

IDENTIFICATION

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PRODUCT CODE: MAINDEC-11-DEMMD-A-D  
(SUPERSEDES MAINDEC-11-D1DB)

PRODUCT NAME: BASIC MEMORY PATTERNS TEST

DATE REVISED: MAY 16, 1972

MAINTAINER: DIAGNOSTIC GROUP

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1, ABSTRACT  
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THE BASIC MEMORY PATTERNS TEST VERIFIES THAT THE SELECTED MEMORY TEST FIELD IS CAPABLE OF WRITING AND READING FIXED DATA PATTERNS, SCOPE LOOP PROVISIONS ARE ALSO AVAILABLE TO FACILITATE FURTHER FAULT ISOLATION PROCEDURES OR IDENTIFYING INTERMITTENT FAILURE CONDITIONS,

2, REQUIREMENTS  
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2,1 EQUIPMENT  
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PDP-11 WITH MINIMUM 4K OF MEMORY

2,2 STORAGE  
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2,2,1 PROGRAM STORAGE - THE ROUTINE USES MEMORY FROM 200 TO 2410,

3, LOADING PROCEDURE  
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3,1 METHOD  
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PROCEDURE FOR NORMAL BINARY TAPES SHOULD BE FOLLOWED.

- 1, ABSOLUTE LOADER MUST BE IN MEMORY,
- 2, PLACE BINARY TAPE IN READER,
- 3, LOAD ADDRESS \*7500, (\* DETERMINED BY ADDRESS OF LOADER)
- 4, PRESS "START" (PROGRAM WILL LOAD),

4, STARTING PROCEDURE  
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4,1 CONTROL SWITCH SETTING  
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STARTING AT SA 200 ALL SWITCHES SHOULD BE DOWN OR ZERO,

4,2 STARTING ADDRESS OR ADDRESSES  
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- 200 = START HERE FOR AUTOMATIC TEST LIMITS
- 202 = START HERE TO SELECT TEST LIMITS
- 216 = START HERE TO SELECT SPECIAL TEST PATTERNS

4.3 PROGRAM AND/OR OPERATOR ACTION

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LOAD PROGRAM INTO MEMORY,  
SET SWITCH REGISTER TO STARTING ADDRESS,  
LOAD ADDRESS 200,  
PRESS START,  
THE PROGRAM WILL RUN THROUGH THE SELECTED ADDRESS FIELD  
AND LOOP.

5. OPERATING PROCEDURE

5.1 OPERATIONAL SWITCH SETTINGS

5.1.1 WITH ALL SWITCHES DOWN, THE PROGRAM WILL PRINT OUT  
ON ERRORS AND CONTINUE IN TEST;

5.1.2 SWITCH SETTINGS ARE

SW15 = 1 OR UP ... HALT ON ERROR  
SW14 = 1 OR UP ... SCOPE LOOP  
SW13 = 1 OR UP ... INHIBIT PRINTOUT  
SW12 = 1 OR UP ... HALT ON END OF PROGRAM  
SW11 = 1 OR UP ... PRINT PATTERN TABLE ON END OF  
PROGRAM

5.1.3 AUTOMATIC TEST LIMITS

IF THE PROGRAM IS STARTED AT ADDRESS 200 THE PROGRAM WILL  
TEST ALL AVAILABLE MEMORY, CARE SHOULD BE TAKEN TO SELECT THE  
PROPER OPERATIONAL SWITCH SETTINGS (REFER TO 5.1.2) BEFORE  
STARTING.

#### 5.1.4 SELECTED TEST LIMITS

IF THE PROGRAM IS STARTED AT ADDRESS 202 A MESSAGE WILL BE PRINTED ON THE TELETYPE INSTRUCTING THE OPERATOR ON THE METHOD OF SELECTING OTHER MEMORY TEST AREAS AND THEN THE PROGRAM WILL STOP AT THE FIRST OF THREE HALTS,

- A, SET THE LOW TEST LIMIT IN THE SWITCH REGISTER AND PRESS CONTINUE,
- B, THEN SET THE HIGH TEST LIMIT IN THE SWITCH REGISTER AND PRESS CONTINUE,
- C, THEN SET THE OPERATIONAL SWITCH SETTINGS (REF 5.1.2) AND PRESS CONTINUE,

