

SERIES SIXTEEN

PROCESSOR TEST

Consists of:

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Program Listing, Part 1	06-242F01M96R00A13
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SERIES SIXTEEN
PROCESSOR TEST DESCRIPTION, PART 1

1. GENERAL

This program exhaustively tests the Series Sixteen Processors. All the logic and arithmetic instructions are tested. The Floating Point instructions are not tested (refer to Test 06-205).

2. REQUIREMENTS

The following is a list of the minimum hardware requirements for this test:

- Series Sixteen Processor
- 10KB of Memory
- Console Device: CRT, or Model 550, 1100, or 1200 Terminals, Carousel 15, 30, 35, or 300.
- Object input Device or Multimedia loader

The following test programs should be run prior to loading this test:

- Series Sixteen Memory Test Program 06-214

The following test programs are also applicable:

- Model 1100 Test Program 06-217
- Model 1200 Test Program 06-218
- Model 550 Test Program 06-243

3. LOADING PROCEDURES

The program is self loading using the X'50' sequence shown below:

<u>Location</u>	<u>Contents</u>	
X'30'	X'0000'	
X'32'	X'0000'	
X'34'	X'0000'	
X'36'	X'0050'	
X'50'	X'D500'	
X'52'	X'00CF'	
X'54	X'4300'	
X'56'	X'0080'	
X'78'	X'85A1'	For 800 BPI flag tape for
X'78'	X'C186'	floppy media disc
X'78'	X'1399'	HSPTR/P

Execute from address X'30'.

To load this program from the Perkin-Elmer Multimedia Diagnostic System, refer to Publication Number 06-176M95A15.

4. PROGRAM EXECUTION

After the requirements of the Machine Under Test are met and the loading of PART 1 is complete, execute at X'100' and observe that the following title is output:

```
Series Sixteen PROCESSOR TEST PART 1 06-242R00
CPU
*
```

4.1 Normal Testing

After loading is complete, and the proper Processor number has been entered (see Appendix B), the following is printed:

```
Enter 0 or 1
```

If the Processor under test has 16kb or less memory, enter a zero. If the Processor has more than 16kb of memory, enter a one. The test then executes the appropriate subtests a total of 10 times or until an error has been encountered. (See Appendix D for meaning of errors.)

4.2 Optional Testing

All the printouts can be inhibited by turning the Console OFF or OFF-Line (DU-1). When this is done, a count is made of the total number of times the entire test is repeated. This is stored in memory location TOTAL. If an error is detected, a count is made of the total number of errors at memory location TOTERR.

When the Console is turned On-Line, the test is repeated until TOTAL equals NTIMES. The test is terminated and the following characters are printed:

```
NO ERROR
NNNN RRRR
```

where

```
NNNN = Contents of TOTAL,
RRRR = Contents of TOTERR.
```

If any errors are detected while the Console is turned OFF and no errors detected after it was turned ON, the following is printed:

NNNN RRRR

where

N and R have the same meaning as above.

If any errors are detected after turning the Console ON, the following characters are printed and the test is terminated:

ERROR XXXX
NNNN RRRR

where

XXXX = The last error detected,
NNNN = Contents of TOTAL,
RRRR = Contents of TOTERR.

When the Console is turned OFF, the test is aborted if, (1) a spurious interrupt is detected (e.g., an illegal instruction). The Processor is halted by loading a PSW of X'8000'. When the EXECUTE switch is depressed and the Console Device is turned ON, the error message is printed; the test is also aborted if TOTERR equals X'FFFF'. The Processor is halted by loading a PSW of X'8000'. When the EXECUTE switch is depressed and the Console Device is turned ON, characters FFFF ERRORS are printed and the test is terminated.

5. ERROR PROCEDURES

In case of an error, further action depends on the type of error (see Appendix D for a description of each error number).

- Case 1 - The program detects an error; the error number is printed on the Console. The error number dictionary in Appendix D should be referred to pinpoint the error.
- Case 2 - If a spurious interrupt is detected, the Processor is halted by loading a PSW of X'8000'. The error number has the form X'1TFN' where T equals the test number which was executing at the time of the error; N defines the spurious interrupt. See the error numbers in Appendix D. When the EXECUTE switch is depressed, the error number is printed.
- Case 3 - If an error is detected in a test which checks arithmetic operations, refer to Appendix D. In Tests 8 and 11 which check the Fixed Point Arithmetic instructions, after printing the error number certain registers are also printed.
- Case 4 - If a SET MAP instruction error occurs, refer to Appendix D. Error numbers 1C01 to 1C04 refer to the first part

of the test. Error numbers 1C05 to 1C08 refer to the second part of the test. Further diagnosis can be performed by observing which part of the test the error occurred in (see the listing). Then executing the section (see the listing) of the test to find the exact PSW bits which caused the SET MAP instruction to fail.

5.1 Examples

ERROR 1604

If this message is printed, it indicates that Test 6 detected an error. The error number is 04. Refer to the Error Number Table in Appendix D. It indicates that instruction SLHA or SRHA failed.

To isolate the problem further, the program can be run in single steps starting at the beginning of the test. The program may also be executed, starting at a location where the test for the failed instruction begins. Thus, Test 6 can be started after it has tested for errors 1601 through 1603 and begins to test for error 1604. In this case, the symbolic location is T6F.

ERROR 19F2

This indicates that Test 9 detected an error. Error number F2 indicates that an illegal instruction interrupt was detected. To determine at what location this occurred, the program must be executed in single step mode starting at Test 9.

ERROR 1B0C

If the following messages are printed:

```
0000 0000 FFFF 0000 0000 0000 0000 1000 1000 7777 0000
```

it indicates that Test 11 detected an error. The error number is 0C. Refer to the Error Printout Description in Appendix D. It states that error 1B0C refers to incorrect fixed point division. The printed values of the contents of some registers can be interpreted using the information given in the Error Printout Description as shown below:

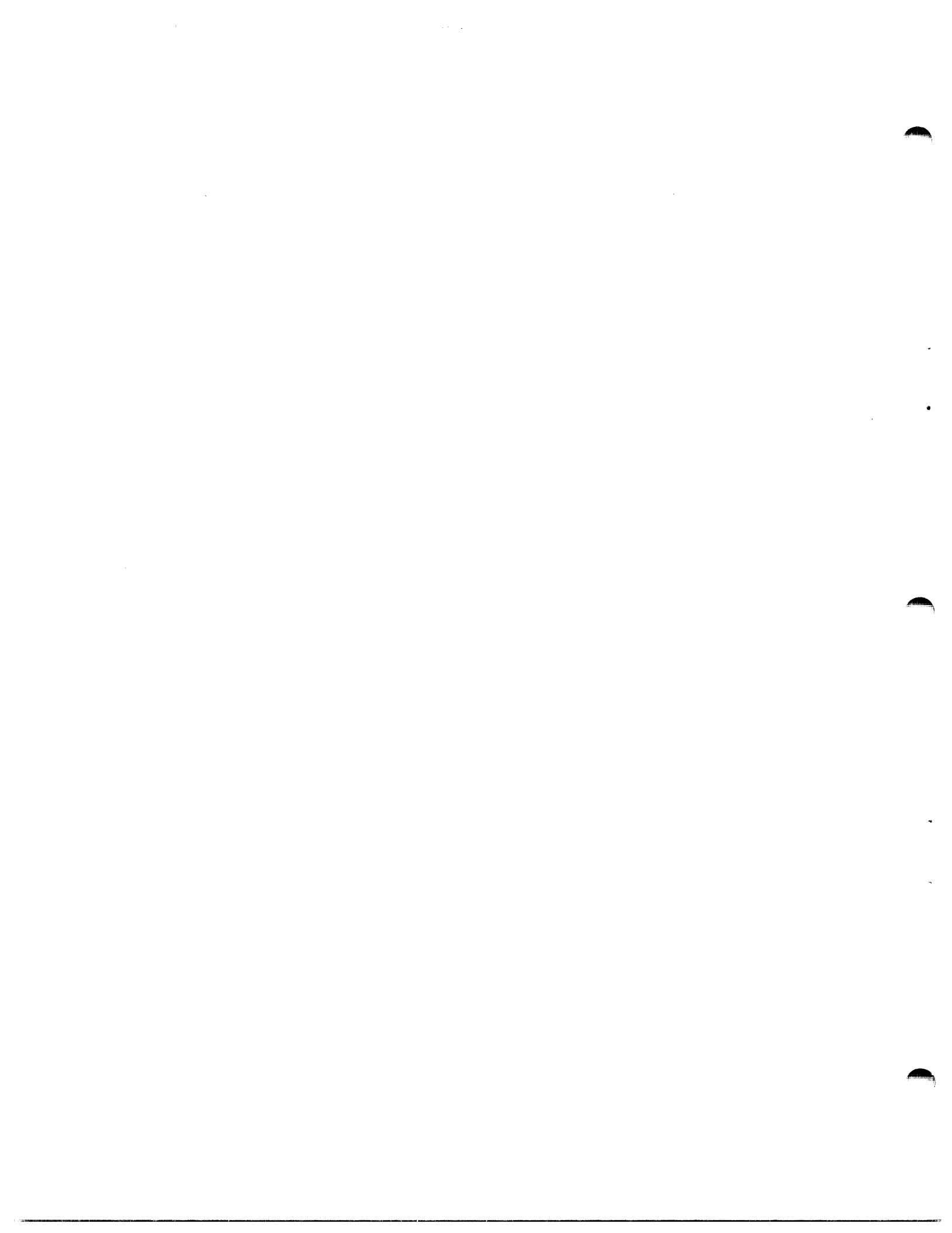
0000 0000	FFFF	0000 0000	0000 0000	1000	1000
Dividend	Divisor	actual values	expected values	PSW	PSW
= 0	= -1	of remainder	of remainder	after	before
		and quotient	and quotient	division	division
7777		0000			
actual divide		expected divide			
fault interrupt		fault interrupt			
flag		flag			

The above interpretation of the printed information indicates: when 0 was divided by -1, the obtained values of the remainder and quotient were zero (which are identical to expected values), the PSW remained unchanged (PSW should not change), and a divide fault interrupt was taken (indicated by non-zero actual divide fault flag) when it was not expected (indicated by zero expected divide fault interrupt flag). So an error in divide fault interrupt logic has been detected.

For further diagnosis of the problem, the program can be run in single step starting from the instruction which sets the error number to X'C' (in this case DLOOP2+4).

6. RESTART PROCEDURES

The starting address for PART 1 is X'100'.



APPENDIX A
USER DEVICE DEFINITION

The halfword labeled IO (see listing) has the default value for micro I/O bus as an Input/Output Console Device. If the console is different, it must be changed as follows:

IO	0	CONSOLE DEVICE IDENT.	15
----	---	-----------------------	----

Console Device Identifier	Explanation
X'0101'	GDT/CRT on PASLA/PALM Interface strapped for FDX at highest baud.
X'0404'	Carousel 300 on PASLA/PALM Interface strapped for FDX at highest baud rate.
X'0505'	Micro I/O Bus.

1. The GDT (Graphic Display Terminal), CRT, or Carousel 300 used on PASLA/PALM interface, should be strapped for device address X'10' and X'11' for the Receive and Transmit sides respectively. If the addresses are different, then the halfword labeled PASADR (see the program listing) must be changed accordingly.
2. Location CONADR and CONADRS+1 should equal the address of the Micro I/O Bus interface. If not they should be changed appropriately.



APPENDIX B
PROCESSOR AND SUBTEST SELECTION

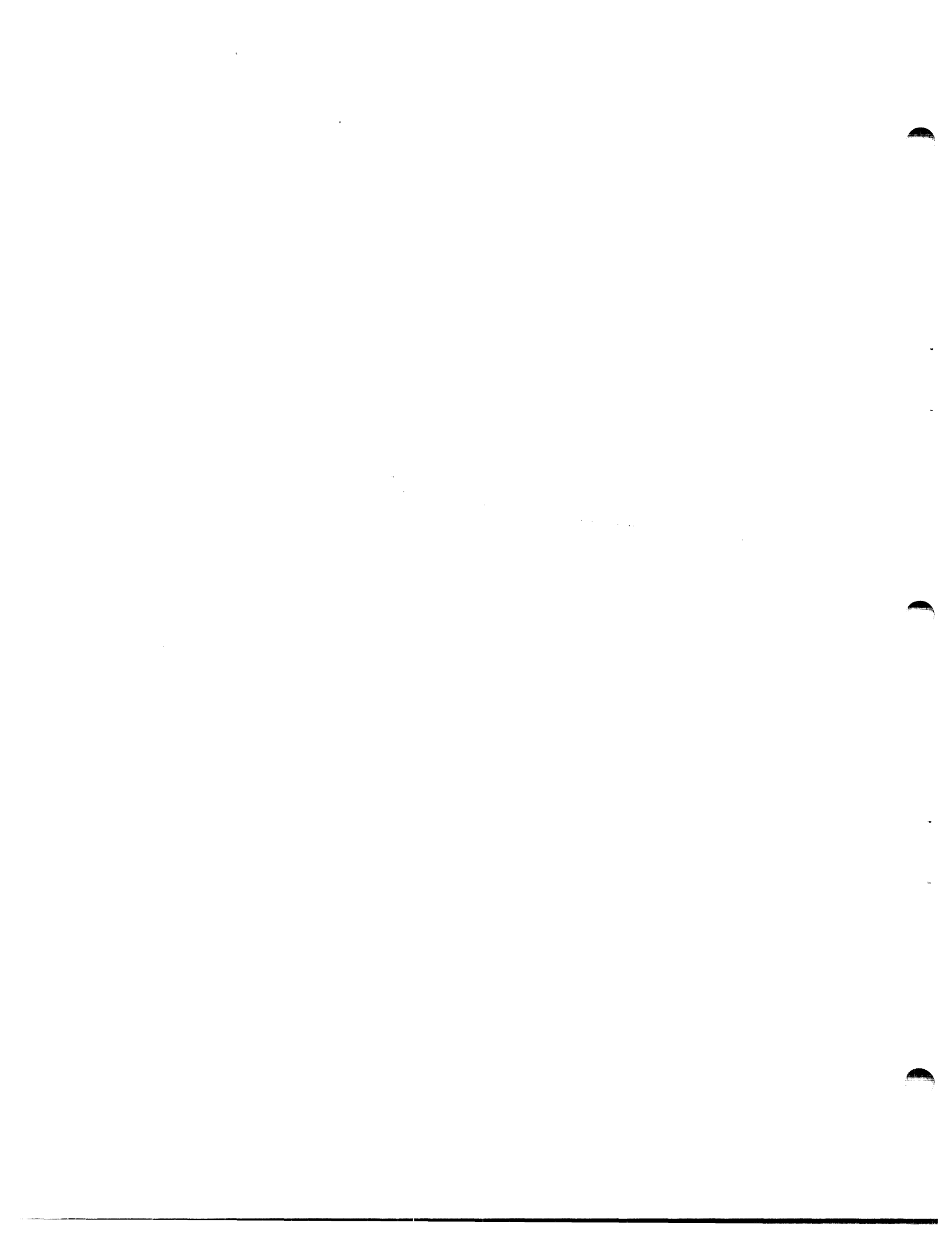
MODEL UNDER TEST		REQUIRED INPUT (CPU) Part 1
1610	basic M/D	1M
1620	basic M/D	2M
1630	basic M/D	3M
1620	with single precision floating point	2S
1630	with single precision floating point	3S
1620	with double precision floating point	2D
1630	with double precision floating point	3D



APPENDIX C

The following table indicates the test number where each particular instruction is tested.

Test Number	Instruction
Test 1	LPSW, BTC, BFC, BTFS, BTBS, BFFS
Test 2	LH, CLHR, CLHI, LHI, CLH, LIS, LHR, LCS
Test 3	STH, LM, STM
Test 4	XHR, XHI, XH; OHR, OHI, OH; NHR, NHI, NH
Test 5	BAL, BXLE, BXH, BR, BTCR, BFCR, BALR
Test 6	EPSR, SLLS, SRLS, SLHL, SRHL, SLHA, SRHA, THI
Test 7	LB, STB, CLB, LBR, STBR, EXBR
Test 8	AH, AHR, AHI, AHM, AIS, ACH, ACHI, SH, SHR, SHI, SIS, SCH, SCHI
Test 9	Simulate interrupt and illegal instruction interrupt
Test 10	SLL, SRL, SLA, SRA, RLL, RRL
Test 11	MH, MHR, MHU, MHUR, DH, DHR
Test 12	SETMR, SETM, LPS, LPSR



APPENDIX D
ERROR MESSAGES

Test No.	Error No.	Type of Failure, Instructions Failed
1	1101	LPSW
	1102	BTC, BFC (COND. CODE = 0000)
	1103	BTC, BFC (COND. CODE = 1111)
	1104	BFFS, BFBS (UNCONDITIONAL)
	1105	BTFS, BFFS, BTBS, BFBS
2	1201	LH, CLHR, CLHI, LHI, CLH, LIS, LHR, LCS
3	1301	STH
	1302	LM
	1303	STM
4	1401	XHR, XHI, XH
	1402	OHR, OHI, OH
	1403	NHR, NHI, NH
5	1501	BAL
	1502	BXLE, BXH
	1503	BTCR, BFCR, BR
6	1601	ESPR
	1602	SLLS, SRLS
	1603	SLHL, SRHL
	1604	SLHA, SRHA
	1605	THI
7	1701	LB, STB, CLB, LBR, STBR, EXBR

For Test 8, after printing the error number, some of the pertinent register values are also printed as shown below:

AAAA	BBBB	CCCC	DDDDMax. 10 halfwords printed
(i)	(ii)	(iii)		

The table below describes the meaning of different operand values.

For error numbers 1801, M and N are 2 arbitrary numbers whose values are between -2^{15} and $2^{15}-1$. C is 1 if there is an input carry to the least significant bit.

APPENDIX D (Continued)

If there is no carry, the value of C is 0.

TEST NUMBER	ERROR NUMBER	TYPE OF FAILURE	VALUES PRINTED TO AID IN DIAGNOSIS
8	1801	$M+(-M)$ does not equal zero. AIS,AHM	(i) M (ii) $-M$ (iii) $M+(-M)$ (calculated value)
	1802	$M+(R4)-(R4)$ does not equal M. AHR,SHR	(i) M (ii) $M+(R4)$ (iii) $M+(R4)-(R4)$ (calculated value)
	1803	$M+X'789A'-X'789A'$ does not equal M. AHI, SHI	(i) M (ii) $M+X'789A'$ (iii) $M+X'789A'-X'789A'$ (calculated value)
	1804	$(M+M+C)+(M-N-C)$ is not equal to $2*M$. AH, SIS, ACH, SH	(i) M (ii) N (iii) C (iv) $M+N+C$ (v) $M-N-C$ (vi) Calculate value of $(M=N=C)+(M-N-C)$ (vii) expected value of $(M+N+C) + (M-N-C)$
	1805	$(M+N+C)=(M-N-C)-C$ is not equal to $2N+C$	(i) M (ii) N (iii) C (iv) $M+N+C$ (v) $M-N-C$ (vi) calculated value of $(M+N+C)-(M-N-C)$ (vii) expected value of $(M+N+C)-(M-N-C)-C$

Error numbers from 1806 through 181D refer to improper setting of the condition code as a result of addition or subtraction operation. The actual and expected values of condition codes are printed in each case.

APPENDIX D (Continued)

TEST NUMBER	ERROR NUMBER	TYPE OF FAILURE, INSTRUCTIONS FAILED	VALUES PRINTED TO AID IN DIAGNOSIS
8	1806	0 + 0 did not set condition code correctly	(i) Actual Condition Code (ii) Expected condition Code
	1807	0 - 0 SHR	"
	1808	X'7FFE'-X'7FFE' SHI	"
	1809	X'FFFF'-X'FFFF' SH	"
	180A	X'8001'+X'7FFE' AH	"
	180B	X'8002'-X'0001' SIS	"
	180C	X'7FFE'+1 AIS	"
	180D	X'7FFF'-X'7FFE' SHI	"
	180E	X'FFFF'-X'FFFE' SH	"
	180F	X'7FFE'+X'7FFF' AH	"
	1810	X'8001'-X'7FFF' SHI	"
	1811	X'0001'+X'FFFF' AHR	"
	1812	X'7FFF'+X'8001' AHI	"
	1813	X'FFFF'+X'FFFE' AHR	"

APPENDIX D (Continued)

TEST NUMBER	ERROR NUMBER	TYPE OF FAILURE, INSTRUCTIONS FAILED	VALUES PRINTED TO AID IN DIAGNOSIS
8	1814	0 - 1 SIS	(i) Actual condition code (ii) Expected condition code
	1815	X'FFFE'-X'FFFF' SHI	"
	1816	X'7FFE'-X'7FFF' SH	"
	1817	X'FFFF'+2 AIS	"
	1818	0-X'FFFF' SHI	"
	1819	X'7FFE'-X'FFFF' SH	"
	181A	X'8002'+X'7FFF'	"
	181B	X'7FFF'-X'FFFE' SH	"
	181C	2-X'8001' SHI	
	181D	X'8001'+X'FFFE' AHI	

APPENDIX D (Continued)

Error numbers 181E and 181F refer to incorrect operation of instruction ACH, ACHR, SCH, SCHR, when they are used for multi-precision addition and subtraction. Expected value is indicated below and the program prints the actual incorrect value (triple precision) in 3 halfwords:

TEST NUMBER	ERROR NUMBER	TYPE OF FAILURE AND EXPECTED VALUE
8	181E	2221 + 2*1111 + 3*1111 ++ FFFF*1111 does not equal 0888 7777 8000 ACH ACHR
	181F	0888 7777 8000 -1111 -2*1111 -3*1111..... -FFFF*1111 does not equal zero SCH, SCHR

APPENDIX D (Continued)

Errors 1820 through 1833 refer to incorrect condition codes set up after the fixed point compare operation. The actual condition code and the expected condition codes are printed as two halfwords.

TEST NUMBER	ERROR NUMBER	TYPE OF FAILURE, INSTRUCTIONS FAILED
8	1820	0:0, CLHR
	1821	2:2, CLH
	1822	X'7FFF':X'7FFF', CLHI
	1823	X'8002':X'8001', CHR
	1824	X'FFFE':X'FFFE', CH
	1825	X'FFFF':X'FFFF', CHI
	1826	X'8002':2, CLHR
	1827	X'7FFF':X'7FFFF', CLH
	1828	X'8002':X'8001', CLHI
	1829	2:0, CHR
	182A	X'FFFF':X'FFFE', CH
	182B	0:X'8001', CHI
	182C	X'8001':2, CLH
	182D	X'FFFE'-X'FFFF', CLHR
	182E	0:1, CLHI
	182F	0:1, CHI
	1830	X'8001':X'8002', CH
	1831	X'FFFF':0, CHR
	1832	X'7FFE':X'FFFF', CLH
	1833	X'7FFF':X'FFFE', CLHI
9	1901	External I/O Interrupt Detected. Incorrect Service Pointer used by SINT to generate interrupt.
	1902	SINT used Immediate Interrupt Service when not specified by PSW.
	1903	SINT generated no interrupt.
	1904	PSW swap not OK after SINT.
	1905	The illegal instruction at location ILLEGL was executed and it did not generate an interrupt.
	1906	When the illegal instruction interrupt is generated, the locations X'30' through X'34' were not set up correctly.
10	1A01	Zero shift set incorrect condition code
	1A02	SRL or SLL instruction failed
	1A03	SLA or SRA instruction failed
	1A04	RLL or RRL instruction failed

APPENDIX D (Continued)

Test 11 prints twelve different error numbers (1B01 to 1B0D). The error numbers 1B01 to 1B0A refer to improper fixed point multiplication. If any of these errors are detected, the following information is printed:

ERROR NNNN
 AAAA BBBB A'A'A'A' B'B'B'B' RRRR RRRR R'R'R'R' R'R'R'R' PPPP P'P'P'P'

where

NNNN	Error Number
AAAA	First Operand
BBBB	Second Operand
A'A'A'A'	Negative of the first operand
B'B'B'B'	Negative of the second operand
RRRR RRRR	Double length actual result
R'R'R'R' R'R'R'R'	Double length expected result
PPPP	PSW after multiplication
P'P'P'P'	PSW before multiplication

The error numbers 1B0C and 1B0D refer to incorrect division. If any error in the fixed point divide operation is detected, the following is printed:

ERROR NN
 AAAA AAAA BBBB RRRR QQQQ R'R'R'R' Q'Q'Q'Q' PPPP P'P'P'P' FFFF F'F'F'F'

where

NNNN	Error Number
AAAA AAAA	First operand (double length dividend)
BBBB	Second operand (Divisor)
RRR	Actual remainder
QQQQ	Actual Quotient
R'R'R'R'	Expected remainder
Q'Q'Q'Q'	Expected quotient
PPPP	PSW after division
P'P'P'P'	PSW before division
FFFF	Actual divide fault flag (non-zero if divide fault interrupt was taken, zero otherwise).
F'F'F'F'	Expected Divide fault flag (non-zero if divide fault interrupt is expected, otherwise zero).

APPENDIX D (Continued)

TEST NUMBER	ERROR NUMBER	TYPE OF FAILURE, INSTRUCTION FAILED
11	1B01	A*B does not equal the expected value, MH.
	1B02	B*A is not equal to the expected value of the product, MH.
	1B03	(-A)*(-B) is not equal to the expected product, MHR
	1B04	(-B)*(-A) is not equal to the expected value, MHR.
	1B05	A*(-B) does not equal the expected result, MHR.
	1B06	(-B)*A does not equal the expected result, MH.
	1B07	B*(-A) is not equal to the expected value of the product, MHR.
	1B08	(-A)*(B) is not equal to the expected value of the product.
	1B09	Unsigned product of A and B does not equal the expected value, MHU.
	1B0A	Unsigned product of B and A is not equal to the expected value of the unsigned product, MHUR.
	1B0C	A/B did not produce the expected values of the remainder and the quotient, DHR.
	1B0D	A/B did not produce the expected remainder and quotient values.
12	1C01	First operand not correct (RR format), SETMR
	1C02	PSW is incorrect (RX format), SETM
	1C03	First operand not correct (RR format), SETMR
	1C04	PSW is incorrect (RX format), SETM
	1C05	First operand not correct (RR format), SETMR

APPENDIX D (Continued)

TEST NUMBER	ERROR NUMBER	TYPE OF FAILURE, INSTRUCTION FAILED
	1C06	PSW is incorrect (RX format), SETM
	1C07	First operand not correct (RR format), SETMR
	1C08	PSW is incorrect (RX format), SETM
	1C09	R ₂ field was destroyed during execution of a SET MAP instruction
	1C0A	LPS instruction failed to load correct PSW
	1C0B	LPSR instruction failed to load correct PSW
	1C0C	R ₁ field was destroyed after LPS instruction
	1C0D	R ₁ field was destroyed after LPSR instruction

APPENDIX D (Continued)

Other Errors

Error No.	Type of Failure
1NF1	Floating Point Arithmetic Fault Interrupt is detected.
1NF2	Illegal Instruction Interrupt is detected.
1NF3	Machine Malfunction Interrupt is detected.
1NF4	External Interrupt is detected.
1NF5	Fixed Point Divide Fault Interrupt is detected.
1NF6	System Queue Interrupt
1NF7	SVC is performed from an incorrect location (one of X'9C' through X'13A')
1NF8	Incorrect Service Pointer used (one of X'D0' through X'2CE')

NOTE

N - test number from 1 through X'C'.

APPENDIX E
EXPECTED RESULTS

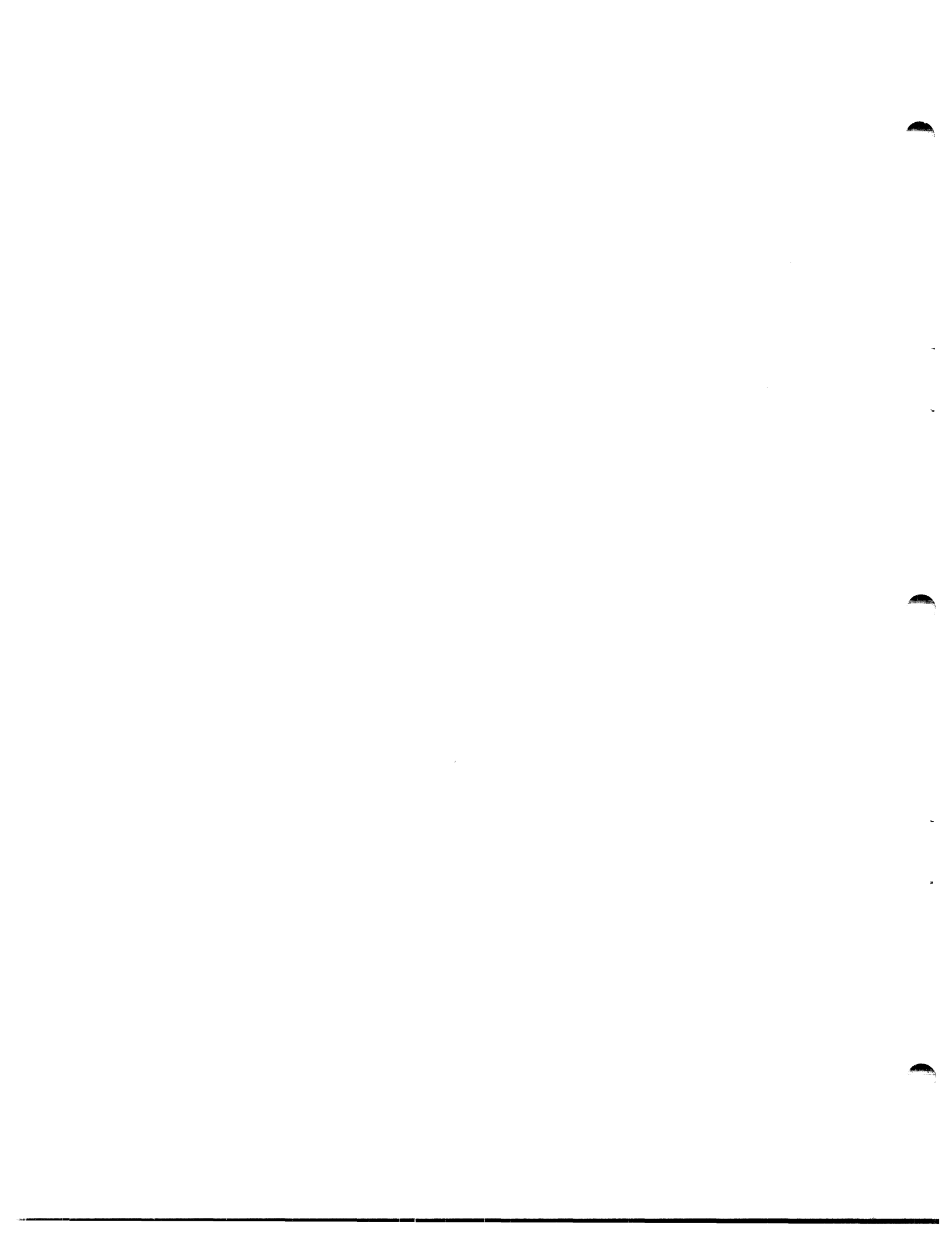
SERIES SIXTEEN PROCESSOR TEST PART 1 06-242R00
0123456789
NO ERROR
*



APPENDIX F
RELATED DOCUMENTS

Program Listing 06-242F01M96A13

Program Tape 06-242F01M17



PROG= 06242 ASSEMBLED BY CAL 03-066R07-C0 (32-BIT)

	1	CROSS		MPT00010
	2	WIDTH 120		MPT00020
	3	TARGT 16		MPT00030
	4	06242 PROG SERIES SIXTEEN PROCESSOR TEST PART 1 06-242M96F01A13		MPT00040
	5	*		MPT00050
	6	* COPYRIGHT PERKIN ELMER CORP FEBRUARY 1979		MPT00060
	7	*		MPT00070
	8	*		MPT00080
	9	* THIS PROGRAM IS DESIGNED TO TEST SERIES SIXTEEN PROCESSORS		MPT00090
	10	*		MPT00100
	11	*		MPT00110
	12	*		MPT00120
	13	*		MPT00130
	14	R0 EQU 0		MPT00140
	15	R1 EQU 1		MPT00150
	16	R2 EQU 2		MPT00160
	17	R3 EQU 3		MPT00170
	18	R4 EQU 4		MPT00180
	19	R5 EQU 5		MPT00190
	20	R6 EQU 6		MPT00200
	21	R7 EQU 7		MPT00210
	22	R8 EQU 8		MPT00220
	23	R9 EQU 9		MPT00230
	24	R10 EQU 10		MPT00240
	25	R11 EQU 11		MPT00250
	26	R12 EQU 12		MPT00260
	27	R13 EQU 13		MPT00270
	28	R14 EQU 14		MPT00280
	29	R15 EQU 15		MPT00290
	30	*		MPT00300
0000R	31	ORG X'80'		MPT00310
	32	*		MPT00320
0080 2421	33	LIS R2,1		MPT00330
0082 2303	34	BS BOOT		MPT00340
0084 0110	35	DC Z(PSWAVE)		MPT00350
0086 2392	36	DC Z(REGSAV)		MPT00360
0088 4020 0022	37	BOOT STH R2,X'22'		MPT00370
008C C810 0100	38	LHI R1,X'100'		MPT00380
0090 C830 2382	39	LHI R3,LNZB		MPT00390
0094 C860 0000	40	MN LHI R6,0		MPT00400
0098 D340 0078	41	LB R4,X'78'		MPT00410
009C DE40 0079	42	OC R4,X'79'		MPT00420
00A0 9D45	43	LEADER SSR R4,R5		MPT00430
00A2 2091	44	BTBS 9,1		MPT00440
00A4 9B45	45	RDR R4,R5		MPT00450
00A6 0855	46	LJAR R5,R5		MPT00460
00A8 2234	47	BZS LEADER		MPT00470
00AA 0251 0000	48	LOAD STB R5,0(R1)		MPT00480
00AE 0351 0000	49	LB R5,0(R1)		MPT00490
00B2 0765	50	XAR R6,R5		MPT00500
00B4 9481	51	EXBR R8,R1		MPT00510
00B6 9D45	52	SSR R4,R5		MPT00520
00B8 2091	53	BTBS 9,1		MPT00530

