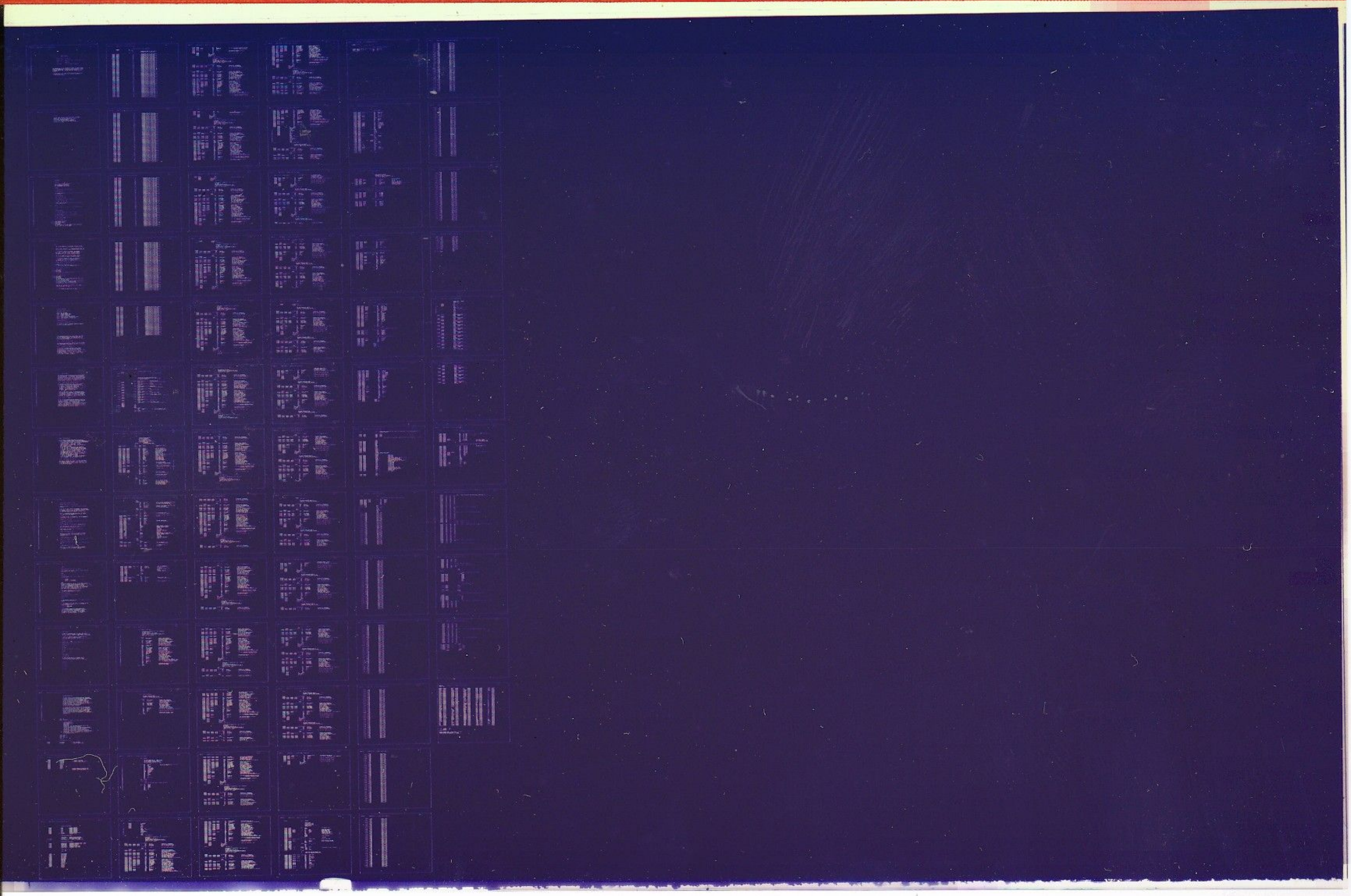
# DH11

DH11 BRK & HALF DUPLEX
CZDHID0

AH-8478D-MC
1 OF 1 OCT 1985


digital
MADE IN USA



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                        .REM !
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## IDENTIFICATION

PRODUCT CODE: AC-8476D-MC

PRODUCT NAME: CZDHIDO DH11 BREAK AND HALF-DUPLEX TEST

DATE: JUNE 1985

MAINTAINER: MK NAC SOFTWARE ENGINEERING

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1
2                                   1.      ABSTRACT
3
4                                           THE DH11 BREAK AND HALF DUPLEX TEST CHECKS THE BREAK
5                                           CONTROL LOGIC OF THE DH11 AND VERIFIES THAT THE UARTS
6                                           RECEIVE ONLY ONE BREAK CHARACTER  ON A GIVEN
7                                           LINE NO MATTER HOW LONG BREAK IS ASSERTED.
8                                           THE TEST ALSO VERIFIES THAT NO CHARACTERS ARE
9                                           RECEIVED ON A A LINE IF THE HALF DUPLEX FUNCTION FOR
10                                          THAT LINE IS SELECTED.
11
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                        2.      REQUIREMENTS

                        2.1     EQUIPMENT

                                PDP-11 FAMILY STANDARD COMPUTER WITH 4KW OF MEMORY
                                ASR-33 TELETYPE OR EQUIVALENT
                                DH11 ASYNCHRONOUS MULTIPLEXER
                                DM11 MAINTENANCE CARD INSTALLED

                        2.2     STORAGE

                                THE PROGRAM LOADS INTO 4KW OF MEMORY

                        3.      LOADING PROCEDURE

                                THE STANDART PROCEDURE FOR LOADING ABSOLUTE BINARY TAPES
                                IS TO BE USED

                        4.      STARTING PROCEDURE

                        4.1     CONTROL SWITCH SETTINGS

                        4.1.1   AFTER PROGRAM LOAD (INITIAL PROGRAM START)

                                ALL CONSOLE SWITCHES DOWN

                        4.1.2   TO MODIFY DEVICE VECTOR AND CONTROL REGISTER ADDRESSES
                                AFTER PROGRAM RESTART

                                SW00=1

                        4.1.3   TO START PROGRAM AT SELECTED TEST AFTER PROGRAM RESTART

                                SW01=1

                        4.2     STARTING ADDRESS

                                THE STARTING ADDRESS FOR ALL TESTS IS 000200

                                THE RESTART ADDRESS FOR ALL TESTS I 0002000

                                THE STARTING ADDRESS TO ENTER A SELECTED TEST IS 000200

                        4.3     PROGRAM AND/OR OPERATOR ACTION

                        4.3.1   INITIAL PROGRAM START

                        4.3.1.1 LOAD PROGRAM INTO MEMORY
                        4.3.1.2 LOAD ADDRESS 000200
                        4.3.1.3 CLEAR CONSOLE SWITCHES
                        4.3.1.4 PRESS START
                        4.3.1.5 THE PROGRAM WILL TYPE "DH11 BREAK AND HALF-DUPLEX TEST"
                                AND WILL THEN TYPE "VECTOR ADDRESS-" AND WAIT FOR AN
                                INPUT FROM THE TELETYPE KEYBOARD.
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                4.3 (CONT'D)

                4.3.1.6 TYPE IN THE ADDRESS OF THE RECEIVER INTERRUPT VECTOR
                        FOR THE DH11 TO BE TESTED FOLLOWED BY <CARRIAGE RETURN>

                NOTE:   WORDS IN ANGLE BRACKETS, I.E. <CARRIAGE RETURN> MEAN THAT
                        THE TELETYPE KEY WITH THE NAMED FUNCTION SHOULD BE STRUCK

                        IF AN INCORRECT ADDRESS IS ENTERED, THE PROGRAM
                        WILL TYPE "?" AND WILL REPEAT THE SECOND MESSAGE OF 4.3.1.5
                4.3.1.7 THE PROGRAM WILL TYPE "CONTROL REGISTER ADDRESS-"
                        AND WAIT FOR AN INPUT FROM THE TELETYPE KEYBOARD

                4.3.1.8 TYPE IN THE ADDRESS OF THE SYSTEM CONTROL REGISTER OF THE
                        DH11 TO BE TESTED FOLLOWED BY <CARRIAGE RETURN>

                        IF AN INCORRECT ADDRESS IS TYPED, THE PROGRAM WILL TYPE
                        "?" AND WILL THEN REPEAT THE MESSAGE OF 4.3.1.7
                4.3.1.9 THE PROGRAM WILL TYPE "R" TO INDICATE THAT IT IS
                        ABOUT TO START TESTING, AND THEN TESTING WILL BEGIN

                4.3.2   PROGRAM RESTART WITH ALL SWITCHES DOWN

                4.3.2.1 PERFORM 4.3.1.2 TO 4.3.1.5
                4.3.2.2 THE PROGRAM WILL TYPE "DH11 BREAK AND HALF-DUPLEX TEST"
                        AND WILL THEN CONTINUE AS DESCRIBED IN 4.3.1.9

                4.3.3   PROGRAM RESTART WITH SW00=1

                4.3.3.1 LOAD ADDRESS 000200
                4.3.3.2 SET SW01=1
                4.3.3.3 PRESS START
                4.3.3.4 THE PROGRAM WILL PERFORM AS DESCRIBED IN 4.3.1.5 TO 4.3.1.9

                4.3.4   PROGRAM RESTART WITH SW01=1

                4.3.4.1 LOAD ADDRESS 000200
                4.3.4.2 SET SW01=1
                4.3.4.3 PRESS START
                4.3.4.4 THE PROGRAM WILL TYPE "DH11 BREAK AND HALF-DUPLEX TEST"
                        AND WILL THEN TYPE "TEST PC-" AND WILL WAIT FOR AN INPUT
                        FROM THE TELETYPE KEYBOARD
                4.3.4.5 TYPE IN THE ADDRESS OF THE TEST AT WHICH THE PROGRAM IS TO
                        BE STARTED FOLLOWED BY <CARRIAGE RETURN>
                4.3.4.6 THE PROGRAM WILL TYPE R TO INDICATE THAT IT HAS STARTED
                        AND WILL START TESTING AT THE SELECTED TEST.

                NOTE:   CARE MUST BE TAKEN WHEN THS FEATURE IS USED, SINCE
                        THERE IS NO PROTECTION AGAINST SELECTING AN ADDRESS THAT
                        IS IN THE MIDDLE OF A TEST

                NOTE:   IF IT IS DESIRED TO LOOP ON THE TEST THAT IS SELECTED
                        SET SW14=1 BEFORE ENTERING THE TEST ADDRESS
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                        5.      OPERATING PROCEDURE

                        5.1     OPERATIONAL SWITCH SETTINGS

                                SW15=1, HALT ON ERROR
                                SW14=1, LOOP ON CURRENT TEST
                                SW13=1, SUPPRESS ERROR TYPEOUT
                                SW11=1, INHIBIT ITERATIONS
                                SW10=1, ESCAPE TO NEXT TEST ON ERROR
                                SW09=1, FREEZE VARIABLE PARAMETER IN CURRENT TEST
                                SW01=1, START PROGRAM AT SELECTED TEST
                                SW00=1, CHANGE PARAMETERS AT PROGRAM RESTART

                        5.2     SUBROUTINE ABSTRACTS

                        5.2.1   TRAPCATCHER (LOCATIONS 000000-000776)

                                THIS ROUTINE IS USED TO INTERCEPT UNEXPECTED INTERRUPTS
                                AND TRAPS.  THE AREA FROM 000000-000776 IS LOADED
                                WITH THE FOLLOWING SEQUENCE

                                        2
                                        0
                                        4
                                        0
                                        ...
                                        772
                                        0
                                        776
                                        0

                                IF AN UNEXPECTED INTERRUPT OR TRAP OCCURS, THE PROGRAM
                                WILL HALT WITH THE PC 2 GREATER THAN THE ADDRESS TO
                                WHICH THE PROGRAM TRAPPED.  THE PROCESSOR STACK MAY
                                BE EXAMINED TO DETERMINE WHERE THE PROGRAM WAS WHEN THE
                                TRAP OR INTERRUPT OCCURED.

                        5.2.2   START   (PROGRAM INITIALIZATION)

                                THIS ROUTINE INITIALIZES ALL PROGRAM FLAGS AND COUNTERS,
                                TYPES THE PROGRAM TITLE MESSAGE, AND INPUTS THE VECTOR
                                AND CONTROL REGISTER ADDRESSES OF THE DH11 TO BE TESTED.

                        5.2.3   BEGIN   (PROGRAM START AND RESTART)

                                THIS ROUTINE IS ENTERED IMMEDIATLY AFTER "START"
                                AND EACH TIME A PROGRAM PASS HAS BEEN COMPLETED.
                                THE ROUTINE SETS UP THE PROCESSOR STACK AND STATUS WORD
                                AND THEN TRANSFERS CONTROL TO THE TEST AT WHICH
                                TESTING WILL BEGIN.  IF SW01=0 WHEN THIS ROUTINE IS ENTERD
                                TESTING WILL START AT T1 (TEST 1).  IF SW01=1 WHEN
                                THIS ROUTINE IS ENTERED, TESTING WILL START AT THE PC
                                ENTERED FROM THE TELETYPE KEYBOARD.
```

### 5.2.4 EOP (END OF PASS)

THIS ROUTINE IS ENTERED ONCE PER PASS AFTER ALL TESTS
HAVE BEEN COMPLETED. THIS ROUTINE TYPES THE MAINDEC
IDENTIFICATION CODE OF THE PROGRAM, CLEARS ERROR FLAGS
AND UPDATES THE PASS COUNT. IF THE PROGRAM WAS LOADED
UNDER ACT11 OR DDP, THE ROUTINE CHECKS FOR RETURN TO
THE ACT11 OR DDP MONITOR. IF THE PROGRAM IS NOT UNDER
MONITOR CONTROL, THE ROUTINE TRANSFERS TO BEGIN.

### 5.2.5 SCOPER (SCOPE LOOP AND ITERATION HANDLER)

THIS ROUTINE IS ENTERED EACH TIME A TEST IS COMPLETED.
THE ROUTINE CHECKS FOR THE FOLLOWING UPON ENTRY
A) IF SW10=1, THE ROUTINE WILL TRANSFER TO THE NEXT TEST
   IN SEQUENCE, AFTER CLEARING ERROR FLAGS.
B) IF SW11=1, THE ROUTINE WILL TRANSFER TO THE NEXT TEST
   SEQUENCE, AFTER CLEARING ERROR FLAGS.
C) IF SW14=1, THE ROUTINE WILL LOOP ON THE CURRENT TEST
   REGARDLESS OF THE ITERATION COUNT.

IF NONE OF THE ABOVE IS TRUE, THE ROUTINE WILL ADD 1
TO THE COUNT OF TEST ITERATIONS, AND COMPARE THIS VALUE
TO THE NUMBER OF ITERATIONS THAT SHOULD BE PERFORMED.
IF THESE NUMBERS ARE EQUAL, THE ROUTINE WILL TRANSFER
TO THE NEXT TEST IN SEQUENCE. THE THE NUMBERS ARE NOT
EQUAL, THE TEST CURRENTLY IN PROGRESS WILL BE REPEATED.

### 5.2.6 SCOP1R (FREEZE ON CURRENT DATA)

THE CALL TO THIS ROUTINE FOLLOWS IMMEDIATLY AFTER THE
THE CALL TO THE ERROR HANDLER IN THOSE TESTS THAT HAVE
VARIABLE PARAMETERS. THIS ROUTINE IS ALWAYS ENTERED IN
THOSE TESTS, WHETHER OR NOT AN ERROR OCCURS.
IF SW09=1, THE ROUTINE WILL TRANSFER CONTROL BACK TO THE
TEST AT A POINT WHICH WILL ALLOW REPEATING THE FUNCTION
UNDER TEST CONTINUOUSLY WITH THE SAME DATA. IF THIS
OPTION IS SELECTED, THE ROUTINE "SCOPER" IS NEVER ENTERED
AND ITERATION COUNTS WILL NOT BE UPDATED.

```
1
2                    5.2.7   ERRORS  (ERROR HANDLER)
3
4                            THIS ROUTINE IS ENTERED UPON ERROR DETECTION ONLY.
5                            WITH ALL CONSOLE SWITCHES DOWN, THE ROUTINE PROCEDES AS FOLLOWS:
6                            A) THE PC OF THE INSTRUCTION THAT CALLED THE ERROR HANDLER
7                               IS ACCESSED THRU THE STACK, AND THEN THE EMT INSTRUCTION
8                               ITSELF IS FETCHED.  THE 8 LSB OF THE EMT
9                               INSTRUCTION ARE THE ERROR CODE.  THIS CODE IS
10                              USED TO ACCESS A TABLE OF ERROR MESSAGES AND ERROR
11                              DATA STORAGE LOCATIONS.
12                           B) IF THE TEST THAT FAILED DID NOT FAIL PREVIOUSLY
13                              DURING THIS PASS,  A COMPLETE ERROR REPORT IS MADE
14                              IF THE TEST THAT FAILED FAILED MOR THAT ONCE DURING
15                              THE CURRENT PASS, ONLY THE DATA RELATING TO THE FAILUER
16                              IS TYPED.  IF SW13=1, NO ERROR TYPEOUT IS MADE.
17                           C) THE ROUTINE NOW CHECKS FOR HALT ON ERROR.  IF SW15=1
18                              THE PROGRAM WILL HALT WITH THE PC OF THE CALL TO
19                              THE ERROR ROUTINE IN R0.  IF SW15=0, THE PROGRAM WILL
20                              NOT HALT, BUT WILL CHECK FOR ESCAPE TO NEXT TEST.
21                           D) IF SW10=0, THE ROUTINE WILL RETURN
22                              TO THE TEST IN PROGRESS.  IF SW10=1, THE ROUTINE WILL
23                              ABORT THE CURRENT TEST, AND TRANSFER TO THE NEXT
24                              TEST IN SEQUENCE, THRU THE ROUTINE "SCOPER".
25
26                   5.2.8   TRPSRV  (TRAP DECODE AND DISPATCH)
27
28                           THIS ROUTINE DECODES THE 8 LSB OF THE TRAP INSTRUCTION
29                           THAT CAUSED TH PROGRAM INTERRUPT, AND TRANSFERS CONTROL
30                           TO THE ROUTINE THRU THE TABLE "TRPTAB" USING THE 8 LSB
31                           OF THE TRAP INSTRUCTION AS  AN OFFSET TO THE POINTER TO
32                           THE ROUTINE TO BE ENTERED.
33
```

5.3 PROGRAM AND OR OPERATOR ACTION

5.3.1 PROGRAM START WITH ALL SWITCHES DOWN

5.3.1.1 REFER TO SECTIONS 4.3.1 AND 4.3.2 FOR INITIAL PROGRAM BEHAVIOR.

5.3.1.2 AFTER "R" HAS BEEN TYPED BY THE PROGRAM, TEST EXECUTION WILL BEGIN. EACH TEST WILL BE REPEATED A SELECTED NUMBER OF ITERATIONS (SEE LISTING FOR EXACT NUMBER FOR EACH TEST) AND THEN THE PROGRAM WILL PROCEED TO THE NEXT TEST.

5.3.1.3 WHEN ALL ITERATIONS HAVE BEEN COMPLETED, THE PROGRAM WILL TYPE "CZDHI" AND THEN RESTART TESTING AT TEST 1 (LOCATION T1 IN THE PROGRAM).

5.3.1.4 IF AN ERROR OCCURS, THE PROGRAM WILL TYPE AN APPROPRIATE ERROR MESSAGE, AND THEN CONTINUE THE TEST IN PROGRESS.

5.3.2 PROGRAM START WITH SW00=1

THE PROGRAM WILL PERFORM AS DESCRIBED IN 4.3.1 AND 5.3.1

5.3.3 PROGRAM START WITH SW01=1

5.3.3.1 REFER TO SECTION 4.3.4 FOR INITIAL PROGRAM BEHAVIOR

5.3.3.2 TEST EXECUTION WILL START AT THE ADDRESS SPECIFIED AND WILL CONTINUE AS DESCRIBED IN 5.3.1.2

5.3.3.3 AFTER "CZDHI" HAS BEEN TYPED, THE PROGRAM WILL RESUME TESTING AT TEST 1

5.3.4 PROGRAM OPERATION WITH SW15=1

SAME AS 5.3.1, EXCEPT THAT IN THE CASE OF AN ERROR, THE PROGRAM WILL HALT AFTER THE ERROR TYPEOUT, AND THE PC+2 OF THE CALL TO THE ERROR ROUTINE WILL BE DISPLAYED IN R0.

5.3.5 PROGRAM OPERATION WITH SW13=1

SAME AS 5.3.1 EXCEPT THAT NO ERROR TYPEOUTS WILL OCCUR

5.3.6 PROGRAM OPERATION WITH SW11=1

SAME AS 5.3.1 EXCEPT THAT EACH TEST WILL BE REPEATED ONCE ONLY

5.3.7 PROGRAM OPERATION WITH SW10=1

SAME AS 5.3.1, EXCEPT THAT IN THE CASE OF AN ERROR THE CURRENT TEST WILL BE ABORTED, AND THE PROGRAM WILL PROCEED TO THE NEXT TEST IN SEQUENCE.

5.  (CONT'D)

5.3.8  PROGRAM OPERATION WITH SW14=1, OR SW09=1

THESE FUNCTIONS ARE NORMALLY USED FOR TROUBLE SHOOTING.
SEE SECTION 6.3 FOR THEIR USE.

6.  ERRORS

6.1  ERROR HALTS

THE ERROR MESSAGE FORMAT FOR ALL ERROR TYPEOUTS
IS AS FOLLOWS

```
PC+2    MESSAGE
        HEADER (IF APPLICABLE)
        DATA    (IF APPLICABLE)
```

WHERE
PC+2 IS THE ADDRESS OF THE CALL TO THE ERROR HANDLER + 2
MESSAGE IS AN ASCII MESSAGE DESCRIBING (BRIEFLY) THE FAILURE
HEADER IS A DESCRIPTION OF THE DATA TO FOLLOW
DATA IS OCTAL INFORMATION RELATING TO THE CAUSE OF THE FAILURE
IF THE SAME ERROR OCCURS IN A GIVEN TEST ON THE SAME
PASS, AND IF DATA IS ASSOCIATED WITH THAT ERROR, ONLY
DATA IS TYPE ON SUCCEEDING ERROR TYPEOUTS

IF NO DATA IS ASSOCIATED WITH THE ERROR
THE COMPLETE ERROR MESSAGE IS TYPED.

6.1.1  ERROR DESCRIPTIONS

SEE LISTING FOR DETAILS OF ERRORS

6.2  ERROR RECOVERY

6.2.1  SW15=0

IF THE PROGRAM IS RUN WITH SW15=0, NO OPERATOT ACTION IS
REQUIRED TO CONTINUE TESTING

6.2.2  SW15=1

IF THE PROGRAM IS RUN WITH SW15=1, TO CONTINUE TESTING
AFTER THE PROGRAM HAS HALTED, PRESS THE PROCESSOR
CONSOLE CONTINUE SWITCH

6.2.3  ILLEGAL INTERRUPTS

IF AN INTERRUPT OCCURS TO A VECTOR ADDRESS NOT
SELECTED DURING PROGRAM INITIALIZATION, THE PROGRAM WILL
HALT IN THE TRAPCATCHER. THE ADDRESS AT WHICH
THE PROGRAM HALTS IS 2 GREATER THAN THE ADDRESS
TO WHICH THE INTERRUPT OCCURED.  THE PROGRAM MUST BE
RESTARTED AT 200 TO RECOVER FROM THIS ERROR.