THE PROGRAM WILL NOW BEGIN TESTING THE SELECTED AREA, THE PROGRAM WILL NOT ALLOW LIMITS TO BE SELECTED THAT WOULD CAUSE ITSELF TO BE DESTROYED, AN EXCEPTION TO THIS WOULD BE THE INSTRUCTIONAL TEXT STORAGE AREA, STARTING THE PROGRAM AT 200 OR SELECTING LIMITS WHICH OVERLAP THIS AREA WILL CAUSE THE TEXT MESSAGE TO BE DESTROYED,

#### 5.1.5 SPECIAL PATTERN SELECTION

IF THE PROGRAM IS STARTED AT ADDRESS 216 THE OPERATOR IS ALLOWED TO SELECT A DATA PATTERN OTHER THAN THOSE SUPPLIED BY THE PROGRAM, THE PROCEDURE IS THE SAME AS FOR 5.1.4 (SELECTED TEST LIMITS) EXCEPT AFTER SETTING THE HIGH TEST LIMIT AND BEFORE SETTING THE OPERATIONAL SWITCH SETTINGS AN ADDITIONAL HALT IS PROVIDED TO ALLOW THE OPERATOR TO PLACE HIS SELECTED DATA PATTERN IN THE SWITCH REGISTER AND THEN PRESS CONTINUE,

5,2 SUBROUTINE ABSTRACTS

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5,2,1 ERROR

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SUBROUTINE ERROR IS CALLED WHENEVER THE PROGRAM DETECTS A LOCATION WHICH HAS FAILED TO STORE PATTERN TEST DATA PROPERLY. UPON ENTERING THE SUBROUTINE, THE INHIBIT PRINT SWITCH (SW13) IS TESTED TO DETERMINE IF THE ADDRESS AND CONTENTS OF THE ERROR LOCATION WILL BE PRINTED. UPON THE END OF PRINTING, OR IN THE EVENT SW13 IS PRESENT, CHECKS THE HALT-SCOPE SWITCHES (SW15 AND 14 RESPECTIVELY). IF NEITHER SWITCH IS SET THE PROGRAM IMMEDIATELY RETURNS TO THE MAIN TEST PROGRAM. IF SW15 IS SET, THE SUBROUTINE PRINTS THE ERROR MESSAGE AND THEN HALTS. AT THIS TIME THE SCOPE LOOP SWITCH (SW14) MAY BE SET (IF NOT SET ALREADY). A CONTINUE FROM THIS HALT WILL CAUSE THE SUBROUTINE TO ENTER THE SCOPE LOOP CHECK. IF THE SW14 IS SET THE SUBROUTINE WILL PERFORM A WRITE-READ LOOP THROUGH THE ERROR LOCATION. ERROR PRINTOUTS MAY BE ENABLED OR INHIBITED DURING THE SCOPE LOOP AS COMMANDED BY THE POSITION OF SW13. THE SCOPE LOOP IS TERMINATED AT ANY TIME DURING THE LOOP BY RESETTING SW14. IF SW14 WAS RESET PRIOR TO OR AFTER THE ERROR HALT, OR IS RESET DURING THE SCOPE LOOP, THE PROGRAM WILL RETURN TO MAIN TEST PROGRAM AND RESUME TESTING.

6, ERRORS

6.1 ERROR PRINTOUT

PRINTS ALL ERRORS UNLESS INHIBITED BY SW13

6.2 ERROR RECOVERY

A, IF IN A SCOPE LOOP, RESET SW14;

B, TO RECOVER FROM AN ERROR HALT,  
MAKE SURE SW14 IS RESET THEN DEPRESS CONTINUE.

C, RELOAD SA AND START,

7, RESTRICTIONS

7.1 STARTING RESTRICTION

NONE

7.2 OPERATIONAL RESTRICTION

NONE

8, MISCELLANEOUS

8.1 EXECUTION TIME

THE PROGRAM WILL RING THE TELETYPE BELL AFTER EVERY 61  
PASSES THRU THE PROGRAM WHICH IS APPROXIMATELY ONCE PER  
MINUTE WITH 4K OF MEMORY.

