

DataGeneral

**DIAGNOSTIC
LISTING**

LISTING

096-000145-10

PROGRAM

MEMORY ADDRESS TEST

TAPE

095-000002-10

ABSTRACT

MEMORY ADDRESS TEST IS A MAINTENANCE PROGRAM DESIGNED TO DETECT MALFUNCTIONS IN THE MEMORY ADDRESS SELECTION LOGIC. THE PROGRAM FILLS MEMORY WITH AN ADDRESS PATTERN (C(ADDRESS)=ADDRESS). SUCCESSFUL READ BACK OF THE PATTERN IS PROOF THAT ALL LOCATIONS EXIST.


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0001 .MAIN      MACRO REV 06.30      09:13:30 08/15/78
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;
; NAME: ADDRST.TX          PART NUMBER: 097-000145
;
; DESCRIPTION: ADDRESS TEST
;
; REVISION HISTORY:
;
;     REV.      DATE
;
;     00      02/05/69
;     01      07/22/70
;     02      04/10/71
;     03      01/25/74
;     04      06/07/74
;     05      10/25/74
;     06      04/18/75
;     07      12/05/75
;     08      06/11/76
;     09      12/31/76
;     10      08/18/78
;
;
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; 1975, 1976, 1978.
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;*****

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10002 .MAIN
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;: 0.0 REVISION HISTORY
;:
;: REV. 10 WAS CREATED TO
;: IMPLEMENT THE STANDARDS PROVIDED
;: BY DLIB.
;: THIS HAS NOT CHANGED THE PHILOSOPHY
;: OR TEST PROCEDURES IN THIS PROGRAM.
;: ALL UNNECESSARY "IORS" HAVE BEEN
;: DELETED FROM THIS FILE.
;
; MEMORY ADDRESS TEST
;
;1. ABSTRACT
;
; MEMORY ADDRESS TEST IS A MAINTENANCE
; PROGRAM DESIGNED TO DETECT MALFUNCTIONS
; IN THE MEMORY ADDRESS SELECTION
; LOGIC. THE PROGRAM FILLS MEMORY WITH
; A ADDRESS PATTERN(C(ADDRESS)=ADDRESS)
; SUCCESSFUL READ BACK OF THE PATTERN IS
; PROOF THAT ALL LOCATIONS EXIST.
;
;2. MACHINE REQUIREMENTS
;2.1 ANY NOVA OR ECLIPSE PROCESSOR
;2.2 4K READ/WRITE MEMORY. SEE SECTION 7.
;
;3. SWITCH SETTINGS
; STARTING ADDRESS = 2
;
;4. OPERATING PROCEDURE
;4.1 READ IN THE PROGRAM VIA THE BINARY LOADER
;4.2 SET THE SWITCHES TO 000002
;4.3 PRESS START
;4.4 THE PROGRAM WILL RUN UNTILL A ERROR
; IS DETECTED OR IT IS MANUALLY STOPPED.
;
;5. PROGRAM OUTPUT/ERROR DISCRPTION
;5.1 WHEN A ERROR IS DETECTED THE PROGRAM
; WILL HALT. EXAMINE AC3 TO OBTAIN THE
; ADDRESS OF THE FAILURE. EXAMINE AC2
; TO OBTAIN THE DATA READ FROM THE ADDRESS
; SPECIFIED BY AC3.
;5.2 IF THE CARRY FLAG IS SET WHEN THE HALT
; IS EXECUTED THE MEMORY FAILED UPON
; READING OUT THE LOCATION JUST AFTER
; HAVING STORED IT. THIS SUGGEST FAULTY
; CURRENTS AT THE FAILING LOCATION. IF
; THE CARRY FLAG IS RESET WHEN THE HALT
; IS EXECUTED THE LOCATION FAILED AFTER
; HAVING BEEN SUCCESSFULLY READ ONCE.
; THIS SUGGEST THAT OTHER ADDRESS MAY
; AFFECT THE FAILING ADDRESS.
;5.3 RECORD THE ADDRESS AND VALUE AT EACH
; HALT. PRESS CONTINUE. TRY TO FORM A
; PATTERN OF ERRORS. ARE ALL THE ERRORS
; AT ONE X OR Y LINE VALUE? DOES THE FAIL-
; ING LOCATION CONTAIN THE DATA OF ANOTHER
; ADDRESS?

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10003 .MAIN
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16. PROGRAM DISCRPTION
; THE PROGRAM CONSIST OF A RELATIVELY
; SIMPLE STORE AND CHECK MEMORY ROUTINE.
; ON THE FIRST PASS AFTER STARTING, THE
; ADDRESS OF THE PATTERN LOCATION IS STORED
; IN THE PATTERN LOCATION. THE LOCATION
; IS THEN READ OUT AND CHECKED FOW ERRORS.
; THE PROCESS CONTINUES WITH SUCCESSIVE
; LOCATIONS UNTILL THE END OF THE PATTERN
; IS REACHED. THE CARRY WILL BE COMPLIMENTED
; AT THE END OF A PASS. THE PROGRAM AGAIN
; SCANS MEMORY READING AND CHECKING ,BUT
; NOT STORING, THE DATA. THAT IS STORES ARE
; DONE ONLY ON THE FIRST PASS.