```
                        6.3     SCOPE LOOPING

                        6.3.1   TO SCOPE ON A SPECIFIC TEST, SET SW14=1 AND SW13=1
                                THIS WILL CAUSE THE PROGRAM TO CONTINUOUSLY LOOP ON THE
                                SAME TEST, AND WILL CAUSE ALL ERROR TYPEOUTS TO BE INHIBITED

                        6.3.2   TO SCOPE ON A SPECIFIC VALUE OF A PARAMETER WITHIN
                                A TEST, SET SW09=1 TO FREEZE THE DATA
                                (SEE LISTING FOR THOSE TESTS THAT INCORPORATE THIS FEATURE)

                        6.      (CONT'D)

                        6.3.3   PROGRAM START TO SCOPE LOOP ON SELECTED TEST

                                PERFORM SECTION 4.3.4 WITH SW14=1

                        7.      RESTRICTIONS

                        7.1     STARTING

                                THE DH11 TEST CARD MUST BE INSTALLED

                        7.2     RUNNING

                                NONE

                        8.      MISCELLANEOUS

                        8.1     EXECUTION TIME

                                THE TIME FOR ONE PASS OF THE PROGRAM (END OF
                                TYPEOUT OF CZDHI TO END OF TYPEOUT OF CZDHI)
                                IS GIVEN FOR VARIOUS PROCESSORS IN THE TABLE BELOW

                                                TIME
                                PROCESSOR

                                PDP-11/05,10

                                PDP-11/20

                                PDP-11/40

                                PDP-11/45
```

```
                                9.      PROGRAM DESCRIPTION

                                        THE FIRST GROUP OF TESTS VERIFIES THAT ONLY ONE BREAK
                                        CHARACTER IS RECEIVED ON A GIVEN LINE, EVEN THOUGH BREAK
                                        IS ASSRETED FOR THAT LINE FOR 400 (OCTAL) CHARACTER TIMES.
                                        THERE IS AN INDIVIDUAL TEST LOOP FOR EACH LINE.
                                        THE TEST BEGINS BY FLUSING EACH UART BY TRANSMITTING
                                        TO NULL (0) CHARACTERS.  THE BREAK BIT IS THEN SET
                                        FOR THE LINE TO BE TESTED, TRANSMISSION OF THE BINARY COUNT
                                        PATTERN IS STARTED.  THE SILO IS THEN CHECKED TO VERIFY
                                        THAT ONLY ONE CHARACTER WAS RECEIVED
                                        AND THAT IT WAS A BREAK CHARACTER.

                                        THE SECOND GROUP OF TESTS VERIFIES THAT NO CHARACTERS
                                        ARE RECEIVED ON A SELECTED LINE IF THE HALF DUPLEX BIT
                                        IS SET FOR THE LINE TO BE TESTED.  THERE IS AN INDIVIDUAL
                                        TEST LOOP FOR EACH LINE TO BE TESTED.  A BINARY COUNT
                                        PATTERN IS THEN TRANSMITTED ON THE LINE TO BE TESTED.
                                        WHEN ALL CHARACTERS HAVE BEEN TRANSMITTED, THE CHARACTER
                                        AVAILABLE FLAG IS TESTED TO DETERMINE IF ANY CHARACTERS HAVE
                                        BEEN RECEIVED.

                                10.     LISTING


                                        !
                                .LIST   ME
                                .NLIST  MC,MD,CND
 32 000000                      .HEADER /1972, 1976, 1985/,/DH11 BREAK AND HALF DUPLEX TEST/,/CZDHI-DO/

                                        ;STARTING PROCEDURE
                                        ;LOAD PROGRAM
                                        ;LOAD ADDRESS 000200
                                        ;PRESS START
                                        ;PROGRAM WILL TYPE DH11 BREAK AND HALF DUPLEX TEST
                                        ;PROGRAM WILL TYPE "VECTOR ADDRESS-"
                                        ;TYPE IN THE ADDRESS OF THE RECEIVER INTERRUPT VECTOR
                                        ;FOR THE DH11 TO BE TESTED, FOLLOWED BY <CARRIAGE RETURN>
                                        ;PROGRAM WILL TYPE "CONTROL REGISTER ADDRESS-"
                                        ;TYPE IN THE ADDRESS OF THE SYSTEM CONTROL REGISTER
                                        ;FOR THE DH11 TO BE TESTED, FOLLOWED BY <CARRIAGE RETURN>          ; 3
                                        ;PROGRAM WILL TYPE "R" TO INDICATE THAT TESTING HAS STARTED
                                        ;AT THE END OF A PASS, PROGRAM WILL TYPE " CZDHI-DO "
                                        ;AND THEN RESUM TESTING

                                .TITLE  CZDHI-DO
    000000                      .ENABLE ABS
                                .NLIST  MC,MD,CND
                                .LIST   ME
 33 000000                      .SYMBOLS

                                ;SWITCH REGISTER OPTIONS

            100000              SW15=100000             ;=1,HALT ON ERROR
            040000              SW14=40000              ;=1,LOOP ON CURRENT TEST
            020000              SW13=20000              ;=1,INHIBIT ERROR TYPEOUT
```

```
010000                  SW12=10000
004000                  SW11=4000       ;=1,INHIBIT ITERATIONS
002000                  SW10=2000       ;=1,ESCAPE TO NEXT TEST ON ERROR        ; 3
001000                  SW09=1000       ;=1,LOOP WITH CURRENT DATA
000400                  SW08=400
000100                  SW06=100
000040                  SW05=40
000020                  SW04=20
000010                  SW03=10
000004                  SW02=4
000002                  SW01=2          ;RESTART PROGRAM AT SELECTED TEST
000001                  SW00=1          ;RESELECT VECTOR AND CONTROL REGISTER
                                        ;ADDRESS AFTER PROGRAM RESTART
```

```
0

                        ;REGISTER DEFINITIONS

000000                  R0=%0           ;GENERAL REGISTER
000001                  R1=%1           ;GENERAL REGISTER
000002                  R2=%2           ;GENERAL REGISTER
000003                  R3=%3           ;GENERAL REGISTER
000004                  R4=%4           ;GENERAL REGISTER
000005                  R5=%5           ;GENERAL REGISTER
000006                  SP=%6           ;PROCESSOR STACK POINTER
000007                  PC=%7           ;PROGRAM COUNTER

                        ;LOCATION EQUIVALENCIES                                 ; 3

                        ;SWR=177570     ;CONSOLE SWITCH REGISTER                ; 4
                        ;LIGHTS=177570  ;PDP-11/45 DISPLAY REGISTER             ; 4
177776                  PS=177776       ;PROCESSOR STATUS WORD
013724                  STACK=ENDCOD+200    ;START OF PROCESSOR STACK           ; 3

                        ;INSTRUCTION DEFINITIONS

005746                  PUSH1SP=5746    ;DECREMENT PROCESSOR STACK 1 WORD
005726                  POP1SP=5726     ;INCREMENT PROCESSOR STACK 1 WORD
010046                  PUSHR0=10046    ;SAVE R0 ON STACK
012600                  POPR0=12600     ;RESTORE R0 FROM STACK
024646                  PUSH2SP=24646   ;DECREMENT STACK TWICE
022626                  POP2SP=22626    ;INCREMENT STACK TWICE
                        ;
                        .MACRO  HLT     $A
                                EMT     $A
                        .ENDM   HLT
                        ;
                        ;
                100000  BIT15=100000
                040000  BIT14=40000                                            ; 3
                020000  BIT13=20000
                010000  BIT12=10000
                004000  BIT11=4000
                002000  BIT10=2000
                001000  BIT09=1000
                000400  BIT08=400
                000200  BIT07=200
                000100  BIT06=100
                000040  BIT05=40
                000020  BIT04=20
                000010  BIT03=10
                000004  BIT02=4
                000002  BIT01=2
                000001  BIT00=1
1 000000                .CATCH
```

```
     0                                  ;TRAPCATCAER FOR ILLEGAL INTERRUPTS
               000000             .=0
               000200             .REPT 200
                                          .+2           ;UNEXPECTED TRAP TO THIS LOCATION
                                          HALT          ;EXAMINE STACK TO FIND CAUSE
                                  .ENDR
          000000  000002                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000002  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000004  000006                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000006  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000010  000012                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000012  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000014  000016                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000016  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000020  000022                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000022  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000024  000026                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000026  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000030  000032                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000032  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000034  000036                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000036  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000040  000042                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000042  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000044  000046                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000046  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000050  000052                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000052  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000054  000056                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000056  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000060  000062                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000062  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000064  000066                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000066  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000070  000072                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000072  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000074  000076                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000076  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000100  000102                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000102  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000104  000106                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000106  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000110  000112                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000112  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000114  000116                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000116  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000120  000122                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000122  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000124  000126                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000126  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000130  000132                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000132  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000134  000136                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000136  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000140  000142                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
          000142  000000                  HALT          ;EXAMINE STACK TO FIND CAUSE
          000144  000146                  .+2           ;UNEXPECTED TRAP TO THIS LOCATION
```

```
000146  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000150  000152                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000152  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000154  000156                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000156  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000160  000162                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000162  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000164  000166                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000166  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000170  000172                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000172  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000174  000176                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000176  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000200  000202                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000202  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000204  000206                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000206  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000210  000212                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000212  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000214  000216                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000216  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000220  000222                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000222  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000224  000226                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000226  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000230  000232                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000232  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000234  000236                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000236  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000240  000242                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000242  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000244  000246                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000246  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000250  000252                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000252  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000254  000256                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000256  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000260  000262                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000262  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000264  000266                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000266  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000270  000272                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000272  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000274  000276                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000276  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000300  000302                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000302  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000304  000306                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000306  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000310  000312                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000312  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000314  000316                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000316  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000320  000322                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000322  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000324  000326                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000326  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
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000330  000332                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000332  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000334  000336                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000336  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000340  000342                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000342  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000344  000346                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000346  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000350  000352                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000352  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000354  000356                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000356  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000360  000362                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000362  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000364  000366                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000366  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000370  000372                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000372  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000374  000376                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000376  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000400  000402                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000402  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000404  000406                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000406  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000410  000412                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000412  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000414  000416                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000416  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000420  000422                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000422  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000424  000426                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000426  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000430  000432                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000432  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000434  000436                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000436  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000440  000442                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000442  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000444  000446                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000446  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000450  000452                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000452  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000454  000456                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000456  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000460  000462                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000462  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000464  000466                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000466  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000470  000472                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000472  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000474  000476                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000476  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000500  000502                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000502  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000504  000506                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000506  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000510  000512                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
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000512  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000514  000516          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000516  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000520  000522          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000522  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000524  000526          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000526  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000530  000532          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000532  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000534  000536          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000536  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000540  000542          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000542  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000544  000546          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000546  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000550  000552          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000552  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000554  000556          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000556  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000560  000562          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000562  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000564  000566          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000566  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000570  000572          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000572  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000574  000576          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000576  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000600  000602          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000602  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000604  000606          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000606  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000610  000612          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000612  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000614  000616          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000616  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000620  000622          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000622  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000624  000626          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000626  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000630  000632          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000632  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000634  000636          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000636  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000640  000642          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000642  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000644  000646          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000646  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000650  000652          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000652  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000654  000656          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000656  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000660  000662          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000662  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000664  000666          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000666  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
000670  000672          .+2         ;UNEXPECTED TRAP TO THIS LOCATION
000672  000000          HALT        ;EXAMINE STACK TO FIND CAUSE
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000674  000676                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000676  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000700  000702                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000702  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000704  000706                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000706  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000710  000712                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000712  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000714  000716                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000716  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000720  000722                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000722  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000724  000726                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000726  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000730  000732                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000732  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000734  000736                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000736  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000740  000742                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000742  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000744  000746                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000746  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000750  000752                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000752  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000754  000756                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000756  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000760  000762                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000762  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000764  000766                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000766  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000770  000772                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000772  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
000774  000776                  .+2             ;UNEXPECTED TRAP TO THIS LOCATION
000776  000000                  HALT            ;EXAMINE STACK TO FIND CAUSE
  1 001000              .SETVEC
```

```
      0                                 ;STANDARD INTERRUPT VECTORS
                000200          .=200
        000200  000167  000600           JMP     START           ;GO TO START OF PROGRAM

      1 000204                  .TRPDEF

                                        ;DEFINITIONS FOR TRAP SUBROUTINE CALLS
                                        ;POINTERS TO SUBROUTINES CAN BE FOUND STARTING
                                        ;AT LOCATION "TRPTAB"

        000204                  TRPDEF  SCOPE,↑/SCOPE LOOP AND ITERATION HANDLER/
                104400                  SCOPE=TRAP+Y            ;SCOPE LOOP AND ITERATION HANDLER
                000001                  Y=Y+1
        000204                  TRPDEF  TYPE,↑/TELETYPE OUTPUT ROUTINE/
                104401                  TYPE=TRAP+Y             ;TELETYPE OUTPUT ROUTINE
                000002                  Y=Y+1
        000204                  TRPDEF  OCTASC,↑/OCTAL TO ASCII CONVERSION/
                104402                  OCTASC=TRAP+Y           ;OCTAL TO ASCII CONVERSION
                000003                  Y=Y+1
        000204                  TRPDEF  INSTR,↑/INPUT ASCII STRING/
                104403                  INSTR=TRAP+Y            ;INPUT ASCII STRING
                000004                  Y=Y+1
        000204                  TRPDEF  INSTER,↑/STRING INPUT ERROR/
                104404                  INSTER=TRAP+Y           ;STRING INPUT ERROR
                000005                  Y=Y+1
        000204                  TRPDEF  PARAM,↑/CONVERT STRING TO OCTAL, CHECK LIMITS/
                104405                  PARAM=TRAP+Y            ;CONVERT STRING TO OCTAL, CHECK LIMITS
                000006                  Y=Y+1
        000204                  TRPDEF  SAV05P,↑/SAVE R0-R5, PC/
                104406                  SAV05P=TRAP+Y           ;SAVE R0-R5, PC
                000007                  Y=Y+1
        000204                  TRPDEF  RES05,↑/RESTORE R0-R5/
                104407                  RES05=TRAP+Y            ;RESTORE R0-R5
                000010                  Y=Y+1
        000204                  TRPDEF  SCOPE1,↑/CHECK FOR FREEZE ON CURRENT DATA/
                104410                  SCOPE1=TRAP+Y           ;CHECK FOR FREEZE ON CURRENT DATA
                000011                  Y=Y+1
      2         000046          .=46
      3 000046  010556          LOGICAL
      4         000052          .=52
      5 000052  040000          40000
      6                         .MACRO  CODEM1
      7                                 MOV     DHSSR,DHSLR             ;SET UP ADDRESS OF SILO
      8                                 INC     DHSLR                   ;STATUS REGISTER HIGH BYTE
      9                         .ENDM   CODEM1
     10 000054                  .START  DHRVEC,3,4,DHSCR,0,177776,7,10,,,1
```

```
      0     001000                  .=1000

                                    ;PROGRAM INITIALIZATION
                                    ;LOCK OUT INTERRUPTS
                                    ;SET UP PROCESSOR STACK
                                    ;SET UP POWER FAIL VECTOR
                                    ;CLEAR PROGRAM FLAGS AND COUNTS
                                    ;TYPE TITLE MESSAGE
                                .IIF NB <>,     ;DETERMINE MEMORY SIZE
                                .IIF NB <>,     ;SET UP TRACE TRAP RETURN

   001000  177570               SWR:    .WORD   177570          ; SWITCH DHSCR ADDRESS          ; 4
   001002  177570               LIGHTS: .WORD   177570          ; LIGHTS                        ; 4
                                                                                                ; 4
   001004  012767  000340  176764  START:  MOV     #340,PS         ;LOCK OUT INTERRUPTS
   001012  012706  013724               MOV     #STACK,SP       ;SET UP PROCESSOR STACK
   001016  012702  000024               MOV     #24,R2          ; POINT TO VECTOR AREA          ; 7
   001022  012722  012614               MOV     #PFAIL,(R2)+    ;SET UP POWER FAIL TRAP         ; 7
   001026  012722  000340               MOV     #340, (R2)+     ;SERVICE AT LEVEL 7             ; 7
   001032  012722  010716               MOV     #ERRORS, (R2)+  ;ERROR HANDLER                  ; 7
   001036  012722  000340               MOV     #340, (R2)+     ;SERVICE AT LEVEL 7             ; 7
   001042  012722  011130               MOV     #TRPSRV, (R2)+  ;GENERAL HANDLER DISPATCH SERVICE ; 7
   001046  012712  000340               MOV     #340, (R2)      ;SERVICE AT LEVEL 7             ; 8
   001052  005067  010774               CLR     STFLG           ;CLEAR TEST START FLAG
   001056  005067  010730               CLR     PASCNT          ;CLEAR PASS COUNT
   001062  005067  010726               CLR     ERRCNT          ;CLEAR ERROR COUNT
   001066  005067  010716               CLR     ERRFLG          ;CLEAR ERROR FLAG
   001072  005067  010712               CLR     ERRFLG          ;CLEAR LAST ERROR PC
   001076  016746  176702               MOV     4, -(SP)        ; PUSH TRAP VECTOR              ; 4
   001102  016746  176700               MOV     6, -(SP)                                        ; 4
   001106  012767  001122  176670       MOV     #1$, 4          ; SET UP TRAP VECTOR            ; 4
   001114  005777  177660               TST     @SWR            ; TEST SWITCH REGISTER ADDRESS  ; 4
   001120  000405                       BR      2$              ; IF SUCCESSFUL, LEAVE IT ALONE ; 4
   001122                       1$:                                                             ; 4
   001122  012767  000176  177650       MOV     #176, SWR       ; POINT TO SOFT SWITCH DHSCR    ; 4
   001130  005067  177646               CLR     LIGHTS          ; 0 MEANS WE ARE NOT GOING TO USE LIGHTS ; 4
   001134                       2$:                                                             ; 5
   001134  005726                       TST     (SP)+           ; CLEAN UP STACK                ; 4
   001136  005726                       TST     (SP)+                                           ; 4
   001140  012667  176642               MOV     (SP)+, 6                                        ; 4
   001144  012667  176634               MOV     (SP)+, 4                                        ; 4
   001150  104401  012764               TYPE    ,MTITLE         ;TYPE TITLE MESSAGE
   001154  005767  010670               TST     INIFLG          ;CHECK INITIALIZATION FLAG
                                .IF NB  <DHRVEC>
   001160  001001                       BNE     VEC1            ;IF NOT 0, CHECK SWITCHES
                                                                 ;FOR REINITIALIZATION
                                .IFF
                                        BNE     BEGIN           ;IF NOT 0, START TEST
                                .ENDC
                                .IF NB  <>
                                SIZE:   CLR     R0
                                        MOV     #2$,@#4         ;SET UP TIME OUT RETURN
                                1$:     TST     (R0)+           ;WILL TRAP WHEN NO MEMORY       ; 9
                                        BR      1$              ;LOCATION RESPONDED, CONTINUE
                                2$:     MOV     R0,HCORE        ;R0 CONTAINS ADDRESS OF
                                        SUB     #2,HCORE        ;NON EXISTANT MEMORY            ; 9
                                        MOV     #6,@#4          ;RESTORE TRAPCATCHER
```

```
                                .ENDC
                                .IF NB  <>
                        TRACER: MOV     #1$,@#10                ;SET UP ILLEGAL INSTRUCTION TRAP RETURN
                                SXT     R0                      ;DO 11/40, 11/45 INSTRUCTION
                                MOV     #RTT,TRTRET             ;11/40,45 RTT RETURN FROM TRACE TRAP
                                BR      2$
                        1$:     MOV     #RTI,TRTRET             ;1105,10,20 RTI RETURN FROM TRACE TRAP
                                MOV     #12,@#10                ;RESTROE TRAPCATCHER
                                MOV     #TRTRET,@#16            ;SET UP TRACE TRAP VECTOR
                                .ENDC
                                .IF NB  <DHRVEC>                                                        ; 3
                                .IF B   <>
001162  000404                  BR      VEC2
                                .IFF
                                TST     INIFLG                  ;IF INITIALIZE FLAG=0
                                BEQ     VEC2                    ;GET VECTOR AND CSR ADDRESS
                                .ENDC
001164  032777  000001  177606  VEC1:   BIT     #SW00,@SWR      ;IF SW00=1, GET NEW VECTOR      ; 4
001172  001445                  BEQ     BEGIN                   ;AND CSR
001174                          VEC2:                                                                   ; 4
001174  012701  000300          MOV     #300,R1                                                         ; 4
001200  012702  000302          MOV     #302,R2
001204  012703  000004          MOV     #4,R3
001210  010211                  1$:     MOV     R2,(R1)         ;RESTORE TRAPCATCHER
001212  005012                  CLR     (R2)                    ;IN FLOATING VECTOR AREA
001214  060301                  ADD     R3,R1
001216  060302                  ADD     R3,R2
001220  020127  001000          CMP     R1,#1000
001224  001371                  BNE     1$
001226  104403                  INSTR                           ;INPUT ADDRESS OF DEVICE VECTOR
001230  013032                  MVECTOR                         ;MESSAGE "VECTOR ADDRESS-"
001232  104405                  PARAM                           ;CONVERT STRING TO OCTAL
001234  000300                  300                             ;LOW LIMIT
001236  000770                  770                             ;HIGH  LIMIT                    ; 3
001240  012000                  DHRVEC                          ;LOCATIONS TO BE FILLED
001242     003          .BYTE   3                               ;NUMBER OF LOCATIONS
001243     004          .BYTE   4                               ;LSB MASK
001244  104403                  INSTR                           ;INPUT ADDRESS OF DEVICE CSR
001246  013054                  MREGAD                          ;MESSAGE "CONTROL REGISTER ADDRESS-"
001250  104405                  PARAM                           ;CONVERT STRING TO OCTAL
001252  000000                  0                               ;LOW LIMIT
001254  177776                  177776                          ;HIGH LIMIT
001256  011756                  DHSCR                           ;LOCATIONS TO BE FILLED
001260     007          .BYTE   7                               ;NUMBER OF LOCATIONS
001261     010          .BYTE   10                              ;LSB MASK
                                .ENDC
                                .IF NB  <1>
001262                          CODEM1
001262  016767  010506  010506          MOV     DHSSR,DHSLR     ;SET UP ADDRESS OF SILO
001270  005267  010502          INC     DHSLR                   ;STATUS REGISTER HIGH BYTE
                                .ENDC
001274  005767  010550          TST     INIFLG                  ;IF INITIALIZATION FLAG
001300  001002                  BNE     BEGIN                   ;IS CLEARED
001302  005167  010542          COM     INIFLG                  ;SET IT

                                ;PROGRAM START                                                          ; 3
                                ;CHECK FOR PROGRAM START AT SELECTED ADDRESS
```

```
001306  012767  000340  176462  BEGIN:  MOV     #340,PS         ;LOCK OUT INTERRUPTS
001314  012706  013724                  MOV     #STACK,SP       ;SET UP PROCESSOR STACK
001320  032777  000002  177452          BIT     #SW01,@SWR      ;IF SW01=1                      ; 4
001326  001410                          BEQ     1$              ;GET PC FOR PROGRAM START
001330  104403                          INSTR                   ;GET PC
001332  013243                          MTSTPC                  ;MESSAGE "TEST PC"
001334  104405                          PARAM                   ;CONVERT STRING TO OCTAL
001336  000000                          0
001340  017500                          17500
001342  012016                          RETRN
001344     001                  .BYTE   1
001345     001                  .BYTE   1
001346  000410                          BR      2$
001350  012767  001400  010440  1$:     MOV     #T1,RETRN       ;NORMAL START, TEST 1
001356  005767  010470                  TST     STFLG           ;IF LOOPING, BYPASS TYPEOUT
001362  001004                          BNE     3$
001364  005167  010462                  COM     STFLG
001370  104401  013237          2$:     TYPE    ,MR             ;TYPE "R" TO INDICATE START
001374  000177  010416          3$:     JMP     @RETRN          ;START TESTING                  ; 3
```

```
                        .MACRO  BREAK1  XLINE,XBIT,K

                                ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                ;ON LINE 'XLINE'
                                ;SET BREAK BIT FOR LINE 'XLINE'
                                ;TRANSMIT BINARY COUNT PATTERN ON LINE 'XLINE'
                                ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                ;AND THAT IT IS A BREAK

