. STOR DB 002
01374  000600 .. ZERO,NOP             01464  020302  . IOOP 32 BIT OP       01554  040006 @. LOAD P+ 006
01375  021020 ". LDI  16              01465  000002 .. NOP ,DDEL            01555  131013 .. LDX  DB 013
01376  000066 .6 PCAL GET'MESSAGE     01466  141503 .C BNE  P+ 003          01556  014500 .@ CSR  0 BITS,X
01377  051024 R. STOR DB 024          01467  051070 R8 STOR DB 070          01557  051005 R. STOR DB 005
01400  041070 B8 LOAD DB 070          01470  140002 .. BR   P+ 002          01560  140003 .. BR   P+ 003
01401  037407 ?. ANDI 7               01471  000103 .C PCAL READFAIL        01561  077777 .. ADDM S- 077,I,X
01402  021060 "0 LDI  48              01472  041070 B8 LOAD DB 070          01562  100000 .. SUBM P+ 000
01403  006000 .. LADD,NOP             01473  037407 ?. ANDI 7               01563  020104  D IOOP 32 BIT OP
01404  021423 #. LDXI 19              01474  021007 ". LDI  7               01564  000000 .. NOP ,NOP
01405  166104 .D STB  DB 104,I,X      01475  001700 .. CMP ,NOP             01565  021012 ". LDI  10
01406  041013 B. LOAD DB 013          01476  141207 .. BE   P+ 007          01566  000000 .. PCAL DODELAY
01407  021060 "0 LDI  48              01477  000600 .. ZERO,NOP             01567  025401 +. LDXN 1
01410  006000 .. LADD,NOP             01500  021017 ". LDI  15              01570  020320  . PLDA
01411  021436 #. LDXI 30              01501  000103 .C PCAL GET'MESSAGE    01571  051047 R' STOR DB 047
01412  166104 .D STB  DB 104,I,X      01502  002400 .. NEG ,NOP             01572  041047 B' LOAD DB 047
01413  041024 B. LOAD DB 024          01503  021000 ". LDI  0               01573  041005 B. LOAD DB 005
01414  002400 .. NEG ,NOP             01504  000066 .6 PCAL ERROROUT       01574  005700 .. LCMP,NOP
01415  021000 ". LDI  0               01505  021012 ". LDI  10              01575  141507 .G BNE  P+ 007
01416  000103 .C PCAL ERROROUT        01506  051065 R5 STOR DB 065          01576  000600 .. ZERO,NOP
01417  000312 .. PCAL REP'ILL'INT     01507  025001 *. LDNI 1               01577  021122 "R LDI  82
01420  041013 B. LOAD DB 013          01510  051013 R. STOR DB 013          01600  000077 .? PCAL GET'MESSAGE
01421  051070 R8 STOR DB 070          01511  120013 .. INCM DB 013          01601  002400 .. NEG ,NOP
01422  041010 B. LOAD DB 010          01512  041013 B. LOAD DB 013          01602  021001 ". LDI  1
01423  021014 ". LDI  12              01513  022010 $. CMPI 8               01603  000077 .? PCAL ERROROUT
01424  010410 .. CSL  8 BITS          01514  145604 .. BGE  P+ 004,I        01604  041034 B. LOAD DB 034
01425  006500 .@ OR  ,NOP             01515  041013 B. LOAD DB 013          01605  041035 B. LOAD DB 035
01426  041070 B8 LOAD DB 070          01516  000000 .. PCAL SETUP'DRT       01606  006500 .@ OR  ,NOP
01427  020302  . IOOP 32 BIT OP       01517  140002 .. BR   P+ 002          01607  030100 0@ SMSK
01430  000003 .. NOP ,ZROX            01520  000165 .u DELB,OR              01610  020104  D IOOP 32 BIT OP
01431  141202 .. BE   P+ 002          01521  000600 .. ZERO,NOP             01611  000000 .. NOP ,NOP
01432  000056 .. PCAL WRITEFAIL       01522  025401 +. LDXN 1               01612  021012 ". LDI  10
01433  140507 .G BR   P- 107          01523  020321  . PSTA                 01613  000025 .. PCAL DODELAY
01434  041035 B. LOAD DB 035          01524  025402 +. LDXN 2               01614  030040 0  SED  0
01435  030100 0@ SMSK                 01525  000600 .. ZERO,NOP             01615  041035 B. LOAD DB 035
01436  021011 ". LDI  9               01526  020321  . PSTA                 01616  030100 0@ SMSK
01437  051065 R5 STOR DB 065          01527  025403 +. LDXN 3               01617  025401 +. LDXN 1
01440  021010 ". LDI  8               01530  000600 .. ZERO,NOP             01620  020320  . PLDA
01441  051070 R8 STOR DB 070          01531  020321  . PSTA                 01621  051047 R' STOR DB 047
01442  041010 B. LOAD DB 010          01532  030041 0! SED  1               01622  041002 B. LOAD DB 002
01443  021014 ". LDI  12              01533  021010 ". LDI  8               01623  041047 B' LOAD DB 047
01444  010410 .. CSL  8 BITS          01534  041013 B. LOAD DB 013          01624  006700 .. AND ,NOP
01445  006500 .@ OR  ,NOP             01535  006000 .. LADD,NOP             01625  021000 ". LDI  0
01446  041070 B8 LOAD DB 070          01536  051070 R8 STOR DB 070          01626  005700 .. LCMP,NOP
01447  020302  . IOOP 32 BIT OP       01537  041010 B. LOAD DB 010          01627  141216 .. BE   P+ 016
01450  000003 .. NOP ,ZROX            01540  021014 ". LDI  12              01630  000600 .. ZERO,NOP
01451  141202 .. BE   P+ 002          01541  010410 .. CSL  8 BITS          01631  021022 ". LDI  18
01452  000020 .. PCAL WRITEFAIL       01542  006500 .@ OR  ,NOP             01632  000032 .. PCAL GET'MESSAGE
01453  041010 B. LOAD DB 010          01543  041070 B8 LOAD DB 070          01633  051024 R. STOR DB 024
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01634  041013 B. LOAD DB 013          01724  021014 ". LDI  12             02014  010410 .. CSL  8 BITS
01635  021060 "0 LDI  48             01725  010410 .. CSL  8 BITS         02015  006500 .@ OR  ,NOP
01636  006000 .. LADD,NOP            01726  006500 .@ OR  ,NOP           02016  041070 B8 LOAD DB 070
01637  021441 #! LDXI 33             01727  041070 B8 LOAD DB 070         02017  020302  . IOOP 32 BIT OP
01640  166104 .D STB  DB 104,I,X     01730  020302  . IOOP 32 BIT OP      02020  000003 .. NOP ,ZROX
01641  041024 B. LOAD DB 024         01731  000003 .. NOP ,ZROX          02021  141202 .. BE   P+ 002
01642  002400 .. NEG ,NOP            01732  141202 .. BE   P+ 002        02022  000067 .7 PCAL WRITEFAIL
01643  021000 ". LDI  0              01733  000030 .. PCAL WRITEFAIL     02023  140464 .4 BR   P- 064
01644  000041 .! PCAL ERROROUT       01734  140423 .. BR   P- 023        02024  000134 .\ PCAL REP'ILL'INT
01645  041047 B' LOAD DB 047         01735  025001 *. LDNI 1             02025  000717 .. PCAL DOT
01646  041005 B. LOAD DB 005         01736  051013 R. STOR DB 013        02026  151075 .= LDD  DB 075
01647  005700 .. LCMP,NOP            01737  120013 .. INCM DB 013        02027  021003 ". LDI  3
01650  141220 .. BE   P+ 020         01740  041013 B. LOAD DB 013        02030  004300 .. STAX,NOP
01651  000600 .. ZERO,NOP            01741  022010 $. CMPI 8             02031  016401 .. DCSL 1 BIT ,X
01652  021021 ". LDI  17             01742  145602 .. BGE  P+ 002,I      02032  000100 .@ DELB,NOP
01653  000021 .. PCAL GET'MESSAGE    01743  140002 .. BR   P+ 002        02033  017704 .. BRE  P+4,I
01654  051024 R. STOR DB 024         01744  000060 .0 NOP ,LADD          02034  021014 ". LDI  12
01655  021060 "0 LDI  48             01745  041010 B. LOAD DB 010        02035  051065 R5 STOR DB 065
01656  041013 B. LOAD DB 013         01746  021002 ". LDI  2            02036  140002 .. BR   P+ 002
01657  006000 .. LADD,NOP            01747  010414 .. CSL  12 BITS      02037  000064 .4 NOP ,NOT
01660  021416 #. LDXI 14             01750  006500 .@ OR  ,NOP          02040  030040 0  SED  0
01661  166104 .D STB  DB 104,I,X     01751  020302  . IOOP 32 BIT OP      02041  041034 B. LOAD DB 034
01662  140002 .. BR   P+ 002         01752  000002 .. NOP ,DDEL          02042  041035 B. LOAD DB 035
01663  000005 .. NOP ,DECX           01753  141503 .C BNE  P+ 003        02043  006500 .@ OR  ,NOP
01664  041024 B. LOAD DB 024         01754  051070 R8 STOR DB 070        02044  030100 0@ SMSK
01665  002400 .. NEG ,NOP            01755  140002 .. BR   P+ 002        02045  021010 ". LDI  8
01666  021000 ". LDI  0              01756  000265 .. PCAL READFAIL      02046  051070 R8 STOR DB 070
01667  000023 .. PCAL ERROROUT       01757  041070 B8 LOAD DB 070        02047  041010 B. LOAD DB 010
01670  000251 .. PCAL REP'ILL'INT    01760  037407 ?. ANDI 7             02050  021014 ". LDI  12
01671  041013 B. LOAD DB 013         01761  041013 B. LOAD DB 013        02051  010410 .. CSL  8 BITS
01672  051070 R8 STOR DB 070         01762  037407 ?. ANDI 7             02052  006500 .@ OR  ,NOP
01673  041010 B. LOAD DB 010         01763  001700 .. CMP ,NOP          02053  041070 B8 LOAD DB 070
01674  021014 ". LDI  12             01764  141224 .. BE   P+ 024        02054  020302  . IOOP 32 BIT OP
01675  010410 .. CSL  8 BITS         01765  000600 .. ZERO,NOP           02055  000003 .. NOP ,ZROX
01676  006500 .@ OR  ,NOP            01766  021023 ". LDI  19            02056  141202 .. BE   P+ 002
01677  041070 B8 LOAD DB 070         01767  000114 .L PCAL GET'MESSAGE   02057  000035 .. PCAL WRITEFAIL
01700  020302  . IOOP 32 BIT OP      01770  051024 R. STOR DB 024        02060  021010 ". LDI  8
01701  000003 .. NOP ,ZROX           01771  041070 B8 LOAD DB 070        02061  010414 .. CSL  12 BITS
01702  141202 .. BE   P+ 002         01772  037407 ?. ANDI 7             02062  020302  . IOOP 32 BIT OP
01703  000134 .\ PCAL WRITEFAIL      01773  021060 "0 LDI  48            02063  000002 .. NOP ,DDEL
01704  140573 .{ BR   P- 173         01774  006000 .. LADD,NOP           02064  141503 .C BNE  P+ 003
01705  021013 ". LDI  11             01775  021460 #0 LDXI 48            02065  051070 R8 STOR DB 070
01706  051065 R5 STOR DB 065         01776  166104 .D STB  DB 104,I,X    02066  140002 .. BR   P+ 002
01707  025001 *. LDNI 1              01777  041013 B. LOAD DB 013        02067  000111 .I PCAL READFAIL
01710  051013 R. STOR DB 013         02000  021060 "0 LDI  48            02070  041070 B8 LOAD DB 070
01711  120013 .. INCM DB 013         02001  006000 .. LADD,NOP           02071  041034 B. LOAD DB 034
01712  041013 B. LOAD DB 013         02002  021407 #. LDXI 7             02072  005700 .. LCMP,NOP
01713  022010 $. CMPI 8              02003  166104 .D STB  DB 104,I,X    02073  141223 .. BE   P+ 023
01714  141621 .. BGE  P+ 021         02004  041024 B. LOAD DB 024        02074  000600 .. ZERO,NOP
01715  021010 ". LDI  8              02005  002400 .. NEG ,NOP           02075  021024 ". LDI  20
01716  041013 B. LOAD DB 013         02006  021000 ". LDI  0             02076  000107 .G PCAL GET'MESSAGE
01717  006000 .. LADD,NOP            02007  000120 .P PCAL ERROROUT      02077  051024 R. STOR DB 024
01720  051070 R8 STOR DB 070         02010  041013 B. LOAD DB 013        02100  021017 ". LDI  15
01721  140002 .. BR   P+ 002         02011  051070 R8 STOR DB 070        02101  021004 ". LDI  4
01722  000013 .. NOP ,MPYL           02012  041010 B. LOAD DB 010        02102  021020 ". LDI  16
01723  041010 B. LOAD DB 010         02013  021014 ". LDI  12           02103  041070 B8 LOAD DB 070
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02104  000631 .. PCAL NUM2ASC          02174  000104 .D DELB,INCX          02264  140002 .. BR   P+ 002
02105  021036 ". LDI  30               02175  041010 B. LOAD DB 010        02265  041005 B. LOAD DB 005
02106  021004 ". LDI  4                02176  041050 B( LOAD DB 050        02266  051005 R. STOR DB 005
02107  021020 ". LDI  16               02177  010410 .. CSL  8 BITS        02267  041050 B( LOAD DB 050
02110  041034 B. LOAD DB 034           02200  006500 .@ OR  ,NOP          02270  021016 ". LDI  14
02111  000005 .. PCAL NUM2ASC          02201  020302  . IOOP 32 BIT OP     02271  005700 .. LCMP,NOP
02112  041024 B. LOAD DB 024           02202  000002 .. NOP ,DDEL         02272  141503 .C BNE  P+ 003
02113  002400 .. NEG ,NOP              02203  141503 .C BNE  P+ 003        02273  041070 B8 LOAD DB 070
02114  021000 ". LDI  0                02204  051070 R8 STOR DB 070        02274  140002 .. BR   P+ 002
02115  000106 .F PCAL ERROROUT         02205  140002 .. BR   P+ 002        02275  041007 B. LOAD DB 007
02116  025402 +. LDXN 2                02206  000117 .O PCAL READFAIL      02276  051007 R. STOR DB 007
02117  000600 .. ZERO,NOP              02207  041050 B( LOAD DB 050        02277  140515 .M BR   P- 115
02120  020321  . PSTA                  02210  021002 ". LDI  2             02300  140530 .X BR   P- 130
02121  000075 .= PCAL REP'ILL'INT      02211  005700 .. LCMP,NOP          02301  021016 ". LDI  14
02122  000075 .= PCAL DOT              02212  145234 .. BE   P+ 034,I      02302  051065 R5 STOR DB 065
02123  151075 .= LDD  DB 075           02213  041050 B( LOAD DB 050        02303  041036 B. LOAD DB 036
02124  021004 ". LDI  4                02214  021016 ". LDI  14            02304  021001 ". LDI  1
02125  004300 .. STAX,NOP              02215  005700 .. LCMP,NOP          02305  006100 .@ LSUB,NOP
02126  016401 .. DCSL 1 BIT ,X         02216  145230 .. BE   P+ 030,I      02306  051013 R. STOR DB 013
02127  000100 .@ DELB,NOP              02217  041070 B8 LOAD DB 070        02307  120013 .. INCM DB 013
02130  017704 .. BRE  P+4,I            02220  021000 ". LDI  0             02310  041013 B. LOAD DB 013
02131  021015 ". LDI  13               02221  005700 .. LCMP,NOP          02311  061023 b. CMPM DB 023
02132  051065 R5 STOR DB 065           02222  141235 .. BE   P+ 035        02312  145404 .. BG   P+ 004,I
02133  140002 .. BR   P+ 002           02223  000600 .. ZERO,NOP          02313  021000 ". LDI  0
02134  000346 .. ZROX,DDUP             02224  021025 ". LDI  21            02314  051050 R( STOR DB 050
02135  041010 B. LOAD DB 010           02225  000127 .W PCAL GET'MESSAGE   02315  140002 .. BR   P+ 002
02136  020302  . IOOP 32 BIT OP        02226  051024 R. STOR DB 024        02316  000152 .j DELB,FSUB
02137  000006 .. NOP ,ZERO             02227  021411 #. LDXI 9             02317  041050 B( LOAD DB 050
02140  141402 .. BG   P+ 002           02230  177104 .D LRA  DB 104,I,X    02320  021001 ". LDI  1
02141  000062 .2 PCAL WRITEFAIL        02231  170017 .. LRA  P+ 017        02321  006045 .% LADD,DUP
02142  041035 B. LOAD DB 035           02232  010201 .. LSL  1 BIT         02322  051050 R( STOR DB 050
02143  030100 0@ SMSK                  02233  021002 ". LDI  2             02323  021020 ". LDI  16
02144  041036 B. LOAD DB 036           02234  020043  # MVB  PB-DB,3       02324  005700 .. LCMP,NOP
02145  021001 ". LDI  1                02235  021011 ". LDI  9             02325  145604 .. BGE  P+ 004,I
02146  006100 .@ LSUB,NOP              02236  021002 ". LDI  2             02326  025001 *. LDNI 1
02147  051013 R. STOR DB 013           02237  021012 ". LDI  10            02327  051070 R8 STOR DB 070
02150  120013 .. INCM DB 013           02240  041050 B( LOAD DB 050        02330  140002 .. BR   P+ 002
02151  041013 B. LOAD DB 013           02241  000130 .X PCAL NUM2ASC       02331  000136 .^ DELB,ADAX
02152  061023 b. CMPM DB 023           02242  021026 ". LDI  22            02332  041010 B. LOAD DB 010
02153  145417 .. BG   P+ 017,I         02243  021004 ". LDI  4             02333  041050 B( LOAD DB 050
02154  040017 @. LOAD P+ 017           02244  021020 ". LDI  16            02334  010410 .. CSL  8 BITS
02155  041013 B. LOAD DB 013           02245  140004 .. BR   P+ 004        02335  006500 .@ OR  ,NOP
02156  006000 .. LADD,NOP              02246  000011 .. NOP ,DADD          02336  041070 B8 LOAD DB 070
02157  000000 .. PCAL DO'WIOC0         02247  000010 .. NOP ,DCMP          02337  020302  . IOOP 32 BIT OP
02160  021000 ". LDI  0                02250  020040    MVB  PB-DB,0       02340  000003 .. NOP ,ZROX
02161  051050 R( STOR DB 050           02251  041070 B8 LOAD DB 070        02341  141202 .. BE   P+ 002
02162  041050 B( LOAD DB 050           02252  000011 .. PCAL NUM2ASC       02342  000201 .. PCAL WRITEFAIL
02163  021001 ". LDI  1                02253  041024 B. LOAD DB 024        02343  021000 ". LDI  0
02164  006045 .% LADD,DUP              02254  002400 .. NEG ,NOP           02344  051012 R. STOR DB 012
02165  051050 R( STOR DB 050           02255  021001 ". LDI  1             02345  120012 .. INCM DB 012
02166  021020 ". LDI  16               02256  000141 .a PCAL ERROROUT      02346  041012 B. LOAD DB 012
02167  005700 .. LCMP,NOP              02257  041050 B( LOAD DB 050        02347  022020 $. CMPI 16
02170  145604 .. BGE  P+ 004,I         02260  021002 ". LDI  2             02350  145607 .. BGE  P+ 007,I
02171  140004 .. BR   P+ 004           02261  005700 .. LCMP,NOP          02351  040007 @. LOAD P+ 007
02172  000107 .G DELB,DZRO             02262  141503 .C BNE  P+ 003        02352  071013 r. ADDM DB 013
02173  040100 @@ LOAD P+ 100           02263  041070 B8 LOAD DB 070        02353  000174 .| PCAL DO'WIOC0
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02354  021000 ". LDI  0              02444  021026 ". LDI  22             02534  041013 B. LOAD DB 013
02355  051016 R. STOR DB 016         02445  000220 .. PCAL GET'MESSAGE    02535  006000 .. LADD,NOP
02356  140003 .. BR   P+ 003         02446  051024 R. STOR DB 024         02536  000163 .s PCAL DO'WIOC0
02357  000107 .G DELB,DZRO           02447  021022 ". LDI  18             02537  040030 @. LOAD P+ 030
02360  007710 .. ADXB,DCMP           02450  021002 ". LDI  2              02540  000002 .. PCAL DO'WIOC0
02361  041010 B. LOAD DB 010         02451  021012 ". LDI  10             02541  021336 ". LDI  222
02362  041012 B. LOAD DB 012         02452  041050 B( LOAD DB 050         02542  000002 .. PCAL DO'WIOC0
02363  010410 .. CSL  8 BITS         02453  000201 .. PCAL NUM2ASC        02543  021001 ". LDI  1
02364  006500 .@ OR  ,NOP            02454  021046 "& LDI  38             02544  051006 R. STOR DB 006
02365  020302  . IOOP 32 BIT OP      02455  021002 ". LDI  2              02545  120006 .. INCM DB 006
02366  000002 .. NOP ,DDEL           02456  021012 ". LDI  10             02546  041006 B. LOAD DB 006
02367  141503 .C BNE  P+ 003         02457  041012 B. LOAD DB 012         02547  021020 ". LDI  16
02370  051070 R8 STOR DB 070         02460  000005 .. PCAL NUM2ASC       02550  005700 .. LCMP,NOP
02371  140002 .. BR   P+ 002         02461  041024 B. LOAD DB 024         02551  145617 .. BGE  P+ 017,I
02372  000164 .t PCAL READFAIL       02462  002400 .. NEG ,NOP            02552  040017 @. LOAD P+ 017
02373  041012 B. LOAD DB 012         02463  021001 ". LDI  1              02553  000011 .. PCAL DO'WIOC0
02374  022002 $. CMPI 2              02464  000206 .. PCAL ERROROUT        02554  041006 B. LOAD DB 006
02375  141214 .. BE   P+ 014         02465  140520 .P BR   P- 120         02555  000002 .. PCAL DO'WIOC0
02376  041012 B. LOAD DB 012         02466  140551 .i BR   P- 151         02556  041006 B. LOAD DB 006
02377  022016 $. CMPI 14             02467  140560 .p BR   P- 160         02557  021020 ". LDI  16
02400  141211 .. BE   P+ 011         02470  041010 B. LOAD DB 010         02560  006000 .. LADD,NOP
02401  041070 B8 LOAD DB 070         02471  020302  . IOOP 32 BIT OP      02561  000004 .. PCAL DO'WIOC0
02402  021000 ". LDI  0              02472  000006 .. NOP ,ZERO           02562  040010 @. LOAD P+ 010
02403  005700 .. LCMP,NOP            02473  141402 .. BG   P+ 002         02563  000002 .. PCAL DO'WIOC0
02404  141503 .C BNE  P+ 003         02474  000132 .Z PCAL WRITEFAIL      02564  021125 "U LDI  85
02405  041016 B. LOAD DB 016         02475  025402 +. LDXN 2              02565  140006 .. BR   P+ 006
02406  140002 .. BR   P+ 002         02476  000600 .. ZERO,NOP            02566  000371 .. ZROX,FIXT
02407  025001 *. LDNI 1              02477  020321  . PSTA                 02567  040141 @a LOAD P+ 141
02410  051016 R. STOR DB 016         02500  000357 .. PCAL REP'ILL'INT    02570  000336 .. ZROX,ADAX
02411  041012 B. LOAD DB 012         02501  000357 .. PCAL DOT            02571  040146 @f LOAD P+ 146
02412  022002 $. CMPI 2              02502  151075 .= LDD  DB 075         02572  040140 @' LOAD P+ 140
02413  141511 .I BNE  P+ 011         02503  021005 ". LDI  5              02573  000010 .. PCAL DO'WIOC0
02414  041070 B8 LOAD DB 070         02504  004300 .. STAX,NOP            02574  020104  D IOOP 32 BIT OP
02415  041005 B. LOAD DB 005         02505  016401 .. DCSL 1 BIT ,X       02575  000000 .. NOP ,NOP
02416  005700 .. LCMP,NOP            02506  000100 .@ DELB,NOP            02576  040042 @" LOAD P+ 042
02417  141503 .C BNE  P+ 003         02507  017704 .. BRE  P+4,I          02577  000764 .. PCAL DODELAY
02420  041016 B. LOAD DB 016         02510  021017 ". LDI  15             02600  000000 .. PCAL DO'RIOC0
02421  140002 .. BR   P+ 002         02511  051065 R5 STOR DB 065         02601  041070 B8 LOAD DB 070
02422  025001 *. LDNI 1              02512  140002 .. BR   P+ 002         02602  037777 ?. ANDI 255
02423  051016 R. STOR DB 016         02513  000452 .* INCX,FSUB           02603  021125 "U LDI  85
02424  041012 B. LOAD DB 012         02514  041035 B. LOAD DB 035         02604  005700 .. LCMP,NOP
02425  022016 $. CMPI 14             02515  030100 0@ SMSK                02605  145234 .. BE   P+ 034,I
02426  141513 .K BNE  P+ 013         02516  041010 B. LOAD DB 010         02606  021003 ". LDI  3
02427  041070 B8 LOAD DB 070         02517  020302  . IOOP 32 BIT OP      02607  051007 R. STOR DB 007
02430  140002 .. BR   P+ 002         02520  000006 .. NOP ,ZERO           02610  021007 ". LDI  7
02431  000010 .. NOP ,DCMP           02521  141402 .. BG   P+ 002         02611  021014 ". LDI  12
02432  041007 B. LOAD DB 007         02522  000026 .. PCAL WRITEFAIL      02612  131006 .. LDX  DB 006
02433  005700 .. LCMP,NOP            02523  041036 B. LOAD DB 036         02613  012602 .. CPRB P+2
02434  141503 .C BNE  P+ 003         02524  021001 ". LDI  1              02614  140003 .. BR   P+ 003
02435  041016 B. LOAD DB 016         02525  006100 .@ LSUB,NOP            02615  021004 ". LDI  4
02436  140002 .. BR   P+ 002         02526  051013 R. STOR DB 013         02616  140002 .. BR   P+ 002
02437  025001 *. LDNI 1              02527  120013 .. INCM DB 013         02617  041007 B. LOAD DB 007
02440  051016 R. STOR DB 016         02530  041013 B. LOAD DB 013         02620  051007 R. STOR DB 007
02441  041016 B. LOAD DB 016         02531  061023 b. CMPM DB 023         02621  021002 ". LDI  2
02442  013723 .. BRE  P+23           02532  145434 .. BG   P+ 034,I       02622  021003 ". LDI  3
02443  000600 .. ZERO,NOP            02533  040740 A. LOAD P- 340         02623  131006 .. LDX  DB 006
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02624  012602 .. CPRB P+2          02714  141507 .G BNE  P+ 007          03004  041007 B. LOAD DB 007
02625  140003 .. BR   P+ 003       02715  021452 #* LDXI 42             03005  051007 R. STOR DB 007
02626  021002 ". LDI  2            02716  177104 .D LRA  DB 104,I,X      03006  000600 .. ZERO,NOP
02627  140002 .. BR   P+ 002       02717  170006 .. LRA  P+ 006          03007  021032 ". LDI  26
02630  041007 B. LOAD DB 007       02720  010201 .. LSL  1 BIT           03010  000154 .l PCAL GET'MESSAGE
02631  051007 R. STOR DB 007       02721  021002 ". LDI  2              03011  023002 &. SUBI 2
02632  000600 .. ZERO,NOP          02722  020043  # MVB  PB-DB,3         03012  051024 R. STOR DB 024
02633  021033 ". LDI  27           02723  140003 .. BR   P+ 003          03013  021007 ". LDI  7
02634  000167 .w PCAL GET'MESSAGE  02724  016342 .. DLSR 34 BITS,X       03014  140002 .. BR   P+ 002
02635  023001 &. SUBI 1            02725  027065 .5 DPF  (3:5)          03015  000106 .F DELB,ZERO
02636  051024 R. STOR DB 024       02726  041024 B. LOAD DB 024          03016  021014 ". LDI  12
02637  140003 .. BR   P+ 003       02727  002400 .. NEG  ,NOP           03017  131006 .. LDX  DB 006
02640  000454 ., INCX,FDIV         02730  021001 ". LDI  1              03020  012602 .. CPRB P+2
02641  000071 .9 NOP  ,FIXT        02731  000245 .. PCAL ERROROUT        03021  140004 .. BR   P+ 004
02642  021007 ". LDI  7            02732  025001 *. LDNI 1              03022  041024 B. LOAD DB 024
02643  021014 ". LDI  12           02733  051005 R. STOR DB 005          03023  022401 %. ADDI 1
02644  131006 .. LDX  DB 006       02734  120005 .. INCM DB 005         03024  140002 .. BR   P+ 002
02645  012602 .. CPRB P+2          02735  041005 B. LOAD DB 005          03025  041024 B. LOAD DB 024
02646  140004 .. BR   P+ 004       02736  022004 $. CMPI 4              03026  051024 R. STOR DB 024
02647  041024 B. LOAD DB 024       02737  145605 .. BGE  P+ 005,I        03027  021002 ". LDI  2
02650  022401 %. ADDI 1            02740  131005 .. LDX  DB 005         03030  021003 ". LDI  3
02651  140002 .. BR   P+ 002       02741  047111 NI LOAD DB 111,I,X     03031  131006 .. LDX  DB 006
02652  041024 B. LOAD DB 024       02742  000147 .g PCAL DO'WIOC0        03032  012602 .. CPRB P+2
02653  051024 R. STOR DB 024       02743  140002 .. BR   P+ 002          03033  140004 .. BR   P+ 004
02654  021002 ". LDI  2            02744  000160 .p DELB,LADD          03034  041024 B. LOAD DB 024
02655  021003 ". LDI  3            02745  020104  D IOOP 32 BIT OP      03035  023001 &. SUBI 1
02656  131006 .. LDX  DB 006       02746  000000 .. NOP  ,NOP          03036  140002 .. BR   P+ 002
02657  012602 .. CPRB P+2          02747  131006 .. LDX  DB 006          03037  041024 B. LOAD DB 024
02660  140004 .. BR   P+ 004       02750  047110 NH LOAD DB 110,I,X     03040  051024 R. STOR DB 024
02661  041024 B. LOAD DB 024       02751  000152 .j PCAL DODELAY         03041  041006 B. LOAD DB 006
02662  023001 &. SUBI 1            02752  000152 .j PCAL DO'RIOC0        03042  022004 $. CMPI 4
02663  140002 .. BR   P+ 002       02753  041070 B8 LOAD DB 070          03043  141504 .D BNE  P+ 004
02664  041024 B. LOAD DB 024       02754  037777 ?. ANDI 255            03044  041024 B. LOAD DB 024
02665  051024 R. STOR DB 024       02755  131005 .. LDX  DB 005         03045  022402 %. ADDI 2
02666  041006 B. LOAD DB 006       02756  047111 NI LOAD DB 111,I,X     03046  140002 .. BR   P+ 002
02667  022004 $. CMPI 4            02757  037777 ?. ANDI 255            03047  041024 B. LOAD DB 024
02670  141504 .D BNE  P+ 004       02760  001700 .. CMP  ,NOP           03050  051024 R. STOR DB 024
02671  041024 B. LOAD DB 024       02761  145234 .. BE   P+ 034,I        03051  021457 #/ LDXI 47
02672  022401 %. ADDI 1            02762  021003 ". LDI  3              03052  177104 .D LRA  DB 104,I,X
02673  140002 .. BR   P+ 002       02763  051007 R. STOR DB 007          03053  172527 .W LRA  P- 127,I
02674  041024 B. LOAD DB 024       02764  021007 ". LDI  7              03054  010201 .. LSL  1 BIT
02675  051024 R. STOR DB 024       02765  021014 ". LDI  12             03055  021005 ". LDI  5
02676  021447 #' LDXI 39           02766  131006 .. LDX  DB 006         03056  020043  # MVB  PB-DB,3
02677  177104 .D LRA  DB 104,I,X   02767  012602 .. CPRB P+2           03057  021031 ". LDI  25
02700  172024 .. LRA  P+ 024,I     02770  140003 .. BR   P+ 003         03060  021002 ". LDI  2
02701  010201 .. LSL  1 BIT        02771  021004 ". LDI  4              03061  021020 ". LDI  16
02702  021005 ". LDI  5            02772  140002 .. BR   P+ 002         03062  131005 .. LDX  DB 005
02703  020043  # MVB  PB-DB,3      02773  041007 B. LOAD DB 007         03063  047111 NI LOAD DB 111,I,X
02704  021047 "' LDI  39           02774  051007 R. STOR DB 007         03064  000153 .k PCAL NUM2ASC
02705  041007 B. LOAD DB 007       02775  021002 ". LDI  2              03065  021046 "& LDI  38
02706  021012 ". LDI  10           02776  021003 ". LDI  3              03066  021002 ". LDI  2
02707  131006 .. LDX  DB 006       02777  131006 .. LDX  DB 006         03067  021020 ". LDI  16
02710  047112 NJ LOAD DB 112,I,X   03000  012602 .. CPRB P+2           03070  041070 B8 LOAD DB 070
02711  000231 .. PCAL NUM2ASC      03001  140003 .. BR   P+ 003         03071  037777 ?. ANDI 255
02712  041006 B. LOAD DB 006       03002  021002 ". LDI  2              03072  000006 .. PCAL NUM2ASC
02713  022004 $. CMPI 4            03003  140002 .. BR   P+ 002         03073  021057 "/ LDI  47
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03074  041007 B. LOAD DB 007          03164  000464 .4 PCAL REP'ILL'INT    03254  021000 ". LDI  0
03075  021012 ". LDI  10              03165  151075 .= LDD  DB 075         03255  140002 .. BR   P+ 002
03076  131006 .. LDX  DB 006          03166  021006 ". LDI  6             03256  040017 @. LOAD P+ 017
03077  047112 NJ LOAD DB 112,I,X      03167  004300 .. STAX,NOP            03257  051021 R. STOR DB 021
03100  000006 .. PCAL NUM2ASC         03170  016401 .. DCSL 1 BIT ,X       03260  041022 B. LOAD DB 022
03101  041006 B. LOAD DB 006          03171  000100 .@ DELB,NOP            03261  000037 .. PCAL DO'WIOC0
03102  022004 $. CMPI 4               03172  017734 .. BRE  P+34,I         03262  025001 *. LDNI 1
03103  141507 .G BNE  P+ 007          03173  021020 ". LDI  16            03263  051002 R. STOR DB 002
03104  021462 #2 LDXI 50              03174  051065 R5 STOR DB 065         03264  120002 .. INCM DB 002
03105  177104 .D LRA  DB 104,I,X      03175  041036 B. LOAD DB 036         03265  041002 B. LOAD DB 002
03106  170561 .q LRA  P- 161          03176  021001 ". LDI  1             03266  022377 $. CMPI 255
03107  010201 .. LSL  1 BIT           03177  006100 .@ LSUB,NOP           03267  141411 .. BG   P+ 011
03110  021002 ". LDI  2               03200  051013 R. STOR DB 013         03270  041002 B. LOAD DB 002
03111  020043  # MVB  PB-DB,3         03201  120013 .. INCM DB 013         03271  000010 .. PCAL DO'WIOC0
03112  021016 ". LDI  14              03202  041013 B. LOAD DB 013         03272  140005 .. BR   P+ 005
03113  021002 ". LDI  2               03203  061023 b. CMPM DB 023         03273  000137 ._ DELB,ADXA
03114  021020 ". LDI  16              03204  145423 .. BG   P+ 023,I       03274  040144 @d LOAD P+ 144
03115  021336 ". LDI  222             03205  040446 A& LOAD P- 046         03275  040000 @. LOAD P+ 000
03116  000016 .. PCAL NUM2ASC         03206  041013 B. LOAD DB 013         03276  000002 .. NOP ,DDEL
03117  041024 B. LOAD DB 024          03207  006000 .. LADD,NOP            03277  140413 .. BR   P- 013
03120  002400 .. NEG ,NOP             03210  000047 .' PCAL DO'WIOC0       03300  040013 @. LOAD P+ 013
03121  021001 ". LDI  1               03211  040017 @. LOAD P+ 017         03301  000010 .. PCAL DO'WIOC0
03122  000171 .y PCAL ERROROUT        03212  000002 .. PCAL DO'WIOC0       03302  025001 *. LDNI 1
03123  140567 .w BR   P- 167          03213  021336 ". LDI  222           03303  051002 R. STOR DB 002
03124  000423 .. PCAL DOT             03214  000002 .. PCAL DO'WIOC0       03304  120002 .. INCM DB 002
03125  140760 .. BR   P- 360          03215  040014 @. LOAD P+ 014         03305  041002 B. LOAD DB 002
03126  040011 @. LOAD P+ 011          03216  000002 .. PCAL DO'WIOC0       03306  022377 $. CMPI 255
03127  041013 B. LOAD DB 013          03217  021010 ". LDI  8             03307  145405 .. BG   P+ 005,I
03130  006000 .. LADD,NOP             03220  000002 .. PCAL DO'WIOC0       03310  041002 B. LOAD DB 002
03131  000167 .w PCAL DO'WIOC0        03221  021030 ". LDI  24            03311  000010 .. PCAL DO'WIOC0
03132  040743 A. LOAD P- 343          03222  000002 .. PCAL DO'WIOC0       03312  140003 .. BR   P+ 003
03133  000002 .. PCAL DO'WIOC0        03223  040007 @. LOAD P+ 007         03313  040140 @' LOAD P+ 140
03134  021336 ". LDI  222             03224  051022 R. STOR DB 022         03314  000115 .M DELB,DNEG
03135  000002 .. PCAL DO'WIOC0        03225  140006 .. BR   P+ 006         03315  020104  D IOOP 32 BIT OP
03136  140002 .. BR   P+ 002          03226  000212 .. DDEL,DSUB           03316  000000 .. NOP ,NOP
03137  040100 @@ LOAD P+ 100          03227  000205 .. DDEL,DECX           03317  021002 ". LDI  2
03140  040746 A. LOAD P- 346          03230  040141 @a LOAD P+ 141         03320  000347 .. PCAL DODELAY
03141  000004 .. PCAL DO'WIOC0        03231  040146 @f LOAD P+ 146         03321  000157 .o PCAL DO'RIOC0
03142  000170 .x PCAL DO'RIOC0        03232  040143 @c LOAD P+ 143         03322  041070 B8 LOAD DB 070
03143  041070 B8 LOAD DB 070          03233  120022 .. INCM DB 022         03323  037777 ?. ANDI 255
03144  037777 ?. ANDI 255             03234  041022 B. LOAD DB 022         03324  041002 B. LOAD DB 002
03145  021000 ". LDI  0               03235  040404 A. LOAD P- 004         03325  037777 ?. ANDI 255
03146  001700 .. CMP ,NOP             03236  005700 .. LCMP,NOP            03326  001700 .. CMP ,NOP
03147  141207 .. BE   P+ 007          03237  145634 .. BGE  P+ 034,I       03327  141225 .. BE   P+ 025
03150  000600 .. ZERO,NOP             03240  041022 B. LOAD DB 022         03330  000600 .. ZERO,NOP
03151  021123 "S LDI  83              03241  040033 @. LOAD P+ 033         03331  021027 ". LDI  23
03152  000142 .b PCAL GET'MESSAGE     03242  005700 .. LCMP,NOP            03332  000160 .p PCAL GET'MESSAGE
03153  002400 .. NEG ,NOP             03243  141503 .C BNE  P+ 003         03333  051024 R. STOR DB 024
03154  021001 ". LDI  1               03244  021020 ". LDI  16            03334  021050 "( LDI  40
03155  000033 .. PCAL ERROROUT        03245  140002 .. BR   P+ 002         03335  021002 ". LDI  2
03156  142002 .. BR   P+ 002,I        03246  021021 ". LDI  17            03336  021020 ". LDI  16
03157  140002 .. BR   P+ 002          03247  051065 R5 STOR DB 065         03337  041070 B8 LOAD DB 070
03160  177347 .. LRA  DB 347,I,X      03250  041022 B. LOAD DB 022         03340  037777 ?. ANDI 255
03161  025402 +. LDXN 2               03251  040023 @. LOAD P+ 023         03341  000223 .. PCAL NUM2ASC
03162  000600 .. ZERO,NOP             03252  005700 .. LCMP,NOP            03342  021032 ". LDI  26
03163  020321  . PSTA                 03253  141503 .C BNE  P+ 003         03343  021002 ". LDI  2
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03344  021020 ". LDI  16          03434  025402 +. LDXN 2          03524  040765 A. LOAD P- 365
03345  041002 B. LOAD DB 002      03435  000600 .. ZERO,NOP        03525  041013 B. LOAD DB 013
03346  037777 ?. ANDI 255         03436  020321  . PSTA           03526  006000 .. LADD,NOP
03347  000006 .. PCAL NUM2ASC     03437  000253 .. PCAL REP'ILL'INT 03527  000017 .. PCAL DO'WIOC0
03350  041024 B. LOAD DB 024      03440  151075 .= LDD  DB 075     03530  040676 A. LOAD P- 276
03351  002400 .. NEG ,NOP         03441  021007 ". LDI  7          03531  000002 .. PCAL DO'WIOC0
03352  021001 ". LDI  1           03442  004300 .. STAX,NOP        03532  021006 ". LDI  6
03353  000176 .~ PCAL ERROROUT    03443  016401 .. DCSL 1 BIT ,X   03533  000002 .. PCAL DO'WIOC0
03354  041070 B8 LOAD DB 070      03444  000100 .@ DELB,NOP        03534  040024 @. LOAD P+ 024
03355  040006 @. LOAD P+ 006      03445  017704 .. BRE  P+4,I      03535  000002 .. PCAL DO'WIOC0
03356  006700 .. AND ,NOP         03446  021022 ". LDI  18         03536  000215 .. PCAL DO'RIOC0
03357  041021 B. LOAD DB 021      03447  051065 R5 STOR DB 065     03537  041070 B8 LOAD DB 070
03360  005700 .. LCMP,NOP         03450  140002 .. BR   P+ 002     03540  037777 ?. ANDI 255
03361  145203 .. BE   P+ 003,I    03451  001310 .. MPYL,DCMP       03541  021003 ". LDI  3
03362  140003 .. BR   P+ 003      03452  041010 B. LOAD DB 010     03542  001700 .. CMP ,NOP
03363  077400 .. ADDM Q+ 000,I,X  03453  020302  . IOOP 32 BIT OP 03543  141226 .. BE   P+ 026
03364  000044 .$ NOP ,LDXA        03454  000006 .. NOP ,ZERO       03544  000600 .. ZERO,NOP
03365  041022 B. LOAD DB 022      03455  141402 .. BG   P+ 002     03545  021034 ". LDI  28
03366  040472 A: LOAD P- 072      03456  000734 .. PCAL WRITEFAIL  03546  000134 .\ PCAL GET'MESSAGE
03367  005700 .. LCMP,NOP         03457  041036 B. LOAD DB 036     03547  051024 R. STOR DB 024
03370  141520 .P BNE  P+ 020      03460  021001 ". LDI  1          03550  021037 ". LDI  31
03371  000600 .. ZERO,NOP         03461  006100 .@ LSUB,NOP       03551  021002 ". LDI  2
03372  021030 ". LDI  24          03462  051013 R. STOR DB 013    03552  021012 ". LDI  10
03373  000041 .! PCAL GET'MESSAGE 03463  120013 .. INCM DB 013    03553  041070 B8 LOAD DB 070
03374  051024 R. STOR DB 024      03464  041013 B. LOAD DB 013    03554  037777 ?. ANDI 255
03375  021001 ". LDI  1           03465  061023 b. CMPM DB 023     03555  000134 .\ PCAL NUM2ASC
03376  021002 ". LDI  2           03466  141424 .. BG   P+ 024     03556  140004 .. BR   P+ 004
03377  021020 ". LDI  16          03467  040730 A. LOAD P- 330     03557  000013 .. NOP ,MPYL
03400  041070 B8 LOAD DB 070      03470  041013 B. LOAD DB 013     03560  040160 @p LOAD P+ 160
03401  037777 ?. ANDI 255         03471  006000 .. LADD,NOP        03561  000010 .. NOP ,DCMP
03402  000033 .. PCAL NUM2ASC     03472  000161 .q PCAL DO'WIOC0   03562  021063 "3 LDI  51
03403  041024 B. LOAD DB 024      03473  040643 A. LOAD P- 243     03563  021454 #, LDXI 44
03404  002400 .. NEG ,NOP         03474  000002 .. PCAL DO'WIOC0   03564  166104 .D STB  DB 104,I,X
03405  021001 ". LDI  1           03475  021336 ". LDI  222        03565  041024 B. LOAD DB 024
03406  000033 .. PCAL ERROROUT    03476  000002 .. PCAL DO'WIOC0   03566  002400 .. NEG ,NOP
03407  140021 .. BR   P+ 021      03477  040646 A. LOAD P- 246     03567  021001 ". LDI  1
03410  000600 .. ZERO,NOP         03500  000002 .. PCAL DO'WIOC0   03570  000141 .a PCAL ERROROUT
03411  021031 ". LDI  25          03501  021010 ". LDI  8          03571  140453 .+ BR   P- 053
03412  000017 .. PCAL GET'MESSAGE 03502  000002 .. PCAL DO'WIOC0   03572  002665 .. PCAL CHECKYTRAP
03413  051024 R. STOR DB 024      03503  021030 ". LDI  24         03573  021023 ". LDI  19
03414  021001 ". LDI  1           03504  000002 .. PCAL DO'WIOC0   03574  051065 R5 STOR DB 065
03415  021002 ". LDI  2           03505  040015 @. LOAD P+ 015     03575  041036 B. LOAD DB 036
03416  021020 ". LDI  16          03506  000002 .. PCAL DO'WIOC0   03576  021001 ". LDI  1
03417  041070 B8 LOAD DB 070      03507  021000 ". LDI  0          03577  006100 .@ LSUB,NOP
03420  037777 ?. ANDI 255         03510  000002 .. PCAL DO'WIOC0   03600  051013 R. STOR DB 013
03421  000017 .. PCAL NUM2ASC     03511  140426 .. BR   P- 026     03601  120013 .. INCM DB 013
03422  041024 B. LOAD DB 024      03512  041036 B. LOAD DB 036     03602  041013 B. LOAD DB 013
03423  140002 .. BR   P+ 002      03513  021001 ". LDI  1          03603  061023 b. CMPM DB 023
03424  000004 .. NOP ,INCX        03514  006100 .@ LSUB,NOP       03604  145416 .. BG   P+ 016,I
03425  002400 .. NEG ,NOP         03515  051013 R. STOR DB 013     03605  040016 @. LOAD P+ 016
03426  021001 ". LDI  1           03516  120013 .. INCM DB 013     03606  041013 B. LOAD DB 013
03427  000021 .. PCAL ERROROUT    03517  041013 B. LOAD DB 013     03607  006000 .. LADD,NOP
03430  140524 .T BR   P- 124      03520  061023 b. CMPM DB 023     03610  000053 .+ PCAL DO'WIOC0
03431  140604 .. BR   P- 204      03521  140002 .. BR   P+ 002     03611  040757 A. LOAD P- 357
03432  000306 .. PCAL DOT         03522  040147 @g LOAD P+ 147     03612  000002 .. PCAL DO'WIOC0
03433  140632 .. BR   P- 232      03523  145434 .. BG   P+ 034,I   03613  021006 ". LDI  6
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03614  000002 .. PCAL DO'WIOC0          03704  040030 @. LOAD P+ 030          03774  021006 ". LDI  6
03615  040702 A. LOAD P- 302            03705  000002 .. PCAL DO'WIOC0        03775  000002 .. PCAL DO'WIOC0
03616  000002 .. PCAL DO'WIOC0          03706  021002 ". LDI  2               03776  040015 @. LOAD P+ 015
03617  021101 "A LDI  65                03707  000002 .. PCAL DO'WIOC0        03777  000002 .. PCAL DO'WIOC0
03620  000002 .. PCAL DO'WIOC0          03710  021004 ". LDI  4               04000  021010 ". LDI  8
03621  140003 .. BR   P+ 003            03711  000002 .. PCAL DO'WIOC0        04001  000002 .. PCAL DO'WIOC0
03622  000043 .# NOP ,STAX              03712  040532 AZ LOAD P- 132           04002  021031 ". LDI  25
03623  040100 @@ LOAD P+ 100            03713  000002 .. PCAL DO'WIOC0        04003  000002 .. PCAL DO'WIOC0
03624  020104  D IOOP 32 BIT OP        03714  000031 .. PCAL DO'RIOC0        04004  040010 @. LOAD P+ 010
03625  000000 .. NOP ,NOP               03715  041070 B8 LOAD DB 070          04005  000002 .. PCAL DO'WIOC0
03626  021005 ". LDI  5                 03716  037777 ?. ANDI 255             04006  021340 ". LDI  224
03627  000307 .. PCAL DODELAY           03717  021001 ". LDI  1               04007  000002 .. PCAL DO'WIOC0
03630  040450 A( LOAD P- 050            03720  001700 .. CMP ,NOP             04010  140005 .. BR   P+ 005
03631  000011 .. PCAL DO'WIOC0          03721  141226 .. BE   P+ 026          04011  000125 .U DELB,TEST
03632  000074 .< PCAL DO'RIOC0          03722  000600 .. ZERO,NOP             04012  040141 @a LOAD P+ 141
03633  041070 B8 LOAD DB 070            03723  021034 ". LDI  28              04013  040146 @f LOAD P+ 146
03634  037777 ?. ANDI 255               03724  000062 .2 PCAL GET'MESSAGE     04014  040140 @' LOAD P+ 140
03635  021000 ". LDI  0                 03725  051024 R. STOR DB 024          04015  020104  D IOOP 32 BIT OP
03636  001700 .. CMP ,NOP               03726  021037 ". LDI  31              04016  000000 .. NOP ,NOP
03637  141222 .. BE   P+ 022            03727  021002 ". LDI  2               04017  021005 ". LDI  5
03640  000600 .. ZERO,NOP               03730  021012 ". LDI  10              04020  000171 .y PCAL DODELAY
03641  021034 ". LDI  28                03731  041070 B8 LOAD DB 070          04021  040407 A. LOAD P- 007
03642  000074 .< PCAL GET'MESSAGE       03732  140004 .. BR   P+ 004          04022  000013 .. PCAL DO'WIOC0
03643  051024 R. STOR DB 024            03733  000015 .. NOP ,DNEG            04023  000107 .G PCAL DO'RIOC0
03644  021037 ". LDI  31                03734  040143 @c LOAD P+ 143          04024  041070 B8 LOAD DB 070
03645  021002 ". LDI  2                 03735  000012 .. NOP ,DSUB            04025  051002 R. STOR DB 002
03646  021012 ". LDI  10                03736  037777 ?. ANDI 255             04026  040646 A. LOAD P- 246
03647  041070 B8 LOAD DB 070            03737  000066 .6 PCAL NUM2ASC         04027  000005 .. PCAL DO'WIOC0
03650  037777 ?. ANDI 255               03740  021061 "1 LDI  49              04030  000005 .. PCAL DO'RIOC0
03651  000074 .< PCAL NUM2ASC           03741  021454 #, LDXI 44              04031  021000 ". LDI  0
03652  021060 "0 LDI  48                03742  166104 .D STB  DB 104,I,X      04032  051005 R. STOR DB 005
03653  021454 #, LDXI 44                03743  041024 B. LOAD DB 024          04033  041002 B. LOAD DB 002
03654  166104 .D STB  DB 104,I,X        03744  002400 .. NEG ,NOP            04034  010301 .. LSR  1 BIT
03655  041024 B. LOAD DB 024            03745  021001 ". LDI  1               04035  037401 ?. ANDI 1
03656  002400 .. NEG ,NOP               03746  000066 .6 PCAL ERROROUT        04036  017634 .. BRO  P+34,I
03657  021001 ". LDI  1                 03747  140453 .+ BR   P- 053          04037  041070 B8 LOAD DB 070
03660  000070 .8 PCAL ERROROUT          03750  021025 ". LDI  21              04040  037777 ?. ANDI 255
03661  040746 A. LOAD P- 346            03751  051065 R5 STOR DB 065          04041  021002 ". LDI  2
03662  000031 .. PCAL DO'WIOC0          03752  041036 B. LOAD DB 036          04042  001700 .. CMP ,NOP
03663  000031 .. PCAL DO'RIOC0          03753  021001 ". LDI  1               04043  141221 .. BE   P+ 021
03664  140463 .3 BR   P- 063            03754  006100 .@ LSUB,NOP             04044  000600 .. ZERO,NOP
03665  000073 .; PCAL CHECKYTRAP        03755  051013 R. STOR DB 013          04045  021035 ". LDI  29
03666  021024 ". LDI  20                03756  120013 .. INCM DB 013          04046  000122 .R PCAL GET'MESSAGE
03667  051065 R5 STOR DB 065            03757  041013 B. LOAD DB 013          04047  051024 R. STOR DB 024
03670  041036 B. LOAD DB 036            03760  061023 b. CMPM DB 023          04050  041013 B. LOAD DB 013
03671  021001 ". LDI  1                 03761  145430 .. BG   P+ 030,I        04051  021060 "0 LDI  48
03672  006100 .@ LSUB,NOP               03762  040537 A_ LOAD P- 137          04052  006000 .. LADD,NOP
03673  051013 R. STOR DB 013            03763  041013 B. LOAD DB 013          04053  021407 #. LDXI 7
03674  120013 .. INCM DB 013            03764  006000 .. LADD,NOP             04054  166104 .D STB  DB 104,I,X
03675  041013 B. LOAD DB 013            03765  000052 .* PCAL DO'WIOC0        04055  041024 B. LOAD DB 024
03676  061023 b. CMPM DB 023            03766  040024 @. LOAD P+ 024          04056  002400 .. NEG ,NOP
03677  145434 .. BG   P+ 034,I          03767  000002 .. PCAL DO'WIOC0        04057  021000 ". LDI  0
03700  040455 A- LOAD P- 055            03770  021336 ". LDI  222             04060  000112 .J PCAL ERROROUT
03701  041013 B. LOAD DB 013            03771  000002 .. PCAL DO'WIOC0        04061  025001 *. LDNI 1
03702  006000 .. LADD,NOP               03772  040436 A. LOAD P- 036          04062  051005 R. STOR DB 005
03703  000021 .. PCAL DO'WIOC0          03773  000002 .. PCAL DO'WIOC0        04063  140021 .. BR   P+ 021
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04064  000600 .. ZERO,NOP          04154  040541 Aa LOAD P- 141          04244  000012 .. NOP ,DSUB
04065  021036 ". LDI  30           04155  000002 .. PCAL DO'WIOC0        04245  021060 "0 LDI  48
04066  000020 .. PCAL GET'MESSAGE  04156  021010 ". LDI  8              04246  041013 B. LOAD DB 013
04067  051024 R. STOR DB 024       04157  000002 .. PCAL DO'WIOC0        04247  006000 .. LADD,NOP
04070  041013 B. LOAD DB 013       04160  040544 Ad LOAD P- 144         04250  021407 #. LDXI 7
04071  140003 .. BR   P+ 003       04161  000002 .. PCAL DO'WIOC0        04251  166104 .D STB  DB 104,I,X
04072  000012 .. NOP ,DSUB         04162  021125 "U LDI  85             04252  041024 B. LOAD DB 024
04073  000011 .. NOP ,DADD         04163  000002 .. PCAL DO'WIOC0        04253  002400 .. NEG ,NOP
04074  021060 "0 LDI  48           04164  140002 .. BR   P+ 002         04254  021000 ". LDI  0
04075  006000 .. LADD,NOP          04165  000152 .j DELB,FSUB          04255  000024 .. PCAL ERROROUT
04076  021407 #. LDXI 7            04166  020104  D IOOP 32 BIT OP     04256  041005 B. LOAD DB 005
04077  166104 .D STB  DB 104,I,X   04167  000000 .. NOP ,NOP          04257  013627 .. BRO  P+27
04100  041024 B. LOAD DB 024       04170  021005 ". LDI  5              04260  041070 B8 LOAD DB 070
04101  002400 .. NEG ,NOP          04171  000151 .i PCAL DODELAY        04261  037777 ?. ANDI 255
04102  021000 ". LDI  0            04172  040560 Ap LOAD P- 160         04262  021002 ". LDI  2
04103  000023 .. PCAL ERROROUT     04173  000010 .. PCAL DO'WIOC0        04263  001700 .. CMP ,NOP
04104  041005 B. LOAD DB 005       04174  000144 .d PCAL DO'RIOC0        04264  141222 .. BE   P+ 022
04105  013627 .. BRO  P+27         04175  041070 B8 LOAD DB 070          04265  000600 .. ZERO,NOP
04106  041070 B8 LOAD DB 070       04176  051002 R. STOR DB 002          04266  021034 ". LDI  28
04107  037777 ?. ANDI 255          04177  040043 @# LOAD P+ 043          04267  000030 .. PCAL GET'MESSAGE
04110  021002 ". LDI  2            04200  000005 .. PCAL DO'WIOC0        04270  051024 R. STOR DB 024
04111  001700 .. CMP ,NOP          04201  000005 .. PCAL DO'RIOC0        04271  021062 "2 LDI  50
04112  141222 .. BE   P+ 022       04202  021000 ". LDI  0              04272  021454 #, LDXI 44
04113  000600 .. ZERO,NOP          04203  051005 R. STOR DB 005          04273  166104 .D STB  DB 104,I,X
04114  021034 ". LDI  28           04204  041002 B. LOAD DB 002          04274  021037 ". LDI  31
04115  000027 .. PCAL GET'MESSAGE  04205  010302 .. LSR  2 BITS         04275  021002 ". LDI  2
04116  051024 R. STOR DB 024       04206  037401 ?. ANDI 1              04276  021012 ". LDI  10
04117  021037 ". LDI  31           04207  017634 .. BRO  P+34,I          04277  041070 B8 LOAD DB 070
04120  021002 ". LDI  2            04210  041070 B8 LOAD DB 070          04300  037777 ?. ANDI 255
04121  021012 ". LDI  10           04211  037777 ?. ANDI 255            04301  000155 .m PCAL NUM2ASC
04122  041070 B8 LOAD DB 070       04212  021002 ". LDI  2              04302  041024 B. LOAD DB 024
04123  037777 ?. ANDI 255          04213  001700 .. CMP ,NOP            04303  002400 .. NEG ,NOP
04124  000165 .u PCAL NUM2ASC      04214  141221 .. BE   P+ 021         04304  021001 ". LDI  1
04125  021062 "2 LDI  50           04215  000600 .. ZERO,NOP            04305  000030 .. PCAL ERROROUT
04126  021454 #, LDXI 44           04216  021037 ". LDI  31             04306  040672 A. LOAD P- 272
04127  166104 .D STB  DB 104,I,X   04217  000102 .B PCAL GET'MESSAGE     04307  000107 .G PCAL DO'WIOC0
04130  041024 B. LOAD DB 024       04220  051024 R. STOR DB 024          04310  000107 .G PCAL DO'RIOC0
04131  002400 .. NEG ,NOP          04221  021060 "0 LDI  48             04311  040677 A. LOAD P- 277
04132  021001 ". LDI  1            04222  041013 B. LOAD DB 013          04312  000003 .. PCAL DO'WIOC0
04133  000030 .. PCAL ERROROUT     04223  006000 .. LADD,NOP            04313  000003 .. PCAL DO'RIOC0
04134  000247 .. PCAL CHECKYTRAP   04224  021407 #. LDXI 7              04314  041070 B8 LOAD DB 070
04135  140557 .o BR   P- 157       04225  166104 .D STB  DB 104,I,X     04315  010302 .. LSR  2 BITS
04136  021026 ". LDI  22           04226  041024 B. LOAD DB 024          04316  037401 ?. ANDI 1
04137  051065 R5 STOR DB 065       04227  002400 .. NEG ,NOP            04317  013616 .. BRO  P+16
04140  041036 B. LOAD DB 036       04230  021000 ". LDI  0              04320  000600 .. ZERO,NOP
04141  021001 ". LDI  1            04231  000076 .> PCAL ERROROUT        04321  021040 "  LDI  32
04142  006100 .@ LSUB,NOP          04232  025001 *. LDNI 1              04322  000033 .. PCAL GET'MESSAGE
04143  051013 R. STOR DB 013       04233  051005 R. STOR DB 005          04323  051024 R. STOR DB 024
04144  120013 .. INCM DB 013       04234  140022 .. BR   P+ 022         04324  021060 "0 LDI  48
04145  041013 B. LOAD DB 013       04235  000600 .. ZERO,NOP            04325  041013 B. LOAD DB 013
04146  061023 b. CMPM DB 023       04236  021040 "  LDI  32             04326  006000 .. LADD,NOP
04147  145416 .. BG   P+ 016,I     04237  000020 .. PCAL GET'MESSAGE     04327  021407 #. LDXI 7
04150  040725 A. LOAD P- 325       04240  051024 R. STOR DB 024          04330  166104 .D STB  DB 104,I,X
04151  041013 B. LOAD DB 013       04241  140004 .. BR   P+ 004         04331  041024 B. LOAD DB 024
04152  006000 .. LADD,NOP          04242  040160 @p LOAD P+ 160          04332  002400 .. NEG ,NOP
04153  000124 .T PCAL DO'WIOC0     04243  000013 .. NOP ,MPYL           04333  021000 ". LDI  0
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04334  000027 .. PCAL ERROROUT        04424  021002 ". LDI  2              04514  002400 .. NEG ,NOP
04335  000201 .. PCAL CHECKYTRAP      04425  001700 .. CMP ,NOP            04515  021001 ". LDI  1
04336  140572 .z BR   P- 172          04426  141221 .. BE   P+ 021          04516  000030 .. PCAL ERROROUT
04337  021027 ". LDI  23              04427  000600 .. ZERO,NOP            04517  000162 .r PCAL CHECKYTRAP
04340  051065 R5 STOR DB 065          04430  021041 "! LDI  33             04520  140553 .k BR   P- 153
04341  041036 B. LOAD DB 036          04431  000107 .G PCAL GET'MESSAGE    04521  021030 ". LDI  24
04342  021001 ". LDI  1               04432  051024 R. STOR DB 024         04522  051065 R5 STOR DB 065
04343  006100 .@ LSUB,NOP            04433  021060 "0 LDI  48             04523  041036 B. LOAD DB 036
04344  051013 R. STOR DB 013          04434  041013 B. LOAD DB 013         04524  021001 ". LDI  1
04345  120013 .. INCM DB 013          04435  006000 .. LADD,NOP           04525  006100 .@ LSUB,NOP
04346  041013 B. LOAD DB 013          04436  021407 #. LDXI 7              04526  051013 R. STOR DB 013
04347  061023 b. CMPM DB 023          04437  166104 .D STB  DB 104,I,X     04527  120013 .. INCM DB 013
04350  145403 .. BG   P+ 003,I        04440  041024 B. LOAD DB 024         04530  041013 B. LOAD DB 013
04351  040003 @. LOAD P+ 003          04441  002400 .. NEG ,NOP           04531  061023 b. CMPM DB 023
04352  140003 .. BR   P+ 003          04442  021000 ". LDI  0              04532  145424 .. BG   P+ 024,I
04353  000146 .f DELB,DDUP            04443  000107 .G PCAL ERROROUT       04533  040557 Ao LOAD P- 157
04354  040100 @@ LOAD P+ 100          04444  021001 ". LDI  1              04534  041013 B. LOAD DB 013
04355  041013 B. LOAD DB 013          04445  051005 R. STOR DB 005         04535  006000 .. LADD,NOP
04356  006000 .. LADD,NOP             04446  140021 .. BR   P+ 021          04536  000124 .T PCAL DO'WIOC0
04357  000045 .% PCAL DO'WIOC0        04447  000600 .. ZERO,NOP            04537  040540 A' LOAD P- 140
04360  040017 @. LOAD P+ 017          04450  021042 "" LDI  34             04540  000002 .. PCAL DO'WIOC0
04361  000002 .. PCAL DO'WIOC0        04451  000020 .. PCAL GET'MESSAGE    04541  021006 ". LDI  6
04362  021006 ". LDI  6               04452  051024 R. STOR DB 024         04542  000002 .. PCAL DO'WIOC0
04363  000002 .. PCAL DO'WIOC0        04453  021060 "0 LDI  48             04543  040014 @. LOAD P+ 014
04364  040751 A. LOAD P- 351          04454  140003 .. BR   P+ 003          04544  000002 .. PCAL DO'WIOC0
04365  000002 .. PCAL DO'WIOC0        04455  000012 .. NOP ,DSUB           04545  021007 ". LDI  7
04366  021007 ". LDI  7               04456  000011 .. NOP ,DADD           04546  000002 .. PCAL DO'WIOC0
04367  000002 .. PCAL DO'WIOC0        04457  041013 B. LOAD DB 013         04547  021030 ". LDI  24
04370  021030 ". LDI  24              04460  006000 .. LADD,NOP           04550  000002 .. PCAL DO'WIOC0
04371  000002 .. PCAL DO'WIOC0        04461  021407 #. LDXI 7              04551  040007 @. LOAD P+ 007
04372  040756 A. LOAD P- 356          04462  166104 .D STB  DB 104,I,X     04552  000002 .. PCAL DO'WIOC0
04373  000002 .. PCAL DO'WIOC0        04463  041024 B. LOAD DB 024         04553  021000 ". LDI  0
04374  021000 ". LDI  0               04464  002400 .. NEG ,NOP           04554  000002 .. PCAL DO'WIOC0
04375  000002 .. PCAL DO'WIOC0        04465  021000 ". LDI  0              04555  140004 .. BR   P+ 004
04376  140002 .. BR   P+ 002          04466  000023 .. PCAL ERROROUT       04556  000026 .. NOP ,STBX
04377  040143 @c LOAD P+ 143          04467  041005 B. LOAD DB 005         04557  040146 @f LOAD P+ 146
04400  020104  D IOOP 32 BIT OP       04470  013627 .. BRO  P+27           04560  040140 @' LOAD P+ 140
04401  000000 .. NOP ,NOP             04471  041070 B8 LOAD DB 070         04561  020104  D IOOP 32 BIT OP
04402  021031 ". LDI  25              04472  037777 ?. ANDI 255            04562  000000 .. NOP ,NOP
04403  000212 .. PCAL DODELAY         04473  021002 ". LDI  2              04563  021005 ". LDI  5
04404  040772 A. LOAD P- 372          04474  001700 .. CMP ,NOP            04564  000161 .q PCAL DODELAY
04405  000010 .. PCAL DO'WIOC0        04475  141222 .. BE   P+ 022          04565  040022 @. LOAD P+ 022
04406  000073 .; PCAL DO'RIOC0        04476  000600 .. ZERO,NOP            04566  000012 .. PCAL DO'WIOC0
04407  041070 B8 LOAD DB 070          04477  021034 ". LDI  28             04567  000154 .l PCAL DO'RIOC0
04410  051002 R. STOR DB 002          04500  000027 .. PCAL GET'MESSAGE    04570  041070 B8 LOAD DB 070
04411  040547 Ag LOAD P- 147          04501  051024 R. STOR DB 024         04571  010316 .. LSR  14 BITS
04412  000005 .. PCAL DO'WIOC0        04502  021062 "2 LDI  50             04572  037401 ?. ANDI 1
04413  000005 .. PCAL DO'RIOC0        04503  021454 #, LDXI 44             04573  013607 .. BRO  P+7
04414  021000 ". LDI  0               04504  166104 .D STB  DB 104,I,X     04574  000600 .. ZERO,NOP
04415  051005 R. STOR DB 005          04505  021037 ". LDI  31             04575  021043 "# LDI  35
04416  041002 B. LOAD DB 002          04506  021002 ". LDI  2              04576  000076 .> PCAL GET'MESSAGE
04417  010303 .. LSR  3 BITS          04507  021012 ". LDI  10             04577  002400 .. NEG ,NOP
04420  037401 ?. ANDI 1               04510  041070 B8 LOAD DB 070         04600  021001 ". LDI  1
04421  017634 .. BRO  P+34,I          04511  037777 ?. ANDI 255            04601  000063 .3 PCAL ERROROUT
04422  041070 B8 LOAD DB 070          04512  000211 .. PCAL NUM2ASC        04602  000063 .3 PCAL CHECKYTRAP
04423  037777 ?. ANDI 255             04513  041024 B. LOAD DB 024         04603  140454 ., BR   P- 054
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04604  021031 ". LDI  25          04674  041036 B. LOAD DB 036       04764  016401 .. DCSL 1 BIT ,X
04605  051065 R5 STOR DB 065      04675  021001 ". LDI  1           04765  000100 .@ DELB,NOP
04606  140002 .. BR   P+ 002      04676  006100 .@ LSUB,NOP         04766  017716 .. BRE  P+16,I
04607  040141 @a LOAD P+ 141      04677  051013 R. STOR DB 013       04767  021033 ". LDI  27
04610  041010 B. LOAD DB 010      04700  120013 .. INCM DB 013       04770  051065 R5 STOR DB 065
04611  020302  . IOOP 32 BIT OP  04701  041013 B. LOAD DB 013       04771  021060 "0 LDI  48
04612  000006 .. NOP ,ZERO        04702  061023 b. CMPM DB 023       04772  051055 R- STOR DB 055
04613  141402 .. BG   P+ 002      04703  145434 .. BG   P+ 034,I     04773  021020 ". LDI  16
04614  001136 .^ PCAL WRITEFAIL   04704  040730 A. LOAD P- 330       04774  051064 R4 STOR DB 064
04615  041036 B. LOAD DB 036      04705  041013 B. LOAD DB 013       04775  021000 ". LDI  0
04616  021001 ". LDI  1           04706  006000 .. LADD,NOP          04776  051033 R. STOR DB 033
04617  006100 .@ LSUB,NOP         04707  000047 .’ PCAL DO’WIOC0     04777  041033 B. LOAD DB 033
04620  051013 R. STOR DB 013      04710  040711 A. LOAD P- 311       05000  021000 ". LDI  0
04621  120013 .. INCM DB 013      04711  000002 .. PCAL DO’WIOC0     05001  005700 .. LCMP,NOP
04622  041013 B. LOAD DB 013      04712  021005 ". LDI  5           05002  145503 .C BNE  P+ 003,I
04623  061023 b. CMPM DB 023      04713  000002 .. PCAL DO’WIOC0     05003  140003 .. BR   P+ 003
04624  145434 .. BG   P+ 034,I    04714  040505 AE LOAD P- 105       05004  004424 .. LDXA,NEG
04625  040651 A. LOAD P- 251      04715  000002 .. PCAL DO’WIOC0     05005  000415 .. INCX,DNEG
04626  041013 B. LOAD DB 013      04716  021336 ". LDI  222         05006  030040 0  SED  0
04627  006000 .. LADD,NOP         04717  000002 .. PCAL DO’WIOC0     05007  041010 B. LOAD DB 010
04630  000042 ." PCAL DO’WIOC0    04720  040541 Aa LOAD P- 141       05010  020302  . IOOP 32 BIT OP
04631  040632 A. LOAD P- 232      04721  000002 .. PCAL DO’WIOC0     05011  000006 .. NOP ,ZERO
04632  000002 .. PCAL DO’WIOC0    04722  021011 ". LDI  9           05012  141402 .. BG   P+ 002
04633  021005 ". LDI  5           04723  000002 .. PCAL DO’WIOC0     05013  000120 .P PCAL WRITEFAIL
04634  000002 .. PCAL DO’WIOC0    04724  021031 ". LDI  25          05014  041036 B. LOAD DB 036
04635  040426 A. LOAD P- 026      04725  000002 .. PCAL DO’WIOC0     05015  021001 ". LDI  1
04636  000002 .. PCAL DO’WIOC0    04726  040546 Af LOAD P- 146      05016  006100 .@ LSUB,NOP
04637  021336 ". LDI  222         04727  000002 .. PCAL DO’WIOC0     05017  051013 R. STOR DB 013
04640  000002 .. PCAL DO’WIOC0    04730  021125 "U LDI  85          05020  120013 .. INCM DB 013
04641  000052 .* PCAL DO’RIOC0    04731  000002 .. PCAL DO’WIOC0     05021  041013 B. LOAD DB 013
04642  041070 B8 LOAD DB 070      04732  040523 AS LOAD P- 123       05022  061023 b. CMPM DB 023
04643  037401 ?. ANDI 1           04733  000002 .. PCAL DO’WIOC0     05023  145402 .. BG   P+ 002,I
04644  013617 .. BRO  P+17        04734  000073 .; PCAL DO’RIOC0     05024  140002 .. BR   P+ 002
04645  000600 .. ZERO,NOP         04735  041070 B8 LOAD DB 070       05025  000361 .. ZROX,LSUB
04646  021044 "$ LDI  36          04736  140002 .. BR   P+ 002       05026  041034 B. LOAD DB 034
04647  000051 .) PCAL GET’MESSAGE 04737  000020 .. NOP ,ADD         05027  041035 B. LOAD DB 035
04650  051024 R. STOR DB 024      04740  037401 ?. ANDI 1           05030  006500 .@ OR   ,NOP
04651  021061 "1 LDI  49          04741  013714 .. BRE  P+14         05031  030100 0@ SMSK
04652  021424 #. LDXI 20          04742  000600 .. ZERO,NOP         05032  025001 *. LDNI 1
04653  166104 .D STB  DB 104,I,X  04743  021044 "$ LDI  36          05033  051012 R. STOR DB 012
04654  041024 B. LOAD DB 024      04744  000075 .= PCAL GET’MESSAGE 05034  120012 .. INCM DB 012
04655  002400 .. NEG ,NOP         04745  051024 R. STOR DB 024      05035  041012 B. LOAD DB 012
04656  021001 ". LDI  1           04746  021060 "0 LDI  48          05036  041045 B% LOAD DB 045
04657  140003 .. BR   P+ 003      04747  021424 #. LDXI 20          05037  013703 .. BRE  P+3
04660  000005 .. NOP ,DECX        04750  166104 .D STB  DB 104,I,X  05040  021007 ". LDI  7
04661  000002 .. NOP ,DDEL        04751  041024 B. LOAD DB 024      05041  140002 .. BR   P+ 002
04662  000061 .1 PCAL ERROROUT    04752  002400 .. NEG ,NOP         05042  021003 ". LDI  3
04663  000061 .1 PCAL CHECKYTRAP  04753  021001 ". LDI  1           05043  001700 .. CMP ,NOP
04664  140443 .# BR   P- 043      04754  000072 .: PCAL ERROROUT     05044  141420 .. BG   P+ 020
04665  021032 ". LDI  26          04755  000072 .: PCAL CHECKYTRAP   05045  040023 @. LOAD P+ 023
04666  051065 R5 STOR DB 065      04756  140456 .. BR   P- 056       05046  041012 B. LOAD DB 012
04667  041010 B. LOAD DB 010      04757  001320 .. PCAL REP’ILL’INT  05047  006000 .. LADD,NOP
04670  020302  . IOOP 32 BIT OP  04760  001326 .. PCAL DOT          05050  000115 .M PCAL DO’WIOC0
04671  000006 .. NOP ,ZERO        04761  151075 .= LDD  DB 075       05051  040020 @. LOAD P+ 020
04672  141402 .. BG   P+ 002      04762  021010 ". LDI  8           05052  000002 .. PCAL DO’WIOC0
04673  000057 ./ PCAL WRITEFAIL   04763  004300 .. STAX,NOP         05053  021040 "  LDI  32
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05054  000002 .. PCAL DO'WIOC0          05144  020104  D IOOP 32 BIT OP        05234  000600 .. ZERO,NOP
05055  021037 ". LDI  31                05145  000000 .. NOP ,NOP             05235  021047 "' LDI  39
05056  000002 .. PCAL DO'WIOC0          05146  021005 ". LDI  5               05236  000030 .. PCAL GET'MESSAGE
05057  040013 @. LOAD P+ 013            05147  000024 .. PCAL DODELAY         05237  002400 .. NEG ,NOP
05060  000002 .. PCAL DO'WIOC0          05150  021000 ". LDI  0               05240  021001 ". LDI  1
05061  021017 ". LDI  15                05151  004500 .@ DUP ,NOP             05241  000007 .. PCAL ERROROUT
05062  000002 .. PCAL DO'WIOC0          05152  051005 R. STOR DB 005          05242  140120 .P BR   P+ 120
05063  140427 .. BR   P- 027            05153  051002 R. STOR DB 002          05243  041070 B8 LOAD DB 070
05064  000000 .. PCAL DRT'INIT          05154  000220 .. PCAL DO'RIOC0        05244  037777 ?. ANDI 255
05065  000000 .. PCAL ZERO'CPVA         05155  041070 B8 LOAD DB 070          05245  021003 ". LDI  3
05066  000000 .. PCAL ST'DSJ'CH'PROGS   05156  051002 R. STOR DB 002          05246  001700 .. CMP ,NOP
05067  140004 .. BR   P+ 004            05157  040041 @! LOAD P+ 041          05247  141224 .. BE   P+ 024
05070  040100 @@ LOAD P+ 100            05160  000015 .. PCAL DO'WIOC0        05250  000600 .. ZERO,NOP
05071  040147 @g LOAD P+ 147            05161  000005 .. PCAL DO'RIOC0        05251  021051 ") LDI  41
05072  040142 @b LOAD P+ 142            05162  021011 ". LDI  9               05252  000014 .. PCAL GET'MESSAGE
05073  030041 0! SED  1                 05163  051007 R. STOR DB 007          05253  051024 R. STOR DB 024
05074  025001 *. LDNI 1                 05164  041045 B% LOAD DB 045          05254  021016 ". LDI  14
05075  051012 R. STOR DB 012            05165  013705 .. BRE  P+5             05255  021002 ". LDI  2
05076  120012 .. INCM DB 012            05166  041007 B. LOAD DB 007          05256  021020 ". LDI  16
05077  041012 B. LOAD DB 012            05167  021004 ". LDI  4               05257  041070 B8 LOAD DB 070
05100  041045 B% LOAD DB 045            05170  006500 .@ OR  ,NOP            05260  037777 ?. ANDI 255
05101  013703 .. BRE  P+3               05171  051007 R. STOR DB 007          05261  000033 .. PCAL NUM2ASC
05102  021007 ". LDI  7                 05172  041002 B. LOAD DB 002          05262  021033 ". LDI  27
05103  140002 .. BR   P+ 002            05173  037437 ?. ANDI 31              05263  021002 ". LDI  2
05104  021003 ". LDI  3                 05174  041007 B. LOAD DB 007          05264  021020 ". LDI  16
05105  001700 .. CMP ,NOP               05175  001700 .. CMP ,NOP             05265  021000 ". LDI  0
05106  141412 .. BG   P+ 012            05176  145223 .. BE   P+ 023,I         05266  000005 .. PCAL NUM2ASC
05107  040417 A. LOAD P- 017            05177  041002 B. LOAD DB 002          05267  041024 B. LOAD DB 024
05110  041012 B. LOAD DB 012            05200  037437 ?. ANDI 31              05270  002400 .. NEG ,NOP
05111  006000 .. LADD,NOP               05201  021007 ". LDI  7               05271  021001 ". LDI  1
05112  000030 .. PCAL DO'WIOC0          05202  001700 .. CMP ,NOP             05272  000031 .. PCAL ERROROUT
05113  040422 A. LOAD P- 022            05203  141231 .. BE   P+ 031          05273  171013 .. LRA  DB 013
05114  000002 .. PCAL DO'WIOC0          05204  000600 .. ZERO,NOP            05274  000147 .g PCAL CHK'UNEXP'I
05115  021077 "? LDI  63                05205  021050 "( LDI  40              05275  040604 A. LOAD P- 204
05116  000002 .. PCAL DO'WIOC0          05206  000242 .. PCAL GET'MESSAGE     05276  000116 .N PCAL DO'WIOC0
05117  140421 .. BR   P- 021            05207  051024 R. STOR DB 024          05277  041055 B- LOAD DB 055
05120  020104  D IOOP 32 BIT OP         05210  021024 ". LDI  20              05300  000002 .. PCAL DO'WIOC0
05121  000000 .. NOP ,NOP               05211  021002 ". LDI  2               05301  140002 .. BR   P+ 002
05122  021005 ". LDI  5                 05212  021020 ". LDI  16              05302  000060 .0 NOP ,LADD
05123  000337 .. PCAL DODELAY           05213  041002 B. LOAD DB 002          05303  020104  D IOOP 32 BIT OP
05124  171013 .. LRA  DB 013            05214  037437 ?. ANDI 31              05304  000000 .. NOP ,NOP
05125  000000 .. PCAL CHK'UNEXP'I       05215  000503 .C PCAL NUM2ASC         05305  021005 ". LDI  5
05126  040436 A. LOAD P- 036            05216  021041 "! LDI  33              05306  000137 ._ PCAL DODELAY
05127  041013 B. LOAD DB 013            05217  140004 .. BR   P+ 004          05307  041013 B. LOAD DB 013
05130  006000 .. LADD,NOP               05220  040160 @p LOAD P+ 160          05310  021025 ". LDI  21
05131  000013 .. PCAL DO'WIOC0          05221  000022 .. NOP ,MPY             05311  006201 .. LMPY,DELB
05132  040441 A! LOAD P- 041            05222  000012 .. NOP ,DSUB            05312  021005 ". LDI  5
05133  000002 .. PCAL DO'WIOC0          05223  021002 ". LDI  2               05313  006043 .# LADD,STAX
05134  021040 "  LDI  32                05224  021020 ". LDI  16              05314  047137 N_ LOAD DB 137,I,X
05135  000002 .. PCAL DO'WIOC0          05225  041007 B. LOAD DB 007          05315  004500 .@ DUP ,NOP
05136  041064 B4 LOAD DB 064            05226  000011 .. PCAL NUM2ASC         05316  051005 R. STOR DB 005
05137  000002 .. PCAL DO'WIOC0          05227  041024 B. LOAD DB 024          05317  022002 $. CMPI 2
05140  040446 A& LOAD P- 046            05230  002400 .. NEG ,NOP             05320  141223 .. BE   P+ 023
05141  000002 .. PCAL DO'WIOC0          05231  021001 ". LDI  1               05321  000600 .. ZERO,NOP
05142  021007 ". LDI  7                 05232  000256 .. PCAL ERROROUT        05322  021053 "+ LDI  43
05143  000002 .. PCAL DO'WIOC0          05233  140007 .. BR   P+ 007          05323  000051 .) PCAL GET'MESSAGE
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05324  051024 R. STOR DB 024        05414  021002 ". LDI  2            05504  040020 @. LOAD P+ 020
05325  021052 "* LDI  42           05415  051064 R4 STOR DB 064       05505  000002 .. PCAL DO'WIOC0
05326  021002 ". LDI  2            05416  140003 .. BR   P+ 003       05506  021040 "  LDI  32
05327  021020 ". LDI  16           05417  025001 *. LDNI 1            05507  000002 .. PCAL DO'WIOC0
05330  041005 B. LOAD DB 005       05420  051033 R. STOR DB 033       05510  021000 ". LDI  0
05331  000043 .# PCAL NUM2ASC      05421  142016 .. BR   P+ 016,I     05511  000002 .. PCAL DO'WIOC0
05332  021066 "6 LDI  54           05422  021034 ". LDI  28           05512  040013 @. LOAD P+ 013
05333  021001 ". LDI  1            05423  051065 R5 STOR DB 065       05513  000002 .. PCAL DO'WIOC0
05334  021020 ". LDI  16           05424  021060 "0 LDI  48           05514  021000 ". LDI  0
05335  021002 ". LDI  2            05425  051055 R- STOR DB 055       05515  000002 .. PCAL DO'WIOC0
05336  000005 .. PCAL NUM2ASC      05426  021017 ". LDI  15           05516  140427 .. BR   P- 027
05337  041024 B. LOAD DB 024       05427  051064 R4 STOR DB 064       05517  000433 .. PCAL DRT'INIT
