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IDENTIFICATION

PRODUCT CODE: AC-T443A-MC
PRODUCT NAME: CNDZAA0 DZV11 DIAG PRT1
PRODUCT DATE: DEC, 1982
MAINTAINER: DIAGNOSTIC SERVICES/ISS
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1. ABSTRACT

THE FUNCTION OF THE DZV11 DIAGNOSTICS IS TO VERIFY THE OPTION OPERATES ACCORDING TO SPECIFICATIONS. THE DIAGNOSTICS ALSO VERIFY THAT THE DZV11 OPERATES IN ITS ENVIRONMENT SUCH AS THE SYSTEM IN WHICH IT IS INSTALLED.

PARAMETERS MAY BE SUPPLIED TO THE PROGRAM BY EITHER 'AUTO SIZING' OR INPUT FROM THE USER ON THE CONSOLE BY ~~HAVING~~ SW00=1 AT START TIME. AUTO SIZING WILL BE DONE ONLY THE FIRST TIME THE PROGRAM IS STARTED AND SW07=0 AND SW00=0 AND SW03=0. THE AUTOSIZER IS DESIGNED TO DETECT DZV11 DEVICE ADDRESSES AND VECTORS ONLY. ALL REMAINING PARAMETERS WILL DEFAULT TO CERTAIN VALUES (SEE SEC.8.5). CONSOLE INPUT MAY BE CONTROLLED AT ANY START TIME THROUGH THE USE OF SW00, SW03, SW04, AND SW06 (SEE SEC. 4.1.1 FOR A DETAILED DESCRIPTION OF THESE SWITCHES).

CURRENTLY THERE ARE THREE STANDALONE DIAGNOSTICS (CNDZA, CNDZB, AND CNDZC) ONE SYSTEM MODULE FOR DEC X/11 (CXDZBA), AND AN OVERLAY FOR ITEP (CVDZD).

CNDZA TOGETHER WITH CNDZB WILL TEST ALL LOGICAL FUNCTIONS OF THE DZV11 INTERFACE MODULE.

CNDZC IS DESIGNED AS A NON-CHAINABLE STANDALONE DIAGNOSTIC PROVIDING THE OPERATOR WITH DIRECT CONTROL OVER THE TESTING OF ALL DZV11 EIA CABLES.

*
* NOTE: THIS DIAGNOSTIC HAS BEEN MODIFIED TO RUN IN KXT11 (SBC 11/21) ^{;;GPA} *
* BASED SYSTEMS. *
*

SBC 11/21

CSR RANGE: 174000 TO 177770
VECTOR RANGE: 300 TO 370
AUTO SIZING FOR
CSR AND VECTOR: DISABLED

2. REQUIREMENTS

2.1 EQUIPMENT

AN LSI11 CPU WITH MINIMUM 4K OF MEMORY.
ASR 33 (OR EQUIVALENT FOR CONSOLE)
DZV11 INTERFACE MODULE
H329 STAGGERED TURNAROUND CONNECTOR.
H325 CABLE TURNAROUND CONNECTOR.

NOTE: A STAGGERED TURNAROUND CONNECTOR IS NEEDED IN ORDER TO TEST THE PARITY LOGIC.

2.2 STORAGE

PROGRAM WILL USE ALL 4K OF MEMORY EXCEPT WHERE ABL AND BOOTSTRAP LOADER RESIDE. LOCATION 1500 THRU 1740 ARE ESPECIALLY TO BE NOTED AND TO BE UNTOUCHED BY OPERATOR AFTER PARAMETERS HAVE BEEN INPUT FROM CONSOLE (SW00=1); OR AFTER THE 'AUTO SIZING' HAS BEEN DONE. THESE LOCATIONS MAY BE CHANGED IF THE USER UNDERSTANDS THEIR MEANING AND DIFFERENT PARAMETERS ARE REQUIRED.