                        TS \XN,20,4$
                                MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
                                JSR     PC,CLRALL               ;CLEAR ALL BUS ADDRESS AND
                                                                ;BUS ADDRESS MEMORY LOCATIONS
                                MOV     #XLINE,@DHSCR           ;SELECT LINE XLINE
                                MOV     #NULL,@DHBA             ;SET UPT TO TRANSMIT 0 CHARACTER
                                MOV     #-2,@DHBC               ;TWO OS WILL BE TRANSMITTED
                                MOV     #33503,@DHLPR           ;SET LINE SPEED=9600 BAUD
                                                                ;CHARACTER LENGTH =8 BITS
                                MOV     #'XBIT',@DHBAR          ;SET BAR BIT FOR LINE XLINE
                        1$:     CMPB    #2,@DHSLR               ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
                                BNE     1$
                                MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
                                MOV     #XLINE,@DHSCR           ;SELECT LINE XLINE
                                MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT 400
                                MOV     #-400,@DHBC             ;(OCTAL) CHARACTERS
                                MOV     #33503,@DHLPR           ;LINE SPEED = 9600 BAUD
                                MOV     #XBIT,@DHBCR            ;SET BREAK BIT FOR LINE XLINE
                                MOV     #XBIT,@DHBAR            ;SET BAR BIT FOR LINE XLINE
                        2$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS
                                BNE     2$                      ;TO BE TRANSMITTED
                                CMPB    #1,@DHSLR               ;CHECK TO SEE THAT ONLY
                                BEQ     3$                      ;1 CHARACTER WAS RECEIVED
                                MOV     @DHSSR,R4               ;(R4)=ACTUAL RECEIVED DATA
                                BIC     #300,R4                 ;CLEAR UNWANTED BITS
                                MOV     #400,R5                 ;(R5)=EXPECTED SILO FILL LEVEL, 1
                                HLT     0                       ;MORE THAN ONE CHARACTER RECEIVED, ERROR
                        3$:     MOV     @DHNRC,R4               ;READ NEXT RECEIVED CHARACTER REGISTER
                                CMP     RWRD'K',R4                      ;IS RECEIVED CHARACTER A BREAK
                                BEQ     4$
                                MOV     RWRD'K',R5              ;(R5)=EXPECTED RECEIVED CHARACTER
                                HLT     1                       ;RECEIVED DATA ERROR
                        4$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
                        .ENDM   BREAK1
```

```
                        .MACRO  BLIND1,XLINE,XBIT,K

                                ;SET HALF DUPLEX ON LINE 'K'
                                ;TRANSMITI A BINARY COUNT PATTERN
                                ;VERIFY THAT NO CHARACTERS ARE RECEIVED

                        TS \XN,20,2$
                                MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
                                JSR     PC,CLRALL               ;CLEAR ALL BYTE COUNT AND
                                                                ;AND BUS ADDRESS MEMORY LOCATIONS
                                MOV     #XLINE,@DHSCR           ;SELECT LINE XLINE
                                MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT
                                MOV     #-400,@DHBC             ;400 (OCTAL) CHARACTERS
                                MOV     #73503,@DHLPR           ;SET RECEIVER BLIND
                                                                ;LINE SPEED =9600 BAUD
                                                                ;CHARACTER LENGTH = 8 BITS
                                MOV     #XBIT,@DHBAR            ;SET BAR BIT FOR LINE XLINE
                        1$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
                                BNE     1$
                                TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
                                BPL     2$
                                HLT     2                       ;RECEIVER NOT BLINDED, ERROR
                        2$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
                        .ENDM   BLIND1
```

```
                        .MACRO  SSETALL

                                ;SET BYTE COUNT FOR ALL LINES TO 400
                                ;SET BUS ADDRESS FOR ALL LINES TO TBUF
                                ;CLEAR EXPECTED CHARACTER BUFFERS
                                ;SET LINE ACTIVE BITS FOR ALL LINES

                        SETALL: MOV     #20,R0                  ;SET UP TO LOAD 20 MEMORY LOCATIONSA
                                CLR     R1                      ;START WITH LINE 0
                                MOV     #200,R2
                                MOV     #1,R3
                        1$:     MOV     #TBUF,@DHBA
                                MOV     #-400,@DHBC
                                MOV     #31403,@DHLPR
                                CLRB    RBUF(R1)
                                MOVB    R2,RBUF(R3)
                                INC     @DHSCR
                                INC     R2
                                ADD     #2,R1
                                ADD     #2,R3
                                DEC     R0
                                BNE     1$
                                MOV     #-1,LINACT
                                RTS     PC
                        .ENDM   SSETALL

                        .MACRO  CCLRALL

                                ;CLEAR ALL BYTE COUNT AND BUS ADDRESS REGISTERS

                        CLRALL: MOV     #20,R0
                        1$:     CLR     @DHBA
                                CLR     @DHBC
                                INC     @DHSCR
                                DEC     R0
                                BNE     1$
                                RTS     PC
                        .ENDM   CCLRALL
```

```
                        XLINE=LINE
                        XBIT=BITX
                        K=KX
                        LINE=0
                        BITX=1
                        KX=0
                        .REPT   20
                        BREAK1  \LINE,\BITX,\KX
                        .NLIST
                        LINE=LINE+1
                        BITX=BITX+BITX
                        KX=KX+1
                        .LIST
                        .ENDR
001400                  BREAK1  \LINE,\BITX,\KX

                                ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                ;ON LINE 0
                                ;SET BREAK BIT FOR LINE 0
                                ;TRANSMIT BINARY COUNT PATTERN ON LINE 0
                                ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                ;AND THAT IT IS A BREAK

001400                  TS \XN,20,4$
001400  012767  000340  176370 T1:     MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
001406  012767  000020  010410         MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
001414  012767  001630  010376         MOV     #4$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                        .IF NB  <>
                                MOV     #.,FREEZ1               ;SET UP TO LOOP WITH DATA       ; 3
                        .ENDC
        000002          XN=XN+1
001422  012777  004000  010326         MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
001430  004767  010430                 JSR     PC,CLRALL               ;CLEAR ALL BUS ADDRESS AND
                                                                        ;BUS ADDRESS MEMORY LOCATIONS
001434  012777  000000  010314         MOV     #0,@DHSCR               ;SELECT LINE 0
001442  012777  012060  010314         MOV     #NULL,@DHBA             ;SET UPT TO TRANSMIT 0 CHARACTER
001450  012777  177776  010310         MOV     #-2,@DHBC               ;TWO OS WILL BE TRANSMITTED
001456  012777  033503  010276         MOV     #33503,@DHLPR           ;SET LINE SPEED=9600 BAUD
                                                                        ;CHARACTER LENGTH =8 BITS
001464  012777  000001  010276         MOV     #1,@DHBAR               ;SET BAR BIT FOR LINE 0
001472  122777  000002  010276 1$:     CMPB    #2,@DHSLR               ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
001500  001374                         BNE     1$
001502  012777  004000  010246         MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
001510  012777  000000  010240         MOV     #0,@DHSCR               ;SELECT LINE 0
001516  012777  012112  010240         MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT 400
001524  012777  177400  010234         MOV     #-400,@DHBC             ;(OCTAL) CHARACTERS
001532  012777  033503  010222         MOV     #33503,@DHLPR           ;LINE SPEED = 9600 BAUD
001540  012777  000001  010224         MOV     #1,@DHBCR               ;SET BREAK BIT FOR LINE 0
001546  012777  000001  010214         MOV     #1,@DHBAR               ;SET BAR BIT FOR LINE 0
001554  005777  010210         2$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS
001560  001375                         BNE     2$                      ;TO BE TRANSMITTED
001562  122777  000001  010206         CMPB    #1,@DHSLR               ;CHECK TO SEE THAT ONLY
001570  001407                         BEQ     3$                      ;1 CHARACTER WAS RECEIVED
001572  017704  010176                 MOV     @DHSSR,R4               ;(R4)=ACTUAL RECEIVED DATA
001576  042704  000300                 BIC     #300,R4                 ;CLEAR UNWANTED BITS
001602  012705  000400                 MOV     #400,R5                 ;(R5)=EXPECTED SILO FILL LEVEL, 1
001606                                 HLT     0                       ;MORE THAN ONE CHARACTER RECEIVED, ERROR
```

```
001606  104000                  EMT     0
001610  017704  010144  3$:     MOV     @DHNRC,R4       ;READ NEXT RECEIVED CHARACTER REGISTER
001614  026704  010734          CMP     RWRD0,R4        ;IS RECEIVED CHARACTER A BREAK
001620  001403                  BEQ     4$
001622  016705  010726          MOV     RWRD0,R5        ;(R5)=EXPECTED RECEIVED CHARACTER
001626                          HLT     1               ;RECEIVED DATA ERROR
001626  104001                  EMT     1
001630  104400          4$:     SCOPE                   ;CHECK FOR ITERATIONS, LOOP
        000001          LINE=LINE+1
        000002          BITX=BITX+BITX
        000001          KX=KX+1
001632                  BREAK1  \LINE,\BITX,\KX

                        ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                        ;ON LINE 1
                        ;SET BREAK BIT FOR LINE 1
                        ;TRANSMIT BINARY COUNT PATTERN ON LINE 1
                        ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                        ;AND THAT IT IS A BREAK

001632                  TS \XN,20,4$
001632  012767  000340  176136  T2:     MOV     #340,PS         ;DISABLE ALL INTERRUPTS
001640  012767  000020  010156          MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
0C1646  012767  002062  010144          MOV     #4$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                        .IF NB  <>
                        MOV     #,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                        .ENDC
        000003          XN=XN+1
001654  012777  004000  010074          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
001662  004767  010176                  JSR     PC,CLRALL       ;CLEAR ALL BUS ADDRESS AND
                                                                ;BUS ADDRESS MEMORY LOCATIONS
001666  012777  000001  010062          MOV     #1,@DHSCR       ;SELECT LINE 1
001674  012777  012060  010062          MOV     #NULL,@DHBA     ;SET UPT TO TRANSMIT 0 CHARACTER
001702  012777  177776  010056          MOV     #-2,@DHBC       ;TWO OS WILL BE TRANSMITTED
001710  012777  033503  010044          MOV     #33503,@DHLPR   ;SET LINE SPEED=9600 BAUD
                                                                ;CHARACTER LENGTH =8 BITS
001716  012777  000002  010044          MOV     #2,@DHBAR       ;SET BAR BIT FOR LINE 1
001724  122777  000002  010044  1$:     CMPB    #2,@DHSLR       ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
001732  001374                          BNE     1$
001734  012777  004000  010014          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
001742  012777  000001  010006          MOV     #1,@DHSCR       ;SELECT LINE 1
001750  012777  012112  010006          MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT 400
001756  012777  177400  010002          MOV     #-400,@DHBC     ;(OCTAL) CHARACTERS
001764  012777  033503  007770          MOV     #33503,@DHLPR   ;LINE SPEED = 9600 BAUD
001772  012777  000002  007772          MOV     #2,@DHBCR       ;SET BREAK BIT FOR LINE 1
002000  012777  000002  007762          MOV     #2,@DHBAR       ;SET BAR BIT FOR LINE 1
002006  005777  007756          2$:     TST     @DHBAR          ;WAIT FOR ALL CHARACTERS
002012  001375                          BNE     2$              ;TO BE TRANSMITTED
002014  122777  000001  007754          CMPB    #1,@DHSLR       ;CHECK TO SEE THAT ONLY
002022  001407                          BEQ     3$              ;1 CHARACTER WAS RECEIVED
002024  017704  007744                  MOV     @DHSSR,R4       ;(R4)=ACTUAL RECEIVED DATA
002030  042704  000300                  BIC     #300,R4         ;CLEAR UNWANTED BITS
002034  012705  000400                  MOV     #400,R5         ;(R5)=EXPECTED SILO FILL LEVEL, 1
002040                                  HLT     0               ;MORE THAN ONE CHARACTER RECEIVED, ERROR
002040  104000                          EMT     0
002042  017704  007712          3$:     MOV     @DHNRC,R4       ;READ NEXT RECEIVED CHARACTER REGISTER
002046  026704  010504                  CMP     RWRD1,R4        ;IS RECEIVED CHARACTER A BREAK
```

```
002052  001403                          BEQ     4$
002054  016705  010476                  MOV     RWRD1,R5                ;(R5)=EXPECTED RECEIVED CHARACTER
002060                                  HLT     1                       ;RECEIVED DATA ERROR
002060  104001                          EMT     1
002062  104400                  4$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
        000002                  LINE=LINE+1
        000004                  BITX=BITX+BITX
        000002                  KX=KX+1
002064                          BREAK1  \LINE,\BITX,\KX

                                ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                ;ON LINE 2
                                ;SET BREAK BIT FOR LINE 2
                                ;TRANSMIT BINARY COUNT PATTERN ON LINE 2
                                ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                ;AND THAT IT IS A BREAK

002064                          TS \XN,20,4$
002064  012767  000340  175704  T3:     MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
002072  012767  000020  007724          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
002100  012767  002314  007712          MOV     #4$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                        .IF NB  <>
                                MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                        .ENDC
        000004          XN=XN+1
002106  012777  004000  007642          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
002114  004767  007744                  JSR     PC,CLRALL               ;CLEAR ALL BUS ADDRESS AND
                                                                        ;BUS ADDRESS MEMORY LOCATIONS
002120  012777  000002  007630          MOV     #2,@DHSCR               ;SELECT LINE 2
002126  012777  012060  007630          MOV     #NULL,@DHBA             ;SET UPT TO TRANSMIT 0 CHARACTER
002134  012777  177776  007624          MOV     #-2,@DHBC               ;TWO OS WILL BE TRANSMITTED
002142  012777  033503  007612          MOV     #33503,@DHLPR           ;SET LINE SPEED=9600 BAUD
                                                                        ;CHARACTER LENGTH =8 BITS
002150  012777  000004  007612          MOV     #4,@DHBAR               ;SET BAR BIT FOR LINE 2
002156  122777  000002  007612  1$:     CMPB    #2,@DHSLR               ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
002164  001374                          BNE     1$
002166  012777  004000  007562          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
002174  012777  000002  007554          MOV     #2,@DHSCR               ;SELECT LINE 2
002202  012777  012112  007554          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT 400
002210  012777  177400  007550          MOV     #-400,@DHBC             ;(OCTAL) CHARACTERS
002216  012777  033503  007536          MOV     #33503,@DHLPR           ;LINE SPEED = 9600 BAUD
002224  012777  000004  007540          MOV     #4,@DHBCR               ;SET BREAK BIT FOR LINE 2
002232  012777  000004  007530          MOV     #4,@DHBAR               ;SET BAR BIT FOR LINE 2
002240  005777  007524          2$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS
002244  001375                          BNE     2$                      ;TO BE TRANSMITTED
002246  122777  000001  007522          CMPB    #1,@DHSLR               ;CHECK TO SEE THAT ONLY
002254  001407                          BEQ     3$                      ;1 CHARACTER WAS RECEIVED
002256  017704  007512                  MOV     @DHSSR,R4               ;(R4)=ACTUAL RECEIVED DATA
002262  042704  000300                  BIC     #300,R4                 ;CLEAR UNWANTED BITS
002266  012705  000400                  MOV     #400,R5                 ;(R5)=EXPECTED SILO FILL LEVEL, 1
002272                                  HLT     0                       ;MORE THAN ONE CHARACTER RECEIVED, ERROR
002272  104000                          EMT     0
002274  017704  007460          3$:     MOV     @DHNRC,R4               ;READ NEXT RECEIVED CHARACTER REGISTER
002300  026704  010254                  CMP     RWRD2,R4                        ;IS RECEIVED CHARACTER A BREAK
002304  001403                          BEQ     4$
002306  016705  010246                  MOV     RWRD2,R5                ;(R5)=EXPECTED RECEIVED CHARACTER
002312                                  HLT     1                       ;RECEIVED DATA ERROR
```

```
002312  104001                          EMT     1
002314  104400                  4$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
        000003                  LINE=LINE+1
        000010                  BITX=BITX+B.T.
        000003                  KX=KX+1
002316                          BREAK1  \LINE,\BITX,\KX

                                ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                ;ON LINE 3
                                ;SET BREAK BIT FOR LINE 3
                                ;TRANSMIT BINARY COUNT PATTERN ON LINE 3
                                ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                ;AND THAT IT IS A BREAK

002316                          TS \XN,20,4$
002316  012767  000340  175452  T4:     MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
002324  012767  000020  007472          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
002332  012767  002546  007460          MOV     #4$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                        .IF NB  <>
                                MOV     #.,FREEZ1               ;SET UP TO LOOP WITH DATA       ; 3
                        .ENDC
        000005          XN=XN+1
002340  012777  004000  007410          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
002346  004767  007512                  JSR     PC,CLRALL               ;CLEAR ALL BUS ADDRESS AND
                                                                        ;BUS ADDRESS MEMORY LOCATIONS
002352  012777  000003  007376          MOV     #3,@DHSCR               ;SELECT LINE 3
002360  012777  012060  007376          MOV     #NULL,@DHBA             ;SET UPT TO TRANSMIT 0 CHARACTER
002366  012777  177776  007372          MOV     #-2,@DHBC               ;TWO OS WILL BE TRANSMITTED
002374  012777  033503  007360          MOV     #33503,@DHLPR           ;SET LINE SPEED=9600 BAUD
                                                                        ;CHARACTER LENGTH =8 BITS
002402  012777  000010  007360          MOV     #10,@DHBAR              ;SET BAR BIT FOR LINE 3
002410  122777  000002  007360  1$:     CMPB    #2,@DHSLR               ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
002416  001374                          BNE     1$
002420  012777  004000  007330          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
002426  012777  000003  007322          MOV     #3,@DHSCR               ;SELECT LINE 3
002434  012777  012112  007322          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT 400
002442  012777  177400  007316          MOV     #-400,@DHBC             ;(OCTAL) CHARACTERS
002450  012777  033503  007304          MOV     #33503,@DHLPR           ;LINE SPEED = 9600 BAUD
002456  012777  000010  007306          MOV     #10,@DHBCR              ;SET BREAK BIT FOR LINE 3
002464  012777  000010  007276          MOV     #10,@DHBAR              ;SET BAR BIT FOR LINE 3
002472  005777  007272          2$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS
002476  001375                          BNE     2$                      ;TO BE TRANSMITTED
002500  122777  000001  007270          CMPB    #1,@DHSLR               ;CHECK TO SEE THAT ONLY
002506  001407                          BEQ     3$                      ;1 CHARACTER WAS RECEIVED
002510  017704  007260                  MOV     @DHSSR,R4               ;(R4)=ACTUAL RECEIVED DATA
002514  042704  000300                  BIC     #300,R4                 ;CLEAR UNWANTED BITS
002520  012705  000400                  MOV     #400,R5                 ;(R5)=EXPECTED SILO FILL LEVEL, 1
002524                                  HLT     0                       ;MORE THAN ONE CHARACTER RECEIVED, ERROR
002524  104000                          EMT     0
002526  017704  007226          3$:     MOV     @DHNRC,R4               ;READ NEXT RECEIVED CHARACTER REGISTER
002532  026704  010024                  CMP     RWRD3,R4                        ;IS RECEIVED CHARACTER A BREAK
002536  001403                          BEQ     4$
002540  016705  010016                  MOV     RWRD3,R5                ;(R5)=EXPECTED RECEIVED CHARACTER
002544                                  HLT     1                       ;RECEIVED DATA ERROR
002544  104001                          EMT     1
002546  104400                  4$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
        000004                  LINE=LINE+1
```

```
                000020                  BITX=BITX+BITX
                000004                  KX=KX+1
        002550                          BREAK1  \LINE,\BITX,\KX

                                                ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                                ;ON LINE 4
                                                ;SET BREAK BIT FOR LINE 4
                                                ;TRANSMIT BINARY COUNT PATTERN ON LINE 4
                                                ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                                ;AND THAT IT IS A BREAK

        002550                          TS \XN,20,4$
        002550  012767  000340  175220  T5:     MOV     #340,PS         ;DISABLE ALL INTERRUPTS
        002556  012767  000020  007240          MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
        002564  012767  003000  007226          MOV     #4$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                        .IF NB  <>
                                                MOV     #,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                                        .ENDC
                000006                  XN=XN+1
        002572  012777  004000  007156          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
        002600  004767  007260                  JSR     PC,CLRALL       ;CLEAR ALL BUS ADDRESS AND
                                                                        ;BUS ADDRESS MEMORY LOCATIONS
        002604  012777  000004  007144          MOV     #4,@DHSCR       ;SELECT LINE 4
        002612  012777  012060  007144          MOV     #NULL,@DHBA     ;SET UPT TO TRANSMIT 0 CHARACTER
        002620  012777  177776  007140          MOV     #-2,@DHBC       ;TWO OS WILL BE TRANSMITTED
        002626  012777  033503  007126          MOV     #33503,@DHLPR   ;SET LINE SPEED=9600 BAUD
                                                                        ;CHARACTER LENGTH =8 BITS
        002634  012777  000020  007126          MOV     #20,@DHBAR      ;SET BAR BIT FOR LINE 4
        002642  122777  000002  007126  1$:     CMPB    #2,@DHSLR       ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
        002650  001374                          BNE     1$
        002652  012777  004000  007076          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
        002660  012777  000004  007070          MOV     #4,@DHSCR       ;SELECT LINE 4
        002666  012777  012112  007070          MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT 400
        002674  012777  177400  007064          MOV     #-400,@DHBC     ;(OCTAL) CHARACTERS
        002702  012777  033503  007052          MOV     #33503,@DHLPR   ;LINE SPEED = 9600 BAUD
        002710  012777  000020  007054          MOV     #20,@DHBCR      ;SET BREAK BIT FOR LINE 4
        002716  012777  000020  007044          MOV     #20,@DHBAR      ;SET BAR BIT FOR LINE 4
        002724  005777  007040          2$:     TST     @DHBAR          ;WAIT FOR ALL CHARACTERS
        002730  001375                          BNE     2$              ;TO BE TRANSMITTED
        002732  122777  000001  007036          CMPB    #1,@DHSLR       ;CHECK TO SEE THAT ONLY
        002740  001407                          BEQ     3$              ;1 CHARACTER WAS RECEIVED
        002742  017704  007026                  MOV     @DHSSR,R4       ;(R4)=ACTUAL RECEIVED DATA
        002746  042704  000300                  BIC     #300,R4         ;CLEAR UNWANTED BITS
        002752  012705  000400                  MOV     #400,R5         ;(R5)=EXPECTED SILO FILL LEVEL, 1
        002756                                  HLT     0               ;MORE THAN ONE CHARACTER RECEIVED, ERROR
        002756  104000                          EMT     0
        002760  017704  006774          3$:     MOV     @DHNRC,R4       ;READ NEXT RECEIVED CHARACTER REGISTER
        002764  026704  007574                  CMP     RWRD4,R4                ;IS RECEIVED CHARACTER A BREAK
        002770  001403                          BEQ     4$
        002772  016705  007566                  MOV     RWRD4,R5        ;(R5)=EXPECTED RECEIVED CHARACTER
        002776                                  HLT     1               ;RECEIVED DATA ERROR
        002776  104001                          EMT     1
        003000  104400          4$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
                000005          LINE=LINE+1
                000040          BITX=BITX+BITX
                000005          KX=KX+1
        003002                  BREAK1  \LINE,\BITX,\KX
```

```
                                        ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                        ;ON LINE 5
                                        ;SET BREAK BIT FOR LINE 5
                                        ;TRANSMIT BINARY COUNT PATTERN ON LINE 5
                                        ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                        ;AND THAT IT IS A BREAK

003002                          TS \XN,20,4$
003002  012767  000340  174766  T6:     MOV     #340,PS         ;DISABLE ALL INTERRUPTS
003010  012767  000020  007006          MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
003016  012767  003232  006774          MOV     #4$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                        MOV     #,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
        000007                  XN=XN+1
003024  012777  004000  006724          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
003032  004767  007026                  JSR     PC,CLRALL       ;CLEAR ALL BUS ADDRESS AND
                                                                ;BUS ADDRESS MEMORY LOCATIONS
003036  012777  000005  006712          MOV     #5,@DHSCR       ;SELECT LINE 5
003044  012777  012060  006712          MOV     #NULL,@DHBA     ;SET UPT TO TRANSMIT 0 CHARACTER
003052  012777  177776  006706          MOV     #-2,@DHBC       ;TWO OS WILL BE TRANSMITTED
003060  012777  033503  006674          MOV     #33503,@DHLPR   ;SET LINE SPEED=9600 BAUD
                                                                ;CHARACTER LENGTH =8 BITS
003066  012777  000040  006674          MOV     #40,@DHBAR      ;SET BAR BIT FOR LINE 5
003074  122777  000002  006674  1$:     CMPB    #2,@DHSLR       ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
003102  001374                  BNE     1$
003104  012777  004000  006644          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
003112  012777  000005  006636          MOV     #5,@DHSCR       ;SELECT LINE 5
003120  012777  012112  006636          MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT 400
003126  012777  177400  006632          MOV     #-400,@DHBC     ;(OCTAL) CHARACTERS
003134  012777  033503  006620          MOV     #33503,@DHLPR   ;LINE SPEED = 9600 BAUD
003142  012777  000040  006622          MOV     #40,@DHBCR      ;SET BREAK BIT FOR LINE 5
003150  012777  000040  006612          MOV     #40,@DHBAR      ;SET BAR BIT FOR LINE 5
003156  005777  006606          2$:     TST     @DHBAR          ;WAIT FOR ALL CHARACTERS
003162  001375                  BNE     2$              ;TO BE TRANSMITTED
003164  122777  000001  006604          CMPB    #1,@DHSLR       ;CHECK TO SEE THAT ONLY
003172  001407                  BEQ     3$              ;i CHARACTER WAS RECEIVED
003174  017704  006574                  MOV     @DHSSR,R4       ;(R4)=ACTUAL RECEIVED DATA
003200  042704  000300                  BIC     #300,R4         ;CLEAR UNWANTED BITS
003204  012705  000400                  MOV     #400,R5         ;(R5)=EXPECTED SILO FILL LEVEL, 1
003210                          HLT     0               ;MORE THAN ONE CHARACTER RECEIVED, ERROR
003210  104000                  EMT     0
003212  017704  006542          3$:     MOV     @DHNRC,R4       ;READ NEXT RECEIVED CHARACTER REGISTER
003216  026704  007344                  CMP     RWRD5,R4                ;IS RECEIVED CHARACTER A BREAK
003222  001403                  BEQ     4$
003224  016705  007336                  MOV     RWRD5,R5        ;(R5)=EXPECTED RECEIVED CHARACTER
003230                          HLT     1               ;RECEIVED DATA ERROR
003230  104001                  EMT     1
003232  104400          4$:     SCOPE                   ;CHECK FOR ITERATIONS, LOOP
        000006          LINE=LINE+1
        000100          BITX=BITX+BITX
        000006          KX=KX+1
003234                  BREAK1  \LINE,\BITX,\KX