05340  002400 .. NEG ,NOP          05430  021000 ". LDI  0            05520  000433 .. PCAL ZERO'CPVA
05341  021001 ". LDI  1            05431  051033 R. STOR DB 033       05521  000433 .. PCAL ST'DSJ'CH'PROGS
05342  000050 .( PCAL ERROROUT     05432  041033 B. LOAD DB 033       05522  140004 .. BR   P+ 004
05343  041013 B. LOAD DB 013       05433  021000 ". LDI  0            05523  040100 @@ LOAD P+ 100
05344  023404 '. MPYI 4            05434  005700 .. LCMP,NOP          05524  040147 @g LOAD P+ 147
05345  022402 %. ADDI 2            05435  145503 .C BNE  P+ 003,I     05525  040142 @b LOAD P+ 142
05346  004300 .. STAX,NOP          05436  140003 .. BR   P+ 003       05526  030041 0! SED  1
05347  047140 N' LOAD DB 140,I,X   05437  177340 .. LRA  DB 340,I,X   05527  025001 *. LDNI 1
05350  041010 B. LOAD DB 010       05440  000404 .. INCX,INCX         05530  051012 R. STOR DB 012
05351  071013 r. ADDM DB 013       05441  030040 0  SED  0            05531  120012 .. INCM DB 012
05352  005700 .. LCMP,NOP          05442  041010 B. LOAD DB 010       05532  041012 B. LOAD DB 012
05353  141207 .. BE   P+ 007       05443  020302  . IOOP 32 BIT OP     05533  041045 B% LOAD DB 045
05354  000600 .. ZERO,NOP          05444  000006 .. NOP ,ZERO         05534  013703 .. BRE  P+3
05355  021125 "U LDI  85           05445  141402 .. BG   P+ 002       05535  021007 ". LDI  7
05356  000033 .. PCAL GET'MESSAGE  05446  000043 .# PCAL WRITEFAIL    05536  140002 .. BR   P+ 002
05357  002400 .. NEG ,NOP          05447  041036 B. LOAD DB 036       05537  021003 ". LDI  3
05360  021001 ". LDI  1            05450  021001 ". LDI  1            05540  001700 .. CMP ,NOP
05361  000017 .. PCAL ERROROUT     05451  006100 .@ LSUB,NOP          05541  141412 .. BG   P+ 012
05362  025001 *. LDNI 1            05452  051013 R. STOR DB 013       05542  040417 A. LOAD P- 017
05363  051012 R. STOR DB 012       05453  120013 .. INCM DB 013       05543  041012 B. LOAD DB 012
05364  030041 0! SED  1            05454  041013 B. LOAD DB 013       05544  006000 .. LADD,NOP
05365  120012 .. INCM DB 012       05455  061023 b. CMPM DB 023       05545  000030 .. PCAL DO'WIOC0
05366  041012 B. LOAD DB 012       05456  145402 .. BG   P+ 002,I     05546  040422 A. LOAD P- 022
05367  022007 $. CMPI 7            05457  140002 .. BR   P+ 002       05547  000002 .. PCAL DO'WIOC0
05370  141407 .. BG   P+ 007       05460  000350 .. ZROX,FCMP         05550  021077 "? LDI  63
05371  041012 B. LOAD DB 012       05461  041034 B. LOAD DB 034       05551  000002 .. PCAL DO'WIOC0
05372  061013 b. CMPM DB 013       05462  041035 B. LOAD DB 035       05552  140421 .. BR   P- 021
05373  141203 .. BE   P+ 003       05463  006500 .@ OR  ,NOP          05553  020104  D IOOP 32 BIT OP
05374  171012 .. LRA  DB 012       05464  030100 0@ SMSK              05554  000000 .. NOP ,NOP
05375  000101 .A PCAL CHK'UNEXP'I  05465  025001 *. LDNI 1            05555  021005 ". LDI  5
05376  140411 .. BR   P- 011       05466  051012 R. STOR DB 012       05556  000250 .. PCAL DODELAY
05377  041010 B. LOAD DB 010       05467  120012 .. INCM DB 012       05557  171013 .. LRA  DB 013
05400  020302  . IOOP 32 BIT OP    05470  041012 B. LOAD DB 012       05560  000163 .s PCAL CHK'UNEXP'I
05401  000006 .. NOP ,ZERO         05471  041045 B% LOAD DB 045       05561  040436 A. LOAD P- 036
05402  141402 .. BG   P+ 002       05472  013703 .. BRE  P+3           05562  041013 B. LOAD DB 013
05403  000370 .. PCAL WRITEFAIL    05473  021007 ". LDI  7            05563  006000 .. LADD,NOP
05404  000427 .. PCAL CHECKYTRAP   05474  140002 .. BR   P+ 002       05564  000013 .. PCAL DO'WIOC0
05405  140765 .. BR   P- 365       05475  021003 ". LDI  3            05565  040441 A! LOAD P- 041
05406  041064 B4 LOAD DB 064       05476  001700 .. CMP ,NOP          05566  000002 .. PCAL DO'WIOC0
05407  021020 ". LDI  16           05477  141420 .. BG   P+ 020       05567  021040 "  LDI  32
05410  005700 .. LCMP,NOP          05500  040023 @. LOAD P+ 023       05570  000002 .. PCAL DO'WIOC0
05411  141506 .F BNE  P+ 006       05501  041012 B. LOAD DB 012       05571  041064 B4 LOAD DB 064
05412  021042 "" LDI  34           05502  006000 .. LADD,NOP          05572  000002 .. PCAL DO'WIOC0
05413  051055 R- STOR DB 055       05503  000203 .. PCAL DO'WIOC0     05573  040446 A& LOAD P- 046
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05574  000002 .. PCAL DO'WIOC0        05664  140120 .P BR   P+ 120        05754  021066 "6 LDI  54
05575  021010 ". LDI  8               05665  041070 B8 LOAD DB 070        05755  021001 ". LDI  1
05576  000002 .. PCAL DO'WIOC0        05666  037777 ?. ANDI 255          05756  021020 ". LDI  16
05577  020104  D IOOP 32 BIT OP       05667  021003 ". LDI  3            05757  021002 ". LDI  2
05600  000000 .. NOP ,NOP             05670  001700 .. CMP ,NOP         05760  000005 .. PCAL NUM2ASC
05601  021005 ". LDI  5               05671  141224 .. BE   P+ 024       05761  041024 B. LOAD DB 024
05602  000024 .. PCAL DODELAY         05672  000600 .. ZERO,NOP          05762  002400 .. NEG ,NOP
05603  021000 ". LDI  0               05673  021051 ") LDI  41           05763  021001 ". LDI  1
05604  004500 .@ DUP ,NOP             05674  000014 .. PCAL GET'MESSAGE   05764  000050 .( PCAL ERROROUT
05605  051005 R. STOR DB 005          05675  051024 R. STOR DB 024        05765  041013 B. LOAD DB 013
05606  051002 R. STOR DB 002          05676  021016 ". LDI  14           05766  023404 '. MPYI 4
05607  000426 .. PCAL DO'RIOC0        05677  021002 ". LDI  2            05767  022402 %. ADDI 2
05610  041070 B8 LOAD DB 070          05700  021020 ". LDI  16           05770  004300 .. STAX,NOP
05611  051002 R. STOR DB 002          05701  041070 B8 LOAD DB 070        05771  047140 N' LOAD DB 140,I,X
05612  040772 A. LOAD P- 372          05702  037777 ?. ANDI 255          05772  041010 B. LOAD DB 010
05613  000015 .. PCAL DO'WIOC0        05703  000036 .. PCAL NUM2ASC      05773  071013 r. ADDM DB 013
05614  000005 .. PCAL DO'RIOC0        05704  021033 ". LDI  27           05774  005700 .. LCMP,NOP
05615  041002 B. LOAD DB 002          05705  021002 ". LDI  2            05775  141207 .. BE   P+ 007
05616  037437 ?. ANDI 31              05706  021020 ". LDI  16           05776  000600 .. ZERO,NOP
05617  021022 ". LDI  18              05707  021000 ". LDI  0            05777  021125 "U LDI  85
05620  005700 .. LCMP,NOP             05710  000005 .. PCAL NUM2ASC      06000  000033 .. PCAL GET'MESSAGE
05621  145234 .. BE   P+ 034,I        05711  041024 B. LOAD DB 024        06001  002400 .. NEG ,NOP
05622  041002 B. LOAD DB 002          05712  002400 .. NEG ,NOP          06002  021001 ". LDI  1
05623  037437 ?. ANDI 31              05713  021001 ". LDI  1            06003  000017 .. PCAL ERROROUT
05624  021010 ". LDI  8               05714  000031 .. PCAL ERROROUT      06004  025001 *. LDNI 1
05625  005700 .. LCMP,NOP             05715  171013 .. LRA  DB 013        06005  051012 R. STOR DB 012
05626  141225 .. BE   P+ 025          05716  000136 .^ PCAL CHK'UNEXP'I   06006  030041 0! SED  1
05627  000600 .. ZERO,NOP             05717  040573 A{ LOAD P- 173        06007  120012 .. INCM DB 012
05630  021050 "( LDI  40              05720  000105 .E PCAL DO'WIOC0      06010  041012 B. LOAD DB 012
05631  000253 .. PCAL GET'MESSAGE     05721  041055 B- LOAD DB 055        06011  022007 $. CMPI 7
05632  051024 R. STOR DB 024          05722  000002 .. PCAL DO'WIOC0      06012  141407 .. BG   P+ 007
05633  021024 ". LDI  20              05723  140002 .. BR   P+ 002        06013  041012 B. LOAD DB 012
05634  021002 ". LDI  2               05724  000060 .0 NOP ,LADD         06014  061013 b. CMPM DB 013
05635  021020 ". LDI  16              05725  020104  D IOOP 32 BIT OP    06015  141203 .. BE   P+ 003
05636  041002 B. LOAD DB 002          05726  000000 .. NOP ,NOP          06016  171012 .. LRA  DB 012
05637  037437 ?. ANDI 31              05727  021005 ". LDI  5            06017  000101 .A PCAL CHK'UNEXP'I
05640  000302 .. PCAL NUM2ASC         05730  000126 .V PCAL DODELAY       06020  140411 .. BR   P- 011
05641  021041 "! LDI  33              05731  041013 B. LOAD DB 013        06021  041010 B. LOAD DB 010
05642  021002 ". LDI  2               05732  021025 ". LDI  21           06022  020302  . IOOP 32 BIT OP
05643  021020 ". LDI  16              05733  006201 .. LMPY,DELB         06023  000006 .. NOP ,ZERO
05644  021022 ". LDI  18              05734  021005 ". LDI  5            06024  141402 .. BG   P+ 002
05645  000005 .. PCAL NUM2ASC         05735  006043 .# LADD,STAX         06025  000357 .. PCAL WRITEFAIL
05646  041024 B. LOAD DB 024          05736  047137 N_ LOAD DB 137,I,X    06026  000422 .. PCAL CHECKYTRAP
05647  002400 .. NEG ,NOP             05737  004500 .@ DUP ,NOP          06027  140754 .. BR   P- 354
05650  021001 ". LDI  1               05740  051005 R. STOR DB 005        06030  041064 B4 LOAD DB 064
05651  000270 .. PCAL ERROROUT        05741  022002 $. CMPI 2            06031  021020 ". LDI  16
05652  140012 .. BR   P+ 012          05742  141223 .. BE   P+ 023        06032  005700 .. LCMP,NOP
05653  000600 .. ZERO,NOP             05743  000600 .. ZERO,NOP          06033  141506 .F BNE  P+ 006
05654  140003 .. BR   P+ 003          05744  021053 "+ LDI  43           06034  021042 "" LDI  34
05655  000010 .. NOP ,DCMP            05745  000051 .) PCAL GET'MESSAGE   06035  051055 R- STOR DB 055
05656  000006 .. NOP ,ZERO            05746  051024 R. STOR DB 024        06036  021035 ". LDI  29
05657  021047 "' LDI  39              05747  021052 "* LDI  42           06037  051064 R4 STOR DB 064
05660  000027 .. PCAL GET'MESSAGE     05750  021002 ". LDI  2            06040  140003 .. BR   P+ 003
05661  002400 .. NEG ,NOP             05751  021020 ". LDI  16           06041  025001 *. LDNI 1
05662  021001 ". LDI  1               05752  041005 B. LOAD DB 005        06042  051033 R. STOR DB 033
05663  000012 .. PCAL ERROROUT        05753  000043 .# PCAL NUM2ASC      06043  142004 .. BR   P+ 004,I
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06044  021035 ". LDI  29          06134  120012 .. INCM DB 012          06224  000005 .. PCAL DO'RIOC0
06045  051065 R5 STOR DB 065      06135  041012 B. LOAD DB 012          06225  021023 ". LDI  19
06046  140002 .. BR   P+ 002      06136  041045 B% LOAD DB 045          06226  051007 R. STOR DB 007
06047  177363 .. LRA  DB 363,I,X  06137  013703 .. BRE  P+3            06227  041045 B% LOAD DB 045
06050  030040 0  SED  0          06140  021007 ". LDI  7              06230  013705 .. BRE  P+5
06051  041010 B. LOAD DB 010      06141  140002 .. BR   P+ 002         06231  041007 B. LOAD DB 007
06052  020302  . IOOP 32 BIT OP   06142  021003 ". LDI  3              06232  021004 ". LDI  4
06053  000006 .. NOP ,ZERO        06143  001700 .. CMP ,NOP           06233  006500 .@ OR   ,NOP
06054  141402 .. BG   P+ 002      06144  141412 .. BG   P+ 012         06234  051007 R. STOR DB 007
06055  000030 .. PCAL WRITEFAIL   06145  040012 @. LOAD P+ 012         06235  041002 B. LOAD DB 002
06056  041036 B. LOAD DB 036      06146  041012 B. LOAD DB 012         06236  037437 ?. ANDI 31
06057  021001 ". LDI  1          06147  006000 .. LADD,NOP            06237  041007 B. LOAD DB 007
06060  006100 .@ LSUB,NOP        06150  000024 .. PCAL DO'WIOC0        06240  001700 .. CMP ,NOP
06061  051013 R. STOR DB 013      06151  040007 @. LOAD P+ 007         06241  145223 .. BE   P+ 023,I
06062  120013 .. INCM DB 013      06152  000002 .. PCAL DO'WIOC0       06242  041002 B. LOAD DB 002
06063  041013 B. LOAD DB 013      06153  021077 "? LDI  63             06243  037437 ?. ANDI 31
06064  061023 b. CMPM DB 023      06154  000002 .. PCAL DO'WIOC0       06244  021013 ". LDI  11
06065  145402 .. BG   P+ 002,I    06155  140421 .. BR   P- 021         06245  005700 .. LCMP,NOP
06066  140002 .. BR   P+ 002      06156  140003 .. BR   P+ 003         06246  141231 .. BE   P+ 031
06067  000362 .. ZROX,LMPY        06157  040100 @@ LOAD P+ 100         06247  000600 .. ZERO,NOP
06070  041034 B. LOAD DB 034      06160  040147 @g LOAD P+ 147         06250  021050 "( LDI  40
06071  041035 B. LOAD DB 035      06161  020104  D IOOP 32 BIT OP     06251  000251 .. PCAL GET'MESSAGE
06072  006500 .@ OR  ,NOP         06162  000000 .. NOP ,NOP           06252  051024 R. STOR DB 024
06073  030100 0@ SMSK             06163  021005 ". LDI  5              06253  021024 ". LDI  20
06074  025001 *. LDNI 1           06164  000234 .. PCAL DODELAY        06254  021002 ". LDI  2
06075  051012 R. STOR DB 012      06165  171013 .. LRA  DB 013         06255  021020 ". LDI  16
06076  120012 .. INCM DB 012      06166  000147 .g PCAL CHK'UNEXP'I    06256  041002 B. LOAD DB 002
06077  041012 B. LOAD DB 012      06167  040410 A. LOAD P- 010         06257  037437 ?. ANDI 31
06100  041045 B% LOAD DB 045      06170  041013 B. LOAD DB 013         06260  000300 .. PCAL NUM2ASC
06101  013703 .. BRE  P+3         06171  006000 .. LADD,NOP            06261  021041 "! LDI  33
06102  021007 ". LDI  7           06172  000016 .. PCAL DO'WIOC0       06262  140004 .. BR   P+ 004
06103  140002 .. BR   P+ 002      06173  040413 A. LOAD P- 013         06263  040160 @p LOAD P+ 160
06104  021003 ". LDI  3           06174  000002 .. PCAL DO'WIOC0       06264  000022 .. NOP ,MPY
06105  001700 .. CMP ,NOP         06175  021040 "  LDI  32             06265  000012 .. NOP ,DSUB
06106  141420 .. BG   P+ 020      06176  000002 .. PCAL DO'WIOC0       06266  021002 ". LDI  2
06107  040764 A. LOAD P- 364      06177  021010 ". LDI  8              06267  021020 ". LDI  16
06110  041012 B. LOAD DB 012      06200  000002 .. PCAL DO'WIOC0       06270  041007 B. LOAD DB 007
06111  006000 .. LADD,NOP         06201  040005 @. LOAD P+ 005         06271  000011 .. PCAL NUM2ASC
06112  000170 .x PCAL DO'WIOC0    06202  000002 .. PCAL DO'WIOC0       06272  041024 B. LOAD DB 024
06113  040767 A. LOAD P- 367      06203  021013 ". LDI  11             06273  002400 .. NEG ,NOP
06114  000002 .. PCAL DO'WIOC0    06204  000002 .. PCAL DO'WIOC0       06274  021001 ". LDI  1
06115  021040 "  LDI  32          06205  140002 .. BR   P+ 002         06275  000272 .. PCAL ERROROUT
06116  000002 .. PCAL DO'WIOC0    06206  040142 @b LOAD P+ 142         06276  140007 .. BR   P+ 007
06117  021037 ". LDI  31          06207  020104  D IOOP 32 BIT OP     06277  000600 .. ZERO,NOP
06120  000002 .. PCAL DO'WIOC0    06210  000000 .. NOP ,NOP           06300  021047 "' LDI  39
06121  040774 A. LOAD P- 374      06211  021005 ". LDI  5              06301  000030 .. PCAL GET'MESSAGE
06122  000002 .. PCAL DO'WIOC0    06212  000026 .. PCAL DODELAY        06302  002400 .. NEG ,NOP
06123  021017 ". LDI  15          06213  021000 ". LDI  0              06303  021001 ". LDI  1
06124  000002 .. PCAL DO'WIOC0    06214  004500 .@ DUP ,NOP           06304  000007 .. PCAL ERROROUT
06125  140427 .. BR   P- 027      06215  051005 R. STOR DB 005         06305  140120 .P BR   P+ 120
06126  000407 .. PCAL DRT'INIT    06216  051002 R. STOR DB 002         06306  041070 B8 LOAD DB 070
06127  000407 .. PCAL ZERO'CPVA   06217  000403 .. PCAL DO'RIOC0       06307  037777 ?. ANDI 255
06130  000407 .. PCAL ST'DSJ'CH'PROGS 06220 041070 B8 LOAD DB 070      06310  021003 ". LDI  3
06131  030041 0! SED  1          06221  051002 R. STOR DB 002         06311  001700 .. CMP ,NOP
06132  025001 *. LDNI 1          06222  040041 @! LOAD P+ 041         06312  141224 .. BE   P+ 024
06133  051012 R. STOR DB 012     06223  000017 .. PCAL DO'WIOC0       06313  000600 .. ZERO,NOP
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06314  021051 ") LDI  41          06404  021001 ". LDI  1           06474  041035 B. LOAD DB 035
06315  000014 .. PCAL GET'MESSAGE 06405  000050 .( PCAL ERROROUT    06475  006500 .@ OR  ,NOP
06316  051024 R. STOR DB 024      06406  041013 B. LOAD DB 013      06476  030100 0@ SMSK
06317  021016 ". LDI  14          06407  023404 '. MPYI 4           06477  025001 *. LDNI 1
06320  021002 ". LDI  2           06410  022402 %. ADDI 2           06500  051012 R. STOR DB 012
06321  021020 ". LDI  16          06411  004300 .. STAX,NOP         06501  120012 .. INCM DB 012
06322  041070 B8 LOAD DB 070      06412  047140 N' LOAD DB 140,I,X  06502  041012 B. LOAD DB 012
06323  037777 ?. ANDI 255         06413  041010 B. LOAD DB 010      06503  041045 B% LOAD DB 045
06324  000033 .. PCAL NUM2ASC     06414  071013 r. ADDM DB 013      06504  013703 .. BRE  P+3
06325  021033 ". LDI  27          06415  005700 .. LCMP,NOP         06505  021007 ". LDI  7
06326  021002 ". LDI  2           06416  141207 .. BE   P+ 007      06506  140002 .. BR   P+ 002
06327  021020 ". LDI  16          06417  000600 .. ZERO,NOP         06507  021003 ". LDI  3
06330  021000 ". LDI  0           06420  021125 "U LDI  85          06510  001700 .. CMP ,NOP
06331  000005 .. PCAL NUM2ASC     06421  000033 .. PCAL GET'MESSAGE 06511  141420 .. BG   P+ 020
06332  041024 B. LOAD DB 024      06422  002400 .. NEG ,NOP         06512  040733 A. LOAD P- 333
06333  002400 .. NEG ,NOP         06423  021001 ". LDI  1           06513  041012 B. LOAD DB 012
06334  021001 ". LDI  1           06424  000017 .. PCAL ERROROUT    06514  006000 .. LADD,NOP
06335  000031 .. PCAL ERROROUT    06425  025001 *. LDNI 1           06515  000152 .j PCAL DO'WIOC0
06336  171013 .. LRA  DB 013      06426  051012 R. STOR DB 012      06516  040736 A. LOAD P- 336
06337  000151 .i PCAL CHK'UNEXP'I 06427  030041 0! SED  1           06517  000002 .. PCAL DO'WIOC0
06340  040560 Ap LOAD P- 160      06430  120012 .. INCM DB 012      06520  021040 "  LDI  32
06341  000116 .N PCAL DO'WIOC0    06431  041012 B. LOAD DB 012      06521  000002 .. PCAL DO'WIOC0
06342  021050 "( LDI  40          06432  022007 $. CMPI 7           06522  021000 ". LDI  0
06343  000002 .. PCAL DO'WIOC0    06433  141407 .. BG   P+ 007      06523  000002 .. PCAL DO'WIOC0
06344  140002 .. BR   P+ 002      06434  041012 B. LOAD DB 012      06524  040716 A. LOAD P- 316
06345  000060 .0 NOP ,LADD        06435  061013 b. CMPM DB 013      06525  000002 .. PCAL DO'WIOC0
06346  020104  D IOOP 32 BIT OP   06436  141203 .. BE   P+ 003      06526  021000 ". LDI  0
06347  000000 .. NOP ,NOP         06437  171012 .. LRA  DB 012      06527  000002 .. PCAL DO'WIOC0
06350  021005 ". LDI  5           06440  000101 .A PCAL CHK'UNEXP'I 06530  140427 .. BR   P- 027
06351  000137 ._ PCAL DODELAY     06441  140411 .. BR   P- 011      06531  000403 .. PCAL DRT'INIT
06352  041013 B. LOAD DB 013      06442  041010 B. LOAD DB 010      06532  000403 .. PCAL ZERO'CPVA
06353  021025 ". LDI  21          06443  020302  . IOOP 32 BIT OP   06533  000403 .. PCAL ST'DSJ'CH'PROGS
06354  006201 .. LMPY,DELB        06444  000006 .. NOP ,ZERO        06534  030041 0! SED  1
06355  021005 ". LDI  5           06445  141402 .. BG   P+ 002      06535  025001 *. LDNI 1
06356  006043 .# LADD,STAX        06446  000371 .. PCAL WRITEFAIL   06536  051012 R. STOR DB 012
06357  047137 N_ LOAD DB 137,I,X  06447  000421 .. PCAL CHECKYTRAP  06537  120012 .. INCM DB 012
06360  004500 .@ DUP ,NOP         06450  140766 .. BR   P- 366      06540  041012 B. LOAD DB 012
06361  051005 R. STOR DB 005      06451  021036 ". LDI  30          06541  041045 B% LOAD DB 045
06362  022002 $. CMPI 2           06452  051065 R5 STOR DB 065      06542  013703 .. BRE  P+3
06363  141223 .. BE   P+ 023      06453  030040 0  SED  0           06543  021007 ". LDI  7
06364  000600 .. ZERO,NOP         06454  041010 B. LOAD DB 010      06544  140002 .. BR   P+ 002
06365  021053 "+ LDI  43          06455  020302  . IOOP 32 BIT OP   06545  021003 ". LDI  3
06366  000051 .) PCAL GET'MESSAGE 06456  000006 .. NOP ,ZERO        06546  001700 .. CMP ,NOP
06367  051024 R. STOR DB 024      06457  141402 .. BG   P+ 002      06547  141412 .. BG   P+ 012
06370  021052 "* LDI  42          06460  000012 .. PCAL WRITEFAIL   06550  040771 A. LOAD P- 371
06371  021002 ". LDI  2           06461  041036 B. LOAD DB 036      06551  041012 B. LOAD DB 012
06372  021020 ". LDI  16          06462  021001 ". LDI  1           06552  006000 .. LADD,NOP
06373  041005 B. LOAD DB 005      06463  006100 .@ LSUB,NOP        06553  000024 .. PCAL DO'WIOC0
06374  000043 .# PCAL NUM2ASC     06464  051013 R. STOR DB 013      06554  040774 A. LOAD P- 374
06375  021066 "6 LDI  54          06465  120013 .. INCM DB 013      06555  000002 .. PCAL DO'WIOC0
06376  021001 ". LDI  1           06466  041013 B. LOAD DB 013      06556  021077 "? LDI  63
06377  021020 ". LDI  16          06467  061023 b. CMPM DB 023      06557  000002 .. PCAL DO'WIOC0
06400  021002 ". LDI  2           06470  145402 .. BG   P+ 002,I    06560  140421 .. BR   P- 021
06401  000005 .. PCAL NUM2ASC     06471  140002 .. BR   P+ 002      06561  020104  D IOOP 32 BIT OP
06402  041024 B. LOAD DB 024      06472  000347 .. ZROX,FLT         06562  000000 .. NOP ,NOP
06403  002400 .. NEG ,NOP         06473  041034 B. LOAD DB 034      06563  021005 ". LDI  5
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06564  000213 .. PCAL DODELAY          06654  021020 ". LDI  16          06744  006201 .. LMPY,DELB
06565  171013 .. LRA  DB 013           06655  021010 ". LDI  8           06745  021005 ". LDI  5
06566  000126 .V PCAL CHK'UNEXP'I      06656  000005 .. PCAL NUM2ASC     06746  006043 .# LADD,STAX
06567  040017 @. LOAD P+ 017           06657  041024 B. LOAD DB 024       06747  047137 N_ LOAD DB 137,I,X
06570  041013 B. LOAD DB 013           06660  002400 .. NEG ,NOP          06750  004500 .@ DUP ,NOP
06571  006000 .. LADD,NOP              06661  021001 ". LDI  1           06751  051005 R. STOR DB 005
06572  000013 .. PCAL DO'WIOC0         06662  000236 .. PCAL ERROROUT     06752  022002 $. CMPI 2
06573  040014 @. LOAD P+ 014           06663  140012 .. BR   P+ 012       06753  141223 .. BE   P+ 023
06574  000002 .. PCAL DO'WIOC0         06664  000600 .. ZERO,NOP          06754  000600 .. ZERO,NOP
06575  021040 "  LDI  32               06665  140003 .. BR   P+ 003       06755  021053 "+ LDI  43
06576  000002 .. PCAL DO'WIOC0         06666  000010 .. NOP ,DCMP         06756  000051 .) PCAL GET'MESSAGE
06577  021027 ". LDI  23               06667  000006 .. NOP ,ZERO         06757  051024 R. STOR DB 024
06600  000002 .. PCAL DO'WIOC0         06670  021047 "' LDI  39          06760  021052 "* LDI  42
06601  040773 A. LOAD P- 373           06671  000027 .. PCAL GET'MESSAGE  06761  021002 ". LDI  2
06602  000002 .. PCAL DO'WIOC0         06672  002400 .. NEG ,NOP          06762  021020 ". LDI  16
06603  021004 ". LDI  4                06673  021001 ". LDI  1           06763  041005 B. LOAD DB 005
06604  000002 .. PCAL DO'WIOC0         06674  000012 .. PCAL ERROROUT     06764  000043 .# PCAL NUM2ASC
06605  140003 .. BR   P+ 003           06675  140120 .P BR   P+ 120       06765  021066 "6 LDI  54
06606  040100 @@ LOAD P+ 100           06676  041070 B8 LOAD DB 070       06766  021001 ". LDI  1
06607  040147 @g LOAD P+ 147           06677  037777 ?. ANDI 255          06767  021020 ". LDI  16
06610  020104  D IOOP 32 BIT OP        06700  021003 ". LDI  3           06770  021002 ". LDI  2
06611  000000 .. NOP ,NOP              06701  001700 .. CMP ,NOP         06771  000005 .. PCAL NUM2ASC
06612  021005 ". LDI  5                06702  141224 .. BE   P+ 024       06772  041024 B. LOAD DB 024
06613  000027 .. PCAL DODELAY          06703  000600 .. ZERO,NOP          06773  002400 .. NEG ,NOP
06614  021000 ". LDI  0                06704  021051 ") LDI  41          06774  021001 ". LDI  1
06615  004500 .@ DUP ,NOP              06705  000014 .. PCAL GET'MESSAGE  06775  000050 .( PCAL ERROROUT
06616  051005 R. STOR DB 005           06706  051024 R. STOR DB 024       06776  041013 B. LOAD DB 013
06617  051002 R. STOR DB 002           06707  021016 ". LDI  14          06777  023404 '. MPYI 4
06620  000374 .. PCAL DO'RIOC0         06710  021002 ". LDI  2           07000  022402 %. ADDI 2
06621  041070 B8 LOAD DB 070           06711  021020 ". LDI  16          07001  004300 .. STAX,NOP
06622  051002 R. STOR DB 002           06712  041070 B8 LOAD DB 070       07002  047140 N' LOAD DB 140,I,X
06623  040740 A. LOAD P- 340           06713  037777 ?. ANDI 255          07003  041010 B. LOAD DB 010
06624  000020 .. PCAL DO'WIOC0         06714  000036 .. PCAL NUM2ASC      07004  071013 r. ADDM DB 013
06625  000005 .. PCAL DO'RIOC0         06715  021033 ". LDI  27          07005  005700 .. LCMP,NOP
06626  041002 B. LOAD DB 002           06716  021002 ". LDI  2           07006  141207 .. BE   P+ 007
06627  037437 ?. ANDI 31               06717  021020 ". LDI  16          07007  000600 .. ZERO,NOP
06630  021010 ". LDI  8                06720  021000 ". LDI  0           07010  021125 "U LDI  85
06631  005700 .. LCMP,NOP              06721  000005 .. PCAL NUM2ASC      07011  000033 .. PCAL GET'MESSAGE
06632  145234 .. BE   P+ 034,I         06722  041024 B. LOAD DB 024       07012  002400 .. NEG ,NOP
06633  041002 B. LOAD DB 002           06723  002400 .. NEG ,NOP          07013  021001 ". LDI  1
06634  037437 ?. ANDI 31               06724  021001 ". LDI  1           07014  000017 .. PCAL ERROROUT
06635  021004 ". LDI  4                06725  000031 .. PCAL ERROROUT     07015  025001 *. LDNI 1
06636  005700 .. LCMP,NOP              06726  171013 .. LRA  DB 013       07016  051012 R. STOR DB 012
06637  141225 .. BE   P+ 025           06727  000141 .a PCAL CHK'UNEXP'I  07017  030041 0! SED  1
06640  000600 .. ZERO,NOP              06730  040521 AQ LOAD P- 121       07020  120012 .. INCM DB 012
06641  021050 "( LDI  40               06731  000105 .E PCAL DO'WIOC0     07021  041012 B. LOAD DB 012
06642  000221 .. PCAL GET'MESSAGE      06732  021062 "2 LDI  50          07022  022007 $. CMPI 7
06643  051024 R. STOR DB 024           06733  000002 .. PCAL DO'WIOC0     07023  141407 .. BG   P+ 007
06644  021024 ". LDI  20               06734  140002 .. BR   P+ 002       07024  041012 B. LOAD DB 012
06645  021002 ". LDI  2                06735  000060 .0 NOP ,LADD         07025  061013 b. CMPM DB 013
06646  021020 ". LDI  16               06736  020104  D IOOP 32 BIT OP    07026  141203 .. BE   P+ 003
06647  041002 B. LOAD DB 002           06737  000000 .. NOP ,NOP          07027  171012 .. LRA  DB 012
06650  037437 ?. ANDI 31               06740  021005 ". LDI  5           07030  000101 .A PCAL CHK'UNEXP'I
06651  000250 .. PCAL NUM2ASC          06741  000126 .V PCAL DODELAY      07031  140411 .. BR   P- 011
06652  021041 "! LDI  33               06742  041013 B. LOAD DB 013       07032  041010 B. LOAD DB 010
06653  021002 ". LDI  2                06743  021025 ". LDI  21          07033  020302  . IOOP 32 BIT OP
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07034  000006 .. NOP ,ZERO          07124  140002 .. BR   P+ 002          07214  000005 .. PCAL DO'RIOC0
07035  141402 .. BG   P+ 002        07125  040142 @b LOAD P+ 142          07215  021032 ". LDI  26
07036  000356 .. PCAL WRITEFAIL     07126  030041 0! SED  1              07216  051007 R. STOR DB 007
07037  000370 .. PCAL CHECKYTRAP    07127  025001 *. LDNI 1              07217  041045 B% LOAD DB 045
07040  140753 .. BR   P- 353        07130  051012 R. STOR DB 012         07220  013705 .. BRE  P+5
07041  021037 ". LDI  31           07131  120012 .. INCM DB 012         07221  041007 B. LOAD DB 007
07042  051065 R5 STOR DB 065       07132  041012 B. LOAD DB 012         07222  021004 ". LDI  4
07043  030040 0  SED  0            07133  041045 B% LOAD DB 045         07223  006500 .@ OR   ,NOP
07044  041010 B. LOAD DB 010       07134  013703 .. BRE  P+3            07224  051007 R. STOR DB 007
07045  020302  . IOOP 32 BIT OP    07135  021007 ". LDI  7              07225  041002 B. LOAD DB 002
07046  000006 .. NOP ,ZERO         07136  140002 .. BR   P+ 002         07226  037437 ?. ANDI 31
07047  141402 .. BG   P+ 002       07137  021003 ". LDI  3              07227  041007 B. LOAD DB 007
07050  000012 .. PCAL WRITEFAIL    07140  001700 .. CMP ,NOP            07230  001700 .. CMP ,NOP
07051  041036 B. LOAD DB 036       07141  141412 .. BG   P+ 012         07231  145223 .. BE   P+ 023,I
07052  021001 ". LDI  1            07142  040734 A. LOAD P- 334         07232  041002 B. LOAD DB 002
07053  006100 .@ LSUB,NOP          07143  041012 B. LOAD DB 012         07233  037437 ?. ANDI 31
07054  051013 R. STOR DB 013       07144  006000 .. LADD,NOP            07234  021016 ". LDI  14
07055  120013 .. INCM DB 013       07145  000026 .. PCAL DO'WIOC0       07235  005700 .. LCMP,NOP
07056  041013 B. LOAD DB 013       07146  040737 A. LOAD P- 337         07236  141231 .. BE   P+ 031
07057  061023 b. CMPM DB 023       07147  000002 .. PCAL DO'WIOC0       07237  000600 .. ZERO,NOP
07060  145402 .. BG   P+ 002,I     07150  021077 "? LDI  63             07240  021050 "( LDI  40
07061  140002 .. BR   P+ 002       07151  000002 .. PCAL DO'WIOC0       07241  000230 .. PCAL GET'MESSAGE
07062  000360 .. ZROX,LADD         07152  140421 .. BR   P- 021         07242  051024 R. STOR DB 024
07063  041034 B. LOAD DB 034       07153  020104  D IOOP 32 BIT OP      07243  021024 ". LDI  20
07064  041035 B. LOAD DB 035       07154  000000 .. NOP ,NOP            07244  021002 ". LDI  2
07065  006500 .@ OR   ,NOP         07155  021005 ". LDI  5              07245  021020 ". LDI  16
07066  030100 0@ SMSK              07156  000215 .. PCAL DODELAY         07246  041002 B. LOAD DB 002
07067  025001 *. LDNI 1            07157  171013 .. LRA  DB 013         07247  037437 ?. ANDI 31
07070  051012 R. STOR DB 012       07160  000130 .X PCAL CHK'UNEXP'I    07250  000257 .. PCAL NUM2ASC
07071  120012 .. INCM DB 012       07161  040753 A. LOAD P- 353         07251  021041 "! LDI  33
07072  041012 B. LOAD DB 012       07162  041013 B. LOAD DB 013         07252  140004 .. BR   P+ 004
07073  041045 B% LOAD DB 045       07163  006000 .. LADD,NOP            07253  040160 @p LOAD P+ 160
07074  013703 .. BRE  P+3          07164  000013 .. PCAL DO'WIOC0       07254  000022 .. NOP ,MPY
07075  021007 ". LDI  7            07165  040756 A. LOAD P- 356         07255  000012 .. NOP ,DSUB
07076  140002 .. BR   P+ 002       07166  000002 .. PCAL DO'WIOC0       07256  021002 ". LDI  2
07077  021003 ". LDI  3            07167  021040 "  LDI  32             07257  021020 ". LDI  16
07100  001700 .. CMP ,NOP          07170  000002 .. PCAL DO'WIOC0       07260  041007 B. LOAD DB 007
07101  141420 .. BG   P+ 020       07171  021001 ". LDI  1              07261  000011 .. PCAL NUM2ASC
07102  040674 A. LOAD P- 274       07172  000002 .. PCAL DO'WIOC0       07262  041024 B. LOAD DB 024
07103  041012 B. LOAD DB 012       07173  040446 A& LOAD P- 046         07263  002400 .. NEG ,NOP
07104  006000 .. LADD,NOP          07174  000002 .. PCAL DO'WIOC0       07264  021001 ". LDI  1
07105  000152 .j PCAL DO'WIOC0     07175  021016 ". LDI  14             07265  000251 .. PCAL ERROROUT
07106  040677 A. LOAD P- 277       07176  000002 .. PCAL DO'WIOC0       07266  140007 .. BR   P+ 007
07107  000002 .. PCAL DO'WIOC0     07177  020104  D IOOP 32 BIT OP      07267  000600 .. ZERO,NOP
07110  021040 "  LDI  32           07200  000000 .. NOP ,NOP            07270  021047 "' LDI  39
07111  000002 .. PCAL DO'WIOC0     07201  021005 ". LDI  5              07271  000030 .. PCAL GET'MESSAGE
07112  021037 ". LDI  31           07202  000024 .. PCAL DODELAY         07272  002400 .. NEG ,NOP
07113  000002 .. PCAL DO'WIOC0     07203  021000 ". LDI  0              07273  021001 ". LDI  1
07114  040011 @. LOAD P+ 011       07204  004500 .@ DUP ,NOP            07274  000007 .. PCAL ERROROUT
07115  000002 .. PCAL DO'WIOC0     07205  051005 R. STOR DB 005         07275  140121 .Q BR   P+ 121
07116  021017 ". LDI  15           07206  051002 R. STOR DB 002         07276  041070 B8 LOAD DB 070
07117  000002 .. PCAL DO'WIOC0     07207  000362 .. PCAL DO'RIOC0       07277  037777 ?. ANDI 255
07120  140427 .. BR   P- 027        07210  041070 B8 LOAD DB 070         07300  021003 ". LDI  3
07121  000370 .. PCAL DRT'INIT     07211  051002 R. STOR DB 002         07301  001700 .. CMP ,NOP
07122  000370 .. PCAL ZERO'CPVA    07212  040041 @! LOAD P+ 041         07302  141224 .. BE   P+ 024
07123  000370 .. PCAL ST'DSJ'CH'PROGS 07213  000015 .. PCAL DO'WIOC0   07303  000600 .. ZERO,NOP
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07304  021051 ") LDI  41          07374  002400 .. NEG ,NOP         07464  000332 .. ZROX,XCH
07305  000014 .. PCAL GET'MESSAGE 07375  021001 ". LDI  1          07465  041034 B. LOAD DB 034
07306  051024 R. STOR DB 024      07376  000051 .) PCAL ERROROUT    07466  041035 B. LOAD DB 035
07307  021016 ". LDI  14         07377  041013 B. LOAD DB 013      07467  006500 .@ OR  ,NOP
07310  021002 ". LDI  2          07400  023404 '. MPYI 4          07470  030100 0@ SMSK
07311  021020 ". LDI  16         07401  022402 %. ADDI 2          07471  025001 *. LDNI 1
07312  041070 B8 LOAD DB 070     07402  004300 .. STAX,NOP         07472  051012 R. STOR DB 012
07313  037777 ?. ANDI 255        07403  047140 N' LOAD DB 140,I,X  07473  120012 .. INCM DB 012
07314  000033 .. PCAL NUM2ASC    07404  041010 B. LOAD DB 010      07474  041012 B. LOAD DB 012
07315  021033 ". LDI  27         07405  071013 r. ADDM DB 013      07475  041045 B% LOAD DB 045
07316  021002 ". LDI  2          07406  005700 .. LCMP,NOP         07476  013703 .. BRE  P+3
07317  021020 ". LDI  16         07407  141207 .. BE   P+ 007      07477  021007 ". LDI  7
07320  021000 ". LDI  0          07410  000600 .. ZERO,NOP         07500  140002 .. BR   P+ 002
07321  000005 .. PCAL NUM2ASC    07411  021125 "U LDI  85          07501  021003 ". LDI  3
07322  041024 B. LOAD DB 024     07412  000033 .. PCAL GET'MESSAGE 07502  001700 .. CMP ,NOP
07323  002400 .. NEG ,NOP        07413  002400 .. NEG ,NOP         07503  141420 .. BG   P+ 020
07324  021001 ". LDI  1          07414  021001 ". LDI  1          07504  040023 @. LOAD P+ 023
07325  000031 .. PCAL ERROROUT   07415  000017 .. PCAL ERROROUT    07505  041012 B. LOAD DB 012
07326  171013 .. LRA  DB 013     07416  025001 *. LDNI 1          07506  006000 .. LADD,NOP
07327  000147 .g PCAL CHK'UNEXP'I 07417  051012 R. STOR DB 012    07507  000154 .l PCAL DO'WIOC0
07330  040006 @. LOAD P+ 006     07420  030041 0! SED  1          07510  040552 Aj LOAD P- 152
07331  000116 .N PCAL DO'WIOC0   07421  120012 .. INCM DB 012      07511  000002 .. PCAL DO'WIOC0
07332  021041 "! LDI  33         07422  041012 B. LOAD DB 012      07512  021040 "  LDI  32
07333  000002 .. PCAL DO'WIOC0   07423  022007 $. CMPI 7          07513  000002 .. PCAL DO'WIOC0
07334  140003 .. BR   P+ 003     07424  141407 .. BG   P+ 007      07514  021000 ". LDI  0
07335  000061 .1 NOP ,LSUB       07425  041012 B. LOAD DB 012      07515  000002 .. PCAL DO'WIOC0
07336  040147 @g LOAD P+ 147     07426  061013 b. CMPM DB 013      07516  040771 A. LOAD P- 371
07337  020104  D IOOP 32 BIT OP  07427  141203 .. BE   P+ 003      07517  000002 .. PCAL DO'WIOC0
07340  000000 .. NOP ,NOP        07430  171012 .. LRA  DB 012      07520  021000 ". LDI  0
07341  021005 ". LDI  5          07431  000102 .B PCAL CHK'UNEXP'I 07521  000002 .. PCAL DO'WIOC0
07342  000140 .' PCAL DODELAY    07432  140411 .. BR   P- 011      07522  140427 .. BR   P- 027
07343  041013 B. LOAD DB 013     07433  041010 B. LOAD DB 010      07523  000402 .. PCAL DRT'INIT
07344  021025 ". LDI  21         07434  020302  . IOOP 32 BIT OP  07524  000402 .. PCAL ZERO'CPVA
07345  006201 .. LMPY,DELB       07435  000006 .. NOP ,ZERO        07525  000402 .. PCAL ST'DSJ'CH'PROGS
07346  021005 ". LDI  5          07436  141402 .. BG   P+ 002      07526  140002 .. BR   P+ 002
07347  006043 .# LADD,STAX       07437  000367 .. PCAL WRITEFAIL   07527  040100 @@ LOAD P+ 100
07350  047137 N_ LOAD DB 137,I,X 07440  000401 .. PCAL CHECKYTRAP  07530  030041 0! SED  1
07351  004500 .@ DUP ,NOP        07441  140764 .. BR   P- 364      07531  025001 *. LDNI 1
07352  051005 R. STOR DB 005     07442  002462 .2 PCAL DOT         07532  051012 R. STOR DB 012
07353  022002 $. CMPI 2          07443  021040 "  LDI  32         07533  120012 .. INCM DB 012
07354  141223 .. BE   P+ 023     07444  051065 R5 STOR DB 065     07534  041012 B. LOAD DB 012
07355  000600 .. ZERO,NOP        07445  030040 0  SED  0          07535  041045 B% LOAD DB 045
07356  021053 "+ LDI  43         07446  041010 B. LOAD DB 010      07536  013703 .. BRE  P+3
07357  000052 .* PCAL GET'MESSAGE 07447  020302  . IOOP 32 BIT OP  07537  021007 ". LDI  7
07360  051024 R. STOR DB 024     07450  000006 .. NOP ,ZERO        07540  140002 .. BR   P+ 002
07361  021052 "* LDI  42         07451  141402 .. BG   P+ 002      07541  021003 ". LDI  3
07362  021002 ". LDI  2          07452  000013 .. PCAL WRITEFAIL   07542  001700 .. CMP ,NOP
07363  021020 ". LDI  16         07453  041036 B. LOAD DB 036      07543  141412 .. BG   P+ 012
07364  041005 B. LOAD DB 005     07454  021001 ". LDI  1          07544  040415 A. LOAD P- 015
07365  000044 .$ PCAL NUM2ASC    07455  006100 .@ LSUB,NOP         07545  041012 B. LOAD DB 012
07366  021066 "6 LDI  54         07456  051013 R. STOR DB 013      07546  006000 .. LADD,NOP
07367  021001 ". LDI  1          07457  120013 .. INCM DB 013      07547  000026 .. PCAL DO'WIOC0
07370  021020 ". LDI  16         07460  041013 B. LOAD DB 013      07550  040612 A. LOAD P- 212
07371  021002 ". LDI  2          07461  061023 b. CMPM DB 023      07551  000002 .. PCAL DO'WIOC0
07372  000005 .. PCAL NUM2ASC    07462  145402 .. BG   P+ 002,I    07552  021077 "? LDI  63
07373  041024 B. LOAD DB 024     07463  140002 .. BR   P+ 002      07553  000002 .. PCAL DO'WIOC0
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07554  140421 .. BR   P- 021          07644  000005 .. PCAL NUM2ASC        07734  051024 R. STOR DB 024
07555  020104  D IOOP 32 BIT OP       07645  041024 B. LOAD DB 024         07735  021052 "* LDI  42
07556  000000 .. NOP ,NOP            07646  002400 .. NEG ,NOP            07736  021002 ". LDI  2
07557  021005 ". LDI  5              07647  021001 ". LDI  1              07737  021020 ". LDI  16
07560  000216 .. PCAL DODELAY        07650  000233 .. PCAL ERROROUT       07740  041005 B. LOAD DB 005
07561  171013 .. LRA  DB 013         07651  140121 .Q BR   P+ 121         07741  000041 .! PCAL NUM2ASC
07562  000131 .Y PCAL CHK'UNEXP'I    07652  041070 B8 LOAD DB 070         07742  021066 "6 LDI  54
07563  040434 A. LOAD P- 034         07653  037777 ?. ANDI 255            07743  021001 ". LDI  1
07564  041013 B. LOAD DB 013         07654  021003 ". LDI  3              07744  021020 ". LDI  16
07565  006000 .. LADD,NOP            07655  001700 .. CMP ,NOP            07745  021002 ". LDI  2
07566  000013 .. PCAL DO'WIOC0       07656  141227 .. BE   P+ 027         07746  000005 .. PCAL NUM2ASC
07567  040631 A. LOAD P- 231         07657  000600 .. ZERO,NOP            07747  041024 B. LOAD DB 024
07570  000002 .. PCAL DO'WIOC0       07660  140003 .. BR   P+ 003         07750  002400 .. NEG ,NOP
07571  021040 "  LDI  32             07661  000111 .I DELB,DADD           07751  021001 ". LDI  1
07572  000002 .. PCAL DO'WIOC0       07662  000023 .. NOP ,DIV            07752  000046 .& PCAL ERROROUT
07573  021036 ". LDI  30             07663  021051 ") LDI  41             07753  041013 B. LOAD DB 013
07574  000002 .. PCAL DO'WIOC0       07664  000034 .. PCAL GET'MESSAGE    07754  023404 '. MPYI 4
07575  040005 @. LOAD P+ 005         07665  051024 R. STOR DB 024         07755  022402 %. ADDI 2
07576  000002 .. PCAL DO'WIOC0       07666  021016 ". LDI  14             07756  004300 .. STAX,NOP
07577  021001 ". LDI  1              07667  021002 ". LDI  2              07757  047140 N' LOAD DB 140,I,X
07600  000002 .. PCAL DO'WIOC0       07670  021020 ". LDI  16             07760  041010 B. LOAD DB 010
07601  140002 .. BR   P+ 002         07671  041070 B8 LOAD DB 070         07761  071013 r. ADDM DB 013
07602  040142 @b LOAD P+ 142         07672  037777 ?. ANDI 255            07762  005700 .. LCMP,NOP
07603  020104  D IOOP 32 BIT OP      07673  000027 .. PCAL NUM2ASC        07763  141207 .. BE   P+ 007
07604  000000 .. NOP ,NOP            07674  021033 ". LDI  27             07764  000600 .. ZERO,NOP
07605  021005 ". LDI  5              07675  021002 ". LDI  2              07765  021125 "U LDI  85
07606  000026 .. PCAL DODELAY        07676  021020 ". LDI  16             07766  000033 .. PCAL GET'MESSAGE
07607  021000 ". LDI  0              07677  021000 ". LDI  0              07767  002400 .. NEG ,NOP
07610  004500 .@ DUP ,NOP            07700  000005 .. PCAL NUM2ASC        07770  021001 ". LDI  1
07611  051005 R. STOR DB 005         07701  041024 B. LOAD DB 024         07771  000017 .. PCAL ERROROUT
07612  051002 R. STOR DB 002         07702  002400 .. NEG ,NOP            07772  025001 *. LDNI 1
07613  000377 .. PCAL DO'RIOC0       07703  021001 ". LDI  1              07773  051012 R. STOR DB 012
07614  041070 B8 LOAD DB 070         07704  000034 .. PCAL ERROROUT       07774  030041 0! SED  1
07615  051002 R. STOR DB 002         07705  171013 .. LRA  DB 013         07775  120012 .. INCM DB 012
07616  040743 A. LOAD P- 343         07706  000124 .T PCAL CHK'UNEXP'I    07776  041012 B. LOAD DB 012
07617  000017 .. PCAL DO'WIOC0       07707  040751 A. LOAD P- 351         07777  022007 $. CMPI 7
07620  000005 .. PCAL DO'RIOC0       07710  000071 .9 PCAL DO'WIOC0       10000  141407 .. BG   P+ 007
07621  041002 B. LOAD DB 002         07711  021041 "! LDI  33             10001  041012 B. LOAD DB 012
07622  037437 ?. ANDI 31             07712  000002 .. PCAL DO'WIOC0       10002  061013 b. CMPM DB 013
07623  021001 ". LDI  1              07713  020104  D IOOP 32 BIT OP      10003  141203 .. BE   P+ 003
07624  005700 .. LCMP,NOP            07714  000000 .. NOP ,NOP            10004  171012 .. LRA  DB 012
07625  141225 .. BE   P+ 025         07715  021005 ". LDI  5              10005  000077 .? PCAL CHK'UNEXP'I
07626  000600 .. ZERO,NOP            07716  000110 .H PCAL DODELAY        10006  140411 .. BR   P- 011
07627  021050 "( LDI  40             07717  041013 B. LOAD DB 013         10007  041010 B. LOAD DB 010
07630  000216 .. PCAL GET'MESSAGE    07720  021025 ". LDI  21             10010  020302  . IOOP 32 BIT OP
07631  051024 R. STOR DB 024         07721  006201 .. LMPY,DELB           10011  000006 .. NOP ,ZERO
07632  021024 ". LDI  20             07722  021005 ". LDI  5              10012  141402 .. BG   P+ 002
07633  021002 ". LDI  2              07723  006043 .# LADD,STAX           10013  000341 .. PCAL WRITEFAIL
07634  021020 ". LDI  16             07724  047137 N_ LOAD DB 137,I,X     10014  000354 .. PCAL CHECKYTRAP
07635  041002 B. LOAD DB 002         07725  004500 .@ DUP ,NOP            10015  140736 .. BR   P- 336
07636  037437 ?. ANDI 31             07726  051005 R. STOR DB 005         10016  041045 B% LOAD DB 045
07637  000245 .. PCAL NUM2ASC        07727  022002 $. CMPI 2              10017  017704 .. BRE  P+4,I
07640  021041 "! LDI  33             07730  141223 .. BE   P+ 023         10020  021041 "! LDI  33
07641  021002 ". LDI  2              07731  000600 .. ZERO,NOP            10021  051065 R5 STOR DB 065
07642  021020 ". LDI  16             07732  021053 "+ LDI  43             10022  140002 .. BR   P+ 002
07643  021001 ". LDI  1              07733  000047 .' PCAL GET'MESSAGE    10023  000736 .. DZRO,ADAX
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10024  030040 0  SED  0              10114  000021 .. PCAL DO'WIOC0        10204  021024 ". LDI  20
10025  041010 B. LOAD DB 010         10115  040414 A. LOAD P- 014         10205  021002 ". LDI  2
10026  020302  . IOOP 32 BIT OP      10116  000002 .. PCAL DO'WIOC0        10206  021020 ". LDI  16
10027  000006 .. NOP ,ZERO           10117  021077 "? LDI  63             10207  041002 B. LOAD DB 002
10030  141402 .. BG   P+ 002         10120  000002 .. PCAL DO'WIOC0        10210  037437 ?. ANDI 31
10031  000016 .. PCAL WRITEFAIL      10121  140414 .. BR   P- 014         10211  000243 .. PCAL NUM2ASC
10032  041036 B. LOAD DB 036         10122  020104  D IOOP 32 BIT OP      10212  021041 "! LDI  33
10033  021001 ". LDI  1              10123  000000 .. NOP ,NOP            10213  021002 ". LDI  2
10034  006100 .@ LSUB,NOP            10124  021005 ". LDI  5              10214  021020 ". LDI  16
10035  051013 R. STOR DB 013         10125  000207 .. PCAL DODELAY        10215  021033 ". LDI  27
10036  120013 .. INCM DB 013         10126  171013 .. LRA  DB 013         10216  000005 .. PCAL NUM2ASC
10037  041013 B. LOAD DB 013         10127  000122 .R PCAL CHK'UNEXP'I    10217  041024 B. LOAD DB 024
10040  061023 b. CMPM DB 023         10130  040017 @. LOAD P+ 017         10220  002400 .. NEG ,NOP
10041  145402 .. BG   P+ 002,I       10131  041013 B. LOAD DB 013         10221  021001 ". LDI  1
10042  140002 .. BR   P+ 002         10132  006000 .. LADD,NOP            10222  000231 .. PCAL ERROROUT
10043  000337 .. ZROX,ADXA           10133  000013 .. PCAL DO'WIOC0        10223  140013 .. BR   P+ 013
10044  041034 B. LOAD DB 034         10134  040433 A. LOAD P- 033         10224  140004 .. BR   P+ 004
10045  041035 B. LOAD DB 035         10135  000002 .. PCAL DO'WIOC0        10225  040160 @p LOAD P+ 160
10046  006500 .@ OR  ,NOP            10136  021040 "  LDI  32             10226  000011 .. NOP ,DADD
10047  030100 0@ SMSK                10137  000002 .. PCAL DO'WIOC0        10227  000007 .. NOP ,DZRO
10050  025001 *. LDNI 1              10140  021004 ". LDI  4              10230  000600 .. ZERO,NOP
10051  051012 R. STOR DB 012         10141  000002 .. PCAL DO'WIOC0        10231  021047 "' LDI  39
10052  120012 .. INCM DB 012         10142  040740 A. LOAD P- 340         10232  000030 .. PCAL GET'MESSAGE
10053  041012 B. LOAD DB 012         10143  000002 .. PCAL DO'WIOC0        10233  002400 .. NEG ,NOP
10054  022007 $. CMPI 7              10144  021015 ". LDI  13             10234  021001 ". LDI  1
10055  141420 .. BG   P+ 020         10145  000002 .. PCAL DO'WIOC0        10235  000013 .. PCAL ERROROUT
10056  040727 A. LOAD P- 327         10146  140002 .. BR   P+ 002         10236  140120 .P BR   P+ 120
10057  041012 B. LOAD DB 012         10147  040100 @@ LOAD P+ 100         10237  041070 B8 LOAD DB 070
10060  006000 .. LADD,NOP            10150  020104  D IOOP 32 BIT OP      10240  037777 ?. ANDI 255
10061  000147 .g PCAL DO'WIOC0       10151  000000 .. NOP ,NOP            10241  021003 ". LDI  3
10062  040017 @. LOAD P+ 017         10152  021005 ". LDI  5              10242  001700 .. CMP ,NOP
10063  000002 .. PCAL DO'WIOC0       10153  000026 .. PCAL DODELAY        10243  141224 .. BE   P+ 024
10064  021040 "  LDI  32             10154  021000 ". LDI  0              10244  000600 .. ZERO,NOP
10065  000002 .. PCAL DO'WIOC0       10155  004500 .@ DUP ,NOP            10245  021051 ") LDI  41
10066  021037 ". LDI  31             10156  051005 R. STOR DB 005         10246  000014 .. PCAL GET'MESSAGE
10067  000002 .. PCAL DO'WIOC0       10157  051002 R. STOR DB 002         10247  051024 R. STOR DB 024
10070  040666 A. LOAD P- 266         10160  000340 .. PCAL DO'RIOC0        10250  021016 ". LDI  14
10071  000002 .. PCAL DO'WIOC0       10161  041070 B8 LOAD DB 070         10251  021002 ". LDI  2
10072  021017 ". LDI  15             10162  051002 R. STOR DB 002         10252  021020 ". LDI  16
10073  000002 .. PCAL DO'WIOC0       10163  040042 @" LOAD P+ 042         10253  041070 B8 LOAD DB 070
10074  140422 .. BR   P- 022         10164  000017 .. PCAL DO'WIOC0        10254  037777 ?. ANDI 255
10075  000352 .. PCAL DRT'INIT       10165  000005 .. PCAL DO'RIOC0        10255  000037 .. PCAL NUM2ASC
10076  000352 .. PCAL ZERO'CPVA      10166  041002 B. LOAD DB 002         10256  021033 ". LDI  27
10077  000352 .. PCAL ST'DSJ'CH'PROGS 10167 037437 ?. ANDI 31             10257  021002 ". LDI  2
10100  140002 .. BR   P+ 002         10170  021033 ". LDI  27             10260  021020 ". LDI  16
10101  040147 @g LOAD P+ 147         10171  005700 .. LCMP,NOP            10261  021000 ". LDI  0
10102  030041 0! SED  1              10172  145234 .. BE   P+ 034,I        10262  000005 .. PCAL NUM2ASC
10103  025001 *. LDNI 1              10173  041002 B. LOAD DB 002         10263  041024 B. LOAD DB 024
10104  051012 R. STOR DB 012         10174  037437 ?. ANDI 31             10264  002400 .. NEG ,NOP
10105  120012 .. INCM DB 012         10175  021015 ". LDI  13             10265  021001 ". LDI  1
10106  041012 B. LOAD DB 012         10176  005700 .. LCMP,NOP            10266  000031 .. PCAL ERROROUT
10107  022007 $. CMPI 7              10177  141225 .. BE   P+ 025         10267  171013 .. LRA  DB 013
10110  141412 .. BG   P+ 012         10200  000600 .. ZERO,NOP            10270  000141 .a PCAL CHK'UNEXP'I
10111  040762 A. LOAD P- 362         10201  021050 "( LDI  40             10271  040570 Ax LOAD P- 170
10112  041012 B. LOAD DB 012         10202  000214 .. PCAL GET'MESSAGE     10272  000106 .F PCAL DO'WIOC0
10113  006000 .. LADD,NOP            10203  051024 R. STOR DB 024         10273  021044 "$ LDI  36
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10274  000002 .. PCAL DO'WIOC0          10364  141407 .. BG   P+ 007          10454  140422 .. BR   P- 022
10275  140002 .. BR   P+ 002            10365  041012 B. LOAD DB 012          10455  000360 .. PCAL DRT'INIT
10276  000060 .0 NOP ,LADD              10366  061013 b. CMPM DB 013          10456  000360 .. PCAL ZERO'CPVA
10277  020104  D IOOP 32 BIT OP         10367  141203 .. BE   P+ 003          10457  000360 .. PCAL ST'DSJ'CH'PROGS
10300  000000 .. NOP ,NOP               10370  171012 .. LRA  DB 012          10460  140002 .. BR   P+ 002
10301  021005 ". LDI  5                 10371  000101 .A PCAL CHK'UNEXP'I      10461  040142 @b LOAD P+ 142
10302  000127 .W PCAL DODELAY           10372  140411 .. BR   P- 011          10462  030041 0! SED  1
10303  041013 B. LOAD DB 013            10373  041010 B. LOAD DB 010          10463  025001 *. LDNI 1
10304  021025 ". LDI  21                10374  020302  . IOOP 32 BIT OP       10464  051012 R. STOR DB 012
10305  006201 .. LMPY,DELB              10375  000006 .. NOP ,ZERO             10465  120012 .. INCM DB 012
10306  021005 ". LDI  5                 10376  141402 .. BG   P+ 002          10466  041012 B. LOAD DB 012
10307  006043 .# LADD,STAX              10377  000346 .. PCAL WRITEFAIL        10467  022007 $. CMPI 7
10310  047137 N_ LOAD DB 137,I,X        10400  000364 .. PCAL CHECKYTRAP       10470  141412 .. BG   P+ 012
10311  004500 .@ DUP ,NOP               10401  140743 .. BR   P- 343          10471  040722 A. LOAD P- 322
10312  051005 R. STOR DB 005            10402  021042 "" LDI  34              10472  041012 B. LOAD DB 012
10313  022002 $. CMPI 2                 10403  051065 R5 STOR DB 065          10473  006000 .. LADD,NOP
10314  141223 .. BE   P+ 023            10404  030040 0  SED  0              10474  000021 .. PCAL DO'WIOC0
10315  000600 .. ZERO,NOP               10405  041010 B. LOAD DB 010          10475  040774 A. LOAD P- 374
10316  021053 "+ LDI  43                10406  020302  . IOOP 32 BIT OP       10476  000002 .. PCAL DO'WIOC0
10317  000051 .) PCAL GET'MESSAGE       10407  000006 .. NOP ,ZERO             10477  021077 "? LDI  63
10320  051024 R. STOR DB 024            10410  141402 .. BG   P+ 002          10500  000002 .. PCAL DO'WIOC0
10321  021052 "* LDI  42                10411  000012 .. PCAL WRITEFAIL        10501  140414 .. BR   P- 014
10322  021002 ". LDI  2                 10412  041036 B. LOAD DB 036          10502  020104  D IOOP 32 BIT OP
10323  021020 ". LDI  16                10413  021001 ". LDI  1               10503  000000 .. NOP ,NOP
10324  041005 B. LOAD DB 005            10414  006100 .@ LSUB,NOP             10504  021005 ". LDI  5
10325  000043 .# PCAL NUM2ASC           10415  051013 R. STOR DB 013          10505  000203 .. PCAL DODELAY
10326  021066 "6 LDI  54                10416  120013 .. INCM DB 013          10506  171013 .. LRA  DB 013
10327  021001 ". LDI  1                 10417  041013 B. LOAD DB 013          10507  000116 .N PCAL CHK'UNEXP'I
10330  021020 ". LDI  16                10420  061023 b. CMPM DB 023          10510  040741 A. LOAD P- 341
10331  021002 ". LDI  2                 10421  145402 .. BG   P+ 002,I        10511  041013 B. LOAD DB 013
10332  000005 .. PCAL NUM2ASC           10422  140002 .. BR   P+ 002          10512  006000 .. LADD,NOP
10333  041024 B. LOAD DB 024            10423  000336 .. ZROX,ADAX            10513  000013 .. PCAL DO'WIOC0
10334  002400 .. NEG ,NOP               10424  041034 B. LOAD DB 034          10514  040013 @. LOAD P+ 013
10335  021001 ". LDI  1                 10425  041035 B. LOAD DB 035          10515  000002 .. PCAL DO'WIOC0
10336  000050 .( PCAL ERROROUT          10426  006500 .@ OR  ,NOP             10516  021040 "  LDI  32
10337  041013 B. LOAD DB 013            10427  030100 0@ SMSK                  10517  000002 .. PCAL DO'WIOC0
10340  023404 '. MPYI 4                 10430  025001 *. LDNI 1               10520  021033 ". LDI  27
10341  022402 %. ADDI 2                 10431  051012 R. STOR DB 012          10521  000002 .. PCAL DO'WIOC0
10342  004300 .. STAX,NOP               10432  120012 .. INCM DB 012          10522  040441 A! LOAD P- 041
10343  047140 N' LOAD DB 140,I,X        10433  041012 B. LOAD DB 012          10523  000002 .. PCAL DO'WIOC0
10344  041010 B. LOAD DB 010            10434  022007 $. CMPI 7               10524  021002 ". LDI  2
10345  071013 r. ADDM DB 013            10435  141420 .. BG   P+ 020          10525  000002 .. PCAL DO'WIOC0
10346  005700 .. LCMP,NOP               10436  040667 A. LOAD P- 267          10526  140002 .. BR   P+ 002
10347  141207 .. BE   P+ 007            10437  041012 B. LOAD DB 012          10527  040147 @g LOAD P+ 147
10350  000600 .. ZERO,NOP               10440  006000 .. LADD,NOP             10530  020104  D IOOP 32 BIT OP
10351  021125 "U LDI  85                10441  000145 .e PCAL DO'WIOC0        10531  000000 .. NOP ,NOP
10352  000033 .. PCAL GET'MESSAGE       10442  040741 A. LOAD P- 341          10532  021005 ". LDI  5
10353  002400 .. NEG ,NOP               10443  000002 .. PCAL DO'WIOC0        10533  000026 .. PCAL DODELAY
10354  021001 ". LDI  1                 10444  021040 "  LDI  32             10534  021000 ". LDI  0
10355  000017 .. PCAL ERROROUT          10445  000002 .. PCAL DO'WIOC0        10535  004500 .@ DUP ,NOP
10356  025001 *. LDNI 1                 10446  021000 ". LDI  0               10536  051005 R. STOR DB 005
10357  051012 R. STOR DB 012            10447  000002 .. PCAL DO'WIOC0        10537  051002 R. STOR DB 002
10360  030041 0! SED  1                 10450  040011 @. LOAD P+ 011          10540  000353 .. PCAL DO'RIOC0
10361  120012 .. INCM DB 012            10451  000002 .. PCAL DO'WIOC0        10541  041070 B8 LOAD DB 070
10362  041012 B. LOAD DB 012            10452  021000 ". LDI  0               10542  051002 R. STOR DB 002
10363  022007 $. CMPI 7                 10453  000002 .. PCAL DO'WIOC0        10543  040716 A. LOAD P- 316
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10544  000017 .. PCAL DO'WIOC0          10634  000036 .. PCAL NUM2ASC          10724  071013 r. ADDM DB 013
10545  000005 .. PCAL DO'RIOC0          10635  021033 ". LDI  27               10725  005700 .. LCMP,NOP
10546  041002 B. LOAD DB 002            10636  021002 ". LDI  2                10726  141207 .. BE   P+ 007
10547  037437 ?. ANDI 31                10637  021020 ". LDI  16               10727  000600 .. ZERO,NOP
10550  021004 ". LDI  4                 10640  021000 ". LDI  0                10730  021125 "U LDI  85
10551  005700 .. LCMP,NOP               10641  000005 .. PCAL NUM2ASC           10731  000033 .. PCAL GET'MESSAGE
10552  145234 .. BE   P+ 034,I          10642  041024 B. LOAD DB 024            10732  002400 .. NEG ,NOP
10553  041002 B. LOAD DB 002            10643  002400 .. NEG ,NOP               10733  021001 ". LDI  1
10554  037437 ?. ANDI 31                10644  021001 ". LDI  1                 10734  000017 .. PCAL ERROROUT
10555  021002 ". LDI  2                 10645  000031 .. PCAL ERROROUT          10735  025001 *. LDNI 1
10556  005700 .. LCMP,NOP               10646  171013 .. LRA  DB 013            10736  051012 R. STOR DB 012
10557  141225 .. BE   P+ 025            10647  000140 .' PCAL CHK'UNEXP'I       10737  030041 0! SED  1
10560  000600 .. ZERO,NOP               10650  040521 AQ LOAD P- 121            10740  120012 .. INCM DB 012
10561  021050 "( LDI  40                10651  000105 .E PCAL DO'WIOC0          10741  041012 B. LOAD DB 012
10562  000210 .. PCAL GET'MESSAGE       10652  021044 "$ LDI  36               10742  022007 $. CMPI 7
10563  051024 R. STOR DB 024            10653  000002 .. PCAL DO'WIOC0          10743  141407 .. BG   P+ 007
10564  021024 ". LDI  20                10654  140002 .. BR   P+ 002            10744  041012 B. LOAD DB 012
10565  021002 ". LDI  2                 10655  000060 .0 NOP ,LADD              10745  061013 b. CMPM DB 013
10566  021020 ". LDI  16                10656  020104  D IOOP 32 BIT OP        10746  141203 .. BE   P+ 003
10567  041002 B. LOAD DB 002            10657  000000 .. NOP ,NOP               10747  171012 .. LRA  DB 012
10570  037437 ?. ANDI 31                10660  021005 ". LDI  5                 10750  000101 .A PCAL CHK'UNEXP'I
10571  000237 .. PCAL NUM2ASC           10661  000126 .V PCAL DODELAY           10751  140411 .. BR   P- 011
10572  021041 "! LDI  33                10662  041013 B. LOAD DB 013            10752  041010 B. LOAD DB 010
10573  021002 ". LDI  2                 10663  021025 ". LDI  21               10753  020302  . IOOP 32 BIT OP
10574  021020 ". LDI  16                10664  006201 .. LMPY,DELB              10754  000006 .. NOP ,ZERO
10575  021004 ". LDI  4                 10665  021005 ". LDI  5                 10755  141402 .. BG   P+ 002
10576  000005 .. PCAL NUM2ASC           10666  006043 .# LADD,STAX              10756  000345 .. PCAL WRITEFAIL
10577  041024 B. LOAD DB 024            10667  047137 N_ LOAD DB 137,I,X        10757  000357 .. PCAL CHECKYTRAP
10600  002400 .. NEG ,NOP               10670  004500 .@ DUP ,NOP               10760  140742 .. BR   P- 342
10601  021001 ". LDI  1                 10671  051005 R. STOR DB 005            10761  021043 "# LDI  35
10602  000225 .. PCAL ERROROUT          10672  022002 $. CMPI 2                 10762  051065 R5 STOR DB 065
10603  140012 .. BR   P+ 012            10673  141223 .. BE   P+ 023            10763  041010 B. LOAD DB 010
10604  000600 .. ZERO,NOP               10674  000600 .. ZERO,NOP               10764  020302  . IOOP 32 BIT OP
10605  140003 .. BR   P+ 003            10675  021053 "+ LDI  43               10765  000006 .. NOP ,ZERO
10606  000010 .. NOP ,DCMP              10676  000051 .) PCAL GET'MESSAGE       10766  141402 .. BG   P+ 002
10607  000006 .. NOP ,ZERO              10677  051024 R. STOR DB 024            10767  000011 .. PCAL WRITEFAIL
10610  021047 "' LDI  39                10700  021052 "* LDI  42               10770  041036 B. LOAD DB 036
10611  000027 .. PCAL GET'MESSAGE       10701  021002 ". LDI  2                10771  021001 ". LDI  1
10612  002400 .. NEG ,NOP               10702  021020 ". LDI  16               10772  006100 .@ LSUB,NOP
10613  021001 ". LDI  1                 10703  041005 B. LOAD DB 005            10773  051013 R. STOR DB 013
10614  000012 .. PCAL ERROROUT          10704  000043 .# PCAL NUM2ASC           10774  120013 .. INCM DB 013
10615  140120 .P BR   P+ 120            10705  021066 "6 LDI  54               10775  041013 B. LOAD DB 013
10616  041070 B8 LOAD DB 070            10706  021001 ". LDI  1                10776  061023 b. CMPM DB 023
10617  037777 ?. ANDI 255               10707  021020 ". LDI  16               10777  145434 .. BG   P+ 034,I
10620  021003 ". LDI  3                 10710  021002 ". LDI  2                11000  040034 @. LOAD P+ 034
10621  001700 .. CMP ,NOP               10711  000005 .. PCAL NUM2ASC           11001  041013 B. LOAD DB 013
10622  141224 .. BE   P+ 024            10712  041024 B. LOAD DB 024            11002  006000 .. LADD,NOP
10623  000600 .. ZERO,NOP               10713  002400 .. NEG ,NOP               11003  000130 .X PCAL DO'WIOC0
10624  021051 ") LDI  41                10714  021001 ". LDI  1                 11004  040031 @. LOAD P+ 031
10625  000014 .. PCAL GET'MESSAGE       10715  000050 .( PCAL ERROROUT          11005  000002 .. PCAL DO'WIOC0
10626  051024 R. STOR DB 024            10716  041013 B. LOAD DB 013            11006  021006 ". LDI  6
10627  021016 ". LDI  14                10717  023404 '. MPYI 4                 11007  000002 .. PCAL DO'WIOC0
10630  021002 ". LDI  2                 10720  022402 %. ADDI 2                11010  040026 @. LOAD P+ 026
10631  021020 ". LDI  16                10721  004300 .. STAX,NOP               11011  000002 .. PCAL DO'WIOC0
10632  041070 B8 LOAD DB 070            10722  047140 N' LOAD DB 140,I,X        11012  025001 *. LDNI 1
10633  037777 ?. ANDI 255               10723  041010 B. LOAD DB 010            11013  051002 R. STOR DB 002
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11014  120002 .. INCM DB 002        11104  000337 .. PCAL DO'RIOC0      11174  041024 B. LOAD DB 024
11015  041002 B. LOAD DB 002        11105  041070 B8 LOAD DB 070       11175  002400 .. NEG ,NOP
11016  040021 @. LOAD P+ 021        11106  037777 ?. ANDI 255          11176  021001 ". LDI  1
11017  001700 .. CMP ,NOP           11107  021002 ". LDI  2            11177  000024 .. PCAL ERROROUT
11020  141604 .. BGE  P+ 004        11110  001700 .. CMP ,NOP          11200  140520 .P BR   P- 120
11021  041002 B. LOAD DB 002        11111  145534 .\ BNE  P+ 034,I     11201  000222 .. PCAL CHECKYTRAP
11022  000011 .. PCAL DO'WIOC0      11112  041070 B8 LOAD DB 070       11202  140606 .. BR   P- 206
11023  140407 .. BR   P- 007        11113  051007 R. STOR DB 007       11203  021044 "$ LDI  36
11024  040014 @. LOAD P+ 014        11114  040032 @. LOAD P+ 032       11204  051065 R5 STOR DB 065
11025  000003 .. PCAL DO'WIOC0      11115  000012 .. PCAL DO'WIOC0     11205  041010 B. LOAD DB 010
11026  021336 ". LDI  222           11116  000012 .. PCAL DO'RIOC0     11206  020302  . IOOP 32 BIT OP
11027  000002 .. PCAL DO'WIOC0      11117  041070 B8 LOAD DB 070       11207  000006 .. NOP ,ZERO
11030  040011 @. LOAD P+ 011        11120  037437 ?. ANDI 31           11210  141402 .. BG   P+ 002
11031  000002 .. PCAL DO'WIOC0      11121  021000 ". LDI  0            11211  000222 .. PCAL WRITEFAIL
11032  140010 .. BR   P+ 010        11122  001700 .. CMP ,NOP          11212  041036 B. LOAD DB 036
11033  000150 .h DELB,FCMP          11123  141532 .Z BNE  P+ 032       11213  021001 ". LDI  1
11034  040100 @@ LOAD P+ 100        11124  000600 .. ZERO,NOP           11214  006100 .@ LSUB,NOP
11035  040143 @c LOAD P+ 143        11125  021051 ") LDI  41           11215  051013 R. STOR DB 013
11036  040144 @d LOAD P+ 144        11126  000175 .} PCAL GET'MESSAGE  11216  120013 .. INCM DB 013
11037  000400 .. INCX,NOP           11127  051024 R. STOR DB 024       11217  041013 B. LOAD DB 013
11040  040141 @a LOAD P+ 141        11130  021016 ". LDI  14           11220  061023 b. CMPM DB 023
11041  040146 @f LOAD P+ 146        11131  021002 ". LDI  2            11221  145434 .. BG   P+ 034,I
11042  021010 ". LDI  8             11132  021020 ". LDI  16           11222  040566 Av LOAD P- 166
11043  000012 .. PCAL DO'WIOC0      11133  041007 B. LOAD DB 007       11223  041013 B. LOAD DB 013
11044  021030 ". LDI  24            11134  037777 ?. ANDI 255          11224  006000 .. LADD,NOP
11045  000002 .. PCAL DO'WIOC0      11135  000224 .. PCAL NUM2ASC      11225  000110 .H PCAL DO'WIOC0
11046  040717 A. LOAD P- 317        11136  021033 ". LDI  27           11226  040571 Ay LOAD P- 171
11047  000002 .. PCAL DO'WIOC0      11137  021002 ". LDI  2            11227  000002 .. PCAL DO'WIOC0
11050  021000 ". LDI  0             11140  021020 ". LDI  16           11230  021006 ". LDI  6
11051  000002 .. PCAL DO'WIOC0      11141  021000 ". LDI  0            11231  000002 .. PCAL DO'WIOC0
11052  021040 "  LDI  32            11142  000005 .. PCAL NUM2ASC      11232  040574 A| LOAD P- 174
11053  000002 .. PCAL DO'WIOC0      11143  140005 .. BR   P+ 005       11233  000002 .. PCAL DO'WIOC0
11054  040020 @. LOAD P+ 020        11144  040160 @p LOAD P+ 160       11234  025001 *. LDNI 1
11055  000002 .. PCAL DO'WIOC0      11145  000033 .. NOP ,INCA         11235  051002 R. STOR DB 002
11056  025001 *. LDNI 1             11146  040142 @b LOAD P+ 142       11236  120002 .. INCM DB 002
11057  051005 R. STOR DB 005        11147  000006 .. NOP ,ZERO         11237  041002 B. LOAD DB 002
11060  120005 .. INCM DB 005        11150  041024 B. LOAD DB 024       11240  040601 A. LOAD P- 201
11061  041005 B. LOAD DB 005        11151  002400 .. NEG ,NOP          11241  001700 .. CMP ,NOP
11062  041045 B% LOAD DB 045        11152  021001 ". LDI  1            11242  141604 .. BGE  P+ 004
11063  013703 .. BRE  P+3           11153  000217 .. PCAL ERROROUT      11243  041002 B. LOAD DB 002
11064  021007 ". LDI  7             11154  140024 .. BR   P+ 024       11244  000011 .. PCAL DO'WIOC0
11065  140002 .. BR   P+ 002        11155  000600 .. ZERO,NOP           11245  140407 .. BR   P- 007
11066  021003 ". LDI  3             11156  021050 "( LDI  40           11246  040606 A. LOAD P- 206
11067  001700 .. CMP ,NOP           11157  000031 .. PCAL GET'MESSAGE   11247  000003 .. PCAL DO'WIOC0
11070  145405 .. BG   P+ 005,I       11160  051024 R. STOR DB 024       11250  021336 ". LDI  222
11071  041005 B. LOAD DB 005        11161  021024 ". LDI  20           11251  000002 .. PCAL DO'WIOC0
11072  000015 .. PCAL DO'WIOC0      11162  021002 ". LDI  2            11252  040611 A. LOAD P- 211
11073  140003 .. BR   P+ 003        11163  021020 ". LDI  16           11253  000002 .. PCAL DO'WIOC0
11074  040140 @' LOAD P+ 140        11164  041070 B8 LOAD DB 070       11254  140002 .. BR   P+ 002
11075  000104 .D DELB,INCX          11165  037437 ?. ANDI 31           11255  000146 .f DELB,DDUP
11076  020104  D IOOP 32 BIT OP     11166  000024 .. PCAL NUM2ASC      11256  021010 ". LDI  8
11077  000000 .. NOP ,NOP           11167  021041 "! LDI  33           11257  000004 .. PCAL DO'WIOC0
11100  021005 ". LDI  5             11170  021002 ". LDI  2            11260  021030 ". LDI  24
11101  000220 .. PCAL DODELAY       11171  021020 ". LDI  16           11261  000002 .. PCAL DO'WIOC0
11102  040042 @" LOAD P+ 042        11172  021000 ". LDI  0            11262  040026 @. LOAD P+ 026
11103  000011 .. PCAL DO'WIOC0      11173  000005 .. PCAL NUM2ASC      11263  000002 .. PCAL DO'WIOC0
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11264  021037 ". LDI  31          11354  021020 ". LDI  16          11444  120013 .. INCM DB 013
11265  000002 .. PCAL DO'WIOC0    11355  041007 B. LOAD DB 007     11445  041013 B. LOAD DB 013
11266  021040 "  LDI  32          11356  037777 ?. ANDI 255         11446  061023 b. CMPM DB 023
11267  000002 .. PCAL DO'WIOC0    11357  000164 .t PCAL NUM2ASC     11447  145403 .. BG   P+ 003,I
11270  040574 A| LOAD P- 174      11360  140003 .. BR   P+ 003      11450  140003 .. BR   P+ 003
11271  000002 .. PCAL DO'WIOC0    11361  000037 .. NOP ,ADXA        11451  000311 .. ZROX,DADD
11272  025001 *. LDNI 1           11362  000013 .. NOP ,MPYL        11452  000303 .. ZROX,ZROX
11273  051005 R. STOR DB 005      11363  021033 ". LDI  27          11453  041010 B. LOAD DB 010
11274  120005 .. INCM DB 005      11364  021002 ". LDI  2           11454  020302  . IOOP 32 BIT OP
11275  041005 B. LOAD DB 005      11365  021020 ". LDI  16          11455  000006 .. NOP ,ZERO
11276  041045 B% LOAD DB 045      11366  041012 B. LOAD DB 012     11456  141402 .. BG   P+ 002
11277  013703 .. BRE  P+3         11367  000010 .. PCAL NUM2ASC     11457  000246 .. PCAL WRITEFAIL
11300  021007 ". LDI  7           11370  041024 B. LOAD DB 024     11460  040037 @. LOAD P+ 037
11301  140002 .. BR   P+ 002      11371  002400 .. NEG ,NOP         11461  041013 B. LOAD DB 013
11302  021003 ". LDI  3           11372  021001 ". LDI  1           11462  006000 .. LADD,NOP
11303  001700 .. CMP ,NOP         11373  000174 .| PCAL ERROROUT    11463  000132 .Z PCAL DO'WIOC0
11304  145405 .. BG   P+ 005,I    11374  140024 .. BR   P+ 024      11464  040034 @. LOAD P+ 034
11305  041005 B. LOAD DB 005      11375  000600 .. ZERO,NOP         11465  000002 .. PCAL DO'WIOC0
11306  000015 .. PCAL DO'WIOC0    11376  021050 "( LDI  40          11466  021336 ". LDI  222
11307  140003 .. BR   P+ 003      11377  000027 .. PCAL GET'MESSAGE 11467  000002 .. PCAL DO'WIOC0
11310  040147 @g LOAD P+ 147      11400  051024 R. STOR DB 024      11470  040031 @. LOAD P+ 031
11311  000110 .H DELB,DCMP        11401  021024 ". LDI  20          11471  000002 .. PCAL DO'WIOC0
