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* V.D.M. PART NO. 92L0107-021A

* RELEASED 05-25-71

* 620 MEMORY TEST PART 2

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*   * ***** *   * *****
** ** *   ** ** *
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***** ***** *** *****
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*   ***** *** *

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* THIS TEST PROGRAM IS A PART OF THE MAINTAIN II TEST PROGRAM SYSTEM

* THE MEMC TEST IS DESIGNED TO ASCERTAIN THE OPERATIC AL

0002
0003
0004
0005
0006
0007
0008
0009
0010
CCCC100011
CCCC200012
CCCC300013
CCCC400014
CCCC500015
CCCC600016
CCCC700017
CCCC800018
CCCC900019
CCC1000020
CCC1100021
CCC1200022
CCC1300023
CCC1400024
CCC1500025
CCC1600026
0027
0028
0029
0030
0031
0032
0033
0034
0035
CCC1700036
CCC1800037
0038
0039
CCC2000040
CCC2200041
CCC2300042
CCC2400043

* STATUS OF THE COMPUTER MEMORY. ANY MEMORY SIZE (4K-32K,16 C 18
 * BIT) CAN BE CHECKED. READ-ONLY-MEMORY(ROM) IS NOT TESTED BY
 * THIS PROGRAM.

CC02500044
 CCC2600045
 CCC2700046
 CCC2800047
 CCC2900048
 CCC3000049
 CCC3100050
 CCC3200051
 CCC3300052
 CCC3400053
 CCC3500054

* AREAS RESERVED BY EXECUTIVE *

*
 * *****
 * CRG 0
 * JMP EXECUTIVE
 * CRG 040
 * JMPM POWER DOWN ROUTINE
 * JMP POWER UP ROUTINE

* NOTE: THE TEST EXECUTIVE ALSO RESERVES LOCATIONS 0400 TO 477
 * FOR A POINTER TABLE TO STANDARD ROUTINES, AND AS AN REA
 * FOR EXECUTIVE DATA. ALL TEST PROGRAMS WORKING WITH HE
 * EXECUTIVE MUST PRESERVE THIS BLOCK.
 * STANDARD ROUTINES WILL BE CALLED INDIRECTLY THRU
 * THIS TABLE

0055
 0056
 0057
 0058
 0059
 0060
 0061
 0062
 0063
 0064
 0065
 0066
 0067
 0068
 0069
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 0071
 0072
 0073
 0074
 0075
 0076
 0077
 0078
 0079
 0080
 0081
 0082
 0083
 0084
 0085

000400 .CRG .0400
 000400 .BSS .1
 000401 .BSS .1
 000402 .BSS .1
 000403 .BSS .1
 000404 .BSS .1
 000405 .BSS .1
 000406 .BSS .1
 000407 .BSS .1
 000410 .BSS .1

OUTPUT ONE CHAR ROUTINE
 OUTPUT TWO CHAR ROUTINE
 OUTPUT CR/LF ROUTINE
 OUTPUT MESSAGE ROUTINE
 OUTPUT OCTAL WORD ROUTINE
 OUTPUT OCTAL ADDR ROUTINE
 OUTPUT ERROR MSG ROUTINE
 OUTPUT CONTROL CHAR TO TTY ROUTINE
 INPUT ONE CHAR ROUTINE

000411	INPB	.BSS	.1	INPUT AND PRINT ONE CHAR	ROUTINE	0086
000412	INPC	.BSS	.1	INPUT ONE CHAR EDITED	ROUTINE	0087
000413	INPD	.BSS	.1	INPUT ONE ALPHA CHAR	ROUTINE	0088
000414	INPE	.BSS	.1	INPUT TWO ALPHA CHAR	ROUTINE	0089
000415	INPF	.BSS	.1	INPUT COMMA/PERICE TERMINATION ROUTI E		0090
000416	INPG	.BSS	.1	INPUT OCTAL NUMBER ROUTINE		0091
000417	TOUT	.BSS	.1	TIME-OUT	ROUTINE	0092
000420	TDLY	.BSS	.1	TIME DELAY	ROUTINE	0093
000421	SSWT	.BSS	.1	STANDARD SENSE SWITCH ROUTINE		0094
000422	SLWE	.BSS	.1	LOWEST WORD USED BY EXEC		0095
000423	ESZC	.BSS	.1	MEMORY SIZE DETERMINATION ROUTINE		0096
000424	SMSM	.BSS	.1	MEMORY SIZE MESSAGE		0097
	*					0098
	*					0099
000440		.CRG	.0440			0100
	*					0101
	*			EXECUTIVE DATA TABLE		0102
	*					0103
000440	\$FLG	.BSS	.1	LOOP ON ERROR FLAG, 0=DON'T LOCP 1=LC P		0104
000441	\$MEM	.BSS	.1	MEMORY SIZE (HIGHEST AVAIL CORE)		0105
000442	\$CON	.BSS	.1	0=CONSOLE MODE 1=TTY MODE		0106
000443		.BSS	.22			0107
000471	\$DCT	.BSS	.1	DIGIT COUNTER FOR INPG		0108
	*					0109
	*					0110
000100		.CRG	.0100			0111
000100	000000	.ENTR	.0	INSTRUCTION PARITY ERROR		0112
000101	001000	.JMP	.IPER			0113
000102	005151 R					
000104		.CRG	.0104			0114
000104	000000	.ENTR	.0	ADDRESS PARITY ERROR		0115
000105	001000	.JMP	.APER			0116
000106	005210 R					
000110		.CRG	.0110			0117
000110	000000	.ENTR	.0	OPERAND PARITY ERROR		0118
000111	001000	.JMP	.OPER			0119
000112	005247 R					
000114		.CRG	.0114			0120
000114	000000	.ENTR	.0	TRAP PARITY ERROR		0121
000115	001000	.JMP	.TPER			0122
000116	005306 R					
	*					0123

000500

.CRG .0500

0124

0125

* MAIN ENTRY POINT *

0126

0127

000045

PRTY .SET .045 PARITY HARDWARE DEVICE ADDRESS

0128

000500 001000

.JMP .SIRT

0129

000501 003550 R

0130

* DATA *

0131

0132

* DATA TABLE

0133

CC75300134

* DATA TABLE

0135

000502

MTW1 .BSS .1

SAVE VALID PATTERN

CC75400136

000503

MTW2 .BSS .1

SAVE PATTERN READ

CC75500137

000504

TCYC .BSS .1

TOTLE CYCLES EXECUTED

0136

000505 000000

CYCL .DATA .0

CYCLES

CC27600139

000506 000000

EMEM .DATA .0

PRINT END MEMO FLAG

CC27700140

000507 000000

TEST .DATA .0

TEST NUMBER

CC75800141

000510 000002

MTYP .DATA .2

MACHINE TYPE I=0,L=1,F=2

0142

000511

REP1 .BSS .1

REP CTR

0143

000512

REP .BSS .1

REP CTR

0144

000513 000000

FRST .DATA .0

FIRST ADDRESS

CC75900145

000514 000000

LAST .DATA .0

LAST ADDRESS

CC76000146

000515

BITS .BSS .1

BIT SELECT PATTERN

0147

000516

PAT1 .BSS .1

PATTERN 1

0146

000517

PAT2 .BSS .1

PATTERN 2

0149

000520 000000

TERR .DATA .0

ERROR TOTAL

CC46400150

000521 000000

SWCH .DATA .0

PRINT ERROR HDG FLG

CC46500151

000522 000000

SAVB .DATA .0

CC46600152

000523 000000

SAVX .DATA .0

CC46700153

0154

* TABLES HAVE THE FORM

0155

* NAME BSS 1 TABLE NAME, INDEX PTR FOR TABLE

0156

* BSS 1 MAX LENGTH OR CURRENT LENGTH OF TABLE

0157

* BSS N (DEPENDING ON ROUTINE ACCESSING TABLE

0156

* BODY OF TABLE, N=OCTAL MAX LENGTH

0159

* * * * *

0160

* * * * *

0161

* * * * *

0162

* TBLI = WORST CASE PATTERNS FOR 620/622/I MEMORIES

0163

* * * * *

0163

000524 000000

TBLI .DATA .0,4

620/I

0164

000525 000004
000526 000203
000527 004001
000530 000202
000531 004010

.DATA .0203 AMPEX
.DATA .04001 FABRI-TEK OR LITTCN
.DATA .0202 FERROXCUBE
.DATA .04010 KERONIX

0165
0166
0167
0168
0169
0170
0171
0172

*
* TBLI = WORST CASE PATTERNS FOR 620/L MEMORIES

000532 000000
000533 000002
000534 000140
000535 000144

TBLI .DATA .0.2
.DATA .0140,0144

0173

*
* TBLF = WORST CASE PATTERNS FOR 620/F MEMORIES

000536 000000
000537 000001
000540 004001

TBLF .DATA .0.1
.DATA .04001

0174
0175
0176
0177

*
* TBLO = MEMORY LOCATIONS IN FIRST 4K TO BE TESTED

000541 000000
000542 000010
000543 000002
000544 000037
000545 000044
000546 000077
000547 000120
000550 000377
000551 000622
000552 003547