00BA	9845	54	RDR	R4,R5		MPT00540
008C	C110 00AA	55	BXLE	R1,LOAD		MPT00550
00C0	8800	56	DCX	8800	BREAK POINT	MPT00560
		57	*			MPT00570
		58	*			MPT00580
00C2		59	ORG	X'100'		MPT00590
0100	4300 0112	60	ORIGIN1	B ENTRY1		MPT00600
		61	*****			MPT00610
0104	0505	62	IO	DCX 0505	IO INDICATOR	MPT00620
0106	0101	63	CRT	DCX 0101	CRT VALUE	MPT00630
0108	0404	64	CAR	DCX 0404	CAROUSEL VALUE	MPT00640
010A	C0C0	65	CONADR	DCX C0C0	CONSOLE ADDRESS (MICRO I O BUS)	MPT00650
010C	1011	66	PASADR	DCX 1011	PASLA ADDRESS REC/SND DEFAULT 1011	MPT00660
010E	000A	67	NTIMES	DC 10		MPT00670
0110	0000	68	PSWAVE	DC 0		MPT00680
		69	*			MPT00690
		70	*			MPT00700
		71	*	SET UP FOR SPURIOUS INTERRUPTS		MPT00710
		72	*			MPT00720
0112	C800 0000	73	ENTRY1	LHI R0,0		MPT00730
0116	4000 2354	74		STH R0,CRTFLG		MPT00740
011A	4000 2356	75		STH R0,MICFLAG	CLEAR MICRO I/O CONSOLE FLAG	MPT00750
011E	4000 002C	76	M5001	STH R0,X'2C'		MPT00760
0122	4000 0034	77		STH R0,X'34'		MPT00770
0126	4000 003C	78		STH R0,X'3C'		MPT00780
012A	4000 0044	79		STH R0,X'44'		MPT00790
012E	4000 004C	80		STH R0,X'4C'		MPT00800
0132	4000 0086	81		STH R0,X'86'		MPT00810
0136	4000 0090	82	M5002	STH R0,X'90'		MPT00820
		83	*			MPT00830
013A	C800 2384	84		LHI R0,LNZB+2		MPT00840
013E	4000 0022	85		STH R0,X'22'	POWER FAIL REGISTER POINTER	MPT00850
0142	C800 21AA	86		LHI R0,FLPTNT		MPT00860
0146	4000 002E	87		STH R0,X'2E'	FLOATING POINT FAULT NEW PSW	MPT00870
014A	C800 21AE	88		LHI R0,ILGINT		MPT00880
014E	4000 0036	89		STH R0,X'36'	ILLEGAL INTERRUPT NEW PSW	MPT00890
0152	C800 21B2	90		LHI R0,MALFTN		MPT00900
0156	4000 003E	91		STH R0,X'3E'	MACHINE MALFUNCTION INTERRUPT NEW PSW	MPT00910
015A	C800 21B6	92		LHI R0,EXTINT		MPT00920
015E	4000 0046	93		STH R0,X'46'	EXTERNAL INTERRUPT NEW PSW	MPT00930
0162	C800 21B0	94		LHI R0,DVDFLT		MPT00940
0166	4000 004E	95		STH R0,X'4E'	FIXED POINT DIVIDE FAULT INTERRUPT NE	MPT00950
016A	C800 232E	96		LHI R0,TABLE		MPT00960
016E	4000 0080	97		STH R0,X'80'	SYSTEM QUEUE POINTER	MPT00970
0172	C800 21C0	98		LHI R0,SQINT		MPT00980
0176	4000 0088	99		STH R0,X'88'	SYSTEM QUEUE INTERRUPT	MPT00990
		100	*			MPT01000
		101	*	SET UP INPUT OUTPUT DEVICES		MPT01010
		102	*			MPT01020
017A	C800 F800	103		LHI R0,X'F800'		MPT01030
017E	4000 2358	104		STH R0,FIRSTCMD		MPT01040
0182	D300 0104	105	IOTEST	LB R0,IO		MPT01050
0186	C500 0004	106		CLHI R0,4	IS IT A CAROUSEL 300	MPT01060
018A	4230 0196	107		BNE CRTIO	NO, BRANCH	MPT01070
018E	C810 F000	108		LHI R1,X'F000'		MPT01080

0192	4010	2358	109		STH	R1, FIRSTCMD		MPT01090
0196	C500	0005	110	CRTIO	CLHI	R0,5	IS IT ON MICRO I/O CONSOLE/	MPT01100
019A	4330	01C4	111		BE	MICROIO	YES, BRANCH	MPT01110
019E	0310	234F	112		LB	R1, CRTOUT+1		MPT01120
01A2	0210	234C	113		STB	R1, INCMND		MPT01130
01A6	0310	010C	114		LB	R1, PASADR		MPT01140
01AA	0210	234B	115		STB	R1, INDEV		MPT01150
01AE	0310	010D	116		LB	R1, PASADR+1		MPT01160
01B2	0320	234E	117		LB	R2, CRTOUT		MPT01170
01B6	0E10	2358	118		OC	R1, FIRSTCMD		MPT01180
01BA	2531		119		LCS	R3,1		MPT01190
01BC	4030	2354	120		STH	R3, CRTFLG	SET CRTFLG	MPT01200
01C0	4300	010C	121		B	IO2		MPT01210
	0000	01C4	122	MICROIO	EQU	*		MPT01220
01C4	0310	2351	123		LB	R1, CONOUT+1	GET INPUT COMMAND	MPT01230
01C8	0210	234C	124		STB	R1, INCMND		MPT01240
01CC	0310	010A	125		LB	R1, CONADR		MPT01250
01D0	0210	234B	126		STB	R1, INDEV		MPT01260
01D4	4010	2356	127		STH	R1, MICFLAG	SET MICRO I/O FLAG	MPT01270
01D8	0320	2350	128		LB	R2, CONOUT		MPT01280
			129	*				MPT01290
	0000	010C	130	IO2	EQU	*		MPT01300
01DC	0210	234A	131		STB	R1, OUTDEV		MPT01310
01E0	0220	234D	132		STB	R2, OUTCMD		MPT01320
01E4	0320	234A	133		LB	R2, OUTDEV	R2 = OUTDEV	MPT01330
01E8	0E20	234D	134		OC	R2, OUTCMD		MPT01340
01EC	9D23		135		SSR	R2, R3		MPT01350
01EE	4210	02DA	136		BTC	1, ENTRY4	DEVICE UNAVAILABLE...BRANCH	MPT01360
01F2	C430	00FC	137		NHI	R3, X'FC'		MPT01370
01F6	C530	000C	138		CLHI	R3, X'0C'		MPT01380
01FA	4330	02DA	139		BE	ENTRY4	PASLA DU ..BRANCH	MPT01390
01FE	9D23		140	PRTTLE	SSR	R2, R3		MPT01400
0200	4280	01FE	141		BTC	8, PRTTLE	BUSY, WAIT	MPT01410
0204	4840	2344	142		LH	R4, CPUFLAG	IS IT A RESTART	MPT01420
0208	C540	0001	143		CLHI	R4, X'1'		MPT01430
020C	4330	0216	144		BE	PRTCPU1	YES, DONT PRINT TITLE	MPT01440
0210	C840	236E	145		LHI	R4, TITLE1	PRINT TITLE OF PROGRAM	MPT01450
0214	2303		146		BS	PRTCPU		MPT01460
0216	C840	23A2	147	PRTCPU1	LHI	R4, TITLE2	PRINT CPU *	MPT01470
021A	D304	0000	148	PRTCPU	LB	R0, 0(R4)	PRINT	MPT01480
021E	41E0	2112	149		BAL	R14, WRITE1	CPU	MPT01490
0222	2641		150		AIS	R4, 1	*	MPT01500
0224	C540	23B2	151		CLHI	R4, TITEND		MPT01510
0228	2037		152		BNES	PRTCPU		MPT01520
022A	2441		153		LIS	R4, 1		MPT01530
022C	4040	2344	154		STH	R4, CPUFLAG		MPT01540
	0000	0230	155	RD	EQU	*		MPT01550
0230	41E0	217A	156		BAL	R14, READ1		MPT01560
0234	0850		157		LHR	R5, R0	SAVE IT	MPT01570
0236	41E0	217A	158		BAL	R14, READ1	READ ANOTHER CHAR	MPT01580
023A	0810		159		LHR	R1, R0		MPT01590
023C	0805		160		LHR	R0, R5		MPT01600
023E	C400	007F	161		NHI	R0, X'7F'		MPT01610
0242	C410	007F	162	RDCPU22	NHI	R1, X'7F'	RDCPU22	MPT01620
0246	9108		163		SLLS	R0, 8		MPT01630

0248	0601	164		OHR	RO,R1	RO = 2 KEYS	MPT01640
024A	C500 314D	165		CLHI	RO,C'1M'	1610 PROCESSOR	MPT01650
024E	4330 0294	166		BE	MOD5		MPT01660
0252	C500 324D	167		CLHI	RO,C'2M'	1620 PROCESSOR	MPT01670
0256	4330 0294	168		BE	MOD5		MPT01680
025A	C500 334D	169		CLHI	RO,C'3M'	1630 PROCESSOR	MPT01690
025E	4330 0294	170		BE	MOD5		MPT01700
0262	C500 3253	171		CLHI	RO,C'2S'	1620 WITH SINGLE PRECISION	MPT01710
0266	4330 0294	172		BE	MOD5		MPT01720
026A	C500 3353	173		CLHI	RO,C'3S'	1630 WITH SINGLE PRECISION	MPT01730
026E	4330 0294	174		BE	MOD5		MPT01740
0272	C500 3244	175		CLHI	RO,C'2D'	1620 WITH DOUBLE PRECISION	MPT01750
0276	4330 0294	176		BE	MOD5		MPT01760
027A	C500 3344	177		CLHI	RO,C'3D'	1630 WITH DOUBLE PRECISION	MPT01770
027E	4330 0294	178		BE	MOD5		MPT01780
0282	C800 003F	179	CPUERR	LHI	RO,C'??'	NONE OF ABOVE ...??	MPT01790
0286	41E0 2112	180		BAL	R14,WRITE1		MPT01800
028A	0744	181		XHR	R4,R4		MPT01810
028C	4040 2344	182		STH	R4,CPUFLAG	ZERO CPU FLAG	MPT01820
0290	4300 01FE	183		B	PRITTLE		MPT01830
0294	4000 2342	184	MOD5	STH	RO,CPUNO		MPT01840
0298	41C0 2126	185	MOD	BAL	R12,CRLF		MPT01850
		186	*				MPT01860
	0000 029C	187	ENTRY2	EQU	*		MPT01870
029C	07EE	188	WMEM	XHR	R14,R14	MESSAGE ROUTINE FOR TEST 12 ONLY	MPT01880
029E	C840 1F42	189		LHI	R4,MESMEM1	BEGINNING ADDRESS OF MESSAGE	MPT01890
02A2	C850 1F57	190		LHI	R5,MESMEM2	ENDING ADDRESS OF MESSAGE	MPT01900
02A6	0320 234A	191		LB	R2,OUTDEV		MPT01910
02AA	0E20 234D	192		OC	R2,OUTCMD	WRITE COMMAND	MPT01920
02AE	9D23	193		SSR	R2,R3		MPT01930
02B0	2081	194		BTBS	8,1		MPT01940
02B2	9624	195		WBR	R2,R4	WRITE MESSAGE	MPT01950
02B4	41E0 217A	196		BAL	R14,READ1	READ	MPT01960
02B8	C400 007F	197	WMEM2	NHI	RO,X'7F'		MPT01970
02BC	C500 0030	198		CLHI	RO,X'30'		MPT01980
02C0	2335	199		BES	WMEM3		MPT01990
02C2	C500 0031	200		CLHI	RO,X'31'		MPT02000
02C6	4230 029C	201		BNE	WMEM		MPT02010
02CA	C400 000F	202	WMEM3	NHI	RO,X'F'		MPT02020
02CE	4000 1F58	203		STH	RO,MEMSTO	STORE FLAG IN STORAGE AREA	MPT02030
02D2	41C0 2126	204		BAL	R12,CRLF		MPT02040
02D6	41C0 2126	205		BAL	R12,CRLF		MPT02050
		206	*				MPT02060
	0000 02DA	207	ENTRY4	EQU	*		MPT02070
02DA	C800 0000	208		LHI	RO,0		MPT02080
02DE	4000 2340	209		STH	RO,CONOFF		MPT02090
02E2	4000 233C	210		STH	RO,TOTAL		MPT02100
02E6	4000 233E	211		STH	RO,TOTERR		MPT02110
02EA	0200 2348	212		STB	RO,ASCOUNT		MPT02120
02EE	C800 3331	213		LHI	RO,C'31'		MPT02130
02F2	0200 2349	214		STB	RO,ASCNUMB	INITIALIZE	MPT02140
	0000 02F6	215	ENTRY3	EQU	*		MPT02150
02F6	0320 234A	216		LB	R2,OUTDEV		MPT02160
02FA	9D25	217		SSR	R2,R5		MPT02170
02FC	4210 0310	218		BTC	1,ENT3B	DU?	MPT02180

0300	C450	00FC	219	NHI	R5,X'FC'		MPT02190	
0304	C550	000C	220	CLHI	R5,X'0C'	DU PASLA?	MPT02200	
0308	4330	0310	221	BE	ENT3B		MPT02210	
030C	4300	0316	222	S	TEST1	GO TO TEST 1	MPT02220	
	0000	0310	223	ENT3B	EQU *		MPT02230	
0310	2451		224	LIS	R5,1		MPT02240	
0312	4950	2340	225	STH	R5,CONOFF		MPT02250	
			226	*****				MPT02260
			227	*			MPT02270	
			228	*	TEST1 CHECKS THE INSTRUCTIONS		MPT02280	
			229	*			MPT02290	
			230	*	LPSW, BTC,BFC,BTFS,BTBS,BFFS,BFBS		MPT02300	
			231	*			MPT02310	
			232	*****				MPT02320
0316	C800	04EA	233	TEST1	LHI	RO,TEST2	MPT02330	
031A	4000	235C	234		STH	RO,NXTST	MPT02340	
031E	C800	3131	235		LHI	RO,C'11'	MPT02350	
0322	4000	2318	236		STH	RO,TESTNO	MPT02360	
0326	C800	0111	237		LHI	RO,X'0111'	MPT02370	
032A	4000	235A	238		STH	RO,ERRIND	MPT02380	
			239	*			MPT02390	
			240	*			MPT02400	
	0000	032E	241	LPSW	EQU *	LPSW INSTRUCTION TEST	MPT02410	
032E	C200	0332	242		LPSW	T1	MPT02420	
0332	0C00		243	T1	DC	0,T1A	MPT02430	
0334	033A							
0336	4300	21F4	244	T1AA	B	ERROR	MPT02440	
033A	4300	0346	245	T1A	B	T1B	MPT02450	
033E	4300	034E	246	T1A2	B	T1C	MPT02460	
0342	4300	21F4	247	T1ERR1	B	ERROR	MPT02470	
0346	4300	033E	248	T1B	B	T1A2	MPT02480	
034A	4300	21F4	249		B	ERROR	MPT02490	
			250	*			MPT02500	
			251	*			MPT02510	
	0000	034E	252	BTC	EQU *	BTC INSTRUCTION TEST	MPT02520	
034E	4210	0362	253	T1C	BTC	1,T1ERR2	MPT02530	
0352	4220	0362	254		BTC	2,T1ERR2	MPT02540	
0356	4240	0362	255		BTC	4,T1ERR2	MPT02550	
035A	4280	0362	256		BTC	8,T1ERR2	MPT02560	
			257	*			MPT02570	
			258	*			MPT02580	
	0000	035E	259	BFC	EQU *	BFC INSTRUCTION TEST	MPT02590	
035E	4310	036E	260		BFC	1,T1D1	MPT02600	
0362	C800	0211	261	T1ERR2	LHI	RO,X'0211'	MPT02610	
0366	4000	235A	262		STH	RO,ERRIND	MPT02620	
036A	4300	21F4	263		B	ERROR	MPT02630	
036E	4320	0376	264	T1D1	BFC	2,T1D2	MPT02640	
0372	4300	0362	265		B	T1ERR2	MPT02650	
0376	4340	037E	266	T1D2	BFC	4,T1D3	MPT02660	
037A	4300	0362	267		B	T1ERR2	MPT02670	
037E	4380	0386	268	T1D3	BFC	8,T1D4	MPT02680	
0382	4300	0362	269		B	T1ERR2	MPT02690	
0386	C200	038A	270	T1D4	LPSW	T1D8	MPT02700	
038A	000F		271	T1D8	DC	15,T1D9	MPT02710	
038C	038E					CONDITON CODE = 1111 LOC = T1D9		

038E	4310	038A	272	T1D9	BFC	1,T1ERR3	COND CODE = 1111 , SO	MPT02720
0392	4320	038A	273		BFC	2,T1ERR3	ERR. IF BRANCH ON ZERO	MPT02730
0396	4340	038A	274		BFC	4,T1ERR3		MPT02740
039A	4380	038A	275		BFC	8,T1ERR3		MPT02750
039E	4210	03A6	276		BTC	1,T1E1	COND. CODE = 1111 , SO	MPT02760
03A2	4300	038A	277		B	T1ERR3	ERR. IF BRANCH NOT TAKEN	MPT02770
03A6	4220	03AE	278	T1E1	BTC	2,T1E2		MPT02780
03AA	4300	038A	279		B	T1ERR3		MPT02790
03AE	4240	03B6	280	T1E2	BTC	4,T1E3		MPT02800
03B2	4300	038A	281		B	T1ERR3		MPT02810
03B6	4280	03C6	282	T1E3	BTC	8,T1E4		MPT02820
03BA	C800	0311	283	T1ERR3	LHI	RO,X'0311'	ERROR 1103	MPT02830
03BE	4000	235A	284		STH	RO,ERRIND		MPT02840
03C2	4300	21F4	285		B	ERROR		MPT02850
			286	*				MPT02860
			287	*				MPT02870
	0000	03C6	288	BFFS	EQU	*	BFFS INSTRUCTION TEST	MPT02880
03C6	2301		289	T1E4	BFFS	0,1	BS +1	MPT02890
03C8	2302		290		BFFS	0,2	BS+2	MPT02900
03CA	2302		291		BFFS	0,2		MPT02910
03CC	2303		292		BFFS	0,3	BS+3	MPT02920
03CE	4300	0468	293		B	T1ERR4		MPT02930
03D2	2303		294		BFFS	0,3	BS+3	MPT02940
03D4	4300	0468	295		B	T1ERR4		MPT02950
03D8	2307		296		BFFS	0,7	BS+7 1	MPT02960
03DA	4300	0468	297		B	T1ERR4		MPT02970
03DE	2306		298		BFFS	0,6	BS+6 3	MPT02980
03E0	4300	0468	299		B	T1ERR4		MPT02990
03E4	2306		300		BFFS	0,6	BS+6	MPT03000
03E6	2204		301		BFFS	0,4	BS-4 2	MPT03010
03E8	2302		302		BFFS	0,2	BS+2	MPT03020
03EA	2203		303		BFFS	0,3	BS-3 4	MPT03030
03EC	4300	0468	304		B	T1ERR4		MPT03040
			305	*				MPT03050
03F0	230F		306	T1F	BFFS	0,15	BS+15 1	MPT03060
03F2	2302		307		BFFS	0,2		MPT0307C
03F4	2303		308		BFFS	0,3	BS+3	MPT03080
03F6	2302		309		BFFS	0,2		MPT03090
03F8	230E		310		BFFS	0,14	BS+14 3	MPT03100
03FA	2302		311		BFFS	0,2		MPT03110
03FC	2300		312		BFFS	0,13	BS+13 5	MPT03120
03FE	2302		313		BFFS	0,2		MPT03130
0400	230C		314		BFFS	0,12	BS+12 7	MPT03140
0402	2302		315		BFFS	0,2		MPT03150
0404	2308		316		BFFS	0,11	BS+11 9	MPT03160
0406	2302		317		BFFS	0,2		MPT03170
0408	230A		318		BFFS	0,10	BS+10 11	MPT03180
040A	2303		319		BFFS	0,3		MPT03190
040C	2309		320		BFFS	0,9	BS+9 13 TO T1F2	MPT03200
040E	2208		321		BFFS	0,11	BS-11 2	MPT03210
0410	4300	0468	322		B	T1ERR4		MPT03220
0414	220C		323		BFFS	0,12	BS-12 4	MPT03230
0416	2208		324		BFFS	0,11	BS-11 6	MPT03240
0418	220A		325		BFFS	0,10	BS-10 8	MPT03250
041A	2209		326		BFFS	0,9	BS-9 10	MPT03260

041C	2208	327	BFBS	0,8	BS-8	12	MPT03270	
		328	*				MPT03280	
041E	2308	329	T1F2	BFFS	0,8	BS+8	1	MPT03290
0420	2302	330		BFFS	0,2			MPT03300
0422	2307	331		BFFS	0,7	BS+7	3	MPT03310
0424	2302	332		BFFS	0,2			MPT03320
0426	2306	333		BFFS	0,6	BS+6	5	MPT03330
0428	2302	334		BFFS	0,2			MPT03340
042A	2305	335		BFFS	0,5	BS+5	7	MPT03350
042C	2306	336		BFFS	0,6			MPT03360
042E	2206	337		BFBS	0,6	BS-6	2	MPT03370
0430	2205	338		BFBS	0,5	BS-5	4	MPT03380
0432	2204	339		BFBS	0,4	BS-4	6	MPT03390
0434	2304	340		BFFS	0,4	BS+4	8	MPT03400
0436	2301	341		BFFS	0,1	BS+1		MPT03410
0438	4300 0468	342	B	T1ERR4				MPT03420
		343	*					MPT03430
043C	230F	344	BS	T1F3				MPT03440
043E	2302	345	BFFS	0,2				MPT03450
0440	2307	346	BFFS	0,7	9	BS+7		MPT03460
0442	2302	347	BFFS	0,2				MPT03470
0444	230F	348	BFFS	0,15	6	BS+15		MPT03480
0446	2302	349	BFFS	0,2				MPT03490
0448	2204	350	BFBS	0,4	8	BS-4		MPT03500
044A	2304	351	BFFS	0,4				MPT03510
044C	230D	352	BFFS	0,13				MPT03520
044E	230C	353	BS	T1F4				MPT03530
0450	2308	354	BFFS	0,8	4	BS+8		MPT03540
0452	2302	355	BFFS	0,2				MPT03550
0454	2202	356	BFBS	0,2	3	BS-3		MPT03560
0456	2303	357	BFFS	0,3				MPT03570
0458	2202	358	BFBS	0,2	2	BS-2		MPT03580
045A	2201	359	T1F3	BFBS	0,1	1	BS-1	MPT03590
045C	2306	360	SS	T1ERR4				MPT03600
045E	2305	361	BS	T1ERR4				MPT03610
0460	220E	362	BFBS	0,14	5	BS-14		MPT03620
0462	220D	363	BFBS	0,13	7	BS-13		MPT03630
0464	2302	364	BS	T1ERR4				MPT03640
0466	2309	365	T1F4	BS	T1G2			MPT03650
0468	C800 0411	366	T1ERR4	LHI	RO,X*0411	ERROR 1104		MPT03660
046C	4000 235A	367		STH	RO,ERRIND	PART 1, TEST 1, ERROR NUMBER 04		MPT03670
0470	4300 21F4	368	B		ERROR			MPT03680
		369	*					MPT03690
		370	*	COND CODE = 1111				MPT03700
		371	*					MPT03710
	0000 0474	372	BTFS	EQU	*	BTFS,BTBS INSTRUCTION TEST		MPT03720
0474	2134	373	T1G	BTFS	3,4	3		MPT03730
0476	2302	374		BFFS	0,2			MPT03740
0478	2154	375	T1G2	BTFS	5,4	1		MPT03750
047A	2302	376		BFFS	0,2			MPT03760
047C	218A	377		BTFS	8,10	4		MPT03770
047E	2302	378		BFFS	0,2			MPT03780
	0000 0480	379	BTBS	EQU	*			MPT03790
0480	2056	380		BTBS	5,6	2		MPT03800
0482	2302	381		BFFS	0,2			MPT03810

0484	2174	382		BTFS	7,4	6	MPT03820	
0486	2302	383		BFFS	0,2		MPT03830	
0488	2117	384		BTFS	1,7	8	MPT03840	
048A	2302	385		BFFS	0,2		MPT03850	
048C	2092	386		BTBS	9,2	7	MPT03860	
048E	2302	387		BFFS	0,2		MPT03870	
0490	2046	388		BTBS	4,6	5	MPT03880	
0492	4300 04DA	389		B	T1ERR5		MPT03890	
0496	2315	390		BFFS	1,5	COND CODE = 111 , SO	MPT03900	
0498	2344	391		BFFS	4,4		MPT03910	
049A	2393	392		BFFS	9,3	ERR. IF BRANCH	MPT03920	
049C	2372	393		BFFS	7,2		MPT03930	
049E	2303	394		BFFS	0,3		MPT03940	
04A0	4300 04DA	395		B	T1ERR5		MPT03950	
		396	*				MPT03960	
04A4	C200 04A8	397		LPSW	T1H		MPT03970	
04A8	0000	398	T1H	DC	0,T1H1	CC=0, LOC = T1H1	MPT03980	
04AA	0482							
04AC	2304	399		BS	T1H1+2		MPT03990	
04AE	2334	400		BFFS	3,4	3	MPT04000	
04B0	2302	401		BFFS	0,2		MPT04010	
04B2	2354	402	T1H1	BFFS	5,4	1	MPT04020	
04B4	2302	403		BFFS	0,2		MPT04030	
04B6	238A	404		BFFS	8,10	4	MPT04040	
04B8	2302	405		BFFS	0,2		MPT04050	
04BA	2256	406		BFFS	5,6	2	MPT04060	
04BC	2302	407		BFFS	0,2		MPT04070	
04BE	2374	408		BFFS	7,4	6	MPT04080	
04C0	2302	409		BFFS	0,2		MPT04090	
04C2	2317	410		BFFS	1,7	8	MPT04100	
04C4	2302	411		BFFS	0,2		MPT04110	
04C6	2292	412		BFFS	9,2	7	MPT04120	
04C8	2302	413		BFFS	0,2		MPT04130	
04CA	2246	414		BFFS	4,6	5	MPT04140	
04CC	4300 04DA	415		B	T1ERR5		MPT04150	
		416	*				MPT04160	
04D0	2115	417		BTFS	1,5	COND CODE = 0000 , SO	MPT04170	
04D2	2144	418		BTFS	4,4		MPT04180	
04D4	2193	419		BTFS	9,3	ERR. IF BRANCH	MPT04190	
04D6	2172	420		BTFS	7,2		MPT04200	
04D8	2307	421		BFFS	0,7		MPT04210	
04DA	C800 0511	422	T1ERR5	LHI	RO,X'0511'	ERROR 1105	MPT04220	
04DE	4000 235A	423		STH	RO,ERRIND		MPT04230	
04E2	4300 21F4	424		B	ERROR		MPT04240	
04E6	4300 04EA	425	T1END	B	TEST2		MPT04250	
		426	*				MPT04260	
		427	*				MPT04270	
		428	*****					MPT04280
		429	*				MPT04290	
		430	*	TEST 2 CHECKS THE INSTRUCTIONS			MPT04300	
		431	*				MPT04310	
		432	*	LH, CLHR, CLHI, LHI, CLH, LIS, LHR, LCS			MPT04320	
		433	*				MPT04330	
		434	*	MEMORY LOCATIONS USED ARE			MPT04340	
		435	*				MPT04350	

		436	*	ZERO	0		MPT04360	
		437	*	ONE	X'FFFF'		MPT04370	
		438	*	FIVE	X'5555'		MPT04380	
		439	*	TEN	X'AAAA'		MPT04390	
		440	*				MPT04400	
		441	*****					MPT04410
04EA	C800 0604	442	TEST2	LHI	RO,TEST3		MPT04420	
04EE	4000 235C	443		STH	RO,NXTST		MPT04430	
04F2	C800 0112	444		LHI	RO,X'0112'		MPT04440	
04F6	4000 235A	445		STH	RO,ERRIND	ERRIND = 0112	MPT04450	
04FA	C800 3132	446		LHI	RO,X'3132'	PART1 , TEST2	MPT04460	
04FE	4000 2318	447		STH	RO,TESTNO		MPT04470	
0502	C200 0506	448		LPSW	T2		MPT04480	
0506	3000	449	T2	DC	X'3000',T2A		MPT04490	
0508	050A							
		450	*				MPT04500	
050A	2400	451	T2A	LIS	RO,0	RO = 0	MPT04510	
050C	213C	452		BNZS	T2R1		MPT04520	
		453	*				MPT04530	
	0000 050E	454	LHR	EQU	*	LHR INSTRUCTION TEST	MPT04540	
		455	*				MPT04550	
050E	0810	456		LHR	R1,R0	R1 = R0 = 0	MPT04560	
0510	213A	457		BNZS	T2R1		MPT04570	
0512	0821	458		LHR	R2,R1	R2 = R1 = 0	MPT04580	
0514	0832	459		LHR	R3,R2	R3 = R2 = 0	MPT04590	
0516	0843	460		LHR	R4,R3	R4 = R3 = 0	MPT04600	
0518	0504	461		CLHR	RO,R4	IS RO = R4 (=0)	MPT04610	
051A	2135	462		BNES	T2R1		MPT04620	
051C	0853	463		LHR	R5,R3	R5 = R3 = 0	MPT04630	
051E	0865	464		LHR	R6,R5	R6 = R5 = 0	MPT04640	
0520	0536	465		CLHR	R3,R6	IS R3 = R6 (=0)	MPT04650	
0522	2332	466		BES	T2B		MPT04660	
0524	230E	467	T2R1	BS	T2R2		MPT04670	
		468	*				MPT04680	
	0000 0526	469	LH	EQU	*	LH INSTRUCTION TEST	MPT04690	
		470	*				MPT04700	
0526	4870 235E	471	T2B	LH	R7,ZERO	R7 = 0	MPT04710	
052A	C570 0000	472		CLHI	R7,0		MPT04720	
052E	2139	473		BNES	T2R2		MPT04730	
0530	4530 235E	474		CLH	R3,ZERO	IS R3 = ZERO (=0)	MPT04740	
0534	2136	475		BNES	T2R2		MPT04750	
0536	48A0 236A	476		LH	R10,TEN	R10 = AAAA	MPT04760	
053A	C5A0 AAAA	477		CLHI	R10,X'AAAA'		MPT04770	
053E	2332	478		BES	T2C		MPT04780	
0540	230D	479	T2R2	BS	T2R3		MPT04790	
0542	C5A0 AAA9	480	T2C	CLHI	R10,X'AAA9'	R10 > AAA9	MPT04800	
0546	218A	481		BLS	T2R3	LESS, ERROR	MPT04810	
0548	2339	482		BES	T2R3	EQUAL, ERROR	MPT04820	
054A	45A0 2362	483		CLH	R10,ONE	R10 = AAAA , ONE = FFFF	MPT04830	
054E	2386	484		BNLS	T2R3	ERROR IF NOT LOW	MPT04840	
0550	2385	485		BNCS	T2R3	ERROR IF 'C' FLAG NOT SET	MPT04850	
0552	4850 2366	486		LH	R5,FIVE	R5 = FIVE = 5555	MPT04860	
		487	*				MPT04870	
	0000 0556	488	CLHR	EQU	*	CLHR INSTRUCTION TEST	MPT04880	
0556	055A	489		CLHR	R5,R10	R5 = 5555 R10 = AAAA	MPT04890	

0558	2182	490		BLS	T2D		MPT04900
055A	2300	491	T2R3	BS	T2R4		MPT04910
055C	0553	492	T2D	CLHR	R5,R3	R5 = 5555, R3 = 0	MPT04920
055E	2188	493		BLS	T2R4		MPT04930
0560	233A	494		BES	T2R4		MPT04940
0562	C8F0 5555	495		LHI	R15,X'5555'		MPT04950
0566	055F	496		CLHR	R5,R15	R5 = R15 = 5555	MPT04960
0568	2136	497		BNES	T2R4		MPT04970
056A	0505	498		CLHR	R0,R5	R0 = 0, R5 = 5555	MPT04980
056C	2384	499		BNLS	T2R4		MPT04990
		500	*				MPT05000
	0000 056E	501	CLH	EQU	*	CLH INSTRUCTION TEST	MPT05010
		502	*				MPT05020
056E	4550 2366	503		CLH	R5,FIVE	R5 = 5555, FIVE = 5555	MPT05030
0572	2332	504		BES	T2E		MPT05040
0574	230E	505	T2R4	BS	T2R5		MPT05050
0576	4540 235E	506	T2E	CLH	R4,ZERO	R4 = 0000 = ZERO = 0	MPT05060
057A	2138	507		BNES	T2R5		MPT05070
057C	45A0 2366	508		CLH	R10,FIVE	R10 = AAAA, FIVE = 5555	MPT05080
0580	2188	509		BLS	T2R5		MPT05090
0582	2337	510		BES	T2R5		MPT05100
0584	C5A0 AAAB	511		CLHI	R10,X'AAAB'	R10 = AAAB	MPT05110
0588	2384	512		BNLS	T2R5		MPT05120
		513	*				MPT05130
	0000 058A	514	CLHI	EQU	*	CLHI INSTRUCTION TEST	MPT05140
		515	*				MPT05150
058A	C540 0003	516		CLHI	R4,3	R4 = 0 <3	MPT05160
058E	2183	517		BLS	T2F		MPT05170
0590	4300 21F4	518	T2R5	B	ERROR		MPT05180
0594	48F0 2362	519	T2F	LH	R15,ONE	R15 = ONE = FFFF	MPT05190
0598	C5F0 FFFF	520		CLHI	R15,X'FFFF'		MPT05200
059C	2138	521		BNES	T2R6		MPT05210
059E	48A0 2366	522		LH	R10,FIVE	R10 = 5555	MPT05220
05A2	05A5	523		CLHR	R10,R5		MPT05230
05A4	2137	524		BNES	T2R6		MPT05240
05A6	4850 236A	525		LH	R5,TEN	R5 = AAAA	MPT05250
	0000 05AA	526	LHI	EQU	*		MPT05260
05AA	C8A0 AAAA	527		LHI	R10,X'AAAA'	R10 = AAAA	MPT05270
05AE	055A	528		CLHR	R5,R10	IS R5 = R10 (=AAAA)	MPT05280
05B0	2332	529		BES	T2G		MPT05290
05B2	2300	530	T2R6	BS	T2R7		MPT05300
		531	*				MPT05310
	0000 05B4	532	LIS	EQU	*	LIS INSTRUCTION TEST	MPT05320
		533	*				MPT05330
05B4	2477	534	T2G	LIS	R7,7	R7 = 7	MPT05340
05B6	C570 0007	535		CLHI	R7,7		MPT05350
05BA	2139	536		BNES	T2R7		MPT05360
05BC	2488	537		LIS	R8,8	R8 = 8	MPT05370
05BE	24DD	538		LIS	R13,13	R13=13	MPT05380
05C0	C580 0008	539		CLHI	R8,8		MPT05390
05C4	2134	540		BNES	T2R7		MPT05400
05C6	C5D0 000D	541		CLHI	R13,13		MPT05410
05CA	2333	542		BES	T2H		MPT05420
05CC	4300 05EE	543	T2R7	B	T2R8		MPT05430
		544	*				MPT05440