9. PROGRAM DESCRIPTION

THIS TEST VERIFIES THE ABILITY OF THE SELECTED MEMORY TEST FIELD TO WRITE AND READ VARIOUS FIXED DATA PATTERNS,

AT THE START OF THE TEST THE ADDRESS OF THE PATTERN TABLE IS ACCESSED AND STORED IN A TEMPORARY LOCATION, THIS LOCATION SERVES AS THE CHANNEL FOR ACCESSING THE VARIOUS TEST PATTERNS IN THE TABLE, TESTING IS STARTED BY READING THE FIRST PATTERN FROM THE TABLE AND SEQUENTIALLY WRITING IT THROUGHOUT THE MEMORY TEST ZONE, IMMEDIATELY FOLLOWING THE WRITING CYCLE, THE MEMORY TEST ZONE IS SEQUENTIALLY READ AND COMPARED WITH THE PATTERN JUST WRITTEN, A FAILURE TO COMPARE RESULTS IN A CALL TO THE ERROR SUBROUTINE, WHEN THE READ SCAN IS COMPLETED, THE TABLE ADDRESS HOLDING LOCATION IS INCREMENTED TO THE NEXT (WORD) ADDRESS, AND THE WRITE-READ SEQUENCE IS REPEATED, EACH TIME A PATTERN IS ACCESSED FROM MEMORY IT IS COMPARED WITH AN END OF TABLE MARK, THIS CHARACTER CAUSES THE PROGRAM TO PRINT THE PATTERN TABLE (IF SW13 IS RESET) AND HALT, A CONTINUE FROM THIS POINT WILL LOOP BACK TO BEGIN FOR THE NEXT PASS, THE PROGRAM WILL RING THE BELL ON THE TELETYPE AFTER EACH 61 PASSES THRU THE TEST WHICH IS APPROXIMATELY ONCE EVERY MINUTE,

10. LISTING

BASIC MEMORY PATTERNS TEST  
DEMMDA;P11

MAINDEC-11-DEMMD-A

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,NLIST SEQ  
,TITLE BASIC MEMORY PATTERNS TEST MAINDEC-11-DEMMD-A  
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000240

NOP=240

000000

,ENABL ABS  
,#0

,TRAP CATCHER 0-176

000004

,#4  
TLG  
,#200

000004 000362

000200

BR START  
BR DWNFLG

,START HERE FOR AUTOMATIC TEST  
,START HERE TO SELECT TEST LIMITS

000200 000462

000202 000411

000204 000000

000206 000000

000210 177570

000212 177566

000214 177564

L0LMTI 0  
HILMTI 0  
SWREGI 177570  
TDBRI 177566  
TCSRI 177564



000216	012767	177777	000660	SPENTI	MOV	#=1,SPEF	ISSET SPECIAL ENTRANCE FLAG
000224	000402				BR	LMMSG	
000226	005067	000652		DWNFLGI	CLR	SPEF	ICLR SPECIAL ENTRANCE FLAG
000232	012767	177703	000652	LMSGI	MOV	#=75,BELLCT	INIT PROGRAM PASS COUNTER
000240	012767	002050	177736		MOV	#DONE1,LOLMT	
000246	012767	017470	177732		MOV	#17470,HILMT	
000254	012706	002046			MOV	#BUFFER,X6	ISSET LP
000260	012702	002052			MOV	#MSG1,X2	MESSAGE ADDRESS IN R2
000264	004767	000624			JSR	X7,TOP	TO TTY OUTPUT
000270	000000				HALT		FOR AUTO TEST CLR SWREG, LOAD 442 & GO!
000272	005777	177712			TST	@SWREG	LOOK FOR LOLMT
000276	001407				BEG	HISSET	DEFERED
000300	027767	177704	177676		CMP	@SWREG,LOLMT	ICRN LOLMT INPUT>DONE
000306	103403				BLO	HISSET	LOLMT<DONE USE LIMIT DEFINED
000310	017767	177674	177666		MOV	@SWREG,LOLMT	LOLMT>DONE STORE INPUT
000316	000000			HISSET	HALT		WAIT FOR CONTINUE
000320	005777	177664			TST	@SWREG	LOOK FOR HILMT
000324	001447				BEG	SECK	DEFERRED
000326	027767	177656	177650		CMP	@SWREG,LOLMT	
000334	103443				BLO	SECK	
000336	017767	177646	177642		MOV	@SWREG,HILMT	STORE INPUT
000344	000437				BR	SECK	
000346	012706	002046		START	MOV	#BUFFER,X6	
000352	010603				MOV	X6,X3	TEST POINT IN LOWEST BANK
000354	005723			SEE	TST	(X3)+	ITEST
000356	000240				NOP		PRECAUTIONARY DELAY
000360	000775				BR	SEE	NO TRAP, CONTINUE
000362	162703	000004		TLGI	SUB	#4,X3	TRAPPED
000366	005737	000042			TST	@#42	
000372	001407				BEG	S1	
000374	023727	000042	000714		CMP	@#42,#ENDADR	
000402	001403				BEG	S2	
000404	162703	002734			SUB	#1500,,X3	
000410	000402				BR	S2	
000412	162703	000300		S1)	SUB	#300,X3	
000416	010367	177564		S2)	MOV	X3,HILMT	
000422	005067	000456			CLR	SPEF	
000426	012767	177703	000456		MOV	#=75,BELLCT	
000434	012767	002050	177542		MOV	#DONE1,LOLMT	
000442	000411				BR	BEGIN	
000444	005767	000434		SECK	TST	SPEF	ICK SPECIAL ENTRANCE FLAG
000450	001403				BEG	NORM	IND FLAG
000452	000000				HALT		
000454	017700	177530			MOV	@SWREG,X0	INPUT SPECIAL PATTERN IN R0
000460	000000				HALT		
000462	000417				BR	SPWRT	
000464	000000			NORM	HALT		ISSET CONTROL OPTIONS IN SWITCH REGISTER
000466	012700	001720		BEGIN	MOV	#TABLOS,X0	
000472	000402				BR	HOLCK	