TBLO .DATA .0.8
.DATA .02,037,044,077,0120,0377,0622,03547

0178
0179
0180
0181
0182

000553 000524 R
000554 000532 R
000555 000536 R
000556 000524 R

TBLI .DATA .TBLI,TBLI,TBLF,TBLI

0184

*
* TBL CONTAINS BEGINNING AND ENDING ADDRS OF MEMORY SEGMENT TO BE ESTE

000557
000560
000561

TBL .BSS .1 TBL INDEX
.BSS .1 TBL LENGTH,VARIABLE UP TO 30
.BSS .30 TBL DATA ITEMS

0185
0186
0187
0188
0189
0190
0191

```

*
*****
003550          .CRG      .03550
*
*****
*          INPUT MACHINE TYPE
*****
003550 010510  STRT  .LDA      .MTYP      INPUT MACHINE TYPE
003551 000777 S101  .HLT      .0777      /I =0  /L =1
003552 050510      .STA      .MTYP      /F =2
003553 006010      .LDAI     .0106612  RESTORE HEADING
003554 106612
003555 006030      .LDXI     .HDG1
003556 003710 R
003557 055000      .STA      .0.1
*****
*          MEMO TOP = COMMON ENTRY POINT
*****
003560 010442  MTOP  .LDA      .SCCN      CONSOLE MODE ?
003561 001010      .JAZ      .MTCM      YES
003562 003721 R
*****
*          INPUT PARAMETERS (TTY MODE)
*****
003563 006030  MTTM  .LDXI     .HDG1      *MEMORY TEST*
003564 003710 R
003565 002000      .CALL     .(OUTD)*
003566 100403 R
003567 005001      .TZA      .          PRINT HEADING ONCE
003570 006030      .LDXI     .HDG1
003571 003710 R
003572 055000      .STA      .0.1
003573 002000  MTT1  .CALL     .(ESZC)*  DETERMINE MEMORY SIZE
003574 100423 R
003575 100445      .EXC      .0400+PRTY  ENABLE PARITY INTERRUPTS
003576 030424      .LDX      .SMSM      PRINT MEMORY SIZE MESSAGE
003577 002000      .CALL     .(OUTD)*
003600 100403 R
003601 006030      .LDXI     .HDG2      *4K MEMORY MODULE(S) TO BE TESTED =*
003602 005345 R
003603 002000      .CALL     .(OUTD)*
003604 100403 R

```

000660

0192
0193
0194
0195
0196
0197
0198
0199
0200
0201
0202

0203

0204
0205
0206
0207
0208
0209

0210
0211
0212
0213

0214

0215
0216

0217
0218

0219
0220
0221

0222
0223

003605	005001	.TZA	.	INIT TBL	0224
003606	050557	.STA	.TBL		0225
003607	006010	.LEAI	.J0		0226
003610	000036				
003611	050560	.STA	.TBL+1		0227
003612	007400	MTT2	.ROF	RESET COMMA INDICATOR	0228
003613	002000		.CALL	INPUT N	0229
			.(INPG)*		
003614	100416	R			
003615	001000	R	.JMP	SS3	0230
			.MTP		
003616	003560	R			
003617	001000	R	.JMP	BACKSLASH	0231
			.MTT1+5		
003620	003600	R			
003621	007401	R	.SQF	COMMA	0232
			.	NGP	0233
003622	005011	R	.MERG		
			.011		
003623	020471	R	.LEB	TEST ALL OF MEMORY ?	0234
			.SDCT	YES,GOTO MTT4	0235
003624	001020	R	.J&Z		
			.MTT4		
003625	003640	R			
003626	002000	R	.CALL	PUT INTO TBL,PARAMETER ERROR,TEL SIZ ERR	0236
			.MTP2,TPR,TTR		
003627	004076	R			
003630	003702	R			
003631	003674	R			
003632	001001	R	.J&F	GET NEXT N IF COMMA IND SET	0237
			.MTT2		
003633	003612	R			
003634	010557	MTT3	.LDA	FIX TBL LENGTH	0238
			.TBL		
003635	050560	R	.STA		0239
			.TBL+1		
003636	001000	R	.JMP		0240
			.MTT5		
003637	003645	R			
003640	002000	MTT4	.CALL	TBL=ALL OF MEMORY	0241
			.MTP1,TTR		
003641	004015	R			
003642	003674	R			
003643	001000	R	.JMP		0242
			.MTT3		
003644	003634	R			
003645	006030	MTT5	.LDXI	CYCLES =	0243
			.HDG6		
003646	005422	R			
003647	002000	R	.CALL		0244
			.(OUTD)*		
003650	100403	R			
003651	002000	R	.CALL	INPUT CYCLES	0245
			.(INPG)*		
003652	100416	R			
003653	001000	R	.JMP	SS3 TERMINATE	0246
			.MTTM		
003654	003563	R			
003655	001000	R	.JMP	BACKSLASH	0247
			.MTT5		
003656	003645	R			

003657	001000		.JMP	.MTT6	CCMMA (PRINT *END MEMO*)	0248
003660	003666	R				
003661	050505		.STA	.CYCL	SAVE CYCLES	CC12900249
003662	005001		.TZA	.		CC13000250
003663	050506		.STA	.EMEM	SET FLAG TO SUPPRESS END MEMO	CC13100251
003664	001000		.JMP	.MINT	BRANCH TO TEST INITIALIZATION	CC13200252
003665	004202	R				
003666	050505		MTT6 .STA	.CYCL	SAVE CYCLES	0253
003667	005001		.TZA	.		CC13400254
003670	005211		.CRA	.		CC13500255
003671	050506		.STA	.EMEM	SET FLAG TO PRINT END MEMO	CC13600256
003672	001000		.JMP	.MINT		0257
003673	004202	R				
003674	006030		TTR .LDXI	.HDG3	*TOO MANY PARAMETERS*	0258
003675	005365	R				
003676	002000		.CALL	.(OUTD)*		0259
003677	100403	R				
003700	001000		.JMP	.MTT1		0260
003701	003573	R				
003702	006030		TPR .LDXI	.HDG5	*MODULE NOT WITHIN MEMORY RANGE*	0261
003703	005401	R				
003704	002000		.CALL	.(OUTD)*		0262
003705	100403	R				
003706	001000		.JMP	.MTT1		0263
003707	003573	R				
	106612		CRLF .SET	.0106612	CARRIAGE RETURN / LINE FEED	0264
003710	106612		HDG1 .DATA	.CRLF, *MEMORY TEST*, CRLF, 0		0265
003711	146705					
003712	146717					
003713	151331					
003714	120324					
003715	142723					
003716	152240					
003717	106612					
003720	000000					
						0266
						0267
						0268
						0269
						0270
003721	002000		MTCM .CALL	.(ESZC)*	X=ADDRS OF HIGHEST AVAILABLE CCRE	
003722	100423	R				
003723	100445		.EXC	.0400+PRTY	ENABLE PARITY INTERRUPTS	0271