	0000 0500	545	LCS	EQU	*	LCS INSTRUCTION TEST	MPT05450
		546	*				MPT05460
05D0	25E1	547	T2H	LCS	R14,1	R14=FFFF	MPT05470
05D2	2233	548		BZS	T2R7		MPT05480
05D4	2024	549		BPS	T2R7		MPT05490
05D6	05EF	550		CLHR	R14,R15	R14 = R15 FFFF ?	MPT05500
05D8	213B	551		BNES	T2R8		MPT05510
05DA	258B	552		LCS	R11,11	R11 = FFF5	MPT05520
05DC	2129	553		BPS	T2R8		MPT05530
05DE	25CC	554		LCS	R12,12	R12 = FFF4	MPT05540
05E0	2127	555		BPS	T2R8		MPT05550
05E2	C5B0 FFF5	556		CLHI	R11,X'FFF5'		MPT05560
05E6	2134	557		BNES	T2R8		MPT05570
05E8	C5C0 FFF4	558		CLHI	R12,X'FFF4'		MPT05580
05EC	2333	559		BES	T2END		MPT05590
05EE	4300 21F4	560	T2R8	B	ERROR	ERROR 1201	MPT05600
05F2	4300 0604	561	T2END	B	TEST3		MPT05610
05F6	0000	562		DC	0		MPT05620
05F8	0000	563	T2WRD0	DC	0		MPT05630
05FA	0000	564		DC	0		MPT05640
05FC	0000	565	T2WRD1	DC	0		MPT05650
05FE	0000	566		DC	0		MPT05660
0600	0000	567	T2WRD2	DC	0		MPT05670
0602	0000	568		DC	0		MPT05680
		569	*				MPT05690
		570	*				MPT05700
		571	*	*****			MPT05710
		572	*				MPT05720
		573	*	TEST 3 CHECKS THE INSTRUCTIONS			MPT05730
		574	*				MPT05740
		575	*	STH , LM AND STM			MPT05750
		576	*				MPT05760
		577	*	T3BUF0 = 16 HW'S OF ZEROS			MPT05770
		578	*				MPT05780
		579	*	T3BUF2 = 16 HW'S OF DATA 0,1,2,.....,14,15			MPT05790
		580	*				MPT05800
		581	*	T3BUF1 = T3BUF2 + 14, (STARTS AT HW = 7)			MPT05810
		582	*				MPT05820
		583	*	T3BUF3 = 16 HW'S OF STORAGE AREA			MPT05830
		584	*				MPT05840
		585	*	*****			MPT05850
		586	*				MPT05860
0604	C800 079E	587	TEST3	LHI	RO,TEST4		MPT05870
0608	4000 235C	588		STH	RO,NXTST		MPT05880
060C	C800 0113	589		LHI	RO,X'0113'		MPT05890
0610	4000 235A	590		STH	RO,ERRIND	ERRIND = 0113	MPT05900
0614	C800 3133	591		LHI	RO,X'3133'	PART 1, TEST 3	MPT05910
0618	4000 2318	592		STH	RO,TESTNO		MPT05920
		593	*				MPT05930
061C	2501	594		LCS	RO,1	RO=FFFF	MPT05940
061E	2512	595		LCS	R1,2		MPT05950
0620	2523	596		LCS	R2,3		MPT05960
		597	*				MPT05970
	0000 0622	598	STH	EQU	*	STH INSTRUCTION TEST	MPT05980
		599	*				MPT05990

0622	4000 05F8	600	STH	RO,T2WRD0	T2WRD0 = RO = FFFF	MPT06000
0626	4010 05FC	601	STH	R1,T2WRD1	T2WRD1 = R1 = FFFE	MPT06010
062A	4020 0600	602	STH	R2,T2WRD2	T2WRD2 = R2 = FFFD	MPT06020
062E	4310 21F4	603	BNM	ERROR	IF NOT NEGATIVE , ERROR	MPT06030
0632	4860 05F8	604	LH	R6,T2WRD0		MPT06040
0636	4870 05FC	605	LH	R7,T2WRD1		MPT06050
063A	4880 0600	606	LH	R8,T2WRD2		MPT06060
063E	0506	607	CLHR	RO,R6	RO=R6?	MPT06070
0640	4230 21F4	608	BNE	ERROR	NO, ERROR	MPT06080
0644	0528	609	CLHR	R2,R8		MPT06090
0646	4230 21F4	610	BNE	ERROR		MPT06100
064A	C800 0213	611	LHI	RO,X'213'	PART 1, TEST 3, ERROR 02	MPT06110
064E	4000 235A	612	STH	RO,ERRIND		MPT06120
		613	*			MPT06130
	0000 0652	614	LM	EQU *	LM INSTRUCTION TEST	MPT06140
		615	*			MPT06150
0652	D100 0734	616	T3B	LM RO,T3BUFO	ZERO INTO ALL REG. RO THRU R15	MPT06160
0656	0800	617	LHR	RO,RO		MPT06170
0658	2135	618	BNZS	T3R1		MPT06180
065A	050F	619	CLHR	RO,R15	IS RO = R15 (=0)	MPT06190
065C	2133	620	BNES	T3R1		MPT06200
065E	0507	621	CLHR	RO,R7		MPT06210
0660	2332	622	BES	T3C		MPT06220
0662	2300	623	T3R1	BS T3R2		MPT06230
		624	*			MPT06240
0664	D170 0764	625	T3C	LM R7,T3BUF1	REG7=7,.....,REG15=15	MPT06250
0668	0800	626	LHR	RO,RO	RO THRU R6 MUST BE UNCHANGED	MPT06260
066A	2139	627	BNZS	T3R2		MPT06270
066C	0866	628	LHR	R6,R6		MPT06280
066E	2137	629	BNZS	T3R2		MPT06290
0670	C570 0007	630	CLHI	R7,7		MPT06300
0674	2134	631	BNES	T3R2		MPT06310
0676	C580 0008	632	CLHI	R8,8		MPT06320
067A	2332	633	BES	T3D		MPT06330
067C	230F	634	T3R2	BS T3R3		MPT06340
067E	C5F0 000F	635	T3D	CLHI R15,15		MPT06350
0682	213C	636	BNES	T3R3		MPT06360
0684	C5E0 000E	637	CLHI	R14,14		MPT06370
0688	2139	638	BNES	T3R3		MPT06380
		639	*			MPT06390
068A	2544	640	LCS	R4,4	R4=FFFF	MPT06400
068C	2555	641	LCS	R5,5	R5=FFFFB	MPT06410
068E	2565	642	LCS	R6,5	R6=FFFFB	MPT06420
		643	*			MPT06430
0690	D150 0734	644	LM	R5,T3BUFO	ALL REG. R5 THRU R15 = 0	MPT06440
0694	C540 FFFC	645	CLHI	R4,X'FFFC'	R4 SHOULD NOT BE DESTROYED	MPT06450
0698	2332	646	BES	T3E	O.K. BRANCH	MPT06460
069A	2300	647	T3R3	BS T3R4		MPT06470
069C	0800	648	T3E	LHR RO,RO	RO SHOULD BE ZERO	MPT06480
069E	213B	649	BNZS	T3R4	NO, ERROR	MPT06490
06A0	0505	650	CLHR	RO,R5	R5-R15 SHOULD BE ZERO	MPT06500
06A2	2139	651	BNES	T3R4	NO..ERROR	MPT06510
06A4	0506	652	CLHR	RO,R6		MPT06520
06A6	2137	653	BNES	T3R4		MPT06530
06A8	050F	654	CLHR	RO,R15		MPT06540

06AA	2135	655	BNES	T3R4		MPT06550
06AC	050E	656	CLHR	RO,R14		MPT06560
06AE	2133	657	BNES	T3R4		MPT06570
06B0	0509	658	CLHR	RO,R9		MPT06580
06B2	2333	659	BES	T3F		MPT06590
06B4	4300 21F4	660	T3R4	B	ERROR	MPT06600
06B8	C800 0313	661	T3F	LHI	RO,X'313'	ERROR 1302
06BC	4000 235A	662		STM	RO,ERRIND	MPT06610
06C0	2466	663		LIS	R6,6	MPT06620
06C2	0106 0750	664		LM	RO,T3BUF2-6(R6)	270
		665	*			REG 0=0 REG 1=1 ETC
	0000 06C6	666	STM	EQU	*	STM INSTRUCTION TEST
		667	*			MPT06640
		668		STM	RO,T3BUF3-8(R8)	MPT06650
06C6	D008 0770	669		LH	RO,T3BUF3	0
06CA	4800 0778	670		BNZS	T3R5	MPT06660
06CE	213D	671		LH	RO,T3BUF3+2	1
06D0	4800 077A	672		CLHR	RO,R1	MPT06670
06D4	0501	673		BNES	T3R5	MPT06680
06D6	2139	674		LH	RO,T3BUF3+4	2
06D8	4800 077C	675		CLHR	RO,R2	MPT06690
06DC	0502	676		BNES	T3R5	MPT06700
06DE	2135	677		LH	RO,T3BUF3+30	15
06E0	4800 0796	678		CLHR	RO,R15	MPT06710
06E4	050F	679		BES	T3G	MPT06720
06E6	2332	680	T3R5	BS	T3R6	MPT06730
06E8	230D	681	T3G	LH	RO,T3BUF3+28	14
06EA	4800 0794	682		CLHR	RO,R14	MPT06740
06EE	050E	683		BNES	T3R6	MPT06750
06F0	2139	684		LH	RO,T3BUF3+18	MPT06760
06F2	4800 078A	685		CLHR	R9,RO	MPT06770
06F6	0590	686		BNES	T3R6	MPT06780
06F8	2135	687		LH	RO,T3BUF3+10	5
06FA	4800 0782	688		CLHR	RO,R5	MPT06790
06FE	0505	689		BES	T3H	MPT06800
0700	2333	690	T3R6	B	ERROR	ERROR 1303
0702	4300 21F4	691	T3H	LM	RO,T3BUF0	EACH REG. =0
0706	D100 0734	692		STM	RO,T3BUF3	T3BUF3 = 0
070A	D000 0778	693		LH	RO,T3BUF3	0
070E	4800 0778	694		BNZS	T3R7	MPT06810
0712	213E	695		LH	RO,T3BUF3+2	1
0714	4800 077A	696		BNZS	T3R7	MPT06820
0718	2138	697		LH	RO,T3BUF3+30	15
071A	4800 0796	698		BNZS	T3R7	MPT06830
071E	2138	699		LH	RO,T3BUF3+14	7
0720	4800 0786	700		BNZS	T3R7	MPT06840
0724	2135	701		LH	RO,T3BUF3+20	10
0726	4800 078C	702		BZ	T3END	MPT06850
072A	4330 079A	703	T3R7	B	ERROR	ERROR 1303
072E	4300 21F4	704		DC	X'FFFF'	MPT06860
0732	FFFF	705	T3BUF0	DC	0	0
0734	0000	706		DC	0	1
0736	0000	707		DC	0	2
0738	0000	708		DC	0	3
073A	0000	709		DC	0	4
073C	0000					MPT06870
						MPT06880
						MPT06890
						MPT06900
						MPT06910
						MPT06920
						MPT06930
						MPT06940
						MPT06950
						MPT06960
						MPT06970
						MPT06980
						MPT06990
						MPT07000
						MPT07010
						MPT07020
						MPT07030
						MPT07040
						MPT07050
						MPT07060
						MPT07070
						MPT07080
						MPT07090

073E	0000	710	DC	0	5	MPT07100
0740	0000	711	DC	0	6	MPT07110
0742	0000	712	DC	0	7	MPT07120
0744	0000	713	DC	0	8	MPT07130
0746	0000	714	DC	0	9	MPT07140
0748	0000	715	DC	0	10	MPT07150
074A	0000	716	DC	0	11	MPT07160
074C	0000	717	DC	0	12	MPT07170
074E	0000	718	DC	0	13	MPT07180
0750	0000	719	DC	0	14	MPT07190
0752	0000	720	DC	0	15	MPT07200
0754	FFFF	721	DC	X'FFFF'		MPT07210
0756	0000	722	T3BUF2	DC	0	MPT07220
0758	0001	723		DC	1	MPT07230
075A	0002	724		DC	2	MPT07240
075C	0003	725		DC	3	MPT07250
075E	0004	726		DC	4	MPT07260
0760	0005	727		DC	5	MPT07270
0762	0006	728		DC	6	MPT07280
0764	0007	729	T3BUF1	DC	7	MPT07290
0766	0008	730		DC	8	MPT07300
0768	0009	731		DC	9	MPT07310
076A	000A	732		DC	10	MPT07320
076C	000B	733		DC	11	MPT07330
076E	000C	734		DC	12	MPT07340
0770	000D	735		DC	13	MPT07350
0772	000E	736		DC	14	MPT07360
0774	000F	737		DC	15	MPT07370
0776	FFFF	738		DC	X'FFFF'	MPT07380
0778	0000	739	T3BUF3	DC	0	MPT07390
077A	0000	740		DC	0	MPT07400
077C	0000	741		DC	0	MPT07410
077E	0000	742		DC	0	MPT07420
0780	0000	743		DC	0	MPT07430
0782	0000	744		DC	0	MPT07440
0784	0000	745		DC	0	MPT07450
0786	0000	746		DC	0	MPT07460
0788	0000	747		DC	0	MPT07470
078A	0000	748		DC	0	MPT07480
078C	0000	749		DC	0	MPT07490
078E	0000	750		DC	0	MPT07500
0790	0000	751		DC	0	MPT07510
0792	0000	752		DC	0	MPT07520
0794	0000	753		DC	0	MPT07530
0796	0000	754		DC	0	MPT07540
0798	0000	755		DC	0	MPT07550
079A	4300 079E	756	T3END	B	TEST4	MPT07560
		757	*****			MPT07570
		758	*		MPT07580	
		759	*	TEST 4 CHECKS THE LOGIC INSTRUCTIONS	MPT07590	
		760	*		MPT07600	
		761	*	XHR , XHI , XM ; OHR , OHI , OH ; NHR , NHI , NH	MPT07610	
		762	*		MPT07620	
		763	*****			MPT07630
079E	C800 099C	764	TEST4	LHI	RO,TEST5	MPT07640

07A2	4000	235C	765		STH	RO,NXTST		MPT07650
07A6	C800	0114	766		LHI	RO,X'0114'		MPT07660
07AA	40C0	235A	767		STH	RO,ERRIND	ERRIND = 0114	MPT07670
07AE	C800	3134	768		LHI	RO,X'3134'		MPT07680
07B2	4000	2318	769		STH	RO,TESTNO	PART 1, TEST 4	MPT07690
			770	*				MPT07700
07B6	0100	0734	771		LM	RO,T3BUFO	EACH REG. RO THRU R15=0	MPT07710
07BA	4850	2366	772		LH	R5,FIVE	R5=5555	MPT07720
07BE	48A0	236A	773		LH	R10,TEN	R10=AAAA	MPT07730
07C2	25F1		774		LCS	R15,1		MPT07740
			775	*				MPT07750
	0000	07C4	776	XHR	EQU	*	XHR INSTRUCTION TEST	MPT07760
			777	*				MPT07770
07C4	0705		778		XHR	RO,R5	RO=R5=5555	MPT07780
07C6	233D		779		BZS	T4R1	ZERO , ERROR	MPT07790
07C8	21CC		780		BTFS	12,12	C,V FLAG SET...ERROR	MPT07800
07CA	050F		781		CLHR	RO,R15	RO> R15	MPT07810
07CC	238A		782		BNLS	T4R1	YES, ERROR	MPT07820
07CE	070A		783		XHR	RO,R10	RO=FFFF	MPT07830
07D0	2338		784		BZS	T4R1	ZERO?...ERROR	MPT07840
07D2	21C7		785		BTFS	12,7	C,V FLAGS SET..ERROR	MPT07850
07D4	050F		786		CLHR	RO,R15		MPT07860
07D6	2135		787		BNES	T4R1		MPT07870
07D8	0703		788		XHR	RO,R3	RO=FFFF,R3=0	MPT07880
07DA	2333		789		BZS	T4R1		MPT07890
07DC	050F		790		CLHR	RO,R15	RO = FFFF	MPT07900
07DE	2333		791		BES	T4B		MPT07910
07E0	4300	21F4	792	T4R1	B	ERROR	ERROR 1401	MPT07920
07E4	070A		793	T4B	XHR	RO,R10	RO = 5555	MPT07930
07E6	2233		794		BZS	T4R1		MPT07940
07E8	20C4		795		BTBS	12,4	C,V FLAGS SET ..ERROR	MPT07950
07EA	0505		796		CLHR	RO,R5		MPT07960
07EC	2036		797		BNES	T4R1		MPT07970
07EE	0705		798		XHR	RO,R5		MPT07980
07F0	2038		799		BNZS	T4R1		MPT07990
07F2	0800		800		LHR	RO,RO	RO = 0	MPT08000
07F4	203A		801		BNZS	T4R1		MPT08010
07F6	C700	5555	802		XHI	RO,X'5555'	RO = 5555	MPT08020
07FA	223D		803		BZS	T4R1		MPT08030
07FC	20CE		804		BTBS	12,14	C,V FLAGS SET..ERROR	MPT08040
07FE	0505		805		CLHR	RO,R5		MPT08050
0800	213D		806		BNES	T4R2		MPT08060
			807	*				MPT08070
	0000	0802	808	XHI	EQU	*	XHI INSTRUCTION TEST	MPT08080
			809	*				MPT08090
0802	C700	AAAA	810		XHI	RO,X'AAAA'	RO = FFFF	MPT08100
0806	233A		811		BZS	T4R2	ZERO..ERROR	MPT08110
0808	21C9		812		BTFS	12,9	C,V FLAGS SET...ERROR	MPT08120
080A	050F		813		CLHR	RO,R15		MPT08130
080C	2137		814		BNES	T4R2		MPT08140
080E	C700	0000	815		XHI	RO,0	RO = FFFF	MPT08150
0812	2334		816		BZS	T4R2		MPT08160
0814	21C3		817		BTFS	12,3	C,V FLAGS SET..ERROR	MPT08170
0816	050F		818		CLHR	RO,R15		MPT08180
0818	2333		819		BES	T4D		MPT08190

081A	4300 21F4	820	T4R2	B	ERROR	ERROR 1401	MPT08200
081E	C700 5555	821	T4D	XHI	RO,X'5555'	RO = AAAA	MPT08210
0822	2234	822		BZS	T4R2		MPT08220
0824	050A	823		CLHR	RO,R10		MPT08230
0826	2036	824		BNES	T4R2		MPT08240
0828	C700 AAAA	825		XHI	RO,X'AAAA'	RO = 0	MPT08250
082C	2039	826		BNZS	T4R2		MPT08260
082E	0800	827		LHR	RO,RO		MPT08270
0830	203B	828		BNZS	T4R2		MPT08280
		829	*				MPT08290
	0000 0832	830	XH	EQU	*	XH INSTRUCTION TEST	MPT08300
		831	*				MPT08310
0832	4700 2366	832		XH	RO,FIVE	RO = 5555	MPT08320
0836	223E	833		BZS	T4R2		MPT08330
0838	0505	834		CLHR	RO,R5	RO=R5	MPT08340
083A	213B	835		BNES	T4R3	NO, ERROR	MPT08350
083C	4700 236A	836		XH	RO,TEN	RO = FFFF	MPT08360
0840	2338	837		BZS	T4R3		MPT08370
0842	050F	838		CLHR	RO,R15		MPT08380
0844	2136	839		BNES	T4R3		MPT08390
0846	4700 235E	840		XH	RO,ZERO	RO = FFFF	MPT08400
084A	2333	841		BZS	T4R3		MPT08410
084C	050F	842		CLHR	RO,R15		MPT08420
084E	2333	843		BES	T4E		MPT08430
0850	4300 21F4	844	T4R3	B	ERROR	ERROR 1401	MPT08440
		845	*				MPT08450
0854	C870 0214	846	T4E	LHI	R7,X'214'		MPT08460
0858	4070 235A	847		STH	R7,ERRIND	ERRIND = 0214	MPT08470
		848	*				MPT08480
085C	4700 236A	849		XH	RO,TEN	RO = 5555	MPT08490
0860	2238	850		BZS	T4R3		MPT08500
0862	0505	851		CLHR	RO,R5		MPT08510
0864	203A	852		BNES	T4R3		MPT08520
0866	4700 2366	853		XH	RO,FIVE	RO = 0	MPT08530
086A	203D	854		BNZS	T4R3		MPT08540
086C	0800	855		LHR	RO,RO		MPT08550
086E	203F	856		BNZS	T4R3		MPT08560
		857	*				MPT08570
		858	*		THE REG. HAVE THE VALUES:		MPT08580
		859	*				MPT08590
		860	*		RO=0,R5=5555,R10=AAAA,R15=FFFF		MPT08600
		861	*				MPT08610
		862	*		ALL OTHERS=0		MPT08620
		863	*				MPT08630
0870	087F	864		LHR	R7,R15	R7=R15=FFFF	MPT08640
		865	*				MPT08650
	0000 0872	866	OHR	EQU	*	OHR INSTRUCTION TEST	MPT08660
		867	*				MPT08670
0872	0640	868		OHR	R4,RO	R4=RO=0	MPT08680
0874	213F	869		BNZS	T4R4	NO, ERROR	MPT08690
0876	0540	870		CLHR	R4,RO	R4=RO=0 ?	MPT08700
0878	213D	871		BNES	T4R4	NO, ERROR	MPT08710
		872	*				MPT08720
087A	0000 087A	873	OHI	EQU	*	OHI INSTRUCTION TEST	MPT08730
	C640 0000	874		OHI	R4,0	R4=0	MPT08740

087E	213A	875		BNZS	T4R4	NO, BRANCH	MPT08750
0880	0540	876		CLHR	R4,R0		MPT08760
0882	2138	877		BNES	T4R4		MPT08770
		878	*				MPT08780
	0000 0884	879	OH	EQU	*	OH INSTRUCTION TEST	MPT08790
		880	*				MPT08800
0884	4640 235E	881		OH	R4,ZERO	R4=ZERO=0	MPT08810
0888	2135	882		BNZS	T4R4	NO, ERROR	MPT08820
088A	C540 0000	883		CLHI	R4,R0		MPT08830
088E	4330 0896	884		BE	T4G		MPT08840
0892	4300 21F4	885	T4R4	B	ERROR	ERROR 1402	MPT08850
0896	0674	886	T4G	OHR	R7,R4	R7=FFFF,R4=0	MPT08860
0898	2233	887		BZS	T4R4	ERROR	MPT08870
089A	20C4	888		BTBS	12,4	C,V.. FLAGS SET ..ERROR	MPT08880
089C	057F	889		CLHR	R7,R15	R7=R15=FFFF?	MPT08890
089E	2036	890		BNES	T4R4	NO, ERROR	MPT08900
08A0	0540	891		CLHR	R4,R0	R4=R0=0?	MPT08910
08A2	2038	892		BNES	T4R4		MPT08920
08A4	C670 0000	893		OHI	R7,0	R7=FFFF	MPT08930
08A8	223B	894		BZS	T4R4		MPT08940
08AA	057F	895		CLHR	R7,R15	R7=R15=FFFF?	MPT08950
08AC	203D	896		BNES	T4R4	NO, ERROR	MPT08960
08AE	4670 235E	897		OH	R7,ZERO	R7=FFFF,ZERO=0	MPT08970
0882	233E	898		BZS	T4R5	IF ZERO ...ERROR	MPT08980
08B4	21CC	899		BTFS	12,12	C,V FLAGS SET...ERROR	MPT08990
08B6	057F	900		CLHR	R7,R15	R7=R15=FFFF?	MPT09000
08B8	2138	901		BNES	T4R5	ERROR	MPT09010
08BA	0647	902		OHR	R4,R7	R4=R7=FFFF	MPT09020
08BC	2339	903		BZS	T4R5	IF ZERO ..ERROR	MPT09030
08BE	21C7	904		BTFS	12,7		MPT09040
08C0	054F	905		CLHR	R4,R15	R4=R15=FFFF?	MPT09050
08C2	2136	906		BNES	T4R5		MPT09060
08C4	2135	907		BNES	T4R5		MPT09070
08C6	057F	908		CLHR	R7,R15		MPT09080
08C8	C600 FFFF	909		OHI	R0,X'FFFF'	R0=FFFF	MPT09090
08CC	2133	910		BNZS	T4H		MPT09100
08CE	4300 21F4	911	T4R5	B	ERROR	ERROR 1402	MPT09110
08D2	050F	912	T4H	CLHR	R0,R15	R0=R15=FFFF?	MPT09120
08D4	2033	913		BNES	T4R5		MPT09130
08D6	4680 2362	914		OH	R8,ONE		MPT09140
08DA	2236	915		BZS	T4R5		MPT09150
08DC	20C6	916		BTBS	12,6		MPT09160
08DE	058F	917		CLHR	R8,R15	R8=R15=FFFF?	MPT09170
08E0	064F	918		OHR	R4,R15	R4=FFFF,R15=FFFF	MPT09180
08E2	223A	919		BZS	T4R5		MPT09190
08E4	20C9	920		BTBS	12,9		MPT09200
08E6	C600 0000	921		OHI	R0,0	R0=FFFF	MPT09210
08EA	2338	922		BZS	T4R6		MPT09220
08EC	050F	923		CLHR	R0,R15	R0=R15=FFFF?	MPT09230
08EE	2136	924		BNES	T4R6		MPT09240
08F0	4680 2362	925		OH	R8,ONE	R8=FFFF,ONE=FFFF	MPT09250
08F4	2333	926		BZS	T4R6		MPT09260
08F6	058F	927		CLHR	R8,R15		MPT09270
08F8	2333	928		BES	T4J		MPT09280
08FA	4300 21F4	929	T4R6	B	ERROR	ERROR 1402	MPT09290

		930	*				MPT09300
		931	*	THE REG. HAVE THE VALUES:			MPT09310
		932	*				MPT09320
		933	*	R0=R4=R8=FFFF			MPT09330
		934	*				MPT09340
		935	*	R5=5555,R10=AAAA,R15=FFFF			MPT09350
		936	*				MPT09360
		937	*	ALL OTHERS=0			MPT09370
		938	*				MPT09380
08FE	C800 0314	939	T4J	LHI R0,X'314'			MPT09390
0902	4000 235A	940		STH R0,ERRIND	ERRIND = 0314		MPT09400
		941	*				MPT09410
0906	2400	942		LIS R0,0	R0=0		MPT09420
0908	2490	943		LIS R9,0	R9=0		MPT09430
		944	*				MPT09440
	0000 090A	945	NHR	EQU *	NHR INSTRUCTION TEST		MPT09450
		946	*				MPT09460
090A	0490	947		NHR R9,R0			MPT09470
090C	213F	948		BNZS T4R7			MPT09480
090E	0899	949		LHR R9,R9			MPT09490
0910	213D	950		BNZS T4R7			MPT09500
0912	0590	951		CLHR R9,R0	R9=R0=0?		MPT09510
0914	213B	952		BNZS T4R7			MPT09520
		953	*				MPT09530
	0000 0916	954	NH	EQU *	NH INSTRUCTION TEST		MPT09540
		955	*				MPT09550
0916	4490 235E	956		NH R9,ZERO	R9=0,ZERO=0		MPT09560
091A	2138	957		BNZS T4R7			MPT09570
091C	0590	958		CLHR R9,R0	R9=R0=0?		MPT09580
091E	2136	959		BNES T4R7			MPT09590
		960	*				MPT09600
	0000 0920	961	NHI	EQU *	NHI INSTRUCTION TEST		MPT09610
		962	*				MPT09620
0920	C490 0000	963		NHI R9,0			MPT09630
0924	2133	964		BNZS T4R7			MPT09640
0926	0590	965		CLHR R9,R0	R9=0000		MPT09650
0928	2333	966		BES T4K			MPT09660
092A	4300 21F4	967	T4R7	B ERROR	ERR0- 1403		MPT09670
092E	0498	968	T4K	NHR R9,R8	R9=0,R8=FFFF		MPT09680
0930	2033	969		BNZS T4R7			MPT09690
0932	058F	970		CLHR R8,R15	R8=R15=FFFF?		MPT09700
0934	2035	971		BNES T4R7			MPT09710
0936	0590	972		CLHR R9,R0	R9=R0=0?		MPT09720
0938	2037	973		BNES T4R7			MPT09730
093A	C490 FFFF	974		NHI R9,X'FFFF'	R9=0		MPT09740
093E	203A	975		BNZS T4R7			MPT09750
0940	0590	976		CLHR R9,R0	R9=R0=0?		MPT09760
0942	203C	977		BNES T4R7			MPT09770
0944	4490 2362	978		NH R9,ONE	R9=0,ONE=FFFF		MPT09780
0948	203F	979		BNZS T4R7			MPT09790
094A	0590	980		CLHR R9,R0			MPT09800
094C	0448	981		NHR R4,R8	R4=FFFF,R8=FFFF		MPT09810
094E	233A	982		BZS T4R8			MPT09820
0950	21C9	983		BTFS 12,9			MPT09830
0952	054F	984		CLHR R4,R15	R4=R15=FFFF?		MPT09840

0954	2137	985	BNES	T4R8		MPT09850	
0956	058F	986	CLHR	R8,R15	R8=R15=FFFF?	MPT09860	
0958	C440 FFFF	987	NHI	R4,X'FFFF'		MPT09870	
095C	2333	988	BZS	T4R8		MPT09880	
095E	054F	989	CLHR	R4,R15	R4=R15=FFFF?	MPT09890	
0960	2333	990	BES	T4L		MPT09900	
0962	4300 21F4	991	T4R8	B	ERROR 1403	MPT09910	
0966	4440 2362	992	T4L	NH	R4,ONE	MPT09920	
096A	2234	993	BZS	T4R8		MPT09930	
096C	20C5	994	BTBS	12,5		MPT09940	
096E	054F	995	CLHR	R4,R15	R4=R15=FFFF?	MPT09950	
0970	2037	996	BNES	T4R8		MPT09960	
0972	0440	997	NHR	R4,R0	R4=FFFF,R0=0 R4=R0=0	MPT09970	
0974	2039	998	BNZS	T4R8		MPT09980	
0976	0844	999	LHR	R4,R4		MPT09990	
0978	203B	1000	BNZS	T4R8		MPT10000	
097A	0540	1001	CLHR	R4,R0		MPT10010	
097C	213C	1002	BNES	T4R9		MPT10020	
097E	C480 0000	1003	NHI	R8,0	R8=FFFF R8=0	MPT10030	
0982	2139	1004	BNZS	T4R9		MPT10040	
0984	0580	1005	CLHR	R8,R0	R8=R0=0?	MPT10050	
0986	2137	1006	BNES	T4R9		MPT10060	
0988	087F	1007	LHR	R7,R15	R7=R15=FFFF	MPT10070	
098A	4470 235E	1008	NH	R7,ZERO	R7=FFFF,ZERO=0 R7=0	MPT10080	
098E	2133	1009	BNZS	T4R9		MPT10090	
0990	0570	1010	CLHR	R7,R0		MPT10100	
0992	2333	1011	BES	T4END		MPT10110	
0994	4300 21F4	1012	T4R9	B	ERROR 1403	MPT10120	
0998	4300 099C	1013	T4END	B	TEST5	MPT10130	
		1014	*****				MPT10140
		1015	*			MPT10150	
		1016	*	TEST 5 TESTS THE INSTRUCTIONS		MPT10160	
		1017	*			MPT10170	
		1018	*			MPT10180	
		1019	*	BAL , BXLE , BXH , BR , BTCL,BFCR , BALR		MPT10190	
		1020	*			MPT10200	
		1021	*	(ERR1, ERR2,3,4 ERR5,6,7)		MPT10210	
		1022	*			MPT10220	
		1023	*****				MPT10230
		1024	*			MPT10240	
099C	C800 0AF6	1025	TEST5	LHI	R0,TEST6	MPT10250	
09A0	4000 235C	1026		STH	R0,NXTST	MPT10260	
09A4	C800 0115	1027		LHI	R0,X'0115'	MPT10270	
09A8	4000 235A	1028		STH	R0,ERRIND	MPT10280	
09AC	C800 3135	1029		LHI	R0,X'3135'	MPT10290	
09B0	4000 2318	1030		STH	R0,TESTNO	MPT10300	
		1031	*			MPT10310	
	0000 09B4	1032	BAL	EQU	*	MPT10320	
		1033	*		BAL INSTRUCTION TEST	MPT10330	
09B4	4100 09BA	1034	BAL	R0,T5A2		MPT10340	
09B8	230C	1035	T5A1	BS	T5ERR1	MPT10350	
09BA	C810 09B8	1036	T5A2	LHI	R1,T5A1	MPT10360	
09BE	0501	1037	CLHR	R0,R1	R0= T5A1=(LINK ADDRESS)	MPT10370	
09C0	2138	1038	BNES	T5ERR1	NO, BRANCH	MPT10380	
09C2	4130 09C8	1039	BAL	R3,T5B2		MPT10390	