022474	016700	000406		PATNXI	MOV	TBADD,X0	I GET NEXT TABLOS ADDRESS
022500	012067	000404		HOLDCKI	MOV	(0)+,HOLD	I GET NEXT PATTERN
022504	010067	000376			MOV	X0,TBADD	I STORE TABLOS ADDRESS
022510	016700	000374			MOV	HOLD,X0	I PATTERN INTO R0
022514	020027	000215			CMP	X0,#215	I CKN END TABLOS MARK CR
022520	001416				BEQ	SW3CK	I FINIS PATTERNS CK SW3
022522	016701	177456		SPWRTI	MOV	L0LMT,X1	
022526	010021			WRITEI	MOV	X0,(1)+	
022530	020167	177452			CMP	X1,HILMT	I CKN HIGH LIMIT
022534	101774				BLOS	WRITE	
022536	024100			READI	CMP	-(1),X0	
022540	001402				BEQ	REDON	
022542	004767	000162			JSR	X7,ERROR	I GO TO ERROR SUBROUTINE
022546	026701	177432		REDONI	CMP	L0LMT,X1	I CKN L0LIMIT
022552	103771				BLO	READ	
022554	000747				BR	PATNX	
022556	032777	004000	177424	SW3CKI	BIT	#4000,@SWREG	I TEST FOR PRINT REQUEST
022564	001425				BEQ	SW4CK	I NO REQUEST CKSW4
022566	012700	001720			MOV	#TABLOS,X0	
022572	012002			PRQSTI	MOV	(0)+,X2	I GET PATTERN
022574	020227	000215			CMP	X2,#215	I CKN END TABLOS MARK CR
022600	001417				BEQ	SW4CK	I FINIS PRINTING
022602	004767	000616			JSR	X7,PRTAB	I PRINT PATTERN TABLOS
022606	105777	177402			TSTB	@TCSR	I CK TTY
022612	100375				BPL	,+4	
022614	012777	000215	177370		MOV	#215,@TDBR	I SEND CR
022622	105777	177366			TSTB	@TCSR	I CK TTY
022626	100375				BPL	,+4	
022630	012777	000212	177354		MOV	#212,@TDBR	I SEND LF
022636	000755				BR	PRQST	
022640	032777	010000	177342	SW4CKI	BIT	#10000,@SWREG	I TEST FOR HALT SWITCH
022646	001401				BEQ	,+4	