003724	030441		.LDX	.SMEM		0272
003725	005103		.INCR	.03	SET A REG FOR ALL MEM,CONTINUE: EXECL ICN	0273
003726	004541		.LLSR	.1	INIT TBL	0274
003727	050557		.STA	.TBL		0275
003730	006010		.LDAI	.30		0276
003731	000036					
003732	050560		.STA	.TBL+1		0277
003733	005021		.TBA	.	A=10---0	0278
003734	001000		.JMP	.MTC1+1		0279
003735	003737	R				
003736	005001	MTC1	.TZA	.		0280
003737	000037		.FLT	.037	INPUT PARAMETERS	0281
003740	001004		.JAN	.MTC4	INPUT CYCLES? YES,GOTO MTC4	0282
003741	003757	R				
003742	002000		.CALL	.MTP2,MTC2,MTC3	PUT INTO TBL	0283
003743	004076	R				
003744	003750	R				
003745	003753	R				
003746	001000		.JMP	.MTC1		0284
003747	003736	R				
003750	005301	MTC2	.DECR	.01	PARAMETER EXCEEDS MEM A=-1	0285
003751	001000		.JMP	.MTC1+1		0286
003752	003737	R				
003753	013754	MTC3	.LDA	..+1	TOO MANY PARAMETERS	0287
003754	000077		.FLT	.077		0288
003755	001000		.JMP	.MTCM		0289
003756	003721	R				
003757	006150	MTC4	.ANAI	.077777	STORE CYCLES	0290
003760	077777					
003761	050505		.STA	.CYCL		0291
003762	010557		.LEA	.TBL	TEST ALL OF MEMORY	0292
003763	001010		.JAZ	.MTC6		0293
003764	003771	R				
003765	010557	MTC5	.LEA	.TBL	FIX TBL LENGTH	0294
003766	050560		.STA	.TBL+1		0295
003767	001000		.JMP	.MINT		0296
003770	004202	R				
003771	002000	MTC6	.CALL	.MTP1,MTC3	TBL=ALL OF MEMORY	0297
003772	004015	R				
003773	003753	R				
003774	001000		.JMP	.MTC5		0298
003775	003765	R				

 * PARAMETER INPUT SUBROUTINES *

* TBL = ALL OF MEMORY

003776	005302	MTP3	.DECR	.02			0299
003777	005123		.INCR	.023			0300
004000	002000		.CALL	.MTP2,MTP7,MTP5	TBL = MODULE (A)		0301
004001	004076	R					0302
004002	004013	R					0303
004003	004006	R					0304
004004	001000		.JMP	.MTP3+1			0305
004005	003777	R					0306
004006	034006	MTP5	.LEX	.MTP1	TOO MANY PARAMETERS		0307
004007	035000		.LEX	.0,1			0308
004010	074004		.STX	.MTP1			0309
004011	001000		.JMP	.(MTP1)*			0310
004012	104015	R					0311
004013	044001	MTP7	.INR	.MTP1	NORMAL EXIT		0312
004014	001000		.JMP	.0			0313
004015	000000						0314
004015		MTP1	.BES	.0	ENTRY		0315
004016	001000		.JMP	.MTP3			0316
004017	003776	R					0317
							0318
							0319
							0320
							0321
							0322
							0323
							0324
							0325
							0326
							0327

* TBL = MODULE (A)

MTP4 .JAZ .MTP8 TBL=1ST 4K? YES.GOTO MTP8
 .LRLA .12 PARAMETER EXCEEDS MEMORY ?
 .SUB .SMEM YES.GOTO MTP6
 .JAP .MTP6
 .ADD .SMEM
 .CALL .UADA,TBL,MTP0 PUT PARAMETERS INTO TBL

.CRAI .07777
 .CALL .UADA,TBL,MTP0

004036	004132	R					
004037	000557	R					
004040	004066	R					
004041	044034		.INR	.MTP2	NORMAL EXIT		0328
004042	044033		.INR	.MTP2			0329
004043	001000		.JMP	.(MTP2)*			0330
004044	104076	R					
004045	034030		MTP6	.LDX	.MTP2	PARAMETER EXCEEDS MEM	EXIT
004046	035000			.LDX	.0,1		0331
004047	074001			.STX	.*+2		0332
004050	001000			.JMP	.0		0333
004051	000000						
004052	005001		MTP8	.TZA	.	TBL=1ST 4K	0334
004053	050541			.STA	.TBL0		0335
004054	002000			.CALL	.UACA,TBL0,MTPA	TRANSFER TBLs	0336
004055	004173	R					
004056	000541	R					
004057	004073	R					
004060	002000			.CALL	.UADA,TBL,MTP0		0337
004061	004132	R					
004062	000557	R					
004063	004066	R					
004064	001000			.JMP	.MTP8+2		0338
004065	004054	R					
004066	034007		MTP0	.LDX	.MTP2	TBL CVFL EXIT	0339
004067	035001			.LDX	.1,1		0340
004070	074001			.STX	.*+2		0341
004071	001000			.JMP	.0		0342
004072	000000						0343
004073	044002		MTPA	.INR	.MTP2	NORMAL EXIT	0344
004074	044001			.INR	.MTP2		0345
004075	001000			.JMP	.0		0346
004076	000000						
004076			MTP2	.SES	.0	ENTRY	0347
004077	001000			.JMP	.MTP4		0348
004100	004020	R					
		*					0349
		*					0350
		*					0351
		*					0352
		*					0353
		*					0354