0A5C	0300	1095	T5E	BR	R0	R0 = ADD. OF T5D2 (1) TO T5D2	MPT10950
0A5E	230A	1096		BS	T5R5		MPT10960
0A60	C860 09FE	1097	T5E1	LHI	R6,T5E2		MPT10970
0A64	0306	1098		BR	R6	(3) TO T5E2	MPT10980
0A66	2306	1099		BS	T5R5		MPT10990
0A68	2400	1100	T5F	LIS	R0,0		MPT11000
0A6A	2410	1101		LIS	R1,0		MPT11010
0A6C	C950 0A04	1102		LHI	R5,T5F2		MPT11020
0A70	0305	1103		BR	R5	(5) TO T5F2	MPT11030
0A72	230B	1104	T5R5	BS	T5ERR5	ERROR 1503	MPT11040
0A74	C500 0008	1105	T5G	CLHI	R0,8	NO ERR. IF R4 = 8	MPT11050
0A78	2138	1106		BNES	T5ERR5		MPT11060
0A7A	0811	1107		LHR	R1,R1	R1 MUST BE ZERO	MPT11070
0A7C	2136	1108		BNZS	T5ERR5		MPT11080
0A7E	4300 0AA2	1109		B	T5K1	(7) TO T5K1	MPT11090
0A82	4300 0AB4	1110	T5H1	B	T5K2	(9) TO T5K2	MPT11100
0A86	2301	1111	T5H2	BS	T5ERR5		MPT11110
0A88	4300 0AE6	1112	T5ERR5	B	T5ERR7	ERROR 1503	MPT11120
0A8C	4300 0AC4	1113	T5H3	B	T5K3	(11) TO T5K3	MPT11130
0A90	2204	1114	T5H4	BS	T5ERR5		MPT11140
0A92	C820 0ACC	1115	T5J1	LHI	R2,T5L		MPT11150
0A96	0512	1116		CLHR	R1,R2		MPT11160
0A98	2038	1117		BNES	T5ERR5		MPT11170
0A9A	C830 0ACE	1118		LHI	R3,T5M	R3 = (T5M)	MPT11180
0A9E	0143	1119		BALR	R4,R3	(13) TO T5M , R4 = (T5J3)	MPT11190
0AA0	220C	1120	T5J3	BS	T5ERR5		MPT11200
		1121	*				MPT11210
0AA2	C800 0A82	1122	T5K1	LHI	R0,T5H1	R0 = ADD. OF T5H1	MPT11220
0AA6	C850 0A86	1123		LHI	R5,T5H2	R5 = ADD. OF T5H2	MPT11230
0AAA	2418	1124		LIS	R1,8		MPT11240
0AAC	0511	1125		CLHR	R1,R1	COND. CODE = 0000	MPT11250
		1126	*				MPT11260
	0000 0AAE	1127	BFCR	EQU	*	BFCR INSTRUCTION TEST	MPT11270
		1128	*				MPT11280
0AAE	0330	1129		BFCR	3,R0	(8) TO T5H1	MPT11290
0AB0	4300 0A50	1130		B	T5ERR4	ERR. IF NO BRANCH TAKEN	MPT11300
	0000 0AB4	1131	BTCR	EQU	*		MPT11310
0AB4	0235	1132	T5K2	BTCR	3,R5	ERR. IF BRANCH TO R5 (T5H2)	MPT11320
0AB6	C840 0A8C	1133		LHI	R4,T5H3	R4 = ADD. OF T5H3	MPT11330
0ABA	C860 0A90	1134		LHI	R6,T5H4	R6 = ADD. OF T5H4	MPT11340
0ABE	0516	1135		CLHR	R1,R6	R1 < R6 , COND. CODE = 1000	MPT11350
0ACO	0284	1136		BTCR	8,R4	(10) TO T5H3	MPT11360
0AC2	230A	1137		BS	T5ERR6		MPT11370
0AC4	0386	1138	T5K3	BFCR	8,R6	ERR. IF BRANCH	MPT11380
		1139	*				MPT11390
0AC6	C890 0A92	1140		LHI	R9,T5J1		MPT11400
0ACA	0119	1141		BALR	R1,R9	(12) TO T5J1 , R1 = (T5L)	MPT11410
0ACC	2305	1142	T5L	BS	T5ERR6		MPT11420
0ACE	C880 0AA0	1143	T5M	LHI	R8,T5J3		MPT11430
0AD2	0548	1144		CLHR	R4,R8		MPT11440
0AD4	2332	1145		BES	T5P		MPT11450
0AD6	2308	1146	T5ERR6	BS	T5ERR7	ERROR 1503	MPT11460
0AD8	C870 0A0A	1147	T5P	LHI	R7,T5Q	R7 = ADD. OF T5Q	MPT11470
		1148	*				MPT11480
	0000 0ADC	1149	BALR	EQU	*	BALR INSTRUCTION TEST	MPT11490

OADC	0177	1150	*				MPT11500	
		1151		BALR	R7,R7		MPT11510	
		1152	*				MPT11520	
OADE	2304	1153	T5R7	BS	T5ERR7		MPT11530	
OAE0	C570 OADE	1154	T5Q2	CLHI	R7,T5R7	IS R7 = ADD. OF T5R7	MPT11540	
OAE4	2337	1155		BES	T5END		MPT11550	
OAE6	C800 0315	1156	T5ERR7	LHI	RO,X'0315'	ERROR 1503	MPT11560	
OAEA	4000 235A	1157		STH	RO,ERRIND		MPT11570	
OAE8	4300 21F4	1158		B	ERROR		MPT11580	
OAF2	4300 OAF6	1159	T5END	B	TEST6		MPT11590	
		1160	*****					MPT11600
		1161	*				MPT11610	
		1162	*	TEST 6 CHECKS THE INSTRUCTIONS			MPT11620	
		1163	*				MPT11630	
		1164	*	EPSR , SLLS , SRLS , SLHL , SRHL			MPT11640	
		1165	*				MPT11650	
		1166	*	(T6R1 , T6R2,T6R3,T6R4 , T6R5,T6R6)			MPT11660	
		1167	*				MPT11670	
		1168	*				MPT11680	
		1169	*	SLHA , SRHA , THI			MPT11690	
		1170	*				MPT11700	
		1171	*	(T6R7,T6R8,T6R9 , T6RA)			MPT11710	
		1172	*				MPT11720	
		1173	*****					MPT11730
OAF6	C800 OD3C	1174	TEST6	LHI	RO,TEST7		MPT11740	
OAF8	4000 235C	1175		STH	RO,NXTST		MPT11750	
OAFE	C800 3136	1176		LHI	RO,C'16'		MPT11760	
OB02	4000 2318	1177		STH	RO,TESTNO		MPT11770	
OB06	C800 0116	1178		LHI	RO,X'0116'		MPT11780	
OB0A	4000 235A	1179		STH	RO,ERRIND	ERRIND = 0116	MPT11790	
		1180	*				MPT11800	
OB0E	2400	1181		LIS	RO,0		MPT11810	
		1182	*				MPT11820	
	0000 OB10	1183	EPSR	EQU	*	EPSR INSTRUCTION TEST	MPT11830	
		1184	*				MPT11840	
OB10	9510	1185		EPSR	R1,RO	SET PSW =0	MPT11850	
OB12	2511	1186		LCS	R1,1		MPT11860	
OB14	2400	1187		LIS	RO,0		MPT11870	
OB16	9510	1188		EPSR	R1,RO	PSW INTO R1 , RO INTO PSW	MPT11880	
OB18	2138	1189		BNZS	T6R1	CC= 0 , OTHERWISE ERROR	MPT11890	
OB1A	0800	1190		LHR	RO,RO	RO=0	MPT11900	
OB1C	2139	1191		BNZS	T6R1	IF NOT ZERO ...ERROR	MPT11910	
OB1E	0510	1192		CLHR	R1,RO	R1=RO	MPT11920	
OB20	2137	1193		BNES	T6R1	NO, ERROR	MPT11930	
OB22	2511	1194		LCS	R1,1		MPT11940	
OB24	2400	1195		LIS	RO,0	COND. CODE = 0 , RO =0	MPT11950	
OB26	9511	1196		EPSR	R1,R1	R1 = PSW = 0 ?	MPT11960	
OB28	2133	1197		BNZS	T6R1	IF CC NOT ZERO ..ERROR	MPT11970	
OB2A	0510	1198		CLHR	R1,RO	R1=RO?	MPT11980	
OB2C	2333	1199		BES	T6A1	O#YES, BRANCH	MPT11990	
OB2E	4300 21F4	1200	T6R1	B	ERROR	ERROR 1601	MPT12000	
OB32	C810 300F	1201	T6A1	LHI	R1,X'300F'		MPT12010	
OB36	9501	1202		EPSR	RO,R1	NEW PSW = R1 = 300F	MPT12020	
OB38	2440	1203		LIS	R4,0		MPT12030	
OB3A	9540	1204		EPSR	R4,RO	R4 = NEW PSW = 300F	MPT12040	

083C	C540	3000	1205	M5004	CLHI	R4,X'3000'		MPT12050
0840	2039		1206		BNES	T6R1		MPT12060
0842	9511		1207		EPSR	R1,R1		MPT12070
0844	2038		1208		BNZS	T6R1		MPT12080
0846	0811		1209		LHR	R1,R1		MPT12090
0848	2030		1210		BNZS	T6R1		MPT12100
084A	2402		1211	T6B	LIS	R0,2		MPT12110
084C	D200	235A	1212		STB	R0,ERRIND	ERRIND = 0216	MPT12120
			1213	*				MPT12130
0850	C860	D2BB	1214		LHI	R6,X'D2BB'	R6 = 1101,0010,1011,1011	MPT12140
0854	C870	DD4B	1215		LHI	R7,X'DD4B'	R7 = 1101,1101,0100,1011	MPT12150
			1216	*				MPT12160
	0000	0B58	1217	SLLS	EQU	*	SLLS INSTRUCTION TEST	MPT12170
			1218	*				MPT12180
0858	9170		1219		SLLS	R7,0	SHIFT LEFT SHORT 0	MPT12190
085A	218C		1220		BCS	T6R2		MPT12200
			1221	*				MPT12210
	0000	0B5C	1222	SRLS	EQU	*	SRLS INSTRUCTION TEST	MPT12220
			1223	*				MPT12230
085C	9070		1224		SRLS	R7,0	SHIFT RIGHT SHORT 0	MPT12240
085E	212A		1225		BPS	T6R2		MPT12250
			1226	*				MPT12260
	0000	0B60	1227	SLHL	EQU	*	SLHL INSTRUCTION TEST	MPT12270
			1228	*				MPT12280
0860	CD70	0000	1229		SLHL	R7,0	SHIFT LEFT HW 0	MPT12290
0864	2187		1230		BCS	T6R2		MPT12300
	0000	0B66	1231	SRHL	EQU	*		MPT12310
0866	CC70	0000	1232		SRHL	R7,0	SHIFT RIGHT HW 0	MPT12320
086A	2124		1233		BPS	T6R2		MPT12330
086C	CF60	0000	1234		SLHA	R6,0		MPT12340
0870	2383		1235		BNCS	T6B2		MPT12350
0872	4300	21F4	1236	T6R2	B	ERRDR	ERROR 1602	MPT12360
			1237	*				MPT12370
	0000	0B76	1238	SRHA	EQU	*	SRHA INSTRUCTION TEST	MPT12380
			1239	*				MPT12390
0876	CE60	0000	1240	T6B2	SRHA	R6,0		MPT12400
087A	2024		1241		BPS	T6R2		MPT12410
087C	C560	D2BB	1242		CLHI	R6,X'D2BB'		MPT12420
0880	2037		1243		BNES	T6R2		MPT12430
0882	C570	DD4B	1244		CLHI	R7,X'DD4B'		MPT12440
0886	203A		1245		BNES	T6R2		MPT12450
0888	9161		1246		SLLS	R6,1	SHIFT LEFT SHORT 1	MPT12460
088A	228C		1247		BNCS	T6R2		MPT12470
088C	C560	A576	1248	T6B4	CLHI	R6,X'A576'		MPT12480
0890	213D		1249		BNES	T6R3		MPT12490
0892	9162		1250		SLLS	R6,2	SHIFT LEFT SHORT 2	MPT12500
0894	218B		1251		BCS	T6R3		MPT12510
0896	C560	95D8	1252		CLHI	R6,X'95D8'		MPT12520
089A	2138		1253		BNES	T6R3		MPT12530
089C	9164		1254		SLLS	R6,4	SHIFT LEFT SHORT 4	MPT12540
089E	2386		1255		BNCS	T6R3		MPT12550
08A0	C560	5D80	1256		CLHI	R6,X'5D80'		MPT12560
08A4	2133		1257		BNES	T6R3		MPT12570
08A6	9168		1258		SLLS	R6,8	SHIFT LEFT SHORT 8	MPT12580
08A8	2183		1259		BCS	T6B6		MPT12590

OBAA	4300 21F4	1260	T6R3	B	ERROR	ERROR 1602	MPT12600
OBAE	C560 8000	1261	T6B6	CLHI	R6,X*8000'		MPT12610
OB82	2034	1262		BNES	T6R3		MPT12620
OB84	C570 D048	1263		CLHI	R7,X*DD48'	R7 MUST BE UNCHANGED	MPT12630
OB88	2037	1264		BNES	T6R3		MPT12640
OB8A	C840 2369	1265	T6C	LHI	R4,X*2369'		MPT12650
OB8E	9041	1266		SRLS	R4,1	SHIFT RIGHT SHORT 1	MPT12660
OB8C	2288	1267		BNCS	T6R3		MPT12670
OB82	C540 11B4	1268		CLHI	R4,X*11B4'		MPT12680
OB86	2130	1269		BNES	T6R4		MPT12690
OB88	9042	1270		SRLS	R4,2	SHIFT RIGHT SHORT 2	MPT12700
OB8A	2185	1271		BCS	T6R4		MPT12710
OB8C	C540 0460	1272		CLHI	R4,X*460'		MPT12720
OB80	2138	1273		BNES	T6R4		MPT12730
OB82	9044	1274		SRLS	R4,4	SHIFT RIGHT SHORT 4	MPT12740
OB84	2386	1275		BNCS	T6R4		MPT12750
OB86	C540 0046	1276		CLHI	R4,X*46'		MPT12760
OB8A	2133	1277		BNES	T6R4		MPT12770
OB8C	9048	1278		SRLS	R4,8	SHIFT RIGHT SHORT 8	MPT12780
OB8E	2333	1279		BZS	T6C3		MPT12790
OBEO	4300 21F4	1280	T6R4	B	ERROR	ERROR 1602	MPT12800
OB84	0844	1281	T6C3	LHR	R4,R4		MPT12810
OB86	2033	1282		BNZS	T6R4		MPT12820
OB88	2403	1283	T6D	LIS	R0,3		MPT12830
OB8A	D200 235A	1284		STB	R0,ERRIND	ERRIND = 0316	MPT12840
OB8E	C840 D28B	1285		LHI	R4,X*D28B'		MPT12850
OB82	CD40 0001	1286		SLHL	R4,1	SHIFT LEFT HW 1	MPT12860
OB86	238E	1287		BNCS	T6R5		MPT12870
OB88	C540 A576	1288		CLHI	R4,X*A576'		MPT12880
OB8C	213B	1289		BNES	T6R5		MPT12890
OB8E	CD40 0002	1290		SLHL	R4,2	SHIFT LEFT HW 2	MPT12900
OC02	2188	1291		BCS	T6R5		MPT12910
OC04	C540 95D8	1292		CLHI	R4,X*95D8'		MPT12920
OC08	2135	1293		BNES	T6R5		MPT12930
OC0A	2474	1294		LIS	R7,4		MPT12940
OC0C	CD47 0000	1295		SLHL	R4,0(R7)		MPT12950
OC10	2183	1296		BCS	T6D2		MPT12960
OC12	4300 21F4	1297	T6R5	B	ERROR	ERROR 1603	MPT12970
OC16	C540 5080	1298	T6D2	CLHI	R4,X*5080'		MPT12980
OC1A	2034	1299		BNES	T6R5		MPT12990
OC1C	CD40 0008	1300		SLHL	R4,8	SHIFT LEFT HW 8	MPT13000
OC20	2287	1301		BNCS	T6R5		MPT13010
OC22	C540 8000	1302		CLHI	R4,X*8000'		MPT13020
OC26	203A	1303		BNES	T6R5		MPT13030
OC28	C860 2369	1304	T6E	LHI	R6,X*2369'		MPT13040
OC2C	CC60 0001	1305		SRHL	R6,1	SHIFT RIGHT HW 1	MPT13050
OC30	238D	1306		BNCS	T6R6		MPT13060
OC32	C560 11B4	1307		CLHI	R6,X*11B4'		MPT13070
OC36	213A	1308		BNES	T6R6		MPT13080
OC38	CC60 0002	1309		SRHL	R6,2	SHIFT RIGHT HW 2	MPT13090
OC3C	2187	1310		BCS	T6R6		MPT13100
OC3E	C560 0460	1311		CLHI	R6,X*460'		MPT13110
OC42	2134	1312		BNES	T6R6		MPT13120
OC44	CC60 0004	1313		SRHL	R6,4	SHIFT RIGHT HW 4	MPT13130
OC48	2183	1314		BCS	T6E2		MPT13140

0C4A	4300 21F4	1315	T6R6	B	ERROR	ERROR 1603	MPT13150
0C4E	C560 0046	1316	T6E2	CLHI	R6,X'46'		MPT13160
0C52	2034	1317		BNES	T6R6		MPT13170
0C54	2478	1318		LIS	R7,8		MPT13180
0C56	CC67 0000	1319		SRHL	R6,0(R7)		MPT13190
0C5A	2038	1320		BNZS	T6R6		MPT13200
0C5C	0866	1321		LHR	R6,R6		MPT13210
0C5E	203A	1322		BNZS	T6R6		MPT13220
0C60	2404	1323	T6F	LIS	R0,4		MPT13230
0C62	D200 235A	1324		STB	R0,ERRIND	ERRIND = 0416	MPT13240
0C66	C860 496C	1325		LHI	R6,X'496C'		MPT13250
0C6A	CF60 0001	1326		SLHA	R6,1	SHIFT LEFT HW ARITH. 1	MPT13260
0C6E	238E	1327		BNCS	T6R7		MPT13270
0C70	C560 12D8	1328		CLHI	R6,X'12D8'		MPT13280
0C74	2138	1329		BNES	T6R7		MPT13290
0C76	CF60 0002	1330		SLHA	R6,2	SHIFT LEFT HW ARITH. 2	MPT13300
0C7A	2188	1331		BCS	T6R7		MPT13310
0C7C	C560 4860	1332		CLHI	R6,X'4860'		MPT13320
0C80	2135	1333		BNES	T6R7		MPT13330
0C82	9161	1334		SLLS	R6,1	R6 = 96C0 = -VE NO.	MPT13340
0C84	CF60 0004	1335		SLHA	R6,4	SHIFT LEFT HW ARITH. 4	MPT13350
0C88	2383	1336		BNCS	T6F3		MPT13360
0C8A	4300 21F4	1337	T6R7	B	ERROR	ERROR 1604	MPT13370
0C8E	C560 EC00	1338	T6F3	CLHI	R6,X'EC00'		MPT13380
0C92	2034	1339		BNES	T6R7		MPT13390
0C94	C860 ECAA	1340		LHI	R6,X'ECAA'		MPT13400
0C98	CF60 0008	1341		SLHA	R6,8	SHIFT LEFT HW ARITH. 8	MPT13410
0C9C	2289	1342		BNCS	T6R7		MPT13420
0C9E	C560 4A00	1343		CLHI	R6,X'4A00'		MPT13430
0CA2	203C	1344		BNES	T6R7		MPT13440
0CA4	C870 6729	1345	T6G	LHI	R7,X'6729'		MPT13450
0CA8	CE70 0001	1346		SRHA	R7,1	SHIFT RIGHT HW ARITH. 1	MPT13460
0CAC	238C	1347		BNCS	T6R8		MPT13470
0CAE	232B	1348		BNPS	T6R8		MPT13480
0CB0	C570 3394	1349		CLHI	R7,X'3394'		MPT13490
0CB4	2138	1350		BNES	T6R8		MPT13500
0CB6	CE70 0002	1351		SRHA	R7,2	SHIFT RIGHT HW ARITH. 2	MPT13510
0CBA	2185	1352		BCS	T6R8		MPT13520
0CBC	2324	1353		BNPS	T6R8		MPT13530
0CBE	C570 0CE5	1354		CLHI	R7,X'CE5'		MPT13540
0CC2	2333	1355		BES	T6G4		MPT13550
0CC4	4300 21F4	1356	T6R8	B	ERROR	ERROR 1604	MPT13560
0CC8	C860 948A	1357	T6G4	LHI	R6,X'948A'	R6 = -VE NO.	MPT13570
0CCC	CE60 0004	1358		SRHA	R6,4	SHIFT RIGHT HW ARITH. 4	MPT13580
0CD0	2286	1359		BNCS	T6R8		MPT13590
0CD2	2027	1360		BPS	T6R8		MPT13600
0CD4	C560 F948	1361		CLHI	R6,X'F948'		MPT13610
0CD8	203A	1362		BNES	T6R8		MPT13620
0CDA	CE60 0008	1363		SRHA	R6,8	SHIFT RIGHT HW ARITH. 8	MPT13630
0CDE	2185	1364		BCS	T6R9		MPT13640
0CE0	2124	1365	T6G8	BPS	T6R9		MPT13650
0CE2	C560 FFF9	1366		CLHI	R6,X'FFF9'		MPT13660
0CE6	2333	1367		BES	T6H		MPT13670
0CE8	4300 21F4	1368	T6R9	B	ERROR	ERROR 1604	MPT13680
		1369	*				MPT13690

	0000 0CEC	1370	THI	EQU	*	THI INSTRUCTION TEST	MPT13700	
		1371	*				MPT13710	
	0CEC 2405	1372	T6H	LIS	R0,5		MPT13720	
	0CEE 0200 235A	1373		STB	R0,ERRIND	ERRIND = 0516	MPT13730	
	0CF2 2400	1374		LIS	R0,0		MPT13740	
	0CF4 C300 0000	1375		THI	R0,0		MPT13750	
	0CF8 2139	1376		BNZS	T6RA	CC=0...OR ERROR	MPT13760	
	0CFA 0800	1377		LHR	R0,R0	RO=0?	MPT13770	
	0CFC 2137	1378		BNZS	T6RA	NO, ERROR	MPT13780	
	0CFE 2437	1379		LIS	R3,7		MPT13790	
	0D00 C330 5555	1380		THI	R3,X'5555'		MPT13800	
	0D04 2323	1381		BNPS	T6RA	SHOULD BE + IVE ..OR ERROR	MPT13810	
	0D06 4310 0D0E	1382		BFC	1,T6H3	L FLAG SHOULD BE ZERO...OR ERROR	MPT13820	
	0D0A 4300 21F4	1383	T6RA	B	ERROR	ERROR 1605	MPT13830	
	0D0E C530 0D07	1384	T6H3	CLHI	R3,7		MPT13840	
	0D12 2034	1385		BNES	T6RA	IF NOT EQUAL ...ERROR	MPT13850	
	0D14 C880 8000	1386		LHI	R8,X'8000'		MPT13860	
	0D18 C380 AAAA	1387		THI	R8,X'AAAA'		MPT13870	
	0D1C 4330 0D0A	1388		BFC	3,T6RA	IF RESULT IS ZERO...ERROR	MPT13880	
	0D20 9181	1389		SLLS	R8,1		MPT13890	
	0D22 203C	1390		BNZS	T6RA	IF RESULT IS NOT ZERO..ERROR	MPT13900	
	0D24 C8A0 AAAA	1391		LHI	R10,X'AAAA'		MPT13910	
	0D28 C3A0 0000	1392		THI	R10,0		MPT13920	
	0D2C 4230 0D0A	1393		BNZ	T6RA	IF RESULT IS NOT ZERO...ERROR	MPT13930	
	0D30 45A0 236A	1394		CLH	R10,TEN	R10=AAAA	MPT13940	
	0D34 4230 0D0A	1395		BNE	T6RA	IF NOT EQUAL ERROR	MPT13950	
	0D38 4300 0D3C	1396	T6END	B	TEST7		MPT13960	
		1397	*****					MPT13970
		1398	*				MPT13980	
		1399	*	TEST 7 CHECKS THE BYTE HANDLING INSTRUCTIONS			MPT13990	
		1400	*				MPT14000	
		1401	*	LB, STB, CLB, LBR, STBR, EXBR			MPT14010	
		1402	*				MPT14020	
		1403	*****					MPT14030
	0D3C C800 0E6A	1404	TEST7	LHI	R0,TEST8		MPT14040	
	0D40 4000 235C	1405		STH	R0,NXTST		MPT14050	
	0D44 C800 0117	1406		LHI	R0,X'0117'		MPT14060	
	0D48 4000 235A	1407		STH	R0,ERRIND	ERRIND = 0117	MPT14070	
	0D4C C800 3137	1408		LHI	R0,X'3137'		MPT14080	
	0D50 4000 2318	1409		STH	R0,TESTNO		MPT14090	
		1410	*				MPT14100	
	0D54 2501	1411		LCS	R0,1		MPT14110	
	0D56 4000 05F8	1412		STH	R0,T2WRD0	T2WRD0 = FFFF	MPT14120	
	0D5A 4000 05FC	1413		STH	R0,T2WRD1	T2WRD1 = FFFF	MPT14130	
	0D5E 4000 0600	1414		STH	R0,T2WRD2	T2WRD2 = FFFF	MPT14140	
	0D62 0810	1415		LHR	R1,R0	R1 = R0 = FFFF	MPT14150	
	0D64 0850	1416		LHR	R5,R0	R5 = R0 = FFFF	MPT14160	
	0D66 08A0	1417		LHR	R10,R0	R10 = R0 = FFFF	MPT14170	
		1418	*				MPT14180	
	0000 0D68	1419	LB	EQU	*	LB INSTRUCTION TEST	MPT14190	
		1420	*				MPT14200	
	0D68 D310 2362	1421		LB	R1,ONE	R1=00FF	MPT14210	
	0D6C D350 2366	1422		LB	R5,FIVE	R5 = 0055	MPT14220	
	0D70 D3A0 236A	1423		LB	R10,TEN	R10 = 00AA	MPT14230	
	0D74 C510 00FF	1424		CLHI	R1,X'FF'	CHECK BYTES LOADED INTO	MPT14240	

0D78	213D	1425		BNES	T7R1	R1	MPT14250
0D7A	C550 0055	1426		CLHI	R5,X'55'		MPT14260
0D7E	213A	1427		BNES	T7R1	R5	MPT14270
0D80	C5A0 00AA	1428		CLHI	R10,X'AA'		MPT14280
0D84	2137	1429		BNES	T7R1	R10	MPT14290
0D86	D410 2363	1430		CLB	R1,ONE+1	TEST CLB INSTRUCTION USING	MPT14300
0D8A	2134	1431		BNES	T7R1	R1	MPT14310
		1432	*				MPT14320
	0000 0D8C	1433	CLB	EQU	*	CLB INSTRUCTION TEST	MPT14330
		1434	*				MPT14340
0D8C	D450 2367	1435		CLB	R5,FIVE+1		MPT14350
0D90	2333	1436		BES	T7B	R5	MPT14360
0D92	4300 21F4	1437	T7R1	B	ERROR	ERROR 1701	MPT14370
0D96	D4A0 236A	1438	T7B	CLB	R10,TEN	R10	MPT14380
0D9A	2034	1439		BNES	T7R1		MPT14390
0D9C	C870 0123	1440		LHI	R7,X'0123'	R7 = 0123	MPT14400
0DA0	C880 4567	1441		LHI	R8,X'4567'	R8 = 4567	MPT14410
0DA4	C890 89AB	1442		LHI	R9,X'89AB'	R9 = 89AB	MPT14420
		1443	*				MPT14430
	0000 0DA8	1444	STB	EQU	*	STB INSTRUCTION TEST	MPT14440
		1445	*				MPT14450
0DA8	D270 05F9	1446		STB	R7,T2WRD0+1	T2WRD0 = FF23	MPT14460
0DAC	D280 05FD	1447		STB	R8,T2WRD1+1	T2WRD1 = FF67	MPT14470
0DB0	D290 0600	1448		STB	R9,T2WRD2	T2WRD2 = 89FF	MPT14480
0DB4	4310 0DE2	1449		BNM	T7R2		MPT14490
0DB8	4800 05F8	1450		LH	R0,T2WRD0	R0 = FF23	MPT14500
0DBC	4810 05FC	1451		LH	R1,T2WRD1	R1 = FF6C	MPT14510
0DC0	4820 0600	1452		LH	R2,T2WRD2	R3 = ABFF	MPT14520
0DC4	C500 FF23	1453		CLHI	R0,X'FF23'		MPT14530
0DC8	213D	1454		BNES	T7R2		MPT14540
0DCA	C510 FF67	1455		CLHI	R1,X'FF67'		MPT14550
0DCE	213A	1456		BNES	T7R2		MPT14560
0DD0	C520 ABFF	1457		CLHI	R2,X'ABFF'		MPT14570
0DD4	2137	1458		BNES	T7R2		MPT14580
0DD6	D470 05F9	1459		CLB	R7,T2WRD0+1	R7 = 0123, T2WRD0 = FF23	MPT14590
0DDA	2134	1460		BNES	T7R2		MPT14600
0DDC	D480 05FD	1461		CLB	R8,T2WRD1+1	R8=4567, T2WRD1=FF67	MPT14610
0DE0	2333	1462		BES	T7C		MPT14620
0DE2	4300 21F4	1463	T7R2	B	ERROR	ERROR 1701	MPT14630
0DE6	D490 0600	1464	T7C	CLB	R9,T2WRD2	R9=89AB, T2WRD2=ABFF	MPT14640
0DEA	2034	1465		BNES	T7R2		MPT14650
0DEC	D400 05FC	1466		CLB	R0,T2WRD1	R0=FF23BT2WRD1=FF67	MPT14660
0DF0	2237	1467		BES	T7R2		MPT14670
0DF2	D470 2360	1468		CLB	R7,ZERO+2	R7=C123, ZERO=0000	MPT14680
0DF6	223A	1469		BES	T7R2		MPT14690
0DF8	2480	1470		LIS	R11,0		MPT14700
0DFA	D480 2362	1471		CLB	R11,ONE		MPT14710
0DFE	223E	1472		BES	T7R2		MPT14720
		1473	*				MPT14730
0E00	2551	1474		LCS	R11,1	R11 = FFFF	MPT14740
0E02	25C2	1475		LCS	R12,2	R12 = FFFF	MPT14750
0E04	2503	1476		LCS	R13,3	R13=FFFF	MPT14760
		1477	*				MPT14770
	0000 0E06	1478	STBR	EQU	*	STBR INSTRUCTION TEST	MPT14780
		1479	*				MPT14790

OE06	927B	1480	STBR	R7,R11		MPT14800	
OE08	928C	1481	STBR	R8,R12		MPT14810	
OE0A	9290	1482	STBR	R9,R13		MPT14820	
OE0C	C580 FF23	1483	CLHI	R11,X'FF23'		MPT14830	
OE10	213E	1484	BNES	T7R3		MPT14840	
OE12	C5C0 FF67	1485	CLHI	R12,X'FF67'		MPT14850	
OE16	2138	1486	BNES	T7R3		MPT14860	
OE18	C5D0 FFAB	1487	CLHI	R13,X'FFAB'		MPT14870	
OE1C	2138	1488	BNES	T7R3		MPT14880	
		1489	*			MPT14890	
	0000 OE1E	1490	LBR	EQU *	LBR INSTRUCTION TEST	MPT14900	
		1491	*			MPT14910	
OE1E	93B1	1492	LBR	R11,R1	R1=FF678 R11=FF23	MPT14920	
OE20	93C0	1493	LBR	R12,R0	R0=FF23, R12=FF67	MPT14930	
OE22	93D2	1494	LBR	R13,R2	R2=ABFF, R13=FFAB	MPT14940	
OE24	2134	1495	BNZS	T7R3		MPT14950	
OE26	C580 0067	1496	CLHI	R11,X'0067'		MPT14960	
OE2A	2333	1497	BES	T7E		MPT14970	
OE2C	4300 21F4	1498	T7R3	B	ERROR 1701	MPT14980	
OE30	C5C0 0023	1499	T7E	CLHI	R12,X'0023'	MPT14990	
OE34	2034	1500	BNES	T7R3		MPT15000	
OE36	C5D0 00FF	1501	CLHI	R13,X'00FF'		MPT15010	
OE3A	2037	1502	BNES	T7R3		MPT15020	
		1503	*			MPT15030	
	0000 OE3C	1504	EXBR	EQU *	EXBR INSTRUCTION TEST	MPT15040	
		1505	*			MPT15050	
OE3C	9478	1506	EXBR	R7,R8	R7=0123, R8=4567	MPT15060	
		1507	*		R7 = 6745 , R8 = 4567	MPT15070	
OE3E	C570 6745	1508	CLHI	R7,X'6745'		MPT15080	
OE42	2038	1509	BNES	T7R3		MPT15090	
OE44	C580 4567	1510	CLHI	R8,X'4567'		MPT15100	
OE48	203E	1511	BNES	T7R3		MPT15110	
OE4A	9489	1512	EXBR	R8,R9	R8 = AB89 , R9 = 89AB	MPT15120	
OE4C	2138	1513	BNES	T7R4		MPT15130	
OE4E	C580 AB89	1514	CLHI	R8,X'AB89'		MPT15140	
OE52	9499	1515	EXBR	R9,R9	R9 = AB89	MPT15150	
OE54	9488	1516	EXBR	R8,R8	R8 = 89AB	MPT15160	
OE56	C580 89AB	1517	CLHI	R8,X'89AB'		MPT15170	
OE5A	2134	1518	BNES	T7R4		MPT15180	
OE5C	C590 AB89	1519	CLHI	R9,X'AB89'		MPT15190	
OE60	2333	1520	BES	T7END		MPT15200	
OE62	4300 21F4	1521	T7R4	B	ERROR 1701	MPT15210	
OE66	4300 OE6A	1522	T7END	B	TEST8	MPT15220	
		1523	*****				MPT15230
		1524	*			MPT15240	
		1525	*	TEST8	CHECKS THE INSTRUCTIONS	MPT15250	
		1526	*			MPT15260	
		1527	*	AM / AHR / AHI / AHM / AIS / ACH / ACHI		MPT15270	
		1528	*			MPT15280	
		1529	*	SH / SHR / SHI / SIS / SCH / SCHI		MPT15290	
		1530	*			MPT15300	
		1531	*			MPT15310	
		1532	*	TEST8	CHECKS THE FIXED POINT	MPT15320	
		1533	*	ADD,SUBTRACT,AND COMPARE INSTRUCTIONS		MPT15330	
		1534	*			MPT15340	