11312  020104  D IOOP 32 BIT OP   11402  021002 ". LDI  2           11472  021004 ". LDI  4
11313  000000 .. NOP ,NOP         11403  021020 ". LDI  16          11473  000002 .. PCAL DO'WIOC0
11314  021005 ". LDI  5           11404  041070 B8 LOAD DB 070     11474  021006 ". LDI  6
11315  000214 .. PCAL DODELAY     11405  037437 ?. ANDI 31          11475  000002 .. PCAL DO'WIOC0
11316  040552 Aj LOAD P- 152      11406  000017 .. PCAL NUM2ASC     11476  040024 @. LOAD P+ 024
11317  000011 .. PCAL DO'WIOC0    11407  021041 "! LDI  33          11477  000002 .. PCAL DO'WIOC0
11320  000202 .. PCAL DO'RIOC0    11410  021002 ". LDI  2           11500  021010 ". LDI  8
11321  041070 B8 LOAD DB 070      11411  021020 ". LDI  16          11501  000002 .. PCAL DO'WIOC0
11322  037777 ?. ANDI 255         11412  041012 B. LOAD DB 012     11502  021030 ". LDI  24
11323  021002 ". LDI  2           11413  000005 .. PCAL NUM2ASC     11503  000002 .. PCAL DO'WIOC0
11324  001700 .. CMP ,NOP         11414  041024 B. LOAD DB 024     11504  040574 A| LOAD P- 174
11325  145534 .\ BNE  P+ 034,I    11415  002400 .. NEG ,NOP         11505  000002 .. PCAL DO'WIOC0
11326  041070 B8 LOAD DB 070      11416  021001 ". LDI  1           11506  021027 ". LDI  23
11327  051007 R. STOR DB 007      11417  000024 .. PCAL ERROROUT    11507  000002 .. PCAL DO'WIOC0
11330  040562 Ar LOAD P- 162      11420  140524 .T BR   P- 124      11510  021062 "2 LDI  50
11331  000012 .. PCAL DO'WIOC0    11421  000220 .. PCAL CHECKYTRAP  11511  000002 .. PCAL DO'WIOC0
11332  000012 .. PCAL DO'RIOC0    11422  140604 .. BR   P- 204      11512  040744 A. LOAD P- 344
11333  041045 B% LOAD DB 045      11423  025402 +. LDXN 2           11513  000002 .. PCAL DO'WIOC0
11334  013603 .. BRO  P+3         11424  000600 .. ZERO,NOP         11514  021004 ". LDI  4
11335  021033 ". LDI  27          11425  020321  . PSTA             11515  000002 .. PCAL DO'WIOC0
11336  140002 .. BR   P+ 002      11426  004447 .' PCAL REP'ILL'INT 11516  140005 .. BR   P+ 005
11337  021037 ". LDI  31          11427  001765 .. PCAL DOT         11517  040100 @@ LOAD P+ 100
11340  051012 R. STOR DB 012      11430  151075 .= LDD  DB 075     11520  040141 @a LOAD P+ 141
11341  041070 B8 LOAD DB 070      11431  021011 ". LDI  9           11521  040143 @c LOAD P+ 143
11342  037437 ?. ANDI 31          11432  004300 .. STAX,NOP         11522  040146 @f LOAD P+ 146
11343  041012 B. LOAD DB 012      11433  016401 .. DCSL 1 BIT ,X    11523  020104  D IOOP 32 BIT OP
11344  001700 .. CMP ,NOP         11434  000100 .@ DELB,NOP         11524  000000 .. NOP ,NOP
11345  141530 .X BNE  P+ 030      11435  017714 .. BRE  P+14,I      11525  021012 ". LDI  10
11346  000600 .. ZERO,NOP         11436  021045 "% LDI  37          11526  000211 .. PCAL DODELAY
11347  021051 ") LDI  41          11437  051065 R5 STOR DB 065     11527  000175 .} PCAL DO'RIOC0
11350  000171 .y PCAL GET'MESSAGE 11440  041036 B. LOAD DB 036     11530  041070 B8 LOAD DB 070
11351  051024 R. STOR DB 024      11441  021001 ". LDI  1           11531  051002 R. STOR DB 002
11352  021016 ". LDI  14          11442  006100 .@ LSUB,NOP         11532  040766 A. LOAD P- 366
11353  021002 ". LDI  2           11443  051013 R. STOR DB 013     11533  000016 .. PCAL DO'WIOC0
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11534  000005 .. PCAL DO'RIOC0        11624  037777 ?. ANDI 255          11714  040573 A{ LOAD P- 173
11535  041002 B. LOAD DB 002          11625  021000 ". LDI  0            11715  000035 .. PCAL DO'WIOC0
11536  037437 ?. ANDI 31              11626  001700 .. CMP ,NOP          11716  021000 ". LDI  0
11537  021010 ". LDI  8               11627  141224 .. BE   P+ 024        11717  000002 .. PCAL DO'WIOC0
11540  005700 .. LCMP,NOP             11630  000600 .. ZERO,NOP          11720  040436 A. LOAD P- 036
11541  141207 .. BE   P+ 007          11631  021051 ") LDI  41           11721  000002 .. PCAL DO'WIOC0
11542  000600 .. ZERO,NOP             11632  000053 .+ PCAL GET'MESSAGE  11722  000037 .. PCAL DO'RIOC0
11543  021045 "% LDI  37              11633  051024 R. STOR DB 024        11723  041070 B8 LOAD DB 070
11544  000145 .e PCAL GET'MESSAGE     11634  021016 ". LDI  14           11724  037777 ?. ANDI 255
11545  002400 .. NEG ,NOP             11635  021002 ". LDI  2            11725  021003 ". LDI  3
11546  021001 ". LDI  1               11636  021020 ". LDI  16           11726  001700 .. CMP ,NOP
11547  000130 .X PCAL ERROROUT        11637  041070 B8 LOAD DB 070       11727  141224 .. BE   P+ 024
11550  041070 B8 LOAD DB 070          11640  037777 ?. ANDI 255          11730  000600 .. ZERO,NOP
11551  037777 ?. ANDI 255             11641  000046 .& PCAL NUM2ASC      11731  021051 ") LDI  41
11552  021002 ". LDI  2               11642  021033 ". LDI  27           11732  000037 .. PCAL GET'MESSAGE
11553  001700 .. CMP ,NOP             11643  021002 ". LDI  2            11733  051024 R. STOR DB 024
11554  141226 .. BE   P+ 026          11644  021020 ". LDI  16           11734  021016 ". LDI  14
11555  000600 .. ZERO,NOP             11645  021000 ". LDI  0            11735  021002 ". LDI  2
11556  021051 ") LDI  41              11646  000005 .. PCAL NUM2ASC      11736  021020 ". LDI  16
11557  000013 .. PCAL GET'MESSAGE     11647  041024 B. LOAD DB 024       11737  041070 B8 LOAD DB 070
11560  051024 R. STOR DB 024          11650  002400 .. NEG ,NOP          11740  037777 ?. ANDI 255
11561  021016 ". LDI  14              11651  021001 ". LDI  1            11741  000032 .. PCAL NUM2ASC
11562  021002 ". LDI  2               11652  000051 .) PCAL ERROROUT      11742  021033 ". LDI  27
11563  021020 ". LDI  16              11653  040532 AZ LOAD P- 132        11743  021002 ". LDI  2
11564  041070 B8 LOAD DB 070          11654  000033 .. PCAL DO'WIOC0      11744  021020 ". LDI  16
11565  037777 ?. ANDI 255             11655  021002 ". LDI  2            11745  021003 ". LDI  3
11566  000153 .k PCAL NUM2ASC         11656  000002 .. PCAL DO'WIOC0      11746  000005 .. PCAL NUM2ASC
11567  021033 ". LDI  27              11657  040003 @. LOAD P+ 003        11747  041024 B. LOAD DB 024
11570  021002 ". LDI  2               11660  000002 .. PCAL DO'WIOC0      11750  002400 .. NEG ,NOP
11571  021020 ". LDI  16              11661  140002 .. BR   P+ 002        11751  021001 ". LDI  1
11572  021002 ". LDI  2               11662  040160 @p LOAD P+ 160        11752  000037 .. PCAL ERROROUT
11573  000005 .. PCAL NUM2ASC         11663  000041 .! PCAL DO'RIOC0      11753  000332 .. PCAL CHECKYTRAP
11574  140002 .. BR   P+ 002          11664  041070 B8 LOAD DB 070        11754  140710 .. BR   P- 310
11575  000005 .. NOP ,DECX            11665  037777 ?. ANDI 255          11755  025402 +. LDXN 2
11576  041024 B. LOAD DB 024          11666  021001 ". LDI  1            11756  000600 .. ZERO,NOP
11577  002400 .. NEG ,NOP             11667  001700 .. CMP ,NOP          11757  020321  . PSTA
11600  021001 ". LDI  1               11670  141224 .. BE   P+ 024        11760  000332 .. PCAL REP'ILL'INT
11601  000032 .. PCAL ERROROUT        11671  000600 .. ZERO,NOP          11761  000332 .. PCAL DOT
11602  040672 A. LOAD P- 272          11672  021051 ") LDI  41           11762  151075 .= LDD  DB 075
11603  000050 .( PCAL DO'WIOC0        11673  000041 .! PCAL GET'MESSAGE  11763  021012 ". LDI  10
11604  021040 "  LDI  32              11674  051024 R. STOR DB 024        11764  004300 .. STAX,NOP
11605  000002 .. PCAL DO'WIOC0        11675  021016 ". LDI  14           11765  016401 .. DCSL 1 BIT ,X
11606  040005 @. LOAD P+ 005          11676  021002 ". LDI  2            11766  000100 .@ DELB,NOP
11607  000002 .. PCAL DO'WIOC0        11677  021020 ". LDI  16           11767  017704 .. BRE  P+4,I
11610  021125 "U LDI  85              11700  041070 B8 LOAD DB 070       11770  021046 "& LDI  38
11611  000002 .. PCAL DO'WIOC0        11701  037777 ?. ANDI 255          11771  051065 R5 STOR DB 065
11612  140002 .. BR   P+ 002          11702  000034 .. PCAL NUM2ASC      11772  140002 .. BR   P+ 002
11613  040140 @' LOAD P+ 140          11703  021033 ". LDI  27           11773  000120 .P DELB,ADD
11614  020104  D IOOP 32 BIT OP       11704  021002 ". LDI  2            11774  041010 B. LOAD DB 010
11615  000000 .. NOP ,NOP             11705  021020 ". LDI  16           11775  020302  . IOOP 32 BIT OP
11616  021012 ". LDI  10              11706  021001 ". LDI  1            11776  000006 .. NOP ,ZERO
11617  000071 .9 PCAL DODELAY         11707  000005 .. PCAL NUM2ASC      11777  141402 .. BG   P+ 002
11620  040042 @" LOAD P+ 042          11710  041024 B. LOAD DB 024       12000  000321 .. PCAL WRITEFAIL
11621  000010 .. PCAL DO'WIOC0        11711  002400 .. NEG ,NOP          12001  041036 B. LOAD DB 036
11622  000066 .6 PCAL DO'RIOC0        11712  021001 ". LDI  1            12002  021001 ". LDI  1
11623  041070 B8 LOAD DB 070          11713  000041 .! PCAL ERROROUT      12003  006100 .@ LSUB,NOP
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12004  051013 R. STOR DB 013          12074  021020 ". LDI  16             12164  041002 B. LOAD DB 002
12005  120013 .. INCM DB 013          12075  041070 B8 LOAD DB 070         12165  006000 .. LADD,NOP
12006  041013 B. LOAD DB 013          12076  000130 .X PCAL NUM2ASC        12166  051005 R. STOR DB 005
12007  061023 b. CMPM DB 023          12077  041024 B. LOAD DB 024         12167  041005 B. LOAD DB 005
12010  145432 .. BG   P+ 032,I        12100  002400 .. NEG ,NOP            12170  040007 @. LOAD P+ 007
12011  040672 A. LOAD P- 272          12101  021001 ". LDI  1              12171  005700 .. LCMP,NOP
12012  041013 B. LOAD DB 013          12102  000130 .X PCAL ERROROUT        12172  141230 .. BE   P+ 030
12013  006000 .. LADD,NOP             12103  140476 .> BR   P- 076         12173  000600 .. ZERO,NOP
12014  000073 .; PCAL DO'WIOC0        12104  140002 .. BR   P+ 002         12174  140005 .. BR   P+ 005
12015  040675 A. LOAD P- 275          12105  100052 .* SUBM P+ 052         12175  000027 .. NOP ,DTST
12016  000002 .. PCAL DO'WIOC0        12106  025402 +. LDXN 2              12176  040137 @_ LOAD P+ 137
12017  021336 ". LDI  222            12107  000600 .. ZERO,NOP            12177  040200 @. LOAD P+ 200
12020  000002 .. PCAL DO'WIOC0        12110  020321  . PSTA               12200  000022 .. NOP ,MPY
12021  040700 A. LOAD P- 300          12111  000131 .Y PCAL REP'ILL'INT    12201  021061 "1 LDI  49
12022  000002 .. PCAL DO'WIOC0        12112  000131 .Y PCAL DOT            12202  000112 .J PCAL GET'MESSAGE
12023  021004 ". LDI  4              12113  151075 .= LDD  DB 075         12203  051024 R. STOR DB 024
12024  000002 .. PCAL DO'WIOC0        12114  021013 ". LDI  11             12204  021060 "0 LDI  48
12025  041013 B. LOAD DB 013          12115  004300 .. STAX,NOP           12205  041013 B. LOAD DB 013
12026  010310 .. PCAL SETUP'DRT       12116  016401 .. DCSL 1 BIT ,X       12206  006000 .. LADD,NOP
12027  000000 .. PCAL SET'CPVA        12117  000100 .@ DELB,NOP            12207  021420 #. LDXI 16
12030  173127 .W LRA  DB 127,I        12120  017704 .. BRE  P+4,I          12210  166104 .D STB  DB 104,I,X
12031  021005 ". LDI  5              12121  021047 "' LDI  39             12211  021034 ". LDI  28
12032  040011 @. LOAD P+ 011          12122  051065 R5 STOR DB 065        12212  021004 ". LDI  4
12033  000000 .. PCAL MOVE'CHNL'PGM   12123  140002 .. BR   P+ 002         12213  021020 ". LDI  16
12034  041010 B. LOAD DB 010          12124  000274 .. DDEL,DECB           12214  041005 B. LOAD DB 005
12035  071013 r. ADDM DB 013          12125  041010 B. LOAD DB 010         12215  000117 .O PCAL NUM2ASC
12036  051071 R9 STOR DB 071          12126  020302  . IOOP 32 BIT OP      12216  041024 B. LOAD DB 024
12037  040004 @. LOAD P+ 004          12127  000006 .. NOP ,ZERO           12217  002400 .. NEG ,NOP
12040  051070 R8 STOR DB 070          12130  141402 .. BG   P+ 002         12220  021000 ". LDI  0
12041  140003 .. BR   P+ 003          12131  000131 .Y PCAL WRITEFAIL      12221  000117 .O PCAL ERROROUT
12042  000042 ." NOP ,LDXB            12132  041036 B. LOAD DB 036         12222  000247 .. PCAL CHECKYTRAP
12043  170000 .. LRA  P+ 000          12133  021001 ". LDI  1              12223  140465 .5 BR   P- 065
12044  041071 B9 LOAD DB 071          12134  006100 .@ LSUB,NOP            12224  021050 "( LDI  40
12045  041070 B8 LOAD DB 070          12135  051013 R. STOR DB 013         12225  051065 R5 STOR DB 065
12046  020302  . IOOP 32 BIT OP       12136  120013 .. INCM DB 013         12226  041036 B. LOAD DB 036
12047  000000 .. NOP ,NOP             12137  041013 B. LOAD DB 013         12227  021001 ". LDI  1
12050  020104  D IOOP 32 BIT OP       12140  061023 b. CMPM DB 023         12230  006100 .@ LSUB,NOP
12051  000000 .. NOP ,NOP             12141  145434 .. BG   P+ 034,I       12231  051013 R. STOR DB 013
12052  021012 ". LDI  10             12142  040034 @. LOAD P+ 034         12232  120013 .. INCM DB 013
12053  000234 .. PCAL DODELAY         12143  000117 .O PCAL DO'WIOC0       12233  041013 B. LOAD DB 013
12054  040002 @. LOAD P+ 002          12144  040731 A. LOAD P- 331         12234  061023 b. CMPM DB 023
12055  140002 .. BR   P+ 002          12145  041013 B. LOAD DB 013         12235  145416 .. BG   P+ 016,I
12056  170001 .. LRA  P+ 001          12146  006000 .. LADD,NOP            12236  000207 .. PCAL SET'CPVA
12057  004300 .. STAX,NOP             12147  000004 .. PCAL DO'WIOC0       12237  041013 B. LOAD DB 013
12060  020320  . PLDA                 12150  000226 .. PCAL DO'RIOC0       12240  000212 .. PCAL SETUP'DRT
12061  051070 R8 STOR DB 070          12151  041070 B8 LOAD DB 070         12241  173130 .X LRA  DB 130,I
12062  041070 B8 LOAD DB 070          12152  051002 R. STOR DB 002         12242  021005 ". LDI  5
12063  040022 @. LOAD P+ 022          12153  000003 .. PCAL DO'RIOC0       12243  040600 A. LOAD P- 200
12064  005700 .. LCMP,NOP             12154  041070 B8 LOAD DB 070         12244  000211 .. PCAL MOVE'CHNL'PGM
12065  141216 .. BE   P+ 016          12155  051005 R. STOR DB 005         12245  041010 B. LOAD DB 010
12066  000600 .. ZERO,NOP             12156  041002 B. LOAD DB 002         12246  071013 r. ADDM DB 013
12067  021060 "0 LDI  48             12157  037777 ?. ANDI 255            12247  051071 R9 STOR DB 071
12070  000136 .^ PCAL GET'MESSAGE     12160  010410 .. CSL  8 BITS         12250  040605 A. LOAD P- 205
12071  051024 R. STOR DB 024          12161  051002 R. STOR DB 002         12251  051070 R8 STOR DB 070
12072  021024 ". LDI  20             12162  041005 B. LOAD DB 005         12252  140002 .. BR   P+ 002
12073  021004 ". LDI  4              12163  037777 ?. ANDI 255            12253  000044 .$ NOP ,LDXA
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12254  041071 B9 LOAD DB 071          12344  000047 .’ NOP ,FLT          12434  000006 .. NOP ,ZERO
12255  041070 B8 LOAD DB 070          12345  040140 @’ LOAD P+ 140       12435  141402 .. BG   P+ 002
12256  020302  . IOOP 32 BIT OP       12346  041010 B. LOAD DB 010       12436  000305 .. PCAL WRITEFAIL
12257  000000 .. NOP ,NOP             12347  020302  . IOOP 32 BIT OP    12437  041036 B. LOAD DB 036
12260  020104  D IOOP 32 BIT OP       12350  000002 .. NOP ,DDEL         12440  021001 ". LDI  1
12261  000000 .. NOP ,NOP             12351  141603 .. BGE  P+ 003       12441  006100 .@ LSUB,NOP
12262  021012 ". LDI  10              12352  025001 *. LDNI 1            12442  051013 R. STOR DB 013
12263  000210 .. PCAL DODELAY         12353  051040 R  STOR DB 040       12443  120013 .. INCM DB 013
12264  040606 A. LOAD P- 206          12354  004000 .. DEL ,NOP          12444  041013 B. LOAD DB 013
12265  004300 .. STAX,NOP             12355  041040 B  LOAD DB 040       12445  061023 b. CMPM DB 023
12266  020320  . PLDA                 12356  013703 .. BRE  P+3          12446  145414 .. BG   P+ 014,I
12267  051070 R8 STOR DB 070          12357  021001 ". LDI  1            12447  040014 @. LOAD P+ 014
12270  041070 B8 LOAD DB 070          12360  140002 .. BR   P+ 002       12450  041013 B. LOAD DB 013
12271  040472 A: LOAD P- 072          12361  021000 ". LDI  0            12451  006000 .. LADD,NOP
12272  005700 .. LCMP,NOP             12362  051005 R. STOR DB 005       12452  000112 .J PCAL DO’WIOC0
12273  141223 .. BE   P+ 023          12363  021000 ". LDI  0            12453  040011 @. LOAD P+ 011
12274  000600 .. ZERO,NOP             12364  051040 R  STOR DB 040       12454  000002 .. PCAL DO’WIOC0
12275  021061 "1 LDI  49              12365  041010 B. LOAD DB 010       12455  021000 ". LDI  0
12276  000074 .< PCAL GET’MESSAGE     12366  020302  . IOOP 32 BIT OP    12456  000002 .. PCAL DO’WIOC0
12277  051024 R. STOR DB 024          12367  000002 .. NOP ,DDEL         12457  021040 "  LDI  32
12300  021060 "0 LDI  48              12370  141603 .. BGE  P+ 003       12460  000002 .. PCAL DO’WIOC0
12301  041013 B. LOAD DB 013          12371  025001 *. LDNI 1            12461  140004 .. BR   P+ 004
12302  006000 .. LADD,NOP             12372  051040 R  STOR DB 040       12462  000215 .. DDEL,DNEG
12303  021420 #. LDXI 16              12373  004000 .. DEL ,NOP          12463  040100 @@ LOAD P+ 100
12304  166104 .D STB  DB 104,I,X      12374  041040 B  LOAD DB 040       12464  040147 @g LOAD P+ 147
12305  021034 ". LDI  28              12375  013703 .. BRE  P+3          12465  041010 B. LOAD DB 010
12306  021004 ". LDI  4               12376  041005 B. LOAD DB 005       12466  020302  . IOOP 32 BIT OP
12307  021020 ". LDI  16              12377  140002 .. BR   P+ 002       12467  000006 .. NOP ,ZERO
12310  041070 B8 LOAD DB 070          12400  021000 ". LDI  0            12470  141402 .. BG   P+ 002
12311  000074 .< PCAL NUM2ASC         12401  051005 R. STOR DB 005       12471  000033 .. PCAL WRITEFAIL
12312  041024 B. LOAD DB 024          12402  041005 B. LOAD DB 005       12472  041013 B. LOAD DB 013
12313  002400 .. NEG ,NOP             12403  013607 .. BRO  P+7          12473  000233 .. PCAL SETUP’DRT
12314  021000 ". LDI  0               12404  000600 .. ZERO,NOP          12474  173127 .W LRA  DB 127,I
12315  000074 .< PCAL ERROROUT        12405  021062 "2 LDI  50           12475  021005 ". LDI  5
12316  140464 .4 BR   P- 064          12406  000110 .H PCAL GET’MESSAGE  12476  040017 @. LOAD P+ 017
12317  041045 B% LOAD DB 045          12407  002400 .. NEG ,NOP          12477  000233 .. PCAL MOVE’CHNL’PGM
12320  017607 .. BRO  P+7,I           12410  021001 ". LDI  1            12500  025001 *. LDNI 1
12321  021051 ") LDI  41              12411  000074 .< PCAL ERROROUT     12501  051002 R. STOR DB 002
12322  051065 R5 STOR DB 065          12412  140465 .5 BR   P- 065       12502  120002 .. INCM DB 002
12323  021003 ". LDI  3               12413  025402 +. LDXN 2            12503  041002 B. LOAD DB 002
12324  051013 R. STOR DB 013          12414  000600 .. ZERO,NOP          12504  022004 $. CMPI 4
12325  120013 .. INCM DB 013          12415  020321  . PSTA              12505  145611 .. BGE  P+ 011,I
12326  140002 .. BR   P+ 002          12416  000305 .. PCAL REP’ILL’INT  12506  025001 *. LDNI 1
12327  000064 .4 NOP ,NOT             12417  000305 .. PCAL DOT          12507  051005 R. STOR DB 005
12330  041013 B. LOAD DB 013          12420  151075 .= LDD  DB 075       12510  120005 .. INCM DB 005
12331  022010 $. CMPI 8               12421  021014 ". LDI  12           12511  041005 B. LOAD DB 005
12332  145612 .. BGE  P+ 012,I        12422  004300 .. STAX,NOP          12512  022010 $. CMPI 8
12333  040535 A] LOAD P- 135          12423  016401 .. DCSL 1 BIT ,X     12513  145604 .. BGE  P+ 004,I
12334  000165 .u PCAL DO’WIOC0        12424  000100 .@ DELB,NOP          12514  140004 .. BR   P+ 004
12335  040010 @. LOAD P+ 010          12425  017704 .. BRE  P+4,I        12515  170000 .. LRA  P+ 000
12336  041013 B. LOAD DB 013          12426  021052 "* LDI  42           12516  000157 .o DELB,LCMP
12337  006000 .. LADD,NOP             12427  051065 R5 STOR DB 065       12517  000155 .m DELB,FNEG
12340  000004 .. PCAL DO’WIOC0        12430  140002 .. BR   P+ 002       12520  021000 ". LDI  0
12341  021000 ". LDI  0               12431  001532 .Z DNEG,XCH          12521  040002 @. LOAD P+ 002
12342  051040 R  STOR DB 040          12432  041010 B. LOAD DB 010       12522  140002 .. BR   P+ 002
12343  140003 .. BR   P+ 003          12433  020302  . IOOP 32 BIT OP    12523  170001 .. LRA  P+ 001
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12524  004300 .. STAX,NOP          12614  021000 ". LDI  0           12704  051013 R. STOR DB 013
12525  020321  . PSTA              12615  040472 A: LOAD P- 072      12705  120013 .. INCM DB 013
12526  030041 0! SED  1            12616  004300 .. STAX,NOP         12706  041013 B. LOAD DB 013
12527  131002 .. LDX  DB 002       12617  020321  . PSTA              12707  061023 b. CMPM DB 023
12530  047113 NK LOAD DB 113,I,X   12620  030041 0! SED  1           12710  145402 .. BG   P+ 002,I
12531  000051 .) PCAL DO'WIOC0     12621  041010 B. LOAD DB 010      12711  140002 .. BR   P+ 002
12532  131005 .. LDX  DB 005       12622  071013 r. ADDM DB 013      12712  000131 .Y DELB,BTST
12533  047114 NL LOAD DB 114,I,X   12623  051071 R9 STOR DB 071      12713  041010 B. LOAD DB 010
12534  000003 .. PCAL DO'WIOC0     12624  040507 AG LOAD P- 107      12714  020302  . IOOP 32 BIT OP
12535  041010 B. LOAD DB 010       12625  051070 R8 STOR DB 070      12715  000006 .. NOP ,ZERO
12536  071013 r. ADDM DB 013       12626  041071 B9 LOAD DB 071      12716  141402 .. BG   P+ 002
12537  051071 R9 STOR DB 071       12627  041070 B8 LOAD DB 070      12717  000104 .D PCAL WRITEFAIL
12540  040423 A. LOAD P- 023       12630  020302  . IOOP 32 BIT OP   12720  041013 B. LOAD DB 013
12541  051070 R8 STOR DB 070       12631  000000 .. NOP ,NOP         12721  000226 .. PCAL SETUP'DRT
12542  041071 B9 LOAD DB 071       12632  020104  D IOOP 32 BIT OP   12722  173127 .W LRA  DB 127,I
12543  041070 B8 LOAD DB 070       12633  000000 .. NOP ,NOP         12723  021005 ". LDI  5
12544  020302  . IOOP 32 BIT OP    12634  021012 ". LDI  10          12724  040607 A. LOAD P- 207
12545  000000 .. NOP ,NOP          12635  000064 .4 PCAL DODELAY      12725  000226 .. PCAL MOVE'CHNL'PGM
12546  020104  D IOOP 32 BIT OP    12636  030040 0  SED  0           12726  025001 *. LDNI 1
12547  000000 .. NOP ,NOP          12637  040514 AL LOAD P- 114      12727  051002 R. STOR DB 002
12550  021012 ". LDI  10           12640  004300 .. STAX,NOP         12730  120002 .. INCM DB 002
12551  000266 .. PCAL DODELAY      12641  020320  . PLDA              12731  041002 B. LOAD DB 002
12552  030040 0  SED  0           12642  051070 R8 STOR DB 070      12732  022011 $. CMPI 9
12553  040430 A. LOAD P- 030       12643  041070 B8 LOAD DB 070      12733  145610 .. BGE  P+ 010,I
12554  004300 .. STAX,NOP          12644  021000 ". LDI  0           12734  025001 *. LDNI 1
12555  020320  . PLDA              12645  005700 .. LCMP,NOP         12735  051005 R. STOR DB 005
12556  051070 R8 STOR DB 070       12646  141525 .U BNE  P+ 025      12736  120005 .. INCM DB 005
12557  041070 B8 LOAD DB 070       12647  000600 .. ZERO,NOP         12737  041005 B. LOAD DB 005
12560  021000 ". LDI  0            12650  021056 ". LDI  46          12740  022011 $. CMPI 9
12561  005700 .. LCMP,NOP          12651  000064 .4 PCAL GET'MESSAGE 12741  145603 .. BGE  P+ 003,I
12562  141225 .. BE   P+ 025       12652  051024 R. STOR DB 024      12742  140003 .. BR   P+ 003
12563  000600 .. ZERO,NOP          12653  021047 "' LDI  39          12743  000076 .> NOP ,ADBX
12564  021055 "- LDI  45           12654  021002 ". LDI  2           12744  000074 .< NOP ,DECB
12565  000157 .o PCAL GET'MESSAGE  12655  021012 ". LDI  10          12745  021000 ". LDI  0
12566  051024 R. STOR DB 024       12656  131002 .. LDX  DB 002      12746  040623 A. LOAD P- 223
12567  021010 ". LDI  8            12657  047120 NP LOAD DB 120,I,X  12747  004300 .. STAX,NOP
12570  021002 ". LDI  2            12660  000056 .. PCAL NUM2ASC     12750  020321  . PSTA
12571  021012 ". LDI  10           12661  021065 "5 LDI  53          12751  040020 @. LOAD P+ 020
12572  131002 .. LDX  DB 002       12662  021002 ". LDI  2           12752  000216 .. PCAL DO'WIOC0
12573  047120 NP LOAD DB 120,I,X   12663  021012 ". LDI  10          12753  040017 @. LOAD P+ 017
12574  000263 .. PCAL NUM2ASC      12664  131005 .. LDX  DB 005      12754  000002 .. PCAL DO'WIOC0
12575  021026 ". LDI  22           12665  047121 NQ LOAD DB 121,I,X  12755  131002 .. LDX  DB 002
12576  021002 ". LDI  2            12666  000006 .. PCAL NUM2ASC     12756  047115 NM LOAD DB 115,I,X
12577  021012 ". LDI  10           12667  041024 B. LOAD DB 024      12757  000003 .. PCAL DO'WIOC0
12600  131005 .. LDX  DB 005       12670  002400 .. NEG ,NOP         12760  131005 .. LDX  DB 005
12601  047121 NQ LOAD DB 121,I,X   12671  021001 ". LDI  1           12761  047116 NN LOAD DB 116,I,X
12602  000006 .. PCAL NUM2ASC      12672  000064 .4 PCAL ERROROUT    12762  000003 .. PCAL DO'WIOC0
12603  041024 B. LOAD DB 024       12673  140563 .s BR   P- 163      12763  040646 A. LOAD P- 246
12604  002400 .. NEG ,NOP          12674  140572 .z BR   P- 172      12764  051070 R8 STOR DB 070
12605  021001 ". LDI  1            12675  000256 .. PCAL DOT         12765  041010 B. LOAD DB 010
12606  000175 .} PCAL ERROROUT     12676  140633 .. BR   P- 233      12766  071013 r. ADDM DB 013
12607  041010 B. LOAD DB 010       12677  021053 "+ LDI  43          12767  051071 R9 STOR DB 071
12610  020302  . IOOP 32 BIT OP    12700  051065 R5 STOR DB 065      12770  140003 .. BR   P+ 003
12611  000006 .. NOP ,ZERO         12701  041036 B. LOAD DB 036      12771  040060 @0 LOAD P+ 060
12612  141402 .. BG   P+ 002       12702  021001 ". LDI  1           12772  040161 @q LOAD P+ 161
12613  000122 .R PCAL WRITEFAIL    12703  006100 .@ LSUB,NOP        12773  041071 B9 LOAD DB 071
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12774  041070 B8 LOAD DB 070          13064  006000 .. LADD,NOP            13154  021002 ". LDI  2
12775  020302  . IOOP 32 BIT OP      13065  000103 .C PCAL DO'WIOC0       13155  021012 ". LDI  10
12776  000000 .. NOP ,NOP            13066  040475 A= LOAD P- 075         13156  021021 ". LDI  17
12777  020104  D IOOP 32 BIT OP      13067  000002 .. PCAL DO'WIOC0       13157  000005 .. PCAL NUM2ASC
13000  000000 .. NOP ,NOP            13070  040476 A> LOAD P- 076         13160  041024 B. LOAD DB 024
13001  021012 ". LDI  10             13071  000002 .. PCAL DO'WIOC0       13161  002400 .. NEG ,NOP
13002  000145 .e PCAL DODELAY        13072  041013 B. LOAD DB 013         13162  021001 ". LDI  1
13003  040660 A. LOAD P- 260         13073  000152 .j PCAL SETUP'DRT      13163  000125 .U PCAL ERROROUT
13004  004300 .. STAX,NOP            13074  173127 .W LRA  DB 127,I       13164  041010 B. LOAD DB 010
13005  020320  . PLDA                13075  021005 ". LDI  5              13165  021004 ". LDI  4
13006  051070 R8 STOR DB 070         13076  040761 A. LOAD P- 361         13166  010414 .. CSL  12 BITS
13007  041070 B8 LOAD DB 070         13077  000152 .j PCAL MOVE'CHNL'PGM  13167  006500 .@ OR  ,NOP
13010  021000 ". LDI  0              13100  140002 .. BR   P+ 002         13170  020302  . IOOP 32 BIT OP
13011  005700 .. LCMP,NOP            13101  000140 .' DELB,DEL            13171  000002 .. NOP ,DDEL
13012  141525 .U BNE  P+ 025         13102  040765 A. LOAD P- 365         13172  141503 .C BNE  P+ 003
13013  000600 .. ZERO,NOP            13103  041010 B. LOAD DB 010         13173  051070 R8 STOR DB 070
13014  021057 "/ LDI  47             13104  071013 r. ADDM DB 013         13174  140002 .. BR   P+ 002
13015  000144 .d PCAL GET'MESSAGE    13105  023404 '. MPYI 4              13175  010603 .. PCAL READFAIL
13016  051024 R. STOR DB 024         13106  004300 .. STAX,NOP            13176  041010 B. LOAD DB 010
13017  021010 ". LDI  8              13107  020321  . PSTA                13177  071013 r. ADDM DB 013
13020  021002 ". LDI  2              13110  041010 B. LOAD DB 010         13200  040032 @. LOAD P+ 032
13021  021012 ". LDI  10             13111  040006 @. LOAD P+ 006         13201  006000 .. LADD,NOP
13022  131002 .. LDX  DB 002         13112  006000 .. LADD,NOP            13202  051002 R. STOR DB 002
13023  047122 NR LOAD DB 122,I,X     13113  051071 R9 STOR DB 071         13203  041070 B8 LOAD DB 070
13024  000136 .^ PCAL NUM2ASC        13114  041013 B. LOAD DB 013         13204  041002 B. LOAD DB 002
13025  021026 ". LDI  22             13115  051070 R8 STOR DB 070         13205  005700 .. LCMP,NOP
13026  021002 ". LDI  2              13116  140002 .. BR   P+ 002         13206  141223 .. BE   P+ 023
13027  021012 ". LDI  10             13117  040000 @. LOAD P+ 000         13207  000600 .. ZERO,NOP
13030  131005 .. LDX  DB 005         13120  041071 B9 LOAD DB 071         13210  021103 "C LDI  67
13031  047123 NS LOAD DB 123,I,X     13121  041070 B8 LOAD DB 070         13211  000045 .% PCAL GET'MESSAGE
13032  000006 .. PCAL NUM2ASC        13122  020302  . IOOP 32 BIT OP      13212  051024 R. STOR DB 024
13033  041024 B. LOAD DB 024         13123  000003 .. NOP ,ZROX           13213  021020 ". LDI  16
13034  002400 .. NEG ,NOP            13124  020104  D IOOP 32 BIT OP      13214  021004 ". LDI  4
13035  021001 ". LDI  1              13125  000000 .. NOP ,NOP            13215  021020 ". LDI  16
13036  000144 .d PCAL ERROROUT       13126  021012 ". LDI  10             13216  041070 B8 LOAD DB 070
13037  140501 .A BR   P- 101         13127  000125 .U PCAL DODELAY        13217  000040 .  PCAL NUM2ASC
13040  140510 .H BR   P- 110         13130  040002 @. LOAD P+ 002         13220  021037 ". LDI  31
13041  000144 .d PCAL DOT            13131  140002 .. BR   P+ 002         13221  021004 ". LDI  4
13042  140535 .] BR   P- 135         13132  170001 .. LRA  P+ 001         13222  021020 ". LDI  16
13043  021054 ", LDI  44             13133  004300 .. STAX,NOP            13223  041002 B. LOAD DB 002
13044  051065 R5 STOR DB 065         13134  020320  . PLDA                13224  000005 .. PCAL NUM2ASC
13045  041010 B. LOAD DB 010         13135  051070 R8 STOR DB 070         13225  041024 B. LOAD DB 024
13046  020302  . IOOP 32 BIT OP      13136  041070 B8 LOAD DB 070         13226  002400 .. NEG ,NOP
13047  000006 .. NOP ,ZERO           13137  021000 ". LDI  0              13227  021001 ". LDI  1
13050  141402 .. BG   P+ 002         13140  005700 .. LCMP,NOP            13230  000045 .% PCAL ERROROUT
13051  000132 .Z PCAL WRITEFAIL      13141  141223 .. BE   P+ 023         13231  140002 .. BR   P+ 002
13052  041036 B. LOAD DB 036         13142  000600 .. ZERO,NOP            13232  001000 .. DCMP,NOP
13053  021001 ". LDI  1              13143  021055 "- LDI  45             13233  041010 B. LOAD DB 010
13054  006100 .@ LSUB,NOP            13144  000127 .W PCAL GET'MESSAGE    13234  020302  . IOOP 32 BIT OP
13055  051013 R. STOR DB 013         13145  051024 R. STOR DB 024         13235  000006 .. NOP ,ZERO
13056  120013 .. INCM DB 013         13146  021010 ". LDI  8              13236  141402 .. BG   P+ 002
13057  041013 B. LOAD DB 013         13147  021002 ". LDI  2              13237  000166 .v PCAL WRITEFAIL
13060  061023 b. CMPM DB 023         13150  021012 ". LDI  10             13240  140562 .r BR   P- 162
13061  145420 .. BG   P+ 020,I       13151  021020 ". LDI  16             13241  000200 .. PCAL DOT
13062  040777 A. LOAD P- 377         13152  000120 .P PCAL NUM2ASC        13242  021055 "- LDI  45
13063  041013 B. LOAD DB 013         13153  021026 ". LDI  22             13243  051065 R5 STOR DB 065
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13244  041036 B. LOAD DB 036          13334  000600 .. ZERO,NOP            13424  141402 .. BG   P+ 002
13245  021001 ". LDI  1               13335  021055 "- LDI  45             13425  000166 .v PCAL WRITEFAIL
13246  006100 .@ LSUB,NOP            13336  000125 .U PCAL GET'MESSAGE     13426  001204 .. PCAL CHECKYTRAP
13247  051013 R. STOR DB 013          13337  051024 R. STOR DB 024          13427  140557 .o BR   P- 157
13250  120013 .. INCM DB 013          13340  021010 ". LDI  8              13430  000167 .w PCAL DOT
13251  041013 B. LOAD DB 013          13341  021002 ". LDI  2              13431  021056 ". LDI  46
13252  061023 b. CMPM DB 023          13342  021012 ". LDI  10             13432  051065 R5 STOR DB 065
13253  145420 .. BG   P+ 020,I        13343  021020 ". LDI  16             13433  041036 B. LOAD DB 036
13254  040020 @. LOAD P+ 020          13344  000120 .P PCAL NUM2ASC         13434  021001 ". LDI  1
13255  041013 B. LOAD DB 013          13345  021026 ". LDI  22             13435  006100 .@ LSUB,NOP
13256  006000 .. LADD,NOP             13346  021002 ". LDI  2              13436  051013 R. STOR DB 013
13257  000166 .v PCAL DO'WIOC0        13347  021012 ". LDI  10             13437  120013 .. INCM DB 013
13260  040667 A. LOAD P- 267          13350  021021 ". LDI  17             13440  041013 B. LOAD DB 013
13261  000002 .. PCAL DO'WIOC0        13351  000005 .. PCAL NUM2ASC        13441  061023 b. CMPM DB 023
13262  040670 A. LOAD P- 270          13352  041024 B. LOAD DB 024          13442  145420 .. BG   P+ 020,I
13263  000002 .. PCAL DO'WIOC0        13353  002400 .. NEG ,NOP            13443  040547 Ag LOAD P- 147
13264  041013 B. LOAD DB 013          13354  021001 ". LDI  1              13444  041013 B. LOAD DB 013
13265  000172 .z PCAL SETUP'DRT       13355  000125 .U PCAL ERROROUT        13445  006000 .. LADD,NOP
13266  173127 .W LRA  DB 127,I        13356  041010 B. LOAD DB 010          13446  000163 .s PCAL DO'WIOC0
13267  021005 ". LDI  5               13357  022403 %. ADDI 3              13447  040014 @. LOAD P+ 014
13270  040005 @. LOAD P+ 005          13360  051002 R. STOR DB 002          13450  000002 .. PCAL DO'WIOC0
13271  000172 .z PCAL MOVE'CHNL'PGM   13361  041010 B. LOAD DB 010          13451  040013 @. LOAD P+ 013
13272  140004 .. BR   P+ 004          13362  021004 ". LDI  4              13452  000002 .. PCAL DO'WIOC0
13273  000135 .] DELB,XAX             13363  010414 .. CSL  12 BITS         13453  041013 B. LOAD DB 013
13274  040100 @@ LOAD P+ 100          13364  006500 .@ OR  ,NOP             13454  000167 .w PCAL SETUP'DRT
13275  170000 .. LRA  P+ 000          13365  020302  . IOOP 32 BIT OP       13455  173127 .W LRA  DB 127,I
13276  040401 A. LOAD P- 001          13366  000002 .. NOP ,DDEL            13456  021005 ". LDI  5
13277  041010 B. LOAD DB 010          13367  141503 .C BNE  P+ 003          13457  040562 Ar LOAD P- 162
13300  071013 r. ADDM DB 013          13370  051070 R8 STOR DB 070          13460  000167 .w PCAL MOVE'CHNL'PGM
13301  023404 '. MPYI 4               13371  140002 .. BR   P+ 002          13461  140004 .. BR   P+ 004
13302  004300 .. STAX,NOP             13372  000175 .} PCAL READFAIL        13462  000137 ._ DELB,ADXA
13303  020321  . PSTA                 13373  041070 B8 LOAD DB 070          13463  040060 @0 LOAD P+ 060
13304  041010 B. LOAD DB 010          13374  041002 B. LOAD DB 002          13464  040161 @q LOAD P+ 161
13305  040566 Av LOAD P- 166          13375  005700 .. LCMP,NOP             13465  040570 Ax LOAD P- 170
13306  006000 .. LADD,NOP             13376  141223 .. BE   P+ 023          13466  041010 B. LOAD DB 010
13307  051071 R9 STOR DB 071          13377  000600 .. ZERO,NOP             13467  071013 r. ADDM DB 013
13310  021010 ". LDI  8               13400  021103 "C LDI  67             13470  023404 '. MPYI 4
13311  041013 B. LOAD DB 013          13401  000043 .# PCAL GET'MESSAGE     13471  004300 .. STAX,NOP
13312  006000 .. LADD,NOP             13402  051024 R. STOR DB 024          13472  020321  . PSTA
13313  051070 R8 STOR DB 070          13403  021020 ". LDI  16             13473  041010 B. LOAD DB 010
13314  041071 B9 LOAD DB 071          13404  021004 ". LDI  4              13474  040006 @. LOAD P+ 006
13315  041070 B8 LOAD DB 070          13405  021020 ". LDI  16             13475  006000 .. LADD,NOP
13316  020302  . IOOP 32 BIT OP       13406  041070 B8 LOAD DB 070          13476  051071 R9 STOR DB 071
13317  000003 .. NOP ,ZROX            13407  000036 .. PCAL NUM2ASC         13477  041013 B. LOAD DB 013
13320  020104  D IOOP 32 BIT OP       13410  021037 ". LDI  31             13500  051070 R8 STOR DB 070
13321  000000 .. NOP ,NOP             13411  021004 ". LDI  4              13501  140002 .. BR   P+ 002
13322  021012 ". LDI  10              13412  021020 ". LDI  16             13502  060000 '. CMPM P+ 000
13323  000174 .| PCAL DODELAY         13413  041002 B. LOAD DB 002          13503  041071 B9 LOAD DB 071
13324  040572 Az LOAD P- 172          13414  000005 .. PCAL NUM2ASC         13504  041070 B8 LOAD DB 070
13325  004300 .. STAX,NOP             13415  041024 B. LOAD DB 024          13505  020302  . IOOP 32 BIT OP
13326  020320  . PLDA                 13416  002400 .. NEG ,NOP             13506  000003 .. NOP ,ZROX
13327  051070 R8 STOR DB 070          13417  021001 ". LDI  1              13507  020104  D IOOP 32 BIT OP
13330  041070 B8 LOAD DB 070          13420  000043 .# PCAL ERROROUT        13510  000000 .. NOP ,NOP
13331  021000 ". LDI  0               13421  041010 B. LOAD DB 010          13511  021012 ". LDI  10
13332  005700 .. LCMP,NOP             13422  020302  . IOOP 32 BIT OP       13512  000167 .w PCAL DODELAY
13333  141223 .. BE   P+ 023          13423  000006 .. NOP ,ZERO            13513  040761 A. LOAD P- 361
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13514  004300 .. STAX,NOP          13604  041002 B. LOAD DB 002          13674  020302  . IOOP 32 BIT OP
13515  020320  . PLDA              13605  000005 .. PCAL NUM2ASC         13675  000003 .. NOP ,ZROX
13516  051070 R8 STOR DB 070       13606  041024 B. LOAD DB 024          13676  020104  D IOOP 32 BIT OP
13517  041070 B8 LOAD DB 070       13607  002400 .. NEG ,NOP             13677  000000 .. NOP ,NOP
13520  021000 ". LDI  0            13610  021001 ". LDI  1               13700  021012 ". LDI  10
13521  005700 .. LCMP,NOP          13611  000045 .% PCAL ERROROUT         13701  000167 .w PCAL DODELAY
13522  141223 .. BE   P+ 023       13612  041010 B. LOAD DB 010          13702  040002 @. LOAD P+ 002
13523  000600 .. ZERO,NOP          13613  020302  . IOOP 32 BIT OP       13703  140002 .. BR   P+ 002
13524  021055 "- LDI  45           13614  000006 .. NOP ,ZERO            13704  170001 .. LRA  P+ 001
13525  000124 .T PCAL GET'MESSAGE  13615  141402 .. BG   P+ 002          13705  004300 .. STAX,NOP
13526  051024 R. STOR DB 024       13616  000171 .y PCAL WRITEFAIL       13706  020320  . PLDA
13527  021010 ". LDI  8            13617  000171 .y PCAL CHECKYTRAP      13707  051070 R8 STOR DB 070
13530  021002 ". LDI  2            13620  140561 .q BR   P- 161          13710  041070 B8 LOAD DB 070
13531  021012 ". LDI  10           13621  000171 .y PCAL DOT             13711  021000 ". LDI  0
13532  021020 ". LDI  16           13622  021057 "/ LDI  47              13712  005700 .. LCMP,NOP
13533  000117 .O PCAL NUM2ASC      13623  051065 R5 STOR DB 065          13713  141223 .. BE   P+ 023
13534  021026 ". LDI  22           13624  041036 B. LOAD DB 036          13714  000600 .. ZERO,NOP
13535  021002 ". LDI  2            13625  021001 ". LDI  1               13715  021055 "- LDI  45
13536  021012 ". LDI  10           13626  006100 .@ LSUB,NOP             13716  000124 .T PCAL GET'MESSAGE
13537  021021 ". LDI  17           13627  051013 R. STOR DB 013          13717  051024 R. STOR DB 024
13540  000005 .. PCAL NUM2ASC      13630  120013 .. INCM DB 013          13720  021010 ". LDI  8
13541  041024 B. LOAD DB 024       13631  041013 B. LOAD DB 013          13721  021002 ". LDI  2
13542  002400 .. NEG ,NOP          13632  061023 b. CMPM DB 023          13722  021012 ". LDI  10
13543  021001 ". LDI  1            13633  145420 .. BG   P+ 020,I        13723  021020 ". LDI  16
13544  000124 .T PCAL ERROROUT     13634  040740 A. LOAD P- 340          13724  000117 .O PCAL NUM2ASC
13545  041010 B. LOAD DB 010       13635  041013 B. LOAD DB 013          13725  021026 ". LDI  22
13546  021004 ". LDI  4            13636  006000 .. LADD,NOP             13726  021002 ". LDI  2
13547  010414 .. CSL  12 BITS      13637  000165 .u PCAL DO'WIOC0         13727  021012 ". LDI  10
13550  006500 .@ OR  ,NOP          13640  040555 Am LOAD P- 155          13730  021021 ". LDI  17
13551  020302  . IOOP 32 BIT OP    13641  000002 .. PCAL DO'WIOC0         13731  000005 .. PCAL NUM2ASC
13552  000002 .. NOP ,DDEL         13642  040556 An LOAD P- 156          13732  041024 B. LOAD DB 024
13553  141503 .C BNE  P+ 003       13643  000002 .. PCAL DO'WIOC0         13733  002400 .. NEG ,NOP
13554  051070 R8 STOR DB 070       13644  041013 B. LOAD DB 013          13734  021001 ". LDI  1
13555  140002 .. BR   P+ 002       13645  000171 .y PCAL SETUP'DRT        13735  000124 .T PCAL ERROROUT
13556  000164 .t PCAL READFAIL     13646  173127 .W LRA  DB 127,I        13736  041010 B. LOAD DB 010
13557  041010 B. LOAD DB 010       13647  021005 ". LDI  5               13737  022403 %. ADDI 3
13560  071013 r. ADDM DB 013       13650  040753 A. LOAD P- 353          13740  051002 R. STOR DB 002
13561  040727 A. LOAD P- 327       13651  000171 .y PCAL MOVE'CHNL'PGM    13741  041010 B. LOAD DB 010
13562  006000 .. LADD,NOP          13652  140002 .. BR   P+ 002          13742  021004 ". LDI  4
13563  051002 R. STOR DB 002       13653  000135 .] DELB,XAX             13743  010414 .. CSL  12 BITS
13564  041070 B8 LOAD DB 070       13654  040757 A. LOAD P- 357          13744  006500 .@ OR  ,NOP
13565  041002 B. LOAD DB 002       13655  041010 B. LOAD DB 010          13745  020302  . IOOP 32 BIT OP
13566  005700 .. LCMP,NOP          13656  071013 r. ADDM DB 013          13746  000002 .. NOP ,DDEL
13567  141223 .. BE   P+ 023       13657  023404 '. MPYI 4               13747  141503 .C BNE  P+ 003
13570  000600 .. ZERO,NOP          13660  004300 .. STAX,NOP             13750  051070 R8 STOR DB 070
13571  021103 "C LDI  67           13661  020321  . PSTA                13751  140002 .. BR   P+ 002
13572  000045 .% PCAL GET'MESSAGE  13662  041010 B. LOAD DB 010          13752  000174 .| PCAL READFAIL
13573  051024 R. STOR DB 024       13663  040561 Aq LOAD P- 161          13753  041070 B8 LOAD DB 070
13574  021020 ". LDI  16           13664  006000 .. LADD,NOP             13754  041002 B. LOAD DB 002
13575  021004 ". LDI  4            13665  051071 R9 STOR DB 071          13755  005700 .. LCMP,NOP
13576  021020 ". LDI  16           13666  021010 ". LDI  8               13756  141223 .. BE   P+ 023
13577  041070 B8 LOAD DB 070       13667  041013 B. LOAD DB 013          13757  000600 .. ZERO,NOP
13600  000040 .  PCAL NUM2ASC      13670  006000 .. LADD,NOP             13760  021103 "C LDI  67
13601  021037 ". LDI  31           13671  051070 R8 STOR DB 070          13761  000043 .# PCAL GET'MESSAGE
13602  021004 ". LDI  4            13672  041071 B9 LOAD DB 071          13762  051024 R. STOR DB 024
13603  021020 ". LDI  16           13673  041070 B8 LOAD DB 070          13763  021020 ". LDI  16
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13764  021004 ". LDI  4              14054  000000 .. NOP ,NOP            14144  002400 .. NEG ,NOP
13765  021020 ". LDI  16             14055  021012 ". LDI  10             14145  021001 ". LDI  1
13766  041070 B8 LOAD DB 070         14056  000155 .m PCAL DODELAY        14146  000036 .. PCAL ERROROUT
13767  000036 .. PCAL NUM2ASC        14057  040553 Ak LOAD P- 153         14147  041010 B. LOAD DB 010
13770  021037 ". LDI  31             14060  004300 .. STAX,NOP            14150  020302  . IOOP 32 BIT OP
13771  021004 ". LDI  4              14061  020320  . PLDA                14151  000006 .. NOP ,ZERO
13772  021020 ". LDI  16             14062  051070 R8 STOR DB 070         14152  141402 .. BG   P+ 002
13773  041002 B. LOAD DB 002         14063  041070 B8 LOAD DB 070         14153  000146 .f PCAL WRITEFAIL
13774  000005 .. PCAL NUM2ASC        14064  021000 ". LDI  0              14154  000146 .f PCAL CHECKYTRAP
13775  041024 B. LOAD DB 024         14065  005700 .. LCMP,NOP            14155  140536 .^ BR   P- 136
13776  002400 .. NEG ,NOP            14066  141223 .. BE   P+ 023         14156  025402 +. LDXN 2
13777  021001 ". LDI  1              14067  000600 .. ZERO,NOP            14157  000600 .. ZERO,NOP
14000  000043 .# PCAL ERROROUT       14070  021055 "- LDI  45             14160  020321  . PSTA
14001  041010 B. LOAD DB 010         14071  000110 .H PCAL GET'MESSAGE    14161  001543 .c PCAL REP'ILL'INT
14002  020302  . IOOP 32 BIT OP      14072  051024 R. STOR DB 024         14162  000152 .j PCAL DOT
14003  000006 .. NOP ,ZERO           14073  021010 ". LDI  8              14163  151075 .= LDD  DB 075
14004  141402 .. BG   P+ 002         14074  021002 ". LDI  2              14164  021015 ". LDI  13
14005  000167 .w PCAL WRITEFAIL      14075  021012 ". LDI  10             14165  004300 .. STAX,NOP
14006  000167 .w PCAL CHECKYTRAP     14076  021020 ". LDI  16             14166  016401 .. DCSL 1 BIT ,X
14007  140557 .o BR   P- 157         14077  000103 .C PCAL NUM2ASC        14167  000100 .@ DELB,NOP
14010  000167 .w PCAL DOT            14100  021026 ". LDI  22             14170  017704 .. BRE  P+4,I
14011  021060 "0 LDI  48             14101  021002 ". LDI  2              14171  021061 "1 LDI  49
14012  051065 R5 STOR DB 065         14102  021012 ". LDI  10             14172  051065 R5 STOR DB 065
14013  041036 B. LOAD DB 036         14103  021021 ". LDI  17             14173  140002 .. BR   P+ 002
14014  021001 ". LDI  1              14104  000005 .. PCAL NUM2ASC        14174  000754 .. DZRO,FDIV
14015  006100 .@ LSUB,NOP            14105  041024 B. LOAD DB 024         14175  041010 B. LOAD DB 010
14016  051013 R. STOR DB 013         14106  002400 .. NEG ,NOP            14176  020302  . IOOP 32 BIT OP
14017  120013 .. INCM DB 013         14107  021001 ". LDI  1              14177  000006 .. NOP ,ZERO
14020  041013 B. LOAD DB 013         14110  000110 .H PCAL ERROROUT       14200  141402 .. BG   P+ 002
14021  061023 b. CMPM DB 023         14111  021014 ". LDI  12             14201  000026 .. PCAL WRITEFAIL
14022  145422 .. BG   P+ 022,I       14112  010414 .. CSL  12 BITS        14202  001744 .. PCAL SET'CPVA
14023  040022 @. LOAD P+ 022         14113  020302  . IOOP 32 BIT OP      14203  013066 .6 PCAL LOAD'TRAPS
14024  041013 B. LOAD DB 013         14114  000002 .. NOP ,DDEL           14204  000000 .. PCAL LOAD'INTHNDLRS
14025  006000 .. LADD,NOP            14115  141503 .C BNE  P+ 003         14205  041036 B. LOAD DB 036
14026  000163 .s PCAL DO'WIOC0       14116  051070 R8 STOR DB 070         14206  021001 ". LDI  1
14027  040744 A. LOAD P- 344         14117  140002 .. BR   P+ 002         14207  006100 .@ LSUB,NOP
14030  000002 .. PCAL DO'WIOC0       14120  000146 .f PCAL READFAIL       14210  051013 R. STOR DB 013
14031  040745 A. LOAD P- 345         14121  041070 B8 LOAD DB 070         14211  120013 .. INCM DB 013
14032  000002 .. PCAL DO'WIOC0       14122  041034 B. LOAD DB 034         14212  041013 B. LOAD DB 013
14033  041013 B. LOAD DB 013         14123  005700 .. LCMP,NOP            14213  061023 b. CMPM DB 023
14034  000167 .w PCAL SETUP'DRT      14124  141223 .. BE   P+ 023         14214  141414 .. BG   P+ 014
14035  041010 B. LOAD DB 010         14125  000600 .. ZERO,NOP            14215  140002 .. BR   P+ 002
14036  040010 @. LOAD P+ 010         14126  021104 "D LDI  68             14216  000012 .. NOP ,DSUB
14037  006000 .. LADD,NOP            14127  000036 .. PCAL GET'MESSAGE    14217  131013 .. LDX  DB 013
14040  051071 R9 STOR DB 071         14130  051024 R. STOR DB 024         14220  047133 N[ LOAD DB 133,I,X
14041  041013 B. LOAD DB 013         14131  021022 ". LDI  18             14221  041010 B. LOAD DB 010
14042  051070 R8 STOR DB 070         14132  021004 ". LDI  4              14222  071013 r. ADDM DB 013
14043  140004 .. BR   P+ 004         14133  021020 ". LDI  16             14223  023404 '. MPYI 4
14044  000112 .J DELB,DSUB           14134  041070 B8 LOAD DB 070         14224  022402 %. ADDI 2
14045  040100 @@ LOAD P+ 100         14135  000031 .. PCAL NUM2ASC        14225  004300 .. STAX,NOP
14046  040000 @. LOAD P+ 000         14136  021041 "! LDI  33             14226  020321  . PSTA
14047  041071 B9 LOAD DB 071         14137  021004 ". LDI  4              14227  140416 .. BR   P- 016
14050  041070 B8 LOAD DB 070         14140  021020 ". LDI  16             14230  173135 .] LRA  DB 135,I
14051  020302  . IOOP 32 BIT OP      14141  041034 B. LOAD DB 034         14231  021210 ". LDI  136
14052  000003 .. NOP ,ZROX           14142  000005 .. PCAL NUM2ASC        14232  040044 @$ LOAD P+ 044
14053  020104  D IOOP 32 BIT OP      14143  041024 B. LOAD DB 024         14233  000362 .. PCAL MOVE'CHNL'PGM
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14234  041036 B. LOAD DB 036          14324  041013 B. LOAD DB 013          14414  140002 .. BR   P+ 002
14235  021001 ". LDI  1               14325  023402 '. MPYI 2               14415  000006 .. NOP ,ZERO
14236  006100 .@ LSUB,NOP            14326  004300 .. STAX,NOP             14416  041071 B9 LOAD DB 071
14237  051013 R. STOR DB 013          14327  047134 N\ LOAD DB 134,I,X      14417  041070 B8 LOAD DB 070
14240  120013 .. INCM DB 013          14330  051032 R. STOR DB 032          14420  020302  . IOOP 32 BIT OP
14241  041013 B. LOAD DB 013          14331  041032 B. LOAD DB 032          14421  000000 .. NOP ,NOP
14242  061023 b. CMPM DB 023          14332  021177 ". LDI  127             14422  140420 .. BR   P- 020
14243  145434 .. BG   P+ 034,I        14333  006000 .. LADD,NOP             14423  020104  D IOOP 32 BIT OP
14244  041013 B. LOAD DB 013          14334  051004 R. STOR DB 004          14424  000000 .. NOP ,NOP
14245  023402 '. MPYI 2               14335  025001 *. LDNI 1               14425  040003 @. LOAD P+ 003
14246  004300 .. STAX,NOP             14336  041032 B. LOAD DB 032          14426  000350 .. PCAL DODELAY
14247  047134 N\ LOAD DB 134,I,X      14337  004300 .. STAX,NOP             14427  140002 .. BR   P+ 002
14250  021523 #S LDXI 83              14340  020321  . PSTA                 14430  001750 .. CMP ,FCMP
14251  057136 ^^ STOR DB 136,I,X      14341  041032 B. LOAD DB 032          14431  020104  D IOOP 32 BIT OP
14252  041013 B. LOAD DB 013          14342  021001 ". LDI  1               14432  000000 .. NOP ,NOP
14253  023402 '. MPYI 2               14343  006045 .% LADD,DUP             14433  040403 A. LOAD P- 003
14254  022401 %. ADDI 1               14344  051032 R. STOR DB 032          14434  000006 .. PCAL DODELAY
14255  004300 .. STAX,NOP             14345  041004 B. LOAD DB 004          14435  000253 .. PCAL DOT
14256  047134 N\ LOAD DB 134,I,X      14346  005700 .. LCMP,NOP             14436  041036 B. LOAD DB 036
14257  021544 #d LDXI 100             14347  141410 .. BG   P+ 010          14437  021001 ". LDI  1
14260  057136 ^^ STOR DB 136,I,X      14350  140002 .. BR   P+ 002          14440  006100 .@ LSUB,NOP
14261  041013 B. LOAD DB 013          14351  000006 .. NOP ,ZERO            14441  051013 R. STOR DB 013
14262  023402 '. MPYI 2               14352  021000 ". LDI  0               14442  120013 .. INCM DB 013
14263  022401 %. ADDI 1               14353  041032 B. LOAD DB 032          14443  041013 B. LOAD DB 013
14264  004300 .. STAX,NOP             14354  004300 .. STAX,NOP             14444  061023 b. CMPM DB 023
14265  047134 N\ LOAD DB 134,I,X      14355  020321  . PSTA                 14445  145404 .. BG   P+ 004,I
14266  021551 #i LDXI 105             14356  140415 .. BR   P- 015          14446  021000 ". LDI  0
14267  057136 ^^ STOR DB 136,I,X      14357  140517 .O BR   P- 117          14447  051044 R$ STOR DB 044
14270  021120 "P LDI  80              14360  000600 .. ZERO,NOP             14450  140002 .. BR   P+ 002
14271  041013 B. LOAD DB 013          14361  025401 +. LDXN 1               14451  000472 .: INCX,----
14272  006000 .. LADD,NOP             14362  020321  . PSTA                 14452  041010 B. LOAD DB 010
14273  021525 #U LDXI 85              14363  025402 +. LDXN 2               14453  071013 r. ADDM DB 013
14274  057136 ^^ STOR DB 136,I,X      14364  000600 .. ZERO,NOP             14454  023404 '. MPYI 4
14275  140003 .. BR   P+ 003          14365  020321  . PSTA                 14455  022403 %. ADDI 3
14276  160000 .. STB  DB 000          14366  025403 +. LDXN 3               14456  004300 .. STAX,NOP
14277  000061 .1 NOP ,LSUB            14367  000600 .. ZERO,NOP             14457  020320  . PLDA
14300  021020 ". LDI  16              14370  020321  . PSTA                 14460  051070 R8 STOR DB 070
14301  041013 B. LOAD DB 013          14371  030041 0! SED  1               14461  041070 B8 LOAD DB 070
14302  006000 .. LADD,NOP             14372  041034 B. LOAD DB 034          14462  021000 ". LDI  0
14303  021553 #k LDXI 107             14373  041035 B. LOAD DB 035          14463  005700 .. LCMP,NOP
14304  057136 ^^ STOR DB 136,I,X      14374  006500 .@ OR  ,NOP             14464  145234 .. BE   P+ 034,I
14305  021040 "  LDI  32              14375  030100 0@ SMSK                 14465  021001 ". LDI  1
14306  041013 B. LOAD DB 013          14376  041036 B. LOAD DB 036          14466  051044 R$ STOR DB 044
14307  006000 .. LADD,NOP             14377  021001 ". LDI  1               14467  041070 B8 LOAD DB 070
14310  021555 #m LDXI 109             14400  006100 .@ LSUB,NOP            14470  040031 @. LOAD P+ 031
14311  057136 ^^ STOR DB 136,I,X      14401  051013 R. STOR DB 013          14471  005700 .. LCMP,NOP
14312  021060 "0 LDI  48              14402  120013 .. INCM DB 013          14472  141510 .H BNE  P+ 010
14313  041013 B. LOAD DB 013          14403  041013 B. LOAD DB 013          14473  000600 .. ZERO,NOP
14314  006000 .. LADD,NOP             14404  061023 b. CMPM DB 023          14474  021063 "3 LDI  51
14315  021507 #G LDXI 71              14405  141416 .. BG   P+ 016          14475  000346 .. PCAL GET'MESSAGE
14316  057136 ^^ STOR DB 136,I,X      14406  041010 B. LOAD DB 010          14476  002400 .. NEG ,NOP
14317  173136 .^ LRA  DB 136,I        14407  071013 r. ADDM DB 013          14477  021001 ". LDI  1
14320  021157 "o LDI  111             14410  051071 R9 STOR DB 071          14500  000332 .. PCAL ERROROUT
14321  131013 .. LDX  DB 013          14411  131013 .. LDX  DB 013          14501  140037 .. BR   P+ 037
14322  047131 NY LOAD DB 131,I,X      14412  047131 NY LOAD DB 131,I,X      14502  041070 B8 LOAD DB 070
14323  000070 .8 PCAL MOVE'CHNL'PGM   14413  051070 R8 STOR DB 070          14503  040020 @. LOAD P+ 020
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14504  005700 .. LCMP,NOP          14574  140130 .X BR   P+ 130          14664  000131 .Y PCAL NUM2ASC
14505  141510 .H BNE  P+ 010       14575  041070 B8 LOAD DB 070         14665  041024 B. LOAD DB 024
14506  000600 .. ZERO,NOP          14576  037777 ?. ANDI 255            14666  002400 .. NEG ,NOP
14507  021064 "4 LDI  52           14577  021040 "  LDI  32            14667  021001 ". LDI  1
14510  000013 .. PCAL GET'MESSAGE  14600  041013 B. LOAD DB 013         14670  000025 .. PCAL ERROROUT
14511  002400 .. NEG ,NOP          14601  006057 ./ LADD,LCMP           14671  140033 .. BR   P+ 033
14512  021001 ". LDI  1            14602  145504 .D BNE  P+ 004,I       14672  041070 B8 LOAD DB 070
14513  000013 .. PCAL ERROROUT     14603  140004 .. BR   P+ 004         14673  037777 ?. ANDI 255
14514  140024 .. BR   P+ 024       14604  000146 .f DELB,DDUP           14674  021060 "0 LDI  48
14515  000600 .. ZERO,NOP          14605  000117 .O DELB,CMP            14675  041013 B. LOAD DB 013
14516  021065 "5 LDI  53           14606  000064 .4 NOP ,NOT            14676  006057 ./ LADD,LCMP
14517  140006 .. BR   P+ 006       14607  021002 ". LDI  2              14677  141510 .H BNE  P+ 010
14520  000020 .. NOP ,ADD          14610  041013 B. LOAD DB 013         14700  000600 .. ZERO,NOP
14521  140000 .. BR   P+ 000       14611  002200 .. MPY ,NOP            14701  021072 ": LDI  58
14522  000016 .. NOP ,DXCH         14612  022401 %. ADDI 1              14702  000026 .. PCAL GET'MESSAGE
14523  100001 .. SUBM P+ 001       14613  004300 .. STAX,NOP            14703  002400 .. NEG ,NOP
14524  000014 .. NOP ,DIVL         14614  047134 N\ LOAD DB 134,I,X     14704  021001 ". LDI  1
14525  000015 .. PCAL GET'MESSAGE  14615  004300 .. STAX,NOP            14705  000015 .. PCAL ERROROUT
14526  051024 R. STOR DB 024       14616  020320  . PLDA               14706  140016 .. BR   P+ 016
14527  021022 ". LDI  18           14617  051070 R8 STOR DB 070         14707  000600 .. ZERO,NOP
14530  021004 ". LDI  4            14620  041070 B8 LOAD DB 070         14710  021071 "9 LDI  57
14531  021020 ". LDI  16           14621  010302 .. LSR  2 BITS         14711  000007 .. PCAL GET'MESSAGE
14532  041070 B8 LOAD DB 070       14622  037401 ?. ANDI 1              14712  051024 R. STOR DB 024
14533  000371 .. PCAL NUM2ASC      14623  013707 .. BRE  P+7            14713  021022 ". LDI  18
14534  041024 B. LOAD DB 024       14624  000600 .. ZERO,NOP            14714  021004 ". LDI  4
14535  002400 .. NEG ,NOP          14625  021067 "7 LDI  55             14715  021020 ". LDI  16
14536  021001 ". LDI  1            14626  000036 .. PCAL GET'MESSAGE    14716  041070 B8 LOAD DB 070
14537  000024 .. PCAL ERROROUT     14627  002400 .. NEG ,NOP            14717  000033 .. PCAL NUM2ASC
14540  000364 .. PCAL CHECKYTRAP   14630  021001 ". LDI  1              14720  041024 B. LOAD DB 024
14541  131013 .. LDX  DB 013       14631  000036 .. PCAL ERROROUT       14721  002400 .. NEG ,NOP
14542  047132 NZ LOAD DB 132,I,X   14632  041070 B8 LOAD DB 070         14722  021001 ". LDI  1
14543  021002 ". LDI  2            14633  010301 .. LSR  1 BIT          14723  000016 .. PCAL ERROROUT
14544  006000 .. LADD,NOP          14634  037401 ?. ANDI 1              14724  131013 .. LDX  DB 013
14545  004300 .. STAX,NOP          14635  013707 .. BRE  P+7            14725  047132 NZ LOAD DB 132,I,X
14546  020320  . PLDA              14636  000600 .. ZERO,NOP            14726  004300 .. STAX,NOP
14547  051070 R8 STOR DB 070       14637  021070 "8 LDI  56             14727  020320  . PLDA
14550  041070 B8 LOAD DB 070       14640  000012 .. PCAL GET'MESSAGE    14730  051070 R8 STOR DB 070
14551  037777 ?. ANDI 255          14641  002400 .. NEG ,NOP            14731  041070 B8 LOAD DB 070
14552  021120 "P LDI  80           14642  021001 ". LDI  1              14732  021000 ". LDI  0
14553  041013 B. LOAD DB 013       14643  000012 .. PCAL ERROROUT       14733  005700 .. LCMP,NOP
14554  006057 ./ LADD,LCMP         14644  041070 B8 LOAD DB 070         14734  141216 .. BE   P+ 016
14555  145227 .. BE   P+ 027,I     14645  010301 .. LSR  1 BIT          14735  000600 .. ZERO,NOP
14556  021001 ". LDI  1            14646  037403 ?. ANDI 3              14736  021073 "; LDI  59
14557  051044 R$ STOR DB 044       14647  021000 ". LDI  0              14737  000026 .. PCAL GET'MESSAGE
14560  041070 B8 LOAD DB 070       14650  001700 .. CMP ,NOP            14740  051024 R. STOR DB 024
14561  037777 ?. ANDI 255          14651  141520 .P BNE  P+ 020         14741  021046 "& LDI  38
14562  021020 ". LDI  16           14652  000600 .. ZERO,NOP            14742  021004 ". LDI  4
14563  041013 B. LOAD DB 013       14653  021071 "9 LDI  57             14743  021020 ". LDI  16
14564  006057 ./ LADD,LCMP         14654  000014 .. PCAL GET'MESSAGE    14744  041070 B8 LOAD DB 070
14565  141510 .H BNE  P+ 010       14655  051024 R. STOR DB 024         14745  000026 .. PCAL NUM2ASC
14566  000600 .. ZERO,NOP          14656  140002 .. BR   P+ 002         14746  041024 B. LOAD DB 024
14567  021066 "6 LDI  54           14657  000012 .. NOP ,DSUB           14747  002400 .. NEG ,NOP
14570  000043 .# PCAL GET'MESSAGE  14660  021022 ". LDI  18             14750  021001 ". LDI  1
14571  002400 .. NEG ,NOP          14661  021004 ". LDI  4              14751  000026 .. PCAL ERROROUT
14572  021001 ". LDI  1            14662  021020 ". LDI  16             14752  041044 B$ LOAD DB 044
14573  000034 .. PCAL ERROROUT     14663  041070 B8 LOAD DB 070         14753  017602 .. BRO  P+2,I
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14754  140002 .. BR   P+ 002          15044  051012 R. STOR DB 012          15134  140461 .1 BR   P- 061
14755  000164 .t DELB,NOT             15045  041003 B. LOAD DB 003          15135  000001 .. NOP ,DELB
14756  131013 .. LDX  DB 013          15046  004300 .. STAX,NOP             15136  120003 .. INCM DB 003
14757  047131 NY LOAD DB 131,I,X      15047  020320  . PLDA                 15137  120005 .. INCM DB 005
14760  021120 "P LDI  80              15050  051016 R. STOR DB 016          15140  140505 .E BR   P- 105
14761  006000 .. LADD,NOP             15051  021000 ". LDI  0               15141  000401 .. PCAL CHECKYTRAP
14762  004300 .. STAX,NOP             15052  051017 R. STOR DB 017          15142  142002 .. BR   P+ 002,I
14763  020320  . PLDA                 15053  041012 B. LOAD DB 012          15143  140002 .. BR   P+ 002
14764  051050 R( STOR DB 050          15054  010510 .H CSR  8 BITS          15144  177276 .. LRA  DB 276,I,X
14765  041050 B( LOAD DB 050          15055  051012 R. STOR DB 012          15145  030040 0  SED  0
14766  021000 ". LDI  0               15056  041016 B. LOAD DB 016          15146  000765 .. PCAL REP'ILL'INT
14767  005700 .. LCMP,NOP             15057  010510 .H CSR  8 BITS          15147  000512 .J PCAL DOT
14770  141230 .. BE   P+ 030          15060  051016 R. STOR DB 016          15150  151075 .= LDD  DB 075
14771  000600 .. ZERO,NOP             15061  041012 B. LOAD DB 012          15151  021016 ". LDI  14
14772  021126 "V LDI  86              15062  037777 ?. ANDI 255             15152  004300 .. STAX,NOP
14773  000034 .. PCAL GET'MESSAGE     15063  041016 B. LOAD DB 016          15153  016401 .. DCSL 1 BIT ,X
14774  051024 R. STOR DB 024          15064  037777 ?. ANDI 255             15154  000100 .@ DELB,NOP
14775  021520 #P LDXI 80              15065  001700 .. CMP ,NOP             15155  017734 .. BRE  P+34,I
14776  047136 N^ LOAD DB 136,I,X      15066  145234 .. BE   P+ 034,I        15156  021062 "2 LDI  50
14777  051051 R) STOR DB 051          15067  041007 B. LOAD DB 007          15157  051065 R5 STOR DB 065
15000  021006 ". LDI  6               15070  022000 $. CMPI 0               15160  025001 *. LDNI 1
15001  021003 ". LDI  3               15071  141236 .. BE   P+ 036          15161  051013 R. STOR DB 013
15002  021012 ". LDI  10              15072  000600 .. ZERO,NOP             15162  120013 .. INCM DB 013
15003  041051 B) LOAD DB 051          15073  021074 "< LDI  60              15163  041013 B. LOAD DB 013
15004  041050 B( LOAD DB 050          15074  000101 .A PCAL GET'MESSAGE     15164  041045 B% LOAD DB 045
15005  006100 .@ LSUB,NOP             15075  051024 R. STOR DB 024          15165  013703 .. BRE  P+3
15006  000041 .! PCAL NUM2ASC         15076  021006 ". LDI  6               15166  021007 ". LDI  7
15007  021031 ". LDI  25              15077  021002 ". LDI  2               15167  140002 .. BR   P+ 002
15010  021003 ". LDI  3               15100  021020 ". LDI  16              15170  021003 ". LDI  3
15011  021012 ". LDI  10              15101  041007 B. LOAD DB 007          15171  001700 .. CMP ,NOP
15012  041051 B) LOAD DB 051          15102  023001 &. SUBI 1               15172  145420 .. BG   P+ 020,I
15013  000005 .. PCAL NUM2ASC         15103  000070 .8 PCAL NUM2ASC         15173  040020 @. LOAD P+ 020
15014  041024 B. LOAD DB 024          15104  021015 ". LDI  13              15174  041013 B. LOAD DB 013
15015  002400 .. NEG ,NOP             15105  021002 ". LDI  2               15175  006000 .. LADD,NOP
15016  021001 ". LDI  1               15106  021020 ". LDI  16              15176  001144 .d PCAL DO'WIOC0
15017  000046 .& PCAL ERROROUT        15107  041016 B. LOAD DB 016          15177  040015 @. LOAD P+ 015
15020  040004 @. LOAD P+ 004          15110  037777 ?. ANDI 255             15200  000002 .. PCAL DO'WIOC0
15021  051005 R. STOR DB 005          15111  000006 .. PCAL NUM2ASC         15201  021336 ". LDI  222
15022  021002 ". LDI  2               15112  021033 ". LDI  27              15202  000002 .. PCAL DO'WIOC0
15023  140002 .. BR   P+ 002          15113  021002 ". LDI  2               15203  040012 @. LOAD P+ 012
15024  160002 .. STB  DB 002          15114  021020 ". LDI  16              15204  000002 .. PCAL DO'WIOC0
15025  041013 B. LOAD DB 013          15115  041012 B. LOAD DB 012          15205  021010 ". LDI  8
15026  002243 .. MPY ,STAX            15116  037777 ?. ANDI 255             15206  000002 .. PCAL DO'WIOC0
15027  047134 N\ LOAD DB 134,I,X      15117  000006 .. PCAL NUM2ASC         15207  021030 ". LDI  24
15030  051003 R. STOR DB 003          15120  041024 B. LOAD DB 024          15210  140006 .. BR   P+ 006
15031  025001 *. LDNI 1               15121  140003 .. BR   P+ 003          15211  000554 .l DECX,FDIV
15032  051007 R. STOR DB 007          15122  000005 .. NOP ,DECX            15212  000021 .. NOP ,SUB
15033  120007 .. INCM DB 007          15123  000004 .. NOP ,INCX            15213  040100 @@ LOAD P+ 100
15034  041007 B. LOAD DB 007          15124  002400 .. NEG ,NOP             15214  040141 @a LOAD P+ 141
15035  022377 $. CMPI 255             15125  021001 ". LDI  1               15215  040146 @f LOAD P+ 146
15036  145602 .. BGE  P+ 002,I        15126  000107 .G PCAL ERROROUT        15216  000010 .. PCAL DO'WIOC0
15037  140002 .. BR   P+ 002          15127  041017 B. LOAD DB 017          15217  040042 @" LOAD P+ 042
15040  000101 .A DELB,DELB            15130  013606 .. BRO  P+6             15220  000002 .. PCAL DO'WIOC0
15041  041005 B. LOAD DB 005          15131  021001 ". LDI  1               15221  025001 *. LDNI 1
15042  004300 .. STAX,NOP             15132  051017 R. STOR DB 017          15222  051002 R. STOR DB 002
15043  020320  . PLDA                 15133  120007 .. INCM DB 007          15223  120002 .. INCM DB 002
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15224  041002 B. LOAD DB 002          15314  140002 .. BR   P+ 002          15404  000006 .. NOP ,ZERO
15225  022377 $. CMPI 255             15315  021007 ". LDI  7              15405  000005 .. NOP ,DECX
15226  141404 .. BG   P+ 004          15316  001700 .. CMP ,NOP            15406  041024 B. LOAD DB 024
15227  041002 B. LOAD DB 002          15317  145411 .. BG   P+ 011,I        15407  002400 .. NEG ,NOP
15230  000010 .. PCAL DO'WIOC0        15320  025001 *. LDNI 1              15410  021000 ". LDI  0
15231  140406 .. BR   P- 006          15321  051016 R. STOR DB 016         15411  000263 .. PCAL ERROROUT
15232  140450 .( BR   P- 050          15322  120016 .. INCM DB 016         15412  041070 B8 LOAD DB 070
15233  025001 *. LDNI 1               15323  041016 B. LOAD DB 016         15413  037777 ?. ANDI 255
15234  051013 R. STOR DB 013          15324  022377 $. CMPI 255            15414  041016 B. LOAD DB 016
15235  021000 ". LDI  0               15325  140004 .. BR   P+ 004          15415  037777 ?. ANDI 255
15236  051002 R. STOR DB 002          15326  000137 ._ DELB,ADXA           15416  001700 .. CMP ,NOP
15237  040023 @. LOAD P+ 023          15327  040145 @e LOAD P+ 145         15417  141224 .. BE   P+ 024
15240  051020 R. STOR DB 020          15330  000122 .R DELB,MPY            15420  000600 .. ZERO,NOP
15241  025001 *. LDNI 1               15331  145406 .. BG   P+ 006,I        15421  021027 ". LDI  23
15242  051054 R, STOR DB 054          15332  040006 @. LOAD P+ 006         15422  000033 .. PCAL GET'MESSAGE
15243  120013 .. INCM DB 013          15333  000035 .. PCAL DO'WIOC0       15423  051024 R. STOR DB 024
15244  041013 B. LOAD DB 013          15334  041016 B. LOAD DB 016         15424  021032 ". LDI  26
15245  041045 B% LOAD DB 045          15335  000002 .. PCAL DO'WIOC0       15425  021002 ". LDI  2
15246  013703 .. BRE  P+3             15336  140003 .. BR   P+ 003          15426  021020 ". LDI  16
15247  021007 ". LDI  7               15337  000112 .J DELB,DSUB           15427  041016 B. LOAD DB 016
15250  140002 .. BR   P+ 002          15340  040140 @' LOAD P+ 140         15430  000026 .. PCAL NUM2ASC
15251  021003 ". LDI  3               15341  020104  D IOOP 32 BIT OP      15431  021050 "( LDI  40
15252  001700 .. CMP ,NOP             15342  000000 .. NOP ,NOP            15432  021002 ". LDI  2
15253  145410 .. BG   P+ 010,I        15343  021002 ". LDI  2              15433  021020 ". LDI  16
15254  041013 B. LOAD DB 013          15344  000710 .. PCAL DODELAY        15434  041070 B8 LOAD DB 070