 *
 * PUT ITEM INTO TABLE *
 *

```

*          *****
*          CALL      UADA,TBLPTR,OVFLEXIT INCR ( )TBLPTR,IF.GT.( )TBLPTR+1
*                                     GOTO OVFLEXIT,ELSE
*                                     ( )TBLPTR+( )TBLPTR)=A
*          TBL=INDEX,TBLSIZE,ITEM1,....,ITEMN
*          UADB      .LDX      .UADA      B=TBLPTR
004101  034030
004102  025000      .LDB      .0,1
004103  046000      .INR      .0,2      INCR ( )TBLPTR
004104  016001      .LDA      .1,2      IF ( )TBLPTR .GT. ( )TBLPTR+1),GOTO EN EXIT
004105  146000      .SUB      .0,2
004106  001004      .JAN      .UADC
004107  004123  R
004110  005121      .INCR      .021
004111  126000      .ADD      .0,2
004112  005012      .TAB      .
004113  014024      .LDA      .UADD      RESTORE A,B,X
004114  056000      .STA      .0,2
004115  024023      .LDB      .UADD+1
004116  034023      .LDX      .UADD+2
004117  044012      .INR      .UADA      EXIT (RETURN+2)
004120  044011      .INR      .UADA
004121  001000      .JMP      .(UADA)*
004122  104132  R
004123  015001  UADC .LDA      .1,1      SET EXIT
004124  054004      .STA      .UADA-1      RESTORE A,B,X
004125  014012      .LDA      .UADD
004126  024012      .LDB      .UADD+1
004127  034012      .LDX      .UADD+2
004130  001000      .JMP      .*      OVFLEXIT (RETURN+1)*
004131  004130  R
004132  000000  UADA .ENTR      .      ENTRY POINT
004133  054004      .STA      .UADD      SAVE A,B,X
004134  064004      .STB      .UADD+1
004135  074004      .STX      .UADD+2
004136  001000      .JMP      .UADB      CONTINUE
004137  004101  R
004140  UADD .BSS      .3
*
*
*          *****
*          *
*          * GET NEXT ITEM FROM TABLE *
*

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0355
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*
*
* CALL UACA,TBLPTR,ENDEXIT (A)=()(TBL+1+()(TBLPTR))
*
* TBL=INDEX,TBLSIZE,ITEM1,....,ITEMN
004143 034027 UACB .LDX .UACA (B)=TBLPTR
004144 025000 .LDB .0.1
004145 046000 .INR .0.2 INCR ()TBLPTR
004146 016001 .LDA .1.2 IF ()TBLPTR .GT. ()(TBLPTR+1),GOTO EN EXIT
004147 146000 .SUB .0.2
004150 001004 .JAN .UACC
004151 004164 R
004152 005121 .INCR .021 (A)=()(TBLPTR+1+()(TBLPTR))
004153 126000 .ADD .0.2
004154 005012 .TAB .
004155 016000 .LDA .0.2
004156 024021 .LDB .UACD RESTORE B,X
004157 034021 .LDX .UACD+1
004160 044012 .INR .UACA EXIT (RETURN+2)
004161 044011 .INR .UACA
004162 001000 .JMP .(UACA)*
004163 104173 R
004164 016001 UACC .LDA .1.2 (A)=TBLSIZE
004165 035001 .LDX .1.1 SETEXIT
004166 074003 .STX .UACA-1
004167 024010 .LDB .UACD RESTORE B,X
004170 034010 .LDX .UACD+1
004171 001000 .JMP .0 EXIT (RETURN+1)* *GOTO ENDEXIT
004172 000000
004173 000000 UACA .ENTR . ENTRY POINT
004174 064003 .STB .UACD SAVE B,X
004175 074003 .STX .UACD+1
004176 001000 .JMP .UACB CONTINUE
004177 004143 R
004200 UACD .BSS .2 (B).(X)
*
*****
* SUBTEST DRIVER, AND CYCLS COUNTER *
*****
004202 005001 MINT .TZA .
004203 050520 .STA .TERR INIT ERROR CTR
004204 050521 .STA .SWCH SET TO PRINT ERROR TABLE HEADING

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CC14100428
CC14200429
CC14300430

004205	050504		.STA	.TCYC	TOTAL CYCLES EXECUTED = 0	0431
004206	007400	MIN1	.ROF	.	RESET ERROR INDICATOR	0432
004207	002000		.CALL	.TUAT	UNIQUE ADDRS	0433
004210	004431	R				
004211	005001		.TZA	.	INIT TBL	0434
004212	050557		.STA	.TBL		0435
004213	002000	MIN2	.CALL	.UACA.TBL.MIN3	GET FRST ADDRS	0436
004214	004173	R				
004215	000557	R				
004216	004237	R				
004217	050513		.STA	.FRST		0437
004220	002000		.CALL	.UACA.TBL.MIN3	GET LAST ADDRS	0438
004221	004173	R				
004222	000557	R				
004223	004237	R				
004224	050514		.STA	.LAST		0439
004225	002000		.CALL	.TAZT	ALL ZEROS	0440
004226	004546	R				
004227	002000		.CALL	.TACT	ALL ONES	0441
004230	004573	R				
004231	002000		.CALL	.TCBT	CHECKERBOARD	0442
004232	004621	R				
004233	002000		.CALL	.TWCT	WORST CASE	0443
004234	004755	R				
004235	001000		.JMP	.MIN2	CONTINUE TO NEXT CASE	0444
004236	004213	R				
004237	002000	MIN3	.CALL	.DEM	DISPLAY 'END MEMO'	0445
004240	004252	R				
004241	010505		.LDA	.CYCL	CONTINUES ?	0446
004242	001010		.JAZ	.MIN1	YES.GOTO MIN1	0447
004243	004206	R				
004244	005311		.DAR	.	NO.DONE ?	0448
004245	050505		.STA	.CYCL		0449
004246	001010		.JAZ	.TERM	YES.GOTO TERM	0450
004247	004270	R				
004250	001000		.JMP	.MIN1	NO.CONTINUE TO MIN1	0451
004251	004206	R				
004252	000000	DEM	.ENTR	.0	DISPLAY END MEMO	0452
004253	040504		.INR	.TCYC	TCYC = TCYC+1	0453
004254	010442		.LDA	.SCCN	CONSOLE MODE? YES.RETURN	0454
004255	001010		.JAZ	.(DEM)*		0455
004256	104252	R				

004257	010506	LD	EMEM	SUPPRESS MESSAGE ? YES	RETURN	0456
004260	001010	JAZ	(DEM)*			0457
004261	104252	R				
004262	006030	LDXI	HDG8	'END MEMO'		0458
004263	005431	R				
004264	002000	CALL	(GUTD)*			0459
004265	100403	R				
004266	001000	JMP	(DEM)*	RETURN		0460
004267	104252	R				

 * TERMINATE TESTS *

004270	100545	TERM	EXC	0500+PRTY	DISABLE PARITY INTERRUPTS	0461
004271	010442		LDA	SCGN	TERMINATE TEST, REPORT TOTALS	0462
004272	001010		JAZ	TERN	MODE = CONSOLE ? YES GC IC TERN	0463
004273	004316	R				0464
004274	006030	LDXI	HDG9	'ERROR TOTAL ='	TERR	0465
004275	005437	R				
004276	002000	CALL	(GUTD)*			0466
004277	100403	R				
004300	010520	LD	TERR			0467
004301	002000	CALL	(GUTE)*			0468
004302	100404	R				
004303	006030	LDXI	HG11	'NO. CYCLES RUN ='		0469
004304	005472	R				
004305	002000	CALL	(GUTD)*			0470
004306	100403	R				
004307	010504	LD	TCYC	TOTAL CYCLES EXECUTED		0471
004310	002000	CALL	(GUTE)*			0472
004311	100404	R				
004312	002000	CALL	(GUTC)*			0473
004313	100402	R				
004314	001000	JMP	MTCP	CONTINUE		0474