	0000 000F	1535	TOT	EQU	15		MPT15350	
		1536	*				MPT15360	
		1537	*****					MPT15370
0E6A	C800 12A4	1538	TEST8	LHI	R0,TEST9		MPT15380	
0E6E	4000 235C	1539		STH	R0,NXTST		MPT15390	
0E72	C800 0118	1540		LHI	R0,X'0118'		MPT15400	
0E76	4000 235A	1541		STH	R0,ERRIND		MPT15410	
0E7A	C800 3138	1542		LHI	R0,C'18'		MPT15420	
0E7E	4000 2318	1543		STH	R0,TESTNO		MPT15430	
0E82	24F1	1544		LIS	TOT,1	SET ERROR NUMBER=1	MPT15440	
0E84	2445	1545		LIS	R4,5	SET INDEX OFFSET=5	MPT15450	
0E86	0700	1546		XHR	R0,R0	CARRY IN=0	MPT15460	
0E88	0711	1547		XHR	R1,R1	INITIAL M=0	MPT15470	
0E8A	0722	1548		XHR	R2,R2	INITIAL N=0	MPT15480	
0E8C	C8A0 0101	1549		LHI	R10,X'0101'	INCREMENT=X'0101'	MPT15490	
0E90	4180 0EC2	1550		BAL	R8,TEST85	CHECK FOR ALL COMBINATIONS OF M AND N	MPT15500	
0E94	2408	1551		LIS	R0,8	CARRY IN=1	MPT15510	
0E96	C310 0040	1552		LHI	R1,X'0040'	INITIAL M	MPT15520	
0E9A	C820 00C0	1553		LHI	R2,X'00C0'	INITIAL N	MPT15530	
0E9E	4180 0EC2	1554		BAL	R8,TEST85	CHECK FOR ALL COMBINATION OF M AND N	MPT15540	
0EA2	0700	1555		XHR	R0,R0	CARRY IN=0	MPT15550	
0EA4	0711	1556		XHR	R1,R1	INITIAL M=0	MPT15560	
0EA6	0722	1557		XHR	R2,R2	INITIAL N=0	MPT15570	
0EA8	C8A0 1010	1558		LHI	R10,X'1010'	INCREMENT=X'1010'	MPT15580	
0EAC	4180 0EC2	1559		BAL	R8,TEST85	CHECK FOR ALL COMBINATIONS OF M AND N	MPT15590	
0EB0	2408	1560		LIS	R0,8	CARRY IN = 1	MPT15600	
0EB2	C810 0404	1561		LHI	R1,X'0404'	INITIAL M	MPT15610	
0EB6	C820 0C0C	1562		LHI	R2,X'0C0C'	INITIAL N	MPT15620	
0EBA	4180 0EC2	1563		BAL	R8,TEST85	CHECK FOR ALL COMBINATIONS OF M AND N	MPT15630	
0EBE	4300 0EE4	1564		B	OVTEST	GO TO NEXT PART OF TEST	MPT15640	
0EC2	4010 12A2	1565	TEST85	STH	R1,INITM	SAVE INITIAL M	MPT15650	
0EC6	24CF	1566		LIS	R12,15	COUNTER 1	MPT15660	
0EC8	24EF	1567		LIS	R14,15	COUNTER 2	MPT15670	
0ECA	4190 1193	1568	LOOP85	BAL	R9,TEST83		MPT15680	
0ECE	0A1A	1569		AHR	R1,R10	INCREMENT M	MPT15690	
0ED0	27C1	1570		SIS	R12,1	DECREMENT COUNTER 1	MPT15700	
0ED2	2214	1571		BNMS	LOOP85	LOOP IF COUNT IS NONNEGATIVE	MPT15710	
0ED4	4310 12A2	1572		LH	R1,INITM	INITIALIZE M	MPT15720	
0ED8	24CF	1573		LIS	R12,15	INITIALIZE COUNTER 1	MPT15730	
0EDA	0A2A	1574		AHR	R2,R10	INCREMENT N	MPT15740	
0E0C	27E1	1575		SIS	R14,1	DECREMENT COUNTER 2	MPT15750	
0EDE	4310 0ECA	1576		BNM	LOOP85	LOOP IF COUNT IS NON-NEGATIVE	MPT15760	
0EE2	0308	1577		BR	R8		MPT15770	
0EE4	07CC	1578	OVTEST	XHR	R12,R12	EXPECTED CC=0	MPT15780	
0EE6	0700	1579		XHR	R0,R0	(R0)=0	MPT15790	
0EE8	4830 1286	1580		LH	R3,CD3	(R3)=X'7FFE'	MPT15800	
0EEC	4880 1290	1581		LH	R8,CD8	(R8)=X'FFFF'	MPT15810	
0EF0	24F6	1582		LIS	TOT,6	SET ERROR NUMBER=6	MPT15820	
0EF2	2600	1583		AIS	R0,0		MPT15830	
0EF4	4190 1186	1584		BAL	R9,TESTCC		MPT15840	
		1585	*	ERROR NUMBER=7			MPT15850	
0EF8	0300	1586		SHR	R0,R0		MPT15860	
0EFA	4190 1186	1587		BAL	R9,TESTCC		MPT15870	
		1588	*	ERROR NUMBER=8			MPT15880	
0EFE	C830 7FFE	1589		SHI	R3,X'7FFE'		MPT15890	

OF02	4190 1186	1590	BAL	R9,TESTCC		MPT15900
		1591	*	ERROR	NUMBER=9	MPT15910
OF06	4880 1290	1592	SH	R8,CD8		MPT15920
OF0A	4190 1186	1593	BAL	R9,TESTCC		MPT15930
		1594	*	ERROR	NUMBER=X'A'	MPT15940
OF0E	24C1	1595	LIS	R12,1	EXPECTED CC=1	MPT15950
OF10	4850 128A	1596	LH	R5,CD5	(R5)='8001'	MPT15960
OF14	4860 128C	1597	LH	R6,CD6	(R6)='8002'	MPT15970
	0000 OF18	1598	AH	EQU	*	MPT15980
OF18	4A50 1286	1599	AH	R5,CD3	'8001'+ '7FFE'	MPT15990
OF1C	4190 1186	1600	BAL	R9,TESTCC		MPT16000
OF20	2761	1601	SIS	R6,1	'8002'- '0001'	MPT16010
OF22	4190 1186	1602	BAL	R9,TESTCC		MPT16020
		1603	*	ERROR	NUMBER=X'C'	MPT16030
OF26	24C2	1604	LIS	R12,2	EXPECTED CC=2	MPT16040
OF28	4830 1286	1605	LH	R3,CD3	(R3)='7FFE'	MPT16050
OF2C	4840 1288	1606	LH	R4,CD4	(R4)='7FFF'	MPT16060
OF30	4880 1290	1607	LH	R8,CD8	(R8)='FFFF'	MPT16070
OF34	2631	1608	AIS	R3,1	'7FFE'+1='7FFF'	MPT16080
OF36	4190 1186	1609	BAL	R9,TESTCC		MPT16090
	0000 OF3A	1610	SHI	EQU	*	MPT16100
OF3A	C840 7FFE	1611	SHI	R4,X'7FFE'	'7FFF'- '7FFE'	MPT16110
OF3E	4190 1186	1612	BAL	R9,TESTCC		MPT16120
		1613	*	ERROR	NUMBER=X'E'	MPT16130
	0000 OF42	1614	SH	EQU	*	MPT16140
OF42	4880 128E	1615	SH	R8,CD7	'FFFF'- 'FFFE'	MPT16150
OF46	4190 1186	1616	BAL	R9,TESTCC		MPT16160
OF4A	C8C0 0005	1617	LHI	R12,5	EXPECTED CC=5	MPT16170
OF4E	4840 1288	1618	LH	R4,CD4	(R4)='7FFF'	MPT16180
OF52	4A40 1286	1619	AH	R4,CD3	'7FFE'+ '7FFF'	MPT16190
OF56	4190 1186	1620	BAL	R9,TESTCC		MPT16200
		1621	*	ERROR	NUMBER=X'10'	MPT16210
OF5A	24C6	1622	LIS	R12,6	EXPECTED CC=6	MPT16220
OF5C	4850 128A	1623	LH	R5,CD5	(R5)='8001'	MPT16230
OF60	C850 7FFF	1624	SHI	R5,X'7FFF'	'8001'- '7FFF'	MPT16240
OF64	4190 1186	1625	BAL	R9,TESTCC		MPT16250
OF68	24C8	1626	LIS	R12,8	EXPECTED CC=8	MPT16260
OF6A	4810 1282	1627	LH	R1,CD1	(R1)=1	MPT16270
OF6E	4840 1288	1628	LH	R4,CD4	(R4)=X'7FFF'	MPT16280
OF72	4880 1290	1629	LH	R8,CD8	(R8)='FFFF'	MPT16290
	0000 OF76	1630	AHI	EQU	*	MPT16300
OF76	CA40 8001	1631	AHI	R4,X'8001'		MPT16310
OF7A	4190 1186	1632	BAL	R9,TESTCC		MPT16320
	0000 OF7E	1633	AHR	EQU	*	MPT16330
OF7E	0A18	1634	AHR	R1,R8	X'0001' + X'FFFF'	MPT16340
OF80	4190 1186	1635	BAL	R9,TESTCC		MPT16350
OF84	24C9	1636	LIS	R12,9	EXPECTED CC=9	MPT16360
OF86	4830 1286	1637	LH	R3,CD3	(R3)= X'7FFE'	MPT16370
OF8A	4870 128E	1638	LH	R7,CD7	(R7)=X'FFFF'	MPT16380
OF8E	4880 1290	1639	LH	R8,CD8	(R8)=X'FFFF'	MPT16390
OF92	0A87	1640	AHR	R8,R7	'FFFF'+ 'FFFE'	MPT16400
OF94	4190 1186	1641	BAL	R9,TESTCC		MPT16410
		1642	*	ERROR	NUMBER=X'14'	MPT16420
	0000 OF98	1643	SIS	EQU	*	MPT16430
OF98	2701	1644	SIS	R0,1	0-1	MPT16440

0F9A	4190 1186	1645	BAL	R9,TESTCC		MPT16450
0F9E	CB70 FFFF	1646	SHI	R7,X'FFFF'	'FFFE'-'FFFF'	MPT16460
0FA2	4190 1186	1647	BAL	R9,TESTCC		MPT16470
0FA6	4B30 1288	1648	SH	R3,CD4	'7FFE'-'7FFF'	MPT16480
0FAA	4190 1186	1649	BAL	R9,TESTCC		MPT16490
0FAE	24CA	1650	LIS	R12,X'A'	EXPECTED CC= 'A'	MPT16500
0FB0	0700	1651	XHR	R0,R0	(R0)=0	MPT16510
0FB2	4830 1286	1652	LH	R3,CD3	(R3)=X'7FFE'	MPT16520
0FB6	4860 128C	1653	LH	R6,CD6	(R6)='8002'	MPT16530
0FBA	4880 1290	1654	LH	R8,CD8	(R8)='FFFF'	MPT16540
	0000 0FBE	1655	EQU	*		MPT16550
0FB8E	2682	1656	AIS	R8,2	'FFFF'+2	MPT16560
0FC0	4190 1186	1657	BAL	R9,TESTCC		MPT16570
		1658	*	ERROR NUMBER=X'18'		MPT16580
0FC4	CB00 FFFF	1659	SHI	R0,X'FFFF'	0-'FFFF'	MPT16590
0FC8	4190 1186	1660	BAL	R9,TESTCC		MPT16600
0FCC	4B30 1290	1661	SH	R3,CD8	'7FFE'-'FFFF'	MPT16610
0FD0	4190 1186	1662	BAL	R9,TESTCC		MPT16620
0FD4	CA60 7FFF	1663	AHI	R6,X'7FFF'	'8002' + '7FFF' = '0001'	MPT16630
0FD8	4190 1186	1664	BAL	R9,TESTCC		MPT16640
0FDC	24CD	1665	LIS	R12,X'D'	EXPECTED CC='D'	MPT16650
0FDE	4840 1288	1666	LH	R4,CD4	(R4)='7FFF'	MPT16660
0FE2	4820 1284	1667	LH	R2,CD2	(R2)=2	MPT16670
0FE6	4840 128E	1668	SH	R4,CD7	'7FFF'-'FFFF'	MPT16680
0FEA	4190 1186	1669	BAL	R9,TESTCC		MPT16690
		1670	*	ERROR NUMBER=X'1C'		MPT16700
0FEE	C920 8001	1671	SHI	R2,X'8001'	2-'8001'	MPT16710
0FF2	4190 1186	1672	BAL	R9,TESTCC		MPT16720
		1673	*	ERROR NUMBER=X'1D'		MPT16730
0FF6	C8C0 000E	1674	LHI	R12,X'E'	EXPECTED CC = 'E'	MPT16740
0FFA	4850 128A	1675	LH	R5,CD5	(R5)='8001'	MPT16750
0FFE	CA50 FFFE	1676	AHI	R5,X'FFFE'	'8001'+ 'FFFE'	MPT16760
1002	4190 1186	1677	BAL	R9,TESTCC		MPT16770
		1678	*	ERROR NUMBER=X'1E'		MPT16780
		1679	*	MULTIPLE PRECISION ADD	SUBTRACT CHECK	MPT16790
1006	0700	1680	XHR	R0,R0	(R0) = 0 FIRST WORD OF RESULT	MPT16800
1008	0711	1681	XHR	R1,R1	(R1) = 0 SECOND WORD OF RESULT	MPT16810
100A	0722	1682	XHR	R2,R2	(R2) = 0 THIRD WORD OF RESULT	MPT16820
100C	0733	1683	XHR	R3,R3	(R3) = 0 FIRST WORD OF INCREMENT	MPT16830
100E	0744	1684	XHR	R4,R4	(R4) = 0 SECOND WORD OF INCREMENT	MPT16840
1010	C650 1110	1685	LHI	R5,X'1110'	(R5) = '1110' MSB OF FINAL VALUE OF INC	MPT16850
1014	C860 EEEF	1686	LHI	R6,X'EEEEF'	(R6) = 'EEEEF' LSB OF FINAL VALUE OF INC	MPT16860
1018	C870 0888	1687	LHI	R7,X'0888'	FIRST WORD OF EXPECTED RESULT	MPT16870
101C	C880 7777	1688	LHI	R8,X'7777'	SECOND WORD OF EXPECTED RESULT	MPT16880
1020	C890 8000	1689	LHI	R9,X'8000'	THIRD WORD OF EXPECTED RESULT	MPT16890
1024	4A40 1294	1690	LOOP1	AH	R4,ININC2	INCREMENT THE INCREMENT BY '00001111
	0000 1028	1691	ACH	EQU	*	MPT16910
1028	4E30 1292	1692	ACH	R3,ININC1		MPT16920
102C	0A24	1693	AHR	R2,R4	ADD THE INCREMENT TO TRIPLE	MPT16930
102E	0E13	1694	ACHR	R1,R3	PRECISION RESULT	MPT16940
1030	4E00 235E	1695	ACH	R0,ZERO		MPT16950
1034	0805	1696	LHR	R13,R5		MPT16960
1036	08E6	1697	LHR	R14,R6		MPT16970
1038	0BE4	1698	SHR	R14,R4		MPT16980
103A	4230 1024	1699	BNZ	LOOP1		MPT16990

	0000 103E	1700	SHR	EQU *		MPT17000
103E	0B03	1701	SHR	R13,R3		MPT17010
1040	4230 1024	1702	BNZ	LOOP1		MPT17020
1044	0592	1703	CLHR	R9,R2	COMPARE TRIPLE	MPT17030
1046	4230 125C	1704	BNE	ERR13	PRECISION CALCULATED	MPT17040
104A	0581	1705	CLHR	R8,R1	AND EXPECTED	MPT17050
104C	4230 125C	1706	SNE	ERR13		MPT17060
1050	0570	1707	CLHR	R7,R0	RESULTS	MPT17070
1052	4230 125C	1708	SNE	ERR13		MPT17080
1056	26F1	1709	AIS	TOT,1	INCR. ERROR NUMBER BY 1	MPT17090
		1710	*	ERROR NUMBER=X'1F'		MPT17100
1058	0B24	1711	LOOP2	SHR R2,R4	SUBTRACT THE DECREMENT FROM	MPT17110
105A	0F13	1712	SCHR	R1,R3	TRIPLE PRECISION RESULT	MPT17120
		1713	SCH	*		MPT17130
105C	4F00 235E	1714	SCH	RO,ZERO		MPT17140
1060	4840 1294	1715	SH	R4,ININC2	DECR. THE DECREMENT BY '00001111'	MPT17150
1064	4F30 1292	1716	SCH	R3,ININC1		MPT17160
1068	0844	1717	LHR	R4,R4		MPT17170
106A	4230 1058	1718	BNZ	LOOP2		MPT17180
106E	0833	1719	LHR	R3,R3		MPT17190
1070	4230 1058	1720	BNZ	LOOP2		MPT17200
1074	0822	1721	LHR	R2,R2		MPT17210
1076	4230 125C	1722	BNZ	ERR13		MPT17220
107A	0811	1723	LHR	R1,R1		MPT17230
107C	4230 125C	1724	BNZ	ERR13		MPT17240
1080	0800	1725	LHR	RO,RO		MPT17250
1082	4230 125C	1726	BNZ	ERR13		MPT17260
		1727	*	FIXED POINT COMPARE CHECK		MPT17270
1086	26F1	1728	AIS	TOT,1	ERROR NUMBER=X'2C'	MPT17280
1088	2475	1729	LIS	R7,5	SET INDEX OFFSET=5	MPT17290
108A	4800 235E	1730	LH	RO,ZERO	(R0) = 0	MPT17300
108E	4810 1282	1731	LH	R1,CD1	(R1) = 1	MPT17310
1092	4820 1288	1732	LH	R2,CD4	(R2) = '7FFF'	MPT17320
1096	4830 128A	1733	LH	R3,CD5	(R3) = '8001'	MPT17330
109A	4840 128E	1734	LH	R4,CD7	(R4) = 'FFFE'	MPT17340
109E	4850 1290	1735	LH	R5,CD8	(R5) = 'FFFF'	MPT17350
10A2	08C0	1736	LHR	R12,RO	EXPECTED CC = 0	MPT17360
10A4	0500	1737	CLHR	RO,RO		MPT17370
10A6	4190 1186	1738	BAL	R9,TESTCC		MPT17380
10AA	4517 127D	1739	CLH	R1,CD1-5(R7)		MPT17390
10AE	4190 1186	1740	BAL	R9,TESTCC		MPT17400
		1741	*	ERROR NUMBER=X'22'		MPT17410
10B2	C520 7FFF	1742	CLHI	R2,X'7FFF'		MPT17420
10B6	4190 1186	1743	BAL	R9,TESTCC		MPT17430
10BA	0933	1744	CHR	R3,R3		MPT17440
10BC	4190 1186	1745	BAL	R9,TESTCC		MPT17450
		1746	*	ERROR NUMBER=X'24'		MPT17460
10C0	4940 128E	1747	CH	R4,CD7		MPT17470
10C4	4190 1186	1748	BAL	R9,TESTCC		MPT17480
10C8	C950 FFFF	1749	CHI	R5,X'FFFF'		MPT17490
10CC	4190 1186	1750	BAL	R9,TESTCC		MPT17500
		1751	*	ERROR NUMBER=X'26'		MPT17510
10D0	24C1	1752	LIS	R12,1	EXPECTED CC=1	MPT17520
10D2	4810 128C	1753	LH	R1,CD6	(R1) = '8002'	MPT17530
10D6	4820 1282	1754	LH	R2,CD1	(R2) = '0001'	MPT17540

10DA	0512	1755	CLHR	R1,R2		MPT17550
10DC	4190 1186	1756	BAL	R9,TESTCC		MPT17560
10E0	C8C0 0002	1757	LHI	R12,2	EXPECTED CC=2	MPT17570
10E4	4810 1288	1758	LH	R1,CD4	(R1)='7FFF'	MPT17580
10E8	4510 1286	1759	CLH	R1,CD3	COMPARE WITH '7FFE'	MPT17590
10EC	4190 1186	1760	BAL	R9,TESTCC	CHECK CC	MPT17600
		1761	*	ERROR NUMBER=X'28'		MPT17610
10FD	4810 128C	1762	LH	R1,CD6	(R1)='8002'	MPT17620
10F4	C510 8001	1763	CLHI	R1,X'8001'		MPT17630
10F8	4190 1186	1764	BAL	R9,TESTCC		MPT17640
10FC	4820 1290	1765	LH	R2,CD8	(R2)=X'FFFF'	MPT17650
1100	4800 235E	1766	LH	R0,ZERO	(R0)=0	MPT17660
1104	4810 1282	1767	LH	R1,CD1	(R1)=1	MPT17670
1108	0910	1768	CHR	R1,R0		MPT17680
110A	4190 1186	1769	BAL	R9,TESTCC		MPT17690
		1770	*	ERROR NUMBER=X'2A'		MPT17700
110E	4927 1289	1771	CH	R2,CD7-5(R7)	COMPARE 'FFFF' AND 'FFFE'	MPT17710
1112	4190 1186	1772	BAL	R9,TESTCC		MPT17720
1116	C900 8001	1773	CHI	R0,X'8001'	COMPARE 0 AND '8001'	MPT17730
111A	4190 1186	1774	BAL	R9,TESTCC		MPT17740
		1775	*	ERROR NUMBER=X'2C'		MPT17750
111E	24C6	1776	LIS	R12,6	EXPECTED CC=6	MPT17760
1120	4810 128A	1777	LH	R1,CD5	(R1)='8001'	MPT17770
1124	4510 1284	1778	CLH	R1,CD2	COMPARE '8001' AND '0002'	MPT17780
1128	4190 1186	1779	BAL	R9,TESTCC		MPT17790
112C	24C9	1780	LIS	R12,9	EXPECTED CC=9	MPT17800
112E	4800 235E	1781	LH	R0,ZERO	(R0)=0	MPT17810
1132	4810 128E	1782	LH	R1,CD7	(R1)='FFFF'	MPT17820
1136	4820 1290	1783	LH	R2,CD8	(R2)='FFFF'	MPT17830
113A	4830 128A	1784	LH	R3,CD5	(R3)='8001'	MPT17840
113E	0512	1785	CLHR	R1,R2		MPT17850
1140	4190 1186	1786	BAL	R9,TESTCC		MPT17860
		1787	*	ERROR NUMBER=X'2E'		MPT17870
1144	C500 0001	1788	CLHI	R0,1	COMPARE 0 AND 1	MPT17880
1148	4190 1186	1789	BAL	R9,TESTCC		MPT17890
114C	C900 0001	1790	CHI	R0,1		MPT17900
1150	4190 1186	1791	BAL	R9,TESTCC		MPT17910
		1792	*	ERROR NUMBER=X'30'		MPT17920
1154	4930 128C	1793	CH	R3,CD6	COMPARE '8001' AND '8002'	MPT17930
1158	4190 1186	1794	BAL	R9,TESTCC		MPT17940
115C	0920	1795	CHR	R2,R0	COMPARE 'FFFF' AND 0	MPT17950
115E	4190 1186	1796	BAL	R9,TESTCC		MPT17960
		1797	*	ERROR NUMBER=X'32'		MPT17970
1162	C8C0 000A	1798	LHI	R12,X'A'	EXPECTED CC=X'A'	MPT17980
1166	4810 1286	1799	LH	R1,CD3	(R1)='7FFE'	MPT17990
116A	4820 1288	1800	LH	R2,CD4	(R2)='7FFF'	MPT18000
116E	4510 1290	1801	CLH	R1,CD8	COMPARE '7FFE' AND 'FFFF'	MPT18010
1172	4190 1186	1802	BAL	R9,TESTCC		MPT18020
1176	C8C0 000D	1803	LHI	R12,X'D'	EXPECTED CC=X'D'	MPT18030
117A	C520 FFFE	1804	CLHI	R2,X'FFFE'	COMPARE '7FFF' AND 'FFFE'	MPT18040
117E	4190 1186	1805	BAL	R9,TESTCC		MPT18050
		1806	*	ERROR NUMBER=X'34'		MPT18060
1182	4300 12A4	1807	T8END	B TEST9		MPT18070
		1808	*	SUBROUTINES USED IN TESTS		MPT18080
1186	95EE	1809	TESTCC	EPSR R14,R14	OBTAIN CC FROM CURRENT PSW	MPT18090

1188	C4E0 000F	1810	NHI	R14,X'F'		MPT18100
118C	05EC	1811	CLHR	R14,R12		MPT18110
118E	4230 1268	1812	BNE	ERR14		MPT18120
1192	26F1	1813	AIS	TOT,1		MPT18130
1194	4309 0000	1814	B	0(R9)	RETURN	MPT18140
		1815	*	R0 CONTAINS 1 IF CARRY-IN IS 1		MPT18150
		1816	*	R0 CONTAINS 0 IF CARRY-IN IS ZERO		MPT18160
		1817	*	R1 AND R2 CONTAINS VALUES OF M AND N		MPT18170
	0000 1198	1818	AHM	EQU *		MPT18180
1193	24F1	1819	TEST83	LIS	TOT,1	SET ERROR NUMBER=1
119A	4010 1298	1820	STH	R1,PLUSM		STORE M
119E	4020 129A	1821	STH	R2,PLUSN		STORE N
11A2	0831	1822	LHR	R3,R1		M
11A4	C730 FFFF	1823	XHI	R3,X'FFFF'		
11A8	2631	1824	AIS	R3,1		GET - M
11AA	4030 1296	1825	STH	R3,MINUSM		STORE-M
11AE	5114 1291	1826	AHM	R1,MINUSM-5(R4)		M+(-M)=C
11B2	4200 000C	1827	NOP			
11B6	4850 1296	1828	LH	R5,MINUSM		GET M+(-M)
11BA	4230 1238	1829	BNZ	ERR11		
11BE	24F2	1830	LIS	TOT,2		SET ERROR NUMBER=2
11C0	0831	1831	LHR	R3,R1		M
11C2	0A34	1832	AHR	R3,R4		M+(R4)=M+5
11C4	0853	1833	LHR	R5,R3		
11C6	0B54	1834	SHR	R5,R4		M+(R4)-(R4)=M?
11C8	0551	1835	CLHR	R5,R1		
11CA	4230 1238	1836	BNE	ERR11		
11CE	24F3	1837	LIS	TOT,3		SET ERROR NUMBER = 3
11D0	0831	1838	LHR	R3,R1		M
11D2	CA30 789A	1839	AHI	R3,X'789A'		M+X'789A'
11D6	0853	1840	LHR	R5,R3		
11D8	C850 789A	1841	SHI	R5,X'789A'		
11DC	0551	1842	CLHP	R5,R1		
11DE	4230 1238	1843	BNE	ERR11		
11E2	24F4	1844	LIS	TOT,4		SET ERROR NUMBER=4
11E4	0851	1845	LHR	R5,R1		M
11E6	95D0	1846	EPSR	R13,R0		SET CARRY FLAG IF CARRY IN
11E8	4E54 1295	1847	ACH	R5,PLUSN-5(R4)		M+N+C
11EC	4050 129C	1848	STH	R5,MPNPC		STORE M+N+C
11F0	4850 1298	1849	LH	R5,PLUSM		M
11F4	0800	1850	LHR	R0,R0		EXAMINE CARRY IN
11F6	4330 11FC	1851	BZ	NCRY1		IF NO CARRY IN GOTO NCRY1
11FA	2751	1852	SIS	R5,1		
11FC	4854 1295	1853	NCRY1	SH	R5,PLUSN-5(R4)	M-N-C
1200	4050 129E	1854	STH	R5,MMNMC		STORE M-N-C
1204	4A54 1297	1855	AH	R5,MPNPC-5(R4)		GET (M+N+C)+(M-N-C)=2M
1208	0871	1856	LHR	R7,R1		M
120A	C070 0001	1857	SLHL	R7,1		GET 2*M
120E	0557	1858	CLHR	R5,R7		IF(M+N+C)+(M-N-C) IS NOT=2*M
1210	4230 1244	1859	BNE	ERR12		BRANCH TO ERR1
1214	24F5	1860	LIS	TOT,5		SET ERROR NUMBER=5
1216	4850 129C	1861	LH	R5,MPNPC		M+N+C
121A	95D0	1862	EPSR	R13,R0		
121C	4F54 1299	1863	SCH	R5,MMNMC-5(R4)		(M+N+C)-(M-N-C)-C =2N+C
1220	4870 129A	1864	LH	R7,PLUSN		N

1224	0970	0001	1365	SLHL	R7,1	2*N	MPT18650
1228	0800		1366	LHR	R0,R0	EXAMINE IF CARRY IN HAS	MPT18660
122A	4330	1230	1367	BZ	NOCRY	BEEN SPECIFIED	MPT18670
122E	2671		1368	AIS	R7,1	2*N+C	MPT18680
1230	0557		1369	NOCRY	CLHR R5,R7	IF (M+N+C)-(M-N-C)-C	MPT18690
1232	4230	1244	1370	BNE	ERR12	IS NOT=2*N+C,BRANCH TO ERR1	MPT18700
1236	0309		1371	BR	R9	RETURN	MPT18710
1238	2443		1372	ERR11	LIS R4,3	THREE VALUES FOR PRINT OUT	MPT18720
123A	0875		1373	LHR	R7,R5	ACTUAL RESULT	MPT18730
123C	0863		1374	LHR	R6,R3	-M OR M+(R4)OR M*X'789A'	MPT18740
123E	0851		1375	LHR	R5,R1	VALUE OF M	MPT18750
1240	4300	1272	1376	B	ERR1		MPT18760
1244	2447		1377	ERR12	LIS R4,7	SEVEN VALUES ARE TO BE PRINTED	MPT18770
1246	08A5		1378	LHR	R10,R5	ACTUAL RESULT	MPT18780
1248	0887		1379	LHR	R11,R7	EXPECTED RESULT	MPT18790
124A	0851		1380	LHR	R5,R1	M	MPT18800
124C	0862		1381	LHR	R6,R2	N	MPT18810
124E	0870		1382	LHR	R7,R0	CARRY IN	MPT18820
1250	4880	129C	1383	LH	R8,MPNPC	M+N+C	MPT18830
1254	4890	129E	1384	LH	R9,MMNMC	M-N-C	MPT18840
1258	4300	1272	1385	B	ERR1		MPT18850
125C	2443		1386	ERR13	LIS R4,3	THREE VALUES TO BE PRINTED	MPT18860
125E	0850		1387	LHR	R5,R0	ACTUAL	MPT18870
1260	0861		1388	LHR	R6,R1	TRIPAL PRECISION	MPT18880
1262	0872		1389	LHR	R7,R2	RESULT	MPT18890
1264	4300	1272	1390	B	ERR1		MPT18900
1268	2442		1391	ERR14	LIS R4,2	TWO VALUES TO BE PRINTED	MPT18910
126A	085E		1392	LHR	R5,R14	ACTUAL CONDITION CODE	MPT18920
126C	086C		1393	LHR	R6,R12	EXPECTED CONDITION CODE	MPT18930
126E	4300	1272	1394	B	ERR1		MPT18940
1272	0800	0018	1395	ERR1	LHI R0,X'0018'		MPT18950
1276	91F8		1396		SLLS TOT,8		MPT18960
1278	060F		1397		OHR R0,TOT		MPT18970
127A	4000	235A	1398		STH R0,ERRIND		MPT18980
127E	4300	21F4	1399		B ERROR		MPT18990
			1900	*	DATA OF TEST 8		MPT19000
1282	0001		1901	CD1	DC 1		MPT19010
1284	0002		1902	CD2	DC 2		MPT19020
1286	7FFE		1903	CD3	DC X'7FFE'		MPT19030
1288	7FFF		1904	CD4	DC X'7FFF'		MPT19040
128A	8001		1905	CD5	DC X'8001'		MPT19050
128C	8002		1906	CD6	DC X'8002'		MPT19060
128E	FFFE		1907	CD7	DC X'FFFE'		MPT19070
1290	FFFF		1908	CD8	DC X'FFFF'		MPT19080
1292	0000		1909	ININC1	DS 0		MPT19090
1294	1111		1910	ININC2	DC X'1111'		MPT19100
1296			1911	MINUSM	DS 2		MPT19110
1298			1912	PLUSM	DS 2		MPT19120
129A			1913	PLUSN	DS 2		MPT19130
129C			1914	MPNPC	DS 2		MPT19140
129E			1915	MMNMC	DS 2		MPT19150
12A0			1916	MMNMC	DS 2		MPT19160
12A2			1917	INITM	DS 2		MPT19170
			1918	*			MPT19180
			1919	*	*****		MPT19190

		1920	*			MPT19200
		1921	*	TEST 9 CHECKS THE INSTRUCTIONS		MPT19210
		1922	*			MPT19220
		1923	*	SINT AND ILLG. INSTR. INTRPR.		MPT19230
		1924	*			MPT19240
		1925	*	T90INT=ADD. FOR INTERRUPT		MPT19250
		1926	*			MPT19260
		1927	*	T90SNT=ADD. SIMULATE INTERRUPT		MPT19270
		1928	*			MPT19280
		1929	*	OLDPSW=ADD. OF INSTR. AFTER T90SNT		MPT19290
		1930	*			MPT19300
		1931	*	T90DEV=DEV. NO. 0 THRU 255 OF THE INTRPT. DEV.		MPT19310
		1932	*			MPT19320
		1933	*	*****		MPT19330
12A4	C800	1400		1934 TEST9 LHI R0,TEST10		MPT19340
12A8	4000	2350		1935 STH R0,NXTST		MPT19350
12AC	C800	0119		1936 LHI R0,X'0119'		MPT19360
12B0	4000	235A		1937 STH R0,ERRIND	ERRIND = 0119	MPT19370
12B4	C800	3139		1938 LHI R0,C'19'		MPT19380
12B8	4000	2318		1939 STH R0,TESTNO		MPT19390
		1940	*			MPT19400
12BC	2410			1941 LIS R1,0	R1=ADD. OF INTRPT. DEV.	MPT19410
12BE	C840	00FE		1942 LHI R4,X'FE'		MPT19420
12C2	C830	1302		1943 LHI R3,T90R2	ERROR ADD. FOR INCORRECT	MPT19430
12C6	4034	0000		1944 T90A9 STH R3,0(R4)	SERVICE POINTER	MPT19440
12CA	2742			1945 SIS R4,2		MPT19450
12CC	C540	00D0		1946 CLHI R4,X'D0'	STORED AT ALL LOCATIONS	MPT19460
12D0	2035			1947 BNES T90A9	X'D0' THRU X'2CE'	MPT19470
12D2	C830	21F4		1948 T90A2 LHI R3,ERROR	ERR. ADD. EXT. I/O INTRPT.	MPT19480
12D6	4030	0046		1949 STH R3,X'46'	NEW PSW EXT. I/O INTRPT.	MPT19490
12DA	4010	0044		1950 STH R1,X'44'		MPT19500
12DE	4010	0040		1951 STH R1,X'40'	OLD PSW EXT. I/O INT. (PSW)	MPT19510
12E2	4010	0042		1952 STH R1,X'42'	OLD PSW EXT. I/O INT. (LOC.)	MPT19520
12E6	4010	1374		1953 STH R1,T90DEV	T90DEV=SINT DEV. ADDRESS	MPT19530
12EA	4010	1302		1954 STH R1,T90R2	OLD PSW INCORRECT DEV. ADD.	MPT19540
12EE	4010	1304		1955 STH R1,T90R2+2		MPT19550
12F2	4010	1306		1956 STH R1,T90R2+4		MPT19560
12F6	C830	1316		1957 LHI R3,T90INT		MPT19570
12FA	4030	00D0		1958 STH R3,X'D0'		MPT19580
12FE	4300	136A		1959 B T90SNT		MPT19590
1302	0000			1960 T90R2 DC 0		MPT19600
1304	0000			1961 DC 0		MPT19610
1306	0000			1962 DC 0		MPT19620
1308	C800	0219		1963 T90R2B LHI R0,X'0219'	ERRIND = 0219	MPT19630
130C	4000	235A		1964 STH R0,ERRIND		MPT19640
1310	4300	21F4		1965 B ERROR	ERROR 1902	MPT19650
		1966	*			MPT19660
1314	0000			1967 DC 0		MPT19670
1316	0000			1968 T90INT DC 0	OLD PSW	MPT19680
1318	0000			1969 DC 0	OLD PSW LOCATION	MPT19690
131A	0000			1970 DC 0	NEW PSW	MPT19700
131C	2400			1971 LIS R0,0		MPT19710
131E	4830	1316		1972 LH R3,T90INT	OLD PSW=4000?	MPT19720
1322	C530	4000		1973 CLHI R3,X'4000'		MPT19730
1326	213A			1974 BNES T90R4		MPT19740