3. LOADING PROCEEDURE

3.1 METHOD

ALL PROGRAMS ARE IN ABSOLUTE FORMAT AND ARE LOADED USING THE ABSOLUTE LOADER. NOTE: IF THE DIAGNOSTICS ARE ON A MEDIA SUCH AS DISK ,MAGTAPE,DECTAPE, OR CASSETTE; FOLLOW INSTRUCTIONS FOR THE MONITOR WHICH HAS BEEN PROVIDED ON THAT SPECIFIC MEDIA.

ABSOLUTE LOADER STARTING ADDRESS *500

MEMORY * SIZE

4K	17
8K	37
12K	57
16K	77
20K	117
24K	137
28K	157

3.1.1 STARTING THE PROCESSOR AT THE ABSOLUTE LOADER STARTING ADDRESS WILL LOAD THE DIAGNOSTIC INTO MEMORY.

4. STARTING PROCEEDURE

- A. SET SWR TO ZERO FOR 'AUTO SIZING' OR SET SW00=1 FOR USER PARAMETER INPUT FROM CONSOLE TERMINAL. NOTE: LOC. 000176 IS USED AS A SOFTWARE SWITCH REGISTER IN ALL OF THE DZV11 DIAGNOSTICS. (SEE SEC. 4.1) ON THE FIRST STARTUP OF THE DIAGNOSTIC IF SW07=1 AND SW00=0 THE PROGRAM WILL ASSUME THAT THE STATUS TABLE HAS BEEN ALREADY BUILT FROM A PREVIOUS DZV11 DIAGNOSTIC RUN. NOTE: ANY DZV11 DIAGNOSTIC WILL OVERLAY THE STATUS TABLE WHEN LOADED TO PRESERVE ITS CONTENTS AND THUS WILL NOT ALTER A PREVIOUSLY BUILT TABLE.
- B. START THE DIAGNOSTIC AT LOC. 200(8). THE PROGRAM WILL TYPE MAINDEC AND PROGRAM NAMES (IF THIS WAS THE FIRST START UP OF THE PROGRAM) AND ALSO THE FOLLOWING: (ON THE FIRST PROGRAM RUN OR IF PARAMETERS WERE CHANGED)

```
'MAP OF DZV11 STATUS'
1500 160100
1502 000300
1504 000017
1506 017470
1510 000000
```

THE ABOVE IS ONLY AN EXAMPLE! THIS WOULD INDICATE THE STATUS TABLE STARTING AT ADD. 1500 IN THE PROGRAM. THE STATUS TABLE MUST BE VERIFIED BY THE USER IF AUTO SIZING IS DONE. FOR INFORMATION OF STATUS TABLE SEE SECTION 8.4 FOR HELP.

THE PROGRAM WILL TYPE 'RUNNING' AND PROCEED TO RUN THE DIAGNOSTIC.

4.1 CONTROL SWITCH SETTINGS

NOTE: THIS PROGRAM UTILIZES A SOFTWARE SWITCH REGISTER WHICH MAY BE MODIFIED BY CHANGING LOC. 176 OR BY TYPING CONTROL 'G' (^G) ON THE CONSOLE TERMINAL WHILE THE PROGRAM IS RUNNING.

```
SW 15 SET: HALT ON ERROR
SW 14 SET: LOOP ON CURRENT TEST
SW 13 SET: INHIBIT ERROR PRINT OUT
SW 12 SET: INHIBIT **ALL** TYPE OUT/BELL ON ERROR.
SW 11 SET: INHIBIT ITERATIONS. (QUICK PASS)
SW 10 SET: ESCAPE TO NEXT TEST
SW 09 SET: LOOP WITH CURRENT DATA
SW 08 SET: CATCH ERROR AND LOOP ON IT
SW 07 SET: NO AUTO SIZE. IF 1ST START OF PROGRAM AFTER LOADING AND
IF SW00=0 THEN THE PROGRAM WILL ASSUME THAT THE STATUS MAP
HAS BEEN BUILT FROM A PREVIOUS DZV11 DIAGNOSTIC RUN.

SW 06 SET: RESELECT DZV11'S DESIRED ACTIVE
SW 05 SET: RESERVED
SW 04 SET: SELECT DELAY PARAMETER (SEE SEC. 4.1.1)
SW 03 SET: EXTRA PARAMETER INPUT (SEE SEC. 4.1.1)
SW 02 SET: LOCK ON SELECTED TEST
SW 01 SET: RESTART PROGRAM AT SELECTED TEST
SW 00 SET: GET USERS PARAMETERS FROM CONSOLE
```