                                        ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                        ;ON LINE 6
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                                        ;SET BREAK BIT FOR LINE 6
                                        ;TRANSMIT BINARY COUNT PATTERN ON LINE 6
                                        ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                        ;AND THAT IT IS A BREAK

003234                          TS \XN,20,4$
003234  012767  000340  174534 T7:     MOV     #340,PS         ;DISABLE ALL INTERRUPTS
003242  012767  000020  006554        MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
003250  012767  003464  006542        MOV     #4$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                        MOV     #,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
        000010                  XN=XN+1
003256  012777  004000  006472        MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
003264  004767  006574                JSR     PC,CLRALL       ;CLEAR ALL BUS ADDRESS AND
                                                              ;BUS ADDRESS MEMORY LOCATIONS
003270  012777  000006  006460        MOV     #6,@DHSCR       ;SELECT LINE 6
003276  012777  012060  006460        MOV     #NULL,@DHBA     ;SET UPT TO TRANSMIT 0 CHARACTER
003304  012777  177776  006454        MOV     #-2,@DHBC       ;TWO OS WILL BE TRANSMITTED
003312  012777  033503  006442        MOV     #33503,@DHLPR   ;SET LINE SPEED=9600 BAUD
                                                              ;CHARACTER LENGTH =8 BITS
003320  012777  000100  006442        MOV     #100,@DHBAR     ;SET BAR BIT FOR LINE 6
003326  122777  000002  006442 1$:     CMPB    #2,@DHSLR       ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
003334  001374                BNE     1$
003336  012777  004000  006412        MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
003344  012777  000006  006404        MOV     #6,@DHSCR       ;SELECT LINE 6
003352  012777  012112  006404        MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT 400
003360  012777  177400  006400        MOV     #-400,@DHBC     ;(OCTAL) CHARACTERS
003366  012777  033503  006366        MOV     #33503,@DHLPR   ;LINE SPEED = 9600 BAUD
003374  012777  000100  006370        MOV     #100,@DHBCR     ;SET BREAK BIT FOR LINE 6
003402  012777  000100  006360        MOV     #100,@DHBAR     ;SET BAR BIT FOR LINE 6
003410  005777  006354        2$:     TST     @DHBAR          ;WAIT FOR ALL CHARACTERS
003414  001375                BNE     2$              ;TO BE TRANSMITTED
003416  122777  000001  006352        CMPB    #1,@DHSLR       ;CHECK TO SEE THAT ONLY
003424  001407                BEQ     3$              ;1 CHARACTER WAS RECEIVED
003426  017704  006342        MOV     @DHSSR,R4       ;(R4)=ACTUAL RECEIVED DATA
003432  042704  000300        BIC     #300,R4         ;CLEAR UNWANTED BITS
003436  012705  000400        MOV     #400,R5         ;(R5)=EXPECTED SILO FILL LEVEL, 1
003442                        HLT     0               ;MORE THAN ONE CHARACTER RECEIVED, ERROR
003442  104000                EMT     0
003444  017704  006310 3$:     MOV     @DHNRC,R4       ;READ NEXT RECEIVED CHARACTER REGISTER
003450  026704  007114        CMP     RWRD6,R4                ;IS RECEIVED CHARACTER A BREAK
003454  001403                BEQ     4$
003456  016705  007106        MOV     RWRD6,R5        ;(R5)=EXPECTED RECEIVED CHARACTER
003462                        HLT     1               ;RECEIVED DATA ERROR
003462  104001                EMT     1
003464  104400          4$:   SCOPE                   ;CHECK FOR ITERATIONS, LOOP
        000007                LINE=LINE+1
        000200                BITX=BITX+BITX
        000007                KX=KX+1
003466                        BREAK1  \LINE,\BITX,\KX

                                        ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                        ;ON LINE 7
                                        ;SET BREAK BIT FOR LINE 7
                                        ;TRANSMIT BINARY COUNT PATTERN ON LINE 7
                                        ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
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                                        ;AND THAT IT IS A BREAK

003466                                  TS \XN,20,4$
003466  012767  000340  174302  T10:    MOV     #340,PS         ;DISABLE ALL INTERRUPTS
003474  012767  000020  006322          MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
003502  012767  003716  006310          MOV     #4$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                        .IF NB  <>
                                        MOV     #,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                                        .ENDC
        000011                          XN=XN+1
003510  012777  004000  006240          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
003516  004767  006342                  JSR     PC,CLRALL       ;CLEAR ALL BUS ADDRESS AND
                                                                ;BUS ADDRESS MEMORY LOCATIONS
003522  012777  000007  006226          MOV     #7,@DHSCR       ;SELECT LINE 7
003530  012777  012060  006226          MOV     #NULL,@DHBA     ;SET UPT TO TRANSMIT 0 CHARACTER
003536  012777  177776  006222          MOV     #-2,@DHBC       ;TWO OS WILL BE TRANSMITTED
003544  012777  033503  006210          MOV     #33503,@DHLPR   ;SET LINE SPEED=9600 BAUD
                                                                ;CHARACTER LENGTH =8 BITS
003552  012777  000200  006210          MOV     #200,@DHBAR     ;SET BAR BIT FOR LINE 7
003560  122777  000002  006210  1$:     CMPB    #2,@DHSLR       ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
003566  001374                  BNE     1$
003570  012777  004000  006160          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
003576  012777  000007  006152          MOV     #7,@DHSCR       ;SELECT LINE 7
003604  012777  012112  006152          MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT 400
003612  012777  177400  006146          MOV     #-400,@DHBC     ;(OCTAL) CHARACTERS
003620  012777  033503  006134          MOV     #33503,@DHLPR   ;LINE SPEED = 9600 BAUD
003626  012777  000200  006136          MOV     #200,@DHBCR     ;SET BREAK BIT FOR LINE 7
003634  012777  000200  006126          MOV     #200,@DHBAR     ;SET BAR BIT FOR LINE 7
003642  005777  006122          2$:     TST     @DHBAR          ;WAIT FOR ALL CHARACTERS
003646  001375                  BNE     2$              ;TO BE TRANSMITTED
003650  122777  000001  006120          CMPB    #1,@DHSLR       ;CHECK TO SEE THAT ONLY
003656  001407                  BEQ     3$              ;1 CHARACTER WAS RECEIVED
003660  017704  006110          MOV     @DHSSR,R4       ;(R4)=ACTUAL RECEIVED DATA
003664  042704  000300          BIC     #300,R4         ;CLEAR UNWANTED BITS
003670  012705  000400          MOV     #400,R5         ;(R5)=EXPECTED SILO FILL LEVEL, 1
003674                          HLT     0               ;MORE THAN ONE CHARACTER RECEIVED, ERROR
003674  104000                  EMT     0
003676  017704  006056  3$:     MOV     @DHNRC,R4       ;READ NEXT RECEIVED CHARACTER REGISTER
003702  026704  006664          CMP     RWRD7,R4                ;IS RECEIVED CHARACTER A BREAK
003706  001403                  BEQ     4$
003710  016705  006656          MOV     RWRD7,R5        ;(R5)=EXPECTED RECEIVED CHARACTER
003714                          HLT     1               ;RECEIVED DATA ERROR
003714  104001                  EMT     1
003716  104400          4$:     SCOPE                   ;CHECK FOR ITERATIONS, LOOP
        000010                  LINE=LINE+1
        000400                  BITX=BITX+BITX
        000010                  KX=KX+1
003720                          BREAK1  \LINE,\BITX,\KX

                                        ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                        ;ON LINE 10
                                        ;SET BREAK BIT FOR LINE 10
                                        ;TRANSMIT BINARY COUNT PATTERN ON LINE 10
                                        ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                        ;AND THAT IT IS A BREAK

003720                                  TS \XN,20,4$
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003720  012767  000340  174050  T11:    MOV     #340,PS         ;DISABLE ALL INTERRUPTS
003726  012767  000020  006070          MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
003734  012767  004150  006056          MOV     #4$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                MOV     #,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
        000012                  XN=XN+1
003742  012777  004000  006006          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
003750  004767  006110                  JSR     PC,CLRALL       ;CLEAR ALL BUS ADDRESS AND
                                                                ;BUS ADDRESS MEMORY LOCATIONS
003754  012777  000010  005774          MOV     #10,@DHSCR      ;SELECT LINE 10
003762  012777  012060  005774          MOV     #NULL,@DHBA     ;SET UPT TO TRANSMIT 0 CHARACTER
003770  012777  177776  005770          MOV     #-2,@DHBC       ;TWO 0S WILL BE TRANSMITTED
003776  012777  033503  005756          MOV     #33503,@DHLPR   ;SET LINE SPEED=9600 BAUD
                                                                ;CHARACTER LENGTH =8 BITS
004004  012777  000400  005756          MOV     #400,@DHBAR     ;SET BAR BIT FOR LINE 10
004012  122777  000002  005756  1$:     CMPB    #2,@DHSLR       ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
004020  001374                  BNE     1$
004022  012777  004000  005726          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
004030  012777  000010  005720          MOV     #10,@DHSCR      ;SELECT LINE 10
004036  012777  012112  005720          MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT 400
004044  012777  177400  005714          MOV     #-400,@DHBC     ;(OCTAL) CHARACTERS
004052  012777  033503  005702          MOV     #33503,@DHLPR   ;LINE SPEED = 9600 BAUD
004060  012777  000400  005704          MOV     #400,@DHBCR     ;SET BREAK BIT FOR LINE 10
004066  012777  000400  005674          MOV     #400,@DHBAR     ;SET BAR BIT FOR LINE 10
004074  005777  005670          2$:     TST     @DHBAR          ;WAIT FOR ALL CHARACTERS
004100  001375                  BNE     2$              ;TO BE TRANSMITTED
004102  122777  000001  005666          CMPB    #1,@DHSLR       ;CHECK TO SEE THAT ONLY
004110  001407                  BEQ     3$              ;1 CHARACTER WAS RECEIVED
004112  017704  005656                  MOV     @DHSSR,R4       ;(R4)=ACTUAL RECEIVED DATA
004116  042704  000300                  BIC     #300,R4         ;CLEAR UNWANTED BITS
004122  012705  000400                  MOV     #400,R5         ;(R5)=EXPECTED SILO FILL LEVEL, 1
004126                                  HLT     0               ;MORE THAN ONE CHARACTER RECEIVED, ERROR
004126  104000                  EMT     0
004130  017704  005624          3$:     MOV     @DHNRC,R4       ;READ NEXT RECEIVED CHARACTER REGISTER
004134  026704  006434                  CMP     RWRD10,R4               ;IS RECEIVED CHARACTER A BREAK
004140  001403                  BEQ     4$
004142  016705  006426                  MOV     RWRD10,R5       ;(R5)=EXPECTED RECEIVED CHARACTER
004146                                  HLT     1               ;RECEIVED DATA ERROR
004146  104001                  EMT     1
004150  104400          4$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
        000011                  LINE=LINE+1
        001000                  BITX=BITX+BITX
        000011                  KX=KX+1
004152                          BREAK1  \LINE,\BITX,\KX

                                ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                ;ON LINE 11
                                ;SET BREAK BIT FOR LINE 11
                                ;TRANSMIT BINARY COUNT PATTERN ON LINE 11
                                ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                ;AND THAT IT IS A BREAK

004152                          TS \XN,20,4$
004152  012767  000340  173616  T12:    MOV     #340,PS         ;DISABLE ALL INTERRUPTS
004160  012767  000020  005636          MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
004166  012767  004402  005624          MOV     #4$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
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                                .IF NB  <>
                                        MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
                000013                  XN=XN+1
004174  012777  004000  005554          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
004202  004767  005656                  JSR     PC,CLRALL               ;CLEAR ALL BUS ADDRESS AND
                                                                        ;BUS ADDRESS MEMORY LOCATIONS
004206  012777  000011  005542          MOV     #11,@DHSCR              ;SELECT LINE 11
004214  012777  012060  005542          MOV     #NULL,@DHBA             ;SET UPT TO TRANSMIT 0 CHARACTER
004222  012777  177776  005536          MOV     #-2,@DHBC               ;TWO OS WILL BE TRANSMITTED
004230  012777  033503  005524          MOV     #33503,@DHLPR           ;SET LINE SPEED=9600 BAUD
                                                                        ;CHARACTER LENGTH =8 BITS
004236  012777  001000  005524          MOV     #1000,@DHBAR            ;SET BAR BIT FOR LINE 11
004244  122777  000002  005524  1$:     CMPB    #2,@DHSLR               ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
004252  001374                          BNE     1$
004254  012777  004000  005474          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
004262  012777  000011  005466          MOV     #11,@DHSCR              ;SELECT LINE 11
004270  012777  012112  005466          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT 400
004276  012777  177400  005462          MOV     #-400,@DHBC             ;(OCTAL) CHARACTERS
004304  012777  033503  005450          MOV     #33503,@DHLPR           ;LINE SPEED = 9600 BAUD
004312  012777  001000  005452          MOV     #1000,@DHBCR            ;SET BREAK BIT FOR LINE 11
004320  012777  001000  005442          MOV     #1000,@DHBAR            ;SET BAR BIT FOR LINE 11
004326  005777  005436          2$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS
004332  001375                          BNE     2$                      ;TO BE TRANSMITTED
004334  122777  000001  005434          CMPB    #1,@DHSLR               ;CHECK TO SEE THAT ONLY
004342  001407                          BEQ     3$                      ;1 CHARACTER WAS RECEIVED
004344  017704  005424                  MOV     @DHSSR,R4               ;(R4)=ACTUAL RECEIVED DATA
004350  042704  000300                  BIC     #300,R4                 ;CLEAR UNWANTED BITS
004354  012705  000400                  MOV     #400,R5                 ;(R5)=EXPECTED SILO FILL LEVEL, 1
004360                                  HLT     0                       ;MORE THAN ONE CHARACTER RECEIVED, ERROR
004360  104000                          EMT     0
004362  017704  005372          3$:     MOV     @DHNRC,R4               ;READ NEXT RECEIVED CHARACTER REGISTER
004366  026704  006204                  CMP     RWRD11,R4                       ;IS RECEIVED CHARACTER A BREAK
004372  001403                          BEQ     4$
004374  016705  006176                  MOV     RWRD11,R5               ;(R5)=EXPECTED RECEIVED CHARACTER
004400                                  HLT     1                       ;RECEIVED DATA ERROR
004400  104001                          EMT     1
004402  104400          4$:     SCOPE                                   ;CHECK FOR ITERATIONS, LOOP
                000012          LINE=LINE+1
                002000          BITX=BITX+BITX
                000012          KX=KX+1
004404                          BREAK1  \LINE,\BITX,\KX

                                        ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                        ;ON LINE 12
                                        ;SET BREAK BIT FOR LINE 12
                                        ;TRANSMIT BINARY COUNT PATTERN ON LINE 12
                                        ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                        ;AND THAT IT IS A BREAK

004404                          TS \XN,20,4$
004404  012767  000340  173364  T13:     MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
004412  012767  000020  005404          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
004420  012767  004634  005372          MOV     #4$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                        MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
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                000014                          XN=XN+1
004426  012777  004000  005322                  MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
004434  004767  005424                          JSR     PC,CLRALL               ;CLEAR ALL BUS ADDRESS AND
                                                                                ;BUS ADDRESS MEMORY LOCATIONS
004440  012777  000012  005310                  MOV     #12,@DHSCR              ;SELECT LINE 12
004446  012777  012060  005310                  MOV     #NULL,@DHBA             ;SET UPT TO TRANSMIT 0 CHARACTER
004454  012777  177776  005304                  MOV     #-2,@DHBC               ;TWO OS WILL BE TRANSMITTED
004462  012777  033503  005272                  MOV     #33503,@DHLPR           ;SET LINE SPEED=9600 BAUD
                                                                                ;CHARACTER LENGTH =8 BITS
004470  012777  002000  005272                  MOV     #2000,@DHBAR            ;SET BAR BIT FOR LINE 12
004476  122777  000002  005272          1$:     CMPB    #2,@DHSLR               ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
004504  001374                                  BNE     1$
004506  012777  004000  005242                  MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
004514  012777  000012  005234                  MOV     #12,@DHSCR              ;SELECT LINE 12
004522  012777  012112  005234                  MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT 400
004530  012777  177400  005230                  MOV     #-400,@DHBC             ;(OCTAL) CHARACTERS
004536  012777  033503  005216                  MOV     #33503,@DHLPR           ;LINE SPEED = 9600 BAUD
004544  012777  002000  005220                  MOV     #2000,@DHBCR            ;SET BREAK BIT FOR LINE 12
004552  012777  002000  005210                  MOV     #2000,@DHBAR            ;SET BAR BIT FOR LINE 12
004560  005777  005204          2$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS
004564  001375                                  BNE     2$                      ;TO BE TRANSMITTED
004566  122777  000001  005202                  CMPB    #1,@DHSLR               ;CHECK TO SEE THAT ONLY
004574  001407                                  BEQ     3$                      ;1 CHARACTER WAS RECEIVED
004576  017704  005172                          MOV     @DHSSR,R4               ;(R4)=ACTUAL RECEIVED DATA
004602  042704  000300                          BIC     #300,R4                 ;CLEAR UNWANTED BITS
004606  012705  000400                          MOV     #400,R5                 ;(R5)=EXPECTED SILO FILL LEVEL, 1
004612                                          HLT     0                       ;MORE THAN ONE CHARACTER RECEIVED, ERROR
004612  104000                                  EMT     0
004614  017704  005140          3$:     MOV     @DHNRC,R4               ;READ NEXT RECEIVED CHARACTER REGISTER
004620  026704  005754                          CMP     RWRD12,R4               ;IS RECEIVED CHARACTER A BREAK
004624  001403                                  BEQ     4$
004626  016705  005746                          MOV     RWRD12,R5               ;(R5)=EXPECTED RECEIVED CHARACTER
004632                                          HLT     1                       ;RECEIVED DATA ERROR
004632  104001                                  EMT     1
004634  104400          4$:     SCOPE                                   ;CHECK FOR ITERATIONS, LOOP
                000013          LINE=LINE+1
                004000          BITX=BITX+BITX
                000013          KX=KX+1
004636                  BREAK1  \LINE,\BITX,\KX

                                ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                ;ON LINE 13
                                ;SET BREAK BIT FOR LINE 13
                                ;TRANSMIT BINARY COUNT PATTERN ON LINE 13
                                ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                ;AND THAT IT IS A BREAK

004636                  TS \XN,20,4$
004636  012767  000340  173132  T14:    MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
004644  012767  000020  005152          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
004652  012767  005066  005140          MOV     #4$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                        .IF NB  <>
                                MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                        .ENDC
                000015          XN=XN+1
004660  012777  004000  005070          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
004666  004767  005172                  JSR     PC,CLRALL               ;CLEAR ALL BUS ADDRESS AND
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004672  012777  000013  005056          MOV     #13,@DHSCR      ;BUS ADDRESS MEMORY LOCATIONS
004700  012777  012060  005056          MOV     #NULL,@DHBA     ;SELECT LINE 13
004706  012777  177776  005052          MOV     #-2,@DHBC       ;SET UPT TO TRANSMIT 0 CHARACTER
004714  012777  033503  005040          MOV     #33503,@DHLPR   ;TWO OS WILL BE TRANSMITTED
                                                                ;SET LINE SPEED=9600 BAUD
                                                                ;CHARACTER LENGTH =8 BITS
004722  012777  004000  005040          MOV     #4000,@DHBAR    ;SET BAR BIT FOR LINE 13
004730  122777  000002  005040  1$:     CMPB    #2,@DHSLR       ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
004736  001374                          BNE     1$
004740  012777  004000  005010          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
004746  012777  000013  005002          MOV     #13,@DHSCR      ;SELECT LINE 13
004754  012777  012112  005002          MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT 400
004762  012777  177400  004776          MOV     #-400,@DHBC     ;(OCTAL) CHARACTERS
004770  012777  033503  004764          MOV     #33503,@DHLPR   ;LINE SPEED = 9600 BAUD
004776  012777  004000  004766          MOV     #4000,@DHBCR    ;SET BREAK BIT FOR LINE 13
005004  012777  004000  004756          MOV     #4000,@DHBAR    ;SET BAR BIT FOR LINE 13
005012  005777  004752          2$:     TST     @DHBAR          ;WAIT FOR ALL CHARACTERS
005016  001375                          BNE     2$              ;TO BE TRANSMITTED
005020  122777  000001  004750          CMPB    #1,@DHSLR       ;CHECK TO SEE THAT ONLY
005026  001407                          BEQ     3$              ;1 CHARACTER WAS RECEIVED
005030  017704  004740                  MOV     @DHSSR,R4       ;(R4)=ACTUAL RECEIVED DATA
005034  042704  000300                  BIC     #300,R4         ;CLEAR UNWANTED BITS
005040  012705  000400                  MOV     #400,R5         ;(R5)=EXPECTED SILO FILL LEVEL, 1
005044                                  HLT     0               ;MORE THAN ONE CHARACTER RECEIVED, ERROR
005044  104000                          EMT     0
005046  017704  004706          3$:     MOV     @DHNRC,R4       ;READ NEXT RECEIVED CHARACTER REGISTER
005052  026704  005524                  CMP     RWRD13,R4       ;       ;IS RECEIVED CHARACTER A BREAK
005056  001403                          BEQ     4$
005060  016705  005516                  MOV     RWRD13,R5       ;(R5)=EXPECTED RECEIVED CHARACTER
005064                                  HLT     1               ;RECEIVED DATA ERROR
005064  104001                          EMT     1
005066  104400          4$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
        000014          LINE=LINE+1
        010000          BITX=BITX+BITX
        000014          KX=KX+1
005070                  BREAK1  \LINE,\BITX,\KX

                        ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                        ;ON LINE 14
                        ;SET BREAK BIT FOR LINE 14
                        ;TRANSMIT BINARY COUNT PATTERN ON LINE 14
                        ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                        ;AND THAT IT IS A BREAK