17. LIMITATIONS/MISC
; THE SIZE OF THE MEMORY TO BE TESTED MAY
; BE MODIFIED BY CHANGING THE VALUE OF
; PROGRAM LOCATION 'LAST'.

.EOT

0004 .MAIN
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; NAME: ADDRST.SR PART NUMBER: 094-000002
; DESCRIPTION: ADDRESS TEST
; REVISION HISTORY:
; REV. DATE
; 00 02/05/69
; 01 07/22/70
; 02 04/10/71
; 03 01/25/74
; 04 06/07/74
; 05 10/25/74
; 06 04/18/75
; 07 12/05/75
; 08 06/11/76
; 09 12/31/76
; 10 08/18/78
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000000 .TXTM 0

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10005 .MAIN
01
02          000000          .LOC 0
03 00000 000272          DIRT          :DTOS DIRT BLK PNTR
04
05          000002          .LOC 2
06 00002 000020          JMP 20
07
08 00003 000000 IOM?OD: 0          :IOMOD PNTR
09 00004 177700 OFF?M: 177700          :OFFSET MASK
10 00005 000000 OFF?: 0          :OFFSET IN WORDS
11
12          000020          .LOC 20
13
14 00020 101020 A:          MOVZ 0,0          :START HERE!
15 00021 101060          MOVZ 0,0
16 00022 020147          LDA 0, LAST
17 00023 034150          LDA 3, IADR          :AC3= STARTING PATTERN.
18 00024 175402 B:          INC 3,3, SZC          :C(CARRY)=1 IF FILL/CHECK.
19 00025 055400          STA 3,0,3          :C(CARRY)=0 IF CHECK ONLY.
20 00026 031400          LDA 2,0,3
21 00027 156414          SUB# 2,3, SZR          :AC2=ERROR WORD.
22 00030 063077          HALT          :AC3=ERROR ADDRESS.
23 00031 116414          SUB# 0,3, SZR          :TEST FOR END OF PASS.
24 00032 000024          JMP B
25 00033 024046          LDA 1, EGGS
26 00034 125025          MOVZ 1,1, SNR          :CLEAR CRY FOR CHECK ONLY
27 00035 000054          JMP C
28 00036 014051          DSZ EGGS+3
29 00037 000054          JMP C
30 00040 062677          IORST
31 00041 034052          LDA 3, EGGS+4
32 00042 024051          LDA 1, EGGS+3
33 00043 045776          STA 1,-2,3
34 00044 001400          JMP 0,3
35
36          000045          .LOC 45          :EGGS BLK PNTR
37
38 00045 000046          EGGS          :DTOS EGGS BLK PNTR
39 00046 000000 EGGS: 0          :DTOS AUTO MODE SW
40 00047 000000          0          :DEVICE CODE, OFFSET
41 00050 000000          0          :CAT SWITCH
42 00051 000000          0          :# OF PASSES IN AUTO MODE
43 00052 000000          0          :DTOS RETURN ADDRESS
44 00053 000000          0          :SWITCH REGISTER
45
46 00054 010050 C:          ISZ EGGS+2
47 00055 000022          JMP A+2
48 00056 006146          JSR @ICAT
49 00057 000022          JMP A+2
50 00060 152400 START:          SUB 2,2
51 00061 024145          LDA 1, C10K
52 00062 133000 ADDF:          ADD 1,2
53 00063 151112          MOVLM 2,2, SZC
54 00064 000073          JMP ADD1
55 00065 021000          LDA 0,0,2
56 00066 051000          STA 2,0,2
57 00067 035000          LDA 3,0,2
58 00070 041000          STA 0,0,2