15255  022003 $. CMPI 3               15345  003172 .z PCAL DO'RIOC0       15435  037777 ?. ANDI 255
15256  141310 .. BLE  P+ 010          15346  041005 B. LOAD DB 005         15436  000006 .. PCAL NUM2ASC
15257  021000 ". LDI  0               15347  061016 b. CMPM DB 016         15437  041024 B. LOAD DB 024
15260  140005 .. BR   P+ 005          15350  141503 .C BNE  P+ 003         15440  002400 .. NEG ,NOP
15261  040144 @d LOAD P+ 144          15351  021000 ". LDI  0              15441  021001 ". LDI  1
15262  100000 .. SUBM P+ 000          15352  140002 .. BR   P+ 002          15442  000031 .. PCAL ERROROUT
15263  000203 .. DDEL,ZROX            15353  021001 ". LDI  1              15443  040562 Ar LOAD P- 162
15264  000002 .. NOP ,DDEL            15354  051017 R. STOR DB 017         15444  000107 .G PCAL DO'WIOC0
15265  051054 R, STOR DB 054          15355  041070 B8 LOAD DB 070         15445  041005 B. LOAD DB 005
15266  021000 ". LDI  0               15356  010316 .. LSR  14 BITS        15446  000002 .. PCAL DO'WIOC0
15267  051005 R. STOR DB 005          15357  041020 B. LOAD DB 020         15447  120007 .. INCM DB 007
15270  041005 B. LOAD DB 005          15360  010316 .. LSR  14 BITS        15450  140526 .V BR   P- 126
15271  022377 $. CMPI 255             15361  001700 .. CMP ,NOP            15451  140542 .b BR   P- 142
15272  145434 .. BG   P+ 034,I        15362  141230 .. BE   P+ 030          15452  120002 .. INCM DB 002
15273  040034 @. LOAD P+ 034          15363  041017 B. LOAD DB 017         15453  041005 B. LOAD DB 005
15274  000044 .$ PCAL DO'WIOC0        15364  013726 .. BRE  P+26           15454  022000 $. CMPI 0
15275  041005 B. LOAD DB 005          15365  000600 .. ZERO,NOP            15455  141503 .C BNE  P+ 003
15276  000002 .. PCAL DO'WIOC0        15366  021052 "* LDI  42             15456  021001 ". LDI  1
15277  021000 ". LDI  0               15367  000273 .. PCAL GET'MESSAGE     15457  140003 .. BR   P+ 003
15300  051007 R. STOR DB 007          15370  051024 R. STOR DB 024         15460  041005 B. LOAD DB 005
15301  041054 B, LOAD DB 054          15371  021036 ". LDI  30             15461  071005 r. ADDM DB 005
15302  013703 .. BRE  P+3             15372  021004 ". LDI  4              15462  051005 R. STOR DB 005
15303  025001 *. LDNI 1               15373  021012 ". LDI  10             15463  000314 .. PCAL DOT
15304  140002 .. BR   P+ 002          15374  041005 B. LOAD DB 005         15464  140574 .| BR   P- 174
15305  021003 ". LDI  3               15375  000256 .. PCAL NUM2ASC        15465  140622 .. BR   P- 222
15306  051012 R. STOR DB 012          15376  021054 ", LDI  44             15466  021063 "3 LDI  51
15307  120012 .. INCM DB 012          15377  021004 ". LDI  4              15467  051065 R5 STOR DB 065
15310  041012 B. LOAD DB 012          15400  021012 ". LDI  10             15470  025001 *. LDNI 1
15311  041054 B, LOAD DB 054          15401  041016 B. LOAD DB 016         15471  051013 R. STOR DB 013
15312  013703 .. BRE  P+3             15402  000005 .. PCAL NUM2ASC        15472  120013 .. INCM DB 013
15313  021003 ". LDI  3               15403  140003 .. BR   P+ 003          15473  041013 B. LOAD DB 013
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15474  041045 B% LOAD DB 045          15564  021000 ". LDI  0              15654  010316 .. LSR  14 BITS
15475  013703 .. BRE  P+3             15565  051005 R. STOR DB 005         15655  001700 .. CMP ,NOP
15476  021007 ". LDI  7               15566  041005 B. LOAD DB 005         15656  141230 .. BE   P+ 030
15477  140002 .. BR   P+ 002          15567  022377 $. CMPI 255            15657  041017 B. LOAD DB 017
15500  021003 ". LDI  3               15570  145434 .. BG   P+ 034,I       15660  013726 .. BRE  P+26
15501  001700 .. CMP ,NOP             15571  040710 A. LOAD P- 310         15661  000600 .. ZERO,NOP
15502  141431 .. BG   P+ 031          15572  000042 ." PCAL DO'WIOC0       15662  021052 "* LDI  42
15503  040667 A. LOAD P- 267          15573  041005 B. LOAD DB 005         15663  000241 .. PCAL GET'MESSAGE
15504  000036 .. PCAL DO'WIOC0        15574  000002 .. PCAL DO'WIOC0       15664  051024 R. STOR DB 024
15505  021336 ". LDI  222             15575  021000 ". LDI  0              15665  021036 ". LDI  30
15506  000002 .. PCAL DO'WIOC0        15576  051007 R. STOR DB 007         15666  021004 ". LDI  4
15507  040672 A. LOAD P- 272          15577  041054 B, LOAD DB 054         15667  021012 ". LDI  10
15510  140002 .. BR   P+ 002          15600  013703 .. BRE  P+3            15670  041005 B. LOAD DB 005
15511  000022 .. NOP ,MPY             15601  025001 *. LDNI 1              15671  000233 .. PCAL NUM2ASC
15512  000004 .. PCAL DO'WIOC0        15602  140002 .. BR   P+ 002         15672  021054 ", LDI  44
15513  021010 ". LDI  8               15603  021003 ". LDI  3              15673  021004 ". LDI  4
15514  000002 .. PCAL DO'WIOC0        15604  051012 R. STOR DB 012         15674  021012 ". LDI  10
15515  021030 ". LDI  24              15605  120012 .. INCM DB 012         15675  041016 B. LOAD DB 016
15516  000002 .. PCAL DO'WIOC0        15606  041012 B. LOAD DB 012         15676  000005 .. PCAL NUM2ASC
15517  040570 Ax LOAD P- 170          15607  041054 B, LOAD DB 054         15677  140003 .. BR   P+ 003
15520  000002 .. PCAL DO'WIOC0        15610  013703 .. BRE  P+3            15700  000006 .. NOP ,ZERO
15521  025001 *. LDNI 1               15611  021003 ". LDI  3              15701  000005 .. NOP ,DECX
15522  051002 R. STOR DB 002          15612  140002 .. BR   P+ 002         15702  041024 B. LOAD DB 024
15523  120002 .. INCM DB 002          15613  021007 ". LDI  7              15703  002400 .. NEG ,NOP
15524  041002 B. LOAD DB 002          15614  001700 .. CMP ,NOP            15704  021000 ". LDI  0
15525  022377 $. CMPI 255             15615  145410 .. BG   P+ 010,I       15705  000243 .. PCAL ERROROUT
15526  141404 .. BG   P+ 004          15616  025001 *. LDNI 1              15706  041070 B8 LOAD DB 070
15527  041002 B. LOAD DB 002          15617  051016 R. STOR DB 016         15707  037777 ?. ANDI 255
15530  000010 .. PCAL DO'WIOC0        15620  120016 .. INCM DB 016         15710  041016 B. LOAD DB 016
15531  140406 .. BR   P- 006          15621  041016 B. LOAD DB 016         15711  037777 ?. ANDI 255
15532  140440 .  BR   P- 040          15622  022377 $. CMPI 255            15712  001700 .. CMP ,NOP
15533  025001 *. LDNI 1               15623  140003 .. BR   P+ 003         15713  141224 .. BE   P+ 024
15534  051013 R. STOR DB 013          15624  000137 ._ DELB,ADXA           15714  000600 .. ZERO,NOP
15535  021000 ". LDI  0               15625  000121 .Q DELB,SUB            15715  021027 ". LDI  23
15536  051002 R. STOR DB 002          15626  145406 .. BG   P+ 006,I       15716  000033 .. PCAL GET'MESSAGE
15537  040023 @. LOAD P+ 023          15627  040667 A. LOAD P- 267         15717  051024 R. STOR DB 024
15540  051020 R. STOR DB 020          15630  000034 .. PCAL DO'WIOC0       15720  021032 ". LDI  26
15541  025001 *. LDNI 1               15631  041016 B. LOAD DB 016         15721  021002 ". LDI  2
15542  051054 R, STOR DB 054          15632  000002 .. PCAL DO'WIOC0       15722  021020 ". LDI  16
15543  120013 .. INCM DB 013          15633  140002 .. BR   P+ 002         15723  041016 B. LOAD DB 016
15544  041013 B. LOAD DB 013          15634  000111 .I DELB,DADD           15724  000026 .. PCAL NUM2ASC
15545  041045 B% LOAD DB 045          15635  020104  D IOOP 32 BIT OP      15725  021050 "( LDI  40
15546  013703 .. BRE  P+3             15636  000000 .. NOP ,NOP            15726  021002 ". LDI  2
15547  021007 ". LDI  7               15637  021002 ". LDI  2              15727  021020 ". LDI  16
15550  140002 .. BR   P+ 002          15640  000274 .. PCAL DODELAY        15730  041070 B8 LOAD DB 070
15551  021003 ". LDI  3               15641  000274 .. PCAL DO'RIOC0       15731  037777 ?. ANDI 255
15552  001700 .. CMP ,NOP             15642  041005 B. LOAD DB 005         15732  000006 .. PCAL NUM2ASC
15553  145410 .. BG   P+ 010,I        15643  061016 b. CMPM DB 016         15733  041024 B. LOAD DB 024
15554  041013 B. LOAD DB 013          15644  141503 .C BNE  P+ 003         15734  002400 .. NEG ,NOP
15555  022003 $. CMPI 3               15645  021000 ". LDI  0              15735  021001 ". LDI  1
15556  141303 .. BLE  P+ 003          15646  140002 .. BR   P+ 002         15736  000031 .. PCAL ERROROUT
15557  021000 ". LDI  0               15647  021001 ". LDI  1              15737  040010 @. LOAD P+ 010
15560  051054 R, STOR DB 054          15650  051017 R. STOR DB 017         15740  000106 .F PCAL DO'WIOC0
15561  140003 .. BR   P+ 003          15651  041070 B8 LOAD DB 070         15741  041005 B. LOAD DB 005
15562  140000 .. BR   P+ 000          15652  010316 .. LSR  14 BITS        15742  000002 .. PCAL DO'WIOC0
15563  000201 .. DDEL,DELB           15653  041020 B. LOAD DB 020         15743  120007 .. INCM DB 007
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15744  140524 .T BR   P- 124        16034  145634 .. BGE  P+ 034,I      16124  140034 .. BR   P+ 034
15745  140540 .‘ BR   P- 140        16035  040034 @. LOAD P+ 034       16125  131005 .. LDX  DB 005
15746  140002 .. BR   P+ 002        16036  000014 .. PCAL DO’WIOC0     16126  047111 NI LOAD DB 111,I,X
15747  040145 @e LOAD P+ 145        16037  131002 .. LDX  DB 002       16127  037477 ?? ANDI 63
15750  120002 .. INCM DB 002       16040  047117 NO LOAD DB 117,I,X   16130  051071 R9 STOR DB 071
15751  041005 B. LOAD DB 005       16041  000003 .. PCAL DO’WIOC0     16131  140027 .. BR   P+ 027
15752  022000 $. CMPI 0            16042  021001 ". LDI  1            16132  131005 .. LDX  DB 005
15753  141503 .C BNE  P+ 003       16043  051006 R. STOR DB 006       16133  047111 NI LOAD DB 111,I,X
15754  021001 ". LDI  1            16044  120006 .. INCM DB 006       16134  037577 ?. ANDI 127
15755  140003 .. BR   P+ 003       16045  041006 B. LOAD DB 006       16135  051071 R9 STOR DB 071
15756  041005 B. LOAD DB 005       16046  021020 ". LDI  16           16136  140022 .. BR   P+ 022
15757  071005 r. ADDM DB 005       16047  005700 .. LCMP,NOP          16137  131005 .. LDX  DB 005
15760  051005 R. STOR DB 005       16050  145622 .. BGE  P+ 022,I      16140  047111 NI LOAD DB 111,I,X
15761  000276 .. PCAL DOT          16051  040022 @. LOAD P+ 022       16141  037777 ?. ANDI 255
15762  140574 .| BR   P- 174       16052  000011 .. PCAL DO’WIOC0     16142  051071 R9 STOR DB 071
15763  140620 .. BR   P- 220       16053  041006 B. LOAD DB 006       16143  140015 .. BR   P+ 015
15764  000616 .. PCAL REP’ILL’INT  16054  000002 .. PCAL DO’WIOC0     16144  000002 .. NOP ,DDEL
15765  151075 .= LDD  DB 075       16055  041006 B. LOAD DB 006       16145  000013 .. NOP ,MPYL
15766  021017 ". LDI  15           16056  021020 ". LDI  16           16146  000600 .. ZERO,NOP
15767  004300 .. STAX,NOP          16057  006000 .. LADD,NOP          16147  021003 ". LDI  3
15770  016401 .. DCSL 1 BIT ,X     16060  000004 .. PCAL DO’WIOC0     16150  012602 .. CPRB P+2
15771  000100 .@ DELB,NOP          16061  040013 @. LOAD P+ 013       16151  140007 .. BR   P+ 007
15772  017734 .. BRE  P+34,I       16062  000002 .. PCAL DO’WIOC0     16152  134002 .. LDX  P+ 002,X
15773  021064 "4 LDI  52           16063  025001 *. LDNI 1            16153  144001 .. BR   P+ 001,X
15774  051065 R5 STOR DB 065       16064  051005 R. STOR DB 005       16154  177744 .. LRA  S- 044,I,X
15775  041045 B% LOAD DB 045       16065  120005 .. INCM DB 005       16155  177751 .. LRA  S- 051,I,X
15776  013711 .. BRE  P+11         16066  041005 B. LOAD DB 005       16156  177756 .. LRA  S- 056,I,X
15777  041046 B& LOAD DB 046       16067  140006 .. BR   P+ 006       16157  177763 .. LRA  S- 063,I,X
16000  013707 .. BRE  P+7          16070  000244 .. DDEL,LDXA         16160  041070 B8 LOAD DB 070
16001  041036 B. LOAD DB 036       16071  040141 @a LOAD P+ 141       16161  037777 ?. ANDI 255
16002  041023 B. LOAD DB 023       16072  000240 .. DDEL,DEL          16162  041071 B9 LOAD DB 071
16003  005700 .. LCMP,NOP          16073  040146 @f LOAD P+ 146       16163  037777 ?. ANDI 255
16004  141203 .. BE   P+ 003       16074  040140 @‘ LOAD P+ 140       16164  001700 .. CMP ,NOP
16005  021003 ". LDI  3            16075  022004 $. CMPI 4            16165  145234 .. BE   P+ 034,I
16006  140004 .. BR   P+ 004       16076  145605 .. BGE  P+ 005,I      16166  021003 ". LDI  3
16007  041036 B. LOAD DB 036       16077  131005 .. LDX  DB 005       16167  051007 R. STOR DB 007
16010  021001 ". LDI  1            16100  047111 NI LOAD DB 111,I,X   16170  021007 ". LDI  7
16011  006100 .@ LSUB,NOP          16101  000017 .. PCAL DO’WIOC0     16171  021014 ". LDI  12
16012  051013 R. STOR DB 013       16102  140002 .. BR   P+ 002       16172  131006 .. LDX  DB 006
16013  120013 .. INCM DB 013       16103  000226 .. DDEL,STBX         16173  012602 .. CPRB P+2
16014  041013 B. LOAD DB 013       16104  020104  D IOOP 32 BIT OP    16174  140003 .. BR   P+ 003
16015  061023 b. CMPM DB 023       16105  000000 .. NOP ,NOP          16175  021004 ". LDI  4
16016  145411 .. BG   P+ 011,I     16106  131006 .. LDX  DB 006       16176  140002 .. BR   P+ 002
16017  040011 @. LOAD P+ 011       16107  047110 NH LOAD DB 110,I,X   16177  041007 B. LOAD DB 007
16020  041013 B. LOAD DB 013       16110  000250 .. PCAL DODELAY      16200  051007 R. STOR DB 007
16021  006000 .. LADD,NOP          16111  000250 .. PCAL DO’RIOC0     16201  021002 ". LDI  2
16022  000060 .0 PCAL DO’WIOC0     16112  131002 .. LDX  DB 002       16202  021003 ". LDI  3
16023  025001 *. LDNI 1            16113  047117 NO LOAD DB 117,I,X   16203  131006 .. LDX  DB 006
16024  051002 R. STOR DB 002       16114  010303 .. LSR  3 BITS       16204  012602 .. CPRB P+2
16025  140004 .. BR   P+ 004       16115  037403 ?. ANDI 3            16205  140003 .. BR   P+ 003
16026  000310 .. ZROX,DCMP         16116  004300 .. STAX,NOP          16206  021002 ". LDI  2
16027  000306 .. ZROX,ZERO         16117  140027 .. BR   P+ 027       16207  140002 .. BR   P+ 002
16030  040100 @@ LOAD P+ 100       16120  131005 .. LDX  DB 005       16210  041007 B. LOAD DB 007
16031  120002 .. INCM DB 002       16121  047111 NI LOAD DB 111,I,X   16211  051007 R. STOR DB 007
16032  041002 B. LOAD DB 002       16122  037437 ?. ANDI 31           16212  000600 .. ZERO,NOP
16033  022030 $. CMPI 24           16123  051071 R9 STOR DB 071       16213  021032 ". LDI  26
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16214  000276 .. PCAL GET'MESSAGE      16304  000010 .. PCAL NUM2ASC          16374  006045 .% LADD,DUP
16215  051024 R. STOR DB 024           16305  041006 B. LOAD DB 006           16375  051026 R. STOR DB 026
16216  021007 ". LDI  7                16306  022004 $. CMPI 4                 16376  021170 "x LDI  120
16217  021014 ". LDI  12               16307  141507 .G BNE  P+ 007            16377  005700 .. LCMP,NOP
16220  140002 .. BR   P+ 002           16310  021462 #2 LDXI 50               16400  140005 .. BR   P+ 005
16221  000107 .G DELB,DZRO             16311  177104 .D LRA  DB 104,I,X        16401  000627 .. ZERO,DTST
16222  131006 .. LDX  DB 006           16312  170025 .. LRA  P+ 025            16402  100000 .. SUBM P+ 000
16223  012602 .. CPRB P+2              16313  010201 .. LSL  1 BIT             16403  000624 .. ZERO,NEG
16224  140004 .. BR   P+ 004           16314  021002 ". LDI  2                 16404  000010 .. NOP ,DCMP
16225  041024 B. LOAD DB 024           16315  020043  # MVB  PB-DB,3           16405  141303 .. BLE  P+ 003
16226  022401 %. ADDI 1                16316  021016 ". LDI  14                16406  140426 .. BR   P- 026
16227  140002 .. BR   P+ 002           16317  021002 ". LDI  2                 16407  000001 .. NOP ,DELB
16230  041024 B. LOAD DB 024           16320  021020 ". LDI  16                16410  041066 B6 LOAD DB 066
16231  051024 R. STOR DB 024           16321  131002 .. LDX  DB 002           16411  010301 .. LSR  1 BIT
16232  021002 ". LDI  2                16322  047117 NO LOAD DB 117,I,X        16412  051066 R6 STOR DB 066
16233  021003 ". LDI  3                16323  000017 .. PCAL NUM2ASC           16413  140427 .. BR   P- 027
16234  131006 .. LDX  DB 006           16324  041024 B. LOAD DB 024            16414  021065 "5 LDI  53
16235  012602 .. CPRB P+2              16325  002400 .. NEG ,NOP               16415  051065 R5 STOR DB 065
16236  140004 .. BR   P+ 004           16326  021001 ". LDI  1                 16416  041056 B. LOAD DB 056
16237  041024 B. LOAD DB 024           16327  000371 .. PCAL ERROROUT          16417  021000 ". LDI  0
16240  023001 &. SUBI 1                16330  140643 .. BR   P- 243            16420  005700 .. LCMP,NOP
16241  140002 .. BR   P+ 002           16331  140665 .. BR   P- 265            16421  145534 .\ BNE  P+ 034,I
16242  041024 B. LOAD DB 024           16332  000351 .. PCAL DOT               16422  021001 ". LDI  1
16243  051024 R. STOR DB 024           16333  140706 .. BR   P- 306            16423  051005 R. STOR DB 005
16244  041006 B. LOAD DB 006           16334  140721 .. BR   P- 321            16424  041005 B. LOAD DB 005
16245  022004 $. CMPI 4                16335  000351 .. PCAL REP'ILL'INT       16425  022001 $. CMPI 1
16246  141504 .D BNE  P+ 004           16336  140002 .. BR   P+ 002            16426  145530 .X BNE  P+ 030,I
16247  041024 B. LOAD DB 024           16337  027065 .5 DPF  (3:5)             16427  021000 ". LDI  0
16250  022402 %. ADDI 2                16340  151075 .= LDD  DB 075            16430  004500 .@ DUP ,NOP
16251  140002 .. BR   P+ 002           16341  021020 ". LDI  16                16431  051007 R. STOR DB 007
16252  041024 B. LOAD DB 024           16342  004300 .. STAX,NOP               16432  051002 R. STOR DB 002
16253  051024 R. STOR DB 024           16343  016401 .. DCSL 1 BIT ,X          16433  173106 .F LRA  DB 106,I
16254  021457 #/ LDXI 47               16344  000100 .@ DELB,NOP               16434  172023 .. LRA  P+ 023,I
16255  177104 .D LRA  DB 104,I,X       16345  017734 .. BRE  P+34,I           16435  010201 .. LSL  1 BIT
16256  172024 .. LRA  P+ 024,I         16346  021000 ". LDI  0                 16436  021006 ". LDI  6
16257  010201 .. LSL  1 BIT            16347  051012 R. STOR DB 012            16437  020043  # MVB  PB-DB,3
16260  021005 ". LDI  5                16350  025001 *. LDNI 1                 16440  000000 .. PCAL CRLF
16261  020043  # MVB  PB-DB,3          16351  051074 R< STOR DB 074            16441  173104 .D LRA  DB 104,I
16262  021031 ". LDI  25               16352  021000 ". LDI  0                 16442  000600 .. ZERO,NOP
16263  021002 ". LDI  2                16353  051056 R. STOR DB 056            16443  021054 ", LDI  44
16264  021020 ". LDI  16               16354  021000 ". LDI  0                 16444  000230 .. PCAL GET'MESSAGE
16265  041071 B9 LOAD DB 071           16355  051026 R. STOR DB 026            16445  002400 .. NEG ,NOP
16266  000334 .. PCAL NUM2ASC          16356  040024 @. LOAD P+ 024            16446  021320 ". LDI  208
16267  021046 "& LDI  38               16357  051066 R6 STOR DB 066            16447  015621 .. PCAL PRINT
16270  021002 ". LDI  2                16360  041026 B. LOAD DB 026           16450  173106 .F LRA  DB 106,I
16271  021020 ". LDI  16               16361  021200 ". LDI  128              16451  173103 .C LRA  DB 103,I
16272  041070 B8 LOAD DB 070           16362  005700 .. LCMP,NOP              16452  021012 ". LDI  10
16273  037777 ?. ANDI 255              16363  145620 .. BGE  P+ 020,I          16453  020063  3 MVB  DB-DB,3
16274  000006 .. PCAL NUM2ASC          16364  041012 B. LOAD DB 012            16454  140004 .. BR   P+ 004
16275  021057 "/ LDI  47               16365  041066 B6 LOAD DB 066            16455  000156 .n DELB,CAB
16276  041007 B. LOAD DB 007           16366  006700 .. AND ,NOP               16456  000155 .m DELB,FNEG
16277  021012 ". LDI  10               16367  041066 B6 LOAD DB 066            16457  002612 .. STBX,DSUB
16300  131006 .. LDX  DB 006           16370  005700 .. LCMP,NOP              16460  000600 .. ZERO,NOP
16301  140002 .. BR   P+ 002           16371  141523 .S BNE  P+ 023            16461  173106 .F LRA  DB 106,I
16302  002764 .. DTST,NOT              16372  041026 B. LOAD DB 026            16462  025003 *. LDNI 3
16303  047112 NJ LOAD DB 112,I,X       16373  021010 ". LDI  8                 16463  015631 .. PCAL READ
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16464  022002 $. CMPI 2          16554  021071 "9 LDI  57         16644  021002 ". LDI  2
16465  141303 .. BLE  P+ 003     16555  005700 .. LCMP,NOP       16645  021012 ". LDI  10
16466  021001 ". LDI  1          16556  141404 .. BG   P+ 004     16646  041010 B. LOAD DB 010
16467  140002 .. BR   P+ 002     16557  005700 .. LCMP,NOP       16647  010303 .. LSR  3 BITS
16470  021000 ". LDI  0          16560  141304 .. BLE  P+ 004     16650  037417 ?. ANDI 15
16471  051005 R. STOR DB 005     16561  140005 .. BR   P+ 005     16651  000326 .. PCAL NUM2ASC
16472  001331 .. PCAL CHECKYTRAP 16562  035402 ;. SUBS 2          16652  173104 .D LRA  DB 104,I
16473  015636 .. PCAL STARTIDLE  16563  140003 .. BR   P+ 003     16653  041024 B. LOAD DB 024
16474  021401 #. LDXI 1          16564  041005 B. LOAD DB 005     16654  002400 .. NEG ,NOP
16475  156106 .F LDB  DB 106,I,X 16565  140002 .. BR   P+ 002     16655  000024 .. PCAL CRTOUT
16476  004500 .@ DUP ,NOP        16566  021001 ". LDI  1          16656  173104 .D LRA  DB 104,I
16477  051002 R. STOR DB 002     16567  051005 R. STOR DB 005     16657  000600 .. ZERO,NOP
16500  022040 $  CMPI 32         16570  041002 B. LOAD DB 002     16660  021121 "Q LDI  81
16501  145220 .. BE   P+ 020,I   16571  037417 ?. ANDI 15         16661  000020 .. PCAL GET'MESSAGE
16502  021060 "0 LDI  48         16572  051002 R. STOR DB 002     16662  002400 .. NEG ,NOP
16503  041002 B. LOAD DB 002     16573  041007 B. LOAD DB 007     16663  000006 .. PCAL CRTOUT
16504  004500 .@ DUP ,NOP        16574  037417 ?. ANDI 15         16664  015633 .. PCAL DOPAUSE
16505  021071 "9 LDI  57         16575  021012 ". LDI  10         16665  021012 ". LDI  10
16506  005700 .. LCMP,NOP        16576  006201 .. LMPY,DELB       16666  010504 .D CSR  4 BITS
16507  141404 .. BG   P+ 004     16577  051007 R. STOR DB 007     16667  020302  . IOOP 32 BIT OP
16510  005700 .. LCMP,NOP        16600  021001 ". LDI  1          16670  000002 .. NOP ,DDEL
16511  141304 .. BLE  P+ 004     16601  041002 B. LOAD DB 002     16671  051070 R8 STOR DB 070
16512  140005 .. BR   P+ 005     16602  071007 r. ADDM DB 007     16672  041010 B. LOAD DB 010
16513  035402 ;. SUBS 2          16603  004500 .@ DUP ,NOP        16673  022000 $. CMPI 0
16514  140003 .. BR   P+ 003     16604  051056 R. STOR DB 056     16674  141503 .C BNE  P+ 003
16515  041005 B. LOAD DB 005     16605  004500 .@ DUP ,NOP        16675  041070 B8 LOAD DB 070
16516  140002 .. BR   P+ 002     16606  021017 ". LDI  15         16676  051012 R. STOR DB 012
16517  021001 ". LDI  1          16607  005700 .. LCMP,NOP       16677  041070 B8 LOAD DB 070
16520  140002 .. BR   P+ 002     16610  141404 .. BG   P+ 004     16700  051007 R. STOR DB 007
16521  000025 .. NOP ,TEST       16611  005700 .. LCMP,NOP       16701  041070 B8 LOAD DB 070
16522  051005 R. STOR DB 005     16612  141304 .. BLE  P+ 004     16702  041034 B. LOAD DB 034
16523  021060 "0 LDI  48         16613  140005 .. BR   P+ 005     16703  006700 .. AND ,NOP
16524  021400 #. LDXI 0          16614  035402 ;. SUBS 2          16704  041034 B. LOAD DB 034
16525  156106 .F LDB  DB 106,I,X 16615  140003 .. BR   P+ 003     16705  005700 .. LCMP,NOP
16526  004500 .@ DUP ,NOP        16616  041005 B. LOAD DB 005     16706  145222 .. BE   P+ 022,I
16527  051007 R. STOR DB 007     16617  140002 .. BR   P+ 002     16707  041010 B. LOAD DB 010
16530  004500 .@ DUP ,NOP        16620  021001 ". LDI  1          16710  022000 $. CMPI 0
16531  021071 "9 LDI  57         16621  051005 R. STOR DB 005     16711  141237 .. BE   P+ 037
16532  005700 .. LCMP,NOP        16622  041005 B. LOAD DB 005     16712  041010 B. LOAD DB 010
16533  141404 .. BG   P+ 004     16623  013707 .. BRE  P+7        16713  010303 .. LSR  3 BITS
16534  005700 .. LCMP,NOP        16624  173104 .D LRA  DB 104,I   16714  037417 ?. ANDI 15
16535  141304 .. BLE  P+ 004     16625  000600 .. ZERO,NOP       16715  021007 ". LDI  7
16536  140005 .. BR   P+ 005     16626  021076 "> LDI  62         16716  001700 .. CMP ,NOP
16537  035402 ;. SUBS 2          16627  000163 .s PCAL GET'MESSAGE 16717  141304 .. BLE  P+ 004
16540  140003 .. BR   P+ 003     16630  002400 .. NEG ,NOP       16720  021001 ". LDI  1
16541  041005 B. LOAD DB 005     16631  015601 .. PCAL CRTOUT     16721  051022 R. STOR DB 022
16542  140002 .. BR   P+ 002     16632  140606 .. BR   P- 206     16722  140003 .. BR   P+ 003
16543  021001 ". LDI  1          16633  041026 B. LOAD DB 026     16723  021001 ". LDI  1
16544  051005 R. STOR DB 005     16634  051010 R. STOR DB 010     16724  051016 R. STOR DB 016
16545  140023 .. BR   P+ 023     16635  041066 B6 LOAD DB 066     16725  000600 .. ZERO,NOP
16546  021060 "0 LDI  48         16636  051034 R. STOR DB 034     16726  021101 "A LDI  65
16547  021400 #. LDXI 0          16637  000600 .. ZERO,NOP       16727  140002 .. BR   P+ 002
16550  156106 .F LDB  DB 106,I,X 16640  021075 "= LDI  61         16730  000020 .. NOP ,ADD
16551  004500 .@ DUP ,NOP        16641  000012 .. PCAL GET'MESSAGE 16731  000050 .( PCAL GET'MESSAGE
16552  051002 R. STOR DB 002     16642  051024 R. STOR DB 024     16732  051024 R. STOR DB 024
16553  004500 .@ DUP ,NOP        16643  021055 "- LDI  45         16733  021010 ". LDI  8
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16734  021002 ". LDI  2              17024  173104 .D LRA  DB 104,I       17114  021111 "I LDI  73
16735  021012 ". LDI  10             17025  000600 .. ZERO,NOP            17115  021402 #. LDXI 2
16736  041010 B. LOAD DB 010         17026  021106 "F LDI  70             17116  166104 .D STB  DB 104,I,X
16737  010303 .. LSR  3 BITS         17027  000076 .> PCAL GET'MESSAGE    17117  021016 ". LDI  14
16740  037417 ?. ANDI 15             17030  002400 .. NEG ,NOP            17120  021002 ". LDI  2
16741  000070 .8 PCAL NUM2ASC        17031  000146 .f PCAL CRTOUT         17121  021012 ". LDI  10
16742  041024 B. LOAD DB 024         17032  000600 .. ZERO,NOP            17122  041070 B8 LOAD DB 070
16743  002400 .. NEG ,NOP            17033  021077 "? LDI  63             17123  010303 .. LSR  3 BITS
16744  021000 ". LDI  0              17034  000005 .. PCAL GET'MESSAGE    17124  037417 ?. ANDI 15
16745  000416 .. PCAL ERROROUT       17035  051024 R. STOR DB 024         17125  000056 .. PCAL NUM2ASC
16746  142001 .. BR   P+ 001,I       17036  021026 ". LDI  22             17126  021032 ". LDI  26
16747  177367 .. LRA  DB 367,I,X     17037  021002 ". LDI  2              17127  021002 ". LDI  2
16750  025001 *. LDNI 1              17040  021012 ". LDI  10             17130  021012 ". LDI  10
16751  051002 R. STOR DB 002         17041  041005 B. LOAD DB 005         17131  041010 B. LOAD DB 010
16752  021000 ". LDI  0              17042  000101 .A PCAL NUM2ASC        17132  010303 .. LSR  3 BITS
16753  051005 R. STOR DB 005         17043  021043 "# LDI  35             17133  037417 ?. ANDI 15
16754  120002 .. INCM DB 002         17044  021002 ". LDI  2              17134  000007 .. PCAL NUM2ASC
16755  041002 B. LOAD DB 002         17045  021012 ". LDI  10             17135  041024 B. LOAD DB 024
16756  022020 $. CMPI 16             17046  041056 B. LOAD DB 056         17136  002400 .. NEG ,NOP
16757  141615 .. BGE  P+ 015         17047  000005 .. PCAL NUM2ASC        17137  021000 ". LDI  0
16760  041007 B. LOAD DB 007         17050  041024 B. LOAD DB 024         17140  000065 .5 PCAL ERROROUT
16761  037401 ?. ANDI 1              17051  002400 .. NEG ,NOP            17141  021067 "7 LDI  55
16762  013704 .. BRE  P+4            17052  021000 ". LDI  0              17142  051065 R5 STOR DB 065
16763  041005 B. LOAD DB 005         17053  000106 .F PCAL ERROROUT       17143  041010 B. LOAD DB 010
16764  022401 %. ADDI 1              17054  021000 ". LDI  0              17144  021004 ". LDI  4
16765  140002 .. BR   P+ 002         17055  051056 R. STOR DB 056         17145  010414 .. CSL  12 BITS
16766  041005 B. LOAD DB 005         17056  142507 .G BR   P- 107,I       17146  006500 .@ OR  ,NOP
16767  051005 R. STOR DB 005         17057  041010 B. LOAD DB 010         17147  020302  . IOOP 32 BIT OP
16770  041007 B. LOAD DB 007         17060  022000 $. CMPI 0              17150  000002 .. NOP ,DDEL
16771  010301 .. LSR  1 BIT          17061  145204 .. BE   P+ 004,I       17151  141503 .C BNE  P+ 003
16772  051007 R. STOR DB 007         17062  021066 "6 LDI  54             17152  051070 R8 STOR DB 070
16773  140417 .. BR   P- 017         17063  051065 R5 STOR DB 065         17153  140002 .. BR   P+ 002
16774  041010 B. LOAD DB 010         17064  140002 .. BR   P+ 002         17154  000055 .- PCAL READFAIL
16775  022000 $. CMPI 0              17065  000131 .Y DELB,BTST           17155  041070 B8 LOAD DB 070
16776  141502 .B BNE  P+ 002         17066  041010 B. LOAD DB 010         17156  010303 .. LSR  3 BITS
16777  120005 .. INCM DB 005         17067  021002 ". LDI  2              17157  037417 ?. ANDI 15
17000  041005 B. LOAD DB 005         17070  010414 .. CSL  12 BITS       17160  041010 B. LOAD DB 010
17001  041056 B. LOAD DB 056         17071  006500 .@ OR  ,NOP            17161  010303 .. LSR  3 BITS
17002  005700 .. LCMP,NOP            17072  020302  . IOOP 32 BIT OP      17162  037417 ?. ANDI 15
17003  145210 .. BE   P+ 010,I       17073  000002 .. NOP ,DDEL           17163  001700 .. CMP ,NOP
17004  041010 B. LOAD DB 010         17074  141503 .C BNE  P+ 003         17164  141232 .. BE   P+ 032
17005  022000 $. CMPI 0              17075  051070 R8 STOR DB 070         17165  000600 .. ZERO,NOP
17006  141524 .T BNE  P+ 024         17076  140002 .. BR   P+ 002         17166  021016 ". LDI  14
17007  041005 B. LOAD DB 005         17077  002757 .. PCAL READFAIL       17167  000055 .- PCAL GET'MESSAGE
17010  023001 &. SUBI 1              17100  041070 B8 LOAD DB 070         17170  051024 R. STOR DB 024
17011  004500 .@ DUP ,NOP            17101  010303 .. LSR  3 BITS         17171  021123 "S LDI  83
17012  140003 .. BR   P+ 003         17102  037417 ?. ANDI 15             17172  021402 #. LDXI 2
17013  000044 .$ NOP ,LDXA           17103  041010 B. LOAD DB 010         17173  166104 .D STB  DB 104,I,X
17014  000016 .. NOP ,DXCH           17104  010303 .. LSR  3 BITS         17174  021016 ". LDI  14
17015  051005 R. STOR DB 005         17105  037417 ?. ANDI 15             17175  021002 ". LDI  2
17016  041056 B. LOAD DB 056         17106  001700 .. CMP ,NOP            17176  021012 ". LDI  10
17017  021001 ". LDI  1              17107  141232 .. BE   P+ 032         17177  041070 B8 LOAD DB 070
17020  006145 .e LSUB,DUP            17110  000600 .. ZERO,NOP           17200  010303 .. LSR  3 BITS
17021  051056 R. STOR DB 056         17111  021016 ". LDI  14             17201  037417 ?. ANDI 15
17022  005700 .. LCMP,NOP            17112  000056 .. PCAL GET'MESSAGE    17202  000046 .& PCAL NUM2ASC
17023  141307 .. BLE  P+ 007         17113  051024 R. STOR DB 024         17203  021032 ". LDI  26
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17204  021002 ". LDI  2              17274  000040 .  NOP ,DEL            17364  120002 .. INCM DB 002
17205  021012 ". LDI  10             17275  000600 .. ZERO,NOP            17365  041002 B. LOAD DB 002
17206  041010 B. LOAD DB 010         17276  173106 .F LRA  DB 106,I       17366  022377 $. CMPI 255
17207  010303 .. LSR  3 BITS         17277  025003 *. LDNI 3              17367  141404 .. BG   P+ 004
17210  037417 ?. ANDI 15             17300  000615 .. PCAL READ           17370  041002 B. LOAD DB 002
17211  000007 .. PCAL NUM2ASC        17301  004000 .. DEL ,NOP            17371  000010 .. PCAL DO'WIOC0
17212  041024 B. LOAD DB 024         17302  000027 .. PCAL CHECKYTRAP     17372  140406 .. BR   P- 006
17213  002400 .. NEG ,NOP            17303  000610 .. PCAL STARTIDLE       17373  040016 @. LOAD P+ 016
17214  021000 ". LDI  0              17304  021401 #. LDXI 1              17374  000003 .. PCAL DO'WIOC0
17215  000055 .- PCAL ERROROUT       17305  156106 .F LDB  DB 106,I,X     17375  025001 *. LDNI 1
17216  000524 .T PCAL CHECKYTRAP     17306  022040 $  CMPI 32            17376  051002 R. STOR DB 002
17217  041066 B6 LOAD DB 066         17307  141203 .. BE   P+ 003         17377  120002 .. INCM DB 002
17220  010301 .. LSR  1 BIT          17310  021000 ". LDI  0              17400  041002 B. LOAD DB 002
17221  051066 R6 STOR DB 066         17311  140002 .. BR   P+ 002         17401  022377 $. CMPI 255
17222  041026 B. LOAD DB 026         17312  021001 ". LDI  1              17402  145410 .. BG   P+ 010,I
17223  021010 ". LDI  8              17313  051002 R. STOR DB 002         17403  041002 B. LOAD DB 002
17224  006000 .. LADD,NOP            17314  021060 "0 LDI  48             17404  000010 .. PCAL DO'WIOC0
17225  051026 R. STOR DB 026         17315  021400 #. LDXI 0              17405  140006 .. BR   P+ 006
17226  142003 .. BR   P+ 003,I       17316  156106 .F LDB  DB 106,I,X     17406  040141 @a LOAD P+ 141
17227  000672 .. PCAL REP'ILL'INT    17317  004500 .@ DUP ,NOP            17407  040146 @f LOAD P+ 146
17230  140002 .. BR   P+ 002         17320  021067 "7 LDI  55             17410  040144 @d LOAD P+ 144
17231  177127 .W LRA  DB 127,I,X     17321  005700 .. LCMP,NOP            17411  040140 @' LOAD P+ 140
17232  151075 .= LDD  DB 075         17322  141303 .. BLE  P+ 003         17412  000065 .5 NOP ,OR
17233  021021 ". LDI  17             17323  035402 ;. SUBS 2              17413  020104  D IOOP 32 BIT OP
17234  004300 .. STAX,NOP            17324  140003 .. BR   P+ 003         17414  000000 .. NOP ,NOP
17235  016401 .. DCSL 1 BIT ,X       17325  005700 .. LCMP,NOP            17415  021005 ". LDI  5
17236  000100 .@ DELB,NOP            17326  141303 .. BLE  P+ 003         17416  001306 .. PCAL DODELAY
17237  017734 .. BRE  P+34,I         17327  021000 ". LDI  0              17417  001306 .. PCAL DO'RIOC0
17240  021070 "8 LDI  56             17330  140002 .. BR   P+ 002         17420  041070 B8 LOAD DB 070
17241  051065 R5 STOR DB 065         17331  041002 B. LOAD DB 002         17421  037777 ?. ANDI 255
17242  021000 ". LDI  0              17332  051002 R. STOR DB 002         17422  041002 B. LOAD DB 002
17243  051002 R. STOR DB 002         17333  140467 .7 BR   P- 067         17423  037777 ?. ANDI 255
17244  041002 B. LOAD DB 002         17334  021400 #. LDXI 0              17424  001700 .. CMP ,NOP
17245  022000 $. CMPI 0              17335  156106 .F LDB  DB 106,I,X     17425  141225 .. BE   P+ 025
17246  145526 .V BNE  P+ 026,I       17336  037417 ?. ANDI 15             17426  000600 .. ZERO,NOP
17247  173106 .F LRA  DB 106,I       17337  051013 R. STOR DB 013         17427  021027 ". LDI  23
17250  173103 .C LRA  DB 103,I       17340  040003 @. LOAD P+ 003         17430  000142 .b PCAL GET'MESSAGE
17251  021012 ". LDI  10             17341  041013 B. LOAD DB 013         17431  051024 R. STOR DB 024
17252  020063  3 MVB  DB-DB,3        17342  140002 .. BR   P+ 002         17432  021032 ". LDI  26
17253  000035 .. PCAL CHECKYTRAP     17343  040100 @@ LOAD P+ 100         17433  021002 ". LDI  2
17254  000614 .. PCAL CRLF           17344  006000 .. LADD,NOP            17434  021020 ". LDI  16
17255  173104 .D LRA  DB 104,I       17345  001244 .. PCAL DO'WIOC0       17435  041002 B. LOAD DB 002
17256  000600 .. ZERO,NOP            17346  040040 @  LOAD P+ 040         17436  037777 ?. ANDI 255
17257  021102 "B LDI  66             17347  000002 .. PCAL DO'WIOC0       17437  000226 .. PCAL NUM2ASC
17260  000071 .9 PCAL GET'MESSAGE    17350  021336 ". LDI  222            17440  021050 "( LDI  40
17261  002400 .. NEG ,NOP            17351  000002 .. PCAL DO'WIOC0       17441  021002 ". LDI  2
17262  000231 .. PCAL CRTOUT         17352  040035 @. LOAD P+ 035         17442  021020 ". LDI  16
17263  173104 .D LRA  DB 104,I       17353  000002 .. PCAL DO'WIOC0       17443  041070 B8 LOAD DB 070
17264  000600 .. ZERO,NOP            17354  021010 ". LDI  8              17444  037777 ?. ANDI 255
17265  021100 "@ LDI  64             17355  000002 .. PCAL DO'WIOC0       17445  000006 .. PCAL NUM2ASC
17266  000006 .. PCAL GET'MESSAGE    17356  021030 ". LDI  24             17446  041024 B. LOAD DB 024
17267  002400 .. NEG ,NOP            17357  000002 .. PCAL DO'WIOC0       17447  002400 .. NEG ,NOP
17270  021320 ". LDI  208            17360  040030 @. LOAD P+ 030         17450  021001 ". LDI  1
17271  000622 .. PCAL PRINT          17361  000002 .. PCAL DO'WIOC0       17451  000234 .. PCAL ERROROUT
17272  140003 .. BR   P+ 003         17362  025001 *. LDNI 1              17452  041070 B8 LOAD DB 070
17273  001722 .. CMP ,MPY            17363  051002 R. STOR DB 002         17453  010316 .. LSR  14 BITS
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17454  037401 ?. ANDI 1              17544  000020 .. PCAL DO'WIOC0       17634  000600 .. ZERO,NOP
17455  013721 .. BRE  P+21           17545  000005 .. PCAL DO'RIOC0       17635  021047 "' LDI  39
17456  000600 .. ZERO,NOP            17546  041045 B% LOAD DB 045         17636  000011 .. PCAL GET'MESSAGE
17457  021030 ". LDI  24             17547  013603 .. BRO  P+3            17637  002400 .. NEG ,NOP
17460  140002 .. BR   P+ 002         17550  021011 ". LDI  9              17640  021001 ". LDI  1
17461  000015 .. NOP ,DNEG           17551  140002 .. BR   P+ 002         17641  000011 .. PCAL ERROROUT
17462  000032 .. PCAL GET'MESSAGE    17552  021015 ". LDI  13             17642  041005 B. LOAD DB 005
17463  051024 R. STOR DB 024         17553  051007 R. STOR DB 007         17643  013617 .. BRO  P+17
17464  021001 ". LDI  1              17554  041002 B. LOAD DB 002         17644  041070 B8 LOAD DB 070
17465  021002 ". LDI  2              17555  037437 ?. ANDI 31             17645  037777 ?. ANDI 255
17466  021020 ". LDI  16             17556  041007 B. LOAD DB 007         17646  021002 ". LDI  2
17467  041070 B8 LOAD DB 070         17557  001700 .. CMP ,NOP            17647  001700 .. CMP ,NOP
17470  037777 ?. ANDI 255            17560  145223 .. BE   P+ 023,I       17650  141212 .. BE   P+ 012
17471  000024 .. PCAL NUM2ASC        17561  041002 B. LOAD DB 002         17651  000600 .. ZERO,NOP
17472  041024 B. LOAD DB 024         17562  037437 ?. ANDI 31             17652  021046 "& LDI  38
17473  002400 .. NEG ,NOP            17563  021007 ". LDI  7              17653  000015 .. PCAL GET'MESSAGE
17474  021001 ". LDI  1              17564  001700 .. CMP ,NOP            17654  140003 .. BR   P+ 003
17475  000024 .. PCAL ERROROUT       17565  141231 .. BE   P+ 031         17655  000005 .. NOP ,DECX
17476  140477 .? BR   P- 077         17566  000600 .. ZERO,NOP            17656  000004 .. NOP ,INCX
17477  000175 .} PCAL CHECKYTRAP     17567  021050 "( LDI  40             17657  002400 .. NEG ,NOP
17500  021071 "9 LDI  57             17570  000106 .F PCAL GET'MESSAGE    17660  021001 ". LDI  1
17501  051065 R5 STOR DB 065         17571  051024 R. STOR DB 024         17661  000020 .. PCAL ERROROUT
17502  041010 B. LOAD DB 010         17572  021024 ". LDI  20             17662  000163 .s PCAL CHECKYTRAP
17503  020302  . IOOP 32 BIT OP      17573  021002 ". LDI  2              17663  040720 A. LOAD P- 320
17504  000006 .. NOP ,ZERO           17574  021020 ". LDI  16             17664  041013 B. LOAD DB 013
17505  141402 .. BG   P+ 002         17575  041002 B. LOAD DB 002         17665  006000 .. LADD,NOP
17506  003305 .. PCAL WRITEFAIL      17576  037437 ?. ANDI 31             17666  000122 .R PCAL DO'WIOC0
17507  040544 Ad LOAD P- 144         17577  000106 .F PCAL NUM2ASC        17667  040541 Aa LOAD P- 141
17510  041013 B. LOAD DB 013         17600  021041 "! LDI  33             17670  000002 .. PCAL DO'WIOC0
17511  006000 .. LADD,NOP            17601  140004 .. BR   P+ 004         17671  021015 ". LDI  13
17512  000106 .F PCAL DO'WIOC0       17602  040160 @p LOAD P+ 160         17672  000002 .. PCAL DO'WIOC0
17513  040013 @. LOAD P+ 013         17603  000037 .. NOP ,ADXA           17673  021062 "2 LDI  50
17514  000002 .. PCAL DO'WIOC0       17604  000012 .. NOP ,DSUB           17674  000002 .. PCAL DO'WIOC0
17515  021022 ". LDI  18             17605  021002 ". LDI  2              17675  040546 Af LOAD P- 146
17516  000002 .. PCAL DO'WIOC0       17606  021020 ". LDI  16             17676  000002 .. PCAL DO'WIOC0
17517  021062 "2 LDI  50             17607  041007 B. LOAD DB 007         17677  021010 ". LDI  8
17520  000002 .. PCAL DO'WIOC0       17610  000011 .. PCAL NUM2ASC        17700  000002 .. PCAL DO'WIOC0
17521  040006 @. LOAD P+ 006         17611  041024 B. LOAD DB 024         17701  020104  D IOOP 32 BIT OP
17522  000002 .. PCAL DO'WIOC0       17612  002400 .. NEG ,NOP            17702  000000 .. NOP ,NOP
17523  021007 ". LDI  7              17613  021001 ". LDI  1              17703  021005 ". LDI  5
17524  000002 .. PCAL DO'WIOC0       17614  000117 .O PCAL ERROROUT       17704  000151 .i PCAL DODELAY
17525  140003 .. BR   P+ 003         17615  140025 .. BR   P+ 025         17705  021000 ". LDI  0
17526  040147 @g LOAD P+ 147         17616  041070 B8 LOAD DB 070         17706  004500 .@ DUP ,NOP
17527  040142 @b LOAD P+ 142         17617  037777 ?. ANDI 255            17707  051005 R. STOR DB 005
17530  020104  D IOOP 32 BIT OP      17620  021002 ". LDI  2              17710  051002 R. STOR DB 002
17531  000000 .. NOP ,NOP            17621  001700 .. CMP ,NOP            17711  000144 .d PCAL DO'RIOC0
17532  021005 ". LDI  5              17622  141212 .. BE   P+ 012         17712  041070 B8 LOAD DB 070
17533  000115 .M PCAL DODELAY        17623  000600 .. ZERO,NOP            17713  051002 R. STOR DB 002
17534  021000 ". LDI  0              17624  021045 "% LDI  37             17714  040512 AJ LOAD P- 112
17535  004500 .@ DUP ,NOP            17625  000035 .. PCAL GET'MESSAGE    17715  000015 .. PCAL DO'WIOC0
17536  051005 R. STOR DB 005         17626  002400 .. NEG ,NOP            17716  000005 .. PCAL DO'RIOC0
17537  051002 R. STOR DB 002         17627  021001 ". LDI  1              17717  041002 B. LOAD DB 002
17540  000121 .Q PCAL DO'RIOC0       17630  000014 .. PCAL ERROROUT       17720  037437 ?. ANDI 31
17541  041070 B8 LOAD DB 070         17631  025001 *. LDNI 1              17721  021022 ". LDI  18
17542  051002 R. STOR DB 002         17632  051005 R. STOR DB 005         17722  005700 .. LCMP,NOP
17543  040037 @. LOAD P+ 037         17633  140007 .. BR   P+ 007         17723  145234 .. BE   P+ 034,I
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17724  041002 B. LOAD DB 002          20014  021046 "& LDI  38             20104  037437 ?. ANDI 31
17725  037437 ?. ANDI 31              20015  000015 .. PCAL GET'MESSAGE     20105  021013 ". LDI  11
17726  021010 ". LDI  8               20016  002400 .. NEG ,NOP             20106  005700 .. LCMP,NOP
17727  005700 .. LCMP,NOP             20017  140003 .. BR   P+ 003          20107  141230 .. BE   P+ 030
17730  141225 .. BE   P+ 025          20020  000004 .. NOP ,INCX            20110  000600 .. ZERO,NOP
17731  000600 .. ZERO,NOP             20021  000003 .. NOP ,ZROX            20111  021050 "( LDI  40
17732  021050 "( LDI  40              20022  021001 ". LDI  1               20112  000075 .= PCAL GET'MESSAGE
17733  000060 .0 PCAL GET'MESSAGE     20023  000020 .. PCAL ERROROUT        20113  051024 R. STOR DB 024
17734  051024 R. STOR DB 024          20024  000142 .b PCAL CHECKYTRAP      20114  021024 ". LDI  20
17735  021024 ". LDI  20              20025  041010 B. LOAD DB 010          20115  021002 ". LDI  2
17736  021002 ". LDI  2               20026  020302  . IOOP 32 BIT OP      20116  021020 ". LDI  16
17737  021020 ". LDI  16              20027  000006 .. NOP ,ZERO           20117  041002 B. LOAD DB 002
17740  041002 B. LOAD DB 002          20030  141402 .. BG   P+ 002          20120  037437 ?. ANDI 31
17741  037437 ?. ANDI 31              20031  000323 .. PCAL WRITEFAIL       20121  000152 .j PCAL NUM2ASC
17742  000132 .Z PCAL NUM2ASC         20032  040017 @. LOAD P+ 017          20122  021041 "! LDI  33
17743  021041 "! LDI  33              20033  041013 B. LOAD DB 013          20123  021002 ". LDI  2
17744  021002 ". LDI  2               20034  006000 .. LADD,NOP             20124  140003 .. BR   P+ 003
17745  021020 ". LDI  16              20035  000120 .P PCAL DO'WIOC0        20125  000036 .. NOP ,ADAX
17746  021022 ". LDI  18              20036  040710 A. LOAD P- 310          20126  000011 .. NOP ,DADD
17747  000005 .. PCAL NUM2ASC         20037  000002 .. PCAL DO'WIOC0        20127  021020 ". LDI  16
17750  041024 B. LOAD DB 024          20040  021010 ". LDI  8              20130  041007 B. LOAD DB 007
17751  002400 .. NEG ,NOP             20041  000002 .. PCAL DO'WIOC0        20131  000010 .. PCAL NUM2ASC
17752  021001 ". LDI  1               20042  021050 "( LDI  40             20132  041024 B. LOAD DB 024
17753  000072 .: PCAL ERROROUT        20043  000002 .. PCAL DO'WIOC0        20133  002400 .. NEG ,NOP
17754  140030 .. BR   P+ 030          20044  040715 A. LOAD P- 315          20134  021001 ". LDI  1
17755  041070 B8 LOAD DB 070          20045  000002 .. PCAL DO'WIOC0        20135  000112 .J PCAL ERROROUT
17756  140003 .. BR   P+ 003          20046  021013 ". LDI  11             20136  140025 .. BR   P+ 025
17757  000025 .. NOP ,TEST            20047  000002 .. PCAL DO'WIOC0        20137  041070 B8 LOAD DB 070
17760  000024 .. NOP ,NEG             20050  140002 .. BR   P+ 002          20140  037777 ?. ANDI 255
17761  037777 ?. ANDI 255             20051  040100 @@ LOAD P+ 100          20141  021002 ". LDI  2
17762  021002 ". LDI  2               20052  020104  D IOOP 32 BIT OP      20142  001700 .. CMP ,NOP
17763  001700 .. CMP ,NOP             20053  000000 .. NOP ,NOP             20143  141212 .. BE   P+ 012
17764  141212 .. BE   P+ 012          20054  021005 ". LDI  5               20144  000600 .. ZERO,NOP
17765  000600 .. ZERO,NOP             20055  000151 .i PCAL DODELAY         20145  021045 "% LDI  37
17766  021045 "% LDI  37              20056  021000 ". LDI  0               20146  000034 .. PCAL GET'MESSAGE
17767  000034 .. PCAL GET'MESSAGE     20057  004500 .@ DUP ,NOP            20147  002400 .. NEG ,NOP
17770  002400 .. NEG ,NOP             20060  051005 R. STOR DB 005          20150  021001 ". LDI  1
17771  021001 ". LDI  1               20061  051002 R. STOR DB 002          20151  000014 .. PCAL ERROROUT
17772  000017 .. PCAL ERROROUT        20062  000144 .d PCAL DO'RIOC0        20152  025001 *. LDNI 1
17773  025001 *. LDNI 1               20063  041070 B8 LOAD DB 070          20153  051005 R. STOR DB 005
17774  051005 R. STOR DB 005          20064  051002 R. STOR DB 002          20154  140007 .. BR   P+ 007
17775  140007 .. BR   P+ 007          20065  040663 A. LOAD P- 263          20155  000600 .. ZERO,NOP
17776  000600 .. ZERO,NOP             20066  000017 .. PCAL DO'WIOC0        20156  021047 "' LDI  39
17777  021047 "' LDI  39              20067  000005 .. PCAL DO'RIOC0        20157  000011 .. PCAL GET'MESSAGE
20000  000011 .. PCAL GET'MESSAGE     20070  041045 B% LOAD DB 045          20160  002400 .. NEG ,NOP
20001  002400 .. NEG ,NOP             20071  013603 .. BRO  P+3             20161  021001 ". LDI  1
20002  021001 ". LDI  1               20072  021023 ". LDI  19             20162  000011 .. PCAL ERROROUT
20003  000011 .. PCAL ERROROUT        20073  140002 .. BR   P+ 002          20163  041005 B. LOAD DB 005
20004  041005 B. LOAD DB 005          20074  021027 ". LDI  23             20164  013617 .. BRO  P+17
20005  013617 .. BRO  P+17            20075  051007 R. STOR DB 007          20165  041070 B8 LOAD DB 070
20006  041070 B8 LOAD DB 070          20076  041002 B. LOAD DB 002          20166  037777 ?. ANDI 255
20007  037777 ?. ANDI 255             20077  037437 ?. ANDI 31             20167  021002 ". LDI  2
20010  021002 ". LDI  2               20100  041007 B. LOAD DB 007          20170  001700 .. CMP ,NOP
20011  001700 .. CMP ,NOP             20101  001700 .. CMP ,NOP            20171  141212 .. BE   P+ 012
20012  141212 .. BE   P+ 012          20102  145223 .. BE   P+ 023,I        20172  000600 .. ZERO,NOP
20013  000600 .. ZERO,NOP             20103  041002 B. LOAD DB 002          20173  021046 "& LDI  38
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20174  000015 .. PCAL GET'MESSAGE      20264  041002 B. LOAD DB 002          20354  000006 .. NOP ,ZERO
20175  140003 .. BR   P+ 003           20265  037437 ?. ANDI 31              20355  141402 .. BG   P+ 002
20176  000005 .. NOP ,DECX            20266  000135 .] PCAL NUM2ASC         20356  000325 .. PCAL WRITEFAIL
20177  000004 .. NOP ,INCX            20267  021041 "! LDI  33              20357  040706 A. LOAD P- 306
20200  002400 .. NEG ,NOP             20270  021002 ". LDI  2               20360  041013 B. LOAD DB 013
20201  021001 ". LDI  1               20271  021020 ". LDI  16              20361  006000 .. LADD,NOP
20202  000020 .. PCAL ERROROUT        20272  021010 ". LDI  8               20362  000121 .Q PCAL DO'WIOC0
20203  000157 .o PCAL CHECKYTRAP      20273  000005 .. PCAL NUM2ASC         20363  040540 A' LOAD P- 140
20204  040533 A[ LOAD P- 133          20274  041024 B. LOAD DB 024          20364  000002 .. PCAL DO'WIOC0
20205  041013 B. LOAD DB 013          20275  002400 .. NEG ,NOP             20365  021001 ". LDI  1
20206  006000 .. LADD,NOP             20276  021001 ". LDI  1               20366  000002 .. PCAL DO'WIOC0
20207  000121 .Q PCAL DO'WIOC0        20277  000075 .= PCAL ERROROUT        20367  021041 "! LDI  33
20210  040013 @. LOAD P+ 013          20300  140031 .. BR   P+ 031          20370  000002 .. PCAL DO'WIOC0
20211  000002 .. PCAL DO'WIOC0        20301  140004 .. BR   P+ 004          20371  040545 Ae LOAD P- 145
20212  021027 ". LDI  23              20302  040160 @p LOAD P+ 160          20372  000002 .. PCAL DO'WIOC0
20213  000002 .. PCAL DO'WIOC0        20303  000026 .. NOP ,STBX            20373  021016 ". LDI  14
20214  021062 "2 LDI  50              20304  000025 .. NOP ,TEST            20374  000002 .. PCAL DO'WIOC0
20215  000002 .. PCAL DO'WIOC0        20305  041070 B8 LOAD DB 070          20375  020104  D IOOP 32 BIT OP
20216  040006 @. LOAD P+ 006          20306  037777 ?. ANDI 255             20376  000000 .. NOP ,NOP
20217  000002 .. PCAL DO'WIOC0        20307  021002 ". LDI  2               20377  021005 ". LDI  5
20220  021004 ". LDI  4               20310  001700 .. CMP ,NOP             20400  000150 .h PCAL DODELAY
20221  000002 .. PCAL DO'WIOC0        20311  141212 .. BE   P+ 012          20401  021000 ". LDI  0
20222  140003 .. BR   P+ 003          20312  000600 .. ZERO,NOP             20402  004500 .@ DUP ,NOP
20223  040147 @g LOAD P+ 147          20313  021045 "% LDI  37              20403  051005 R. STOR DB 005
20224  040142 @b LOAD P+ 142          20314  000035 .. PCAL GET'MESSAGE     20404  051002 R. STOR DB 002
20225  020104  D IOOP 32 BIT OP       20315  002400 .. NEG ,NOP             20405  000143 .c PCAL DO'RIOC0
20226  000000 .. NOP ,NOP             20316  021001 ". LDI  1               20406  041070 B8 LOAD DB 070
20227  021005 ". LDI  5               20317  000020 .. PCAL ERROROUT        20407  051002 R. STOR DB 002
20230  000153 .k PCAL DODELAY         20320  025001 *. LDNI 1               20410  040506 AF LOAD P- 106
20231  021000 ". LDI  0               20321  051005 R. STOR DB 005          20411  000015 .. PCAL DO'WIOC0
20232  004500 .@ DUP ,NOP             20322  140007 .. BR   P+ 007          20412  000005 .. PCAL DO'RIOC0
20233  051005 R. STOR DB 005          20323  000600 .. ZERO,NOP             20413  041045 B% LOAD DB 045
20234  051002 R. STOR DB 002          20324  021047 "' LDI  39              20414  013603 .. BRO  P+3
20235  000146 .f PCAL DO'RIOC0        20325  000011 .. PCAL GET'MESSAGE     20415  021032 ". LDI  26
20236  041070 B8 LOAD DB 070          20326  002400 .. NEG ,NOP             20416  140002 .. BR   P+ 002
20237  051002 R. STOR DB 002          20327  021001 ". LDI  1               20417  021036 ". LDI  30
20240  040042 @" LOAD P+ 042          20330  000011 .. PCAL ERROROUT        20420  051007 R. STOR DB 007
20241  000020 .. PCAL DO'WIOC0        20331  041005 B. LOAD DB 005          20421  041002 B. LOAD DB 002
20242  000005 .. PCAL DO'RIOC0        20332  013617 .. BRO  P+17            20422  037437 ?. ANDI 31
20243  041002 B. LOAD DB 002          20333  041070 B8 LOAD DB 070          20423  041007 B. LOAD DB 007
20244  037437 ?. ANDI 31              20334  037777 ?. ANDI 255             20424  001700 .. CMP ,NOP
20245  021010 ". LDI  8               20335  021002 ". LDI  2               20425  145223 .. BE   P+ 023,I
20246  005700 .. LCMP,NOP             20336  001700 .. CMP ,NOP             20426  041002 B. LOAD DB 002
20247  145234 .. BE   P+ 034,I        20337  141212 .. BE   P+ 012          20427  037437 ?. ANDI 31
20250  041002 B. LOAD DB 002          20340  000600 .. ZERO,NOP             20430  021016 ". LDI  14
20251  037437 ?. ANDI 31              20341  021046 "& LDI  38              20431  005700 .. LCMP,NOP
20252  021004 ". LDI  4               20342  000015 .. PCAL GET'MESSAGE     20432  141230 .. BE   P+ 030
20253  001700 .. CMP ,NOP             20343  002400 .. NEG ,NOP             20433  000600 .. ZERO,NOP
20254  141225 .. BE   P+ 025          20344  140003 .. BR   P+ 003          20434  021050 "( LDI  40
20255  000600 .. ZERO,NOP             20345  000004 .. NOP ,INCX            20435  000073 .; PCAL GET'MESSAGE
20256  021050 "( LDI  40              20346  000003 .. NOP ,ZROX            20436  051024 R. STOR DB 024
20257  000063 .3 PCAL GET'MESSAGE     20347  021001 ". LDI  1               20437  021024 ". LDI  20
20260  051024 R. STOR DB 024          20350  000020 .. PCAL ERROROUT        20440  021002 ". LDI  2
20261  021024 ". LDI  20              20351  000146 .f PCAL CHECKYTRAP      20441  021020 ". LDI  16
20262  021002 ". LDI  2               20352  041010 B. LOAD DB 010          20442  041002 B. LOAD DB 002
20263  021020 ". LDI  16              20353  020302  . IOOP 32 BIT OP       20443  037437 ?. ANDI 31
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20444  000151 .i PCAL NUM2ASC          20534  000002 .. PCAL DO'WIOC0         20624  140003 .. BR   P+ 003
20445  021041 "! LDI  33               20535  021036 ". LDI  30               20625  000025 .. NOP ,TEST
20446  021002 ". LDI  2                20536  000002 .. PCAL DO'WIOC0         20626  000024 .. NOP ,NEG
20447  140003 .. BR   P+ 003           20537  021041 "! LDI  33               20627  037777 ?. ANDI 255
20450  000036 .. NOP ,ADAX             20540  000002 .. PCAL DO'WIOC0         20630  021002 ". LDI  2
20451  000011 .. NOP ,DADD             20541  040715 A. LOAD P- 315           20631  001700 .. CMP ,NOP
20452  021020 ". LDI  16               20542  000002 .. PCAL DO'WIOC0         20632  141212 .. BE   P+ 012
20453  041007 B. LOAD DB 007           20543  021001 ". LDI  1                20633  000600 .. ZERO,NOP
20454  000010 .. PCAL NUM2ASC          20544  000002 .. PCAL DO'WIOC0         20634  021045 "% LDI  37
20455  041024 B. LOAD DB 024           20545  140002 .. BR   P+ 002           20635  000034 .. PCAL GET'MESSAGE
20456  002400 .. NEG ,NOP              20546  040100 @@ LOAD P+ 100           20636  002400 .. NEG ,NOP
20457  021001 ". LDI  1                20547  020104  D IOOP 32 BIT OP       20637  021001 ". LDI  1
20460  000110 .H PCAL ERROROUT         20550  000000 .. NOP ,NOP              20640  000017 .. PCAL ERROROUT
20461  140025 .. BR   P+ 025           20551  021005 ". LDI  5                20641  025001 *. LDNI 1
20462  041070 B8 LOAD DB 070           20552  000152 .j PCAL DODELAY          20642  051005 R. STOR DB 005
20463  037777 ?. ANDI 255              20553  021000 ". LDI  0                20643  140007 .. BR   P+ 007
20464  021002 ". LDI  2                20554  004500 .@ DUP ,NOP              20644  000600 .. ZERO,NOP
20465  001700 .. CMP ,NOP              20555  051005 R. STOR DB 005           20645  021047 "' LDI  39
20466  141212 .. BE   P+ 012           20556  051002 R. STOR DB 002           20646  000011 .. PCAL GET'MESSAGE
20467  000600 .. ZERO,NOP              20557  000145 .e PCAL DO'RIOC0         20647  002400 .. NEG ,NOP
20470  021045 "% LDI  37               20560  041070 B8 LOAD DB 070           20650  021001 ". LDI  1
20471  000034 .. PCAL GET'MESSAGE      20561  051002 R. STOR DB 002           20651  000011 .. PCAL ERROROUT
20472  002400 .. NEG ,NOP              20562  040660 A. LOAD P- 260           20652  041005 B. LOAD DB 005
20473  021001 ". LDI  1                20563  000017 .. PCAL DO'WIOC0         20653  013617 .. BRO  P+17
20474  000014 .. PCAL ERROROUT         20564  000005 .. PCAL DO'RIOC0         20654  041070 B8 LOAD DB 070
20475  025001 *. LDNI 1                20565  041002 B. LOAD DB 002           20655  037777 ?. ANDI 255
20476  051005 R. STOR DB 005           20566  037437 ?. ANDI 31               20656  021002 ". LDI  2
20477  140007 .. BR   P+ 007           20567  021001 ". LDI  1                20657  001700 .. CMP ,NOP
20500  000600 .. ZERO,NOP              20570  001700 .. CMP ,NOP              20660  141212 .. BE   P+ 012
20501  021047 "' LDI  39               20571  145234 .. BE   P+ 034,I         20661  000600 .. ZERO,NOP
20502  000011 .. PCAL GET'MESSAGE      20572  041002 B. LOAD DB 002           20662  021046 "& LDI  38
20503  002400 .. NEG ,NOP              20573  037437 ?. ANDI 31               20663  000015 .. PCAL GET'MESSAGE
20504  021001 ". LDI  1                20574  021036 ". LDI  30               20664  002400 .. NEG ,NOP
20505  000011 .. PCAL ERROROUT         20575  005700 .. LCMP,NOP              20665  140003 .. BR   P+ 003
20506  041005 B. LOAD DB 005           20576  141225 .. BE   P+ 025           20666  000004 .. NOP ,INCX
20507  013617 .. BRO  P+17             20577  000600 .. ZERO,NOP              20667  000003 .. NOP ,ZROX
20510  041070 B8 LOAD DB 070           20600  021050 "( LDI  40               20670  021001 ". LDI  1
20511  037777 ?. ANDI 255              20601  000062 .2 PCAL GET'MESSAGE      20671  000020 .. PCAL ERROROUT
20512  021002 ". LDI  2                20602  051024 R. STOR DB 024           20672  000144 .d PCAL CHECKYTRAP
20513  001700 .. CMP ,NOP              20603  021024 ". LDI  20               20673  041023 B. LOAD DB 023
20514  141212 .. BE   P+ 012           20604  021002 ". LDI  2                20674  022010 $. CMPI 8
20515  000600 .. ZERO,NOP              20605  021020 ". LDI  16               20675  145502 .B BNE  P+ 002,I
20516  021046 "& LDI  38               20606  041002 B. LOAD DB 002           20676  140002 .. BR   P+ 002
20517  000015 .. PCAL GET'MESSAGE      20607  037437 ?. ANDI 31               20677  000314 .. ZROX,DIVL
20520  140003 .. BR   P+ 003           20610  000134 .\ PCAL NUM2ASC          20700  041010 B. LOAD DB 010
20521  000005 .. NOP ,DECX             20611  021041 "! LDI  33               20701  020302  . IOOP 32 BIT OP
20522  000004 .. NOP ,INCX             20612  021002 ". LDI  2                20702  000006 .. NOP ,ZERO
20523  002400 .. NEG ,NOP              20613  021020 ". LDI  16               20703  141402 .. BG   P+ 002
20524  021001 ". LDI  1                20614  021001 ". LDI  1                20704  000326 .. PCAL WRITEFAIL
20525  000020 .. PCAL ERROROUT         20615  000005 .. PCAL NUM2ASC          20705  040537 A_ LOAD P- 137
20526  000155 .m PCAL CHECKYTRAP       20616  041024 B. LOAD DB 024           20706  041013 B. LOAD DB 013
20527  040017 @. LOAD P+ 017           20617  002400 .. NEG ,NOP              20707  006000 .. LADD,NOP
20530  041013 B. LOAD DB 013           20620  021001 ". LDI  1                20710  000125 .U PCAL DO'WIOC0
20531  006000 .. LADD,NOP              20621  000074 .< PCAL ERROROUT         20711  040013 @. LOAD P+ 013
20532  000121 .Q PCAL DO'WIOC0         20622  140030 .. BR   P+ 030           20712  000002 .. PCAL DO'WIOC0
20533  040710 A. LOAD P- 310           20623  041070 B8 LOAD DB 070           20713  021004 ". LDI  4
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20714  000002 .. PCAL DO'WIOC0          21004  000026 .. NOP ,STBX          21074  021000 ". LDI  0
20715  021044 "$ LDI  36                21005  000025 .. NOP ,TEST          21075  004500 .@ DUP ,NOP
20716  000002 .. PCAL DO'WIOC0          21006  041070 B8 LOAD DB 070        21076  051005 R. STOR DB 005
20717  040006 @. LOAD P+ 006            21007  037777 ?. ANDI 255           21077  051002 R. STOR DB 002
20720  000002 .. PCAL DO'WIOC0          21010  021002 ". LDI  2             21100  000135 .] PCAL DO'RIOC0
20721  021035 ". LDI  29                21011  001700 .. CMP ,NOP           21101  041070 B8 LOAD DB 070
20722  000002 .. PCAL DO'WIOC0          21012  141212 .. BE   P+ 012        21102  051002 R. STOR DB 002
20723  140003 .. BR   P+ 003            21013  000600 .. ZERO,NOP           21103  040500 A@ LOAD P- 100
20724  040147 @g LOAD P+ 147            21014  021045 "% LDI  37            21104  000015 .. PCAL DO'WIOC0
20725  040142 @b LOAD P+ 142            21015  000035 .. PCAL GET'MESSAGE   21105  000005 .. PCAL DO'RIOC0
20726  020104  D IOOP 32 BIT OP        21016  002400 .. NEG ,NOP           21106  041002 B. LOAD DB 002
20727  000000 .. NOP ,NOP               21017  021001 ". LDI  1             21107  037437 ?. ANDI 31
20730  021005 ". LDI  5                 21020  000020 .. PCAL ERROROUT      21110  021004 ". LDI  4
20731  000157 .o PCAL DODELAY           21021  025001 *. LDNI 1             21111  001700 .. CMP ,NOP
20732  021000 ". LDI  0                 21022  051005 R. STOR DB 005        21112  145234 .. BE   P+ 034,I
20733  004500 .@ DUP ,NOP               21023  140007 .. BR   P+ 007        21113  041002 B. LOAD DB 002
20734  051005 R. STOR DB 005            21024  000600 .. ZERO,NOP           21114  037437 ?. ANDI 31
20735  051002 R. STOR DB 002            21025  021047 "' LDI  39            21115  021002 ". LDI  2
20736  000152 .j PCAL DO'RIOC0          21026  000011 .. PCAL GET'MESSAGE   21116  001700 .. CMP ,NOP
20737  041070 B8 LOAD DB 070            21027  002400 .. NEG ,NOP           21117  141225 .. BE   P+ 025
20740  051002 R. STOR DB 002            21030  021001 ". LDI  1             21120  000600 .. ZERO,NOP
20741  040042 @" LOAD P+ 042            21031  000011 .. PCAL ERROROUT      21121  021050 "( LDI  40
20742  000020 .. PCAL DO'WIOC0          21032  041005 B. LOAD DB 005        21122  000057 ./ PCAL GET'MESSAGE
20743  000005 .. PCAL DO'RIOC0          21033  013617 .. BRO  P+17          21123  051024 R. STOR DB 024
20744  041002 B. LOAD DB 002            21034  041070 B8 LOAD DB 070        21124  021024 ". LDI  20
20745  037437 ?. ANDI 31                21035  037777 ?. ANDI 255           21125  021002 ". LDI  2
20746  021033 ". LDI  27                21036  021002 ". LDI  2             21126  021020 ". LDI  16
20747  005700 .. LCMP,NOP               21037  001700 .. CMP ,NOP           21127  041002 B. LOAD DB 002
20750  145234 .. BE   P+ 034,I          21040  141212 .. BE   P+ 012        21130  037437 ?. ANDI 31
20751  041002 B. LOAD DB 002            21041  000600 .. ZERO,NOP           21131  000135 .] PCAL NUM2ASC
20752  037437 ?. ANDI 31                21042  021046 "& LDI  38            21132  021041 "! LDI  33
20753  021035 ". LDI  29                21043  000015 .. PCAL GET'MESSAGE   21133  021002 ". LDI  2
20754  005700 .. LCMP,NOP               21044  002400 .. NEG ,NOP           21134  021020 ". LDI  16
20755  141225 .. BE   P+ 025            21045  140003 .. BR   P+ 003        21135  021004 ". LDI  4
20756  000600 .. ZERO,NOP               21046  000004 .. NOP ,INCX          21136  000005 .. PCAL NUM2ASC
20757  021050 "( LDI  40                21047  000003 .. NOP ,ZROX          21137  041024 B. LOAD DB 024
20760  000075 .= PCAL GET'MESSAGE       21050  021001 ". LDI  1             21140  002400 .. NEG ,NOP
20761  051024 R. STOR DB 024            21051  000020 .. PCAL ERROROUT      21141  021001 ". LDI  1
20762  021024 ". LDI  20                21052  040704 A. LOAD P- 304        21142  000071 .9 PCAL ERROROUT
20763  021002 ". LDI  2                 21053  041013 B. LOAD DB 013        21143  140030 .. BR   P+ 030
20764  021020 ". LDI  16                21054  006000 .. LADD,NOP           21144  041070 B8 LOAD DB 070
20765  041002 B. LOAD DB 002            21055  000113 .K PCAL DO'WIOC0      21145  140003 .. BR   P+ 003
20766  037437 ?. ANDI 31                21056  040532 AZ LOAD P- 132        21146  000025 .. NOP ,TEST
20767  000152 .j PCAL NUM2ASC           21057  000002 .. PCAL DO'WIOC0      21147  000024 .. NOP ,NEG
20770  021041 "! LDI  33                21060  021013 ". LDI  11            21150  037777 ?. ANDI 255
20771  021002 ". LDI  2                 21061  000002 .. PCAL DO'WIOC0      21151  021002 ". LDI  2
20772  021020 ". LDI  16                21062  021044 "$ LDI  36            21152  001700 .. CMP ,NOP
20773  021033 ". LDI  27                21063  000002 .. PCAL DO'WIOC0      21153  141212 .. BE   P+ 012
20774  000005 .. PCAL NUM2ASC           21064  040537 A_ LOAD P- 137        21154  000600 .. ZERO,NOP
20775  041024 B. LOAD DB 024            21065  000002 .. PCAL DO'WIOC0      21155  021045 "% LDI  37
20776  002400 .. NEG ,NOP               21066  021002 ". LDI  2             21156  000034 .. PCAL GET'MESSAGE
20777  021001 ". LDI  1                 21067  000002 .. PCAL DO'WIOC0      21157  002400 .. NEG ,NOP
21000  000107 .G PCAL ERROROUT          21070  020104  D IOOP 32 BIT OP      21160  021001 ". LDI  1
21001  140031 .. BR   P+ 031            21071  000000 .. NOP ,NOP           21161  000017 .. PCAL ERROROUT
21002  140004 .. BR   P+ 004            21072  021005 ". LDI  5             21162  025001 *. LDNI 1
21003  040160 @p LOAD P+ 160            21073  000142 .b PCAL DODELAY       21163  051005 R. STOR DB 005
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21164  140007 .. BR   P+ 007          21214  000322 .. PCAL CHECKYTRAP       21244  140004 .. BR   P+ 004
21165  000600 .. ZERO,NOP            21215  041063 B3 LOAD DB 063           21245  041041 B! LOAD DB 041
21166  021047 "’ LDI  39             21216  013717 .. BRE  P+17              21246  021001 ". LDI  1
21167  000011 .. PCAL GET’MESSAGE    21217  001743 .. PCAL CRLF             21247  006000 .. LADD,NOP
21170  002400 .. NEG ,NOP            21220  000600 .. ZERO,NOP              21250  051041 R! STOR DB 041
21171  021001 ". LDI  1              21221  021011 ". LDI  9                21251  140002 .. BR   P+ 002
21172  000011 .. PCAL ERROROUT       21222  000016 .. PCAL GET’MESSAGE      21252  023417 ’. MPYI 15
21173  041005 B. LOAD DB 005         21223  051024 R. STOR DB 024           21253  041053 B+ LOAD DB 053
21174  013617 .. BRO  P+17           21224  021025 ". LDI  21               21254  013704 .. BRE  P+4
21175  041070 B8 LOAD DB 070         21225  021004 ". LDI  4                21255  142002 .. BR   P+ 002,I
21176  037777 ?. ANDI 255            21226  021012 ". LDI  10               21256  000002 .. NOP ,DDEL
21177  021002 ". LDI  2              21227  041041 B! LOAD DB 041           21257  157427 .. LDD  Q+ 027,I,X
21200  001700 .. CMP ,NOP            21230  000072 .: PCAL NUM2ASC          21260  000000 .. PCAL EXIT’TO’DUS
21201  141212 .. BE   P+ 012         21231  173104 .D LRA  DB 104,I         21261  000000 .. PCAL TERMINATE’
21202  000600 .. ZERO,NOP            21232  041024 B. LOAD DB 024           21262  050162 Pr TBA  P+ 162
21203  021046 "& LDI  38             21233  002400 .. NEG ,NOP              21263  064556 in CMPM P- 156,X
21204  000015 .. PCAL GET’MESSAGE    21234  001752 .. PCAL CRTOUT           21264  072145 te ADDM P+ 145,I
21205  002400 .. NEG ,NOP            21235  021000 ". LDI  0                21265  071056 r. ADDM DB 056
21206  140003 .. BR   P+ 003         21236  051014 R. STOR DB 014           21266  020040    MVB  PB-DB,0
21207  000004 .. NOP ,INCX           21237  041041 B! LOAD DB 041           21267  020040    MVB  PB-DB,0
21210  000003 .. NOP ,ZROX           21240  040012 @. LOAD P+ 012           21270  020000  . MOVE PB-DB,0
21211  021001 ". LDI  1              21241  005700 .. LCMP,NOP              21271  020040    MVB  PB-DB,0
21212  000020 .. PCAL ERROROUT       21242  141103 .C BL   P+ 003           21272  020040    MVB  PB-DB,0
21213  001764 .. PCAL REP’ILL’INT    21243  021001 ". LDI  1                21273  020040    MVB  PB-DB,0