005070                  TS \XN,20,4$
005070  012767  000340  172700  T15:     MOV     #340,PS         ;DISABLE ALL INTERRUPTS
005076  012767  000020  004720          MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
005104  012767  005320  004706          MOV     #4$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
        000016                  XN=XN+1
005112  012777  004000  004636          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
005120  004767  004740                  JSR     PC,CLRALL       ;CLEAR ALL BUS ADDRESS AND
                                                                ;BUS ADDRESS MEMORY LOCATIONS
005124  012777  000014  004624          MOV     #14,@DHSCR      ;SELECT LINE 14
005132  012777  012060  004624          MOV     #NULL,@DHBA     ;SET UPT TO TRANSMIT 0 CHARACTER
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005140  012777  177776  004620          MOV     #-2,@DHBC           ;TWO OS WILL BE TRANSMITTED
005146  012777  033503  004606          MOV     #33503,@DHLPR       ;SET LINE SPEED=9600 BAUD
                                                                    ;CHARACTER LENGTH =8 BITS
005154  012777  010000  004606          MOV     #10000,@DHBAR       ;SET BAR BIT FOR LINE 14
005162  122777  000002  004606  1$:     CMPB    #2,@DHSLR           ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
005170  001374                          BNE     1$
005172  012777  004000  004556          MOV     #BIT11,@DHSCR       ;MASTER CLEAR INTERFACE
005200  012777  000014  004550          MOV     #14,@DHSCR          ;SELECT LINE 14
005206  012777  012112  004550          MOV     #TBUF,@DHBA         ;SET UP TO TRANSMIT 400
005214  012777  177400  004544          MOV     #-400,@DHBC         ;(OCTAL) CHARACTERS
005222  012777  033503  004532          MOV     #33503,@DHLPR       ;LINE SPEED = 9600 BAUD
005230  012777  010000  004534          MOV     #10000,@DHBCR       ;SET BREAK BIT FOR LINE 14
005236  012777  010000  004524          MOV     #10000,@DHBAR       ;SET BAR BIT FOR LINE 14
005244  005777  004520          2$:     TST     @DHBAR              ;WAIT FOR ALL CHARACTERS
005250  001375                          BNE     2$                  ;TO BE TRANSMITTED
005252  122777  000001  004516          CMPB    #1,@DHSLR           ;CHECK TO SEE THAT ONLY
005260  001407                          BEQ     3$                  ;1 CHARACTER WAS RECEIVED
005262  017704  004506                  MOV     @DHSSR,R4           ;(R4)=ACTUAL RECEIVED DATA
005266  042704  000300                  BIC     #300,R4             ;CLEAR UNWANTED BITS
005272  012705  000400                  MOV     #400,R5             ;(R5)=EXPECTED SILO FILL LEVEL, 1
005276                                  HLT     0                   ;MORE THAN ONE CHARACTER RECEIVED, ERROR
005276  104000                          EMT     0
005300  017704  004454          3$:     MOV     @DHNRC,R4           ;READ NEXT RECEIVED CHARACTER REGISTER
005304  026704  005274                  CMP     RWRD14,R4           ;IS RECEIVED CHARACTER A BREAK
005310  001403                          BEQ     4$
005312  016705  005266                  MOV     RWRD14,R5           ;(R5)=EXPECTED RECEIVED CHARACTER
005316                                  HLT     1                   ;RECEIVED DATA ERROR
005316  104001                          EMT     1
005320  104400          4$:     SCOPE                               ;CHECK FOR ITERATIONS, LOOP
        000015          LINE=LINE+1
        020000          BITX=BITX+BITX
        000015          KX=KX+1
005322                  BREAK1  \LINE,\BITX,\KX

                                ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                                ;ON LINE 15
                                ;SET BREAK BIT FOR LINE 15
                                ;TRANSMIT BINARY COUNT PATTERN ON LINE 15
                                ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                                ;AND THAT IT IS A BREAK

005322                  TS \XN,20,4$
005322  012767  000340  172446  T16:    MOV     #340,PS             ;DISABLE ALL INTERRUPTS
005330  012767  000020  004466          MOV     #20,ICOUNT          ;SET UP FOR 20 ITERATIONS
005336  012767  005552  004454          MOV     #4$,.ESCAPE         ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                MOV     #.,FREEZ1                   ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
        000017                  XN=XN+1
005344  012777  004000  004404          MOV     #BIT11,@DHSCR       ;MASTER CLEAR INTERFACE
005352  004767  004506                  JSR     PC,CLRALL           ;CLEAR ALL BUS ADDRESS AND
                                                                    ;BUS ADDRESS MEMORY LOCATIONS
005356  012777  000015  004372          MOV     #15,@DHSCR          ;SELECT LINE 15
005364  012777  012060  004372          MOV     #NULL,@DHBA         ;SET UPT TO TRANSMIT 0 CHARACTER
005372  012777  177776  004366          MOV     #-2,@DHBC           ;TWO OS WILL BE TRANSMITTED
005400  012777  033503  004354          MOV     #33503,@DHLPR       ;SET LINE SPEED=9600 BAUD
                                                                    ;CHARACTER LENGTH =8 BITS
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005406  012777  020000  004354          MOV     #20000,@DHBAR           ;SET BAR BIT FOR LINE 15
005414  122777  000002  004354  1$:     CMPB    #2,@DHSLR               ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
005422  001374                          BNE     1$
005424  012777  004000  004324          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
005432  012777  000015  004316          MOV     #15,@DHSCR              ;SELECT LINE 15
005440  012777  012112  004316          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT 400
005446  012777  177400  004312          MOV     #-400,@DHBC             ;(OCTAL) CHARACTERS
005454  012777  033503  004300          MOV     #33503,@DHLPR           ;LINE SPEED = 9600 BAUD
005462  012777  020000  004302          MOV     #20000,@DHBCR           ;SET BREAK BIT FOR LINE 15
005470  012777  020000  004272          MOV     #20000,@DHBAR           ;SET BAR BIT FOR LINE 15
005476  005777  004266          2$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS
005502  001375                          BNE     2$                      ;TO BE TRANSMITTED
005504  122777  000001  004264          CMPB    #1,@DHSLR               ;CHECK TO SEE THAT ONLY
005512  001407                          BEQ     3$                      ;1 CHARACTER WAS RECEIVED
005514  017704  004254                  MOV     @DHSSR,R4               ;(R4)=ACTUAL RECEIVED DATA
005520  042704  000300                  BIC     #300,R4                 ;CLEAR UNWANTED BITS
005524  012705  000400                  MOV     #400,R5                 ;(R5)=EXPECTED SILO FILL LEVEL, 1
005530                                  HLT     0                       ;MORE THAN ONE CHARACTER RECEIVED, ERROR
005530  104000                          EMT     0
005532  017704  004222          3$:     MOV     @DHNRC,R4               ;READ NEXT RECEIVED CHARACTER REGISTER
005536  026704  005044                  CMP     RWRD15,R4                       ;IS RECEIVED CHARACTER A BREAK
005542  001403                          BEQ     4$
005544  016705  005036                  MOV     RWRD15,R5               ;(R5)=EXPECTED RECEIVED CHARACTER
005550                                  HLT     1                       ;RECEIVED DATA ERROR
005550  104001                          EMT     1
005552  104400          4$:     SCOPE                                   ;CHECK FOR ITERATIONS, LOOP
        000016          LINE=LINE+1
        040000          BITX=BITX+BITX
        000016          KX=KX+1
005554                  BREAK1  \LINE,\BITX,\KX

                        ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                        ;ON LINE 16
                        ;SET BREAK BIT FOR LINE 16
                        ;TRANSMIT BINARY COUNT PATTERN ON LINE 16
                        ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                        ;AND THAT IT IS A BREAK

005554                  TS \XN,20,4$
005554  012767  000340  172214  T17:    MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
005562  012767  000020  004234          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
005570  012767  006004  004222          MOV     #4$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                        .IF NB  <>
                        MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                        .ENDC
        000020          XN=XN+1
005576  012777  004000  004152          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
005604  004767  004254                  JSR     PC,CLRALL               ;CLEAR ALL BUS ADDRESS AND
                                                                        ;BUS ADDRESS MEMORY LOCATIONS
005610  012777  000016  004140          MOV     #16,@DHSCR              ;SELECT LINE 16
005616  012777  012060  004140          MOV     #NULL,@DHBA             ;SET UPT TO TRANSMIT 0 CHARACTER
005624  012777  177776  004134          MOV     #-2,@DHBC               ;TWO OS WILL BE TRANSMITTED
005632  012777  033503  004122          MOV     #33503,@DHLPR           ;SET LINE SPEED=9600 BAUD
                                                                        ;CHARACTER LENGTH =8 BITS
005640  012777  040000  004122          MOV     #40000,@DHBAR           ;SET BAR BIT FOR LINE 16
005646  122777  000002  004122  1$:     CMPB    #2,@DHSLR               ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
005654  001374                          BNE     1$
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005656  012777  004000  004072          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
005664  012777  000016  004064          MOV     #16,@DHSCR              ;SELECT LINE 16
005672  012777  012112  004064          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT 400
005700  012777  177400  004060          MOV     #-400,@DHBC             ;(OCTAL) CHARACTERS
005706  012777  033503  004046          MOV     #33503,@DHLPR           ;LINE SPEED = 9600 BAUD
005714  012777  040000  004050          MOV     #40000,@DHBCR           ;SET BREAK BIT FOR LINE 16
005722  012777  040000  004040          MOV     #40000,@DHBAR           ;SET BAR BIT FOR LINE 16
005730  005777  004034          2$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS
005734  001375                          BNE     2$                      ;TO BE TRANSMITTED
005736  122777  000001  004032          CMPB    #1,@DHSLR               ;CHECK TO SEE THAT ONLY
005744  001407                          BEQ     3$                      ;1 CHARACTER WAS RECEIVED
005746  017704  004022                  MOV     @DHSSR,R4               ;(R4)=ACTUAL RECEIVED DATA
005752  042704  000300                  BIC     #300,R4                 ;CLEAR UNWANTED BITS
005756  012705  000400                  MOV     #400,R5                 ;(R5)=EXPECTED SILO FILL LEVEL, 1
005762                                  HLT     0                       ;MORE THAN ONE CHARACTER RECEIVED, ERROR
005762  104000                          EMT     0
005764  017704  003770          3$:     MOV     @DHNRC,R4               ;READ NEXT RECEIVED CHARACTER REGISTER
005770  026704  004614                  CMP     RWRD16,R4                       ;IS RECEIVED CHARACTER A BREAK
005774  001403                          BEQ     4$
005776  016705  004606                  MOV     RWRD16,R5               ;(R5)=EXPECTED RECEIVED CHARACTER
006002                                  HLT     1                       ;RECEIVED DATA ERROR
006002  104001                          EMT     1
006004  104400          4$:     SCOPE                                   ;CHECK FOR ITERATIONS, LOOP
        000017  LINE=LINE+1
        100000  BITX=BITX+BITX
        000017  KX=KX+1
006006          BREAK1  \LINE,\BITX,\KX

                        ;FLUSH UART BY TRANSMITTING 2 NULL CHARACTERS
                        ;ON LINE 17
                        ;SET BREAK BIT FOR LINE 17
                        ;TRANSMIT BINARY COUNT PATTERN ON LINE 17
                        ;VERIFY HTAT ONLY 1 CHARACTER IS RECEIVED
                        ;AND THAT IT IS A BREAK

006006          TS \XN,20,4$
006006  012767  000340  171762  T20:     MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
006014  012767  000020  004002          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
006022  012767  006236  003770          MOV     #4$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                        .IF NB  <>
                        MOV     #.,FREEZ1               ;SET UP TO LOOP WITH DATA       ; 3
                        .ENDC
        000021  XN=XN+1
006030  012777  004000  003720          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
006036  004767  004022                  JSR     PC,CLRALL               ;CLEAR ALL BUS ADDRESS AND
                                                                        ;BUS ADDRESS MEMORY LOCATIONS
006042  012777  000017  003706          MOV     #17,@DHSCR              ;SELECT LINE 17
006050  012777  012060  003706          MOV     #NULL,@DHBA             ;SET UPT TO TRANSMIT 0 CHARACTER
006056  012777  177776  003702          MOV     #-2,@DHBC               ;TWO OS WILL BE TRANSMITTED
006064  012777  033503  003670          MOV     #33503,@DHLPR           ;SET LINE SPEED=9600 BAUD
                                                                        ;CHARACTER LENGTH =8 BITS
006072  012777  100000  003670          MOV     #100000,@DHBAR          ;SET BAR BIT FOR LINE 17
006100  122777  000002  003670  1$:     CMPB    #2,@DHSLR               ;WAIT FOR 2 CHARACTERS TO BE RECEIVED
006106  001374                          BNE     1$
006110  012777  004000  003640          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
006116  012777  000017  003632          MOV     #17,@DHSCR              ;SELECT LINE 17
006124  012777  012112  003632          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT 400
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006132  012777  177400  003626          MOV     #-400,@DHBC             ;(OCTAL) CHARACTERS
006140  012777  033503  003614          MOV     #33503,@DHLPR           ;LINE SPEED = 9600 BAUD
006146  012777  100000  003616          MOV     #100000,@DHBCR          ;SET BREAK BIT FOR LINE 17
006154  012777  100000  003606          MOV     #100000,@DHBAR          ;SET BAR BIT FOR LINE 17
006162  005777  003602          2$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS
006166  001375                          BNE     2$                      ;TO BE TRANSMITTED
006170  122777  000001  003600          CMPB    #1,@DHSLR               ;CHECK TO SEE THAT ONLY
006176  001407                          BEQ     3$                      ;1 CHARACTER WAS RECEIVED
006200  017704  003570                  MOV     @DHSSR,R4               ;(R4)=ACTUAL RECEIVED DATA
006204  042704  000300                  BIC     #300,R4                 ;CLEAR UNWANTED BITS
006210  012705  000400                  MOV     #400,R5                 ;(R5)=EXPECTED SILO FILL LEVEL, 1
006214                                  HLT     0                       ;MORE THAN ONE CHARACTER RECEIVED, ERROR
006214  104000                          EMT     0
006216  017704  003536          3$:     MOV     @DHNRC,R4               ;READ NEXT RECEIVED CHARACTER REGISTER
006222  026704  004364                  CMP     RWRD17,R4                       ;IS RECEIVED CHARACTER A BREAK
006226  001403                          BEQ     4$
006230  016705  004356                  MOV     RWRD17,R5               ;(R5)=EXPECTED RECEIVED CHARACTER
006234                                  HLT     1                       ;RECEIVED DATA ERROR
006234  104001                          EMT     1
006236  104400          4$:     SCOPE                                   ;CHECK FOR ITERATIONS, LOOP
        000020          LINE=LINE+1
        000000          BITX=BITX+BITX
        000020          KX=KX+1
 18     000020          XLINE=LINE
 19     000000          XBIT=BITX
 20     000020          K=KX
 21     000000          LINE=0
 22     000001          BITX=1
 23     000000          KX=0
 25     000020          .REPT   20
 26                     BLIND1  \LINE,\BITX,\KX
 27                     .NLIST
 28                     LINE=LINE+1
 29                     BITX=BITX+BITX
 30                     KX=KX+1
 31                     .LIST
 32                     .ENDR
006240                  BLIND1  \LINE,\BITX,\KX

                                ;SET HALF DUPLEX ON LINE 0
                                ;TRANSMITI A BINARY COUNT PATTERN
                                ;VERIFY THAT NO CHARACTERS ARE RECEIVED

006240                  TS \XN,20,2$
006240  012767  000340  171530  T21:    MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
006246  012767  000020  003550          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
006254  012767  006350  003536          MOV     #2$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
        000022          XN=XN+1
006262  012777  004000  003466          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
006270  004767  003570                  JSR     PC,CLRALL               ;CLEAR ALL BYTE COUNT AND
                                                                        ;AND BUS ADDRESS MEMORY LOCATIONS
006274  012777  000000  003454          MOV     #0,@DHSCR               ;SELECT LINE 0
006302  012777  012112  003454          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT
006310  012777  177400  003450          MOV     #-400,@DHBC             ;400 (OCTAL) CHARACTERS
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006316  012777  073503  003436          MOV     #73503,@DHLPR           ;SET RECEIVER BLIND
                                                                        ;LINE SPEED =9600 BAUD
                                                                        ;CHARACTER LENGTH = 8 BITS
006324  012777  000001  003436          MOV     #1,@DHBAR               ;SET BAR BIT FOR LINE 0
006332  005777  003432          1$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
006336  001375                          BNE     1$
006340  105777  003412                  TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
006344  100001                          BPL     2$
006346                                  HLT     2                       ;RECEIVER NOT BLINDED, ERROR
006346  104002                          EMT     2
006350  104400          2$:     SCOPE                                   ;CHECK FOR ITERATIONS, LOOP
        000001          LINE=LINE+1
        000002          BITX=BITX+BITX
        000001          KX=KX+1
006352                  BLIND1  \LINE,\BITX,\KX

                                ;SET HALF DUPLEX ON LINE 1
                                ;TRANSMITI A BINARY COUNT PATTERN
                                ;VERIFY THAT NO CHARACTERS ARE RECEIVED

006352                  TS \XN,20,2$
006352  012767  000340  171416  T22:    MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
006360  012767  000020  003436          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
006366  012767  006462  003424          MOV     #2$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                        .IF NB  <>
                                MOV     #,FREEZ1                        ;SET UP TO LOOP WITH DATA       ; 3
                        .ENDC
        000023          XN=XN+1
006374  012777  004000  003354          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
006402  004767  003456                  JSR     PC,CLRALL               ;CLEAR ALL BYTE COUNT AND
                                                                        ;AND BUS ADDRESS MEMORY LOCATIONS
006406  012777  000001  003342          MOV     #1,@DHSCR               ;SELECT LINE 1
006414  012777  012112  003342          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT
006422  012777  177400  003336          MOV     #-400,@DHBC             ;400 (OCTAL) CHARACTERS
006430  012777  073503  003324          MOV     #73503,@DHLPR           ;SET RECEIVER BLIND
                                                                        ;LINE SPEED =9600 BAUD
                                                                        ;CHARACTER LENGTH = 8 BITS
006436  012777  000002  003324          MOV     #2,@DHBAR               ;SET BAR BIT FOR LINE 1
006444  005777  003320          1$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
006450  001375                          BNE     1$
006452  105777  003300                  TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
006456  100001                          BPL     2$
006460                                  HLT     2                       ;RECEIVER NOT BLINDED, ERROR
006460  104002                          EMT     2
006462  104400          2$:     SCOPE                                   ;CHECK FOR ITERATIONS, LOOP
        000002          LINE=LINE+1
        000004          BITX=BITX+BITX
        000002          KX=KX+1
006464                  BLIND1  \LINE,\BITX,\KX

                                ;SET HALF DUPLEX ON LINE 2
                                ;TRANSMITI A BINARY COUNT PATTERN
                                ;VERIFY THAT NO CHARACTERS ARE RECEIVED

006464                  TS \XN,20,2$
006464  012767  000340  171304  T23:    MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
006472  012767  000020  003324          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
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006500  012767  006574  003312          MOV     #2$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                        MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
        000024                  XN=XN+1
006506  012777  004000  003242          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
006514  004767  003344                  JSR     PC,CLRALL               ;CLEAR ALL BYTE COUNT AND
                                                                        ;AND BUS ADDRESS MEMORY LOCATIONS
006520  012777  000002  003230          MOV     #2,@DHSCR               ;SELECT LINE 2
006526  012777  012112  003230          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT
006534  012777  177400  003224          MOV     #-400,@DHBC             ;400 (OCTAL) CHARACTERS
006542  012777  073503  003212          MOV     #73503,@DHLPR           ;SET RECEIVER BLIND
                                                                        ;LINE SPEED =9600 BAUD
                                                                        ;CHARACTER LENGTH = 8 BITS
006550  012777  000004  003212          MOV     #4,@DHBAR               ;SET BAR BIT FOR LINE 2
006556  005777  003206          1$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
006562  001375                  BNE     1$
006564  105777  003166          TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
006570  100001                  BPL     2$
006572                          HLT     2                       ;RECEIVER NOT BLINDED, ERROR
006572  104002                  EMT     2
006574  104400          2$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
        000003          LINE=LINE+1
        000010          BITX=BITX+BITX
        000003          KX=KX+1
006576                  BLIND1  \LINE,\BITX,\KX

                                ;SET HALF DUPLEX ON LINE 3
                                ;TRANSMITI A BINARY COUNT PATTERN
                                ;VERIFY THAT NO CHARACTERS ARE RECEIVED

006576                  TS \XN,20,2$
006576  012767  000340  171172  T24:    MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
006604  012767  000020  003212          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
006612  012767  006706  003200          MOV     #2$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                        MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       : 3
                                .ENDC
        000025                  XN=XN+1
006620  012777  004000  003130          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
006626  004767  003232                  JSR     PC,CLRALL               ;CLEAR ALL BYTE COUNT AND
                                                                        ;AND BUS ADDRESS MEMORY LOCATIONS
006632  012777  000003  003116          MOV     #3,@DHSCR               ;SELECT LINE 3
006640  012777  012112  003116          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT
006646  012777  177400  003112          MOV     #-400,@DHBC             ;400 (OCTAL) CHARACTERS
006654  012777  073503  003100          MOV     #73503,@DHLPR           ;SET RECEIVER BLIND
                                                                        ;LINE SPEED =9600 BAUD
                                                                        ;CHARACTER LENGTH = 8 BITS
006662  012777  000010  003100          MOV     #10,@DHBAR              ;SET BAR BIT FOR LINE 3
006670  005777  003074          1$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
006674  001375                  BNE     1$
006676  105777  003054          TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
006702  100001                  BPL     2$
006704                          HLT     2                       ;RECEIVER NOT BLINDED, ERROR
006704  104002                  EMT     2
006706  104400          2$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
        000004          LINE=LINE+1
```

```
                000020                  BITX=BITX+BITX
                000004                  KX=KX+1
        006710                          BLIND1  \LINE,\BITX,\KX

                                                ;SET HALF DUPLEX ON LINE 4
                                                ;TRANSMITI A BINARY COUNT PATTERN
                                                ;VERIFY THAT NO CHARACTERS ARE RECEIVED

        006710                          TS \XN,20,2$
        006710  012767  000340  171060  T25:    MOV     #340,PS         ;DISABLE ALL INTERRUPTS
        006716  012767  000020  003100          MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
        006724  012767  007020  003066          MOV     #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                        .IF NB  <>
                                                MOV     @,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                                        .ENDC
                000026                  XN=XN+1
        006732  012777  004000  003016          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
        006740  004767  003120                  JSR     PC,CLRALL       ;CLEAR ALL BYTE COUNT AND
                                                                        ;AND BUS ADDRESS MEMORY LOCATIONS
        006744  012777  000004  003004          MOV     #4,@DHSCR       ;SELECT LINE 4
        006752  012777  012112  003004          MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT
        006760  012777  177400  003000          MOV     #-400,@DHBC     ;400 (OCTAL) CHARACTERS
        006766  012777  073503  002766          MOV     #73503,@DHLPR   ;SET RECEIVER BLIND
                                                                        ;LINE SPEED =9600 BAUD
                                                                        ;CHARACTER LENGTH = 8 BITS
        006774  012777  000020  002766          MOV     #20,@DHBAR      ;SET BAR BIT FOR LINE 4
        007002  005777  002762          1$:     TST     @DHBAR          ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
        007006  001375                  BNE     1$
        007010  105777  002742          TSTB    @DHSCR          ;WERE ANY CHARACTERS RECEIVED
        007014  100001                  BPL     2$
        007016                          HLT     2               ;RECEIVER NOT BLINDED, ERROR
        007016  104002                  EMT     2
        007020  104400          2$:     SCOPE                   ;CHECK FOR ITERATIONS, LOOP
                000005                  LINE=LINE+1
                000040                  BITX=BITX+BITX
                000005                  KX=KX+1
        007022                          BLIND1  \LINE,\BITX,\KX

                                                ;SET HALF DUPLEX ON LINE 5
                                                ;TRANSMITI A BINARY COUNT PATTERN
                                                ;VERIFY THAT NO CHARACTERS ARE RECEIVED

        007022                          TS \XN,20,2$
        007022  012767  000340  170746  T26:    MOV     #340,PS         ;DISABLE ALL INTERRUPTS
        007030  012767  000020  002766          MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
        007036  012767  007132  002754          MOV     #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                        .IF NB  <>
                                                MOV     @,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                                        .ENDC
                000027                  XN=XN+1
        007044  012777  004000  002704          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
        007052  004767  003006                  JSR     PC,CLRALL       ;CLEAR ALL BYTE COUNT AND
                                                                        ;AND BUS ADDRESS MEMORY LOCATIONS
        007056  012777  000005  002672          MOV     #5,@DHSCR       ;SELECT LINE 5
        007064  012777  012112  002672          MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT
        007072  012777  177400  002666          MOV     #-400,@DHBC     ;400 (OCTAL) CHARACTERS
        007100  012777  073503  002654          MOV     #73503,@DHLPR   ;SET RECEIVER BLIND
```

```
                                                                ;LINE SPEED =9600 BAUD
                                                                ;CHARACTER LENGTH = 8 BITS
007106  012777  000040  002654            MOV     #40,@DHBAR    ;SET BAR BIT FOR LINE 5
007114  005777  002650          1$:       TST     @DHBAR        ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
007120  001375                            BNE     1$
007122  105777  002630                    TSTB    @DHSCR        ;WERE ANY CHARACTERS RECEIVED
007126  100001                            BPL     2$
007130                                    HLT     2             ;RECEIVER NOT BLINDED, ERROR
007130  104002                            EMT     2
007132  104400          2$:               SCOPE                 ;CHECK FOR ITERATIONS, LOOP
        000006          LINE=LINE+1
        000100          BITX=BITX+BITX
        000006          KX=KX+1
007134                  BLIND1  \LINE,\BITX,\KX