4.1.1 SWITCH REGISTER CONTROL OF PARAMETER INPUT FROM CONSOLE

- SW 00 GET USERS PARAMETERS FROM CONSOLE. SETTING THIS SWITCH AT START UP TIME ALLOWS THE USER TO INPUT AT THE CONSOLE TERMINAL THE FOLLOWING PARAMETERS: BASE DEVICE ADDRESS, BASE VECTOR ADDRESS, MODE OF OPERATION (EXTERNAL, INTERNAL, OR STAGGERED), AND THE NUMBER OF DZV11'S THAT ARE RUNNING. USING THIS SWITCH ALONE WILL DEFAULT THE FOLLOWING PARAMETERS: ALL 4 LINES ARE SET TO BE TESTED ON EACH DZV11, THE DEFAULT BAUD RATE IS SET AT 19.2 KBAUD AND THE CHARACTER LENGTH FOR THE MAJORITY OF TESTING IS SET AT EIGHT BITS PER CHARACTER WITH TWO STOP BITS.
- SW 03 EXTRA PARAMETER INPUT. SETTING THIS SWITCH AT START UP TIME PROVIDES THE USER WITH THE ABILITY TO SET THE LINES ACTIVE FOR TESTING AND TO SET THE DEFAULT BAUD RATE USED FOR THE MAJORITY OF THE DIAGNOSTIC TESTS. THE DELAY PARAMETER IS AUTOMATICALLY ADJUSTED TO THE BAUD RATE GIVEN BY THE USER.
- SW 04 SELECT DELAY PARAMETER. THE DELAY PARAMETER THIS SWITCH CONTROLS DETERMINES THE LENGTH OF TIME THE PROGRAM STALLS WAITING FOR A CHARACTER TO BE COMPLETELY TRANSMITTED OR RECEIVED. THIS DELAY COUNT IS AUTOMATICALLY SET TO PROVIDE ENOUGH DELAY TIME FOR THE DEFAULT BAUD RATE SPECIFIED WHEN RUNNING THE PROGRAM ON AN LSI11 WITH MOS MEMORY. WHEN RUNNING THIS PROGRAM ON A PROCESSOR WITH A FASTER MEMORY SPEED THIS DELAY COUNT SHOULD BE ADJUSTED PROPORTIONATELY HIGHER THAN THE FOLLOWING DEFAULTED VALUES:
- | | |
|------|----------------------|
| 2450 | :TIME FOR 50 BAUD |
| 1560 | :TIME FOR 75 BAUD |
| 1120 | :TIME FOR 110 BAUD |
| 0750 | :TIME FOR 134 BAUD |
| 0660 | :TIME FOR 150 BAUD |
| 0330 | :TIME FOR 300 BAUD |
| 0150 | :TIME FOR 600 BAUD |
| 0060 | :TIME FOR 1200 BAUD |
| 0040 | :TIME FOR 1800 BAUD |
| 0030 | :TIME FOR 2000 BAUD |
| 0020 | :TIME FOR 2400 BAUD |
| 0010 | :TIME FOR 3600 BAUD |
| 0001 | :TIME FOR 4800 BAUD |
| 0001 | :TIME FOR 7200 BAUD |
| 0001 | :TIME FOR 9600 BAUD |
| 0001 | :TIME FOR 19.2 KBAUD |

4.1.3 SWITCH REGISTER PRIORITIES

ERROR SWITCHES

1. SW 12 DELETE PRINT OUT/BELL ON ERROR.
2. SW 13 DELETE ERROR PRINTOUT.
3. SW 15 HALT ON THE ERROR.
4. SW 08 GO TO BEGINNING OF THE TEST(ON ERROR).
5. SW 10 GOTO NEXT TEST(ON ERROR).