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10006 .MAIN
01
02 00071 156415          SUB# 2,3, SNR
03 00072 000062          JMP ADDF
04 00073 020047 ADD1:          LDA 0, EGGS+1          :GET OFFSET IN BLKS
05 00074 024004          LDA 1, OFF?M          :GET MASK
06 00075 123400          AND 1,0          :MASK FOR OFFSET
07 00076 101120          MOVZL 0,0          :CONVERT TO # WDS
08 00077 040005          STA 0, OFF?          :SAVE OFFSET
09 00100 126400          SUB 1,1
10 00101 044003          STA 1, IOM?UD          :CLR IOMOD PNTR
11 00102 024046          LDA 1, EGGS          :GET AUTO SW
12 00103 125005          MOV 1,1, SNR          :SKIP = AUTO
13 00104 000112          JMP AUT?E          :NOT AUTO
14 00105 024142          LDA 1, C400          :
15 00106 101004          MOV 0,0, SZR          :CHECK OFFSET
16 00107 112401          SUB 0,2, SKP
17 00110 132401          SUB 1,2, SKP
18 00111 050003          STA 2, IOM?OD          :STORE PNTR TO I/O MOD
19 00112 020050 AUT?E:          LDA 0, EGGS+2          :GET CAT SW
20 00113 101005          MOV 0,0, SNR          :SKIP = CAT
21 00114 000134          JMP AUTND          :NOT CAT
22 00115 024046          LDA 1, EGGS          :GET AUTO SW
23 00116 125004          MOV 1,1, SZR          :SKIP = NOT AUTO
24 00117 000126          JMP AUT?N          :AUTO
25 00120 020005          LDA 0, OFF?          :GET OFFSET
26 00121 024142          LDA 1, C400
27 00122 101124          MOVZL 0,0, SZR          :CHECK OFFSET
28 00123 112401          SUB 0,2, SKP
29 00124 132401          SUB 1,2, SKP
30 00125 050003          STA 2, IOM?OD          :STORE PNTR TO IO MOD
31 00126 024143 AUT?N:          LDA 1, C1000          :COMPUTE CAT PNTR
32 00127 141000          MOV 2,0
33 00130 122400          SUB 1,0
34 00131 040146          STA 0, ICAT          :STORE PNTR TO CAT
35 00132 020144          LDA 0, C1400
36 00133 112400          SUB 0,2
37 00134 126040 AUTND:          ADCO 1,1
38 00135 133000          ADD 1,2
39 00136 050147          STA 2, LAST
40 00137 020151          LDA 0, BEGIN
41 00140 040150          STA 0, IADR
42 00141 000020          JMP A
43 00142 000400 C400: 400
44 00143 001000 C1000: 1000
45 00144 001400 C1400: 1400
46 00145 010000 C10K: 10000
47 00146 000020 ICAT: A
48 00147 007577 LAST: 7577
49 00150 000150 IADR: .
50 00151 000151 BEGIN: .
51
52 00152 047503          .TXT          /COPYRIGHT © DATA GENERAL CORPORATION,
53          054520
54          044522
55          044107
56          020124
57          041450
58          020051
59          040504
60          040524

```

0007 .MAIN
01 043440
02 047105
03 051105
04 046101
05 041440
06 051117
07 047520
08 040522
09 044524
10 047117
11 00175 004454
12 034461
13 034466
14 020054
15 034461
16 030067
17 020054
18 034461
19 030467
20 020054
21 034461
22 032067
23 020054
24 034461
25 032467
26 020054
27 034461
28 033067
29 020054
30 034461
31 034067
32 00222 004456
33 046101
34 020114
35 044522
36 044107
37 051524
38 051040
39 051505
40 051105
41 042526
42 027104
43 000000
44 00236 044514
45 042503
46 051516
47 042105
48 046440
49 052101
50 051105
51 040511
52 026514
53 051120
54 050117
55 051105
56 054524
57 047440
58 020106
59 040504
60 040524

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0008 .MAIN
01 043440
02 047105
03 051105
04 046101
05 00263 041411 CORPORATION./
06 051117
07 047520
08 040522
09 044524
10 047117
11 000056
12
13 00272 042101 DIRT: .TXTE IADDR TST 101
14 151104
15 152240
16 152123
17 130640
18 000060
19 00300 000000 000000
20 00301 000060 START
21 00302 000007 000007
22 00303 000000 000000
23 00304 000000 000000
24 00305 000000 000000
25 00306 000000 000000
26 00307 000000 000000
27
28 .END
**00000 TOTAL ERRORS, 00000 PASS 1 ERRORS

0009 .MAIN

A	000020	5/14	5/47	5/49	6/42	6/47			
ADD1	000073	5/54	6/04						
ADDF	000062	5/52	6/03						
AUTND	000134	6/21	6/37						
AUT?E	000112	6/13	6/19						
AUT?N	000126	6/24	6/31						
B	000024	5/18	5/24						
BEGIN	000151	6/40	6/50						
C	000054	5/27	5/29	5/46					
C1000	000143	6/31	6/44						
C10K	000145	5/51	6/46						
C1400	000144	6/35	6/45						
C400	000142	6/14	6/26	6/43					
DIRT	000272	5/03	8/13						
EGGS	000046	5/25	5/28	5/31	5/32	5/38	5/39	5/46	
		6/04	6/11	6/19	6/22				
IADR	000150	5/17	6/41	6/49					
ICAT	000146	5/48	6/34	6/47					
IOM?0	000003	5/08	6/10	6/18	6/30				
LAST	000147	5/16	6/39	6/48					
OFF?	000005	5/10	6/08	6/25					
OFF?M	000004	5/09	6/05						
START	000060	5/50	8/20						