                                ;SET HALF DUPLEX ON LINE 6
                                ;TRANSMITI A BINARY COUNT PATTERN
                                ;VERIFY THAT NO CHARACTERS ARE RECEIVED

007134                  TS \XN,20,2$
007134  012767  000340  170634  T27:      MOV     #340,PS       ;DISABLE ALL INTERRUPTS
007142  012767  000020  002654            MOV     #20,ICOUNT    ;SET UP FOR 20 ITERATIONS
007150  012767  007244  002642            MOV     #2$,ESCAPE    ;SET UP TO ESCAPE TO NEXT TEST
                        .IF NB  <>
                                MOV     #,FREEZ1              ;SET UP TO LOOP WITH DATA       ; 3
                        .ENDC
        000030          XN=XN+1
007156  012777  004000  002572            MOV     #BIT11,@DHSCR ;MASTER CLEAR INTERFACE
007164  004767  002674                    JSR     PC,CLRALL     ;CLEAR ALL BYTE COUNT AND
                                                                ;AND BUS ADDRESS MEMORY LOCATIONS
007170  012777  000006  002560            MOV     #6,@DHSCR     ;SELECT LINE 6
007176  012777  012112  002560            MOV     #TBUF,@DHBA   ;SET UP TO TRANSMIT
007204  012777  177400  002554            MOV     #-400,@DHBC   ;400 (OCTAL) CHARACTERS
007212  012777  073503  002542            MOV     #73503,@DHLPR ;SET RECEIVER BLIND
                                                                ;LINE SPEED =9600 BAUD
                                                                ;CHARACTER LENGTH = 8 BITS
007220  012777  000100  002542            MOV     #100,@DHBAR   ;SET BAR BIT FOR LINE 6
007226  005777  002536          1$:       TST     @DHBAR        ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
007232  001375                            BNE     1$
007234  105777  002516                    TSTB    @DHSCR        ;WERE ANY CHARACTERS RECEIVED
007240  100001                            BPL     2$
007242                                    HLT     2             ;RECEIVER NOT BLINDED, ERROR
007242  104002                            EMT     2
007244  104400          2$:               SCOPE                 ;CHECK FOR ITERATIONS, LOOP
        000007          LINE=LINE+1
        000200          BITX=BITX+BITX
        000007          KX=KX+1
007246                  BLIND1  \LINE,\BITX,\KX

                                ;SET HALF DUPLEX ON LINE 7
                                ;TRANSMITI A BINARY COUNT PATTERN
                                ;VERIFY THAT NO CHARACTERS ARE RECEIVED

007246                  TS \XN,20,2$
007246  012767  000340  170522  T30:      MOV     #340,PS       ;DISABLE ALL INTERRUPTS
007254  012767  000020  002542            MOV     #20,ICOUNT    ;SET UP FOR 20 ITERATIONS
007262  012767  007356  002530            MOV     #2$,ESCAPE    ;SET UP TO ESCAPE TO NEXT TEST
```

```
                                .IF NB  <>
                                        MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
                000031          XN=XN+1
007270  012777  004000  002460          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
007276  004767  002562                  JSR     PC,CLRALL               ;CLEAR ALL BYTE COUNT AND
                                                                        ;AND BUS ADDRESS MEMORY LOCATIONS
007302  012777  000007  002446          MOV     #7,@DHSCR               ;SELECT LINE 7
007310  012777  012112  002446          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT
007316  012777  177400  002442          MOV     #-400,@DHBC             ;400 (OCTAL) CHARACTERS
007324  012777  073503  002430          MOV     #73503,@DHLPR           ;SET RECEIVER BLIND
                                                                        ;LINE SPEED =9600 BAUD
                                                                        ;CHARACTER LENGTH = 8 BITS
007332  012777  000200  002430          MOV     #200,@DHBAR             ;SET BAR BIT FOR LINE 7
007340  005777  002424          1$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
007344  001375                          BNE     1$
007346  105777  002404                  TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
007352  100001                          BPL     2$
007354                                  HLT     2                       ;RECEIVER NOT BLINDED, ERROR
007354  104002                          EMT     2
007356  104400          2$:     SCOPE                                   ;CHECK FOR ITERATIONS, LOOP
                000010          LINE=LINE+1
                000400          BITX=BITX+BITX
                000010          KX=KX+1
007360                          BLIND1  \LINE,\BITX,\KX

                                        ;SET HALF DUPLEX ON LINE 10
                                        ;TRANSMITI A BINARY COUNT PATTERN
                                        ;VERIFY THAT NO CHARACTERS ARE RECEIVED

007360                          TS \XN,20,2$
007360  012767  000340  170410  T31:     MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
007366  012767  000020  002430          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
007374  012767  007470  002416          MOV     #2$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                        MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
                000032          XN=XN+1
007402  012777  004000  002346          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
007410  004767  002450                  JSR     PC,CLRALL               ;CLEAR ALL BYTE COUNT AND
                                                                        ;AND BUS ADDRESS MEMORY LOCATIONS
007414  012777  000010  002334          MOV     #10,@DHSCR              ;SELECT LINE 10
007422  012777  012112  002334          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT
007430  012777  177400  002330          MOV     #-400,@DHBC             ;400 (OCTAL) CHARACTERS
007436  012777  073503  002316          MOV     #73503,@DHLPR           ;SET RECEIVER BLIND
                                                                        ;LINE SPEED =9600 BAUD
                                                                        ;CHARACTER LENGTH = 8 BITS
007444  012777  000400  002316          MOV     #400,@DHBAR             ;SET BAR BIT FOR LINE 10
007452  005777  002312          1$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
007456  001375                          BNE     1$
007460  105777  002272                  TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
007464  100001                          BPL     2$
007466                                  HLT     2                       ;RECEIVER NOT BLINDED, ERROR
007466  104002                          EMT     2
007470  104400          2$:     SCOPE                                   ;CHECK FOR ITERATIONS, LOOP
                000011          LINE=LINE+1
                001000          BITX=BITX+BITX
```

```
            000011                  KX=KX+1
 007472                             BLIND1  \LINE,\BITX,\KX

                                            ;SET HALF DUPLEX ON LINE 11
                                            ;TRANSMITI A BINARY COUNT PATTERN
                                            ;VERIFY THAT NO CHARACTERS ARE RECEIVED

 007472                             TS \XN,20,2$
 007472  012767  000340  170276     T32:    MOV     #340,PS         ;DISABLE ALL INTERRUPTS
 007500  012767  000020  002316             MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
 007506  012767  007602  002304             MOV     #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                    .IF NB  <>
                                            MOV     #,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                                    .ENDC
            000033                  XN=XN+1
 007514  012777  004000  002234             MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
 007522  004767  002336             JSR     PC,CLRALL       ;CLEAR ALL BYTE COUNT AND
                                                            ;AND BUS ADDRESS MEMORY LOCATIONS
 007526  012777  000011  002222             MOV     #11,@DHSCR      ;SELECT LINE 11
 007534  012777  012112  002222             MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT
 007542  012777  177400  002216             MOV     #-400,@DHBC     ;400 (OCTAL) CHARACTERS
 007550  012777  073503  002204             MOV     #73503,@DHLPR   ;SET RECEIVER BLIND
                                                            ;LINE SPEED =9600 BAUD
                                                            ;CHARACTER LENGTH = 8 BITS
 007556  012777  001000  002204             MOV     #1000,@DHBAR    ;SET BAR BIT FOR LINE 11
 007564  005777  002200             1$:     TST     @DHBAR          ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
 007570  001375                     BNE     1$
 007572  105777  002160             TSTB    @DHSCR          ;WERE ANY CHARACTERS RECEIVED
 007576  100001                     BPL     2$
 007600                             HLT     2               ;RECEIVER NOT BLINDED, ERROR
 007600  104002                     EMT     2
 007602  104400             2$:     SCOPE                   ;CHECK FOR ITERATIONS, LOOP
            000012          LINE=LINE+1
            002000          BITX=BITX+BITX
            000012          KX=KX+1
 007604                             BLIND1  \LINE,\BITX,\KX

                                            ;SET HALF DUPLEX ON LINE 12
                                            ;TRANSMITI A BINARY COUNT PATTERN
                                            ;VERIFY THAT NO CHARACTERS ARE RECEIVED