022650	000000			STOP:	HALT		
022652	005267	000234			INC	BELLCT	;COMPLETED PASS INCREMENTS COUNTER
022656	001402				BEQ	RING	;APPROX 1 MIN TO RING BELL
022660	000167	177602			JMP	BEGIN	
002664	012767	177703	000220	RING:	MOV	#=75,BELLCT	
002672	105777	177316			TSTB	@TCSR	;CKN TTY AVAIL
002676	100375				BPL	,=4	;WAIT
002700	012777	000207	177304		MOV	#207,@TDBR	;RING A DING
002706	013702	000042			MOV	@#42,X2	
002712	001404				BEQ	DOAGN	
002714	004712			ENDADR:	JSR	X7,(2)	
002716	000240				NOP		
002720	000240				NOP		
002722	000240				NOP		
002724	000167	177536		DOAGN:	JMP	BEGIN	;CONTINUE PROGRAM
002730	032777	020000	177252	ERROR:	BIT	#20000,@SWREG	;CHECK INHIBIT PRINT SW
002736	001026				BNE	SWCHK	;INHIBIT PRINT SW UP
002740	010102			ERRPT:	MOV	X1,X2	;GET ERROR ADDRESS
002742	004767	000456			JSR	X7,PRTAB	;GO TO PRINT ROUTINE
002746	012702	001253		SPACE:	MOV	#SPOCK,X2	
002752	004767	000136			JSR	X7, TOP	;PRINT 6 SPACES
002756	011102				MOV	@X1,X2	;GET ERROR DATA
002760	004767	000440			JSR	X7,PRTAB	;GO TO PRINT ROUTINE
002764	105777	177224			TSTB	@TCSR	;CK TTY
002770	100375				BPL	,=4	
002772	012777	000215	177212		MOV	#215,@TDBR	;SEND CR
002800	105777	177210			TSTB	@TCSR	;CK TTY
002804	100375				BPL	,=4	
002806	012777	000212	177176		MOV	#212,@TDBR	;SEND LF
002814	032777	140000	177166	SWCHK:	BIT	#140000,@SWREG	;CK HALT, SCOPE SWITCHES
002822	001001				BNE	CKS45	;REQUEST UP
002824	000207				RTS	X7	;NO REQUEST-RESUME READ CK
002826	032777	100000	177154	CKS45:	BIT	#100000,@SWREG	;LOOKN FOR HALT SW
002834	001405				BEQ	SCOPE	;CK SCOPE IF NO HALT
002836	012702	001264		RQHLT:	MOV	#MSG2,X2	;SET MSG3 ADDRESS
002842	004767	000046			JSR	X7, TOP	;TO TTY OUTPUT
002846	000000				HALT		;WAIT FOR CONTINUE
002850	032777	040000	177132	SCOPE:	BIT	#40000,@SWREG	
002856	001001				BNE	LOOPON	;SCOPE SWITCH UP
002860	000207				RTS	X7	;NO-SCOPE-RESUME READ CK
002862	010011			LOOPON:	MOV	X0,@X1	;WRITE
002864	021100				CMP	@X1,X0	;READ
002866	001770				BEQ	SCOPE	
002870	032777	020000	177112		BIT	#20000,@SWREG	;CK INHIBIT PRINT SW
002876	001364				BNE	SCOPE	
002880	000167	177634			JMP	ERRPT	;OK PRINT
002884	000000			SPEFI:	0		
002886	000000			TBADD:	0		
002890	000000			HOLD:	0		
002894	000000			BELLCT:	0		

001114	142777	000177	177072	TOP1	BICB	#177,@TCSR	ICLR INT FLAG
001122	105777	177066			TSTB	@TCSR	
001126	100375				BPL	,=4	
001130	112777	000215	177054		MOVB	#215,@TDBR	ISEND CARRIAGE RETURN
001136	105777	177052			TSTB	@TCSR	
001142	100375				BPL	,=4	
001144	112777	000212	177040		MOVB	#212,@TDBR	ISEND LINE FEED
001152	112267	000074			MOVB	(2)+,EOMK	IMOVE IN EOM MARKER
001156	121267	000070		TOP1	CMPB	@X2,EOMK	ICOMPARE FOR EOM
001162	001411				BEQ	ATRATE	
001164	121227	000100			CMPB	@X2,#'0	
001170	001406				BEQ	ATRATE	
001172	105777	177016			TSTB	@TCSR	ICK TTY
001176	100375				BPL	,=4	IWAIT FOR DONE
001200	112277	177006			MOVB	(2)+,@TDBR	IMOVE CHARACTER
001204	000764				BR	TOP1	IBRANCH BACK
001206	105777	177002		ATRATE	TSTB	@TCSR	
001212	100375				BPL	,=4	
001214	112777	000215	176770		MOVB	#215,@TDBR	ISEND CARRIAGE RETURN
001222	105777	176766			TSTB	@TCSR	
001226	100375				BPL	,=4	
001230	112777	000212	176754		MOVB	#212,@TDBR	ISEND LINE FEED
001236	121267	000010			CMPB	@X2,EOMK	ICKN END MESSAGE MARK
001242	001402				BEQ	,+6	ISKP NX2 IF EOMK
001244	005202				INC	X2	IINCRMIN R2
001246	000743				BR	TOP1	INO EOM, SO LOOP
001250	000207				RTS	X7	
001252	000			EOMKI	,BYTE	0	
001253	057	020040	020040	SPOCKI	,ASCII	/ /	
001260	020040	057					
001264					,EVEN		