SCOPE SWITCHES

1. SW 09 (IF ENABLED BY 'SCOPI'). IF AN '*' IS PRINTED IN FRONT OF THE TEST NO. ON AN ERROR REPORT (EX. *TEST NO. 10) SW09 IS INCORPORATED IN THAT TEST AND THEREFORE SW09 IS *USUALLY* THE BEST SWITCH FOR THE SCOPE LOOP (SW14=0, SW10=0, SW09=1, SW08=0) IF THE PROGRAM USER IS TECHNICALLY TRAINED TO ELECTRONICALLY ISOLATE SIGNAL PROBLEMS ON THE DZV11 MODULE. IF SW09 IS NOT ENABELED; AND THERE IS A *HARD* ERROR (CONSTANT); SW08 IS BEST.
2. FOR INTERMITTENT ERRORS EITHER START THE PROGRAM WITH SW01 AND SW02 SET WHICH WILL ALLOW THE USER TO LOCK ON A SELECTED TEST, OR ELSE SET SW14 AS AN ERROR IS BEING TYPED OUT ON THE TERMINAL. SW14 WILL CONTINUE TO LOOP ON THAT TEST REGARDLESS OF WHETHER AN ERROR OCCURS.
3. SW 14 LOOP ON CURRENT TEST.

4.2 STARTING ADDRESS

SA 200 - THE STARTING ADDRESS FOR ANY DZV11 DIAGNOSTIC IS LOC. 200

NOTE: IF ADDRESS 000042 IS NON-ZERO THE PROGRAM ASSUMES IT IS UNDER ACT11 OR XXDP CONTROL AND WILL ACT ACCORDINGLY. AFTER *ALL* AVAILABLE DZV11S ARE TESTED THE PROGRAM WILL RETURN TO 'XXDP' OR 'ACT-11'.

5. OPERATING PROCEEDURE

WHEN THE PROGRAM IS INITIALLY STARTED, MESSAGES AS DESCRIBED IN SECTION FOUR WILL BE PRINTED AND THE DIAGNOSTIC WILL BEGIN RUNNING.

7.2 OPERATING RESTRICTIONS

PARAMETER MUST BE INPUT FROM USER OR APT IF "AUTO SIZING" IS NOT USED.

8. MISCELLANEOUS

8.1 EXECUTION TIME

ALL DZV11 DEVICE DIAGNOSTICS WILL GIVE AN 'END PASS' MESSAGE (PROVIDING NO ERRORS AND SW12=0) WITHIN 2 MIN. THIS IS ASSUMING SW11=1 (INHIBIT ITERATIONS) IS SET TO GIVE THE FASTEST POSSIBLE EXECUTION.

8.2 PASS COMPLETE

NOTE: *EVERY* TIME THE PROGRAM IS STARTED; THE TESTS WILL RUN AS IF SW11 (DELETE ITERATIONS) WAS UP (=1). THIS IS TO 'VERIFY NO *HARD* ERRORS' AS SOON AS POSSIBLE. THEREFORE THE FIRST PASS -EACH TIME PROGRAM IS STARTED- WILL BE A 'QUICK PASS' UNTIL ALL DZV11'S IN SYSTEM ARE TESTED. WHEN THE DIAGNOSTIC HAS COMPLETED A PASS THE FOLLOWING IS AN EXAMPLE OF THE PRINT OUT TO BE EXPECTED.

END PASS CNDZA-A CSR: 160100 VEC: 300 PASSES: 000001 ERRORS: 000000

NOTE: THE NUMBERS FOR CSR AND VEC ARE NOT NECESSARILY THE VALUES FOR THE DEVICE. THEY ARE ONLY FOR THIS EXAMPLE.

8.3 KEY LOCATIONS

\$LPADR (1252) CONTAINS THE ADDRESS WHERE PROGRAM WILL RETURN WHEN
ITERATION COUNT IS REACHED OR IF LOOP ON TEST IS
ASSERTED.