 007604                             TS \XN,20,2$
 007604  012767  000340  170164     T33:    MOV     #340,PS         ;DISABLE ALL INTERRUPTS
 007612  012767  000020  002204             MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
 007620  012767  007714  002172             MOV     #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                    .IF NB  <>
                                            MOV     #,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                                    .ENDC
            000034                  XN=XN+1
 007626  012777  004000  002122             MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
 007634  004767  002224             JSR     PC,CLRALL       ;CLEAR ALL BYTE COUNT AND
                                                            ;AND BUS ADDRESS MEMORY LOCATIONS
 007640  012777  000012  002110             MOV     #12,@DHSCR      ;SELECT LINE 12
 007646  012777  012112  002110             MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT
 007654  012777  177400  002104             MOV     #-400,@DHBC     ;400 (OCTAL) CHARACTERS
 007662  012777  073503  002072             MOV     #73503,@DHLPR   ;SET RECEIVER BLIND
                                                            ;LINE SPEED =9600 BAUD
```

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007670  012777  002000  002072          MOV     #2000,@DHBAR            ;CHARACTER LENGTH = 8 BITS
007676  005777  002066          1$:     TST     @DHBAR                  ;SET BAR BIT FOR LINE 12
007702  001375                          BNE     1$                      ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
007704  105777  002046                  TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
007710  100001                          BPL     2$
007712                                  HLT     2                       ;RECEIVER NOT BLINDED, ERROR
007712  104002                          EMT     2
007714  104400                  2$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
        000013                  LINE=LINE+1
        004000                  BITX=BITX+BITX
        000013                  KX=KX+1
007716                          BLIND1  \LINE,\BITX,\KX

                                ;SET HALF DUPLEX ON LINE 13
                                ;TRANSMITI A BINARY COUNT PATTERN
                                ;VERIFY THAT NO CHARACTERS ARE RECEIVED

007716                          TS \XN,20,2$
007716  012767  000340  170052  T34:    MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
007724  012767  000020  002072          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
007732  012767  010026  002060          MOV     #2$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                        MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
        000035                  XN=XN+1
007740  012777  004000  002010          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
007746  004767  002112                  JSR     PC,CLRALL               ;CLEAR ALL BYTE COUNT AND
                                                                        ;AND BUS ADDRESS MEMORY LOCATIONS
007752  012777  000013  001776          MOV     #13,@DHSCR              ;SELECT LINE 13
007760  012777  012112  001776          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT
007766  012777  177400  001772          MOV     #-400,@DHBC             ;400 (OCTAL) CHARACTERS
007774  012777  073503  001760          MOV     #73503,@DHLPR           ;SET RECEIVER BLIND
                                                                        ;LINE SPEED =9600 BAUD
                                                                        ;CHARACTER LENGTH = 8 BITS
010002  012777  004000  001760          MOV     #4000,@DHBAR            ;SET BAR BIT FOR LINE 13
010010  005777  001754          1$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
010014  001375                          BNE     1$
010016  105777  001734                  TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
010022  100001                          BPL     2
010024                                  HLT     2                       ;RECEIVER NOT BLINDED, ERROR
010024  104002                          EMT     2
010026  104400                  2$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
        000014                  LINE=LINE+1
        010000                  BITX=BITX+BITX
        000014                  KX=KX+1
010030                          BLIND1  \LINE,\BITX,\KX

                                ;SET HALF DUPLEX ON LINE 14
                                ;TRANSMITI A BINARY COUNT PATTERN
                                ;VERIFY THAT NO CHARACTERS ARE RECEIVED

010030                          TS \XN,20,2$
010030  012767  000340  167740  T35:    MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
010036  012767  000020  001760          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
010044  012767  010140  001746          MOV     #2$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
```

```
                                        MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
                         000036 XN=XN+1
010052  012777  004000  001676          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
010060  004767  002000                  JSR     PC,CLRALL               ;CLEAR ALL BYTE COUNT AND
                                                                        ;AND BUS ADDRESS MEMORY LOCATIONS
010064  012777  000014  001664          MOV     #14,@DHSCR              ;SELECT LINE 14
010072  012777  012112  001664          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT
010100  012777  177400  001660          MOV     #-400,@DHBC             ;400 (OCTAL) CHARACTERS
010106  012777  073503  001646          MOV     #73503,@DHLPR           ;SET RECEIVER BLIND
                                                                        ;LINE SPEED =9600 BAUD
                                                                        ;CHARACTER LENGTH = 8 BITS
010114  012777  010000  001646          MOV     #10000,@DHBAR           ;SET BAR BIT FOR LINE 14
010122  005777  001642          1$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
010126  001375                          BNE     1$
010130  105777  001622                  TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
010134  100001                          BPL     2$
010136                                  HLT     2                       ;RECEIVER NOT BLINDED, ERROR
010136  104002                          EMT     2
010140  104400                  2$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
                         000015 LINE=LINE+1
                         020000 BITX=BITX+BITX
                         000015 KX=KX+1
010142                           BLIND1  \LINE,\BITX,\KX

                                        ;SET HALF DUPLEX ON LINE 15
                                        ;TRANSMITI A BINARY COUNT PATTERN
                                        ;VERIFY THAT NO CHARACTERS ARE RECEIVED

010142                          TS \XN,20,2$
010142  012767  000340  167626  T36:     MOV     #340,PS                 ;DISABLE ALL INTERRUPTS
010150  012767  000020  001646          MOV     #20,ICOUNT              ;SET UP FOR 20 ITERATIONS
010156  012767  010252  001634          MOV     #2$,ESCAPE              ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                        MOV     #,FREEZ1                ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
                         000037 XN=XN+1
010164  012777  004000  001564          MOV     #BIT11,@DHSCR           ;MASTER CLEAR INTERFACE
010172  004767  001666                  JSR     PC,CLRALL               ;CLEAR ALL BYTE COUNT AND
                                                                        ;AND BUS ADDRESS MEMORY LOCATIONS
010176  012777  000015  001552          MOV     #15,@DHSCR              ;SELECT LINE 15
010204  012777  012112  001552          MOV     #TBUF,@DHBA             ;SET UP TO TRANSMIT
010212  012777  177400  001546          MOV     #-400,@DHBC             ;400 (OCTAL) CHARACTERS
010220  012777  073503  001534          MOV     #73503,@DHLPR           ;SET RECEIVER BLIND
                                                                        ;LINE SPEED =9600 BAUD
                                                                        ;CHARACTER LENGTH = 8 BITS
010226  012777  020000  001534          MOV     #20000,@DHBAR           ;SET BAR BIT FOR LINE 15
010234  005777  001530          1$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
010240  001375                          BNE     1$
010242  105777  001510                  TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
010246  100001                          BPL     2$
010250                                  HLT     2                       ;RECEIVER NOT BLINDED, ERROR
010250  104002                          EMT     2
010252  104400                  2$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
                         000016 LINE=LINE+1
                         040000 BITX=BITX+BITX
                         000016 KX=KX+1
```

```
010254                          BLIND1  \LINE,\BITX,\KX

                                        ;SET HALF DUPLEX ON LINE 16
                                        ;TRANSMITI A BINARY COUNT PATTERN
                                        ;VERIFY THAT NO CHARACTERS ARE RECEIVED

010254                          TS \XN,20,2$
010254  012767  000340  167514  T37:    MOV     #340,PS         ;DISABLE ALL INTERRUPTS
010262  012767  000020  001534          MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
010270  012767  010364  001522          MOV     #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                        MOV     #,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
        000040                  XN=XN+1
010276  012777  004000  001452          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
010304  004767  001554                  JSR     PC,CLRALL       ;CLEAR ALL BYTE COUNT AND
                                                                ;AND BUS ADDRESS MEMORY LOCATIONS
010310  012777  000016  001440          MOV     #16,@DHSCR      ;SELECT LINE 16
010316  012777  012112  001440          MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT
010324  012777  177400  001434          MOV     #-400,@DHBC     ;400 (OCTAL) CHARACTERS
010332  012777  073503  001422          MOV     #73503,@DHLPR   ;SET RECEIVER BLIND
                                                                ;LINE SPEED =9600 BAUD
                                                                ;CHARACTER LENGTH = 8 BITS
010340  012777  040000  001422          MOV     #40000,@DHBAR   ;SET BAR BIT FOR LINE 16
010346  005777  001416          1$:     TST     @DHBAR          ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
010352  001375                  BNE     1$
010354  105777  001376          TSTB    @DHSCR          ;WERE ANY CHARACTERS RECEIVED
010360  100001                  BPL     2$
010362                          HLT     2               ;RECEIVER NOT BLINDED, ERROR
010362  104002                  EMT     2
010364  104400          2$:     SCOPE                   ;CHECK FOR ITERATIONS, LOOP
        000017          LINE=LINE+1
        100000          BITX=BITX+BITX
        000017          KX=KX+1
010366                          BLIND1  \LINE,\BITX,\KX

                                        ;SET HALF DUPLEX ON LINE 17
                                        ;TRANSMITI A BINARY COUNT PATTERN
                                        ;VERIFY THAT NO CHARACTERS ARE RECEIVED

010366                          TS \XN,20,2$
010366  012767  000340  167402  T40:    MOV     #340,PS         ;DISABLE ALL INTERRUPTS
010374  012767  000020  001422          MOV     #20,ICOUNT      ;SET UP FOR 20 ITERATIONS
010402  012767  010476  001410          MOV     #2$,ESCAPE      ;SET UP TO ESCAPE TO NEXT TEST
                                .IF NB  <>
                                        MOV     #,FREEZ1        ;SET UP TO LOOP WITH DATA       ; 3
                                .ENDC
        000041                  XN=XN+1
010410  012777  004000  001340          MOV     #BIT11,@DHSCR   ;MASTER CLEAR INTERFACE
010416  004767  001442                  JSR     PC,CLRALL       ;CLEAR ALL BYTE COUNT AND
                                                                ;AND BUS ADDRESS MEMORY LOCATIONS
010422  012777  000017  001326          MOV     #17,@DHSCR      ;SELECT LINE 17
010430  012777  012112  001326          MOV     #TBUF,@DHBA     ;SET UP TO TRANSMIT
010436  012777  177400  001322          MOV     #-400,@DHBC     ;400 (OCTAL) CHARACTERS
010444  012777  073503  001310          MOV     #73503,@DHLPR   ;SET RECEIVER BLIND
                                                                ;LINE SPEED =9600 BAUD
                                                                ;CHARACTER LENGTH = 8 BITS
```

```
010452  012777  100000  001310          MOV     #100000,@DHBAR          ;SET BAR BIT FOR LINE 17
010460  005777  001304          1$:     TST     @DHBAR                  ;WAIT FOR ALL CHARACTERS TO BE TRANSMITTED
010464  001375                          BNE     1$
010466  105777  001264                  TSTB    @DHSCR                  ;WERE ANY CHARACTERS RECEIVED
010472  100001                          BPL     2$
010474                                  HLT     2                       ;RECEIVER NOT BLINDED, ERROR
010474  104002                          EMT     2
010476  104400                  2$:     SCOPE                           ;CHECK FOR ITERATIONS, LOOP
        000020                  LINE=LINE+1
        000000                  BITX=BITX+BITX
        000020                  KX=KX+1
```

```
1
2 010500                        .EOP    ↑/BEGIN/

                                ;END OF PASS
                                ;TYPE NAME OF TEST
                                ;UPDATE PASS COUNT
                                ;CHECK FOR EXIT TO ACT-11
                                ;RESTART TEST

 010500  104401                 EOP:    TYPE                            ;TYPE NAME OF TEST
 010502  013204                         MEPASS
 010504  005067  001344                 CLR     LAST                    ;CLEAR LAST ERROR PC
 010510  005067  001274                 CLR     ERRFLG                  ;CLEAR ERROR FLAG
 010514  005267  001272                 INC     PASCNT                  ;UPDATE PASS COUNT
 010520  005767  170256                 TST     LIGHTS                  ; ARE WE USING LIGHTS?          ; 4
 010524  001005                         BNE     2$                      ; BRANCH IF WE ARE              ; 6
 010526  104401                         TYPE                            ; TYPE PASCOUNT MESSAGE         ; 5
 010530  013217                         PASTXT                                                          ; 5
 010532  104402                         OCTASC                          ; PRINT PASSCOUNT               ; 4
 010534  010572                         PASARG                                                                  ;4 ; 6
 010536  000403                         BR      3$                      ; CONTINUE                      ; 4
 010540                         2$:                                                                     ; 4
 010540  016767  001246  170234         MOV     PASCNT,LIGHTS           ;DISPLAY PASS COUNT
 010546                         3$:                                                                     ; 4
 010546  013701  000042                 MOV     @#42,R1                 ;CHECK FOR ACT-11 OR DDP
 010552  001405                         BEQ     RESTRT                  ;IF NOT, CONTINUE TESTING
 010554  000005                         RESET
 010556  004711                 LOGICAL:        JSR     PC,(R1)
 010560  000240                         NOP
 010562  000240                         NOP
 010564  000240                         NOP
 010566  000167  170514         RESTRT: JMP     BEGIN
 010572  000001                 PASARG: .WORD   1                       ; PARAMETERS TO PRINT PASSCOUNT  ; 5
 010574     006     002                 .BYTE   6,2                                                     ; 5
 010576  012012                         .WORD   PASCNT                                                  ; 5
3 010600                        .SCOPE

                                ;CHECK FOR LOOP ON CURRENT TEST                                         ; 3
                                ;CHECK FOR ITERATION SUPPRESSION

 010600  032777  002000  170172 SCOPER: BIT     @#SW10,@#SWR                                            ; 4
 010606  001030                         BNE     4$
 010610  032777  040000  170162 1$:     BIT     @#SW14,@#SWR                                            ; 4
 010616  001021                         BNE     3$
 010620  032777  004000  170152         BIT     @#SW11,@#SWR                                            ; 4
 010626  001006                         BNE     2$
 010630  005267  001172                 INC     LPCNT
 010634  026767  001166  001162         CMP     LPCNT,ICOUNT
 010642  001007                         BNE     3$
 010644  005067  001156         2$:     CLR     LPCNT
 010650  005067  001134                 CLR     ERRFLG
 010654  011667  001136                 MOV     (SP),RETRN
 010660  000002                         RTI
 010662  016716  001130         3$:     MOV     RETRN,(SP)
 010666  000002                         RTI
 010670  005767  001114         4$:     TST     ERRFLG
 010674  001745                         BEQ     1$
```

```
      010676  000762                          BR      2$
    4 010700                          .SCOP1
                                              ;CHECK FOR FREEZE ON CURRENT DATA
      010700  032777  001000  170072  SCOP1R: BIT     @SW09,@SWR                      ; 4
      010706  001402                          BEQ     1$
      010710  016716  001106                  MOV     FREEZ1,(SP)
      010714  000002                  1$:     RTI
```

```
1 010716                                .ERROR

                                        ;ERROR HANDLER

 010716  032777  020000  170054 ERRORS: BIT     @SW13,@SWR                ; 4
 010724  001055                         BNE     HALTS
 010726  021667  001122                 CMP     (SP),LAST
 010732  001404                         BEQ     1$
 010734  011667  001114                 MOV     (SP),LAST
 010740  005067  001044                 CLR     ERRFLG
 010744  104406                 1$:     SAV05P
 010746  011605                         MOV     (SP),R5
 010750  162705  000002                 SUB     @2,R5
 010754  011504                         MOV     (R5),R4
 010756  006304                         ASL     R4
 010760  006304                         ASL     R4
 010762  042704  177001                 BIC     @177001,R4
 010766  062704  013336                 ADD     @ERRTAB,R4
 010772  012467  000040                 MOV     (R4)+,ERRMSG
 010776  011467  000052                 MOV     (R4),DATABP
 011002  005767  001002                 TST     ERRFLG
 011006  001403                         BEQ     TYPMSG
 011010  005767  000040                 TST     DATABP
 011014  001011                         BNE     TYPDAT
 011016  104401             TYPMSG:     TYPE                              ; 3
 011020  013114                         MCRLF                             ; 5
 011022  104402                         OCTASC                            ; 5
 011024  011122                         ERTABO                            ; 5
 011026  012767  000001  000754        MOV     @1,ERRFLG
 011034  104401                         TYPE
 011036  000000             ERRMSG:     0
 011040  005767  000010     TYPDAT:     TST     DATABP
 011044  001404                         BEQ     RESREG
 011046  104401                         TYPE                              ; 5
 011050  013114                         MCRLF                             ; 5
 011052  104402                         OCTASC
 011054  000000             DATABP:     0
 011056  104407             RESREG:     RES05
 011060  005777  167714     HALTS:      TST     @SWR                      ; 4
 011064  100005                         BPL     EXITER
 011066  010046                         PUSHR0
 011070  016600  000002                 MOV     2(SP),R0
 011074  000000                         HALT
 011076  012600                         POPR0
 011100  005267  000710     EXITER:     INC     ERRCNT
 011104  032777  002000  167666        BIT     @SW10,@SWR                ; 4
 011112  001402                         BEQ     1$
 011114  016716  000700                 MOV     ESCAPE,(SP)
 011120  000002                 1$:     RTI
 011122  000001             ERTABO:     1
 011124     006     002                 .BYTE   6,2
 011126  012046                         SAVPC
```

```
                                .TRPSRV
                                        ;TRAP DISPATCH SERVICE
                                        ;ARGUMENT OF TRAP IS EXTRACTED
                                        ;AND USED AS OFFSET TO OBTAIN POINTER                    ; 3
                                        ;TO SELECTED SUBROUTINE

011130  011646                  TRPSRV: MOV     (SP),-(SP)              ;GET PC OF RETURN
011132  162716  000002                  SUB     #2,(SP)                 ;=PC OF TRAP
011136  017616  000000                  MOV     @(SP),(SP)              ;GET TRP
011142  006316                  TRPOK:  ASL     (SP)                    ;MULTIPLY TRAP ARG BY 2
011144  042716  177001                  BIC     #177001,(SP)            ;CLEAR UNWANTED BITS
011150  062716  013256                  ADD     #TRPTAB,(SP)            ;POINTER TO SUBROUTINE ADDRESS
011154  017616  000000                  MOV     @(SP),(SP)              ;SUBROUTINE ADDRESS
011160  000136                          JMP     @(SP)+                  ;GO TO SUBROUTINE
      2 011162                  .SAVREG

                                        ;SAVE PC OF TEST THAT FAILED AND R0-R5

011162  016667  000004  000656  SV05P:  MOV     4(SP),SAVPC

                                        ;SAVE R0-R5

011170  010567  000646          SV05:   MOV     R5,SAVR5
011174  010467  000640                  MOV     R4,SAVR4                                        ; 3
011200  010367  000632                  MOV     R3,SAVR3
011204  010267  000624                  MOV     R2,SAVR2
011210  010167  000616                  MOV     R1,SAVR1
011214  010067  000610                  MOV     R0,SAVR0
011220  000002                          RTI
      3 011222                  .RESREG
                                        ;RESTORE R0-R5

011222  016700  000602          RS05:   MOV     SAVR0,R0
011226  016701  000600                  MOV     SAVR1,R1
011232  016702  000576                  MOV     SAVR2,R2
011236  016703  000574                  MOV     SAVR3,R3
011242  016704  000572                  MOV     SAVR4,R4
011246  016705  000570                  MOV     SAVR5,R5
011252  000002                          RTI
```

```
      1 011254                          .TYPER

                                        ;TELETYPE OUTPUT ROUTINE

 011254  017605  000000          TYPER:  MOV     @(SP),R5                ; 3
 011260  062716  000002                  ADD     #2,(SP)
 011264  105777  000462          1$:     TSTB    @TPCSR
 011270  100375                          BPL     1$
 011272  105715                          TSTB    (R5)
 011274  001001                          BNE     2$
 011276  000002                          RTI
 011300  112577  000450          2$:     MOVB    (R5)+,@TPDBR
 011304  000767                          BR      1$
      2 011306                          .INSTRG

                                        ;ASCII STRING INPUT ROUTINE

 011306  017667  000000  000006  INSTRG: MOV     @(SP),MSG
 011314  062716  000002                  ADD     #2,(SP)
 011320  104401                  INSTR1: TYPE
 011322  000000                  MSG:    0
 011324  012704  013300                  MOV     #INBUF,R4
 011330  012703  000007                  MOV     #7,R3
 011334  105777  000406          1$:     TSTB    @TKCSR
 011340  100375                          BPL     1$
 011342  117714  000402                  MOVB    @TKDBR,(R4)
 011346  142714  000200                  BICB    #200,(R4)
 011352  122427  000015                  CMPB    (R4)+,#15
 011356  001413                          BEQ     INSTR2
 011360  117777  000364  000366          MOVB    @TKDBR,@TPDBR
 011366  105777  000360          2$:     TSTB    @TPCSR
 011372  100375                          BPL     2$
 011374  005303                          DEC     R3
 011376  001356                          BNE     1$
 011400  104401                  INSTRE: TYPE
 011402  013110                          MQM
 011404  000745                          BR      INSTR1
 011406  000002                  INSTR2: RTI
```

```
1 011410                        .PARAMS

                                        ;CONVERT ASCII STRING TO OCTAL                  ; 3

011410  011605          PARAMS: MOV     (SP),R5
011412  012567  000146          MOV     (R5)+,LOLIM
011416  012567  000144          MOV     (R5)+,HILIM
011422  012567  000142          MOV     (R5)+,DEVADR
011426  112567  000140          MOVB    (R5)+,LOBITS
011432  112567  000135          MOVB    (R5)+,ADRCNT
011436  010516                  MOV     R5,(SP)
011440  005005          PARAM1: CLR     R5
011442  012704  013300          MOV     #INBUF,R4
011446  122714  000015          CMPB    #15,(R4)
011452  001420                  BEQ     PARERR
011454  121427  000060  1$:     CMPB    (R4),#60
011460  002415                  BLT     PARERR
011462  121427  000067          CMPB    (R4),#67
011466  003012                  BGT     PARERR
011470  142714  000060          BICB    #60,(R4)
011474  152405                  BISB    (R4)+,R5
011476  122714  000015          CMPB    #15,(R4)
011502  001406                  BEQ     LIMITS
011504  006305                  ASL     R5
011506  006305                  ASL     R5
011510  006305                  ASL     R5
011512  000760                  BR      1$
011514  104404          PARERR: INSTER
011516  000750                  BR      PARAM1

                                        ;TEST TO SEE IF NUMBER IS WITHIN LIMITS

011520  020567  000042  LIMITS: CMP     R5,HILIM
011524  101373                  BHI     PARERR
011526  020567  000032          CMP     R5,LOLIM
011532  103770                  BLO     PARERR
011534  136705  000032          BITB    LOBITS,R5                                       ; 3
011540  001365                  BNE     PARERR

                                        ;STORE NUMBER AT SPECIFIED ADDRESS

011542  016704  000022          MOV     DEVADR,R4
011546  010524          1$:     MOV     R5,(R4)+
011550  062705  000002          ADD     #2,R5
011554  105367  000013          DECB    ADRCNT
011560  001372                  BNE     1$
011562  000002                  RTI
011564  000000          LOLIM:  0
011566  000000          HILIM:  0
011570  000000          DEVADR: 0
011572  000000          LOBITS: 0
        011573          ADRCNT=LOBITS+1
```

```
011574                          .OCTASC

                                ;CONVERT OCTAL NUMBER TO ASCII AND OUTPUT TO TELEPRINTER

011574  017601  000000  OCTASN: MOV     6(SP),R1                        ; 5
011600  062716  000002          ADD     #2,(SP)
011604  012167  000130          MOV     (R1)+,WRDCNT
011610  112167  000126  1$:     MOVB    (R1)+,CHRCNT
011614  112167  000123          MOVB    (R1)+,SPACNT                    ; 3
011620  013167  000120          MOV     @(R1)+,BINWRD
011624  016704  000114  2$:     MOV     BINWRD,R4
011630  116705  000106          MOVB    CHRCNT,R5
011634  012700  013312          MOV     #TEMP,R0
011640  010403          3$:     MOV     R4,R3
011642  042703  177770          BIC     #177770,R3
011646  062703  000260          ADD     #260,R3
011652  110320                  MOVB    R3,(R0)+
011654  006204                  ASR     R4
011656  006204                  ASR     R4
011660  006204                  ASR     R4
011662  005305                  DEC     R5
011664  001365                  BNE     3$
011666  012703  013324          MOV     #MDATA,R3
011672  114023          4$:     MOVB    -(R0),(R3)+
011674  105367  000042          DECB    CHRCNT
011700  001374                  BNE     4$
011702  105767  000035          TSTB    SPACNT
011706  001405                  BEQ     6$
011710  112723  000240  5$:     MOVB    #240,(R3)+
011714  105367  000023          DECB    SPACNT
011720  001373                  BNE     5$
011722  105013          6$:     CLRB    (R3)
011724  104401                  TYPE
011726  013324                  MDATA
011730  005367  000004          DEC     WRDCNT
011734  001325                  BNE     1$
011736  000002                  RTI
011740  000000          WRDCNT: 0
011742  000000          CHRCNT: 0
        011743          SPACNT=CHRCNT+1
011744  000000          BINWRD: 0
```

```
        011746                          .POINT  †/DHSCR,DHNRC,DHLPR,DHBA,DHBC,DHBAR,DHBCR,DHSSR,DHSLR,DHRVEC,DHRLVL,DHTVEC,DHTLVL/
                                                ;INDIRECT POINTERS                                                              ; 3

        011746  177560                  TKCSR:  177560
        011750  177562                  TKDBR:  177562
        011752  177564                  TPCSR:  177564
        011754  177566                  TPDBR:  177566
                                        .IRP    A       <DHSCR,DHNRC,DHLPR,DHBA,DHBC,DHBAR,DHBCR,DHSSR,DHSLR,DHRVEC,DHRLVL,DHTVEC,DH
TLVL>
                                        A:      0
                                        .ENDM
        011756  000000                  DHSCR:  0
        011760  000000                  DHNRC:  0
        011762  000000                  DHLPR:  0
        011764  000000                  DHBA:   0
        011766  000000                  DHBC:   0
        011770  000000                  DHBAR:  0
        011772  000000                  DHBCR:  0
        011774  000000                  DHSSR:  0
        011776  000000                  DHSLR:  0
        012000  000000                  DHRVEC: 0
        012002  000000                  DHRLVL: 0
        012004  000000                  DHTVEC: 0
        012006  000000                  DHTLVL: 0
      2 012010                          .VARIA  †/ENDFLG,NULL,LINACT/
                                                ;PROGRAM VARIABLES

        012010  000000                  ERRFLG: 0               ;ERROR FLAG
        012012  000000                  PASCNT: 0               ;PASS COUNT
        012014  000000                  ERRCNT: 0               ;ERROR COUNT
        012016  000000                  RETRN:  0               ;SCOPE RETURN ADDRESS FOR TEST LOOPING
        012020  000000                  ESCAPE: 0               ;ADDRESS FOR ERROR ESCAPE
        012022  000000                  FREEZ1: 0               ;DATA LOOPING RETURN ADDRESS
        012024  000000                  ICOUNT: 0               ;ITERATION COUNT FOR TEST IN PROGRESS
        012026  000000                  LPCNT:  0               ;NUMBER OF ITERATIONS THIS TEST
        012030  000000                  SAVR0:  0               ;R0 SAVE AREA
        012032  000000                  SAVR1:  0               ;R1 SAVE AREA
        012034  000000                  SAVR2:  0               ;R2 SAVE AREA                                                   ; 3
        012036  000000                  SAVR3:  0               ;R3 SAVE ARE
        012040  000000                  SAVR4:  0               ;R4 SAVE AREA
        012042  000000                  SAVR5:  0               ;R5 SAVE AREA
        012044  000000                  SAVSP:  0               ;STACK POINTER SAVE AREA
        012046  000000                  SAVPC:  0               ;CALLING ROUTINE SAVE AREA
        012050  000000                  INIFLG: 0               ;PROGRAM INITIALIZATION FLAG
        012052  000000                  STFLG:  0               ;PROGRAM START FLAG
        012054  000000                  LAST:   0               ;LAST ERROR PC
                                        .IRP    A       <ENDFLG,NULL,LINACT>
                                        A:      0
                                        .ENDM
        012056  000000                  ENDFLG: 0
        012060  000000                  NULL:   0
        012062  000000                  LINACT: 0
```

```
     1 012064                           CCLRALL

                                               ;CLEAR ALL BYTE COUNT AND BUS ADDRESS REGISTERS

       012064  012700  000020          CLRALL: MOV     #20,R0
       012070  005077  177670          1$:     CLR     @DHBA
       012074  005077  177666                  CLR     @DHBC
       012100  005277  177652                  INC     @DHSCR
       012104  005300                         DEC     R0
       012106  001370                         BNE     1$
       012110  000207                         RTS     PC
     3         000001                TDAT=1
     5 012112    000                 TBUF:   .BYTE   0
     6         000377                .REPT   377
     7                               .BYTE   TDAT
     8                               .NLIST
     9                               TDAT=TDAT+1
    10                               .LIST
    11                               .ENDR
       012113    001                 .BYTE   TDAT
                 000002              TDAT=TDAT+1
       012114    002                 .BYTE   TDAT
                 000003              TDAT=TDAT+1
       012115    003                 .BYTE   TDAT
                 000004              TDAT=TDAT+1
       012116    004                 .BYTE   TDAT
                 000005              TDAT=TDAT+1
       012117    005                 .BYTE   TDAT
                 000006              TDAT=TDAT+1
       012120    006                 .BYTE   TDAT
                 000007              TDAT=TDAT+1
       012121    007                 .BYTE   TDAT
                 000010              TDAT=TDAT+1
       012122    010                 .BYTE   TDAT
                 000011              TDAT=TDAT+1
       012123    011                 .BYTE   TDAT
                 000012              TDAT=TDAT+1
       012124    012                 .BYTE   TDAT
                 000013              TDAT=TDAT+1
       012125    013                 .BYTE   TDAT
                 000014              TDAT=TDAT+1
       012126    014                 .BYTE   TDAT
                 000015              TDAT=TDAT+1
       012127    015                 .BYTE   TDAT
                 000016              TDAT=TDAT+1
       012130    016                 .BYTE   TDAT
                 000017              TDAT=TDAT+1
       012131    017                 .BYTE   TDAT
                 000020              TDAT=TDAT+1
       012132    020                 .BYTE   TDAT
                 000021              TDAT=TDAT+1
       012133    021                 .BYTE   TDAT
                 000022              TDAT=TDAT+1
       012134    022                 .BYTE   TDAT
                 000023              TDAT=TDAT+1
       012135    023                 .BYTE   TDAT
                 000024              TDAT=TDAT+1
```

```
012136     024                  .BYTE   TDAT
           000025               TDAT=TDAT+1
012137     025                  .BYTE   TDAT
           000026               TDAT=TDAT+1
012140     026                  .BYTE   TDAT
           000027               TDAT=TDAT+1
012141     027                  .BYTE   TDAT
           000030               TDAT=TDAT+1
012142     030                  .BYTE   TDAT
           000031               TDAT=TDAT+1
012143     031                  .BYTE   TDAT
           000032               TDAT=TDAT+1
012144     032                  .BYTE   TDAT
           000033               TDAT=TDAT+1
012145     033                  .BYTE   TDAT
           000034               TDAT=TDAT+1
012146     034                  .BYTE   TDAT
           000035               TDAT=TDAT+1
012147     035                  .BYTE   TDAT
           000036               TDAT=TDAT+1
012150     036                  .BYTE   TDAT
           000037               TDAT=TDAT+1
012151     037                  .BYTE   TDAT
           000040               TDAT=TDAT+1
012152     040                  .BYTE   TDAT
           000041               TDAT=TDAT+1
012153     041                  .BYTE   TDAT
           000042               TDAT=TDAT+1
012154     042                  .BYTE   TDAT
           000043               TDAT=TDAT+1
012155     043                  .BYTE   TDAT
           000044               TDAT=TDAT+1
012156     044                  .BYTE   TDAT
           000045               TDAT=TDAT+1
012157     045                  .BYTE   TDAT
           000046               TDAT=TDAT+1
012160     046                  .BYTE   TDAT
           000047               TDAT=TDAT+1
012161     047                  .BYTE   TDAT
           000050               TDAT=TDAT+1
012162     050                  .BYTE   TDAT
           000051               TDAT=TDAT+1
012163     051                  .BYTE   TDAT
           000052               TDAT=TDAT+1
012164     052                  .BYTE   TDAT
           000053               TDAT=TDAT+1
012165     053                  .BYTE   TDAT
           000054               TDAT=TDAT+1
012166     054                  .BYTE   TDAT
           000055               TDAT=TDAT+1
012167     055                  .BYTE   TDAT
           000056               TDAT=TDAT+1
012170     056                  .BYTE   TDAT
           000057               TDAT=TDAT+1
012171     057                  .BYTE   TDAT
           000060               TDAT=TDAT+1
012172     060                  .BYTE   TDAT
```

```
                000061                  TDAT=TDAT+1
012173            061                   .BYTE   TDAT
                000062                  TDAT=TDAT+1
012174            062                   .BYTE   TDAT
                000063                  TDAT=TDAT+1
012175            063                   .BYTE   TDAT
                000064                  TDAT=TDAT+1
012176            064                   .BYTE   TDAT
                000065                  TDAT=TDAT+1
012177            065                   .BYTE   TDAT
                000066                  TDAT=TDAT+1
012200            066                   .BYTE   TDAT
                000067                  TDAT=TDAT+1
012201            067                   .BYTE   TDAT
                000070                  TDAT=TDAT+1
012202            070                   .BYTE   TDAT
                000071                  TDAT=TDAT+1
012203            071                   .BYTE   TDAT
                000072                  TDAT=TDAT+1
012204            072                   .BYTE   TDAT
                000073                  TDAT=TDAT+1
012205            073                   .BYTE   TDAT
                000074                  TDAT=TDAT+1
012206            074                   .BYTE   TDAT
                000075                  TDAT=TDAT+1
012207            075                   .BYTE   TDAT
                000076                  TDAT=TDAT+1
012210            076                   .BYTE   TDAT
                000077                  TDAT=TDAT+1
012211            077                   .BYTE   TDAT
                000100                  TDAT=TDAT+1
012212            100                   .BYTE   TDAT
                000101                  TDAT=TDAT+1
012213            101                   .BYTE   TDAT
                000102                  TDAT=TDAT+1
012214            102                   .BYTE   TDAT
                000103                  TDAT=TDAT+1
012215            103                   .BYTE   TDAT
                000104                  TDAT=TDAT+1
012216            104                   .BYTE   TDAT
                000105                  TDAT=TDAT+1
012217            105                   .BYTE   TDAT
                000106                  TDAT=TDAT+1
012220            106                   .BYTE   TDAT
                000107                  TDAT=TDAT+1
012221            107                   .BYTE   TDAT
                000110                  TDAT=TDAT+1
012222            110                   .BYTE   TDAT
                000111                  TDAT=TDAT+1
012223            111                   .BYTE   TDAT
                000112                  TDAT=TDAT+1
012224            112                   .BYTE   TDAT
                000113                  TDAT=TDAT+1
012225            113                   .BYTE   TDAT
                000114                  TDAT=TDAT+1
012226            114                   .BYTE   TDAT
                000115                  TDAT=TDAT+1
```

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012227     115                  .BYTE   TDAT
           000116               TDAT=TDAT+1
012230     116                  .BYTE   TDAT
           000117               TDAT=TDAT+1
012231     117                  .BYTE   TDAT
           000120               TDAT=TDAT+1
012232     120                  .BYTE   TDAT
           000121               TDAT=TDAT+1
012233     121                  .BYTE   TDAT
           000122               TDAT=TDAT+1
012234     122                  .BYTE   TDAT
           000123               TDAT=TDAT+1
012235     123                  .BYTE   TDAT
           000124               TDAT=TDAT+1
012236     124                  .BYTE   TDAT
           000125               TDAT=TDAT+1
012237     125                  .BYTE   TDAT
           000126               TDAT=TDAT+1
012240     126                  .BYTE   TDAT
           000127               TDAT=TDAT+1
012241     127                  .BYTE   TDAT
           000130               TDAT=TDAT+1
012242     130                  .BYTE   TDAT
           000131               TDAT=TDAT+1
012243     131                  .BYTE   TDAT
           000132               TDAT=TDAT+1
012244     132                  .BYTE   TDAT
           000133               TDAT=TDAT+1
012245     133                  .BYTE   TDAT
           000134               TDAT=TDAT+1
012246     134                  .BYTE   TDAT
           000135               TDAT=TDAT+1
012247     135                  .BYTE   TDAT
           000136               TDAT=TDAT+1
012250     136                  .BYTE   TDAT
           000137               TDAT=TDAT+1
012251     137                  .BYTE   TDAT
           000140               TDAT=TDAT+1
012252     140                  .BYTE   TDAT
           000141               TDAT=TDAT+1
012253     141                  .BYTE   TDAT
           000142               TDAT=TDAT+1
012254     142                  .BYTE   TDAT
           000143               TDAT=TDAT+1
012255     143                  .BYTE   TDAT
           000144               TDAT=TDAT+1
012256     144                  .BYTE   TDAT
           000145               TDAT=TDAT+1
012257     145                  .BYTE   TDAT
           000146               TDAT=TDAT+1
012260     146                  .BYTE   TDAT
           000147               TDAT=TDAT+1
012261     147                  .BYTE   TDAT
           000150               TDAT=TDAT+1
012262     150                  .BYTE   TDAT
           000151               TDAT=TDAT+1
012263     151                  .BYTE   TDAT
```

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            000152                  TDAT=TDAT+1
012264        152                   .BYTE   TDAT
            000153                  TDAT=TDAT+1
012265        153                   .BYTE   TDAT
            000154                  TDAT=TDAT+1
012266        154                   .BYTE   TDAT
            000155                  TDAT=TDAT+1
012267        155                   .BYTE   TDAT
            000156                  TDAT=TDAT+1
012270        156                   .BYTE   TDAT
            000157                  TDAT=TDAT+1
012271        157                   .BYTE   TDAT
            000160                  TDAT=TDAT+1
012272        160                   .BYTE   TDAT
            000161                  TDAT=TDAT+1
012273        161                   .BYTE   TDAT
            000162                  TDAT=TDAT+1
012274        162                   .BYTE   TDAT
            000163                  TDAT=TDAT+1
012275        163                   .BYTE   TDAT
            000164                  TDAT=TDAT+1
012276        164                   .BYTE   TDAT
            000165                  TDAT=TDAT+1
012277        165                   .BYTE   TDAT
            000166                  TDAT=TDAT+1
012300        166                   .BYTE   TDAT
            000167                  TDAT=TDAT+1
012301        167                   .BYTE   TDAT
            000170                  TDAT=TDAT+1
012302        170                   .BYTE   TDAT
            000171                  TDAT=TDAT+1
012303        171                   .BYTE   TDAT
            000172                  TDAT=TDAT+1
012304        172                   .BYTE   TDAT
            000173                  TDAT=TDAT+1
012305        173                   .BYTE   TDAT
            000174                  TDAT=TDAT+1
012306        174                   .BYTE   TDAT
            000175                  TDAT=TDAT+1
012307        175                   .BYTE   TDAT
            000176                  TDAT=TDAT+1
012310        176                   .BYTE   TDAT
            000177                  TDAT=TDAT+1
012311        177                   .BYTE   TDAT
            000200                  TDAT=TDAT+1
012312        200                   .BYTE   TDAT
            000201                  TDAT=TDAT+1
012313        201                   .BYTE   TDAT
            000202                  TDAT=TDAT+1
012314        202                   .BYTE   TDAT
            000203                  TDAT=TDAT+1
012315        203                   .BYTE   TDAT
            000204                  TDAT=TDAT+1
012316        204                   .BYTE   TDAT
            000205                  TDAT=TDAT+1
012317        205                   .BYTE   TDAT
            000206                  TDAT=TDAT+1
```