28850.000 000000  0 $CONTROL NOLIST
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IDENTIFIER	TYPE	CLASS	ADDRESS
A	INTEGER	SIMPLE	DB 2
ABS'ADDR	DEFINE		
ADCC	BYTE	ARRAY	DB 1,I,X
ADCC'CHNL'PGM	LOGICAL	ARRAY	DB 136,I,X
ADCCDIAG		PROCEDURE	
ADD'SUB*	LOGICAL	SIMPLE	DB 31
ADDARRAY	LOGICAL	ARRAY	DB 131,I,X
ADDR	LOGICAL	SIMPLE	DB 32
ADR'B	INTEGER	SIMPLE	DB 3
ADR'LIM	INTEGER	SIMPLE	DB 4
ASMB	DEFINE		
B	INTEGER	SIMPLE	DB 5
BAUD	INTEGER	SIMPLE	DB 6
BAUDARRAY	LOGICAL	ARRAY	DB 111,I,X
BAUDS	LOGICAL	ARRAY	DB 112,I,X
C	INTEGER	SIMPLE	DB 7
CF'DONE	LOGICAL	SIMPLE	DB 33
CHECK'DNV	DEFINE		
CHECKYTRAP		PROCEDURE	
CHG'ADDR'ARRAY	LOGICAL	ARRAY	DB 134,I,X
CHK'UNEXP'I		PROCEDURE	
CHNL	INTEGER	SIMPLE	DB 10
CHNL'INIT	DEFINE		
CHNLBIT	LOGICAL	SIMPLE	DB 34
CLEAR'UNX'DEV	DEFINE		
CLEAR'UNX'IRQ	DEFINE		
CLEARBUF	BYTE	ARRAY	DB 103,I,X
CLEARIRQ	DEFINE		
CLEARMASK	DEFINE		
CLEAROFFLINE		PROCEDURE	EXTERNAL
CONCHNLBIT	LOGICAL	SIMPLE	DB 35
CONSOLE	INTEGER	SIMPLE	DB 11
COPYRIGHT*	BYTE	ARRAY	DB 0,I,X
CPVA	LOGICAL	ARRAY	DB 140,I,X
CPVAARRAY	LOGICAL	ARRAY	DB 132,I,X
CRLF		PROCEDURE	EXTERNAL
CRTOUT		PROCEDURE	
CTCBP	LOGICAL	EQUATE	4
D	INTEGER	SIMPLE	DB 12
DCSRQBUF1	LOGICAL	ARRAY	DB 113,I,X
DCSRQBUF2	LOGICAL	ARRAY	DB 114,I,X
DEFAULT'SECTS	DOUBLE	SIMPLE	DB 77
DELAY1SECOND	DEFINE		
DELAYBUF	LOGICAL	ARRAY	DB 110,I,X
DELTA'P	DEFINE		
DESIRED'DEV	LOGICAL	SIMPLE	DB 36
DEV	INTEGER	SIMPLE	DB 13
DISABLE'RTN'INT	DEFINE		
DISC	LOGICAL	SIMPLE	DB 37
DNV	LOGICAL	SIMPLE	DB 40
DO'PSIOP	DEFINE		
DO'RIOC0		PROCEDURE	
DO'SIOP	DEFINE		