NEXT (1362) CONTAINS THE ADDRESS OF THE NEXT TEST TO BE PERFORMED.

\$TSTNM (1246) CONTAINS THE NUMBER OF THE TEST NOW BEING PERFORMED.

RUN (1412) THE BIT IN 'RUN' ALWAYS POINTS ONE PAST THE DZV11
CURRENTLY BEING TESTED. EXAMPLE: (RUN)
1412/00000000001000000 MEANS THAT DZV11 NO.5 IS THE DZV11
NOW RUNNING.

STATUS MAP
(1500)-(1740) THESE LOCATIONS CONTAIN THE INFORMATION NEEDED TO TEST
UP TO 16 (DECIMAL) DZV11S SEQUENTIALY. THEY CONTAIN THE
CSR, VECTOR AND STATUS CONCERNING THE CONFIGURATION OF
EACH DZV11.

DZVACTV(1406) EACH BIT SET IN THIS LOCATION INDICATES THAT THE
ASSOCIATED DZV11 WILL BE TESTED IN TURN. EXAMPLE:
(DZVACTV) 1406/0000000000011111 MEANS THAT DZV11 NO.
00,01,02,03,04 WILL BE TESTED. EXAMPLE: (DZVACTV)
1406/0000000000010001 MEANS THAT DZV11 NO. 00,04 WILL BE
TESTED.

\$BASE (1174) CONTAINS THE RECEIVER CSR OF THE CURRENT DZV11 UNDER
TEST.

8.4 MORE ON THA' 'STATUS TABLE' (1500-1740)

'MAP OF DZV11 STATUS'
1500 160100
1502 000300
1504 000017
1506 017470
1510 000000

THE ABOVE INFORMATION WILL BE REPEATED FOR EACH OF UP TO 16 DZV11'S IN THE SYSTEM (THESE WILL FOLLOW UNDER THIS TABLE). EXPLANATION:

1500	160100	THIS IS THE SYSTEM CONTROL REGISTER FOR THE 1ST DZV11 IN THE SYSTEM.
1502	000300	THIS IS VECTOR 'A' FOR THE FIRST DZV11 IN THE SYSTEM.
1504	000017	THIS IS THE BINARY REPRESENTATION OF WHAT LINES ARE TO BE TESTED.
1506	017470	THIS IS THE PARAMETER LOCATION USED IN MOST OF THE TESTS. IT INDICATES PARAMETERS OF: RX ON, SPEED SELECT 17 (19.2K BAUD) EIGHT BITS PER CHAR, AND TWO STOP BITS. THE USER MAY ALTER THE STOP BITS AND THE SPEED, BUT THE REMAINING PARAMETERS SHOULD BE LEFT ALONE. THIS LOCATION IS USED TO LOAD THE DZV11 LINE PARAMETER REGISTER FOR EACH LINE. THE MEANING OF THE BITS SET IN THIS LOCATION IS THE SAME AS THE FUNCTION OF THE RELATED BITS IN THE DEVICE LINE PARAMETER REGISTER.
1510	000000	THIS LOCATION WILL CONTAIN EITHER ALL ZEROS INDICATING THAT INTERNAL LOOP WAS SELECTED AS MODE OF OPERATION OR IT WILL CONTAIN 100000 INDICATING THAT "STAGGERED MODE" WAS SELECTED OR IT WILL CONTAIN 000200 INDICATING THAT "EXTERNAL" WAS THE MODE SELECTED.

THE ABOVE IS REPEATED FOR EACH DZV11 IN THE SYSTEM. THE TABLE IS FILLED BY AUTO SIZING OR BY THE MANUAL PARAMETER INPUT PROGRAM AS DESCRIBED PREVIOUSLY. ALSO IF DESIRED BY USER; THE LOCATIONS MAY BE ALTERED BY HAND TO SUIT THE SPECIFIC CONFIGURATION.