1328	C830	1376	1975		LHI	R3,OLDPSW		MPT19750
132C	4530	1318	1976		CLH	R3,T90INT+2	OLD PSW LOC.	MPT19760
1330	2135		1977		BNES	T90R4		MPT19770
1332	9530		1978		EPSR	R3,R0	CURRENT PSW MUST BE ZERO	MPT19780
1334	C430	FFF0	1979		NHI	R3,X'FFF0'		MPT19790
1338	2335		1980		BZS	T90D		MPT19800
133A	C800	0419	1981	T90R4	LHI	R0,X'0419'	ERRIND = 0419	MPT19810
133E	4300	137A	1982		B	T90R34	ERROR 1904	MPT19820
			1983	*				MPT19830
			1984	*		NO ERROR DETECTED		MPT19840
			1985	*				MPT19850
1342	4000	1316	1986	T90D	STH	R0,T90INT	RESET OLD PSW STORAGE LOC.	MPT19860
1346	4000	1318	1987		STH	R0,T90INT+2		MPT19870
134A	C830	1302	1988		LHI	R3,T90R2	LOAD ERROR ADD. AT	MPT19880
134E	4034	0000	1989		STH	R3,0(R4)	DEV. NO. JUST TESTED	MPT19890
1352	2611		1990		AIS	R1,1		MPT19900
1354	C510	0018	1991		CLHI	R1,X'18'		MPT19910
1358	4330	1382	1992		BE	T90E		MPT19920
135C	2642		1993		AIS	R4,2	SERVICE POINTER FOR NEXT DEV.	MPT19930
135E	C830	1316	1994		LHI	R3,T90INT	STORE INTERRUPT ADDRESS	MPT19940
1362	4034	0000	1995		STH	R3,0(R4)		MPT19950
1366	4010	1374	1996		STH	R1,T90DEV		MPT19960
136A	C200	136E	1997	T90SNT	LPSW	**4		MPT19970
136E	4000		1998		DC	X'4000',**2		MPT19980
1370	1372							
	0000	1372	1999	SINT	EQU	*		MPT19990
1372	E200		2000		DC	X'E200'	SINT INSTR. CODE	MPT20000
1374	0000		2001	T90DEV	DC	0	DEV. NO.	MPT20010
	0000	1376	2002	OLDPSW	EQU	*		MPT20020
1376	C800	0319	2003	T90R3	LHI	R0,X'0319'	ERROR 1903	MPT20030
137A	4000	235A	2004	T90R34	STH	R0,ERRIND		MPT20040
137E	4300	21F4	2005		B	ERROR	ERROR 1903 OR 1904	MPT20050
			2006	*				MPT20060
			2007	*		TEST ILLEGAL INSTRUCTION INTERRUPT FOR INSTRUCTIONS		MPT20070
			2008	*				MPT20080
			2009	*		10 THRU 1F , 30 THRU 3F , 50 THRU 5F , 70 THRU 7F		MPT20090
			2010	*				MPT20100
			2011	*		80 THRU 8F , A0 THRU AF , B0 THRU BF , F0 THRU FF		MPT20110
			2012	*				MPT20120
			2013	*		ILLEGAL = ADD. OF THE ILLEGAL INSTRUCTION		MPT20130
			2014	*				MPT20140
			2015	*		ILGINT = ILLG. INSTR. INTRPT. ADDRESS		MPT20150
			2016	*				MPT20160
1382	4800	2342	2017	T90E	LH	R0,CPUN0		MPT20170
1386	C840	147C	2018		LHI	R4,T90B5		MPT20180
138A	C500	314D	2019		CLHI	R0,C'1M'	IS IT 1610 PROCESSOR?	MPT20190
138E	4330	138A	2020		BE	T906	YES, BRANCH	MPT20200
1392	C840	147C	2021		LHI	R4,T90B5		MPT20210
1396	C500	324D	2022		CLHI	R0,C'2M'	IS IT A 1620 PROCESSOR	MPT20220
139A	4330	138A	2023		BE	T906		MPT20230
139E	C500	334D	2024		CLHI	R0,C'3M'	IS IT A 1630 PROCESSOR?	MPT20240
13A2	4330	138A	2025		BE	T906		MPT20250
13A6	C840	148D	2026		LHI	R4,T90B5		MPT20260
13AA	C500	3253	2027		CLHI	R0,C'2S'	IS IT A 1620 WITH SINGLE PRECISION	MPT20270
13AE	2336		2028		BES	T906		MPT20280

13B0	C50G	3353	2029		CLHI	R0,C'35'	IS IT 1630 WITH SINGLE PRECISION	MPT20290
13B4	2333		2030		BES	T906		MPT20300
13B6	C840	149E	2031		LHI	R4,T908D	FOR 1620,1630 WITH DOUBLE PRECISION	MPT20310
13BA	24A0		2032	T906	LIS	R10,0		MPT20320
13BC	2460		2033		LIS	R6,0		MPT20330
13BE	2480		2034		LIS	R11,0		MPT20340
13C0	2400		2035	T90H	LIS	R0,0		MPT20350
13C2	4000	0034	2036		STH	R0,X'34'	NEW PSW , ILLG. INSTR.	MPT20360
13C6	C800	1454	2037		LHI	R0,T90ILG		MPT20370
13CA	4000	0036	2038		STH	R0,X'36'		MPT20380
13CE	2501		2039		LCS	R0,1	STORE ONES IN	MPT20390
13D0	4000	0030	2040		STH	R0,X'30'	ILLEGAL INSTRUCTION OLD PSW	MPT20400
13D4	4000	0032	2041		STH	R0,X'32'	OLD LOC	MPT20410
13D8	08AA		2042		LHR	R10,R10		MPT20420
13DA	4230	13F4	2043		BNZ	T90K	IF R10 = 1 , TEST ODD ILLG. INST.	MPT20430
13DE	D314	0000	2044		LB	R1,0(R4)	OTHERWISE GET NEXT ILLG. INSTR.	MPT20440
13E2	0811		2045		LHR	R1,R1		MPT20450
13E4	2135		2046		BNZS	T90J		MPT20460
13E6	24A1		2047		LIS	R10,1	R1 = 0	MPT20470
13E8	C840	1496	2048		LHI	R4,T900DD		MPT20480
13EC	2302		2049		BS	T90JJ		MPT20490
13EE	2641		2050	T90J	AIS	R4,1		MPT20500
13FO	4300	1416	2051	T90JJ	B	T90L		MPT20510
13F4	08BB		2052	T90K	LHR	R11,R11		MPT20520
13F6	2338		2053		BZS	T90KK		MPT20530
13F8	2480		2054		LIS	R11,0		MPT20540
13FA	2641		2055		AIS	R4,1		MPT20550
13FC	C540	148C	2056		CLHI	R4,T90LST+1		MPT20560
1400	4330	148C	2057		BE	T90Z		MPT20570
1404	2460		2058		LIS	R6,0		MPT20580
1406	D314	0000	2059	T90KK	LB	R1,0(R4)	R11 = 0	MPT20590
140A	0A16		2060	T90P1	AHR	R1,R6		MPT20600
140C	2661		2061		AIS	R6,1		MPT20610
140E	C560	0010	2062		CLHI	R6,16		MPT20620
1412	2132		2063		BNES	T90L		MPT20630
1414	2481		2064		LIS	R11,1		MPT20640
			2065	*				MPT20650
			2066	*		R1 = ILLEGAL INSTRUCTION		MPT20660
			2067	*				MPT20670
1416	D210	144A	2068	T90L	STB	R1,ILLEGL		MPT20680
141A	4800	144A	2069		LH	R0,ILLEGL		MPT20690
141E	C500	8800	2070		CLHI	R0,X'8800'		MPT20700
1422	4330	13C0	2071		BE	T90H		MPT20710
1426	4830	2342	2072		LH	R3,CPUND		MPT20720
142A	C530	3140	2073		CLHI	R3,C'1M'	IS IT 1610 PROCESSOR	MPT20730
142E	4330	1442	2074		BE	DOILLEG	YES, BRANCH	MPT20740
1432	C500	1300	2075		CLHI	R0,X'1300'	SETMR INSTRUCTION	MPT20750
1436	4330	13C0	2076		BE	T90H		MPT20760
143A	C500	5300	2077		CLHI	R0,X'5300'	SETM INSTRUCTION	MPT20770
143E	4330	13C0	2078		BE	T90H		MPT20780
1442	C200	1446	2079	DOILLEG	LPSW	T90M		MPT20790
1446	3005		2080	T90M	DC	X'3005',ILLEGL		MPT20800
1448	144A							
144A	0000		2081	ILLEGL	DC	0	ILLEGAL INSTRUCTION	MPT20810
144C	C800	0519	2082	T90R7	LHI	R0,X'0519'	ERRIND = 0519	MPT20820

145D	4300	1474	2083	B	T90R78	ERROR	1905	MPT20830
			2084	*				MPT20840
1454	4800	0030	2085	T90ILG	LH	RD,X'30'		MPT20850
1458	C500	3005	2086	M5006	CLHI	RD,X'3005'	IS LOC-30 = OLD PSW	MPT20860
145C	4230	1470	2087		SNE	T90R8		MPT20870
1460	C830	144A	2088		LHI	R3,ILLEGL		MPT20880
1464	4530	0032	2089		CLH	R3,X'32'	IS LOC-32 = ADD. OF ILLEGL	MPT20890
1468	2134		2090		BNES	T90R8		MPT20900
146A	9533		2091		EPSR	R3,R3		MPT20910
146C	4330	13C0	2092		BZ	T90H		MPT20920
1470	C800	0619	2093	T90R8	LHI	RD,X'0619'	ERRIND = 0619	MPT20930
1474	4000	235A	2094	T90R78	STH	RD,ERRIND		MPT20940
1478	4300	21F4	2095		B	ERROR	ERROR 1905 OR 1906	MPT20950
			2096	*				MPT20960
			2097	*				MPT20970
147C	28		2098	T908B	DB	X'28'	LER	MPT20980
147D	29		2099		DB	X'29'	CER	MPT20990
147E	2A		2100		DB	X'2A'	AER	MPT21000
147F	2B		2101		DB	X'2B'	SER	MPT21010
1480	2C		2102		DB	X'2C'	MER	MPT21020
1481	2D		2103		DB	X'2D'	DER	MPT21030
1482	60		2104		DB	X'60'	STE	MPT21040
1483	68		2105		DB	X'68'	LE	MPT21050
1484	69		2106		DB	X'69'	CE	MPT21060
1485	6A		2107		DB	X'6A'	AE	MPT21070
1486	6B		2108		DB	X'6B'	SE	MPT21080
1487	6C		2109		DB	X'6C'	ME	MPT21090
1488	6D		2110		DB	X'6D'	JE	MPT21100
1489	2E		2111		DB	X'2E'	FXR	MPT21110
148A	2F		2112		DB	X'2F'	FLR	MPT21120
148B	71		2113		DB	X'71'	STME	MPT21130
148C	72		2114		DB	X'72'	LME	MPT21140
148D	38		2115	T908C	DB	X'38'	LDR	MPT21150
148E	39		2116		DB	X'39'	CDR	MPT21160
148F	3A		2117		DB	X'3A'	ADR	MPT21170
1490	3B		2118		DB	X'3B'	SDR	MPT21180
1491	3C		2119		DB	X'3C'	MDR	MPT21190
1492	3D		2120		DB	X'3D'	DDR	MPT21200
1493	3E		2121		DB	X'3E'	FXDR	MPT21210
1494	3F		2122		DB	X'3F'	FLDR	MPT21220
1495	70		2123		DB	X'70'	STD	MPT21230
1496	78		2124		DB	X'78'	LD	MPT21240
1497	79		2125		DB	X'79'	CD	MPT21250
1498	7A		2126		DB	X'7A'	AD	MPT21260
1499	7B		2127		DB	X'7B'	SD	MPT21270
149A	7C		2128		DB	X'7C'	MD	MPT21280
149B	7D		2129		DB	X'7D'	DD	MPT21290
149C	7E		2130		DB	X'7E'	STMD	MPT21300
149D	7F		2131		DB	X'7F'	LMD	MPT21310
	0000	149E	2132	T908D	EQU	*		MPT21320
149E	30		2133		DB	X'30'		MPT21330
149F	31		2134		DB	X'31'		MPT21340
14A0	32		2135		DB	X'32'		MPT21350
14A1	34		2136		DB	X'34'		MPT21360
14A2	35		2137		DB	X'35'		MPT21370

14A3	36	2138	DB	X'36'		MPT21380	
14A4	37	2139	DB	X'37'		MPT21390	
14A5	74	2140	DB	X'74'		MPT21400	
14A6	75	2141	DB	X'75'		MPT21410	
14A7	76	2142	DB	X'76'		MPT21420	
14A8	77	2143	DB	X'77'		MPT21430	
14A9	62	2144	DB	X'62'		MPT21440	
14AA	63	2145	DB	X'63'		MPT21450	
14AB	6E	2146	DB	X'6E'		MPT21460	
14AC	6F	2147	DB	X'6F'		MPT21470	
14AD	E0	2148	DB	X'E0'		MPT21480	
14AE	E3	2149	DB	X'E3'		MPT21490	
14AF	E4	2150	DB	X'E4'		MPT21500	
14B0	E5	2151	DB	X'E5'		MPT21510	
14B1	E6	2152	DB	X'E6'		MPT21520	
14B2	E7	2153	DB	X'E7'		MPT21530	
14B3	E8	2154	DB	X'E8'		MPT21540	
14B4	E9	2155	DB	X'E9'		MPT21550	
14B5	00	2156	DB	X'00'		MPT21560	
14B6	10	2157	T9000D	X'10'		MPT21570	
14B7	50	2158	DB	X'50'		MPT21580	
14B8	80	2159	DB	X'80'		MPT21590	
14B9	A0	2160	DB	X'A0'		MPT21600	
14BA	B0	2161	DB	X'B0'		MPT21610	
14BB	F0	2162	T90LST	X'F0'		MPT21620	
149C		2163	DB	*		MPT21630	
		2164	*			MPT21640	
14BC	C800 2136	2165	T90Z	LHI	RO,EXTINT	MPT21650	
14C0	4000 0046	2166		STH	RO,X'46'	MPT21660	
14C4	C800 21AE	2167		LHI	RO,ILGINT	MPT21670	
14C8	4000 0036	2168		STH	RO,X'36'	MPT21680	
14CC	4300 14D0	2169	T9END	B	TEST10	MPT21690	
		2170	*****				MPT21700
		2171	*			MPT21710	
		2172	*	TEST 10 CHECKS THE INSTRUCTIONS		MPT21720	
		2173	*			MPT21730	
		2174	*	SLL , SRL , SLA , SRA , RLL , RRL		MPT21740	
		2175	*			MPT21750	
		2176	*****				MPT21760
14D0	C200 14D4	2177	TEST10	LPSW	T10	MPT21770	
14D4	3000	2178	T10	DC	X'3000',T10A	MPT21780	
14D6	14D8						
14D8	C800 17F2	2179	T10A	LHI	RO,TEST11	MPT21790	
14DC	4000 235C	2180		STH	RO,NXTST	MPT21800	
14E0	C800 011A	2181		LHI	RO,X'011A'	MPT21810	
14E4	4000 235A	2182		STH	RO,ERRIND	MPT21820	
14E8	C800 3141	2183		LHI	RO,X'3141'	MPT21830	
14EC	4000 2318	2184		STH	RO,TESTNO	MPT21840	
		2185	*			MPT21850	
14F0	2440	2186		LIS	R4,0	MPT21860	
14F2	2450	2187		LIS	R5,0	MPT21870	
	0000 14F4	2188	SLL	EQU	*	MPT21880	
14F4	ED40 0000	2189		SLL	R4,0	MPT21890	
14F8	213A	2190		BNZS	T10R1	MPT21900	
	0000 14FA	2191	SRL	EQU	*	MPT21910	

RESTORE EXTINT ERROR ADRS.
RESTORE ILGINT ERROR ADRS.

ERRIND = 011A

PART1 TEST A

R4 = 0,0,0,0
R5 = 0,0,0,0

THIS SECTION CHECKS THE SL,SRL,
SRA,SLA INSTRUCTIONS FOR ZERO SHIFT
COND. CODE = 0 ?

14FA	EC40	0000	2192		SRL	R4,0		MPT21920
14FE	2137		2193		BNZS	T10R1	CC=0..NO,ERROR	MPT21930
	0000	1500	2194	SLA	EQU	*		MPT21940
1500	EF40	0000	2195		SLA	R4,0		MPT21950
1504	2134		2196		BNZS	T10R1	IF CC IS NOT ZERO..ERROR	MPT21960
	0000	1506	2197	SRA	EQU	*		MPT21970
1506	EE40	0000	2198		SRA	R4,0		MPT21980
150A	2333		2199		BZS	T10B1	IF CC=0 ..O.K....BRANCH	MPT21990
150C	4300	21F4	2200	T10R1	B	ERROR	ERROR 1A01	MPT22000
1510	C840	0101	2201	T10B1	LHI	R4,X'0101'		MPT22010
1514	2450		2202		LIS	R5,0		MPT22020
1516	ED40	0000	2203		SLL	R4,0		MPT22030
151A	2227		2204		BFBS	2,T10R1	CHECK G FLAG FOR SLL	MPT22040
151C	EC40	0000	2205		SRL	R4,0		MPT22050
1520	222A		2206		BFBS	2,T10R1	CHECK G FLAG FOR SLA	MPT22060
1522	EF40	0000	2207		SLA	R4,0		MPT22070
1526	2324		2208		BFBS	2,T10R2A	CHECK G FLAG FOR SLA	MPT22080
1528	EE40	0000	2209		SRA	R4,0		MPT22090
152C	2123		2210		BTFB	2,T10B	CHECK G FLAG FOR SRA	MPT22100
152E	4300	21F4	2211	T10R2A	B	ERROR		MPT22110
1532	C840	02BB	2212	T10B	LHI	R4,X'02BB'	R4=1101,0011,1111,1111	MPT22120
1536	C850	2D55	2213		LHI	R5,X'2D55'	R5=0010,1101,0101,0101	MPT22130
153A	ED40	0000	2214		SLL	R4,0	ZERO SHIFT	MPT22140
153E	2088		2215		BCS	T10R2A	CHECK C FLAG FOR SLL	MPT22150
1540	2219		2216		BNMS	T10R2A	CHECK L FLAG FOR SLL	MPT22160
1542	EC40	0000	2217		SRL	R4,0		MPT22170
1546	208C		2218		BCS	T10R2A	CHECK C FLAG FOR SRL	MPT22180
1548	231F		2219		BNMS	T10R2	CHECK L FLAG FOR SRL	MPT22190
154A	EF40	0000	2220		SLA	R4,0		MPT22200
154E	218C		2221		BCS	T10R2	CHECK C FLAG FOR SLA	MPT22210
1550	231B		2222		BNMS	T10R2	CHECK L FLAG FOR SLA	MPT22220
1552	EE40	0000	2223		SRA	R4,0		MPT22230
1556	2188		2224		BCS	T10R2	CHECK C FLAG FOR SRA	MPT22240
1558	2317		2225		BNMS	T10R2	CHECK L FLAG FOR SRA	MPT22250
			2226	*				MPT22260
155A	C540	02BB	2227		CLHI	R4,X'02BB'	CHECK FOR SHIFTS OF ZERO ONLY	MPT22270
155E	2134		2228		BNES	T10R2		MPT22280
1560	C550	2D55	2229		CLHI	R5,X'2D55'		MPT22290
1564	2333		2230		BES	T10D		MPT22300
1566	4300	21F4	2231	T10R2	B	ERROR	ERROR 1A01	MPT22310
			2232	*				MPT22320
	0000	156A	2233	T10D	EQU	*		MPT22330
156A	C800	021A	2234		LHI	R0,X'021A'		MPT22340
156E	400C	235A	2235		STH	R0,ERRIND	ERRIND 021A	MPT22350
1572	ED40	0001	2236		SLL	R4,1	SHIFT LEFT 1	MPT22360
1576	4380	15A0	2237		BNC	T10R3	NO CARRY ...ERROR	MPT22370
157A	C540	A576	2238		CLHI	R4,X'A576'		MPT22380
157E	4230	15A0	2239		BNE	T10R3	NOT EQUAL ...ERROR	MPT22390
1582	C550	5AAA	2240		CLHI	R5,X'5AAA'		MPT22400
1586	213D		2241		BNES	T10R3	NOT EQUAL ...ERROR	MPT22410
1588	ED40	0002	2242		SLL	R4,2	SHIFT LEFT 2	MPT22420
158C	218A		2243		BCS	T10R3	IF CARRY ...ERROR	MPT22430
158E	C540	95D9	2244		CLHI	R4,X'95D9'		MPT22440
1592	2137		2245		BNES	T10R3		MPT22450
1594	C550	6AA8	2246		CLHI	R5,X'6AA8'		MPT22460

1598	2134	2247	BNES	T10R3		MPT22470
159A	ED40 0004	2248	SLL	R4,4	SHIFT LEFT 4	MPT22480
159E	2183	2249	BCS	T10E		MPT22490
15A0	4300 21F4	2250	T10R3	B	ERROR 1A02	MPT22500
15A4	C540 5D96	2251	T10E	CLHI	R4,X'5D96'	MPT22510
15A8	2034	2252		BNES	T10R3	MPT22520
15AA	C550 AA80	2253		CLHI	R5,X'AA80'	MPT22530
15AE	2037	2254		BNES	T10R3	MPT22540
15B0	ED40 0008	2255		SLL	R4,8	MPT22550
15B4	228A	2256		BNCS	T10R3	MPT22560
15B6	C540 96AA	2257		CLHI	R4,X'96AA'	MPT22570
15BA	203D	2258		BNES	T10R3	MPT22580
15BC	C550 8000	2259		CLHI	R5,X'8000'	MPT22590
15C0	2138	2260		BNES	T10R4	MPT22600
15C2	C550 67A5	2261		LHI	R5,X'67A5'	MPT22610
15C6	ED40 0010	2262		SLL	R4,16	MPT22620
15CA	2186	2263		BCS	T10R4	MPT22630
15CC	C540 67A5	2264		CLHI	R4,X'67A5'	MPT22640
15D0	2133	2265		BNES	T10R4	MPT22650
15D2	0855	2266		LHR	R5,R5	MPT22660
15D4	2333	2267		BZS	T10F	MPT22670
15D6	4300 21F4	2268	T10R4	B	ERROR	MPT22680
15DA	C840 AAB4	2269	T10F	LHI	R4,X'AAB4'	MPT22690
15DE	C850 2055	2270		LHI	R5,X'2055'	MPT22700
15E2	EC40 0001	2271		SRL	R4,1	MPT22710
15E6	238A	2272		BNCS	T10R5	MPT22720
15E8	C540 555A	2273		CLHI	R4,X'555A'	MPT22730
15EC	2137	2274		BNES	T10R5	MPT22740
15EE	C550 16AA	2275		CLHI	R5,X'16AA'	MPT22750
15F2	2134	2276		BNES	T10R5	MPT22760
15F4	EC40 0002	2277		SRL	R4,2	MPT22770
15F8	2183	2278		BCS	T10G	MPT22780
15FA	4300 21F4	2279	T10R5	B	ERROR	MPT22790
15FE	C540 1556	2280	T10G	CLHI	R4,X'1556'	MPT22800
1602	2034	2281		BNES	T10R5	MPT22810
1604	C550 85AA	2282		CLHI	R5,X'85AA'	MPT22820
1608	2037	2283		BNES	T10R5	MPT22830
160A	EC40 0004	2284		SRL	R4,4	MPT22840
160E	228A	2285		BNCS	T10R5	MPT22850
1610	C540 0155	2286	T10H	CLHI	R4,X'0155'	MPT22860
1614	213D	2287		BNES	T10R6	MPT22870
1616	C550 685A	2288		CLHI	R5,X'685A'	MPT22880
161A	213A	2289		BNES	T10R6	MPT22890
161C	EC40 0008	2290		SRL	R4,8	MPT22900
1620	2187	2291		BCS	T10R6	MPT22910
1622	C540 0001	2292		CLHI	R4,1	MPT22920
1626	2134	2293		BNES	T10R6	MPT22930
1628	C550 5568	2294		CLHI	R5,X'5568'	MPT22940
162C	2333	2295		BES	T10H2	MPT22950
162E	4300 21F4	2296	T10R6	B	ERROR	MPT22960
1632	C840 AA95	2297	T10H2	LHI	R4,X'AA95'	MPT22970
1636	EC40 0010	2298		SRL	R4,16	MPT22980
163A	2086	2299		BCS	T10R6	MPT22990
163C	C550 AA95	2300		CLHI	R5,X'AA95'	MPT23000
1640	2039	2301		BNES	T10R6	MPT23010

1642	0844	2302	LHR	R4,R4		MPT23020
1644	2038	2303	BNZS	T10R6		MPT23030
1646	C800 031A	2304	LHI	R0,X'31A'		MPT23040
164A	4000 235A	2305	STH	R0,ERRIND	ERRIND = 031A	MPT23050
164E	C860 496C	2306	LHI	R6,X'496C'	R6 = 0100,1001,0110,1100	MPT23060
1652	C870 85E3	2307	LHI	R7,X'85E3'	R7 = 1011,0101,1110,0011	MPT23070
1656	EF60 0001	2308	SLA	R6,1	SHIFT LEFT ARITH. 1	MPT23080
165A	2380	2309	BNCS	T10R7		MPT23090
165C	C560 1209	2310	CLHI	R6,X'1209'		MPT23100
1660	213A	2311	BNES	T10R7		MPT23110
1662	C570 6BC6	2312	CLHI	R7,X'6BC6'		MPT23120
1666	2137	2313	BNES	T10R7		MPT23130
1668	EF60 0002	2314	SLA	R6,2	SHIFT LEFT ARITH. 2	MPT23140
166C	2184	2315	BCS	T10R7		MPT23150
166E	C560 4865	2316	CLHI	R6,X'4865'		MPT23160
1672	2333	2317	BES	T10K		MPT23170
1674	4300 21F4	2318	T10R7	B	ERROR 1A03	MPT23180
1678	C570 AF18	2319	T10K	CLHI	R7,X'AF18'	MPT23190
167C	2034	2320	BNES	T10R7		MPT23200
167E	9161	2321	SLLS	R6,1	R6 =96CA	MPT23210
1680	EF60 0004	2322	SLA	R6,4	SHIFT LEFT ARITH. 4	MPT23220
1684	2088	2323	BCS	T10R7	CARRY ...ERROR	MPT23230
1686	C560 ECAA	2324	CLHI	R6,X'ECAA'		MPT23240
168A	203B	2325	BNES	T10R7		MPT23250
168C	C570 F180	2326	CLHI	R7,X'F180'		MPT23260
1690	203E	2327	BNES	T10R7		MPT23270
1692	2488	2328	LIS	R8,8		MPT23280
1694	EF68 0000	2329	SLA	R6,0(R8)		MPT23290
1698	238C	2330	BNCS	T10R8	NO CARRYERROR	MPT23300
169A	C560 AAF1	2331	CLHI	R6,X'AAF1'		MPT23310
169E	2139	2332	BNES	T10R8		MPT23320
16A0	C570 8000	2333	CLHI	R7,X'8000'		MPT23330
16A4	2136	2334	BNES	T10R8		MPT23340
16A6	C870 550E	2335	LHI	R7,X'550E'		MPT23350
16AA	EF60 0010	2336	SLA	R6,16	SHIFT LEFT ARITH. 16	MPT23360
16AE	2383	2337	BNCS	T10K2	NO CARRY ...ERROR	MPT23370
16B0	4300 21F4	2338	T10R8	B	ERROR 1A03	MPT23380
16B4	C560 050E	2339	T10K2	CLHI	R6,X'050E'	MPT23390
16B8	2034	2340	BNES	T10R8		MPT23400
16BA	0877	2341	LHR	R7,R7		MPT23410
16BC	2036	2342	BNZS	T10R8		MPT23420
		2343	*			MPT23430
		2344	*	SRA		MPT23440
		2345	*			MPT23450
16BE	C860 4576	2346	T10L	LHI	R6,X'4576'	MPT23460
16C2	C870 6729	2347	LHI	R7,X'6729'		MPT23470
16C6	EE60 0001	2348	SRA	R6,1	SHIFT RIGHT ARITH 1	MPT23480
16CA	2280	2349	BNCS	T10R8	NO CARRY ...ERROR	MPT23490
16CC	222E	2350	SNPS	T10R8	NOT PLUS ...ERROR	MPT23500
16CE	C560 228B	2351	CLHI	R6,X'228B'		MPT23510
16D2	213F	2352	BNES	T10R9		MPT23520
16D4	C570 3394	2353	CLHI	R7,X'3394'		MPT23530
16D8	213C	2354	BNES	T10R9		MPT23540
16DA	2482	2355	LIS	R8,2		MPT23550
16DC	EE68 0000	2356	SRA	R6,0(R8)		MPT23560

16E0	2188	2357	BCS	T10R9		MPT23570	
16E2	2327	2358	BNPS	T10R9		MPT23580	
16E4	C560 08AE	2359	CLHI	R6,X"08AE"		MPT23590	
16E8	2134	2360	BNES	T10R9		MPT23600	
16EA	C570 CCE5	2361	CLHI	R7,X"CCE5"		MPT23610	
16EE	2333	2362	BES	T10L3		MPT23620	
16F0	4300 21F4	2363	T10R9	B	ERROR	1A03	MPT23630
16F4	C860 AB0F	2364	T10L3	LHI	R6,X"AB0F"		MPT23640
16F8	C870 148A	2365		LHI	R7,X"148A"		MPT23650
16FC	EE60 0004	2366		SRA	R6,4	SHIFT RIGHT ARITH. 4	MPT23660
1700	2283	2367		BNCS	T10R9	NO CARRY....ERROR	MPT23670
1702	2029	2368		BPS	T10R9	PLUS...ERROR	MPT23680
1704	C560 F4B0	2369		CLHI	R6,X"F4B0"		MPT23690
1708	203C	2370		BNES	T10R9		MPT23700
170A	C570 F148	2371		CLHI	R7,X"F148"		MPT23710
170E	2138	2372		BNES	T10R95		MPT23720
1710	EE60 0008	2373		SRA	R6,8	SHIFT RIGHT ARITH. 8	MPT23730
1714	2188	2374		BCS	T10R95		MPT23740
1716	2127	2375		BPS	T10R95		MPT23750
1718	C560 FFFA	2376		CLHI	R6,X"FFFA"		MPT23760
171C	2134	2377		BNES	T10R95		MPT23770
171E	C570 80F1	2378		CLHI	R7,X"80F1"		MPT23780
1722	2333	2379		BES	T10L5		MPT23790
1724	4300 21F4	2380	T10R95	B	ERROR	1A03	MPT23800
1728	C860 730E	2381	T10L5	LHI	R6,X"730E"		MPT23810
172C	EE60 0010	2382		SRA	R6,16	SHIFT RIGHT ARITH. 16	MPT23820
1730	2286	2383		BNCS	T10R95		MPT23830
1732	2227	2384		BNPS	T10R95		MPT23840
1734	C570 730E	2385		CLHI	R7,X"730E"		MPT23850
1738	203A	2386		BNES	T10R95		MPT23860
173A	0866	2387		LHR	R6,R6		MPT23870
173C	203C	2388		BNZS	T10R95		MPT23880
173E	C800 041A	2389	T10P	LHI	R0,X"41A"		MPT23890
1742	4000 235A	2390		STM	R0,ERRIND	ERRIND = 041A	MPT23900
1746	C840 8F70	2391		LHI	R4,X"8F70"		MPT23910
174A	0864	2392		LHR	R6,R4	R4 = R6 = 8F70	MPT23920
174C	C850 E6A0	2393		LHI	R5,X"E6A0"		MPT23930
1750	0875	2394		LHR	R7,R5	R5 = R7 = E680	MPT23940
	0000 1752	2395	RLL	EQU	*		MPT23950
1752	EB60 0000	2396		RLL	R6,0		MPT23960
1756	212E	2397		BPS	T10RA	RESULT IS -VE	MPT23970
	0000 1758	2398	RRL	EQU	*		MPT23980
1758	EA60 0000	2399		RRL	R6,0		MPT23990
175C	2128	2400		BPS	T10RA		MPT24000
175E	0546	2401		CLHR	R4,R6		MPT24010
1760	2139	2402		BNES	T10RA		MPT24020
1762	0557	2403		CLHR	R5,R7		MPT24030
1764	2137	2404		BNES	T10RA		MPT24040
1766	EB60 0001	2405		RLL	R6,1	ROTATE LEFT 1	MPT24050
176A	2324	2406		BNPS	T10RA		MPT24060
176C	C560 1EE1	2407		CLHI	R6,X"1EE1"		MPT24070
1770	2333	2408		BES	T10P2		MPT24080
1772	4300 21F4	2409	T10RA	B	ERROR	1A04	MPT24090
1776	C570 CD41	2410	T10P2	CLHI	R7,X"CD41"		MPT24100
177A	2034	2411		BNES	T10RA		MPT24110