004315	003560	R				
004316	010520	TERM	LDA	TERR	A = TOTAL ERRORS	0475
004317	020504		LDB	TCYC	B = NO. CYCLES	0476
004320	030507		LDB	TEST	X = CURRENT (OR LAST) TEST	0477
004321	000777		HLT	0777	DISPLAY TOTALS	0478
004322	001000	JMP	MTCP	CONTINUE		0479
004323	003560	R				0480

 * ERROR REPORTING ROUTINE *

CC18900469
0470

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0483

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*****
004324 000000 MERR .ENTR .0
004325 007401 .SCF .
004326 040520 .INR .TERR INCR ERR CTR
004327 060522 .STB .SAVB SAVE B (#TEST CYCLES)
004330 070523 .STX .SAVX ERROR ADDRESS
004331 010507 .LDA .TEST
004332 054004 .STA .ERR1+2 GET TEST NO.
004333 010502 .LDA .MTW1 EXPECTED
004334 020503 .LDB .MTW2 ACTUAL
004335 002000 ERR1 .CALL .(SSWT)* CALL SENSE SWITCH ROUTINE
004336 100421 R
004337 000000 .DATA .0 TEST#
004340 104347 R .DATA .(ERPO)* ERR PRINTOUT
004341 004270 R .DATA .TERM 893 EXIT
004342 004416 R .DATA .ELCP LOOP ON ERROR
004343 020522 .LDB .SAVB RESTORE B
004344 030523 .LDX .SAVX
004345 001000 .JMP* .MERR PROCEED WITH TEST
004346 104324 R

* ERROR PRINTOUT SUBROUTINE
004347 000000 ERPO .ENTR .0
004350 002000 .CALL .(OUTC)*
004351 100402 R
004352 010521 .LDA .SWCH
004353 001010 .JAZ .**4
004354 004357 R
004355 001000 .JMP .ERP1
004356 004364 R
004357 040521 .INR .SWCH SET TO BYPASS HEADING
004360 006030 .LDXI .HG10
004361 005450 R
004362 002000 .CALL .(OUTD)*
004363 100403 R
004364 010507 ERP1 .LDA .TEST TEST NO.
004365 002000 .CALL .(OUTE)*
004366 100404 R
004367 010523 .LDA .SAVX ADDR
004370 002000 .CALL .(OUTE)*
004371 100404 R
004372 006010 .LDAI .0120240
004373 120240

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0484
CC41600485
0486
CC41700487
CC41800488
CC41900489
CC42000490
CC42100491
CC42200492
CC42300493
0494
CC42600495
CC42700496
0497
CC42900498
CC43100499
CC43200500
CC43300501
CC43700502
CC43800503
0504
CC44000505
CC44100506
CC44200507
CC44300508
CC44400509
0510
CC44600511
0512
CC45200513
0514
CC45400515

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004374	002000		.CALL	.(OUTB)*		0516
004375	100401	R				
004376	010502		.LDA	.MTW1	EXP	0045600517
004377	002000		.CALL	.(OUTE)*		0518
004400	100404	R				
004401	006010		.LEAI	.0120240		0045800519
004402	120240					
004403	002000		.CALL	.(OUTB)*		0520
004404	100401	R				
004405	002000		.CALL	.(OUTA)*		0521
004406	100400	R				
004407	010503		.LDA	.MTW2	ACTUAL	0046100522
004410	002000		.CALL	.(OUTE)*		0523
004411	100404	R				
004412	001000		.JMP*	.ERPO	RETURN	0046300524
004413	104347	R				

 * LOOP ON ERROR *

004414	001200		.JSS2	.ERR1-2	SS2 EXIT FROM LOOPING	0525
004415	004333	R				0526
004416	001400		ELOP	.JSS3	.TERM	SS3 EXIT
004417	004270	R				0527
004420	010502		.LDA	.MTW1		0528
004421	005000		.NCP	.		0529
004422	135000		.ERA	.0,1	READ ERROR WORD	0530
004423	001010		.JAZ	.ELCP-2	ERROR AGAIN? NO, TRY AGAIN	0531
004424	004414	R				0532
004425	130502		.ERA	.MTW1	RESTORE	0533
004426	050503		.STA	.MTW2		0534
004427	001000		.JMP	.ERR1-2	REPORT	0535
004430	004333	R				0536

 * SUBTEST ROUTINES *

*
 * UNIQUE ADDRS *
 *

004431	000000		TUAT	.ENTR	.0	
004432	006010			.LEAI	.1	TEST = 1
004433	000001					
004434	050507		.STA	.TEST		0537

 * SUBTEST ROUTINES *

*
 * UNIQUE ADDRS *
 *

004431	000000		TUAT	.ENTR	.0	
004432	006010			.LEAI	.1	TEST = 1
004433	000001					
004434	050507		.STA	.TEST		0538

004435	005001		.TZA	.	INIT TBL	0546
004436	050557		.STA	.TBL		0547
004437	002000	TUAA	.CALL	.UACA.TBL.TUAB	GET FRST	0548
004440	004173	R				
004441	000557	R				
004442	004457	R				
004443	050513		.STA	.FRST		0549
004444	002000		.CALL	.UACA.TBL.TUAB	GET LAST	0550
004445	004173	R				
004446	000557	R				
004447	004457	R				
004450	050514		.STA	.LAST		0551
004451	001400		.JSSJ	.TERM	SS3 TERMINATE TESTS	0552
004452	004270	R				
004453	002000		.CALL	.IUA	INIT MEMORY	0553
004454	004504	R				
004455	001000		.JMP	.TUAA	CONTINUE	0554
004456	004437	R				
004457	005001	TUAB	.TZA	.	INIT TBL	0555
004460	050557		.STA	.TBL		0556
004461	006010		.LEAI	.1	REP = 1	0557
004462	000001					
004463	050512		.STA	.REP		0558
004464	002000	TUAC	.CALL	.UACA.TBL.(TUAT)*	GET FRST	0559
004465	004173	R				
004466	000557	R				
004467	104431	R				
004470	050513		.STA	.FRST		0560
004471	002000		.CALL	.UACA.TBL.(TUAT)*	GET LAST	0561
004472	004173	R				
004473	000557	R				
004474	104431	R				
004475	050514		.STA	.LAST		0562
004476	001400		.JSSJ	.TERM	SS3 TERMINATE TESTS	0563
004477	004270	R				
004500	002000		.CALL	.TUA	TEST UNIQUE ADDRS	0564
004501	004516	R				
004502	001000		.JMP	.TUAC	CONTINUE	0565
004503	004464	R				
		* IUA			INIT UNIQUE ADDRS	0566
004504	000000		.ENTR	.0		0567
004505	030513		.LDB	.FRST		0568

004506	005041	IUA1	.TXA	.	()X = X	0569
004507	055000		.STA	.0.1		0570
004510	005144		.IXR	.	X = X+1	0571
004511	140514		.SUB	.LAST	DONE ?	0572
004512	001004		.JAN	.IUA1	NO. CONTINUE	0573
004513	004506	R				
004514	001000		.JMP	.(ILA)*	RETURN	0574
004515	104504	R				
		*	TEST	UNIQUE	ADDRS	0575
004516	000000	TUA	.ENTR	.0		0576
004517	020512		.LDB	.REP	B * REP	0577
004520	030513		.LCX	.FRST	X = FRST	0578
004521	005041	TUA1	.TXA	.	()X = X ?	0579
004522	135000		.ERA	.0.1		0580
004523	001010		.JAZ	.**+7		0581
004524	004532	R				
004525	070502		.STX	.MTW1	NO. CALL MERR	0582
004526	130502		.ERA	.MTW1		0583
004527	050503		.STA	.MTW2		0584
004530	002000		.CALL	.MERR		0585
004531	004324	R				
004532	005041		.TXA	.	A = X	0586
004533	005144		.IXR	.	X = X+1	0587
004534	140514		.SUB	.LAST	DONE ?	0588
004535	001004		.JAN	.TUA1	NO. CONTINUE	0589
004536	004521	R				
004537	001020		.JBZ	.TUA+1	CONTINUES ? YES	0590
004540	004517	R				
004541	005322		.DBR	.	DONE ?	0591