10.0 PROGRAM DESCRIPTION

THIS PROGRAM WAS ASSEMBLED USING THE PDP-11 MAINDEC SYSMAC
PACKAGE (MAINDEC-11-DZQAC-C3).

INITIAL ADDRESS OF THE STACK POINTER **1120**
MISCELLANEOUS DEFINITIONS

GENERAL PURPOSE REGISTER DEFINITIONS

PRIORITY LEVEL DEFINITIONS

'SWITCH REGISTER' SWITCH DEFINITIONS

DATA BIT DEFINITIONS (BIT00 TO BIT15)

BASIC 'CPU' TRAP VECTOR ADDRESSES

BITS 15-11=CPU TYPE
11/04=01,11/05=02,11/20=03,11/40=04,11/45=05
11/70=06,PDQ=07,Q=10
BIT 10=REAL TIME CLOCK
BIT 9=FLOATING POINT PROCESSOR
BIT 8=MEMORY MANAGEMENT

MEM.TYPE BYTE -- (HIGH BYTE)
900 NSEC CORE=001
300 NSEC BIPOLAR=002
500 NSEC MOS=003

MEM.LAST ADDR.=3 BYTES,THIS WORD AND LOW OF 'TYPE' ABO

THIS TABLE CONTAINS VARIOUS COMMON STORAGE LOCATIONS
USED IN THE PROGRAM.

THIS TABLE CONTAINS THE INFORMATION FOR EACH ERROR THAT CAN OCCUR.
THE INFORMATION IS OBTAINED BY USING THE INDEX NUMBER FOUND IN
LOCATION \$ITEMB. THIS NUMBER INDICATES WHICH ITEM IN THE TABLE IS PERTINENT.

NOTE1: IF \$ITEMB IS 0 THE ONLY PERTINENT DATA IS (\$ERRPC).

NOTE2: EACH ITEM IN THE TABLE CONTAINS 4 POINTERS EXPLAINED AS FOLLOWS:

EM	::POINTS TO THE ERROR MESSAGE
DH	::POINTS TO THE DATA HEADER
DT	::POINTS TO THE DATA
DF	::POINTS TO THE DATA FORMAT

CNDZA-A MACY11 30(1046) 15-DEC-82 14:36 PAGE 81-5
CNDZAA.F11 15-DEC-82 14:31 GENERAL DEFINITIONS AND EQUIVALENCES

L 2

SEQ 0024

(1)	002000	BRK2=BIT10	;BREAK FOR LINE 2
(1)	004000	BRK3=BIT11	;BREAK FOR LINE 3

2

(1)
(1)
(1)
(1)
(1)
(1)
(1)
(1)
(1)
(1)
(1)
(1)
(1)
(1)
(1)

TABLE OF LOOP AROUND FUNCTIONS (H325)

I	^
V	^
REC	TRANS
DATA	DATA

I	^
V	^
CO	RTS

I	^
V	^
RING	DTR

CNDZA-A MACY11 30(1046) 15-DEC-82 14:36 PAGE 81-16
CNDZAA.P11 15-DEC-82 14:31 APT PARAMETER BLOCK

J 3

SEQ 0035

```
(1)                                     ;DZV11 VECTOR AND REGISTER INDIRECT POINTERS
(1)                                     ;WORKING AREA
(1)
(1) 002010 160040 DZVCSR: 160040 ;R/W
(1) 002012 160041 HDZVCSR:160041 ;R/W
(1) 002014 160042 DZVRBUF:160042 ;READ ONLY
(1) 002016 160043 HDZVRBUF:160043 ;READ ONLY
(1) 002020 160042 DZVLPR: 160042 ;WRITE ONLY
(1) 002022 160043 HDZVLPR:160043 ;WRITE ONLY
(1) 002024 160044 DZVTCR: 160044 ;R/W
(1) 002026 160045 HDZVTCR:160045 ;R/W
(1) 002030 160046 DZVMSR: 160046 ;READ ONLY
(1) 002032 160047 HDZVMSR:160047 ;READ ONLY
(1) 002034 160046 DZVTDR: 160046 ;WRITE ONLY
(1) 002036 160047 HDZVTDR:160047 ;WRITE ONLY
(1)
(1)                                     ;DEFAULT DZV VECTORS
(1)
(1) 002040 000300 DZVRIV: 300 ;REC INTR VECTOR
(1) 002042 000302 DZVRIS: 302 ;REC INTR STATUS
(1) 002044 000304 DZVTIV: 304 ;XMIT INTR VECTOR
(1) 002046 000306 DZVTIS: 306 ;XMIT INTR STATUS
(1)
(1)
```