177C	EA60	0001	2412	RRL	R6,1	ROTATE RIGHT 1	MPT24120	
1780	2027		2413	BPS	T10RA		MPT24130	
1782	0546		2414	CLHR	R4,R6		MPT24140	
1784	2039		2415	BNES	T10RA		MPT24150	
1786	0557		2416	CLHR	R5,R7		MPT24160	
1788	2038		2417	BNES	T10RA		MPT24170	
178A	EB60	0002	2418	RLL	R6,2	ROTATE LEFT 2	MPT24180	
178E	232E		2419	BNPS	T10RB		MPT24190	
1790	C560	3DC3	2420	CLHI	R6,X'3DC3'		MPT24200	
1794	2138		2421	BNES	T10RB		MPT24210	
1796	C570	9A82	2422	CLHI	R7,X'9A82'		MPT24220	
179A	2138		2423	BNES	T10RB		MPT24230	
179C	EA60	0002	2424	RRL	R6,2	ROTATE RIGHT 2	MPT24240	
17A0	2125		2425	BPS	T10RB		MPT24250	
17A2	0546		2426	CLHR	R4,R6		MPT24260	
17A4	2133		2427	BNES	T10RB		MPT24270	
17A6	0557		2428	CLHR	R5,R7		MPT24280	
17A8	2333		2429	SES	T10P4		MPT24290	
17AA	4300	21F4	2430	T10RB	B	ERROR 1A04	MPT24300	
17AE	E960	0004	2431	T10P4	RLL	ROTATE LEFT 4	MPT24310	
17B2	2024		2432	BPS	T10RB		MPT24320	
17B4	EB60	0008	2433	RLL	R6,8	ROTATE LEFT 8	MPT24330	
17B8	2227		2434	BNPS	T10RB		MPT24340	
17BA	EA60	0004	2435	RRL	R6,4	ROTATE RIGHT 4	MPT24350	
17BE	222A		2436	BNPS	T10RB		MPT24360	
17C0	EA60	0008	2437	RRL	R6,8	ROTATE RIGHT 8	MPT24370	
17C4	202D		2438	BPS	T10RB		MPT24380	
17C6	0546		2439	CLHR	R4,R6		MPT24390	
17C8	213E		2440	BNES	T10RC		MPT24400	
17CA	0557		2441	CLHR	R5,R7		MPT24410	
17CC	213C		2442	BNES	T10RC		MPT24420	
17CE	EB60	0010	2443	RLL	R6,16	ROTATE LEFT 16	MPT24430	
17D2	2129		2444	BPS	T10RC		MPT24440	
17D4	2188		2445	BCS	T10RC		MPT24450	
17D6	0547		2446	CLHR	R4,R7		MPT24460	
17D8	2136		2447	BNES	T10RC		MPT24470	
17DA	0556		2448	CLHR	R5,R6		MPT24480	
17DC	2134		2449	BNES	T10RC		MPT24490	
17DE	EA60	0010	2450	RRL	R6,16	ROTATE RIGHT 16	MPT24500	
17E2	2323		2451	BNPS	T10P8		MPT24510	
17E4	4300	21F4	2452	T10RC	B	ERROR 1A04	MPT24520	
17E8	0546		2453	T10P8	CLHR	R4,R6	MPT24530	
17EA	2033		2454	BNES	T10RC		MPT24540	
17EC	0557		2455	CLHR	R5,R7		MPT24550	
17EE	2035		2456	BNES	T10RC		MPT24560	
			2457	*			MPT24570	
17F0	2301		2458	T10ENC	BS	TEST11	MPT24580	
			2459	*****				MPT24590
			2460	*			MPT24600	
			2461	*	TEST11 CHECKS THE INSTRUCTIONS		MPT24610	
			2462	*			MPT24620	
			2463	*	MH , MHR , MHU , MHUR		MPT24630	
			2464	*			MPT24640	
			2465	*	DH , DHR		MPT24650	
			2466	*			MPT24660	

		2467	*	TEST11 TESTS THE MULTIPLY AND DIVIDE INSTRUCTIONS		MPT24670
		2468	*			MPT24680
	0000 0000	2469	POINT	EQU 13		MPT24690
		2470	*****			MPT24700
		2471	*			MPT24710
	17F2 C800 185C	2472	TEST11	LHI R0,TEST12		MPT24720
	17F6 4000 235C	2473		STH R0,NXTST		MPT24730
	17FA C800 011B	2474		LHI R0,X'011B'		MPT24740
	17FE 4000 235A	2475		STH R0,ERRIND	ERROR 01	MPT24750
	1802 C800 3142	2476		LHI R0,C'1B'		MPT24760
	1806 4000 2318	2477		STH R0,TESTNO	PART 1 TEST B	MPT24770
		2478	*			MPT24780
	180A 24F1	2479		LIS TOT,1	SET ERROR NUMBER=1	MPT24790
	180C C800 1A32	2480	MCHK2	LHI POINT,MUD1		MPT24800
	1810 2478	2481		LIS R7,8		MPT24810
	1812 493D 0000	2482	MLOOP1	LH R3,0(POINT)	FETCH A	MPT24820
	1816 484D 0002	2483		LH R4,2(POINT)	FETCH B	MPT24830
	181A 485D 235E	2484		LH R5,ZERO		MPT24840
	181E 486D 235E	2485		LH R6,ZERO		MPT24850
	1822 0B53	2486		SHR R5,R3	GET -A	MPT24860
	1824 0B64	2487		SHR R6,R4	GET -B	MPT24870
	1826 488D 0004	2488		LH R8,4(POINT)	FETCH EXPECTED DOUBLE	MPT24880
	182A 489D 0006	2489		LH R9,6(POINT)	LENGTH VALUE OF (A*B)	MPT24890
	182E 0813	2490		LHR R1,R3	A	MPT24900
	1830 95CC	2491		EPSR R12,R12	SAVE CC	MPT24910
		2492	MH	EQU *		MPT24920
	1832 4C0D 0002	2493		MH R0,2(POINT)	A*B	MPT24930
	1836 41A0 1976	2494		BAL R10,TESTC4		MPT24940
	183A 24F2	2495		LIS TOT,2	SET ERROR NUMBER=2	MPT24950
	183C 0814	2496		LHR R1,R4	B	MPT24960
	183E 95CC	2497		EPSR R12,R12	SAVE CC	MPT24970
	1840 4C0D 0000	2498		MH R0,0(POINT)	B*A	MPT24980
	1844 41A0 1976	2499		BAL R10,TESTC4		MPT24990
	1848 24F3	2500		LIS TOT,3	SET ERROR NUMBER=3	MPT25000
	184A 0722	2501		XHR R2,R2		MPT25010
	184C 4020 1854	2502		STH R2,SFLAG	RESET SFLAG	MPT25020
	1850 C550 8000	2503		CLHI R5,X'8000'		MPT25030
	1854 4230 1868	2504		BNE SCONT1		MPT25040
	1858 C560 8000	2505		CLHI R6,X'8000'		MPT25050
	185C 4330 1868	2506		BE SCONT1		MPT25060
	1860 C820 7777	2507		LHI R2,X'7777'		MPT25070
	1864 4020 1854	2508		STH R2,SFLAG	SET SFLAG	MPT25080
	1868 0815	2509	SCONT1	LHR R1,R5	-A	MPT25090
	186A 95CC	2510		EPSR R12,R12	SAVE CC	MPT25100
	186C 0C06	2511		MHR R0,R6	-A*(-B)	MPT25110
	186E 41A0 1A08	2512		BAL R10,SCHECK		MPT25120
	1872 41A0 1976	2513		BAL R10,TESTC4		MPT25130
	1876 24F4	2514		LIS TOT,4	SET ERROR NUMBER=4	MPT25140
	1878 0816	2515		LHR R1,R6		MPT25150
	187A 95CC	2516		EPSR R12,R12		MPT25160
	187C 0C05	2517		MHR R0,R5	-B*(-A)	MPT25170
	187E 41A0 1A08	2518		BAL R10,SCHECK		MPT25180
	1882 41A0 1976	2519		BAL R10,TESTC4		MPT25190
	1886 24F5	2520		LIS TOT,5	SET ERROR NUMBER=5	MPT25200
	1888 0788	2521		XHR R8,R8		MPT25210

188A	0799	2522	XHR	R9,R9		MPT25220
188C	4B9D 0006	2523	SH	R9,6(POINT)	DOUBLE LENGTH	MPT25230
1890	4F8D 0004	2524	SCH	R8,4(POINT)	EXPECTED -(A*B)	MPT25240
1894	0722	2525	XHR	R2,R2		MPT25250
1896	4020 1854	2526	STH	R2,SFLAG	RESET SFLAG	MPT25260
189A	C560 8000	2527	CLHI	R6,X'8000'		MPT25270
189E	4230 18AA	2528	BNE	SCONT2		MPT25280
18A2	C820 7777	2529	LHI	R2,X'7777'		MPT25290
18A6	4020 1854	2530	STH	R2,SFLAG	SET SFLAG	MPT25300
18AA	0813	2531	LHR	R1,R3		MPT25310
18AC	95CC	2532	EPSR	R12,R12		MPT25320
18AE	0C06	2533	MHR	R0,R6	A*(-B)	MPT25330
18B0	41A0 1A08	2534	BAL	R10,SCHECK		MPT25340
18B4	41A0 1976	2535	BAL	R10,TESTC4		MPT25350
18B8	24F6	2536	LIS	TOT,6	SET ERROR NUMBER=6	MPT25360
18BA	0816	2537	LHR	R1,R6	-B	MPT25370
18BC	95CC	2538	EPSR	R12,R12		MPT25380
18BE	4C0D 0000	2539	MH	R0,0(POINT)	(-B)*A	MPT25390
18C2	41A0 1A08	2540	BAL	R10,SCHECK		MPT25400
18C6	41A0 1976	2541	BAL	R10,TESTC4		MPT25410
18CA	24F7	2542	LIS	TOT,7	SET ERROR NUMBER=7	MPT25420
18CC	0722	2543	XHR	R2,R2		MPT25430
18CE	4020 1854	2544	STH	R2,SFLAG	RESET SFLAG	MPT25440
18D2	C550 8000	2545	CLHI	R5,X'8000'		MPT25450
18D6	4230 18E2	2546	BNE	SCONT3		MPT25460
18DA	C820 7777	2547	LHI	R2,X'7777'		MPT25470
18DE	4020 1854	2548	STH	R2,SFLAG	SET SFLAG	MPT25480
18E2	0814	2549	LHR	R1,R4	B	MPT25490
18E4	95CC	2550	EPSR	R12,R12		MPT25500
18E6	0000 18E6	2551	MHR	*		MPT25510
18E8	0C05	2552	MHR	R0,R5	B*(-A)	MPT25520
18E8	41A0 1A08	2553	BAL	R10,SCHECK		MPT25530
18EC	41A0 1976	2554	BAL	R10,TESTC4		MPT25540
18F0	24F8	2555	LIS	TOT,8	SET ERROR NUMBER=8	MPT25550
18F2	0815	2556	LHR	R1,R5	-A	MPT25560
18F4	95CC	2557	EPSR	R12,R12		MPT25570
18F6	4C0D 0002	2558	MH	R0,2(POINT)	(-A)*B	MPT25580
18FA	41A0 1A08	2559	BAL	R10,SCHECK		MPT25590
18FE	41A0 1976	2560	BAL	R10,TESTC4		MPT25600
1902	24F9	2561	LIS	TOT,9	SET ERROR NUMBER=9	MPT25610
1904	488D 0008	2562	LH	R8,8(POINT)	EXPECTED DOUBLE LENGTH VALUE	MPT25620
1908	489D 000A	2563	LH	R9,10(POINT)	OF UNSIGNED PRODUCT OF A AND B	MPT25630
190C	0813	2564	LHR	R1,R3	A	MPT25640
190E	95CC	2565	EPSR	R12,R12		MPT25650
1910	0000 1910	2566	MHU	*		MPT25660
1910	0C0D 0002	2567	MHU	R0,2(POINT)	A*B UNSIGNED	MPT25670
1914	41A0 1976	2568	BAL	R10,TESTC4		MPT25680
1918	24FA	2569	LIS	TOT,10	SET ERROR NUMBER=X'A'	MPT25690
191A	0814	2570	LHR	R1,R4	B	MPT25700
191C	95CC	2571	EPSR	R12,R12		MPT25710
191E	0000 191E	2572	MHUR	*		MPT25720
191E	9C03	2573	MHUR	R0,R3	B*A UNSIGNED	MPT25730
1920	41A0 1976	2574	BAL	R10,TESTC4		MPT25740
1924	24F1	2575	LIS	TOT,1		MPT25750
1926	260C	2576	AIS	POINT,12		MPT25760

1928	2771	2577	SIS	R7,1		MPT25770
192A	4230 1812	2578	BNZ	MLOOP1		MPT25780
		2579	*			MPT25790
	0000 0007	2580	POINTR	EQU 7		MPT25800
		2581	*			MPT25810
192E	0722	2582	DVDCHK	XHR R2,R2		MPT25820
1930	4020 004C	2583	STH	R2,X'4C'		MPT25830
1934	C830 19F4	2584	LHI	R3,DFault		MPT25840
1938	4030 004E	2585	STH	R3,X'4E'		MPT25850
193C	C820 1000	2586	LHI	R2,X'1000'	ENABLE DIVIDE FAULT INTERRUPT	MPT25860
1940	9532	2587	EPSR	R3,R2		MPT25870
1942	C870 1A92	2588	LHI	POINTR, DIVD2		MPT25880
1946	242F	2589	LIS	R2,15		MPT25890
1948	D1A7 0000	2590	DLOOP2	LM R10,0(POINTR)		MPT25900
194C	243C	2591	LIS	R3,12	SET ERROR NUMBER=X'C'	MPT25910
194E	080A	2592	LHR	R0,R10	DOUBLE LENGTH	MPT25920
1950	081B	2593	LHR	R1,R11	DIVIDEND	MPT25930
1952	9588	2594	EPSR	R8,R8	SAVE PSW	MPT25940
	0000 1954	2595	DHR	EQU *		MPT25950
1954	000C	2596	DHR	R0,R12	DIVIDEND/DIVISOR	MPT25960
1956	4190 198C	2597	BAL	R9,TESTC5		MPT25970
195A	2430	2598	LIS	R3,13	SET ERROR NUMBER=X'D'	MPT25980
195C	080A	2599	LHR	R0,R10	DOUBLE LENGTH	MPT25990
195E	081B	2600	LHR	R1,R11	DIVIDEND	MPT26000
1960	9588	2601	EPSR	R8,R8	SAVE PSW	MPT26010
	0000 1962	2602	DH	EQU *		MPT26020
1962	4007 0004	2603	DH	R0,4(POINTR)	DIVIDEND/DIVISOR	MPT26030
1966	4190 198C	2604	BAL	R9,TESTC5		MPT26040
196A	267C	2605	AIS	POINTR,12	INCREMENT POINTER BY 12	MPT26050
196C	2721	2606	SIS	R2,1	DECREMENT COUNT	MPT26060
196E	4310 1948	2607	BNM	DLOOP2		MPT26070
1972	4300 1B5C	2608	T11END	S TEST12		MPT26080
		2609	*	SUBROUTINES OF T11		MPT26090
1976	95EE	2610	TESTC4	EPSR R14,R14	GET PSW	MPT26100
1978	05CE	2611	CLHR	R12,R14		MPT26110
197A	4230 1980	2612	BNE	ERR21		MPT26120
197E	0580	2613	CLHR	R8,R0		MPT26130
1980	4230 1980	2614	BNE	ERR21		MPT26140
1984	0591	2615	CLHR	R9,R1		MPT26150
1986	4230 1980	2616	BNE	ERR21		MPT26160
198A	030A	2617	BR	R10		MPT26170
198C	9566	2618	TESTC5	EPSR R6,R6	GET PSW	MPT26180
198E	0568	2619	CLHR	R6,R8		MPT26190
1990	4230 19CC	2620	BNE	ERROR1		MPT26200
1994	0500	2621	CLHR	R0,R13		MPT26210
1996	4230 19CC	2622	BNE	ERROR1		MPT26220
199A	051E	2623	CLHR	R1,R14		MPT26230
199C	4230 19CC	2624	BNE	ERROR1		MPT26240
19A0	45F0 1B52	2625	CLH	R15,IDFLAG		MPT26250
19A4	4230 19CC	2626	BNE	ERROR1		MPT26260
19A8	0766	2627	XHR	R6,R6		MPT26270
19AA	4060 1B52	2628	STH	R6,IDFLAG		MPT26280
19AE	0309	2629	BR	R9		MPT26290
19B0	080E	2630	ERR21	LHR R13,R14	PSW AFTER MULTIPLICATION	MPT26300
19B2	08EC	2631	LHR	R14,R12	PSW BEFORE MULTIPLICATION	MPT26310

1984	0888	2632	LHR	R11,R8	CALCULATED	MPT26320
1986	08C9	2633	LHR	R12,R9	RESULT	MPT26330
1988	0890	2634	LHR	R9,R0	EXPECTED	MPT26340
198A	08A1	2635	LHR	R10,R1	RESULT	MPT26350
198C	0875	2636	LHR	R7,R5	NEGATIVE OF THE FIRST OPERAND	MPT26360
198E	0886	2637	LHR	R8,R6	NEGATIVE OF THE SECOND OPERAND	MPT26370
19C0	0853	2638	LHR	R5,R3	THE FIRST OPERAND	MPT26380
19C2	0864	2639	LHR	R6,R4	THE SECOND OPERAND	MPT26390
19C4	244A	2640	LIS	R4,10	TEN VALUES ARE TO BE PRINTED	MPT26400
19C6	083F	2641	LHR	R3,TOT		MPT26410
19C8	4300 19E4	2642	B	ERR2		MPT26420
19CC	244B	2643	LIS	R4,11	ELEVEN HALF WORDS ARE TO BE PRINTED	MPT26430
19CE	085A	2644	LHR	R5,R10	MSB OF THE DIVIDEND	MPT26440
19D0	087C	2645	LHR	R7,R12	DIVISOR	MPT26450
19D2	0891	2646	LHR	R9,R1	ACTUAL VALUE OF QUOTIENT	MPT26460
19D4	08AD	2647	LHR	R10,R13	EXPECTED VALUE OF REMAINDER	MPT26470
19D6	08C6	2648	LHR	R12,R6	PSW AFTER DIVISION	MPT26480
19D8	08D8	2649	LHR	R13,R8	PSW BEFORE DIVISION	MPT26490
19DA	0880	2650	LHR	R8,R0	ACTUAL VALUE OF THE REMAINDER	MPT26500
19DC	0868	2651	LHR	R6,R11	LSB OF THE DIVIDEND	MPT26510
19DE	08BE	2652	LHR	R11,R14	EXPECTED QUOTIENT VALUE	MPT26520
19E0	48E0 1B52	2653	LH	R14,IDFLAG	ACTUAL DIVIDE FAULT FLAG	MPT26530
19E4	C800 001B	2654	LHI	R0,X'001B'		MPT26540
19E8	9138	2655	SLLS	R3,8		MPT26550
19EA	0603	2656	QHR	R0,R3		MPT26560
19EC	4000 235A	2657	STH	R0,ERRIND		MPT26570
19F0	4300 21F4	2658	B	ERROR		MPT26580
19F4	4080 1B56	2659	DFFAULT	STH R6,TEMPF		MPT26590
19F8	C860 7777	2660	LHI	R6,X'7777'		MPT26600
19FC	4060 1B52	2661	STH	R6,IDFLAG	SET DIVIDE FAULT INT. FLAG	MPT26610
1A00	4860 1B56	2662	LH	R6,TEMPF	RESTORE R6	MPT26620
1A04	C200 0048	2663	LPSW	X'48'	LOAD NEW PSW & LOC FROM '48'	MPT26630
1A08	9522	2664	SCHECK	EPSR R2,R2	SAVE PSW	MPT26640
1A0A	48E0 1B54	2665	LH	R14,SFLAG	EXAMINE SFLAG	MPT26650
1A0E	2338	2666	BZS	NCHANG	IF RESET, DO NOT MODIFY	MPT26660
1A10	C700 FFFF	2667	XHI	R0,X'FFFF'	COMPLEMENT	MPT26670
1A14	C710 FFFF	2668	XHI	R1,X'FFFF'	THE RESULT	MPT26680
1A18	2611	2669	AIS	R1,1		MPT26690
1A1A	4E00 235E	2670	ACH	R0,ZERO		MPT26700
1A1E	95E2	2671	NCHANG	EPSR R14,R2	RESTORE PSW	MPT26710
1A20	030A	2672	BR	R10		MPT26720
		2673	*	DATA OF TEST11		MPT26730
		2674	MUD2	DC 0,1,X'FFFF'		MPT26740
1A22	0000					
1A24	0001					
1A26	FFFF					
1A28	7FFF	2675	DC	X'7FFF',X'8C01'		MPT26750
1A2A	8001					
1A2C	8000	2676	DC	X'8000',X'7777'		MPT26760
1A2E	7777					
1A30	790E	2677	DC	X'79DE'		MPT26770
1A32	0000	2678	MUD1	DC 0	A	MPT26780
1A34	0000	2679	DC	0	B	MPT26790
1A36	0000	2680	DC	0,0	A*B	MPT26800
1A38	0000					
1A3A	0000	2681	DC	0,0	A*B UNSIGNED	MPT26810

1A3C	0000					
1A3E	0000	2682	DC	0	A	MPT26820
1A40	FFFF	2683	DC	X'FFFF'	B	MPT26830
1A42	0000	2684	DC	0,0	A*B	MPT26840
1A44	0000					
1A46	0000	2685	DC	0,0	A*B UNSIGNED	MPT26850
1A48	0000					
1A4A	7FFF	2686	DC	X'7FFF',0		MPT26860
1A4C	0000					
1A4E	0000	2687	DC	0,0		MPT26870
1A50	0000					
1A52	0000	2688	DC	0,0		MPT26880
1A54	0000					
1A56	1111	2689	DC	X'1111'	A	MPT26890
1A58	1111	2690	DC	X'1111'	B	MPT26900
1A5A	0123	2691	DC	X'0123',X'4321'	A*B	MPT26910
1A5C	4321					
1A5E	0123	2692	DC	X'0123',X'4321'	A*B UNSIGNED	MPT26920
1A60	4321					
1A62	1111	2693	DC	X'1111'	A	MPT26930
1A64	FFFF	2694	DC	X'FFFF'	B	MPT26940
1A66	FFFF	2695	DC	X'FFFF',X'EEEE'	A*B	MPT26950
1A68	EEEE					
1A6A	1110	2696	DC	X'1110',X'EEEE'	A*B UNSIGNED	MPT26960
1A6C	EEEE					
1A6E	FFFF	2697	DC	X'FFFF'	A	MPT26970
1A70	FFFF	2698	DC	X'FFFF'	B	MPT26980
1A72	0000	2699	DC	0,1	A*B	MPT26990
1A74	0001					
1A76	FFFE	2700	DC	X'FFFE',X'0001'	A*B UNSIGNED	MPT27000
1A78	0001					
1A7A	8000	2701	DC	X'8000',X'FFFF'		MPT27010
1A7C	FFFF					
1A7E	0000	2702	DC	0,X'8000'		MPT27020
1A80	8000					
1A82	7FFF	2703	DC	X'7FFF',X'8000'		MPT27030
1A84	8000					
1A86	8000	2704	DC	X'8000',X'8000'		MPT27040
1A88	8000					
1A8A	4000	2705	DC	X'4000',0		MPT27050
1A8C	0000					
1A8E	4000	2706	DC	X'4000',0		MPT27060
1A90	0000					
1A92	0000	2707	DIVD2 DC	0,0,0		MPT27070
1A94	0000					
1A96	0000					
1A98	0000	2708	DC	0,0,X'7777'		MPT27080
1A9A	0000					
1A9C	7777					
1A9E	0000	2709	DC	0,1,0		MPT27090
1AA0	0001					
1AA2	0000					
1AA4	0000	2710	DC	0,1,X'7777'		MPT27100
1AA6	0001					
1AA8	7777					

111A	FFFF	2711	DC	X'FFFF',X'FFFF'	MPT27110
111C	FFFF				
111E	0000	2712	DC	0,X'FFFF',X'FFFF'	MPT27120
1130	FFFF				
1132	FFFF				
1134	7777	2713	DC	X'7777'	MPT27130
1136	0000	2714	DC	0,0,X'7FFF'	MPT27140
1138	0000				
113A	7FFF				
113C	0000	2715	DC	0,0,0	MPT27150
113E	0000				
11C0	0000				
11C2	0000	2716	DC	0,0,X'FFFF'	MPT27160
11C4	0000				
11C6	FFFF				
11C8	0000	2717	DC	0,0,0	MPT27170
11CA	0000				
11CC	0000				
11CE	0000	2718	DC	0,0,X'8000'	MPT27180
11D0	0000				
11D2	8000				
11D4	0000	2719	DC	0,0,0	MPT27190
11D6	0000				
11D8	0000				
11DA	3FFF	2720	DC	X'3FFF',X'8000'	MPT27200
11DC	8000				
11DE	7FFF	2721	DC	X'7FFF',X'3FFF'	MPT27210
11E0	3FFF				
11E2	8000	2722	DC	X'8000',X'7777'	MPT27220
11E4	7777				
11E6	C000	2723	DC	X'C000',X'8000'	MPT27230
11E8	8000				
11EA	8001	2724	DC	X'8001',X'C000'	MPT27240
11EC	C000				
11EE	8000	2725	DC	X'8000',X'7777'	MPT27250
11F0	7777				
11F2	3FFF	2726	DC	X'3FFF',X'7FFF'	MPT27260
11F4	7FFF				
11F6	7FFF	2727	DC	X'7FFF',X'7FFE'	MPT27270
11F8	7FFE				
11FA	7FFF	2728	DC	X'7FFF',0	MPT27280
11FC	0000				
11FE	C000	2729	DC	X'C000',X'8001'	MPT27290
1300	8001				
1302	8001	2730	DC	X'8001',X'8002'	MPT27300
1304	8002				
1306	7FFF	2731	DC	X'7FFF',0	MPT27310
1308	0000				
130A	3FFF	2732	DC	X'3FFF',X'FFFE'	MPT27320
130C	FFFE				
130E	8001	2733	DC	X'8001',X'7FFE'	MPT27330
1310	7FFE				
1312	8000	2734	DC	X'8000',0	MPT27340
1314	0000				
1316	C000	2735	DC	X'C000',X'0002'	MPT27350

1818	0002					
181A	7FFF	2736	DC	X'7FFF',X'8002'		MPT27360
181C	8002					
181E	8000	2737	DC	X'8000',0		MPT27370
1820	0000					
1822	3FFF	2738	DC	X'3FFF',X'FFFF'		MPT27380
1824	FFFF					
1826	8001	2739	DC	X'8001',X'3FFF'		MPT27390
1828	3FFF					
182A	FFFF	2740	DC	X'FFFF',X'7777'		MPT27400
182C	7777					
182E	C000	2741	DC	X'C000',X'0001'		MPT27410
1830	0001					
1832	7FFF	2742	DC	X'7FFF',X'C000'		MPT27420
1834	C000					
1836	0001	2743	DC	X'0001',X'7777'		MPT27430
1838	7777					
183A	0000	2744	DC	0,1,X'FFFF'		MPT27440
183C	0001					
183E	FFFF					
1840	0000	2745	DC	0,X'FFFF',0		MPT27450
1842	FFFF					
1844	0000					
1846	FFFF	2746	DC	X'FFFF',X'FFFC'		MPT27460
1848	FFFC					
184A	0002	2747	DC	X'0002',0		MPT27470
184C	0000					
184E	FFFE	2748	DC	X'FFFE',0		MPT27480
1850	0000					
1852	0000	2749	IDFLAG	DC	0	MPT27490
1854	0000	2750	SFLAG	DC	0	MPT27500
1856		2751	TEMPF	DS	2	MPT27510
1858	0000	2752	NUMBER	DC	0,X'7FFF'	MPT27520
185A	7FFF					
2753				*****		MPT27530
2754				*		MPT27540
2755				* TEST 12		MPT27550
2756				*		MPT27560
2757				* THIS TEST CHECKS SET MAP AND LOAD PROGRAM STATUS INSTRUCTIONS.		MPT27570
2758				* THE FIRST PART OF THE TEST CHECKS SETMR AND SETM.		MPT27580
2759				* THE SECOND PART OF THE TEST CHECKS LPS AND LPSR.		MPT27590
2760				*		MPT27600
2761				*****		MPT27610
2762				*		MPT27620
2763				* THE COMMENTS BELOW REFER TO BITS 8-11.		MPT27630
2764				* THESE BITS ARE FROM THE SECOND OPERAND (R2).		MPT27640
2765				*		MPT27650
185C	C8E0 1CC0	2766	TEST12	LHI	R14,STOSETM	STORAGE AREA FOR RX FORMAT INSTR.
1860	C8F0 0316	2767		LHI	R15,TEST1	
1864	40F0 235C	2768		STH	R15,NXTST	
1868	C800 3143	2769		LHI	RO,C'1C'	
186C	4000 2318	2770		STH	RO,TESTNO	
1870	4800 2342	2771		LH	RO,CPUNO	
1874	C500 314D	2772		CLHI	RO,C'1M'	IS IT 1610 PROCESSOR
1878	4330 1FCC	2773		BE	TSTEND	

187C	C850 3000	2774	LHI	R5,X'3000'	ARBITRARY PSW FOR SWITCHING	MPT27740
1880	07AA	2775	XHR	R10,R10	FLAG DECIDES TO EXEC. SETMR OR SETM	MPT27750
1882	0799	2776	XHR	R9,R9	DOCOMP ROUTINE FLAG	MPT27760
1884	C800 001C	2777	LHI	R0,X'001C'		MPT27770
1888	4000 235A	2778	STH	R0,ERRIND		MPT27780
188C	4300 1882	2779	B	SET01		MPT27790
1890	C5A0 0001	2780	SET0	CLHI R10,1	CHECK FLAG	MPT27800
1894	2184	2781	BLS	SERO	IF FLAG IS ZERO EXECUTE SETMR	MPT27810
1896	2339	2782	BES	SER	IF FLAG IS NOT ZERO EXECUTE SETMR	MPT27820
1898	4300 1CC2	2783	B	CHANST	BRANCH TO CHECK FOR LARGER MEMORY	MPT27830
189C	1312	2784	SERO	SETMR R1,R2		MPT27840
189E	4520 1F3E	2785	CLH	R2,RTWOFI	CHECK R2 FIELD TO SEE IF INTACT	MPT27850
18A2	4230 1F36	2786	BNE	SETERC		MPT27860
18A6	030B	2787	BR	R11		MPT27870
18A8	4020 1CC0	2788	SER	STH R2,STOSETM	STORE R2 FIELD IN STORAGE LOCATION	MPT27880
18AC	531E 0000	2789	SETM	R1,0(R14)	R14 CONTAINS ADDRESS OF STOSETM	MPT27890
18B0	030B	2790	BR	R11		MPT27900
		2791	*			MPT27910
		2792	*	BITS 8-11 IN THIS SECTION ARE FROM 0000 TO 0110		MPT27920
		2793	*			MPT27930
18B2	0744	2794	SET01	XHR R4,R4	R4 IS CHECK AGAINST R2 (PSW)	MPT27940
18B4	0766	2795	XHR	R6,R6	R6 IS PSW COUNTER	MPT27950
18B6	0722	2796	XHR	R2,R2	R2 IS LOCATION FOR NEW PSW'S	MPT27960
18B8	9552	2797	EPSR	R5,R2	SWITCH TO NEW PSW	MPT27970
18BA	4020 1F3E	2798	STH	R2,RTWOFI		MPT27980
18BE	0755	2799	XHR	R5,R5		MPT27990
18C0	C810 F0F0	2800	LHI	R1,X'F0F0'	R1 TO BE COMPARE TO	MPT28000
18C4	0831	2801	LHR	R3,R1	CONSTANT VALUE OF R3	MPT28010
18C6	C880 0060	2802	LHI	R8,X'0060'	R8 IS UPPER LIMIT FOR COUNTER	MPT28020
18CA	C880 18D6	2803	LHI	R11,SET0A		MPT28030
18CE	C800 1C30	2804	LHI	R13,SETB		MPT28040
18D2	4300 1890	2805	B	SET0		MPT28050
		2806	*			MPT28060
		2807	*			MPT28070
		2808	*	THIS SECTION TESTS THE ABOVE SET UPS FOR SETMR AND SETM		MPT28080
18D6	0513	2809	SET0A	CLHR R1,R3	COMPARE R1 TO EXPECTED VALUE (R3)	MPT28090
18D8	4230 1C9A	2810	BNE	SETERA		MPT28100
18DC	9525	2811	EPSR	R2,R5	EXCHANGE PSW TO TEST IT	MPT28110
18DE	0524	2812	CLHR	R2,R4	COMPARE R2(PSW) TO EXPECTED PSW(R4)	MPT28120
18E0	4230 1C80	2813	BNE	SETERB		MPT28130
18E4	C5A0 0001	2814	CLHI	R10,1	CHECK IF SETM OR SETMR EXECUTED	MPT28140
18E8	2137	2815	BNES	SET0A2	IF R10=1, R2 FIELD WAS CHECKED	MPT28150
18EA	4820 1CC0	2816	LH	R2,STOSETM	LOAD R2 FIELD INTO R2 FOR CHECK	MPT28160
18EE	4520 1F3E	2817	CLH	R2,RTWOFI	CHECK IF R2 FIELD IS STILL INTACT	MPT28170
18F2	4230 1F36	2818	BNE	SETERC		MPT28180
18F6	0568	2819	SET0A2	CLHR R6,R8	CHECK IF ALL PSW'S HAVE BEEN TESTED	MPT28190
18F8	4330 1C14	2820	BE	CHFI		MPT28200
18FC	CA60 0010	2821	AHI	R6,X'10'	INCREMENT PSW COUNTER	MPT28210
1C00	0826	2822	SET0A1	LHR R2,R6	LOAD NEW PSW INTO R2	MPT28220
1C02	C420 00F0	2823	NHI	R2,X'00F0'	AND OFF UNNECESSARY BITS	MPT28230
1C06	C620 4C00	2824	JHI	R2,X'4C00'	OR IN CHECK BITS	MPT28240
1C0A	4020 1F3E	2825	STH	R2,RTWOFI	STORE IN R2 FIELD CHECK AREA	MPT28250
1C0E	0846	2826	LHR	R4,R6		MPT28260
1C10	4300 1890	2827	B	SET0	BRANCH TO EXECUTE TEST INSTRUCTION	MPT28270
		2828	*			MPT28280