004542	001020		.JBZ	.(TUA)*	YES. RETURN	0592
004543	104516	R				
004544	001000		.JMP	.TUA+1	NO. CONTINUE	0593
004545	004517	R				
		*****				0594
		*				0595
		*	ALL	ZEROS		0596
		*				0597
004546	000000	TAZT	.ENTR	.0	ENTRY/EXIT	0598
004547	002000		.CALL	.IAZ	INIT	0599
004550	004560	R				
004551	006010		.LDAI	.3	REP = 3	0600
004552	000003					

004553	050512	.STA	.REP		0601
004554	002000	.CALL	.TES	TEST PATTERN	0602
004555	005113	R			
004556	001000	.JMP	.(TAZT)*	RETURN	0603
004557	104546	R			
		* IAZ	INIT ALL ZEROS		0604
004560	000000	.ENTR	.0		0605
004561	006010	.LDAI	.2	TEST = 2	0606
004562	000002				
004563	050507	.STA	.TEST		0607
004564	005001	.TZA	.	BITS = 0	0608
004565	050515	.STA	.BITS		0609
004566	050516	.STA	.PAT1	PATTERN1 = 0	0610
004567	002000	.CALL	.SET	SET PATTERN INTO MEMORY	0611
004570	005076	R			
004571	001000	.JMP	.(IAZ)*		0612
004572	104560	R			
		*****			0613
		* IAO	INIT ALL ONES		0614
		* TAOT	ENTRY/EXIT		0615
004573	000000	.ENTR	.0	INIT	0616
004574	002000	.CALL	.IAC		0617
004575	004605	R			0618
004576	006010	.LDAI	.3	REP = 3	0619
004577	000003				
004600	050512	.STA	.REP		0620
004601	002000	.CALL	.TES	TEST PATTERN	0621
004602	005113	R			
004603	001000	.JMP	.(TAOT)*	RETURN	0622
004604	104573	R			
		* IAO	INIT ALL ONES		0623
004605	000000	.ENTR	.0		0624
004606	006010	.LDAI	.3	TEST = 3	0625
004607	000003				
004610	050507	.STA	.TEST		0626
004611	005001	.TZA	.	BITS = 0	0627
004612	050515	.STA	.BITS		0628
004613	005211	.CPA	.	PATTERN1 = 1'S	0629
004614	050516	.STA	.PAT1	PATTERN1 = 1'S	0630
004615	002000	.CALL	.SET	SET PATTERN INTO MEMORY	0631
004616	005076	R			

004617	001000	.JMP	.(IAO)*		0632
004620	104605	R			

		*			0633
		*	CHECKER BOARD		0634
		*			0635
		*			0636
004621	000000	TCBT	.ENTR	.0	0637
004622	006010		.LDAI	.3	0638
				REP = 3	
004623	000003				
004624	050512		.STA	.REP	0639
004625	002000		.CALL	.ICB	0640
				INIT CHECKER BOARD	
004626	004637	R			
004627	002000		.CALL	.TCB	0641
				TEST CHECKER BOARD	
004630	004710	R			
004631	002000		.CALL	.ICBC	0642
				INIT CHECKER BOARD COMPLIMENTED	
004632	004646	R			
004633	002000		.CALL	.TCB	0643
				TEST CHECKER BOARD	
004634	004710	R			
004635	001000		.JMP	.(TCBT)*	0644
004636	104621	R			
		*	INIT CHECKER BOARD		0645
004637	000000	ICB	.ENTR	.0	0646
004640	002000		.CALL	.ICB1	0647
				B = 0252525	
004641	004656	R			
004642	002000		.CALL	.ICB2	0648
				WRITE B AND NOT B INTO MEMCRY	
004643	004672	R			
004644	001000		.JMP	.(ICB)*	0649
004645	104637	R			
		*	INIT CHECKER BOARD COMPLIMENTED		0650
004646	000000	ICBC	.ENTR	.0	0651
004647	002000		.CALL	.ICB1	0652
				B = 0525252	
004650	004656	R			
004651	005222		.CPB	.	0653
004652	002000		.CALL	.ICB2	0654
				WRITE B AND NOT B INTO MEMCRY	
004653	004672	R			
004654	001000		.JMP	.(ICBC)*	0655
004655	104646	R			
004656	000000	ICB1	.ENTR	.	0656
004657	006010		.LDAI	.4	0657
				TEST = 4	
004660	000004				
004661	050507		.STA	.TEST	0658
004662	006010		.LDAI	.0525	0659
				B = 252525	

004663	000525				
004664	004250	.LRLA	.8		0660
004665	006110	.CRAI	.0525		0661
004666	000525				
004667	005012	.TAB	.		0662
004670	001000	.JMP	.(ICB1)*	RETURN	0663
004671	104656	R			
		* ICB2			0664
004672	000000	.ENTR	.		0665
004673	030513	.LIX	.FRST	X = FRST	0666
004674	005221	.DATA	.05221	A = NOT (B) .WRITE PATTERN	0667
004675	065000	.STB	.0.1		0668
004676	005144	.IXR	.		0669
004677	055000	.STA	.0.1		0670
004700	005144	.IXR	.		0671
004701	005041	.TXA	.	DONE?	0672
004702	140514	.SUB	.LAST		0673
004703	005311	.DAR	.		0674
004704	001010	.JAZ	.(ICB2)*	DONE ? YES,RETURN	0675
004705	104672	R			
004706	001000	.JMP	.ICB2+2	CONTINUE	0676
004707	004674	R			
		* TEST CHECKER BOARD			0677
004710	000000	TCB .ENTR	.0		0678
004711	010512	.LDA	.REP	REP1 = REP	0679
004712	050511	.STA	.REP1		0680
004713	030513	.LDX	.FRST	READ PATTERN . INIT	0681
004714	060502	TCBB .STB	.MTW1	EXPECTED = PATTERN	0682
004715	005021	.TBA	.	TEST FIRST WORD	0683
004716	135000	.ERA	.0.1		0684
004717	001010	.JAZ	.**+6		0685
004720	004725	R			
004721	130502	.ERA	.MTW1	BAD,CALL MERR	0686
004722	050503	.STA	.MTW2		0687
004723	002000	.CALL	.MERR		0688
004724	004324	R			
004725	005221	.DATA	.05221	OK.	0689
004726	005144	.IXR	.	TEST SECOND WORD	0690
004727	050502	.STA	.MTW1		0691
004730	135000	.ERA	.0.1		0692
004731	001010	.JAZ	.**+6		0693
004732	004737	R			

004733	130502	.ERA	.MTW1	BAD,CALL MERR	0694
004734	050503	.STA	.MTW2		0695
004735	002000	.CALL	.MERR		0696
004736	004324	R			
004737	005041	.TXA	.	DONE?	0697
004740	005144	.IXR	.		0698
004741	140514	.SUB	.LAST		0699
004742	001004	.JAN	.TCBB	NO,CONTINUE	0700
004743	004714	R			
004744	010511	.LDA	.REP1	CONTINUES ?	0701
004745	001010	.JAZ	.TCBB-1	YES,CONTINUE	0702
004746	004713	R			
004747	005311	.DAR	.		0703
004750	001010	.JAZ	.(TCB)*	DONE ? YES,RETURN	0704
004751	104710	R			
004752	050511	.STA	.REP1		0705
004753	001000	.JMP	.TCBB-1	CONTINUE	0706
004754	004713	R			

*
* WORST CASE TEST
*

004755	000000	TWCT	.ENTR	.0	SELECT WORST CASE PATTERN TABLE	0711
004756	006010		.LDAI	.4	TEST = 4 + N	0712
004757	000004					
004760	050507		.STA	.TEST		0713
004761	006010		.LDAI	.3	REP = 3	0714
004762	000003					
004763	050512		.STA	.REP		0715
004764	010510		.LDA	.MTYP		0716
004765	006150		.ANAI	.03	GET TBL ADDRS	0717
004766	000003					
004767	006120		.ADDI	.TBL1	TBL1 = TBL1,TBL2,TBL3,TBL4	0718
004770	000553	R				
004771	005012		.TAB	.		0719
004772	026000		.LDB	.0,2		0720
004773	005001	TWCA	.TZA	.	INIT TBL	0721
004774	056000		.STA	.0,2		0722
004775	064002		.STB	.TWCB+2		0723
004776	002000	TWCB	.CALL	.UACA,0,(TWCT)*	GET WORST CASE PATTERN FROM TABLE	0724
004777	004173	R				
005000	000000					