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001264 043054 051117 051440 MSG21 ,ASCII ,FOR SCOPE-CLEAR RALT SW,-SET SCOPE SW.-CONTINUE,0)
001272 047523 042520 041455
001300 042514 051101 044040
001306 046121 020124 053523
001314 026456 042523 020124
001322 041523 050117 020105
001330 053523 026456 047503
001336 052116 047111 042525
001344 040054
001346 042522 042523 020124 ,ASCII ;RESET SCOPE SW, ANYTIME TO RETURN TO PROGRAM,;
001354 041523 050117 020105
001362 053523 020056 047101
001370 052131 046511 020105
001376 047524 051040 052105
001404 051125 020116 047524
001412 050040 047522 051107
001420 046501 026056

```

,EVEN

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001424 005067 000252 PRTAB1 CLR BINCT
001430 005067 000244 CLR WGTCT
001434 012704 001706 MOV #LIST,X4 ;GET LIST ADDRESS
001440 142777 000177 176546 BICB #177,@TCSR ;CLR INT FLAG
001446 012767 000005 000230 MOV #5,ASCNT
001454 012767 000007 000212 MOV #7,SEVEN
001462 012767 000001 000206 MOV #1,DECML
001470 105777 176520 WAIT11 TSTB @TCSR
001474 100375 BPL WAIT1
001476 005702 TST X2 ;NEG SIGN PRINT 1
001500 100404 BMI MINUS
001502 012777 000260 176502 MOV #260,@TDBR ;POS SIGN PRINT 0
001510 000403 BR STARTX
001512 012777 000261 176472 MINUS1 MOV #261,@TDBR
001520 016703 000150 STARTX1 MOV SEVEN,X3 ;PUT MASK IN R3
001524 010267 000142 MOV X2,TOODLE ;GET READY TO DOODLE NUMBER IN TOODLE
001530 005167 000136 COM TOODLE ;COMPENSATES FOR COMPLEMENT DURING BIC
001534 045703 000132 BIC TOODLE,X3 ;AND IN OCTAL CHARACTER
001540 001410 BEQ WRTOC ;ZERO, WRITE 0 IN LIST
001542 066767 000130 000130 MKNUM1 ADD DECML,WGTCT ;COUNT UP TO
001550 005267 000126 INC BINCT ;AND RECORD
001554 026703 000120 CMP WGTCT,X3 ;SAME BINARY WEIGHT
001560 001370 BNE MKNUM ;KEEP COUNTN
001562 062767 000260 000112 WRTOC1 ADD #260,BINCT ;ADD ASCII PREFIX
001570 016724 000106 MOV BINCT,(4)+ ;WRITE ASCII CHAR IN LIST
001574 066767 000074 000074 ADD SEVEN,DECML ;EXPAND BINARY WEIGHT
001602 005067 000072 CLR WGTCT
001606 005067 000070 CLR BINCT
001612 005367 000066 DEC ASCNT
001616 001410 BEQ XLIST ;5 CHAR IN LIST
001620 012703 000003 MOV #3,X3 ;SET X3 FOR ADD LOOP
001624 066767 000044 000042 MOADD1 ADD SEVEN,SEVEN ;MAKING SEVENTY BY SEVEN
001632 005303 DEC X3
001634 001373 BNE MOADD

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001636	000730			BR	STARTX	JNX SEVEN SET GET NX OCTAL
001640	012767	000005	000036	XLIST1	#5,ASCNT	ISEND 5 CHAR TO YTY
001646	105777	176342		WAIT21	@TCSR	
001652	100375			BPL	WAIT2	
001654	014477	176332		MOV	-(4),@TDBR	
001660	005367	000020		DEC	ASCNT	
001664	001401			BEO	HOFHM	IFINISH PRINTING GET NXT NUM
001666	000767			BR	WAIT2	