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012320    206                 .BYTE   TDAT
          000207              TDAT=TDAT+1
012321    207                 .BYTE   TDAT
          000210              TDAT=TDAT+1
012322    210                 .BYTE   TDAT
          000211              TDAT=TDAT+1
012323    211                 .BYTE   TDAT
          000212              TDAT=TDAT+1
012324    212                 .BYTE   TDAT
          000213              TDAT=TDAT+1
012325    213                 .BYTE   TDAT
          000214              TDAT=TDAT+1
012326    214                 .BYTE   TDAT
          000215              TDAT=TDAT+1
012327    215                 .BYTE   TDAT
          000216              TDAT=TDAT+1
012330    216                 .BYTE   TDAT
          000217              TDAT=TDAT+1
012331    217                 .BYTE   TDAT
          000220              TDAT=TDAT+1
012332    220                 .BYTE   TDAT
          000221              TDAT=TDAT+1
012333    221                 .BYTE   TDAT
          000222              TDAT=TDAT+1
012334    222                 .BYTE   TDAT
          000223              TDAT=TDAT+1
012335    223                 .BYTE   TDAT
          000224              TDAT=TDAT+1
012336    224                 .BYTE   TDAT
          000225              TDAT=TDAT+1
012337    225                 .BYTE   TDAT
          000226              TDAT=TDAT+1
012340    226                 .BYTE   TDAT
          000227              TDAT=TDAT+1
012341    227                 .BYTE   TDAT
          000230              TDAT=TDAT+1
012342    230                 .BYTE   TDAT
          000231              TDAT=TDAT+1
012343    231                 .BYTE   TDAT
          000232              TDAT=TDAT+1
012344    232                 .BYTE   TDAT
          000233              TDAT=TDAT+1
012345    233                 .BYTE   TDAT
          000234              TDAT=TDAT+1
012346    234                 .BYTE   TDAT
          000235              TDAT=TDAT+1
012347    235                 .BYTE   TDAT
          000236              TDAT=TDAT+1
012350    236                 .BYTE   TDAT
          000237              TDAT=TDAT+1
012351    237                 .BYTE   TDAT
          000240              TDAT=TDAT+1
012352    240                 .BYTE   TDAT
          000241              TDAT=TDAT+1
012353    241                 .BYTE   TDAT
          000242              TDAT=TDAT+1
012354    242                 .BYTE   TDAT
```

```
                000243                  TDAT=TDAT+1
012355             243                  .BYTE   TDAT
                000244                  TDAT=TDAT+1
012356             244                  .BYTE   TDAT
                000245                  TDAT=TDAT+1
012357             245                  .BYTE   TDAT
                000246                  TDAT=TDAT+1
012360             246                  .BYTE   TDAT
                000247                  TDAT=TDAT+1
012361             247                  .BYTE   TDAT
                000250                  TDAT=TDAT+1
012362             250                  .BYTE   TDAT
                000251                  TDAT=TDAT+1
012363             251                  .BYTE   TDAT
                000252                  TDAT=TDAT+1
012364             252                  .BYTE   TDAT
                000253                  TDAT=TDAT+1
012365             253                  .BYTE   TDAT
                000254                  TDAT=TDAT+1
012366             254                  .BYTE   TDAT
                000255                  TDAT=TDAT+1
012367             255                  .BYTE   TDAT
                000256                  TDAT=TDAT+1
012370             256                  .BYTE   TDAT
                000257                  TDAT=TDAT+1
012371             257                  .BYTE   TDAT
                000260                  TDAT=TDAT+1
012372             260                  .BYTE   TDAT
                000261                  TDAT=TDAT+1
012373             261                  .BYTE   TDAT
                000262                  TDAT=TDAT+1
012374             262                  .BYTE   TDAT
                000263                  TDAT=TDAT+1
012375             263                  .BYTE   TDAT
                000264                  TDAT=TDAT+1
012376             264                  .BYTE   TDAT
                000265                  TDAT=TDAT+1
012377             265                  .BYTE   TDAT
                000266                  TDAT=TDAT+1
012400             266                  .BYTE   TDAT
                000267                  TDAT=TDAT+1
012401             267                  .BYTE   TDAT
                000270                  TDAT=TDAT+1
012402             270                  .BYTE   TDAT
                000271                  TDAT=TDAT+1
012403             271                  .BYTE   TDAT
                000272                  TDAT=TDAT+1
012404             272                  .BYTE   TDAT
                000273                  TDAT=TDAT+1
012405             273                  .BYTE   TDAT
                000274                  TDAT=TDAT+1
012406             274                  .BYTE   TDAT
                000275                  TDAT=TDAT+1
012407             275                  .BYTE   TDAT
                000276                  TDAT=TDAT+1
012410             276                  .BYTE   TDAT
                000277                  TDAT=TDAT+1
```

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012411    277                 .BYTE   TDAT
          000300              TDAT=TDAT+1
012412    300                 .BYTE   TDAT
          000301              TDAT=TDAT+1
012413    301                 .BYTE   TDAT
          000302              TDAT=TDAT+1
012414    302                 .BYTE   TDAT
          000303              TDAT=TDAT+1
012415    303                 .BYTE   TDAT
          000304              TDAT=TDAT+1
012416    304                 .BYTE   TDAT
          000305              TDAT=TDAT+1
012417    305                 .BYTE   TDAT
          000306              TDAT=TDAT+1
012420    306                 .BYTE   TDAT
          000307              TDAT=TDAT+1
012421    307                 .BYTE   TDAT
          000310              TDAT=TDAT+1
012422    310                 .BYTE   TDAT
          000311              TDAT=TDAT+1
012423    311                 .BYTE   TDAT
          000312              TDAT=TDAT+1
012424    312                 .BYTE   TDAT
          000313              TDAT=TDAT+1
012425    313                 .BYTE   TDAT
          000314              TDAT=TDAT+1
012426    314                 .BYTE   TDAT
          000315              TDAT=TDAT+1
012427    315                 .BYTE   TDAT
          000316              TDAT=TDAT+1
012430    316                 .BYTE   TDAT
          000317              TDAT=TDAT+1
012431    317                 .BYTE   TDAT
          000320              TDAT=TDAT+1
012432    320                 .BYTE   TDAT
          000321              TDAT=TDAT+1
012433    321                 .BYTE   TDAT
          000322              TDAT=TDAT+1
012434    322                 .BYTE   TDAT
          000323              TDAT=TDAT+1
012435    323                 .BYTE   TDAT
          000324              TDAT=TDAT+1
012436    324                 .BYTE   TDAT
          000325              TDAT=TDAT+1
012437    325                 .BYTE   TDAT
          000326              TDAT=TDAT+1
012440    326                 .BYTE   TDAT
          000327              TDAT=TDAT+1
012441    327                 .BYTE   TDAT
          000330              TDAT=TDAT+1
012442    330                 .BYTE   TDAT
          000331              TDAT=TDAT+1
012443    331                 .BYTE   TDAT
          000332              TDAT=TDAT+1
012444    332                 .BYTE   TDAT
          000333              TDAT=TDAT+1
012445    333                 .BYTE   TDAT
```

```
                000334          TDAT=TDAT+1
012446           334            .BYTE   TDAT
                000335          TDAT=TDAT+1
012447           335            .BYTE   TDAT
                000336          TDAT=TDAT+1
012450           336            .BYTE   TDAT
                000337          TDAT=TDAT+1
012451           337            .BYTE   TDAT
                000340          TDAT=TDAT+1
012452           340            .BYTE   TDAT
                000341          TDAT=TDAT+1
012453           341            .BYTE   TDAT
                000342          TDAT=TDAT+1
012454           342            .BYTE   TDAT
                000343          TDAT=TDAT+1
012455           343            .BYTE   TDAT
                000344          TDAT=TDAT+1
012456           344            .BYTE   TDAT
                000345          TDAT=TDAT+1
012457           345            .BYTE   TDAT
                000346          TDAT=TDAT+1
012460           346            .BYTE   TDAT
                000347          TDAT=TDAT+1
012461           347            .BYTE   TDAT
                000350          TDAT=TDAT+1
012462           350            .BYTE   TDAT
                000351          TDAT=TDAT+1
012463           351            .BYTE   TDAT
                000352          TDAT=TDAT+1
012464           352            .BYTE   TDAT
                000353          TDAT=TDAT+1
012465           353            .BYTE   TDAT
                000354          TDAT=TDAT+1
012466           354            .BYTE   TDAT
                000355          TDAT=TDAT+1
012467           355            .BYTE   TDAT
                000356          TDAT=TDAT+1
012470           356            .BYTE   TDAT
                000357          TDAT=TDAT+1
012471           357            .BYTE   TDAT
                000360          TDAT=TDAT+1
012472           360            .BYTE   TDAT
                000361          TDAT=TDAT+1
012473           361            .BYTE   TDAT
                000362          TDAT=TDAT+1
012474           362            .BYTE   TDAT
                000363          TDAT=TDAT+1
012475           363            .BYTE   TDAT
                000364          TDAT=TDAT+1
012476           364            .BYTE   TDAT
                000365          TDAT=TDAT+1
012477           365            .BYTE   TDAT
                000366          TDAT=TDAT+1
012500           366            .BYTE   TDAT
                000367          TDAT=TDAT+1
012501           367            .BYTE   TDAT
                000370          TDAT=TDAT+1
```

```
012502    370                 .BYTE   TDAT
          000371              TDAT=TDAT+1
012503    371                 .BYTE   TDAT
          000372              TDAT=TDAT+1
012504    372                 .BYTE   TDAT
          000373              TDAT=TDAT+1
012505    373                 .BYTE   TDAT
          000374              TDAT=TDAT+1
012506    374                 .BYTE   TDAT
          000375              TDAT=TDAT+1
012507    375                 .BYTE   TDAT
          000376              TDAT=TDAT+1
012510    376                 .BYTE   TDAT
          000377              TDAT=TDAT+1
012511    377                 .BYTE   TDAT
          000400              TDAT=TDAT+1
12                            .EVEN
13 012512 000000              RBUF:   0
14        012554              .=.+40
```

```
                                .MACRO  WORDS   WDNAME,K,DATA
                                'WDNAME'K':     DATA
                                .ENDM   WORDS
                        000020  K=KX
                        127400  DATA=DATAX
                        000000  KX=0
                        000020  .REPT   20
                                .NLIST
                                DATAX=KX*400+120000
                                .LIST
                                WORDS   ^/RWRD/,\KX,\DATAX
                                .NLIST
                                KX=KX+1
                                .LIST
                                .ENDR
                        120000  DATAX=KX*400+120000
                012554          WORDS   ^/RWRD/,\KX,\DATAX
                012554  120000  RWRD0:  120000
                        000001  KX=KX+1
                        120400  DATAX=KX*400+120000
                012556          WORDS   ^/RWRD/,\KX,\DATAX
                012556  120400  RWRD1:  120400
                        000002  KX=KX+1
                        121000  DATAX=KX*400+120000
                012560          WORDS   ^/RWRD/,\KX,\DATAX
                012560  121000  RWRD2:  121000
                        000003  KX=KX+1
                        121400  DATAX=KX*400+120000
                012562          WORDS   ^/RWRD/,\KX,\DATAX
                012562  121400  RWRD3:  121400
                        000004  KX=KX+1
                        122000  DATAX=KX*400+120000
                012564          WORDS   ^/RWRD/,\KX,\DATAX
                012564  122000  RWRD4:  122000
                        000005  KX=KX+1
                        122400  DATAX=KX*400+120000
                012566          WORDS   ^/RWRD/,\KX,\DATAX
                012566  122400  RWRD5:  122400
                        000006  KX=KX+1
                        123000  DATAX=KX*400+120000
                012570          WORDS   ^/RWRD/,\KX,\DATAX
                012570  123000  RWRD6:  123000
                        000007  KX=KX+1
                        123400  DATAX=KX*400+120000
                012572          WORDS   ^/RWRD/,\KX,\DATAX
                012572  123400  RWRD7:  123400
                        000010  KX=KX+1
                        124000  DATAX=KX*400+120000
                012574          WORDS   ^/RWRD/,\KX,\DATAX
                012574  124000  RWRD10: 124000
                        000011  KX=KX+1
                        124400  DATAX=KX*400+120000
                012576          WORDS   ^/RWRD/,\KX,\DATAX
                012576  124400  RWRD11: 124400
                        000012  KX=KX+1
                        125000  DATAX=KX*400+120000
                012600          WORDS   ^/RWRD/,\KX,\DATAX
```

```
012600  125000                  RWRD12: 125000
        000013                  KX=KX+1
        125400                  DATAX=KX*400+120000
012602                          WORDS   †/RWRD/,\KX,\DATAX
012602  125400                  RWRD13: 125400
        000014                  KX=KX+1
        126000                  DATAX=KX*400+120000
012604                          WORDS   †/RWRD/,\KX,\DATAX
012604  126000                  RWRD14: 126000
        000015                  KX=KX+1
        126400                  DATAX=KX*400+120000
012606                          WORDS   †/RWRD/,\KX,\DATAX
012606  126400                  RWRD15: 126400
        000016                  KX=KX+1
        127000                  DATAX=KX*400+120000
012610                          WORDS   †/RWRD/,\KX,\DATAX
012610  127000                  RWRD16: 127000
        000017                  KX=KX+1
        127400                  DATAX=KX*400+120000
012612                          WORDS   †/RWRD/,\KX,\DATAX
012612  127400                  RWRD17: 127400
        000020                  KX=KX+1
```

```
1 012614                                .PFAIL
                                        ;ENTER HERE ON POWER FAILURE

012614  010046                 PFAIL:  MOV     R0,-(SP)        ;SAVE R0-R5 ON PROCESSOR STACK
012616  010146                         MOV     R1,-(SP)
012620  010246                         MOV     R2,-(SP)
012622  010346                         MOV     R3,-(SP)
012624  010446                         MOV     R4,-(SP)
012626  010546                         MOV     R5,-(SP)
012630  016746  165170                 MOV     24,-(SP)
012634  010667  177204                 MOV     SP,SAVSP        ;SAVE STACK POINTER
012640  012767  012652  165156         MOV     #RESTART,24     ;SET UP FOR POWER UP TRAP       ; 3
012646  000000                         HALT                    ;HALT ON POWER DOWN NORMAL
012650  000777                         BR      .

                                        ;PROCESSOR WILL TRAP HERE WHEN POWER IS RESTORED

012652  016706  177166         RESTAR: MOV     SAVSP,SP        ;RESTORE STACK POINTER
012656  012605                         MOV     (SP)+,R5        ;RESTORE R0-R5
012660  012604                         MOV     (SP)+,R4
012662  012603                         MOV     (SP)+,R3
012664  012602                         MOV     (SP)+,R2
012666  012601                         MOV     (SP)+,R1
012670  012600                         MOV     (SP)+,R0
012672  012767  012614  165124         MOV     #PFAIL,24       ;SET UP FOR POWER FAILURE
012700  012767  000340  165070         MOV     #340,PS
012706  012706  013724                 MOV     #STACK,SP
012712  005067  000374                 CLR     TEMP
012716  005267  000370                 INC     TEMP
012722  001375                         BNE     .-4
012724  104401                         TYPE                                            ; 5
012726  013114                         MCRLF                                           ; 5
012730  104402                         OCTASC
012732  012754                         PFTAB
012734  104401                         TYPE
012736  013117                         MPFAIL
012740  005067  177044                 CLR     ERRFLG
012744  005067  177104                 CLR     LAST
012750  000177  177042                 JMP     @RETRN
012754  000001                 PFTAB:  1
012756  000006  000002                 6,2
012762  012016                         RETRN
```

```
012764                                  .MSG    †/DH11 HALF-DUPLEX AND BREAK TEST/,†/CZDHI-DO/
012764    015     012     012   MTITLE: .ASCIZ  <15><12><12>/DH11 HALF-DUPLEX AND BREAK TEST /<15><12>
012767    104     110     061
012772    061     040     110
012775    101     114     106
013000    055     104     125
013003    120     114     105
013006    130     040     101
013011    116     104     040
013014    102     122     105
013017    101     113     040
013022    124     105     123
013025    124     040     015
013030    012     000
013032    015     012     126   MVECTO: .ASCIZ  <15><12>/VECTOR ADDRESS-/
013035    105     103     124
013040    117     122     040
013043    101     104     104
013046    122     105     123
013051    123     055     000
013054    015     012     103   MREGAD: .ASCIZ  <15><12>/CONTROL REGISTER ADDRESS-/
013057    117     116     124
013062    122     117     114
013065    040     122     105
013070    107     111     123
013073    124     105     122
013076    040     101     104
013101    104     122     105
013104    123     123     055
013107    000
013110    040     040     077   MQM:    .ASCIZ  /  ?/
013113    000
013114    015     012     000   MCRLF:  .ASCIZ   <15><12>

013117    040     040     120   MPFAIL: .ASCIZ  /  POWER FAILURE, PROGRAM RESTART AT TEST IN PROGRESS/
013122    117     127     105
013125    122     040     106
013130    101     111     114
013133    125     122     105
013136    054     040     120
013141    122     117     107
013144    122     101     115
013147    040     122     105
013152    123     124     101
013155    122     124     040
013160    101     124     040
013163    124     105     123
013166    124     040     111
013171    116     040     120
013174    122     117     107
013177    122     105     123
013202    123     000
013204    015     012     103   MEPASS: .ASCIZ  <15><12>/CZDHI-DO/
013207    132     104     110
013212    111     055     104
013215    060     000
013217    015     012     120   PASTXT: .ASCIZ  <15><12>/PASS COUNT = /                         ; 5
```

```
013222  101  123  123
013225  040  103  117
013230  125  116  124
013233  040  075  040
013236  000
013237  015  012  122  MR:      .ASCIZ  <15><12>/R/
013242  000
013243  015  012  124  MTSTPC:  .ASCIZ  <15><12>/TEST PC-/
013246  105  123  124
013251  040  120  103
013254  055  000
                          .EVEN
                2         .EVEN
                3 013256  .TRPTAB

                          ;TABLE OF POINTERS FOR TRAP DECODING

013256  010600            TRPTAB: SCOPER
013260  011254                    TYPER
013262  011574                    OCTASN
013264  011306                    INSTRG
013266  011400                    INSTRE
013270  011410                    PARAMS
013272  011162                    SVO5P
013274  011222                    RSO5
013276  010700                    SCOP1R
                4 013300  .BUFFER

                          ;BUFFERS FOR INPUT-OUTPUT

013300  000000            INBUF:  0
        013312            .=.+10
013312  000000            TEMP:   0
        013324            .=.+10

013324  000000            MDATA:  0
        013336            .=.+10
                5 013336  .ERRTAB

                          ;TABLE OF POINTERS TO ERROR MESSAGES AND DATA

013336                    ERRTAB:
                6 013336  013352          EM1
                7 013340  013512          DT1
                8 013342  013426          EM2
                9 013344  013512          DT1
               10 013346  013464          EM3
               11 013350  000000          0
               12 013352    115  117  122  EM1:    .ASCIZ  /MORE THAN 1 CHARACTER RECEIVED/<15><12>/EXP     REC/
                  013355    105  040  124
                  013360    110  101  116
                  013363    040  061  040
                  013366    103  110  101
                  013371    122  101  103
                  013374    124  105  122
                  013377    040  122  105
                  013402    103  105  111
```

```
        013405   126     105     104
        013410   015     012     105
        013413   130     120     040
        013416   040     040     040
        013421   040     122     105
        013424   103     000
    13  013426   102     122     105     EM2:    .ASCIZ  /BREAK DATA ERROR/<15><12>/EXP     REC/
        013431   101     113     040
        013434   104     101     124
        013437   101     040     105
        013442   122     122     117
        013445   122     015     012
        013450   105     130     120
        013453   040     040     040
        013456   040     040     122
        013461   105     103     000
    14  013464   122     105     103     EM3:    .ASCIZ  /RECEIVER NOT BLINDED/
        013467   105     111     126
        013472   105     122     040
        013475   116     117     124
        013500   040     102     114
        013503   111     116     104
        013506   105     104     000
    15                                   .EVEN
    16  013512  000002                   DT1:    2
    17  013514    006     002            .BYTE   6,2
    18  013516  012042                           SAVR5
    19  013520    006     002            .BYTE   6,2
    20  013522  012040                           SAVR4
    21  013524                           .ENDCOD
        013524  000000                   ENDCOD: 0
    22          000001                   .END
```

SYMBOL TABLE

```
ADRCNT= 011573        ENDFLG  012056        N     = 000001        SAVR0   012030        TYPDAT  011040
BEGIN   001306        EOP     010500        NULL    012060        SAVR1   012032        TYPE  = 104401
BINWRD  011744        ERRCNT  012014        OCTASC= 104402        SAVR2   012034        TYPER   011254
BITX  = 000000        ERRFLG  012010        OCTASN  011574        SAVR3   012036        TYPMSG  011016
BIT00 = 000001        ERRMSG  011036        PARAM = 104405        SAVR4   012040        T1      001400
BIT01 = 000002        ERRORS  010716        PARAMS  011410        SAVR5   012042        T10     003466
BIT02 = 000004        ERRTAB  013336        PARAM1  011440        SAVSP   012044        T11     003720
BIT03 = 000010        ERTAB0  011122        PARERR  011514        SAV05P= 104406        T12     004152
BIT04 = 000020        ESCAPE  012020        PASARG  010572        SCOPE = 104400        T13     004404
BIT05 = 000040        EXITER  011100        PASCNT  012012        SCOPER  010600        T14     004636
BIT06 = 000100        FREEZ1  012022        PASTXT  013217        SCOPE1= 104410        T15     005070
BIT07 = 000200        HALTS   011060        PFAIL   012614        SCOP1R  010700        T16     005322
BIT08 = 000400        HILIM   011566        PFTAB   012754        SPACNT= 011743        T17     005554
BIT09 = 001000        ICOUNT  012024        POPR0 = 012600        STACK = 013724        T2      001632
BIT10 = 002000        INBUF   013300        POP1SP= 005726        START   001004        T20     006006
BIT11 = 004000        INIFLG  012050        POP2SP= 022626        STFLG   012052        T21     006240
BIT12 = 010000        INSTER= 104404        PS    = 177776        SV05    011170        T22     006352
BIT13 = 020000        INSTR = 104403        PUSHR0= 010046        SV05P   011162        T23     006464
BIT14 = 040000        INSTRE  011400        PUSH1S= 005746        SWR     001000        T24     006576
BIT15 = 100000        INSTRG  011306        PUSH2S= 024646        SW00  = 000001        T25     006710
CHRCNT  011742        INSTR1  011320        RBUF    012512        SW01  = 000002        T26     007022
CLRALL  012064        INSTR2  011406        RESREG  011056        SW02  = 000004        T27     007134
DATA  = 127400        K     = 000020        RESTAR  012652        SW03  = 000010        T3      002064
DATABP  011054        KX    = 000020        RESTRT  010566        SW04  = 000020        T30     007246
DATAX = 127400        LAST    012054        RES05 = 104407        SW05  = 000040        T31     007360
DEVADR  011570        LIGHTS  001002        RETRN   012016        SW06  = 000100        T32     007472
DHBA    011764        LIMITS  011520        RS05    011222        SW08  = 000400        T33     007604
DHBAR   011770        LINACT  012062        RWRD0   012554        SW09  = 001000        T34     007716
DHBC    011766        LINE  = 000020        RWRD1   012556        SW10  = 002000        T35     010030
DHBCR   011772        LOBITS  011572        RWRD10  012574        SW11  = 004000        T36     010142
DHLPR   011762        LOGICA  010556        RWRD11  012576        SW12  = 010000        T37     010254
DHNRC   011760        LOLIM   011564        RWRD12  012600        SW13  = 020000        T4      002316
DHRLVL  012002        LPCNT   012026        RWRD13  012602        SW14  = 040000        T40     010366
DHRVEC  012000        MCRLF   013114        RWRD14  012604        SW15  = 100000        T5      002550
DHSCR   011756        MDATA   013324        RWRD15  012606        TBUF    012112        T6      003002
DHSLR   011776        MEPASS  013204        RWRD16  012610        TDAT  = 000400        T7      003234
DHSSR   011774        MPFAIL  013117        RWRD17  012612        TEMP    013312        VEC1    001164
DHTLVL  012006        MQM     013110        RWRD2   012560        TKCSR   011746        VEC2    001174
DHTVEC  012004        MR      013237        RWRD3   012562        TKDBR   011750        WRDCNT  011740
DT1     013512        MREGAD  013054        RWRD4   012564        TPCSR   011752        X     = 000000
EM1     013352        MSG     011322        RWRD5   012566        TPDBR   011754        XBIT  = 000000
EM2     013426        MTITLE  012764        RWRD6   012570        TRPOK   011142        XLINE = 000020
EM3     013464        MTSTPC  013243        RWRD7   012572        TRPSRV  011130        XN    = 000041
ENDCOD  013524        MVECTO  013032        SAVPC   012046        TRPTAB  013256        Y     = 000011

. ABS.  013526     000
        000000     001
ERRORS DETECTED:  0

VIRTUAL MEMORY USED:  18176 WORDS  ( 71 PAGES)
DYNAMIC MEMORY AVAILABLE FOR  71 PAGES
CZDHID.BIN,CZDHID.SEQ=DHMACA.MAC,CZDHID.P11
```