```

005001 104755 R
005002 002000      .CALL  .IWC          INIT WORST CASE          0725
005003 005014 R
005004 002000      .CALL  .TES          TEST PATTERN          0726
005005 005113 R
005006 002000      .CALL  .IWCC         INIT WORST CASE COMPLIMENT 0727
005007 005027 R
005010 002000      .CALL  .TES          TEST MEMORY          0728
005011 005113 R
005012 001000      .JMP   .TWCB
005013 004776 R
*      INIT WORST CASE          0730
IWC   .ENTR  .0          0731
005014 000000      .STA  .BITS          0732
005015 050513      .TZA  .              PAT1 = 0          0733
005016 005001      .STA  .PAT1          0734
005017 050516      .CPA  .              PAT2 = 1          0735
005020 005211      .STA  .PAT2          0736
005021 050517      .CALL  .SET          SET PATTERN INTO MEMORY 0737
005022 002000
005023 005076 R
005024 040507      .INR  .TEST         TEST = TEST + 1          0738
005025 001000      .JMP  .(IWC)*      0739
005026 105014 R
*      INIT WORST CASE COMPLIMENT 0740
IWCC  .ENTR  .0          0741
*      0742
005030 005001      .TZA  .              COMPLIMENT PAT1 AND PAT2 0743
005031 050517      .STA  .PAT2          0744
005032 005211      .CPA  .              0745
005033 050516      .STA  .PAT1          0746
005034 002000      .CALL  .SET          SET PATTERN INTO MEMORY 0747
005035 005076 R
005036 001000      .JMP  .(IWCC)*      0748
005037 105027 R
*****
*      MISC ROUTINES          *          0749
*****          0750
*      DERIVE ADDRS PARITY          0751
*          0752
*      ADDRS IN (A),RETURN PAT(0/1) 0753
*          0754
*          0755
005040 000000      DAP  .ENTR  .0          ENTRY/EXIT          0756

```


005041	001400		.JSS3	.TERM	SS3 TERMINATE TESTS	0757
005042	004270	R				
005043	064030		.STB	.DAP3	SAVE B	0758
005044	074030		.STX	.DAP3+1	SAVE X	0759
005045	005006		.ZERO	.06	ZERO B,X	0760
005046	030513		.LDX	.FRST	ATTEMPT TO MAKE CONSOLE LIGHTS MORE VISIBLE	0761
005047	150515		.ANA	.BITS	SELECT BITS	0762
005050	001010	DAP1	.JAZ	.DAP2	DONE ?	0763
005051	005061	R				
005052	004541		.LLSR	.1	NO,GET NEXT BIT	0764
005053	001020		.JBZ	.DAP1	EVEN PARITY?	0765
005054	005050	R				
005055	005144		.IXR	.	NO	0766
005056	005002		.TZB	.	RESET B	0767
005057	001000		.JMP	.DAP1	CONTINUE	0768
005060	005050	R				
005061	005041	DAP2	.TXA	.	A=PAT1 IF EVEN	0769
005062	006150		.ANAI	.1	A=PAT2 IF ODD	0770
005063	000001					
005064	006120		.ADDI	.PAT1		0771
005065	000516	R				
005066	005014		.TAX	.		0772
005067	015000		.LEA	.0,1		0773
005070	024003		.LDB	.DAP3	RETURN	0774
005071	034003		.LDX	.DAP3+1		0775
005072	001000		.JMP	.(DAP)*		0776
005073	105040	R				
005074		DAP3	.BSS	.2		0777
		*				0778
		*	SET			0779
		*			SET MEMORY TO TEST PATTERN	0780
		*			FRST, LAST, BITS, PAT1, PAT2	0781
		*				0782
005076	000000	SET	.ENTR	.0	ENTRY/EXIT	0783
005077	030513		.LDX	.FRST	X=FIRST ADDR	0784
005100	005041	SET1	.TXA	.	DERIVE ADDR PATTERN	0785
005101	002000		.CALL	.DAP		0786
005102	005040	R				
005103	055000		.STA	.0,1	STORE PATTERN	0787
005104	005041		.TXA	.	DONE?	0788
005105	140514		.SUB	.LAST		0789
005106	001010		.JAZ	.(SET)*	YES, RETURN	0790

005107	105076	R							
005110	005144		.IXR	.	ADDRS = ADDRS+1				0791
005111	001000		.JMP	.SET1	CONTINUE				0792
005112	005100	R							
			*						0793
			*	TES					0794
			*		TEST MEMORY PATTERN				0795
			*		REP,FRST,LAST,BITS,PAT1,PAT2				0796
			*						0797
005113	000000		TES	.ENTR	.0	ENTRY/EXIT			0798
005114	020512			.LDB	.REP	B = REPETITIONS			0799
005115	030513			.LDX	.FRST	X = FIRST ADDRS			0800
005116	005041		TES1	.TXA	.	DERIVE ADDRS PATTERN			0801
005117	002000			.CALL	.DAP				0802
005120	005040	R							
005121	050502			.STA	.MTW1				0803
005122	015000			.LDA	.0,1	GET ACTUAL PATTERN			0804
005123	050503			.STA	.MTW2				0805
005124	130502			.ERA	.MTW1	ERROR?			0806
005125	001010			.JAZ	..+4				0807
005126	005131	R							
005127	002000			.CALL	.MERR	YES,CALL MERR			0808
005130	004324	R							
005131	001400			.JSSJ	.TERM	SSJ TERMINATE TESTS			0809
005132	004270	R							
005133	005041			.TXA	.	DONE?			0810
005134	140514			.SUB	.LAST				0811
005135	001010			.JAZ	.TES2	YES,JMP TES2			0812
005136	005142	R							
005137	005144			.IXR	.	ADVANCE X TO NEXT WORD			0813
005140	001000			.JMP	.TES1	CONTINUE			0814
005141	005116	R							
005142	001020		TES2	.JBZ	.TES+2	CONTINUES ?,YES			0815
005143	005115	R							
005144	005322			.DBR	.	NO,DONE ?			0816
005145	001020			.JBZ	.(TES)*	YES,RETURN			0817
005146	105113	R							
005147	001000			.JMP	.TES+2	NO,CONTINUE			0818
005150	005115	R							
			*						0819
			*						0820
			*						0821

 * PARITY ERROR REPORTING ROUTINES *

*****				0822	
005151		I PER	.BSS .0	INSTRUCTION PARITY ERROR PROCESSOR	0823
005151	100545		.EXC .0500+PRTY	DISABLE PARITY INTERRUPTS	0824
005152	054032		.STA .IPEA	SAVE A	0825
005153	064032		.STB .IPEB	B	0826
005154	074032		.STX .IPEX	AND X	0827
005155	010100		.LDA .0100	A=ERROR ADDRESS	0828
005156	006020		.LDBI .0100	B=TRAP LOCATION	0829
005157	000100				
005160	002000		.CALL .(SSWT)*	CALL SENSE SWITCH ROUTINE	0830
005161	100421 R				
005162	005000		.DATA .05000	NOP	0831
005163	105171 R		.DATA .(IPE1)*	ERR PRINTOUT	0832
005164	004270 R		.DATA .TERM	SS3 EXIT	0833
005165	005166 R		.DATA .**1		0834
005166	000020		.HLT .020		0835
005167	001000		.JMP .TERM		0836
005170	004270 R				
*					
005171	000000	IPE1	.DATA .0		0837
005172	006030		.LDXI .HG12		0838
005173	005507 R				
005174	002000		.CALL .(OUTD)*	OUTPUT ERR MESSAGE	0840
005175	100403 R				
005176	010100		.LDA .0100		0841
005177	002000		.CALL .(OUTE)*	AND PARITY ERROR ADDRESS	0842
005200	100404 R				
005201	002000		.CALL .(OUTC)*	CR/LF	0843
005202	100402 R				
005203	001000		.JMP* .IPE1		0844
005204	105171 R				
005205	000000	IPEA	.DATA .0	REGISTER	0845
005206	000000	IPEB	.DATA .0	SAVE	0846
005207	000000	IPEX	.DATA .0	AREA	0847
*					
005210		APER	.BSS .0	ADDRESS PARITY ERROR PROCESSOR	0849
005210	100545		.EXC .0500+PRTY	DISABLE PARITY INTERRUPTS	0850
005211	054032		.STA .APEA	SAVE A	0851
005212	064032		.STB .APEB	B	0852
005213	074032		.STX .APEX	AND X	0853
005214	010104		.LDA .0104	A=ERROR ADDRESS	0854
005215	006020		.LDBI .0104	B=TRAP LOCATION	0855

005216	000104					
005217	002000		.CALL	.(SSWT)*	CALL SENSE SWITCH ROUTINE	0856
005220	100421	R				
005221	005000		.DATA	.05000	NOP	0857
005222	105230	R	.DATA	.(APE1)*	ERR PRINTOUT	0858
005223	004270	R	.DATA	.TERM	SS3 EXIT	0859
005224	005225	R	.DATA	.**+1		0860
005225	000021		.HLT	.021		0861
005226	001000		.JMP	.TERM		0862
005227	004270	R				
			*			0863
005230	000000		APE1 .DATA	.0		0864
005231	006030		.LXI	.HG13		0865
005232	005527	R				
005233	002000		.CALL	.(OUTD)*	OUTPUT ERR MESSAGE	0866
005234	100403	R				
005235	010104		.LDA	.0104		0867
005236	002000		.CALL	.(OUTE)*	AND PARITY ERROR ADDRESS	0868
005237	100404	R				
005240	002000		.CALL	.(OUTC)*	CR/LF	0869
005241	100402	R				
005242	001000		.JMP*	.APE1		0870
005243	105230	R				
005244	000000		APEA .DATA	.0	REGISTER	0871
005245	000000		APEB .DATA	.0	SAVE	0872
005246	000000		APEX .DATA	.0	AREA	0873
			*			0874
005247			OPER .BSS	.0	OPERAND PARITY ERROR PROCESSOR	0875
005247	100545		.EXC	.0500+PRTY	DISABLE PARITY INTERRUPTS	0876
005250	054032		.STA	.OPEA	SAVE A	0877
005251	064032		.STB	.OPEB	B	0878
005252	074032		.STX	.OPEX	AND X	0879
005253	010110		.LDA	.0110	A=ERROR ADDRESS	0880
005254	006020		.LDBI	.0110	B=TRAP LOCATION	0881
005255	000110					
005256	002000		.CALL	.(SSWT)*	CALL SENSE SWITCH ROUTINE	0882
005257	100421	R				
005260	005000		.DATA	.05000	NOP	0883
005261	105267	R	.DATA	.(OPE1)*	ERR PRINTOUT	0884
005262	004270	R	.DATA	.TERM	SS3 EXIT	0885
005263	005264	R	.DATA	.**+1		0886