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DO'WIOC0                        PROCEDURE
DODELAY                         PROCEDURE
DOPAUSE                         PROCEDURE
DOT                             PROCEDURE
DOT'CNT             INTEGER     SIMPLE          DB 14
DRT'INIT                        PROCEDURE
DRT'PLABEL'OF       DEFINE
DSJ'CH'PROG         LOGICAL     ARRAY           DB 137,I,X
DVN                 INTEGER     SIMPLE          DB 15
E                   INTEGER     SIMPLE          DB 16
ENCSRQBUF1          LOGICAL     ARRAY           DB 115,I,X
ENCSRQBUF2          LOGICAL     ARRAY           DB 116,I,X
ENDPASSCOUNTER      LOGICAL     SIMPLE          DB 41
EPAUSEOK            LOGICAL     SIMPLE          DB 42
EPRINTOK            LOGICAL     SIMPLE          DB 43
ERR                 LOGICAL     SIMPLE          DB 44
ERROROUT                        PROCEDURE
EXIT'TO'DUS                     PROCEDURE
EXTND               LOGICAL     SIMPLE          DB 45
EXTND15             LOGICAL     SIMPLE          DB 46
F                   INTEGER     SIMPLE          DB 17
FLY'CATCHER                     PROCEDURE
FMGR                LOGICAL     PROCEDURE       EXTERNAL
G                   INTEGER     SIMPLE          DB 20
GET'INPUT                       PROCEDURE
GET'MESSAGE         INTEGER     PROCEDURE
GET'UNX'IRQ         DEFINE
GETIO               LOGICAL     PROCEDURE       EXTERNAL
GETIRQ              DEFINE
ID'CHNL'PGM         LOGICAL     ARRAY           DB 130,I,X
IIX'TIMER                       PROCEDURE       EXTERNAL
INT'EXIT            DEFINE
INT'RECV                        PROCEDURE
INTHNDLR0                       PROCEDURE
INTHNDLR1                       PROCEDURE
INTHNDLR2                       PROCEDURE
INTHNDLR3                       PROCEDURE
INTHNDLR4                       PROCEDURE
INTHNDLR5                       PROCEDURE
INTHNDLR6                       PROCEDURE
INTHNDLR7                       PROCEDURE
INTPSYS'OFF         DEFINE
INTPSYS'ON          DEFINE
INTTRAP0                        PROCEDURE
INTTRAP1                        PROCEDURE
INTTRAP2                        PROCEDURE
INTTRAP3                        PROCEDURE
INTTRAP4                        PROCEDURE
INTTRAP5                        PROCEDURE
INTTRAP6                        PROCEDURE
INTTRAP7                        PROCEDURE
IPOLL               DEFINE
IRQ'                LOGICAL     SIMPLE          DB 47
K                   INTEGER     SIMPLE          DB 21
LA                  LOGICAL     SIMPLE          DB 50
LAST'SECT           INTEGER     EQUATE          17
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LB                LOGICAL     SIMPLE          DB 51
LC*               LOGICAL     SIMPLE          DB 52
LIST'COM          BYTE        ARRAY           DB 107,I,X
LIST'PROG'STAT                PROCEDURE
LOAD'INTHNDLRS                PROCEDURE
LOAD'TRAPS                    PROCEDURE
LOOP              LOGICAL     SIMPLE          DB 53
LOOP'BACK                     PROCEDURE
M                 INTEGER     SIMPLE          DB 22
MAIN'BOARD        LOGICAL     SIMPLE          DB 54
MAS               LOGICAL     SIMPLE          DB 55
MASK*             LOGICAL     EQUATE          7
MAX'DEV           INTEGER     SIMPLE          DB 23
MDCSRQBUF1        LOGICAL     ARRAY           DB 120,I,X
MDCSRQBUF2        LOGICAL     ARRAY           DB 121,I,X
MEM'GETS'V        DEFINE
MEMAP             LOGICAL     ARRAY           DB 135,I,X
MENCSRQBUF1       LOGICAL     ARRAY           DB 122,I,X
MENCSRQBUF2       LOGICAL     ARRAY           DB 123,I,X
MOVE'CHNL'PGM                 PROCEDURE
MSG'OUT           BYTE        ARRAY           DB 104,I,X
NMBROFCHNLS       LOGICAL     SIMPLE          DB 56
NO'ERROR          LOGICAL     SIMPLE          DB 57
NUM'CHARS         INTEGER     SIMPLE          DB 24
NUM2ASC                       PROCEDURE
OBII              DEFINE
OBSI              DEFINE
PAUSEOK           LOGICAL     SIMPLE          DB 60
PERIOD            BYTE        ARRAY           DB 105,I,X
PNTR*             INTEGER     SIMPLE          DB 25
PRINT                         PROCEDURE       EXTERNAL
PRINT'ERRORS      LOGICAL     SIMPLE          DB 61
PRINTER           LOGICAL     SIMPLE          DB 62
PRINTOK           LOGICAL     SIMPLE          DB 63
QI                LOGICAL     EQUATE          5
RAW'CLOCK         DEFINE
READ              INTEGER     PROCEDURE       EXTERNAL
READFAIL                      PROCEDURE
READKBD           DEFINE
READREG           DEFINE
REF               LOGICAL     SIMPLE          DB 64
REP'ILL'INT                   PROCEDURE
RESTART           DEFINE
RG2'CHNL'PGM      LOGICAL     ARRAY           DB 127,I,X
ROLLCALL          DEFINE
SAVE'MARK         LOGICAL     ARRAY           DB 124,I,X
SAVESTART         DEFINE
SCST'BANK*        LOGICAL     EQUATE          0
SCSTP*            LOGICAL     EQUATE          1
SECTION           DEFINE
SECTIONS'TO'RUN   DOUBLE      SIMPLE          DB 75
SET'CPVA                      PROCEDURE
SETMASK           DEFINE
SETOFFLINE                    PROCEDURE       EXTERNAL
SETUP'DRT                     PROCEDURE
SPOLL1            DEFINE
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ST'DSJ'CH'PROGS                 PROCEDURE
STARTIDLE                       PROCEDURE     EXTERNAL
STARTIME          DEFINE
STORE'MARK                      PROCEDURE
STP               LOGICAL       SIMPLE        DB 65
STUFF             DEFINE
T'CHNL            INTEGER       SIMPLE        DB 26
T'CHNLBIT         LOGICAL       SIMPLE        DB 66
TEM'DEV           INTEGER       SIMPLE        DB 27
TEMPARRAY         LOGICAL       ARRAY         DB 133,I,X
TEMPBUF           BYTE          ARRAY         DB 106,I,X
TEST'COMMAND'OK   LOGICAL       PROCEDURE
TESTNR*           LOGICAL       SIMPLE        DB 67
TOS'              LOGICAL       SIMPLE        DB 70
TOS'1             LOGICAL       SIMPLE        DB 71
TRAP              DEFINE
TROF'             DEFINE
TSTBUF            LOGICAL       ARRAY         DB 125,I,X
TSTBUF'           LOGICAL       ARRAY         DB 126,I,X
UARTCNTRL         LOGICAL       ARRAY         DB 117,I,X
UCST'BANK*        LOGICAL       EQUATE        2
UCSTP*            LOGICAL       EQUATE        3
V'GETS'MEM        DEFINE
WRITEFAIL                       PROCEDURE
WRITEREG          DEFINE
XX*               LOGICAL       SIMPLE        DB 72
XY*               LOGICAL       SIMPLE        DB 73
ZENDEF*           DEFINE
ZENDINT*          INTEGER       SIMPLE        DB 30
ZENDLOG           LOGICAL       SIMPLE        DB 74
ZENDOUBLE*        DOUBLE        SIMPLE        DB 101
ZERO'CPVA                       PROCEDURE
ZI*               LOGICAL       EQUATE        6
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*** SPL/II CROSS-REFERENCE TABLE ***