CNDZA-A MACY11 30(1046) 15-DEC-82 14:36 PAGE 81-17
CNDZAA.P11 15-DEC-82 14:31 APT PARAMETER BLOCK

K 3

SEQ 0036

(1)			
(1)			:TIME TABLE FOR RELATIVE TIMING TESTS
(1)			:-----
(1)			
(1)	002050		TMTBL:
(1)	002050	000000	T50: 0
(1)	002052	000000	T75: 0
(1)	002054	000000	T110: 0
(1)	002056	000000	T134: 0
(1)	002060	000000	T150: 0
(1)	002062	000000	T300: 0
(1)	002064	000000	T600: 0
(1)	002066	000000	T1200: 0
(1)	002070	000000	T1800: 0
(1)	002072	000000	T2000: 0
(1)	002074	000000	T2400: 0
(1)	002076	000000	T3600: 0
(1)	002100	000000	T4800: 0
(1)	002102	000000	T7200: 0
(1)	002104	000000	T9600: 0
(1)	002106	000000	TEIGHT:0
(1)	002110	000000	TSEVEN: 0
(1)	002112	000000	TSIX: 0
(1)	002114	000000	TFIVE: 0

CNDZA-A MACY11 30(1046) 15-DEC-82 14:36 PAGE 81-23

CNDZAA.P11 15-DEC-82 14:31

PROGRAM INITIALIZATION AND START UP.

SEQ 0042

```

(1) 004060 012706 001120      .BEGIN: MOV    #STACK,SP      ;SET UP STACK
(1) 004064 106427 000200      MTPS    #MASK          ;LOCK OUT INTERRUPTS
(1) 004070 005737 000042      TST     @#42            ;IS PROGRAM UNDER MONITOR CONTROL
(1) 004074 001015              BNE     2$              ;BR IF YES
(1) 004076 032777 000004 175200 BIT     #BIT2,@SWR        ;CHECK FOR LOCK ON TEST
(1) 004104 001406              BEQ     1$              ;BR IF NO LOCK DESIRED.
(1) 004106 104402 007676      TYPE    ,MLOCK          ;TYPE LOCK SELECTED.
(1) 004112 012737 000240 004402 MOV     #NOP,TTST        ;ADJUST SCOPE ROUTINE.
(1) 004120 000403              BR      2$              ;CONTINUE ALONG.
(1) 004122 013737 004630 004402 1$: MOV     BRW,TTST        ;PREPARE NORMAL SCOPE ROUTINE
(1) 004130 012737 010464 001252 2$: MOV     #CYCLE,$LPADR    ;START AT "CYCLE" FIND WHICH DEVICE TO TEST
(1) 004136 113737 001416 001415 MOVB   SAVNO,SAVNUM    ;COPY ACTIVE DEVICES BEING TESTED
(1) 004144 104402 007567      TYPE    ,MR              ;TYPE "RUNNING"
(1) 004150 000177 175076      JMP     @SLPADR          ;START TESTING
8704      ;;GPA  PRGEND  DZV11,<END PASS CNDZA-A >,10.

```


39

CNDZA-A MACY11 30(1046) 15-DEC-82 14:36 PAGE 81-33 N 4
CNDZAA.F11 15-DEC-82 14:31 APT COMMUNICATIONS ROUTINE

SEQ 0052

(1) 006350 000002
(1)

1\$: RTI

;RETURN TO THE PRESENT TEST