```

001670 000207
001672 000000
001674 000000
001676 000000
001700 000000
001702 000000
001704 000000
001706 000000
001710 000000
001712 000000
001714 000000
001716 000000
001720 000000
001722 177777
001724 000000
001726 107070
001730 070707
001732 050505
001734 050505
001736 125252
001740 052525
001742 177777
001744 000215
001746 000000
002046 002046
002050 000000
002052 051497 052105 046440
002060 046505 051117 020131
002066 042101 051104 051505
002074 020123 044514 044515
002102 051524 053040 040511
002110 051440 044527 041524
002116 020110 042522 044507
002124 052123 051105 100
002131 123 052105 046040
002136 053517 051105 046040
002144 040511 052111 044440
002152 020116 053523 051055
002160 043505 040440 042116
002166 050040 042522 051523
002174 041440 047117 044524
002202 052516 040105
002206 042523 020124 050125
002214 042520 020122 044514
002222 044515 020124 047111
002230 051440 026527 042522
002236 020107 047101 020104
002244 051120 051505 020123
002252 047503 052116 047111
002260 042525 100
002263 125 042116 043105
002270 047111 042105 046040
002276 046511 052111 020123

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HDPHM: RTS X7 ;HEAD FOR HOME
TOODLE: 0
SEVEN: 0
DECLI: 0
WGCT: 0
BINCT: 0
ASCNT: 0
LIST: 0
TABLOS: 3
177777
0
107070
070707
050505
050505
125252
052525
177777
215
DONE: 0
; *DONE+100
BUFFER: 0
DONE: 0
MSG1 ,ASCII ;/SET MEMORY ADDRESS LIMITS VIA SWITCH REGISTER;

```

,ASCII ;SET LOWER LIMIT IN SW-REG AND PRESS CONTINUE;

,ASCII ;SET UPPER LIMIT IN SW-REG AND PRESS CONTINUE;

,ASCII ;UNDEFINED LIMITS WILL BE SET TO 2050-17470;

BASIC MEMORY PATTERNS TEST  
DEMMD1,011

MAINDEC-11-DEMMD-A

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002304	044527	046114	041040
002312	020105	042523	020124
002320	047524	031040	032460
002326	026460	033461	033464
002334	040060		
002336	044514	044515	051524
002344	041040	046105	053517
002352	052040	044510	020123
002360	040522	043516	020105
002366	044527	046114	041040
002374	020105	042504	040506
002402	046125	042524	027504

000001

.ASCII |LIMITS BELOW THIS RANGE WILL BE DEFAULTED/|

.EVEN  
.END



ASCNT	001704	TRATE	001206	BEGIN	000466	BELLCT	001112
BINCT	001702	BUFFER	002046	CKS45	001026	DECML	001676
DOAGN	000724	DONE	001746	DONE1	002050	DWNFLG	000226
ENDADR	000714	EOMK	001252	ERROR	000730	ERRPT	000740
HDFHM	001670	HILMT	000206	H1SET	000316	HOLD	001110
HOLDCK	000500	LIST	001706	LMMSC	000232	LOLMT	000204
LOOPON	001062	MINUS	001512	MKNUM	001542	MOADD	001624
MSG1	002052	MSG2	001264	NOP	= 000240	NORM	000464
PATNX	000474	PRGST	000572	PRTAB	001424	READ	000536
REDON	000546	RING	000664	RQHLT	001036	SCOPE	001050
SECK	000444	SEE	000354	SEVEN	001674	SPACE	000746
SPEF	001104	SPENT	000216	SPOCK	001253	SPWRT	000522
START	000346	STARTX	001520	STOP	000650	SWCHK	001014
SWREG	000210	SWJCK	000556	SW4CK	000640	TABLOS	001720
TBADD	001100	TCSR	000214	TDBR	000212	TLG	000362
TOODLE	001672	TOP	001114	TOP1	001156	WAIT1	001470
WAIT2	001640	WGTCT	001700	WRITE	000526	WRTOC	001562
XLIST	001640	S1	000412	S2	000416	.	= 002410

ERRORS DETECTED: 0

BASIC MEMORY PATTERNS TEST  
DZMMDA,P11

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\*DZMMDA,DZMMDA-DZMMDA/SOL  
RUN-TIME: 1 2 0 SECONDS  
CORE USED: 3K