A OF ADCC.OPERATOR.SYS

0002/00260000	0031/06040000	0071/09735000	0071/09740000
0071/09740000	0071/09745000	0072/09930000	0072/09935000
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ACTION OF ADCC.OPERATOR.SYS
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ADCC'CHNL'PGM OF ADCC.OPERATOR.SYS
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  0132/24030000  0134/24610000

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ADD'SUB OF ADCC.OPERATOR.SYS
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  0135/24810000  0135/24810000

ADR'LIM OF ADCC.OPERATOR.SYS
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ARAY OF ADCC.OPERATOR.SYS
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  0101/16610000  0101/16615000  0101/16715000  0102/17025000
  0102/17045000  0103/17140000  0103/17145000  0103/17245000
  0104/17565000  0104/17585000  0105/17640000  0105/17645000
  0105/17745000  0106/18055000  0106/18075000  0107/18130000
  0107/18135000  0107/18235000  0108/18555000  0108/18575000
  0109/18635000  0109/18640000  0109/18740000  0110/19025000
  0110/19045000  0111/19095000  0111/19100000  0111/19200000
  0112/19510000  0112/19530000  0113/19585000  0113/19590000
  0113/19690000  0114/20000000  0114/20020000  0115/20055000
  0116/20365000  0117/20665000  0118/20950000  0120/21270000
  0121/21385000  0121/21445000  0121/21490000  0122/21620000
  0123/21780000  0123/21910000  0123/21920000  0123/21945000
  0124/22165000  0124/22200000  0125/22245000  0125/22270000
  0125/22280000  0125/22325000  0125/22335000  0125/22345000
  0125/22355000  0126/22520000  0126/22590000  0127/22760000
  0127/22815000  0127/22865000  0127/22905000  0128/22980000
  0128/23035000  0128/23070000  0128/23150000  0128/23200000
  0129/23240000  0129/23320000  0129/23375000  0129/23410000
  0130/23520000  0130/23610000  0130/23625000  0131/23870000
  0132/24100000  0132/24105000  0132/24110000  0132/24165000
  0135/24845000  0144/26905000  0144/27010000  0147/27445000
  0148/27785000  0149/28115000  0150/28450000

ASSEMBLE OF ADCC.OPERATOR.SYS
  0004/00580000  0004/00615000  0004/00710000  0004/00725000
  0004/00835000  0005/00960000  0005/01040000  0005/01065000
  0006/01135000  0006/01180000  0006/01215000  0006/01250000
  0006/01310000  0006/01350000  0006/01390000  0007/01410000
  0020/04375000  0023/04680000  0024/04780000  0048/07040000
  0058/07990000  0064/08685000  0065/08900000

B OF ADCC.OPERATOR.SYS
  0002/00275000  0031/06045000  0072/09930000  0072/10010000
  0072/10055000  0072/10060000  0072/10090000  0072/10125000
  0072/10125000  0072/10130000  0072/10130000  0072/10145000
  0072/10145000  0072/10165000  0072/10165000  0072/10170000
  0079/11775000  0079/11790000  0079/11860000  0082/12450000
  0082/12450000  0083/12610000  0085/13060000  0085/13065000
  0085/13065000  0085/13080000  0085/13095000  0085/13180000
  0092/14600000  0092/14630000  0092/14670000  0093/14865000
  0093/14895000  0093/14930000  0094/15180000  0094/15210000
  0094/15250000  0099/16235000  0100/16400000  0100/16420000
  0101/16805000  0102/16960000  0102/16980000  0103/17335000
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  0104/17500000  0104/17520000  0105/17835000  0106/17990000
  0106/18010000  0107/18325000  0108/18490000  0108/18510000
  0109/18830000  0110/18960000  0110/18980000  0111/19290000
  0112/19445000  0112/19465000  0113/19780000  0114/19935000
  0114/19955000  0115/20185000  0115/20190000  0115/20190000
  0115/20205000  0116/20495000  0116/20500000  0116/20500000
  0116/20515000  0122/21650000  0122/21660000  0122/21660000
  0122/21665000  0122/21680000  0123/21915000  0123/21925000
  0123/21925000  0123/21930000  0124/22230000  0124/22235000
  0124/22235000  0125/22255000  0125/22305000  0125/22380000
  0126/22550000  0126/22555000  0126/22555000  0126/22585000
  0126/22620000  0134/24640000  0134/24670000  0134/24670000
  0135/24815000  0135/24815000  0136/25095000  0136/25100000
  0136/25120000  0137/25195000  0137/25235000  0137/25310000
  0137/25345000  0137/25345000  0137/25345000  0137/25345000
  0138/25525000  0138/25530000  0138/25550000  0138/25625000
  0138/25665000  0139/25740000  0139/25775000  0139/25775000
  0139/25775000  0139/25775000  0140/25985000  0140/25990000
  0140/25990000  0140/25995000  0140/26020000  0140/26025000
  0140/26030000  0140/26035000  0142/26455000  0142/26460000
  0143/26500000  0143/26535000  0143/26535000  0143/26540000
  0143/26540000  0143/26555000  0143/26555000  0143/26575000
  0143/26575000  0143/26580000  0143/26710000  0143/26730000
  0143/26730000  0143/26730000  0143/26750000  0143/26750000
  0143/26755000  0144/26785000  0144/26785000  0144/26810000
  0147/27495000  0147/27565000  0147/27590000  0148/27660000
  0148/27725000  0148/27750000  0148/27825000  0148/27895000
  0148/27920000  0149/27990000  0149/28055000  0149/28080000
  0149/28155000  0150/28225000  0150/28250000  0150/28320000
  0150/28385000  0150/28410000  0150/28490000  0151/28555000
  0151/28580000  0151/28640000  0151/28705000  0151/28730000

B1 OF ADCC.OPERATOR.SYS
  0018/04015000  0018/04020000

B2 OF ADCC.OPERATOR.SYS
  0018/04015000  0018/04020000

B3 OF ADCC.OPERATOR.SYS
  0018/04015000  0018/04020000

B4 OF ADCC.OPERATOR.SYS
  0018/04015000  0018/04020000

BASE OF ADCC.OPERATOR.SYS
  0018/04165000  0018/04170000  0060/08160000  0060/08165000
  0060/08200000  0060/08205000  0060/08230000  0060/08300000
  0060/08305000  0060/08310000

BAUD OF ADCC.OPERATOR.SYS
  0002/00280000  0084/12895000  0084/12900000  0084/12900000
  0084/12920000  0084/12925000  0084/12970000  0084/12975000
  0085/12985000  0085/13000000  0085/13015000  0085/13035000
  0085/13040000  0085/13085000  0085/13115000  0085/13120000
  0085/13130000  0085/13145000  0085/13160000  0085/13190000
  0085/13195000  0140/25955000  0140/25960000  0140/25960000
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  0140/25970000  0140/25975000  0140/26000000  0140/26060000
  0140/26065000  0140/26075000  0141/26090000  0141/26105000
  0141/26135000  0141/26140000

BAUDARRAY OF ADCC.OPERATOR.SYS
  0010/01735000  0085/13080000  0085/13095000  0085/13180000
  0140/25995000  0140/26020000  0140/26025000  0140/26030000
  0140/26035000

BAUDS OF ADCC.OPERATOR.SYS
  0010/01750000  0085/13035000  0085/13190000  0141/26135000

BE OF ADCC.OPERATOR.SYS
  0007/01450000  0078/11490000  0078/11545000  0079/11625000
  0079/11765000  0080/11910000  0080/11990000  0080/12060000
  0081/12205000  0083/12570000

BG OF ADCC.OPERATOR.SYS
  0004/00645000  0078/11375000  0079/11630000  0082/12360000
  0083/12675000  0084/12855000  0090/14015000  0095/15495000
  0097/15655000  0098/16045000  0100/16485000  0101/16615000
  0102/17045000  0103/17145000  0104/17585000  0105/17645000
  0106/18075000  0107/18135000  0108/18575000  0109/18640000
  0110/19045000  0111/19100000  0112/19530000  0113/19590000
  0114/20020000  0115/20055000  0116/20365000  0118/20950000
  0121/21385000  0122/21620000  0124/22165000  0124/22200000
  0125/22325000  0126/22520000  0127/22760000  0127/22905000
  0128/23070000  0129/23240000  0129/23410000  0130/23610000
  0131/23870000  0147/27445000  0148/27785000  0149/28115000
  0150/28450000

BGE OF ADCC.OPERATOR.SYS
  0004/00625000  0123/21910000  0123/21920000

BNE OF ADCC.OPERATOR.SYS
  0005/00935000  0005/01000000  0005/01025000  0005/01095000
  0006/01270000  0023/04695000  0023/04715000  0024/04800000
  0024/04815000  0075/10855000  0075/10945000  0076/11005000
  0077/11180000  0077/11280000  0078/11380000  0078/11495000
  0079/11635000  0080/12015000  0081/12215000  0082/12395000
  0083/12600000  0127/22865000  0128/23035000  0128/23200000
  0129/23375000  0130/23570000  0144/26905000  0144/27010000

BR OF ADCC.OPERATOR.SYS
  0005/00940000  0005/01000000  0005/01025000  0005/01105000
  0006/01280000  0075/10855000  0075/10945000  0076/11005000
  0077/11180000  0077/11280000  0078/11380000  0078/11495000
  0079/11635000  0080/12015000  0081/12215000  0082/12395000
  0083/12600000  0127/22865000  0128/23035000  0128/23200000
  0129/23375000  0130/23570000  0144/26905000  0144/27010000

BUF OF ADCC.OPERATOR.SYS
  0018/04015000  0018/04025000

BUFFR OF ADCC.OPERATOR.SYS
  0018/03950000  0018/03955000  0022/04600000  0022/04605000
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  0022/04620000

C OF ADCC.OPERATOR.SYS
  0002/00285000  0072/10075000  0072/10130000  0072/10160000
  0072/10160000  0072/10165000  0082/12455000  0082/12455000
  0083/12615000  0084/12965000  0084/12970000  0084/12970000
  0084/12975000  0084/12975000  0085/13035000  0085/13110000
  0085/13115000  0085/13115000  0085/13120000  0085/13120000
  0085/13190000  0099/16255000  0099/16260000  0099/16260000
  0099/16265000  0099/16305000  0103/17355000  0103/17360000
  0103/17360000  0103/17365000  0104/17405000  0107/18345000
  0107/18350000  0107/18350000  0107/18355000  0108/18395000
  0115/20240000  0115/20275000  0116/20550000  0116/20590000
  0134/24650000  0134/24655000  0134/24655000  0134/24720000
  0134/24740000  0135/24790000  0135/24790000  0136/25125000
  0137/25320000  0137/25320000  0138/25555000  0139/25750000
  0139/25750000  0140/26055000  0140/26060000  0140/26060000
  0140/26065000  0140/26065000  0141/26135000  0142/26475000
  0143/26540000  0143/26570000  0143/26570000  0143/26575000
  0143/26650000  0143/26730000  0143/26735000  0143/26735000
  0147/27515000  0147/27520000  0147/27540000  0148/27845000
  0148/27850000  0148/27870000  0149/28175000  0149/28180000
  0149/28200000

CA OF ADCC.OPERATOR.SYS
  0020/04335000  0020/04465000  0020/04470000

CARRY OF ADCC.OPERATOR.SYS
  0029/05590000  0037/06925000

CF'DONE OF ADCC.OPERATOR.SYS
  0002/00395000  0098/16020000  0098/16025000  0100/16530000
  0101/16590000  0101/16595000  0102/17090000

CHAR'PNTR OF ADCC.OPERATOR.SYS
  0065/08950000  0065/09000000  0065/09015000  0065/09020000
  0065/09035000  0065/09035000  0066/09150000  0066/09160000
  0066/09160000  0066/09180000  0066/09200000  0066/09200000
  0066/09215000  0066/09235000  0066/09235000  0066/09320000
  0066/09330000  0066/09345000  0066/09345000  0067/09400000
  0067/09415000  0067/09425000  0067/09425000

CHECK'DNV OF ADCC.OPERATOR.SYS
  0004/00625000  0123/21910000  0123/21920000

CHECKYTRAP OF ADCC.OPERATOR.SYS
  0020/04315000  0022/04625000  0022/04645000  0025/04950000
  0025/04975000  0027/05295000  0032/06320000  0072/10095000
  0073/10215000  0073/10380000  0073/10465000  0091/14150000
  0091/14315000  0093/14710000  0094/15035000  0095/15295000
  0095/15405000  0096/15565000  0097/15755000  0100/16490000
  0102/17050000  0104/17590000  0106/18080000  0108/18580000
  0110/19050000  0112/19535000  0114/20025000  0116/20340000
  0117/20655000  0120/21260000  0122/21700000  0128/23075000
  0129/23245000  0129/23415000  0130/23615000  0133/24325000
  0135/24830000  0143/26505000  0145/27065000  0146/27195000
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  0146/27220000  0147/27415000  0147/27605000  0148/27765000
  0148/27935000  0149/28095000  0150/28265000  0150/28425000
  0151/28760000

CHG'ADDR'ARRAY OF ADCC.OPERATOR.SYS
  0011/02155000  0132/23985000  0132/23990000  0132/23995000
  0132/24045000  0133/24400000  0133/24400000  0134/24645000

CHK'DEV OF ADCC.OPERATOR.SYS
  0022/04515000  0022/04520000  0022/04540000  0022/04560000

CHK'UNEXP'I OF ADCC.OPERATOR.SYS
  0022/04515000  0099/16195000  0100/16380000  0100/16480000
  0101/16765000  0102/16940000  0102/17040000  0103/17295000
  0104/17480000  0104/17580000  0105/17795000  0106/17970000
  0106/18070000  0107/18285000  0108/18470000  0108/18570000
  0109/18790000  0110/18940000  0110/19040000  0111/19250000
  0112/19425000  0112/19525000  0113/19740000  0114/19915000
  0114/20015000

CHNL OF ADCC.OPERATOR.SYS
  0002/00290000  0004/00625000  0004/00645000  0005/00995000
  0005/01020000  0005/01070000  0007/01445000  0023/04685000
  0023/04715000  0024/04785000  0024/04815000  0026/05095000
  0026/05095000  0055/07560000  0058/07940000  0058/07940000
  0062/08520000  0062/08520000  0063/08565000  0063/08565000
  0063/08625000  0073/10210000  0073/10235000  0073/10265000
  0073/10265000  0073/10290000  0075/10855000  0075/10945000
  0076/11005000  0077/11180000  0077/11185000  0077/11205000
  0077/11280000  0077/11285000  0077/11305000  0078/11375000
  0078/11380000  0078/11490000  0078/11495000  0078/11545000
  0079/11625000  0079/11630000  0079/11635000  0079/11765000
  0080/11910000  0080/11990000  0080/12015000  0080/12060000
  0081/12205000  0082/12360000  0082/12395000  0083/12570000
  0083/12600000  0083/12675000  0084/12855000  0090/14015000
  0095/15495000  0097/15655000  0098/16045000  0100/16440000
  0100/16485000  0101/16615000  0102/17000000  0102/17045000
  0103/17145000  0104/17540000  0104/17585000  0105/17645000
  0106/18030000  0106/18075000  0107/18135000  0108/18530000
  0108/18575000  0109/18640000  0110/19000000  0110/19045000
  0111/19100000  0112/19485000  0112/19530000  0113/19590000
  0114/19975000  0114/20020000  0115/20055000  0116/20365000
  0118/20950000  0121/21385000  0121/21445000  0122/21620000
  0123/21780000  0123/21910000  0123/21920000  0124/22165000
  0124/22200000  0125/22260000  0125/22325000  0125/22340000
  0126/22520000  0126/22590000  0127/22760000  0127/22800000
  0127/22800000  0127/22805000  0127/22865000  0127/22870000
  0127/22905000  0128/22965000  0128/22965000  0128/22970000
  0128/23030000  0128/23035000  0128/23070000  0128/23135000
  0128/23135000  0128/23140000  0128/23200000  0128/23205000
  0129/23240000  0129/23305000  0129/23305000  0129/23310000
  0129/23370000  0129/23375000  0129/23410000  0130/23510000
  0130/23610000  0131/23870000  0131/23925000  0132/23925000
  0132/24155000  0133/24225000  0133/24225000  0143/26600000
  0143/26615000  0143/26645000  0143/26655000  0143/26670000
  0143/26680000  0143/26750000  0144/26770000  0144/26845000
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  0144/26905000  0144/26910000  0144/26940000  0144/27010000
  0144/27015000  0145/27045000  0147/27445000  0148/27785000
  0149/28115000  0150/28450000

CHNL'INIT OF ADCC.OPERATOR.SYS
  0004/00640000  0078/11375000  0079/11630000  0082/12360000
  0083/12675000  0084/12855000  0090/14015000  0095/15495000
  0097/15655000  0098/16045000  0100/16485000  0101/16615000
  0102/17045000  0103/17145000  0104/17585000  0105/17645000
  0106/18075000  0107/18135000  0108/18575000  0109/18640000
  0110/19045000  0111/19100000  0112/19530000  0113/19590000
  0114/20020000  0115/20055000  0116/20365000  0118/20950000
  0121/21385000  0122/21620000  0124/22165000  0124/22200000
  0125/22325000  0126/22520000  0127/22760000  0127/22905000
  0128/23070000  0129/23240000  0129/23410000  0130/23610000
  0131/23870000  0147/27445000  0148/27785000  0149/28115000
  0150/28450000

CHNL'PGM OF ADCC.OPERATOR.SYS
  0059/08105000  0059/08110000  0059/08135000  0059/08135000

CHNLBIT OF ADCC.OPERATOR.SYS
  0002/00400000  0006/01220000  0073/10205000  0075/10770000
  0075/10770000  0078/11455000  0079/11795000  0081/12195000
  0081/12220000  0081/12235000  0099/16070000  0101/16640000
  0103/17170000  0105/17670000  0107/18160000  0109/18665000
  0111/19125000  0113/19615000  0130/23575000  0130/23590000
  0132/24115000  0143/26605000  0143/26655000  0143/26655000

CLEAR'UNX'DEV OF ADCC.OPERATOR.SYS
  0004/00660000  0081/12255000  0083/12680000  0086/13280000
  0089/13840000  0117/20665000  0120/21270000  0121/21490000
  0123/21945000  0130/23625000

CLEAR'UNX'IRQ OF ADCC.OPERATOR.SYS
  0004/00670000  0062/08455000  0071/09870000  0077/11120000
  0078/11475000  0079/11750000  0132/24105000

CLEARBUF OF ADCC.OPERATOR.SYS
  0009/01555000  0029/05490000  0055/07725000  0072/10085000
  0143/26495000  0146/27190000

CLEARIRQ OF ADCC.OPERATOR.SYS
  0004/00680000  0079/11745000  0132/24100000

CLEARMASK OF ADCC.OPERATOR.SYS
  0004/00690000  0078/11555000  0079/11810000  0082/12365000
  0084/12850000

CLEAROFFLINE OF ADCC.OPERATOR.SYS
  0018/03920000  0020/04435000  0027/05275000

CNTL OF ADCC.OPERATOR.SYS
  0018/04185000  0018/04190000

CONCHNLBIT OF ADCC.OPERATOR.SYS
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  0002/00405000  0004/00690000  0006/01225000  0020/04380000
  0020/04405000  0071/09780000  0078/11455000  0078/11555000
  0079/11795000  0079/11810000  0081/12195000  0082/12365000
  0084/12850000  0099/16070000  0101/16640000  0103/17170000
  0105/17670000  0107/18160000  0109/18665000  0111/19125000
  0113/19615000  0132/24115000

CONSOLE OF ADCC.OPERATOR.SYS
  0002/00295000  0071/09775000  0071/09780000  0071/09845000
  0073/10235000

COPYRIGHT OF ADCC.OPERATOR.SYS
  0002/00240000

COUNT OF ADCC.OPERATOR.SYS
  0018/04165000  0018/04170000  0026/05155000  0026/05195000
  0026/05210000  0028/05430000  0029/05495000  0029/05525000
  0029/05525000  0029/05580000  0029/05605000  0029/05610000
  0031/06185000  0037/06885000  0037/06915000  0037/06950000
  0037/06955000  0037/06975000  0054/07535000  0055/07755000
  0055/07760000  0055/07775000  0060/08160000  0060/08165000
  0060/08210000  0060/08225000  0060/08225000  0060/08270000
  0060/08285000  0060/08285000

CPVA OF ADCC.OPERATOR.SYS
  0017/03910000  0022/04540000  0022/04560000  0026/05100000
  0026/05100000  0070/09620000  0070/09625000  0070/09625000
  0100/16440000  0102/17000000  0104/17540000  0106/18030000
  0108/18530000  0110/19000000  0112/19485000  0114/19975000

CPVAARRAY OF ADCC.OPERATOR.SYS
  0011/02130000  0062/08520000  0062/08520000  0133/24335000
  0133/24335000  0134/24510000  0134/24510000

CRLF OF ADCC.OPERATOR.SYS
  0018/03935000  0020/04450000  0027/05220000  0027/05270000
  0028/05340000  0143/26485000  0146/27200000  0152/28785000

CRTOUT OF ADCC.OPERATOR.SYS
  0018/03950000  0022/04600000  0027/05225000  0028/05335000
  0029/05605000  0031/06115000  0032/06295000  0055/07565000
  0055/07585000  0055/07605000  0055/07625000  0055/07645000
  0055/07665000  0055/07685000  0055/07705000  0055/07720000
  0055/07775000  0055/07795000  0066/09305000  0072/09920000
  0072/09925000  0072/10015000  0072/10170000  0073/10250000
  0073/10285000  0073/10310000  0075/10955000  0143/26580000
  0143/26620000  0143/26625000  0144/26795000  0146/27205000
  0152/28800000

CSL OF ADCC.OPERATOR.SYS
  0005/00935000  0005/00995000  0005/01020000  0005/01080000
  0006/01260000  0007/01445000

CSR OF ADCC.OPERATOR.SYS
  0006/01145000
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CTCBP OF ADCC.OPERATOR.SYS

0008/01505000	0071/09730000	0071/09730000

D OF ADCC.OPERATOR.SYS

0002/00300000	0022/04535000	0022/04540000	0022/04565000
0022/04570000	0071/09775000	0071/09775000	0083/12580000
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0083/12605000	0083/12605000	0083/12610000	0083/12615000
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0105/17750000	0105/17755000	0105/17755000	0105/17770000
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0109/18675000	0109/18690000	0109/18745000	0109/18750000
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0113/19695000	0113/19700000	0113/19700000	0113/19715000
0114/19995000	0114/20005000	0114/20005000	0114/20015000
0114/20015000	0116/20565000	0116/20570000	0116/20595000
0117/20630000	0134/24670000	0134/24670000	0134/24690000
0134/24690000	0134/24705000	0134/24750000	0136/25130000
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0138/25565000	0142/26350000	0142/26395000	0143/26645000

DB OF ADCC.OPERATOR.SYS

0048/07050000	0048/07060000

DCSL OF ADCC.OPERATOR.SYS

0006/01200000	0055/07740000	0065/08915000	0066/09275000
0067/09385000	0072/09985000	0074/10485000	0077/11070000
0081/12095000	0082/12280000	0084/12705000	0087/13300000
0090/13860000	0098/15790000	0118/20690000	0121/21295000
0122/21515000	0124/21970000	0131/23650000	0136/24870000
0140/25810000	0142/26205000	0146/27105000	

DCSR OF ADCC.OPERATOR.SYS

0065/08920000	0066/09275000	0067/09385000

DCSRQBUF1 OF ADCC.OPERATOR.SYS

0010/01765000	0125/22250000

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DCSRQBUF2 OF ADCC.OPERATOR.SYS
  0010/01775000  0125/22255000

DECX OF ADCC.OPERATOR.SYS
  0004/00750000  0028/05390000  0048/07065000  0048/07100000
  0049/07125000  0049/07150000  0049/07175000  0050/07200000
  0050/07225000  0051/07250000  0051/07275000  0051/07300000
  0052/07325000  0052/07355000  0053/07385000  0053/07415000
  0053/07445000  0054/07475000  0054/07505000

DEFAULT'SECTS OF ADCC.OPERATOR.SYS
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DEL OF ADCC.OPERATOR.SYS
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  0048/07100000  0049/07125000  0049/07150000  0049/07175000
  0050/07200000  0050/07225000  0051/07250000  0051/07275000
  0051/07300000  0052/07325000  0052/07355000  0053/07385000
  0053/07415000  0053/07445000  0054/07475000  0054/07505000
  0123/21910000  0123/21920000

DELAY1SECOND OF ADCC.OPERATOR.SYS
  0004/00700000  0132/24180000  0132/24185000

DELAYBUF OF ADCC.OPERATOR.SYS
  0010/01725000  0085/13085000  0140/26000000

DELB OF ADCC.OPERATOR.SYS
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  0081/12095000  0082/12280000  0084/12705000  0087/13300000
  0090/13860000  0098/15790000  0118/20690000  0121/21295000
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  0140/25810000  0142/26205000  0146/27105000

DELTA'P OF ADCC.OPERATOR.SYS
  0004/00710000  0023/04725000  0024/04825000

DESIRED'DEV OF ADCC.OPERATOR.SYS
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  0071/09895000  0073/10355000  0082/12370000  0083/12545000
  0084/12860000  0088/13595000  0090/14020000  0090/14080000
  0091/14220000  0091/14380000  0092/14515000  0093/14805000
  0094/15105000  0095/15335000  0095/15500000  0097/15660000
  0098/16050000  0101/16620000  0103/17150000  0105/17650000
  0107/18140000  0109/18645000  0111/19105000  0113/19595000
  0115/20060000  0116/20370000  0118/20940000  0121/21390000
  0122/21625000  0123/21755000  0124/22170000  0126/22510000
  0127/22765000  0127/22930000  0128/23100000  0129/23270000
  0130/23475000  0131/23900000  0132/23965000  0132/24135000
  0132/24200000  0140/25915000  0140/25920000

DEV OF ADCC.OPERATOR.SYS
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  0061/08350000  0069/09595000  0078/11460000  0078/11465000
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0079/11840000	0079/11880000	0080/11905000	0080/11975000
0080/11980000	0080/11980000	0080/11985000	0080/12005000
0080/12010000	0080/12010000	0080/12020000	0080/12035000
0080/12055000	0082/12370000	0082/12375000	0082/12375000
0082/12380000	0083/12545000	0083/12550000	0083/12550000
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0088/13600000	0088/13605000	0090/14020000	0090/14025000
0090/14025000	0090/14030000	0090/14080000	0090/14085000
0090/14085000	0090/14090000	0091/14220000	0091/14225000
0091/14225000	0091/14230000	0091/14380000	0091/14385000
0091/14385000	0091/14390000	0092/14515000	0092/14520000
0092/14520000	0092/14525000	0092/14620000	0092/14645000
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0102/17040000	0103/17150000	0103/17155000	0103/17155000
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  0151/28605000

DISABLE'RTN'INT OF ADCC.OPERATOR.SYS
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  0049/07125000  0049/07150000  0049/07175000  0050/07200000
  0050/07225000  0051/07250000  0051/07275000  0051/07300000
  0052/07325000  0052/07355000  0053/07385000  0053/07415000
  0053/07445000  0054/07475000  0054/07505000

DISC OF ADCC.OPERATOR.SYS
  0002/00415000  0071/09795000  0071/09845000  0073/10265000

DNV OF ADCC.OPERATOR.SYS
  0002/00420000  0004/00625000  0004/00630000  0123/21910000
  0123/21910000  0123/21915000  0123/21920000  0123/21920000
  0123/21925000

DO'PSIOP OF ADCC.OPERATOR.SYS
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  0129/23320000  0130/23520000

DO'RIOC0 OF ADCC.OPERATOR.SYS
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  0088/13715000  0090/14110000  0091/14265000  0091/14305000
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  0148/27840000  0149/27995000  0149/28005000  0149/28160000
  0149/28170000  0150/28325000  0150/28335000  0150/28495000
  0151/28505000  0151/28645000  0151/28655000

DO'SIOP OF ADCC.OPERATOR.SYS
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  0125/22270000  0125/22345000  0126/22590000  0132/24165000

DO'WIOC0 OF ADCC.OPERATOR.SYS
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0127/22940000	0128/22945000	0128/22950000	0128/23110000
0128/23115000	0128/23120000	0129/23280000	0129/23285000
0129/23290000	0130/23485000	0130/23490000	0130/23495000
0136/24990000	0136/24995000	0136/25000000	0136/25005000
0136/25010000	0136/25015000	0136/25020000	0136/25045000
0136/25115000	0136/25120000	0137/25170000	0137/25175000
0137/25305000	0137/25310000	0137/25425000	0138/25430000
0138/25435000	0138/25440000	0138/25445000	0138/25450000
0138/25475000	0138/25545000	0138/25550000	0138/25600000
0138/25605000	0139/25735000	0139/25740000	0140/25930000
0140/25945000	0140/25950000	0140/25965000	0140/25970000
0140/25975000	0140/25980000	0140/25995000	0146/27260000
0146/27265000	0146/27270000	0146/27275000	0146/27280000
0146/27285000	0146/27290000	0146/27305000	0146/27320000
0146/27335000	0147/27460000	0147/27465000	0147/27470000

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  0147/27475000  0147/27480000  0147/27485000  0147/27505000
  0147/27625000  0147/27630000  0147/27635000  0147/27640000
  0147/27645000  0147/27650000  0148/27670000  0148/27790000
  0148/27795000  0148/27800000  0148/27805000  0148/27810000
  0148/27815000  0148/27835000  0149/27955000  0149/27960000
  0149/27965000  0149/27970000  0149/27975000  0149/27980000
  0149/28000000  0149/28120000  0149/28125000  0149/28130000
  0149/28135000  0149/28140000  0149/28145000  0149/28165000
  0150/28285000  0150/28290000  0150/28295000  0150/28300000
  0150/28305000  0150/28310000  0150/28330000  0150/28455000
  0150/28460000  0150/28465000  0150/28470000  0150/28475000
  0150/28480000  0151/28500000  0151/28605000  0151/28610000
  0151/28615000  0151/28620000  0151/28625000  0151/28630000
  0151/28650000

DODELAY OF ADCC.OPERATOR.SYS
  0004/00700000  0018/03970000  0022/04640000  0024/04850000
  0027/05285000  0079/11780000  0079/11800000  0084/12940000
  0085/13085000  0088/13710000  0091/14255000  0092/14575000
  0093/14840000  0094/15155000  0095/15385000  0099/16190000
  0099/16230000  0100/16395000  0101/16760000  0101/16800000
  0102/16955000  0103/17290000  0103/17330000  0104/17495000
  0105/17790000  0105/17830000  0106/17985000  0107/18280000
  0107/18320000  0108/18485000  0109/18785000  0109/18825000
  0110/18955000  0111/19245000  0111/19285000  0112/19440000
  0113/19735000  0113/19775000  0114/19930000  0115/20210000
  0116/20520000  0119/21025000  0119/21105000  0121/21450000
  0123/21785000  0125/22275000  0125/22350000  0126/22595000
  0127/22820000  0128/22985000  0128/23155000  0129/23325000
  0130/23525000  0132/24180000  0132/24185000  0137/25180000
  0138/25610000  0140/26000000  0146/27340000  0147/27490000
  0147/27655000  0148/27820000  0149/27985000  0149/28150000
  0150/28315000  0150/28485000  0151/28635000

DOPAUSE OF ADCC.OPERATOR.SYS
  0025/04935000  0027/05285000  0073/10320000  0075/10960000
  0143/26630000

DORIOC OF ADCC.OPERATOR.SYS
  0023/04675000  0023/04715000

DOT OF ADCC.OPERATOR.SYS
  0025/04965000  0076/11055000  0080/12080000  0081/12265000
  0083/12690000  0085/13220000  0089/13830000  0097/15770000
  0108/18590000  0117/20675000  0120/21280000  0121/21500000
  0123/21955000  0125/22410000  0126/22650000  0127/22915000
  0128/23085000  0129/23255000  0129/23425000  0130/23635000
  0132/24190000  0135/24855000  0137/25350000  0139/25780000
  0141/26170000

DOT'CNT OF ADCC.OPERATOR.SYS
  0002/00310000  0025/04995000  0025/04995000  0025/05015000
  0025/05015000  0152/28810000

DOWIOC OF ADCC.OPERATOR.SYS
  0023/04775000  0024/04815000
```

DPF OF ADCC.OPERATOR.SYS
0004/00770000 0006/01330000 0006/01370000 0006/01395000
0028/05390000 0048/07065000 0048/07095000 0048/07100000
0049/07125000 0049/07125000 0049/07150000 0049/07150000
0049/07175000 0049/07175000 0050/07200000 0050/07200000
0050/07225000 0050/07225000 0051/07250000 0051/07250000
0051/07275000 0051/07275000 0051/07300000 0051/07300000
0052/07325000 0052/07325000 0052/07350000 0052/07355000
0053/07380000 0053/07385000 0053/07410000 0053/07415000
0053/07440000 0053/07445000 0054/07470000 0054/07475000
0054/07500000 0054/07505000 0071/09665000

DRT'ADDR OF ADCC.OPERATOR.SYS
0025/05065000 0026/05095000 0026/05095000 0026/05105000
0026/05105000 0026/05110000 0026/05110000 0026/05115000
0026/05115000

DRT'INIT OF ADCC.OPERATOR.SYS
0025/05035000 0099/16130000 0101/16700000 0103/17230000
0105/17730000 0107/18220000 0109/18725000 0111/19185000
0113/19675000

DRT'PLABEL'OF OF ADCC.OPERATOR.SYS
0004/00830000 0025/05075000 0057/07825000 0057/07830000
0057/07835000 0057/07840000 0057/07845000 0057/07850000
0057/07855000 0057/07860000 0058/07885000 0058/07890000
0058/07895000 0058/07900000 0058/07905000 0058/07910000
0058/07915000 0058/07920000 0071/09820000

DSJ'CH'PROG OF ADCC.OPERATOR.SYS
0014/03010000 0063/08630000 0063/08630000 0100/16400000
0102/16960000 0104/17500000 0106/17990000 0108/18490000
0110/18960000 0112/19445000 0114/19935000

DVN OF ADCC.OPERATOR.SYS
0002/00315000 0018/03990000 0018/04000000 0026/05135000
0026/05145000 0027/05235000 0058/07930000 0058/07935000
0058/07935000 0058/07940000 0058/07940000 0058/07940000
0058/07940000 0062/08510000 0062/08515000 0062/08515000
0062/08520000 0062/08520000 0062/08520000 0062/08520000
0063/08545000 0063/08545000 0063/08565000 0063/08565000
0063/08565000 0063/08565000

E OF ADCC.OPERATOR.SYS
0002/00320000 0083/12595000 0083/12605000 0083/12605000
0083/12610000 0083/12610000 0083/12615000 0083/12615000
0083/12625000 0134/24675000 0134/24675000 0134/24695000
0134/24695000 0134/24705000 0134/24745000 0137/25150000
0137/25155000 0137/25155000 0137/25175000 0137/25195000
0137/25240000 0137/25260000 0137/25280000 0138/25580000
0138/25585000 0138/25585000 0138/25605000 0138/25625000
0138/25670000 0138/25690000 0139/25710000 0143/26670000

ENCSRQBUF1 OF ADCC.OPERATOR.SYS
0010/01790000 0126/22580000

```
ENCSRQBUF2 OF ADCC.OPERATOR.SYS
  0010/01805000  0126/22585000

END OF ADCC.OPERATOR.SYS
  0007/01465000

ENDPASSCOUNTER OF ADCC.OPERATOR.SYS
  0002/00425000  0055/07790000  0071/09875000  0152/28795000
  0152/28815000  0152/28815000  0152/28820000

EPAUSEOK OF ADCC.OPERATOR.SYS
  0002/00430000  0027/05285000  0030/05780000  0030/05860000
  0030/05885000  0055/07620000  0071/09690000

EPRINTOK OF ADCC.OPERATOR.SYS
  0002/00435000  0026/05170000  0030/05775000  0030/05810000
  0030/05835000  0055/07600000  0071/09690000

ERR OF ADCC.OPERATOR.SYS
  0002/00440000  0133/24220000  0133/24250000  0133/24360000
  0134/24565000

ERROROUT OF ADCC.OPERATOR.SYS
  0018/03990000  0022/04580000  0026/05135000  0061/08350000
  0061/08405000  0062/08445000  0069/09595000  0075/10785000
  0075/10880000  0076/11035000  0077/11210000  0077/11310000
  0078/11385000  0078/11520000  0079/11640000  0079/11790000
  0079/11845000  0080/11885000  0080/12040000  0081/12240000
  0082/12430000  0083/12645000  0085/13045000  0085/13205000
  0086/13265000  0088/13740000  0089/13775000  0089/13795000
  0090/14135000  0091/14290000  0092/14440000  0092/14625000
  0092/14650000  0092/14695000  0093/14890000  0093/14915000
  0093/14955000  0094/15020000  0094/15205000  0094/15230000
  0095/15275000  0095/15400000  0096/15555000  0097/15745000
  0099/16310000  0099/16320000  0100/16370000  0100/16430000
  0100/16450000  0102/16870000  0102/16880000  0102/16930000
  0102/16990000  0102/17010000  0104/17410000  0104/17420000
  0104/17470000  0104/17530000  0104/17550000  0106/17900000
  0106/17910000  0106/17960000  0106/18020000  0106/18040000
  0108/18400000  0108/18410000  0108/18460000  0108/18520000
  0108/18540000  0110/18880000  0110/18930000  0110/18990000
  0110/19010000  0112/19355000  0112/19365000  0112/19415000
  0112/19475000  0112/19495000  0114/19845000  0114/19855000
  0114/19905000  0114/19965000  0114/19985000  0115/20285000
  0115/20320000  0116/20600000  0117/20635000  0119/21045000
  0119/21070000  0119/21140000  0119/21195000  0120/21250000
  0121/21475000  0122/21685000  0123/21815000  0123/21930000
  0125/22310000  0125/22385000  0126/22625000  0127/22850000
  0127/22895000  0128/23015000  0128/23060000  0128/23185000
  0129/23230000  0129/23355000  0129/23400000  0130/23555000
  0130/23595000  0133/24265000  0133/24285000  0133/24310000
  0133/24375000  0133/24405000  0133/24410000  0133/24440000
  0133/24470000  0134/24495000  0134/24545000  0134/24625000
  0134/24755000  0137/25245000  0137/25290000  0138/25675000
  0139/25720000  0141/26150000  0143/26685000  0144/26820000
```

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  0144/26945000  0145/27050000  0146/27370000  0147/27400000
  0147/27545000  0147/27560000  0147/27570000  0147/27595000
  0148/27705000  0148/27720000  0148/27730000  0148/27755000
  0148/27875000  0148/27890000  0148/27900000  0148/27925000
  0149/28035000  0149/28050000  0149/28060000  0149/28085000
  0149/28205000  0150/28220000  0150/28230000  0150/28255000
  0150/28365000  0150/28380000  0150/28390000  0150/28415000
  0151/28535000  0151/28550000  0151/28560000  0151/28585000
  0151/28685000  0151/28700000  0151/28710000  0151/28735000

EXIT'TO'DUS OF ADCC.OPERATOR.SYS
  0028/05310000  0030/05955000  0152/28835000

EXTND OF ADCC.OPERATOR.SYS
  0002/00445000  0031/06090000  0055/07660000  0071/09885000
  0073/10400000  0073/10420000  0073/10450000  0073/10460000
  0076/11010000  0099/16080000  0099/16155000  0099/16260000
  0101/16650000  0101/16725000  0103/17180000  0103/17255000
  0103/17360000  0105/17680000  0105/17755000  0107/18170000
  0107/18245000  0107/18350000  0109/18675000  0109/18750000
  0111/19065000  0115/20190000  0116/20500000  0116/20565000
  0123/21880000  0136/24975000  0136/25075000  0137/25410000
  0138/25505000  0140/25915000  0147/27515000  0148/27845000
  0149/28175000

EXTND15 OF ADCC.OPERATOR.SYS
  0002/00450000  0031/06150000  0071/09890000  0140/25915000

F OF ADCC.OPERATOR.SYS
  0002/00325000  0134/24680000  0135/24775000  0135/24790000
  0137/25195000  0137/25215000  0138/25625000  0138/25645000

FLY'CATCHER OF ADCC.OPERATOR.SYS
  0028/05370000  0071/09820000  0071/09820000

FMGR OF ADCC.OPERATOR.SYS
  0018/04015000  0028/05355000  0071/09655000

FRST'BYTE OF ADCC.OPERATOR.SYS
  0065/08960000  0065/09035000  0065/09060000  0065/09070000
  0065/09070000

G OF ADCC.OPERATOR.SYS
  0002/00330000  0136/25065000  0137/25200000  0138/25495000
  0138/25630000

GET'CHANNEL OF ADCC.OPERATOR.SYS
  0072/10050000  0073/10255000  0075/10790000

GET'EXTND OF ADCC.OPERATOR.SYS
  0073/10350000  0073/10430000

GET'INPUT OF ADCC.OPERATOR.SYS
  0018/04040000  0020/04480000  0025/04945000  0028/05410000
  0072/09940000
```

GET'MESSAGE OF ADCC.OPERATOR.SYS

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  0018/04055000  0020/04455000  0022/04555000  0026/05185000
  0027/05250000  0028/05335000  0029/05465000  0031/06115000
  0032/06295000  0032/06300000  0035/06335000  0037/06955000
  0055/07785000  0061/08340000  0061/08395000  0062/08430000
  0066/09295000  0069/09585000  0071/09900000  0071/09905000
  0072/09925000  0072/10015000  0072/10080000  0072/10170000
  0073/10250000  0073/10280000  0073/10370000  0075/10785000
  0075/10870000  0075/10955000  0076/11020000  0077/11190000
  0077/11290000  0078/11385000  0078/11505000  0079/11640000
  0079/11790000  0079/11835000  0079/11875000  0080/12025000
  0081/12225000  0082/12410000  0083/12630000  0084/12980000
  0085/13125000  0086/13265000  0088/13725000  0088/13765000
  0089/13785000  0090/14120000  0091/14275000  0092/14425000
  0092/14615000  0092/14640000  0092/14680000  0093/14880000
  0093/14905000  0093/14940000  0094/15010000  0094/15195000
  0094/15220000  0095/15260000  0095/15400000  0096/15545000
  0097/15735000  0099/16295000  0099/16320000  0100/16355000
  0100/16415000  0100/16450000  0102/16855000  0102/16880000
  0102/16915000  0102/16975000  0102/17010000  0104/17395000
  0104/17420000  0104/17455000  0104/17515000  0104/17550000
  0106/17885000  0106/17910000  0106/17945000  0106/18005000
  0106/18040000  0108/18385000  0108/18410000  0108/18445000
  0108/18505000  0108/18540000  0109/18865000  0110/18915000
  0110/18975000  0110/19010000  0111/19340000  0112/19365000
  0112/19400000  0112/19460000  0112/19495000  0114/19830000
  0114/19855000  0114/19890000  0114/19950000  0114/19985000
  0115/20270000  0115/20305000  0116/20585000  0117/20620000
  0119/21045000  0119/21055000  0119/21125000  0119/21180000
  0119/21235000  0121/21465000  0122/21670000  0123/21800000
  0123/21930000  0125/22295000  0125/22370000  0126/22610000
  0127/22835000  0127/22880000  0128/23000000  0128/23045000
  0128/23170000  0128/23215000  0129/23340000  0129/23385000
  0130/23540000  0130/23580000  0133/24265000  0133/24285000
  0133/24300000  0133/24375000  0133/24405000  0133/24410000
  0133/24430000  0133/24470000  0133/24485000  0134/24535000
  0134/24605000  0134/24735000  0137/25230000  0137/25275000
  0138/25660000  0138/25705000  0140/26070000  0143/26490000
  0143/26580000  0143/26610000  0143/26625000  0143/26675000
  0144/26795000  0144/26805000  0144/26925000  0144/27030000
  0146/27205000  0146/27210000  0146/27355000  0147/27390000
  0147/27530000  0147/27560000  0147/27570000  0147/27595000
  0148/27690000  0148/27720000  0148/27730000  0148/27755000
  0148/27860000  0148/27890000  0148/27900000  0148/27925000
  0149/28020000  0149/28050000  0149/28060000  0149/28085000
  0149/28190000  0150/28220000  0150/28230000  0150/28255000
  0150/28350000  0150/28380000  0150/28390000  0150/28415000
  0151/28520000  0151/28550000  0151/28560000  0151/28585000
  0151/28670000  0151/28700000  0151/28710000  0151/28735000
  0152/28790000
```

GET'UNX'IRQ OF ADCC.OPERATOR.SYS

```
  0005/00875000  0061/08375000
```

GETIO OF ADCC.OPERATOR.SYS

```
  0018/04075000  0020/04415000  0071/09775000  0071/09775000
```

```
  0071/09790000  0071/09795000

GETIRQ OF ADCC.OPERATOR.SYS
  0005/00890000  0079/11785000  0079/11815000

GO'FLAG OF ADCC.OPERATOR.SYS
  0028/05420000  0029/05440000  0029/05445000  0031/06040000

I OF ADCC.OPERATOR.SYS
  0004/00595000  0026/05100000  0059/08010000  0059/08025000
  0059/08040000  0059/08055000  0059/08070000  0059/08085000
  0059/08085000  0059/08085000  0059/08085000  0059/08085000
  0063/08630000  0064/08710000  0064/08725000  0064/08740000
  0064/08755000  0064/08770000  0064/08780000  0064/08780000
  0064/08780000  0064/08780000  0064/08780000

ID'CHNL'PGM OF ADCC.OPERATOR.SYS
  0011/02085000  0123/21775000

IIX'TIMER OF ADCC.OPERATOR.SYS
  0018/04110000  0024/04890000  0024/04905000

INBUFFER OF ADCC.OPERATOR.SYS
  0019/04270000  0019/04275000  0065/08800000  0065/08805000
  0065/09000000  0065/09015000  0065/09020000  0065/09060000
  0066/09150000  0066/09180000  0066/09215000  0066/09330000
  0067/09415000

INCX OF ADCC.OPERATOR.SYS
  0059/08020000  0059/08035000  0059/08050000  0059/08065000
  0059/08085000  0059/08085000  0059/08085000  0059/08085000
  0064/08715000  0064/08730000  0064/08745000  0064/08760000
  0064/08780000  0064/08780000  0064/08780000  0064/08780000

INDEX OF ADCC.OPERATOR.SYS
  0018/04145000  0018/04150000  0018/04165000  0018/04170000
  0028/05425000  0029/05510000  0029/05520000  0029/05525000
  0029/05530000  0029/05535000  0029/05535000  0029/05565000
  0029/05580000  0029/05605000  0029/05610000  0029/05610000
  0037/06890000  0037/06915000  0037/06950000  0037/06975000
  0037/06975000  0037/06985000  0037/06985000  0055/07540000
  0055/07755000  0055/07755000  0055/07760000  0055/07765000
  0055/07765000  0055/07775000  0058/07965000  0058/07970000
  0058/07995000  0059/08085000  0060/08160000  0060/08165000
  0060/08225000  0060/08285000  0060/08300000  0060/08305000
  0060/08310000  0064/08660000  0064/08665000  0064/08690000
  0064/08780000

INDX OF ADCC.OPERATOR.SYS
  0004/00575000  0004/00585000

INFO OF ADCC.OPERATOR.SYS
  0025/05050000  0026/05100000  0026/05105000  0026/05105000

INIT OF ADCC.OPERATOR.SYS
  0004/00645000  0078/11375000  0079/11630000  0082/12360000
```

```
  0083/12675000  0084/12855000  0090/14015000  0095/15495000
  0097/15655000  0098/16045000  0100/16485000  0101/16615000
  0102/17045000  0103/17145000  0104/17585000  0105/17645000
  0106/18075000  0107/18135000  0108/18575000  0109/18640000
  0110/19045000  0111/19100000  0112/19530000  0113/19590000
  0114/20020000  0115/20055000  0116/20365000  0118/20950000
  0121/21385000  0122/21620000  0124/22165000  0124/22200000
  0125/22325000  0126/22520000  0127/22760000  0127/22905000
  0128/23070000  0129/23240000  0129/23410000  0130/23610000
  0131/23870000  0147/27445000  0148/27785000  0149/28115000
  0150/28450000