005264	000022		.HLT	.022		0887

005265	001000		.JMP	.TERM		0888
005266	004270	R				
			*			0889
005267	000000		OPE1	.DATA	.0	0890
005270	006030			.LXI	.HG14	0891
005271	005545	R				
005272	002000		.CALL	.(OUTD)*	OUTPUT ERR MESSAGE	0892
005273	100403	R				
005274	010110		.LDA	.0110		0893
005275	002000		.CALL	.(OLTE)*	AND PARITY ERROR ADDRESS	0894
005276	100404	R				
005277	002000		.CALL	.(OUTC)*	CR/LF	0895
005300	100402	R				
005301	001000		.JMP*	.OPE1		0896
005302	105267	R				
			*			0897
005303	000000		OPEA	.DATA	.0	REGISTER
005304	000000		OPEB	.DATA	.0	SAVE
005305	000000		OPEX	.DATA	.0	AREA
			*			0900
005306			TPER	.BGS	.0	TRAP PARITY ERROR PROCESSOR
005306	100545			.EXC	.0500+PRTY	DISABLE PARITY INTERRUPTS
005307	054032			.STA	.TPEA	SAVE A
005310	064032			.STB	.TPEB	B
005311	074032			.STX	.TPEX	AND X
005312	010114			.LDA	.0114	A=ERROR ADDRESS
005313	006020			.LDBI	.0114	B=TRAP LOCATION
005314	000114					0908
005315	002000		.CALL	.(SSWT)*	CALL SENSE SWITCH ROUTINE	0909
005316	100421	R				
005317	005000		.DATA	.05000	NOP	0910
005320	105326	R	.DATA	.(TPE1)*	ERR PRINTOUT	0911
005321	004270	R	.DATA	.TERM	SS3 EXIT	0912
005322	005323	R	.DATA	.*+1		0913
005323	000023		.HLT	.023		0914
005324	001000		.JMP	.TERM		0915
005325	004270	R				
			*			0916
005326	000000		TPE1	.DATA	.0	0917
005327	006030			.LXI	.HG15	0918
005330	005563	R				
005331	002000		.CALL	.(OUTD)*	OUTPUT ERR MESSAGE	0919

005332	100403	R						
005333	010114		.LDA	.0114			0920	
005334	002000		.CALL	.(OUTE)*	AND PARITY ERROR ADDRESS		0921	
005335	100404	R						
005336	002000		.CALL	.(OUTC)*	CR/LF		0922	
005337	100402	R						
005340	001000		.JMP*	.TPE1			0923	
005341	105326	R						
			*				0924	
005342	000000		TPEA	.DATA	.0	REGISTER	0925	
005343	000000		TPEB	.DATA	.0	SAVE	0926	
005344	000000		TPEX	.DATA	.0	AREA	0927	
			*****					0928
			*				0929	
			*	MESSAGE TABLE			0074200930	
			*				0931	
005345	106612		HDG2	.DATA	.CRLF.	*4K MODULE(S) TO BE TESTED *	0932	
005346	132313							
005347	120315							
005350	147704							
005351	152714							
005352	142650							
005353	151651							
005354	120324							
005355	147640							
005356	141305							
005357	120324							
005360	142723							
005361	152305							
005362	142240							
005363	136640							
005364	000000							
005365	152317		HDG3	.DATA	.*TOO MANY PARAMETERS*	.CRLF.	0933	
005366	147640							
005367	146701							
005370	147331							
005371	120320							
005372	140722							
005373	140715							
005374	142724							
005375	142722							
005376	151640							

005377 106612
 005400 000000
 005401 146717
 005402 142325
 005403 146305
 005404 120316
 005405 147724
 005406 120327
 005407 144724
 005410 144311
 005411 147240
 005412 146705
 005413 146717
 005414 151331
 005415 120322
 005416 140716
 005417 143705
 005420 106612
 005421 000000
 005422 106612
 005423 141731
 005424 141714
 005425 142723
 005426 120275
 005427 120240
 005430 000000
 005431 106612
 005432 142716
 005433 142240
 005434 146705
 005435 146717
 005436 000000
 005437 106612
 005440 142722
 005441 151317
 005442 151240
 005443 152317
 005444 152301
 005445 146240
 005446 136640
 005447 000000
 005450 152305

HDG5 .DATA .MODULE NOT WITHIN MEMORY RANGE%.CRLF.%

0934

HDG6 .DATA .CRLF.%CYCLES = %.0

0935

HDG8 .DATA .CRLF.%END MEMO%.0

0936

HDG9 .DATA .CRLF.%ERROR TOTAL = %.0

0937

HG10 .DATA .TEST ADDRESS EXPECTED ACTUAL%.CRLF.%

0938

005451 151724
005452 120240
005453 120301
005454 142304
005455 151305
005456 151723
005457 120240
005460 142730
005461 150305
005462 141724
005463 142704
005464 120240
005465 140703
005466 152325
005467 140714
005470 106612
005471 000000
005472 106612
005473 147325
005474 146702
005475 142722
005476 120317
005477 143240
005500 141731
005501 141714
005502 142723
005503 120322
005504 152716
005505 120275
005506 000000
005507 106612
005510 144716
005511 151724
005512 151325
005513 141724
005514 144717
005515 147240
005516 150301
005517 151311
005520 152331
005521 120305
005522 151322

HG11 .DATA .CRLF.#NUMBER OF CYCLES RUN =#.0

0939

HG12 .DATA .CRLF.#INSTRUCTION PARITY ERROR AT #.0

0940

005523 147722
005524 120301
005525 152240
005526 000000
005527 106612
005530 140704
005531 142322
005532 142723
005533 151640
005534 150301
005535 151311
005536 152331
005537 120305
005540 151322
005541 147722
005542 120301
005543 152240
005544 000000
005545 106612
005546 147720
005547 142722
005550 140716
005551 142240
005552 150301
005553 151311
005554 152331
005555 120305
005556 151322
005557 147722
005560 120301
005561 152240
005562 000000
005563 106612
005564 152322
005565 140720
005566 120320
005567 140722
005570 144724
005571 154640
005572 142722
005573 151317
005574 151240

HG13 .DATA .CRLF. ADDRESS PARITY ERROR AT %.0

0941

HG14 .DATA .CRLF. OPERAND PARITY ERROR AT %.0

0942

HG15 .DATA .CRLF. TRAP PARITY ERROR AT %.0

0943

PAGE 000042

005575 140724
005576 120240
005577 000000
003550 R

.END .STRT

0944

LITERALS

POINTERS

SYMBOLS

1 005563 R HG15
1 005545 R HG14
1 005527 R HG13
1 005507 R HG12
1 005472 R HG11
1 005450 R HG10
1 005437 R HDG9
1 005431 R HDG8
1 005422 R HDG6
1 005401 R HDG5
1 005365 R HDG3
1 005345 R HDG2
1 005344 R TPEX
1 005343 R TPEB
1 005342 R TPEA
1 005326 R TPE1
1 005306 R TPER
1 005305 R OPEX
1 005304 R OPEB
1 005303 R OPEA
1 005267 R OPE1
1 005247 R OPER
1 005246 R APEX
1 005245 R APEB
1 005244 R APEA
1 005230 R APE1
1 005210 R APER
1 005207 R IPEX
1 005206 R IPEB
1 005205 R IPEA

1	005171	R	IPE1
1	005151	R	IPER
1	005142	R	TES2
1	005116	R	TES1
1	005113	R	TES
1	005100	R	SET1
1	005076	R	SET
1	005074	R	DAP3
1	005061	R	DAP2
1	005050	R	DAP1
1	005040	R	DAP
1	005027	R	IWCC
1	005014	R	IWC
1	004776	R	-TWCB
0	004773	R	TWCA
1	004755	R	TWCT
1	004714	R	TCBB
1	004710	R	TCB
1	004672	R	ICB2
1	004656	R	ICB1
1	004646	R	ICBC
1	004637	R	ICB
1	004621	R	TCBT
1	004605	R	IAO
1	004573	R	TAOT
1	004560	R	IAZ
1	004546	R	TAZT
1	004521	R	TUA1
1	004516	R	TUA
1	004506	R	IUA1
1	004504	R	IUA
1	004464	R	TUAC
1	004457	R	TUAB
1	004437	R	TUAA
1	004431	R	TUAT
1	004416	R	ELOP
1	004364	R	ERP1
1	004347	R	ERPC
1	004335	R	ERR1
1	004324	R	MERR
1	004316	R	TERN
1	004270	R	TERM

1	004252	R	DEM
1	004237	R	MIN3
1	004213	R	MIN2
1	004206	R	MIN1
1	004202	R	MINT
1	004200	R	UACD
1	004173	R	UACA
1	004164	R	UACC
1	004143	R	UACB
1	004140	R	UADD
1	004132	R	UADA
1	004123	R	UADC
1	004101	R	UADB
1	004076	R	MTP2
1	004073	R	MTPA
1	004066	R	MTPC
1	004052	R	MTP8
1	004045	R	MTP6
1	004020	R	MTP4
1	004015	R	MTP1
1	004013	R	MTP7
1	004006	R	MTP5
1	003776	R	MTP3
1	003771	R	MTC6
1	003765	R	MTC5
1	003757	R	MTC4
1	003753	R	MTC3
1	003750	R	MTC2
1	003736	R	MTC1
1	003721	R	MTCM
1	003710	R	HDG1
1	106612		CRLF
1	003702	R	TPR
1	003674	R	TTR
1	003666	R	MTT6
1	003645	R	MTT5
1	003640	R	MTT4
1	003634	R	MTT3
1	003612	R	MTT2
1	003573	R	MTT1
1	003563	R	MTTM
1	003560	R	MTOP

1	003550	R	STRY
1	000557	R	TBL
1	000553	R	TBL1
1	000541	R	TBLC
1	000536	R	TBLF
1	000532	R	TBLL
1	000524	R	TBLI
1	000523	R	SAVX
1	000522	R	SAVE
1	000521	R	SWCH
1	000520	R	TERR
1	000517	R	PAT2
1	000516	R	PAT1
1	000515	R	BITS
1	000514	R	LAST
1	000513	R	FRST
1	000512	R	REP
1	000511	R	REP1
1	000510	R	MTYP
1	000507	R	TEST
1	000506	R	EMEM
1	000505	R	CYCL
1	000504	R	TCYC
1	000503	R	MTW2
1	000502	R	MTW1
1	000045		PRTY
1	000471	R	SDCT
1	000442	R	SCON
1	000441	R	SMEM
0	000440	R	SFLG
1	000424	R	SMSM
1	000423	R	ESZC
0	000422	R	SLWE
1	000421	R	SSWT
0	000420	R	TDLY
0	000417	R	TOUT
1	000416	R	INPG
0	000415	R	INPF
0	000414	R	INPE
0	000413	R	INPD
0	000412	R	INPC
0	000411	R	INPB

0	000410	R	INPA
0	000407	R	OUTH
0	000406	R	OUTG
0	000405	R	OUTF
1	000404	R	OUTE
1	000403	R	OUTD
1	000402	R	OUTC
1	000401	R	OUTB
1	000400	R	OUTA