INPUTOK OF ADCC.OPERATOR.SYS
  0028/05420000  0029/05470000  0029/05475000  0029/05675000
  0030/05720000  0030/05750000  0030/05785000  0030/05810000
  0030/05835000  0030/05860000  0030/05885000  0030/05910000
  0030/05935000  0031/06035000  0031/06085000  0031/06150000
  0031/06185000  0031/06220000  0032/06280000

INT'EXIT OF ADCC.OPERATOR.SYS
  0005/00900000  0028/05395000  0048/07070000  0048/07105000
  0049/07130000  0049/07155000  0049/07180000  0050/07205000
  0050/07230000  0051/07255000  0051/07280000  0051/07305000
  0052/07330000  0052/07360000  0053/07390000  0053/07420000
  0053/07450000  0054/07480000  0054/07510000

INT'RCV'LABEL OF ADCC.OPERATOR.SYS
  0025/05070000  0025/05075000  0026/05110000  0026/05110000

INT'RECV OF ADCC.OPERATOR.SYS
  0018/04090000  0025/05075000  0026/05075000  0048/07015000

INTERRUPT OF ADCC.OPERATOR.SYS
  0018/04095000  0028/05375000  0048/07020000  0048/07090000
  0049/07120000  0049/07145000  0049/07170000  0050/07195000
  0050/07220000  0051/07245000  0051/07270000  0051/07295000
  0052/07320000  0052/07345000  0052/07375000  0053/07405000
  0053/07435000  0054/07465000  0054/07495000

INTHNDLR0 OF ADCC.OPERATOR.SYS
  0051/07290000  0057/07825000  0057/07825000

INTHNDLR1 OF ADCC.OPERATOR.SYS
  0052/07315000  0057/07830000  0057/07830000

INTHNDLR2 OF ADCC.OPERATOR.SYS
  0052/07340000  0057/07835000  0057/07835000

INTHNDLR3 OF ADCC.OPERATOR.SYS
  0052/07370000  0057/07840000  0057/07840000

INTHNDLR4 OF ADCC.OPERATOR.SYS
  0053/07400000  0057/07845000  0057/07845000

INTHNDLR5 OF ADCC.OPERATOR.SYS
  0053/07430000  0057/07850000  0057/07850000
```

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INTHNDLR6 OF ADCC.OPERATOR.SYS
  0054/07460000  0057/07855000  0057/07855000

INTHNDLR7 OF ADCC.OPERATOR.SYS
  0054/07490000  0057/07860000  0057/07860000

INTPSYS'OFF OF ADCC.OPERATOR.SYS
  0005/00910000  0020/04430000  0079/11805000  0081/12190000
  0098/16040000  0101/16610000  0103/17140000  0105/17640000
  0107/18130000  0109/18635000  0111/19095000  0113/19585000
  0125/22280000  0125/22355000  0135/24845000

INTPSYS'ON OF ADCC.OPERATOR.SYS
  0005/00920000  0020/04410000  0079/11755000  0099/16145000
  0100/16465000  0101/16715000  0102/17025000  0103/17245000
  0104/17565000  0105/17745000  0106/18055000  0107/18235000
  0108/18555000  0109/18740000  0110/19025000  0111/19200000
  0112/19510000  0113/19690000  0114/20000000  0124/22245000
  0125/22335000  0132/24110000

INTTRAP0 OF ADCC.OPERATOR.SYS
  0048/07085000  0058/07885000  0058/07885000

INTTRAP1 OF ADCC.OPERATOR.SYS
  0049/07115000  0058/07890000  0058/07890000

INTTRAP2 OF ADCC.OPERATOR.SYS
  0049/07140000  0058/07895000  0058/07895000

INTTRAP3 OF ADCC.OPERATOR.SYS
  0049/07165000  0058/07900000  0058/07900000

INTTRAP4 OF ADCC.OPERATOR.SYS
  0050/07190000  0058/07905000  0058/07905000

INTTRAP5 OF ADCC.OPERATOR.SYS
  0050/07215000  0058/07910000  0058/07910000

INTTRAP6 OF ADCC.OPERATOR.SYS
  0051/07240000  0058/07915000  0058/07915000

INTTRAP7 OF ADCC.OPERATOR.SYS
  0051/07265000  0058/07920000  0058/07920000

IOFF OF ADCC.OPERATOR.SYS
  0005/00910000  0020/04430000  0079/11805000  0081/12190000
  0098/16040000  0101/16610000  0103/17140000  0105/17640000
  0107/18130000  0109/18635000  0111/19095000  0113/19585000
  0125/22280000  0125/22355000  0135/24845000

ION OF ADCC.OPERATOR.SYS
  0005/00920000  0020/04410000  0079/11755000  0099/16145000
  0100/16465000  0101/16715000  0102/17025000  0103/17245000
  0104/17565000  0105/17745000  0106/18055000  0107/18235000
  0108/18555000  0109/18740000  0110/19025000  0111/19200000
```

```
  0112/19510000  0113/19690000  0114/20000000  0125/22245000
  0125/22335000  0132/24110000

IPOLL OF ADCC.OPERATOR.SYS
  0005/00930000  0081/12215000

IRQ' OF ADCC.OPERATOR.SYS
  0002/00455000  0005/00890000  0079/11785000  0079/11790000
  0079/11815000  0079/11820000  0079/11860000

IT'S'A'NUMBER OF ADCC.OPERATOR.SYS
  0065/08990000  0066/09090000  0066/09260000  0067/09360000

IXIT OF ADCC.OPERATOR.SYS
  0005/00900000  0028/05395000  0048/07070000  0048/07105000
  0049/07130000  0049/07155000  0050/07180000  0050/07205000
  0050/07230000  0051/07255000  0051/07280000  0051/07305000
  0052/07330000  0052/07360000  0053/07390000  0053/07420000
  0053/07450000  0054/07480000  0054/07510000

K OF ADCC.OPERATOR.SYS
  0002/00335000  0005/01060000  0005/01075000  0007/01440000
  0007/01445000  0088/13655000  0088/13755000

LA OF ADCC.OPERATOR.SYS
  0002/00460000  0059/08120000  0059/08125000  0059/08130000
  0059/08130000  0059/08135000  0059/08135000  0061/08380000
  0061/08385000  0061/08385000  0061/08400000  0082/12385000
  0082/12390000  0082/12390000  0082/12395000  0082/12395000
  0082/12400000  0082/12400000  0082/12420000  0082/12450000
  0082/12455000  0083/12555000  0083/12560000  0083/12560000
  0083/12570000  0083/12570000  0083/12635000  0134/24585000
  0134/24585000  0134/24590000  0134/24615000

LADD OF ADCC.OPERATOR.SYS
  0004/00605000  0004/00740000  0026/05100000  0028/05390000
  0048/07065000  0048/07100000  0049/07125000  0049/07150000
  0049/07175000  0050/07200000  0050/07225000  0051/07250000
  0051/07275000  0051/07300000  0052/07325000  0052/07355000
  0053/07385000  0053/07415000  0053/07445000  0054/07475000
  0054/07505000  0063/08630000

LAST'ELEMENT OF ADCC.OPERATOR.SYS
  0019/04270000  0019/04280000  0065/08800000  0065/08810000
  0066/09115000  0066/09160000  0066/09200000  0066/09235000
  0066/09320000  0066/09345000  0067/09400000  0067/09425000

LAST'SECT OF ADCC.OPERATOR.SYS
  0008/01510000  0066/09260000  0066/09300000  0067/09360000

LB OF ADCC.OPERATOR.SYS
  0002/00465000  0134/24610000  0134/24615000  0134/24620000

LC OF ADCC.OPERATOR.SYS
  0002/00470000
```

```
LDD OF ADCC.OPERATOR.SYS
  0006/01185000  0055/07740000  0065/08905000  0066/09275000
  0067/09385000  0072/09985000  0074/10485000  0077/11070000
  0081/12095000  0082/12280000  0084/12705000  0087/13300000
  0090/13860000  0098/15790000  0118/20690000  0121/21295000
  0122/21515000  0124/21970000  0131/23650000  0136/24870000
  0140/25810000  0142/26205000  0146/27105000

LDI OF ADCC.OPERATOR.SYS
  0004/00765000  0005/00935000  0005/00995000  0005/01020000
  0006/01140000  0006/01255000  0006/01325000  0006/01365000
  0006/01395000  0028/05390000  0048/07065000  0048/07095000
  0048/07100000  0049/07125000  0049/07125000  0049/07150000
  0049/07150000  0049/07175000  0049/07175000  0050/07200000
  0050/07200000  0050/07225000  0050/07225000  0051/07250000
  0051/07250000  0051/07275000  0051/07275000  0051/07300000
  0051/07300000  0052/07325000  0052/07325000  0052/07350000
  0052/07355000  0053/07380000  0053/07385000  0053/07410000
  0053/07415000  0053/07440000  0053/07445000  0054/07470000
  0054/07475000  0054/07500000  0054/07505000  0071/09665000
  0075/10765000  0077/11180000  0077/11280000  0078/11380000
  0078/11495000  0079/11635000  0080/12015000  0081/12215000
  0127/22865000  0128/23035000  0128/23200000  0129/23375000
  0130/23570000  0143/26640000  0144/26905000  0144/27010000

LDNI OF ADCC.OPERATOR.SYS
  0004/00630000  0123/21910000  0123/21920000

LDXN OF ADCC.OPERATOR.SYS
  0004/00660000  0004/00670000  0004/00670000  0004/00680000
  0005/00875000  0005/00875000  0005/00890000  0006/01315000
  0006/01355000  0048/07095000  0049/07125000  0049/07150000
  0049/07175000  0050/07200000  0050/07225000  0051/07250000
  0051/07275000  0051/07300000  0052/07325000  0052/07350000
  0053/07380000  0053/07410000  0053/07440000  0054/07470000
  0054/07500000  0061/08375000  0061/08375000  0062/08455000
  0062/08455000  0071/09870000  0071/09870000  0077/11120000
  0077/11120000  0078/11475000  0078/11475000  0079/11745000
  0079/11750000  0079/11750000  0079/11785000  0079/11815000
  0081/12255000  0083/12680000  0086/13280000  0089/13840000
  0117/20665000  0120/21270000  0121/21490000  0123/21945000
  0130/23625000  0132/24100000  0132/24105000  0132/24105000

LEN OF ADCC.OPERATOR.SYS
  0018/03990000  0018/03995000  0018/04185000  0018/04190000
  0026/05135000  0026/05140000  0026/05165000  0027/05230000
  0059/08105000  0059/08110000  0059/08130000

LENGTH OF ADCC.OPERATOR.SYS
  0018/03950000  0018/03955000  0022/04600000  0022/04605000
  0022/04620000  0022/04630000

LIST'COM OF ADCC.OPERATOR.SYS
  0009/01605000  0029/05580000  0029/05605000

LIST'PROG'STAT OF ADCC.OPERATOR.SYS
```

```
  0018/04130000  0031/06260000  0054/07520000

LLBL OF ADCC.OPERATOR.SYS
  0004/00840000  0026/05075000  0057/07825000  0057/07830000
  0057/07835000  0057/07840000  0057/07845000  0057/07850000
  0057/07855000  0057/07860000  0058/07885000  0058/07890000
  0058/07895000  0058/07900000  0058/07905000  0058/07910000
  0058/07915000  0058/07920000  0071/09820000

LOAD OF ADCC.OPERATOR.SYS
  0004/00625000  0004/00645000  0004/00690000  0004/00710000
  0004/00815000  0004/00815000  0004/00825000  0004/00825000
  0005/00995000  0005/01020000  0005/01070000  0006/01220000
  0006/01225000  0007/01445000  0007/01445000  0020/04380000
  0020/04405000  0023/04685000  0023/04715000  0023/04725000
  0024/04785000  0024/04790000  0024/04815000  0024/04815000
  0024/04825000  0048/07045000  0048/07060000  0058/07995000
  0059/08010000  0059/08025000  0059/08040000  0059/08055000
  0059/08070000  0059/08085000  0059/08085000  0059/08085000
  0059/08085000  0059/08085000  0059/08085000  0063/08635000
  0063/08635000  0064/08690000  0064/08720000  0064/08735000
  0064/08750000  0064/08765000  0064/08780000  0064/08780000
  0064/08780000  0064/08780000  0064/08780000  0075/10855000
  0075/10945000  0076/11005000  0077/11180000  0077/11280000
  0078/11375000  0078/11380000  0078/11455000  0078/11455000
  0078/11490000  0078/11490000  0078/11495000  0078/11545000
  0078/11545000  0078/11555000  0079/11625000  0079/11625000
  0079/11630000  0079/11635000  0079/11765000  0079/11765000
  0079/11795000  0079/11795000  0079/11810000  0080/11910000
  0080/11910000  0080/11990000  0080/11990000  0080/12015000
  0080/12060000  0080/12060000  0081/12195000  0081/12195000
  0081/12205000  0081/12205000  0082/12360000  0082/12365000
  0082/12395000  0083/12570000  0083/12570000  0083/12600000
  0083/12675000  0084/12850000  0084/12855000  0090/14015000
  0095/15495000  0097/15655000  0098/16045000  0099/16070000
  0099/16070000  0100/16485000  0101/16615000  0101/16640000
  0101/16640000  0102/17045000  0103/17145000  0103/17170000
  0103/17170000  0104/17585000  0105/17645000  0105/17670000
  0105/17670000  0106/18075000  0107/18135000  0107/18160000
  0107/18160000  0108/18575000  0109/18640000  0109/18665000
  0109/18665000  0110/19045000  0111/19100000  0111/19125000
  0111/19125000  0112/19530000  0113/19590000  0113/19615000
  0113/19615000  0114/20020000  0115/20055000  0116/20365000
  0118/20950000  0121/21385000  0121/21445000  0121/21445000
  0122/21620000  0123/21780000  0123/21780000  0123/21910000
  0123/21920000  0124/22165000  0124/22200000  0125/22270000
  0125/22270000  0125/22325000  0125/22345000  0125/22345000
  0126/22520000  0126/22590000  0126/22590000  0127/22760000
  0127/22815000  0127/22815000  0127/22865000  0127/22905000
  0128/22980000  0128/22980000  0128/23035000  0128/23070000
  0128/23150000  0128/23150000  0128/23200000  0129/23240000
  0129/23320000  0129/23320000  0129/23375000  0129/23410000
  0130/23520000  0130/23520000  0130/23610000  0131/23870000
  0132/24115000  0132/24115000  0132/24165000  0132/24165000
  0144/26905000  0144/27010000  0147/27445000  0148/27785000
  0149/28115000  0150/28450000
```

```
LOAD'INTHNDLRS OF ADCC.OPERATOR.SYS
  0057/07815000  0063/08560000  0131/23895000

LOAD'TRAPS OF ADCC.OPERATOR.SYS
  0058/07875000  0063/08555000  0077/11115000  0131/23885000

LOGICAL OF ADCC.OPERATOR.SYS
  0004/00575000  0004/00710000  0004/00830000  0005/01040000
  0006/01175000

LOOP OF ADCC.OPERATOR.SYS
  0002/00475000  0029/05670000  0029/05715000  0055/07680000
  0152/28825000

LOOP'BACK OF ADCC.OPERATOR.SYS
  0005/01120000  0018/04145000  0031/06225000  0058/07965000

LOOPBACK OF ADCC.OPERATOR.SYS
  0058/07985000  0059/08085000

LRA OF ADCC.OPERATOR.SYS
  0004/00595000  0026/05100000  0063/08630000

LST'BYTE OF ADCC.OPERATOR.SYS
  0065/08965000  0065/09015000  0065/09035000  0065/09040000
  0066/09075000  0066/09075000

M OF ADCC.OPERATOR.SYS
  0002/00340000  0088/13640000  0088/13645000  0088/13645000
  0088/13650000  0088/13655000  0088/13660000  0088/13760000
  0143/26670000

MAIN OF ADCC.OPERATOR.SYS
  0071/09645000

MAIN'BOARD OF ADCC.OPERATOR.SYS
  0002/00480000  0136/25070000  0136/25090000  0136/25130000
  0136/25135000  0138/25500000  0138/25520000  0138/25560000
  0138/25565000

MAS OF ADCC.OPERATOR.SYS
  0002/00485000  0098/16010000  0100/16390000  0100/16515000
  0101/16580000  0102/16950000  0102/17075000

MASK OF ADCC.OPERATOR.SYS
  0008/01515000

MAX'DEV OF ADCC.OPERATOR.SYS
  0002/00345000  0028/05345000  0031/06080000  0061/08350000
  0069/09595000  0073/10435000  0073/10450000  0073/10460000
  0073/10460000  0082/12375000  0083/12550000  0084/12865000
  0088/13600000  0090/14025000  0090/14085000  0091/14225000
  0091/14385000  0092/14520000  0093/14810000  0094/15110000
  0095/15340000  0095/15505000  0097/15665000  0098/16055000
  0101/16625000  0103/17155000  0105/17655000  0107/18145000
```

```
  0109/18650000  0111/19110000  0113/19600000  0115/20065000
  0116/20375000  0118/20945000  0121/21395000  0122/21630000
  0123/21760000  0124/22175000  0126/22515000  0127/22770000
  0127/22935000  0128/23105000  0129/23275000  0130/23480000
  0131/23905000  0132/23970000  0132/24140000  0132/24205000
  0140/25915000  0140/25925000  0150/28435000

MAXLEN OF ADCC.OPERATOR.SYS
  0019/04205000  0019/04210000

MDCSRQBUF1 OF ADCC.OPERATOR.SYS
  0010/01950000  0125/22300000  0125/22375000

MDCSRQBUF2 OF ADCC.OPERATOR.SYS
  0010/01960000  0125/22305000  0125/22380000

MEM'GETS'V OF ADCC.OPERATOR.SYS
  0005/00955000  0026/05095000  0026/05105000  0026/05110000
  0026/05115000  0028/05385000  0058/07940000  0059/08135000
  0062/08495000  0062/08520000  0063/08565000  0071/09720000
  0071/09730000  0071/09750000  0071/09850000  0124/22240000
  0125/22330000  0126/22560000  0127/22800000  0128/22965000
  0128/23135000  0129/23305000  0131/23925000  0132/24055000
  0132/24080000

MEMAP OF ADCC.OPERATOR.SYS
  0011/02205000  0132/23945000

MEMLOC OF ADCC.OPERATOR.SYS
  0005/00955000  0005/00970000  0006/01405000  0007/01415000

MENCSRQBUF1 OF ADCC.OPERATOR.SYS
  0010/01970000  0126/22615000

MENCSRQBUF2 OF ADCC.OPERATOR.SYS
  0010/01980000  0126/22620000

MESSAGES OF ADCC.OPERATOR.SYS
  0035/06370000  0037/06915000  0037/06950000

MIL'SEC OF ADCC.OPERATOR.SYS
  0018/03970000  0018/03975000  0024/04850000  0024/04870000
  0024/04880000  0024/04880000  0024/04900000  0024/04900000
  0024/04905000

MOVE'CHNL'PGM OF ADCC.OPERATOR.SYS
  0059/08105000  0121/21435000  0123/21775000  0124/22210000
  0126/22530000  0127/22795000  0128/22960000  0128/23130000
  0129/23300000  0132/23945000  0132/24030000

MPYI OF ADCC.OPERATOR.SYS
  0058/08000000  0059/08085000  0064/08695000  0064/08780000

MSG OF ADCC.OPERATOR.SYS
  0018/04185000  0018/04190000  0019/04205000  0019/04210000
```

MSG'OUT OF ADCC.OPERATOR.SYS

```
  0009/01570000  0020/04445000  0020/04460000  0020/04475000
  0020/04490000  0026/05165000  0026/05190000  0027/05225000
  0027/05255000  0027/05260000  0028/05335000  0029/05465000
  0031/06115000  0032/06295000  0032/06300000  0037/06950000
  0055/07555000  0055/07565000  0055/07575000  0055/07585000
  0055/07595000  0055/07600000  0055/07605000  0055/07615000
  0055/07620000  0055/07625000  0055/07635000  0055/07640000
  0055/07645000  0055/07655000  0055/07660000  0055/07665000
  0055/07675000  0055/07680000  0055/07685000  0055/07695000
  0055/07700000  0055/07705000  0055/07715000  0055/07720000
  0055/07725000  0055/07765000  0055/07775000  0055/07795000
  0060/08225000  0060/08285000  0060/08300000  0060/08305000
  0060/08310000  0061/08400000  0066/09305000  0071/09900000
  0071/09910000  0072/09920000  0072/09925000  0072/10015000
  0072/10080000  0072/10170000  0073/10250000  0073/10285000
  0073/10305000  0073/10310000  0073/10370000  0075/10955000
  0077/11195000  0077/11295000  0078/11510000  0078/11515000
  0079/11840000  0079/11880000  0080/12030000  0080/12035000
  0082/12415000  0085/13030000  0085/13040000  0085/13175000
  0085/13195000  0090/14130000  0091/14285000  0092/14435000
  0092/14620000  0092/14645000  0092/14690000  0093/14885000
  0093/14910000  0093/14945000  0094/15015000  0094/15200000
  0094/15225000  0095/15265000  0096/15550000  0097/15740000
  0122/21675000  0123/21805000  0141/26120000  0141/26140000
  0143/26490000  0143/26580000  0143/26620000  0143/26625000
  0144/26795000  0144/26930000  0144/27035000  0146/27205000
  0146/27210000  0152/28800000
```

N OF ADCC.OPERATOR.SYS

```
  0018/04015000  0018/04020000  0018/04075000  0018/04075000
```

NMBROFCHNLS OF ADCC.OPERATOR.SYS

```
  0002/00490000  0142/26360000  0142/26440000  0143/26575000
  0143/26755000  0144/26785000  0144/26785000  0144/26815000
  0144/26825000
```

NO'ERROR OF ADCC.OPERATOR.SYS

```
  0002/00495000  0023/04735000  0024/04835000
```

NOP OF ADCC.OPERATOR.SYS

```
  0006/01200000  0055/07740000  0065/08910000  0066/09275000
  0067/09385000  0072/09985000  0074/10485000  0077/11070000
  0081/12095000  0082/12280000  0084/12705000  0087/13300000
  0090/13860000  0098/15790000  0118/20690000  0121/21295000
  0122/21515000  0124/21970000  0131/23650000  0136/24870000
  0140/25810000  0142/26205000  0146/27105000
```

NUM OF ADCC.OPERATOR.SYS

```
  0006/01305000  0006/01330000  0006/01345000  0006/01370000
```

NUM'CHARS OF ADCC.OPERATOR.SYS

```
  0002/00350000  0020/04440000  0020/04445000  0020/04455000
  0020/04475000  0020/04485000  0020/04490000  0022/04555000
  0022/04580000  0026/05185000  0027/05225000  0027/05250000
  0027/05260000  0055/07785000  0055/07795000  0061/08340000
```

0061/08350000	0061/08395000	0061/08405000	0062/08430000
0062/08445000	0066/09295000	0066/09305000	0069/09585000
0069/09595000	0071/09905000	0071/09910000	0071/09915000
0071/09915000	0072/09920000	0073/10280000	0073/10285000
0073/10310000	0075/10870000	0075/10880000	0076/11020000
0076/11035000	0077/11190000	0077/11210000	0077/11290000
0077/11310000	0078/11505000	0078/11520000	0079/11835000
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OBSI OF ADCC.OPERATOR.SYS
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  0128/23200000  0129/23375000  0144/27010000

OR OF ADCC.OPERATOR.SYS
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  0007/01445000  0020/04390000

ORI OF ADCC.OPERATOR.SYS
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P OF ADCC.OPERATOR.SYS
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0028/05385000 0028/05385000 0048/07045000 0048/07060000

PAUSEOK OF ADCC.OPERATOR.SYS
0002/00500000 0030/05780000 0071/09690000

PERIOD OF ADCC.OPERATOR.SYS
0009/01585000 0025/04995000

PLDA OF ADCC.OPERATOR.SYS
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0006/01320000 0006/01360000 0007/01425000 0028/05390000
0048/07065000 0048/07095000 0048/07100000 0049/07125000
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0130/23530000 0133/24225000 0133/24335000 0133/24400000
0134/24510000 0134/24585000 0134/24670000 0134/24675000

PNTR OF ADCC.OPERATOR.SYS
0002/00355000

POP OF ADCC.OPERATOR.SYS
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0123/21790000 0125/22285000 0125/22360000 0126/22600000
0127/22825000 0128/22990000 0128/23160000 0129/23330000
0130/23530000 0133/24225000 0133/24335000 0133/24400000
0134/24510000 0134/24585000 0134/24670000 0134/24675000

PREVIOUS'NUMBER OF ADCC.OPERATOR.SYS
0065/08975000 0067/09355000 0067/09360000 0067/09370000
0067/09370000 0067/09385000 0067/09385000

PRINT OF ADCC.OPERATOR.SYS
0018/04185000 0020/04475000 0022/04630000 0025/04995000
0027/05230000 0027/05260000 0029/05465000 0032/06300000
0071/09900000 0072/10080000 0073/10370000 0143/26490000
0146/27210000

PRINT'ERRORS OF ADCC.OPERATOR.SYS
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0030/05785000 0055/07700000 0071/09695000

PRINTER OF ADCC.OPERATOR.SYS
0003/00510000 0071/09790000 0071/09845000 0073/10265000
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PRINTOK OF ADCC.OPERATOR.SYS

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PROCEDUR OF ADCC.OPERATOR.SYS
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PROCESS'INPUT OF ADCC.OPERATOR.SYS
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PSHR OF ADCC.OPERATOR.SYS
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PSTA OF ADCC.OPERATOR.SYS
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PUSH OF ADCC.OPERATOR.SYS
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QI OF ADCC.OPERATOR.SYS
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  0114/19930000  0115/20210000  0116/20520000  0119/21025000
  0119/21105000  0121/21450000  0123/21785000  0125/22275000
  0125/22350000  0126/22595000  0127/22820000  0128/22985000
  0128/23155000  0129/23325000  0130/23525000  0132/24180000
  0132/24185000  0137/25180000  0138/25610000  0140/26000000
  0146/27340000  0147/27490000  0148/27655000  0148/27820000
  0149/27985000  0149/28150000  0150/28315000  0150/28485000
  0151/28635000
```

READ OF ADCC.OPERATOR.SYS

```
  0005/01050000  0019/04205000  0029/05495000  0072/10090000
  0073/10375000  0143/26500000  0146/27215000
```

READFAIL OF ADCC.OPERATOR.SYS

```
  0005/00945000  0005/01005000  0005/01030000  0005/01110000
  0006/01285000  0019/04225000  0023/04730000  0061/08330000
  0075/10855000  0075/10945000  0076/11005000  0077/11180000
  0077/11280000  0078/11380000  0078/11495000  0079/11635000
  0080/12015000  0081/12215000  0082/12395000  0083/12600000
  0127/22865000  0128/23035000  0128/23200000  0129/23375000
  0130/23570000  0144/26905000  0144/27010000
```

READKBD OF ADCC.OPERATOR.SYS

```
  0005/01050000  0029/05495000  0072/10090000  0073/10375000
  0143/26500000  0146/27215000
```

READREG OF ADCC.OPERATOR.SYS

```
  0005/01060000  0075/10855000  0075/10945000  0076/11005000
  0082/12395000  0083/12600000
```

REF OF ADCC.OPERATOR.SYS

```
  0003/00520000  0098/16015000  0099/16215000  0100/16500000
  0100/16520000  0101/16585000  0101/16785000  0102/17060000
  0102/17080000
```

REMAINDER OF ADCC.OPERATOR.SYS

```
  0060/08180000  0060/08200000  0060/08230000  0060/08240000
  0060/08250000
```

REP'ILL'INT OF ADCC.OPERATOR.SYS

```
  0061/08365000  0076/11050000  0078/11535000  0080/11900000
  0080/12075000  0081/12260000  0083/12685000  0086/13285000
  0089/13845000  0097/15765000  0117/20670000  0120/21275000
  0121/21495000  0123/21950000  0130/23630000  0135/24850000
  0139/25795000  0141/26185000  0145/27085000  0151/28755000
```

```
RESTART OF ADCC.OPERATOR.SYS
  0005/01120000  0031/06225000

RG2'CHNL'PGM OF ADCC.OPERATOR.SYS
  0011/02045000  0121/21435000  0124/22210000  0126/22530000
  0127/22795000  0128/22960000  0128/23130000  0129/23300000

RIOC OF ADCC.OPERATOR.SYS
  0004/00625000  0005/00935000  0005/00995000  0005/01020000
  0005/01090000  0006/01150000  0006/01265000  0023/04690000
  0023/04715000  0075/10765000  0075/10855000  0075/10945000
  0076/11005000  0077/11180000  0077/11280000  0078/11380000
  0078/11495000  0079/11635000  0080/12015000  0081/12215000
  0082/12395000  0083/12600000  0123/21910000  0123/21920000
  0127/22865000  0128/23035000  0128/23200000  0129/23375000
  0130/23570000  0143/26640000  0144/26905000  0144/27010000

RMSK OF ADCC.OPERATOR.SYS
  0020/04385000  0020/04405000

ROLLCALL OF ADCC.OPERATOR.SYS
  0006/01130000  0075/10765000  0143/26640000

SADR OF ADCC.OPERATOR.SYS
  0018/04015000  0018/04020000

SAVE'CHARS OF ADCC.OPERATOR.SYS
  0020/04340000  0020/04440000  0020/04485000

SAVE'DEV OF ADCC.OPERATOR.SYS
  0048/07035000  0048/07060000

SAVE'MARK OF ADCC.OPERATOR.SYS
  0010/01995000  0059/08010000  0059/08025000  0059/08040000
  0059/08055000  0059/08070000  0059/08085000  0059/08085000
  0059/08085000  0059/08085000  0059/08085000  0064/08710000
  0064/08725000  0064/08740000  0064/08755000  0064/08770000
  0064/08780000  0064/08780000  0064/08780000  0064/08780000
  0064/08780000

SAVE'MSG OF ADCC.OPERATOR.SYS
  0020/04355000  0020/04445000  0020/04490000

SAVESTART OF ADCC.OPERATOR.SYS
  0006/01165000  0071/09660000

SCANIT OF ADCC.OPERATOR.SYS
  0037/06910000  0037/06995000

SCST'BANK OF ADCC.OPERATOR.SYS
  0008/01525000

SCSTP OF ADCC.OPERATOR.SYS
  0008/01530000

SECTION OF ADCC.OPERATOR.SYS
```

```
  0006/01175000  0055/07740000  0072/09985000  0074/10485000
  0077/11070000  0081/12095000  0082/12280000  0084/12705000
  0087/13300000  0090/13860000  0098/15790000  0118/20690000
  0121/21295000  0122/21515000  0124/21970000  0131/23650000
  0136/24870000  0140/25810000  0142/26205000  0146/27105000

SECTIONS'TO'RUN OF ADCC.OPERATOR.SYS
  0006/01185000  0008/01480000  0028/05350000  0055/07740000
  0067/09465000  0067/09470000  0067/09475000  0067/09480000
  0067/09500000  0067/09515000  0067/09520000  0067/09530000
  0067/09535000  0067/09550000  0067/09555000  0072/09985000
  0074/10485000  0077/11070000  0081/12095000  0082/12280000
  0084/12705000  0087/13300000  0090/13860000  0098/15790000
  0118/20690000  0121/21295000  0122/21515000  0124/21970000
  0131/23650000  0136/24870000  0140/25810000  0142/26205000
  0146/27105000

SECTNO OF ADCC.OPERATOR.SYS
  0006/01175000  0006/01190000  0065/08895000  0065/08910000

SECTNR OF ADCC.OPERATOR.SYS
  0055/07545000  0055/07730000  0055/07730000  0055/07740000
  0055/07740000  0055/07760000  0055/07760000

SELECT OF ADCC.OPERATOR.SYS
  0018/04055000  0018/04060000  0035/06335000  0035/06340000
  0037/06935000  0037/06935000  0037/06990000

SET'CPVA OF ADCC.OPERATOR.SYS
  0062/08475000  0121/21430000  0123/21765000  0131/23875000

SET'SECTION OF ADCC.OPERATOR.SYS
  0065/08895000  0066/09275000  0067/09385000

SETMASK OF ADCC.OPERATOR.SYS
  0006/01210000  0078/11455000  0079/11795000  0081/12195000
  0099/16070000  0101/16640000  0103/17170000  0105/17670000
  0107/18160000  0109/18665000  0111/19125000  0113/19615000
  0132/24115000

SETOFFLINE OF ADCC.OPERATOR.SYS
  0019/04240000  0027/05220000

SETR OF ADCC.OPERATOR.SYS
  0006/01395000  0059/08015000  0059/08085000  0071/09665000

SETUP'DRT OF ADCC.OPERATOR.SYS
  0063/08545000  0079/11740000  0121/21425000  0123/21770000
  0124/22205000  0126/22525000  0127/22790000  0128/22955000
  0128/23125000  0129/23295000  0130/23500000

SIOP OF ADCC.OPERATOR.SYS
  0004/00825000  0063/08635000  0121/21445000  0123/21780000
  0125/22270000  0125/22345000  0126/22590000  0132/24165000

SMSK OF ADCC.OPERATOR.SYS
```

```
  0004/00690000  0006/01235000  0020/04395000  0020/04405000
  0078/11455000  0078/11555000  0079/11795000  0079/11810000
  0081/12195000  0082/12365000  0084/12850000  0099/16070000
  0101/16640000  0103/17170000  0105/17670000  0107/18160000
  0109/18665000  0111/19125000  0113/19615000  0132/24115000

SPOLL1 OF ADCC.OPERATOR.SYS
  0006/01245000  0130/23570000

ST'DSJ'CH'PROGS OF ADCC.OPERATOR.SYS
  0063/08585000  0099/16140000  0101/16710000  0103/17240000
  0105/17740000  0107/18230000  0109/18735000  0111/19195000
  0113/19685000

STAR'CLOCK OF ADCC.OPERATOR.SYS
  0018/03970000  0018/03975000  0024/04850000  0024/04865000

START16 OF ADCC.OPERATOR.SYS
  0072/09985000  0142/26200000  0143/26690000  0144/26830000

STARTIDLE OF ADCC.OPERATOR.SYS
  0019/04255000  0022/04635000  0025/05010000  0027/05280000
  0028/05330000  0029/05500000  0031/06010000  0071/09670000
  0072/10100000  0073/10385000  0143/26510000  0146/27225000

STARTIME OF ADCC.OPERATOR.SYS
  0004/00700000  0006/01295000  0022/04640000  0027/05285000
  0079/11780000  0079/11800000  0084/12940000  0085/13085000
  0088/13710000  0091/14255000  0092/14575000  0093/14840000
  0094/15155000  0095/15385000  0099/16190000  0099/16230000
  0100/16395000  0101/16760000  0101/16800000  0102/16955000
  0103/17290000  0103/17330000  0104/17495000  0105/17790000
  0105/17830000  0106/17985000  0107/18280000  0107/18320000
  0108/18485000  0109/18785000  0109/18825000  0110/18955000
  0111/19245000  0111/19285000  0112/19440000  0113/19735000
  0113/19775000  0114/19930000  0115/20210000  0116/20520000
  0119/21025000  0119/21105000  0121/21450000  0123/21785000
  0125/22275000  0125/22350000  0126/22595000  0127/22820000
  0128/22985000  0128/23155000  0129/23325000  0130/23525000
  0132/24180000  0132/24185000  0137/25180000  0138/25610000
  0140/26000000  0146/27340000  0147/27490000  0147/27655000
  0148/27820000  0149/27985000  0149/28150000  0150/28315000
  0150/28485000  0151/28635000

STAX OF ADCC.OPERATOR.SYS
  0004/00590000  0004/00745000  0005/00975000  0006/01195000
  0007/01420000  0026/05095000  0026/05100000  0026/05105000
  0026/05110000  0026/05115000  0028/05385000  0028/05390000
  0048/07065000  0048/07100000  0049/07125000  0049/07150000
  0049/07175000  0050/07200000  0050/07225000  0051/07250000
  0051/07275000  0051/07300000  0052/07325000  0052/07355000
  0053/07385000  0053/07415000  0053/07445000  0054/07475000
  0054/07505000  0055/07740000  0058/07940000  0059/08005000
  0059/08085000  0059/08135000  0062/08495000  0062/08520000
  0063/08565000  0063/08630000  0064/08700000  0064/08780000
  0065/08910000  0066/09275000  0067/09385000  0071/09715000
```

```
  0071/09720000  0071/09725000  0071/09730000  0071/09750000
  0071/09850000  0072/09985000  0074/10485000  0077/11070000
  0081/12095000  0082/12280000  0084/12705000  0087/13300000
  0090/13860000  0098/15790000  0118/20690000  0121/21295000
  0121/21455000  0122/21515000  0123/21790000  0124/21970000
  0124/22240000  0125/22285000  0125/22330000  0125/22360000
  0126/22560000  0126/22600000  0127/22800000  0127/22825000
  0128/22965000  0128/22990000  0128/23135000  0128/23160000
  0129/23305000  0129/23330000  0130/23530000  0131/23650000
  0132/23925000  0132/24055000  0132/24080000  0133/24225000
  0133/24335000  0133/24400000  0134/24510000  0134/24585000
  0134/24670000  0134/24675000  0136/24870000  0140/25810000
  0142/26205000  0146/27105000

STD OF ADCC.OPERATOR.SYS
  0065/08925000  0066/09275000  0067/09385000

STOR OF ADCC.OPERATOR.SYS
  0004/00630000  0005/00875000  0005/00880000  0005/00890000
  0005/00940000  0005/01000000  0005/01025000  0005/01100000
  0006/01155000  0006/01275000  0023/04700000  0023/04715000
  0048/07050000  0048/07060000  0059/08030000  0059/08045000
  0059/08060000  0059/08075000  0059/08085000  0059/08085000
  0059/08085000  0059/08085000  0061/08375000  0061/08375000
  0064/08710000  0064/08725000  0064/08740000  0064/08755000
  0064/08770000  0064/08780000  0064/08780000  0064/08780000
  0064/08780000  0064/08780000  0075/10765000  0075/10855000
  0075/10945000  0076/11005000  0077/11180000  0077/11280000
  0078/11380000  0078/11495000  0079/11635000  0079/11785000
  0079/11815000  0080/12015000  0081/12215000  0082/12395000
  0083/12600000  0123/21910000  0123/21920000  0127/22865000
  0128/23035000  0128/23200000  0129/23375000  0130/23570000
  0143/26640000  0144/26905000  0144/27010000

STORE'MARK OF ADCC.OPERATOR.SYS
  0006/01165000  0064/08660000  0071/09660000

STOREMARK OF ADCC.OPERATOR.SYS
  0064/08680000  0064/08780000

STP OF ADCC.OPERATOR.SYS
  0003/00525000  0020/04465000  0020/04470000  0026/05195000
  0026/05210000  0071/09895000  0075/10760000  0075/10850000
  0075/10940000  0076/11000000  0077/11175000  0077/11275000
  0078/11370000  0078/11450000  0079/11615000  0079/11715000
  0080/11970000  0081/12185000  0082/12355000  0083/12540000
  0084/12845000  0088/13590000  0088/13650000  0090/14010000
  0091/14215000  0091/14375000  0092/14510000  0093/14800000
  0094/15100000  0095/15330000  0095/15490000  0097/15650000
  0098/16005000  0101/16575000  0103/17135000  0105/17635000
  0107/18125000  0109/18630000  0111/19090000  0113/19580000
  0115/20050000  0116/20360000  0118/20935000  0121/21380000
  0122/21615000  0123/21750000  0123/21885000  0124/22160000
  0126/22505000  0127/22755000  0127/22925000  0128/23095000
  0129/23265000  0130/23470000  0131/23865000  0136/24965000
  0137/25400000  0140/25910000  0142/26430000  0144/26900000
```

```
  0144/27005000  0146/27175000  0147/27440000

STUFF OF ADCC.OPERATOR.SYS
  0006/01305000  0051/07300000  0052/07325000  0052/07350000
  0052/07380000  0053/07410000  0053/07440000  0054/07470000
  0054/07500000

SUBBUF OF ADCC.OPERATOR.SYS
  0022/04615000  0022/04620000  0022/04630000  0026/05160000
  0026/05165000  0027/05230000

SWITCH'LOOP OF ADCC.OPERATOR.SYS
  0142/26375000  0142/26415000

T'CHNL OF ADCC.OPERATOR.SYS
  0002/00360000  0142/26365000  0142/26380000  0142/26410000
  0142/26410000  0143/26600000  0145/27075000  0145/27075000

T'CHNLBIT OF ADCC.OPERATOR.SYS
  0003/00530000  0142/26370000  0142/26395000  0142/26395000
  0142/26420000  0142/26420000  0143/26605000  0145/27070000
  0145/27070000

T11 OF ADCC.OPERATOR.SYS
  0134/24690000  0135/24795000

TEM'DEV OF ADCC.OPERATOR.SYS
  0002/00365000  0025/05055000  0026/05080000  0026/05080000
  0026/05095000  0026/05095000  0026/05100000  0026/05100000
  0063/08600000  0063/08610000  0063/08610000  0063/08625000
  0063/08630000  0063/08630000  0071/09825000  0071/09830000
  0071/09830000  0071/09845000  0071/09845000  0071/09845000
  0071/09850000  0071/09850000

TEMP'CNTR OF ADCC.OPERATOR.SYS
  0065/08980000  0065/09030000  0065/09065000  0066/09080000
  0066/09080000

TEMP'SECT'2'RUN OF ADCC.OPERATOR.SYS
  0065/08905000  0065/08925000  0065/08935000  0066/09130000
  0066/09275000  0066/09275000  0067/09385000  0067/09385000
  0067/09470000  0067/09480000  0067/09500000  0067/09525000
  0067/09540000

TEMPARRAY OF ADCC.OPERATOR.SYS
  0011/02145000  0057/07825000  0057/07830000  0057/07835000
  0057/07840000  0057/07845000  0057/07850000  0057/07855000
  0057/07860000  0058/07885000  0058/07890000  0058/07895000
  0058/07900000  0058/07905000  0058/07910000  0058/07915000
  0058/07920000  0058/07940000  0058/07940000  0063/08565000
  0063/08565000  0131/23925000  0132/23925000

TEMPBUF OF ADCC.OPERATOR.SYS
  0009/01595000  0029/05490000  0029/05495000  0029/05510000
  0029/05520000  0029/05520000  0029/05530000  0029/05535000
  0029/05535000  0029/05550000  0029/05640000  0029/05655000
```

```
  0029/05700000  0029/05700000  0030/05740000  0030/05770000
  0030/05805000  0030/05830000  0030/05855000  0030/05880000
  0030/05905000  0030/05930000  0030/05955000  0030/05985000
  0031/06045000  0031/06065000  0031/06070000  0031/06075000
  0031/06150000  0031/06180000  0031/06185000  0031/06205000
  0031/06245000  0072/10085000  0072/10090000  0072/10110000
  0072/10130000  0072/10145000  0073/10375000  0073/10390000
  0073/10410000  0143/26480000  0143/26495000  0143/26500000
  0143/26520000  0143/26540000  0143/26555000  0146/27190000
  0146/27215000  0146/27230000  0146/27235000  0146/27250000

TEST'COMMAND'OK OF ADCC.OPERATOR.SYS
  0019/04270000  0031/06185000  0065/08800000  0067/09560000

TESTNR OF ADCC.OPERATOR.SYS
  0003/00535000

TIMES OF ADCC.OPERATOR.SYS
  0018/04110000  0018/04115000

TOS' OF ADCC.OPERATOR.SYS
  0003/00540000  0004/00815000  0004/00825000  0005/00875000
  0005/00940000  0005/01000000  0005/01025000  0005/01100000
  0006/01155000  0006/01275000  0007/01445000  0023/04700000
  0023/04715000  0023/04725000  0024/04825000  0061/08345000
  0061/08375000  0061/08390000  0062/08415000  0062/08415000
  0063/08630000  0063/08635000  0069/09590000  0071/09725000
  0071/09725000  0071/09730000  0071/09730000  0071/09730000
  0071/09745000  0071/09750000  0071/09750000  0071/09820000
  0071/09850000  0071/09850000  0075/10765000  0075/10770000
  0075/10855000  0075/10865000  0075/10875000  0075/10945000
  0075/10950000  0076/11005000  0076/11015000  0076/11025000
  0077/11180000  0077/11185000  0077/11200000  0077/11280000
  0077/11285000  0077/11300000  0078/11380000  0078/11385000
  0078/11485000  0078/11490000  0078/11495000  0078/11500000
  0078/11510000  0078/11540000  0078/11545000  0079/11620000
  0079/11625000  0079/11635000  0079/11640000  0079/11760000
  0079/11765000  0080/11905000  0080/11910000  0080/11985000
  0080/11990000  0080/12015000  0080/12020000  0080/12030000
  0080/12055000  0080/12060000  0081/12200000  0081/12205000
  0081/12215000  0081/12220000  0081/12230000  0082/12395000
  0082/12405000  0082/12425000  0082/12450000  0082/12455000
  0083/12565000  0083/12570000  0083/12600000  0083/12605000
  0083/12610000  0083/12615000  0084/12950000  0085/13095000
  0085/13185000  0086/13265000  0088/13720000  0088/13730000
  0088/13755000  0088/13770000  0089/13790000  0090/14115000
  0090/14125000  0091/14270000  0091/14280000  0092/14420000
  0092/14430000  0092/14585000  0092/14610000  0092/14675000
  0092/14685000  0093/14850000  0093/14875000  0093/14935000
  0093/14950000  0094/14995000  0094/15165000  0094/15190000
  0094/15255000  0095/15270000  0095/15400000  0096/15540000
  0097/15730000  0099/16240000  0099/16340000  0100/16360000
  0101/16810000  0102/16900000  0102/16920000  0103/17340000
  0104/17440000  0104/17460000  0105/17840000  0106/17930000
  0106/17950000  0107/18330000  0108/18430000  0108/18450000
  0109/18835000  0110/18900000  0110/18920000  0111/19295000
```

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  0112/19385000  0112/19405000  0113/19785000  0114/19875000
  0114/19895000  0115/20225000  0115/20240000  0115/20255000
  0115/20310000  0116/20535000  0116/20550000  0116/20570000
  0117/20625000  0119/21030000  0119/21050000  0119/21060000
  0119/21120000  0119/21130000  0119/21175000  0119/21185000
  0119/21230000  0119/21240000  0121/21445000  0121/21445000
  0121/21455000  0121/21455000  0121/21460000  0121/21470000
  0122/21645000  0122/21650000  0123/21780000  0123/21780000
  0123/21790000  0123/21790000  0123/21795000  0123/21810000
  0125/22265000  0125/22270000  0125/22285000  0125/22285000
  0125/22290000  0125/22345000  0125/22345000  0125/22360000
  0125/22360000  0125/22365000  0126/22590000  0126/22590000
  0126/22600000  0126/22600000  0126/22605000  0127/22810000
  0127/22815000  0127/22825000  0127/22825000  0127/22830000
  0127/22865000  0127/22875000  0127/22885000  0128/22975000
  0128/22980000  0128/22990000  0128/22990000  0128/22995000
  0128/23035000  0128/23040000  0128/23050000  0128/23145000
  0128/23150000  0128/23160000  0128/23160000  0128/23165000
  0128/23200000  0128/23210000  0128/23220000  0129/23315000
  0129/23320000  0129/23330000  0129/23330000  0129/23335000
  0129/23375000  0129/23380000  0129/23390000  0130/23515000
  0130/23520000  0130/23530000  0130/23530000  0130/23535000
  0130/23570000  0130/23575000  0130/23585000  0132/24160000
  0132/24165000  0133/24225000  0133/24225000  0133/24235000
  0133/24255000  0133/24275000  0133/24305000  0133/24335000
  0133/24335000  0133/24345000  0133/24365000  0133/24385000
  0133/24400000  0133/24400000  0133/24405000  0133/24410000
  0133/24415000  0133/24435000  0133/24460000  0134/24490000
  0134/24510000  0134/24510000  0134/24520000  0134/24540000
  0137/25200000  0137/25260000  0137/25285000  0138/25630000
  0138/25690000  0139/25715000  0140/26050000  0141/26130000
  0143/26640000  0143/26645000  0143/26650000  0143/26655000
  0144/26905000  0144/26910000  0144/26935000  0144/27010000
  0144/27015000  0145/27040000  0146/27350000  0146/27365000
  0147/27385000  0147/27395000  0147/27500000  0147/27555000
  0147/27595000  0148/27665000  0148/27715000  0148/27755000
  0148/27830000  0148/27885000  0148/27925000  0149/27995000
  0149/28045000  0149/28085000  0149/28160000  0149/28215000
  0150/28255000  0150/28325000  0150/28375000  0150/28415000
  0150/28495000  0151/28545000  0151/28585000  0151/28645000
  0151/28695000  0151/28735000

TOS'1 OF ADCC.OPERATOR.SYS
  0003/00545000  0004/00815000  0004/00825000  0005/00880000
  0061/08375000  0062/08425000  0062/08435000  0062/08440000
  0063/08625000  0063/08635000  0121/21445000  0121/21445000
  0123/21780000  0123/21780000  0125/22260000  0125/22270000
  0125/22340000  0125/22345000  0126/22590000  0126/22590000
  0127/22805000  0127/22815000  0128/22970000  0128/22980000
  0128/23140000  0128/23150000  0129/23310000  0129/23320000
  0130/23510000  0130/23520000  0132/24155000  0132/24165000
  0140/26020000  0140/26025000  0140/26030000  0140/26035000
  0140/26050000  0141/26125000

TRAP OF ADCC.OPERATOR.SYS
  0006/01345000  0048/07095000  0049/07125000  0049/07150000
```

```
  0049/07175000  0050/07200000  0050/07225000  0051/07250000
  0051/07275000

TROF' OF ADCC.OPERATOR.SYS
  0006/01385000  0071/09665000

TS0 OF ADCC.OPERATOR.SYS
  0074/10480000  0152/28825000

TSTBUF OF ADCC.OPERATOR.SYS
  0011/02005000  0071/09865000

TSTBUF' OF ADCC.OPERATOR.SYS
  0011/02015000  0071/09865000

UARTCNTRL OF ADCC.OPERATOR.SYS
  0010/01820000  0140/25950000  0140/26010000  0141/26145000

UCST'BANK OF ADCC.OPERATOR.SYS
  0008/01535000

UCSTP OF ADCC.OPERATOR.SYS
  0008/01540000

UNMASK'CONS OF ADCC.OPERATOR.SYS
  0020/04370000  0020/04405000

V'GETS'MEM OF ADCC.OPERATOR.SYS
  0006/01405000  0071/09715000  0071/09725000  0121/21455000
  0123/21790000  0125/22285000  0125/22360000  0126/22600000
  0127/22825000  0128/22990000  0128/23160000  0129/23330000
  0130/23530000  0133/24225000  0133/24335000  0133/24400000
  0134/24510000  0134/24585000  0134/24670000  0134/24675000

VARABLE OF ADCC.OPERATOR.SYS
  0005/00955000  0005/00965000  0006/01405000  0007/01430000

VARIABLE OF ADCC.OPERATOR.SYS
  0018/04030000

WHERE OF ADCC.OPERATOR.SYS
  0018/04040000  0018/04040000  0028/05410000  0028/05410000
  0030/05995000

WIOC OF ADCC.OPERATOR.SYS
  0004/00815000  0007/01450000  0024/04795000  0024/04815000
  0078/11490000  0078/11545000  0079/11625000  0079/11765000
  0080/11910000  0080/11990000  0080/12060000  0081/12205000
  0083/12570000  0127/22815000  0128/22980000  0128/23150000
  0129/23320000  0130/23520000

WRITE'WORD OF ADCC.OPERATOR.SYS
  0023/04750000  0023/04760000  0024/04790000  0024/04815000

WRITEFAIL OF ADCC.OPERATOR.SYS
  0004/00650000  0007/01455000  0019/04295000  0024/04830000
```

```
  0069/09575000  0078/11375000  0078/11490000  0078/11545000
  0079/11625000  0079/11630000  0079/11765000  0080/11910000
  0080/11990000  0080/12060000  0081/12205000  0082/12360000
  0083/12570000  0083/12675000  0084/12855000  0090/14015000
  0095/15495000  0097/15655000  0098/16045000  0100/16485000
  0101/16615000  0102/17045000  0103/17145000  0104/17585000
  0105/17645000  0106/18075000  0107/18135000  0108/18575000
  0109/18640000  0110/19045000  0111/19100000  0112/19530000
  0113/19590000  0114/20020000  0115/20055000  0116/20365000
  0118/20950000  0121/21385000  0122/21620000  0124/22165000
  0124/22200000  0125/22325000  0126/22520000  0127/22760000
  0127/22905000  0128/23070000  0129/23240000  0129/23410000
  0130/23610000  0131/23870000  0147/27445000  0148/27785000
  0149/28115000  0150/28450000

WRITEREG OF ADCC.OPERATOR.SYS
  0007/01440000  0078/11490000  0078/11545000  0079/11625000
  0079/11765000  0080/11910000  0080/11990000  0080/12060000
  0081/12205000  0083/12570000

X OF ADCC.OPERATOR.SYS
  0004/00595000  0006/01200000  0026/05100000  0055/07740000
  0059/08010000  0059/08025000  0059/08040000  0059/08055000
  0059/08070000  0059/08085000  0059/08085000  0059/08085000
  0059/08085000  0059/08085000  0063/08630000  0064/08710000
  0064/08725000  0064/08740000  0064/08755000  0064/08770000
  0064/08780000  0064/08780000  0064/08780000  0064/08780000
  0064/08780000  0065/08915000  0065/08920000  0066/09275000
  0066/09275000  0067/09385000  0067/09385000  0072/09985000
  0074/10485000  0077/11070000  0081/12095000  0082/12280000
  0084/12705000  0087/13300000  0090/13860000  0098/15790000
  0118/20690000  0121/21295000  0122/21515000  0124/21970000
  0131/23650000  0136/24870000  0140/25810000  0142/26205000
  0146/27105000

XX OF ADCC.OPERATOR.SYS
  0003/00550000

XY OF ADCC.OPERATOR.SYS
  0003/00555000

ZENDEF OF ADCC.OPERATOR.SYS
  0007/01465000

ZENDINT OF ADCC.OPERATOR.SYS
  0002/00370000

ZENDLOG OF ADCC.OPERATOR.SYS
  0003/00560000  0142/26355000

ZENDOUBLE OF ADCC.OPERATOR.SYS
  0008/01490000

ZERO OF ADCC.OPERATOR.SYS
  0004/00660000  0004/00670000  0004/00670000  0004/00680000
  0062/08455000  0062/08455000  0071/09870000  0071/09870000
```

```
  0077/11120000  0077/11120000  0078/11475000  0078/11475000
  0079/11745000  0079/11750000  0079/11750000  0081/12255000
  0083/12680000  0086/13280000  0089/13840000  0117/20665000
  0120/21270000  0121/21490000  0123/21945000  0130/23625000
  0132/24100000  0132/24105000  0132/24105000

ZERO'CPVA OF ADCC.OPERATOR.SYS
  0070/09610000  0099/16135000  0101/16705000  0103/17235000
  0105/17735000  0107/18225000  0109/18730000  0111/19190000
  0113/19680000

ZI OF ADCC.OPERATOR.SYS
  0008/01545000


NO. ERRORS = 0          NO. WARNINGS = 500
PRIMARY DB = 97         SECONDARY DB = 1274
CPU TIME   = 0:00:15    ELASPED TIME = 0:00:16
```

```
                                                    #S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
                                                    #S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
                                                    #S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
```

```
                                #S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
                                #S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
                                #S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
```

```
                                                #S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
                                                #S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
                                                #S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
```

```
#S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
#S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
#S1; #O9  *  OPERATOR.SYS; SPLLIST  *  THU, JUN  1, 1995,  6:08 PM
```