1C14	C560 7E60	2829	CHFI	CLHI	R6,X'7E60'	COMPARE COUNTER (R6) TO FINAL PSW	MPT28290
1C18	033D	2830		BER	R13		MPT28300
1C1A	C460 FF00	2831		NHI	R6,X'FF00'	REMOVE EXTRANEIOUS BITS	MPT28310
1C1E	CA60 0200	2832		AHI	R6,X'0200'	INCREMENT FOR NEW PSW	MPT28320
1C22	0886	2833		LHR	R8,R6		MPT28330
1C24	CA80 0060	2834		AHI	R8,X'60'	ADJUST R8 TO FINAL PSW	MPT28340
1C28	9556	2835		EPSR	R5,R6	SWITCH TO NEW PSW	MPT28350
1C2A	0856	2836		LHR	R5,R6	R5 TO BE NEW PSW AT COMPAR. ROUTINE	MPT28360
1C2C	4300 1C00	2837		B	SETOA1		MPT28370
		2838	*				MPT28380
		2839	*	BIT 8-11 IN THIS SECTION ARE EQUAL TO 1111 ONLY			MPT28390
		2840	*				MPT28400
1C30	C810 F0F0	2841	SETB	LHI	R1,X'F0F0'	LOAD R1 WITH CONSTANT	MPT28410
1C34	0831	2842		LHR	R3,R1	R3 TO BE CHECK AGAINST R1	MPT28420
1C36	C880 1C4C	2843		LHI	R11,SETOB		MPT28430
1C3A	0755	2844		XHR	R5,R5	R5 TO BE COUNTER	MPT28440
1C3C	9525	2845		EPSR	R2,R5	SWITCH TO NEW PSW	MPT28450
1C3E	C820 00F0	2846		LHI	R2,X'00F0'	SET UP R2 FIELD	MPT28460
1C42	4020 1F3E	2847		STH	R2,RTWOFI	STORE IN R2 FIELD CHECK AREA	MPT28470
1C46	0842	2848		LHR	R4,R2	R4 TO BE CHECK AGAINST R2	MPT28480
1C48	4300 1890	2849		B	SETO		MPT28490
		2850	*				MPT28500
1C4C	0513	2851	SETOB	CLHR	R1,R3	COMPARE R1 TO EXPECTED VALUE (R3)	MPT28510
1C4E	4230 1C9A	2852		BNE	SETERA		MPT28520
1C52	9525	2853		EPSR	R2,R5	GET PSW	MPT28530
1C54	0524	2854		CLHR	R2,R4	COMPARE PSW(R2) TO EXPECTED PSW(R4)	MPT28540
1C56	4230 1C80	2855		BNE	SETERB		MPT28550
1C5A	C5A0 0001	2856		CLHI	R10,1	CHECK IF SETM OR SETMR EXECUTED	MPT28560
1C5E	4230 1C6E	2857		BNE	SETOB.2	IF R10=1, R2 FIELD WAS CHECKED	MPT28570
1C62	4820 1CC0	2858		LH	R2,STOSETM	LOAD R2 FIELD INTO R2	MPT28580
1C66	4520 1F3E	2859		CLH	R2,RTWOFI	CHECK IF R2 FIELD STILL INTACT	MPT28590
1C6A	4230 1F36	2860		BNE	SETERC		MPT28600
1C6E	C550 7E00	2861	SETOB.2	CLHI	R5,X'7E00'	COMPARE COUNTER (R5) TO FINAL PSW	MPT28610
1C72	4330 1C90	2862		BE	SETOB.1		MPT28620
1C76	CA50 0200	2863		AHI	R5,X'200'	INCREMENT COUNTER	MPT28630
1C7A	0825	2864		LHR	R2,R5	SET UP R2 FIELD	MPT28640
1C7C	C620 4CF0	2865		OHI	R2,X'4CF0'	OR IN CHECK BITS	MPT28650
1C80	4020 1F3E	2866		STH	R2,RTWOFI	STORE IN R2 FIELD CHECK AREA	MPT28660
1C84	0845	2867		LHR	R4,R5	R4 TO BE COMPARISON AGAINST NEW PSW	MPT28670
1C86	C640 00F0	2868		OHI	R4,X'00F0'	OR IN NECESSARY BITS	MPT28680
1C8A	9565	2869		EPSR	R6,R5		MPT28690
1C8C	4300 1890	2870		B	SETO		MPT28700
1C90	C880 18D6	2871	SETOB.1	LHI	R11,SETOA		MPT28710
1C94	26A1	2872		AIS	R10,1	SET FLAG	MPT28720
1C96	4300 18B2	2873		B	SETO1		MPT28730
		2874	*				MPT28740
1C9A	08AA	2875	SETERA	LHR	R10,R10	CHECK FLAG	MPT28750
1C9C	2134	2876		BNZS	SETERA1	IF FLAG SET THEN SETM ERROR	MPT28760
1C9E	C800 011C	2877		LHI	R0,X'011C'	ERROR 1C01	MPT28770
1CA2	2303	2878		BS	SETERR		MPT28780
1CA4	C800 021C	2879	SETERA1	LHI	R0,X'021C'	ERROR 1C02	MPT28790
1CA8	4000 235A	2880	SETERR	STH	R0,ERRIND		MPT28800
1CAC	4300 21F4	2881		B	ERROR		MPT28810
1CB0	08AA	2882	SETERB	LHR	R10,R10	CHECK FLAG	MPT28820
1CB2	2134	2883		BNZS	SETERB1	IF FLAG SET THEN SETM ERROR	MPT28830

1CB4	C800 031C	2884		LHI	R0,X'031C'	ERROR 1C03	MPT28840	
1CB8	2208	2885		BS	SETERR		MPT28850	
1CBA	C800 041C	2886	SETERB1	LHI	R0,X'041C'	ERROR 1C04	MPT28860	
1CBE	220B	2887		BS	SETERR		MPT28870	
		2888	*				MPT28880	
1CC0	0000	2889	STOSETM	DC	0	STORAGE AREA FOR RX FORMAT	MPT28890	
		2890	*				MPT28900	
1CC2	48E0 1F58	2891	CHANST	LH	R14, MEMSTO	LOAD MEMORY FLAG	MPT28910	
1CC6	C5E0 0001	2892		CLHI	R14,X'1'	IF LESS THAN 32K	MPT28920	
1CCA	4230 1F5A	2893		BNE	CHLPS	SKIP TO LPS INSTRUCTIONS	MPT28930	
1CCE	0799	2894		XHR	R9,R9	INSURE FLAG (R9) IS ZERO	MPT28940	
1CD0	C8C0 1F60	2895		LHI	R12, CHLPS1	END ADDRESS FOR STORE ROUTINE	MPT28950	
1CD4	C850 3000	2896		LHI	R5,X'3000'	PSW TO INSURE PROPER MEMORY MODULE	MPT28960	
1C08	9545	2897		EPSR	R4,R5	SWITCH TO NEW PSW	MPT28970	
1CDA	C800 1CF6	2898		LHI	R13, SET00	LOAD BYTES STARTING FROM SET00	MPT28980	
1CDE	D3FD 0000	2899	CHBYT	LB	R15,0(R13)	LOAD A BYTE	MPT28990	
1CE2	D2FD 8000	2900		STB	R15,X'8000'(R13)	STORE THE BYTE	MPT29000	
1CE6	05DC	2901		CLHR	R13,R12	IF IT IS THE LAST BYTE	MPT29010	
1CE8	2334	2902		BES	SWLPS	CONTINUE WITH THE TEST	MPT29020	
1CEA	26D1	2903		AIS	R13,1	ADD 1 TO ADDRESS TO GET NEXT BYTE	MPT29030	
1CEC	4300 1CDE	2904		B	CHBYT		MPT29040	
		2905	*				MPT29050	
1CF0	C820 3090	2906	SWLPS	LHI	R2,X'3090'	LOAD PSW TO SWITCH MEMORY MODULE	MPT29060	
1CF4	9552	2907	SWL1	EPSR	R5,R2	SWITCH TO NEW PSW	MPT29070	
1CF6	07AA	2908	SET00	XHR	R10,R10	RESET INSTRUCTION FORMAT FLAG	MPT29080	
1CF8	C8E0 1F40	2909		LHI	R14, STOSETMB	SET UP FOR RX FORMAT	MPT29090	
1CFC	4300 1D20	2910		B	SET1		MPT29100	
1D00	C5A0 0001	2911	SET001	CLHI	R10,1	CHECK FLAG	MPT29110	
1D04	2184	2912		BLS	SEROB	IF FLAG IS ZERO EXECUTE SETMR	MPT29120	
1D06	2338	2913		BES	SERB	IF FLAG IS ONE EXECUTE SETM	MPT29130	
1D08	4300 1F5A	2914		B	CHLPS	IF FLAG>1, BRANCH TO LPS INSTRUCTION	MPT29140	
1D0C	1312	2915	SEROB	SETMR	R1,R2		MPT29150	
1D0E	052F	2916		CLHR	R2,R15		MPT29160	
1D10	4230 1F36	2917		BNE	SETERC		MPT29170	
1D14	030B	2918		BR	R11		MPT29180	
1D16	4020 1F40	2919	SERB	STH	R2, STOSETMB		MPT29190	
1D1A	531E 0000	2920		SETM	R1,0(R14)	R14 CONTAINS ADDRESS OF STOSETMB	MPT29200	
1D1E	030B	2921		BR	R11		MPT29210	
		2922	*				MPT29220	
		2923	* BITS 8-11 IN THIS SECTION ARE FROM 1000 TO 1110, R1 IS POSITIVE					MPT29230
		2924	*				MPT29240	
1D20	C820 0080	2925	SET1	LHI	R2,X'0080'	VALUE OF R2, TO BE NEW PSW	MPT29250	
1D24	0862	2926		LHR	R6,R2		MPT29260	
1D26	9552	2927		EPSR	R5,R2	SWITCH TO NEW PSW	MPT29270	
1D28	C620 4C00	2928		OHI	R2,X'4C00'		MPT29280	
1D2C	08F2	2929		LHR	R15,R2		MPT29290	
1D2E	0755	2930		XHR	R5,R5		MPT29300	
1D30	C880 00E0	2931		LHI	R8,X'00E0'	UPPER LIMIT FOR COUNTER	MPT29310	
1D34	C830 8000	2932		LHI	R3,X'8000'	R3 TO BE CONSTANT FOR CHECK OF R1	MPT29320	
1D38	0799	2933		XHR	R9,R9	INSURE INCREMENT PSW FLAG IS ZERO	MPT29330	
1D3A	0744	2934		XHR	R4,R4	R4 IS CHECK AGAINST R2 (PSW)	MPT29340	
1D3C	0711	2935		XHR	R1,R1	RESET R1	MPT29350	
1D3E	C880 1D70	2936		LHI	R11, SETOAB	BR LOC. AFTER TEST INSTR. EXEC.	MPT29360	
1D42	C800 1D4A	2937		LHI	R13, SETAB		MPT29370	
1D46	4300 1D00	2938		B	SET001		MPT29380	

		2939	*				MPT29390
		2940	*				MPT29400
		2941	*	BITS 8-11 IN THIS SECTION ARE FROM 1000 TO 1110, R1 IS NEGATIVE			MPT29410
		2942	*				MPT29420
104A	C820 0080	2943	SETAB	LHI	R2,X'0080'	VALUE OF R2 TO BE NEW PSW	MPT29430
104E	0862	2944		LHR	R6,R2	R6 TO COUNT INCREMENTED PSW	MPT29440
1050	C810 F0F0	2945		LHI	R1,X'F0F0'	ARBITRARY VALUE FOR R1	MPT29450
1054	0831	2946		LHR	R3,R1	R3 IS CHECK AGAINST R1	MPT29460
1056	0744	2947		XHR	R4,R4	R4 IS CHECK AGAINST R2 (NEW PSW)	MPT29470
1058	C880 00E0	2948		LHI	R8,X'00E0'	R8 IS LIMIT FOR COUNTER	MPT29480
105C	9552	2949		EPSR	R5,R2	SWITCH TO NEW PSW	MPT29490
105E	C620 4C00	2950		OHI	R2,X'4C00'	OR IN CHECK BITS	MPT29500
1062	08F2	2951		LHR	R15,R2	STORE R2 FIELD IN SAVE REGISTER	MPT29510
1064	0755	2952		XHR	R5,R5	RESET R5, TO CONTROL MEMORY	MPT29520
1066	2491	2953		LIS	R9,1	SET FLAG	MPT29530
1068	C8D0 1E34	2954		LHI	R13,DOCOMP	BR LOC. AFTER FINAL COMPARE ROUTINE	MPT29540
106C	4300 1000	2955		B	SET001		MPT29550
		2956	*				MPT29560
1070	0513	2957	SETOAB	CLHR	R1,R3	COMPARES R1 TO EXPECTED VALUE (R3)	MPT29570
1072	4230 1FOA	2958		BNE	SETERAB		MPT29580
1076	9525	2959		EPSR	R2,R5	GET THE PSW INTO R2	MPT29590
1078	0524	2960		CLHR	R2,R4	COMPARE R2(PSW) TO EXPECTED PSW(R4)	MPT29600
107A	4230 1F26	2961		BNE	SETERBB		MPT29610
107E	C5A0 0001	2962		CLHI	R10,1	COMPARE R10 TO CHECK IF	MPT29620
1082	4230 1090	2963		BNE	SETOA.1	SETMR R0 SETM TO BE CHECKED	MPT29630
1086	4820 9F40	2964		LH	R2,STOSETMB+X'8000'	LOAD FROM R2 FIELD SAVE AREA	MPT29640
108A	052F	2965		CLHR	R2,R15	CHECK IF R2 FIELD IS STILL INTACT	MPT29650
108C	4230 1F36	2966		BNE	SETERC	BRANCH TO ERROR 1C09 IF NOT INTACT	MPT29660
1090	0568	2967	SETOA.1	CLHR	R6,R8	CHECK FOR FINAL PSW	MPT29670
1092	4330 1DCE	2968		BE	CHF1		MPT29680
1096	CA60 0010	2969		AHI	R6,X'10'	INCREMENT COUNTER	MPT29690
109A	C590 0001	2970		CLHI	R9,1	CHECK THE FLAG	MPT29700
109E	2134	2971		BNES	RNO		MPT29710
10A0	CA40 0010	2972		AHI	R4,X'10'	INCREMENT R4 (EXPECTED PSW)	MPT29720
10A4	230A	2973		BS	RN1		MPT29730
10A6	0711	2974	RNO	XHR	R1,R1	RESET R1	MPT29740
10A8	0826	2975		LHR	R2,R6	LOAD INCREMENTED PSW INTO R2	MPT29750
10AA	9552	2976		EPSR	R5,R2	SWITCH TO NEW PSW	MPT29760
10AC	0755	2977		XHR	R5,R5	RESET R5 TO CONTROL MEMORY	MPT29770
10AE	C620 4C00	2978		OHI	R2,X'4C00'	OR IN CHECK BITS	MPT29780
10B2	08F2	2979		LHR	R15,R2	SAVE R2 IN R15 FOR CHECK	MPT29790
10B4	4300 1000	2980		B	SET001		MPT29800
10B8	0826	2981	RN1	LHR	R2,R6	LOAD NEW PSW	MPT29810
10BA	C420 FF80	2982		NHI	R2,X'FF80'	AND IN NECESSARY BITS	MPT29820
10BE	9552	2983		EPSR	R5,R2	SWITCH TO NEW PSW	MPT29830
10C0	0826	2984		LHR	R2,R6	SET UP R2 FIELD	MPT29840
10C2	0755	2985		XHR	R5,R5	RESET R5, TO CONTROL MEMORY	MPT29850
10C4	C620 4C00	2986		OHI	R2,X'4C00'	OR IN CHECK BITS	MPT29860
10C8	08F2	2987		LHR	R15,R2	SAVE R2 FIELD IN R15	MPT29870
10CA	4300 1000	2988		B	SET001		MPT29880
		2989	*				MPT29890
10CE	C590 0001	2990	CHF1	CLHI	R9,1	CHECK FOR CHOICE OF PSW INCRE. ROUT.	MPT29900
10D2	4230 1E06	2991		BNE	CHF3		MPT29910
10D6	C560 7EE0	2992		CLHI	R6,X'7EE0'	COMPARE COUNTER (R6) TO FINAL PSW	MPT29920
10DA	4330 1E34	2993		BE	DOCOMP		MPT29930

10DE	C460	FF00	2994	NHI	R6,X'FF00'	REMOVE EXTRANEIOUS BITS	MPT29940
10E2	C460	0200	2995	AHI	R6,X'200'	INCREMENT COUNTER	MPT29950
10E6	0755		2996	XHR	R5,R5	RESET R5, TO BE NEW PSW	MPT29960
10E8	C660	0080	2997	OHI	R6,X'0080'	SET R6 TO BE NEXT PSW	MPT29970
10EC	9576		2998	EPSR	R7,R6	SWITCH TO NEW PSW	MPT29980
10EE	0846		2999	LHR	R4,R6	R4 TO CHECK AGAINST NEW PSW	MPT29990
10F0	C440	FF7F	3000	NHI	R4,X'FF7F'	SET UP R4 FOR PSW	MPT30000
10F4	0826		3001	LHR	R2,R6	SET UP R2 FIELD	MPT30010
10F6	C620	4C00	3002	OHI	R2,X'4C00'	OR IN CHECK BITS	MPT30020
10FA	08F2		3003	LHR	R15,R2	STORE R2 FIELD IN R15	MPT30030
10FC	0886		3004	LHR	R8,R6	R8 TO BE LIMIT FOR BITS 8-12 OF PSW	MPT30040
10FE	C680	00E0	3005	OHI	R8,X'00E0'	INCREMENT R8 TO UPPER LIMIT FOR PSW	MPT30050
1E02	4300	1D00	3006	B	SET001		MPT30060
1E06	C560	7EE0	3007	CHF3	CLHI	R6,X'7EE0'	COMAPARE R6 TO CHECK FOR LAST
1E0A	4330	1D4A	3008	BE	SETAB	PSW (TOTAL PSW)	MPT30080
1E0E	C460	FF00	3009	NHI	R6,X'FF00'	REMOVE EXTRANEIOUS BITS	MPT30090
1E12	CA60	0200	3010	AHI	R6,X'200'	INCREMENT FOR NEXT PSW	MPT30100
1E16	0755		3011	XHR	R5,R5		MPT30110
1E18	0846		3012	LHR	R4,R6	R4 TO BE CHECK AGAINST NEW PSW	MPT30120
1E1A	C660	0080	3013	OHI	R6,X'0080'	OR IN CHECK BIT FOR NEW PSW	MPT30130
1E1E	9576		3014	EPSR	R7,R6	SWITCH TO NEW PSW	MPT30140
1E20	0826		3015	LHR	R2,R6	SET UP R2 FIELD	MPT30150
1E22	C620	4C00	3016	OHI	R2,X'4C00'	OR IN CHECK BITS	MPT30160
1E26	08F2		3017	LHR	R15,R2	STORE R2 FIELD IN R15	MPT30170
1E28	0886		3018	LHR	R8,R6	SET UP R8 TO BE COUNTER	MPT30180
1E2A	C680	00E0	3019	OHI	R8,X'00E0'	OF BITS 8-12 OF NEW PSW	MPT30190
1E2E	0711		3020	XHR	R1,R1	RESET R1 FIELD	MPT30200
1E30	4300	1D00	3021	B	SET001		MPT30210
			3022	*			MPT30220
			3023	*	BITS 8-11 IN THIS SECTION ARE EQUAL TO 0111 ONLY		MPT30230
			3024	*			MPT30240
1E34	2410		3025	DOCOMP	LIS	R1,0	RESET R1
1E36	C830	8000	3026	LHI	R3,X'8000'	R3 IS CHECK AGAINST R1	MPT30260
1E3A	C920	00F0	3027	LHI	R2,X'00F0'	SET UP NEW PSW	MPT30270
1E3E	9552		3028	EPSR	R5,R2	SWITCH TO NEW PSW	MPT30280
1E40	C850	7C00	3029	LHI	R5,X'7C00'	R5 TO BE PSW BEFORE COMPARISON	MPT30290
1E44	C420	0070	3030	NHI	R2,X'0070'	AND OFF PROPER BITS	MPT30300
1E48	C620	4C00	3031	OHI	R2,X'4C00'	OR IN CHECK BITS	MPT30310
1E4C	08F2		3032	LHR	R15,R2	STORE R2 FIELD IN R15	MPT30320
1E4E	2460		3033	LIS	R6,0	R6 IS COUNTER FOR ENTIRE PSW	MPT30330
1E50	2440		3034	LIS	R4,0	R4 IS CHECK AGAINST R2 (PSW)	MPT30340
1E52	2400		3035	LIS	R12,0	INCREMENT FLAG	MPT30350
1E54	C880	1E5C	3036	LHI	R11,SET01B		MPT30360
1E58	4300	1D00	3037	B	SET001		MPT30370
			3038	*			MPT30380
1E5C	0513		3039	SET01B	CLHR	R1,R3	COMPARE R1 TO EXPECTED VALUE (R3)
1E5E	4230	1F0A	3040	BNE	SETERAB		MPT30390
1E62	9525		3041	EPSR	R2,R5	GET PSW	MPT30410
1E64	0524		3042	CLHR	R2,R4	COMPARE R2(PSW) TO EXPECTED PSW(R4)	MPT30420
1E66	4230	1F26	3043	BNE	SETERBB		MPT30430
1E6A	C5A0	0001	3044	CLHI	R10,1	IF SETMR INSTRUCTION THEN R2 FIELD	MPT30440
1E6E	2136		3045	BNES	SET0A.2	HAS ALREADY BEEN CHECKED	MPT30450
1E70	4820	1F40	3046	LH	R2,STOSETMB	LOAD R2 FIELD INTO R2	MPT30460
1E74	052F		3047	CLHR	R2,R15	CHECK R2 FILED TO SEE IF INTACT	MPT30470
1E76	4230	1F36	3048	BNE	SETERC		MPT30480

1E7A	C5C0	0001	3049	SET0A.2	CLHI	R12,X'1'	COMPARE DOCOMP FLAG (R12)	MPT30490
1E7E	4280	1E8A	3050		BL	CH		MPT30500
1E82	4330	1E04	3051		BE	CH12		MPT30510
1E86	430C	1EFE	3052		9	CH13		MPT30520
1E8A	C540	7E00	3053	CH	CLHI	R4,X'7E00'		MPT30530
1E8E	4330	1E84	3054		BE	CH11		MPT30540
1E92	CA60	0200	3055		AHI	R6,X'200'	INCREMENT FOR NEXT PSW	MPT30550
1E96	0826		3056		LHR	R2,R6	SET UP R2 FIELD	MPT30560
1E98	C620	00F0	3057		OHI	R2,X'00F0'	OR IN PROPER PSW BITS	MPT30570
1E9C	9552		3058		EPSR	R5,R2	SWITCH TO NEW PSW	MPT30580
1E9E	C420	FF70	3059		NHI	R2,X'FF70'	AND OFF PROPER BITS FOR R2 FIELD	MPT30590
1EA2	C850	7C00	3060		LHI	R5,X'7C00'	R5 TO BE NEW PSW BEFORE COMPARISON	MPT30600
1EA6	C620	4C00	3061		OHI	R2,X'4C00'	OR IN CHECK BITS	MPT30610
1EAA	08F2		3062		LHR	R15,R2	STORE R2 FIELD IN R15	MPT30620
1EAC	0846		3063		LHR	R4,R6	R4 TO BE CHECK AGAINST NEW PSW	MPT30630
1EAE	2410		3064		LIS	R1,0	SET UP R1 FIELD	MPT30640
1EB0	4300	1D00	3065		B	SET001		MPT30650
			3066	*				MPT30660
1EB4	0733		3067	CH11	XHR	R3,R3	R3 TO BE CHECK AGAINST R1 FIELD	MPT30670
1EB6	26C1		3068		AIS	R12,1		MPT30680
1EB8	C820	00F0	3069		LHI	R2,X'00F0'	SET UP FOR NEW PSW	MPT30690
1EBC	9552		3070		EPSR	R5,R2		MPT30700
1EBE	C850	7C00	3071		LHI	R5,X'7C00'	R5 TO BE NEW PSW BEFORE COMPARISON	MPT30710
1EC2	C420	0070	3072		NHI	R2,X'0070'	AND IN PROPER BITS INTO R2 FIELD	MPT30720
1EC6	08F2		3073		LHR	R15,R2	STORE R5 FIELD IN R15	MPT30730
1EC8	2460		3074		LIS	R6,0		MPT30740
1ECA	C810	8000	3075		LHI	R1,X'8000'	SET UP R1 FIELD	MPT30750
1ECE	2440		3076		LIS	R4,0	R4 IS CHECK AGAINST NEW PSW	MPT30760
1ED0	4300	1D00	3077		B	SET001		MPT30770
			3078	*				MPT30780
1ED4	C560	7E00	3079	CH12	CLHI	R6,X'7E00'		MPT30790
1ED8	4330	1EFE	3080		BE	CH13		MPT30800
1EDC	CA60	0200	3081		AHI	R6,X'200'	INCREMENT COUNTER FOR TOTAL PSW	MPT30810
1EE0	0826		3082		LHR	R2,R6	SET UP R2 FIELD	MPT30820
1EE2	C620	00F0	3083		OHI	R2,X'00F0'	OR IN CHECK BITS FOR PSW	MPT30830
1EE6	9552		3084		EPSR	R5,R2	SWITCH TO NEW PSW	MPT30840
1EE8	C420	FF70	3085		NHI	R2,X'FF70'	AND OFF EXTRANEIOUS BITS	MPT30850
1EEC	0755		3086		XHR	R5,R5	RESET R5 TO BE PSW AT COMPAR. ROUT.	MPT30860
1EEE	C620	4C00	3087		OHI	R2,X'4C00'	OR IN CHECK BITS	MPT30870
1EF2	08F2		3088		LHR	R15,R2	STORE R2 FIELD IN R15	MPT30880
1EF4	0846		3089		LHR	R4,R6	R4 TO CHECK NEW PSW	MPT30890
1EF6	C810	8000	3090		LHI	R1,X'8000'	SET UP R211 FIELD	MPT30900
1EFA	4300	1D00	3091		B	SET001		MPT30910
1EFE	07CC		3092	CH13	XHR	R12,R12	RESET DOCOMP FLAG	MPT30920
1F00	26A1		3093		AIS	R10,1	INCREMENT TEST INSTRU. FORMAT FLAG	MPT30930
1F02	C8B0	1D70	3094		LHI	R11,SET0AB		MPT30940
1F06	4300	1D20	3095		B	SET1		MPT30950
			3096	*				MPT30960
1FOA	08AA		3097	SETERAB	LHR	R10,R10	CHECK FLAG	MPT30970
1FOC	2134		3098		BNZS	SETERA1B	IF FLAG NOT ZERO THEN SETM ERROR	MPT30980
1FOE	C800	051C	3099		LHI	R0,X'051C'	ERROR 1C05	MPT30990
1F12	2303		3100		BS	SETERR8		MPT31000
1F14	C800	061C	3101	SETERA1B	LHI	R0,X'061C'	ERROR 1C06	MPT31010
1F18	C820	7C00	3102	SETERRB	LHI	R2,X'7C00'		MPT31020
1F1C	9552		3103		EPSR	R5,R2		MPT31030

1F1E	4000	235A	3104	STH	RO,ERRIND		MPT31040
1F22	4300	21F4	3105	B	ERROR		MPT31050
1F26	084A		3106	SETERBB	LHR R10,R10	CHECK INSTRU. FORMAT FLAG	MPT31060
1F28	2134		3107	BNZS	SETERB1B	IF FLAG NOT ZERO THEN SETM ERROR	MPT31070
1F2A	C800	071C	3108	LHI	R0,X'071C'	ERROR 1C07	MPT31080
1F2E	220B		3109	BS	SETERRB		MPT31090
1F30	C800	081C	3110	SETERB1B	LHI R0,X'081C'	ERROR 1C08	MPT31100
1F34	220E		3111	BS	SETERRB		MPT31110
1F36	C800	091C	3112	SETERC	LHI R0,X'091C'	ERROR 1C09	MPT31120
1F3A	4300	1F18	3113	B	SETERRB		MPT31130
			3114	*			MPT31140
1F3E	0000		3115	RTWOFI	DC 0		MPT31150
1F40	0000		3116	STOSETMB	DC 0	STORAGE AREA FOR SETM INSTRU.	MPT31160
			3117	*			MPT31170
1F42	000A		3118	MESMEM1	DC X'D0A'	MESSAGE TO CHECK FOR GREATER	MPT31180
1F44	FFFF		3119	DC	X'FFFF'	THAN 32K OF MEMORY	MPT31190
1F46	454E	5445 5220 3020	3120	DC	C'ENTER 0 OR 1'	ENTER A ZERO FOR 32K OR	MPT31200
1F4E	4F52	2031					
1F52	FFFF		3121	DC	X'FFFF'	LESS OF MEMORY	MPT31210
1F54	000A		3122	DC	X'D0A'	ENTER A ONE FOR 64K	MPT31220
1F56	FFFF		3123	DC	X'FFFF'	OR MORE OF MEMORY	MPT31230
	0000	1F57	3124	MESMEM2	EQU *-1		MPT31240
			3125	*			MPT31250
1F58	0000		3126	MEMSTO	DCX 0	STORAGE AREA FOR MEMORY FLAG	MPT31260
			3127	*			MPT31270
			3128	*****			MPT31280
			3129	*			MPT31290
			3130	* THIS PART OF THE TEST CHECKS THE LPS AND LPSR INSTRUCTIONS.			MPT31300
			3131	*			MPT31310
1F5A	C850	3000	3132	CHLPS	LHI R5,X'3000'	CHANGE PSW TO INSURE	MPT31320
1F5E	9525		3133	EPSR	R2,R5	CORRECT MEMORY MODULE	MPT31330
1F60	C800	F0F0	3134	CHLPS1	LHI R0,X'F0F0'	SET R1 FIELD EQUAL TO A CONSTANT	MPT31340
1F64	C840	2000	3135	LHI	R4,X'2000'	R4 IS CHECK AGAINST R1 (NEW PSW)	MPT31350
1F68	4040	1FCA	3136	STH	R4,MEMFLAG	STORE NEW PSW IN MEMFLAG	MPT31360
1F6C	C830	1FCA	3137	LHI	R3,MEMFLAG	LOAD ADDR. OF TEST PSW	MPT31370
1F70	C200	1F74	3138	LPSW	LS	LOAD A PSW	MPT31380
1F74	3C10		3139	LS	DC X'3C10',LS1		MPT31390
1F76	1F78						
1F78	7303	0000	3140	LS1	LPS 0(R3)	CHANGE PSW WITH TEST INSTRUCTION	MPT31400
1F7C	9515		3141	EPSR	R1,R5	GET PSW	MPT31410
1F7E	C500	F0F0	3142	CLHI	R0,X'F0F0'	CHECK R1 FIELD	MPT31420
1F82	4230	1FB8	3143	BNE	LERR2	IF NOT EQUAL BRANCH TO ERROR	MPT31430
1F86	0514		3144	CLHR	R1,R4	CHECK FOR CORRECT PSW	MPT31440
1F88	4230	1FAC	3145	BNE	LERR	IF NOT CORRECT BRANCH TO ERROR	MPT31450
			3146	*			MPT31460
1F8C	0834		3147	LHR	R3,R4	LOAD TEST PSW INTO R3	MPT31470
1F8E	C200	1F92	3148	LPSW	LS2	LOAD A PSW	MPT31480
1F92	3C10		3149	LS2	DC X'3C10',LS3		MPT31490
1F94	1F96						
1F96	3303		3150	LS3	LPSR R3	CHANGE PSW WITH TEST INSTRUCTION	MPT31500
1F98	9515		3151	EPSR	R1,R5	GET PSW	MPT31510
1F9A	C500	F0F0	3152	CLHI	R0,X'F0F0'	CHECK R1 FIELD	MPT31520
1F9E	4230	1FC4	3153	BNE	LERR3	IF NOT EQUAL BRANCH TO ERROR	MPT31530
1FA2	0514		3154	CLHR	R1,R4	CHECK FOR CORRECT PSW (R1)	MPT31540
1FA4	4230	1FB8	3155	BNE	LERR1	IF NOT CORRECT BRANCH TO ERROR1	MPT31550

1FA8	4300	1FCC	3156	B	TSTEND		MPT31560
			3157	*			MPT31570
1FAC	C800	0A1C	3158	LERR	LHI	RO,X'0A1C'	MPT31580
1FB0	4070	235A	3159	SETERR1	STH	R7,ERRIND	MPT31590
1FB4	4300	1CA8	3160		B	SETERR	MPT31600
1FB8	C800	0B1C	3161	LERR1	LHI	RO,X'0B1C'	MPT31610
1FBC	2206		3162		BS	SETERR1	MPT31620
1FBE	C800	0C1C	3163	LERR2	LHI	RO,X'0C1C'	MPT31630
1FC2	2209		3164		BS	SETERR1	MPT31640
1FC4	C800	0D1C	3165	LERR3	LHI	RO,X'0D1C'	MPT31650
1FC8	220C		3166		BS	SETERR1	MPT31660
			3167	*			MPT31670
1FCA	0000		3168	MEMFLAG	DC	X'0000'	MPT31680
			3169	*		STORAGE AREA FOR MEMORY FLAG	MPT31690
			3170	*			MPT31700
			3171	*			MPT31710
			3172	*	ALL THE TESTS IN PART 1 ARE DONE		MPT31720
			3173	*			MPT31730
1FCC	4800	233C	3174	TSTEND	LH	RO,TOTAL	MPT31740
1FD0	2601		3175		AIS	RO,1	MPT31750
1FD2	4000	233C	3176		STH	RO,TOTAL	MPT31760
1FD6	C500	FFFF	3177		CLHI	RO,X'FFFF'	MPT31770
1FDA	4230	2002	3178		BNE	NOTFF	MPT31780
1FDE	D320	234A	3179	AGTRY	LB	R2,OUTDEV	MPT31790
1FE2	9025		3180		SSR	R2,R5	MPT31800
1FE4	4210	1FDE	3181		BTC	1,AGTRY	MPT31810
1FE8	4240	1FDE	3182		BTC	4,AGTRY	MPT31820
1FEC	C450	00FC	3183		NHI	R5,X'FC'	MPT31830
1FF0	C550	000C	3184		CLHI	R5,X'0C'	MPT31840
1FF4	2238		3185		BES	AGTRY	MPT31850
1FF6	41F0	206E	3186		BAL	R15,TIM	MPT31860
1FFA	4100	2080	3187		BAL	R13,PRTTOT	MPT31870
1FFE	4300	0112	3188		B	ENTRY1	MPT31880
	0000	2002	3189	NOTFF	EQU	*	MPT31890
2002	D320	234A	3190		LB	R2,OUTDEV	MPT31900
2006	9025		3191		SSR	R2,R5	MPT31910
2008	4210	2016	3192		BTC	1,DONE0	MPT31920
200C	C450	00FC	3193		NHI	R5,X'FC'	MPT31930
2010	C550	000C	3194		CLHI	R5,X'0C'	MPT31940
2014	2136		3195		BNES	DONE	MPT31950
2016	2451		3196	DONE0	LIS	R5,1	MPT31960
2018	4050	2340	3197		STH	R5,CONOFF	MPT31970
201C	4300	0316	3198		B	TEST1	MPT31980
	0000	2020	3199	DONE	EQU	*	MPT31990
2020	08A0		3200		LHR	R10,RO	MPT32000
2022	41F0	2134	3201		BAL	R15,ASCWRT	MPT32010
2026	45A0	010E	3202		CLH	R10,NTIMES	MPT32020
202A	4280	02F6	3203		BL	ENTRY3	MPT32030
202E	4800	2340	3204		LH	RO,CONOFF	MPT32040
2032	2333		3205		BZS	DONE11	MPT32050
2034	41F0	206E	3206		BAL	R15,TIM	MPT32060
	0000	2038	3207	DONE11	EQU	*	MPT32070
2038	4800	233E	3208		LH	RO,TOTERR	MPT32080
203C	213F		3209		BNZS	DONE3	MPT32090
203E	2440		3210		LIS	R4,0	MPT32100

2040	C850 232B	3211	LHI	R5,NOERRB		MPT32110
2044	DE20 2340	3212	OC	R2,OUTCMD		MPT32120
2048	9D23	3213	SSR	R2,R3		MPT32130
204A	2081	3214	BTBS	8,1		MPT32140
204C	DA24 231C	3215	DONE2	WD R2,NOERRA(R4)	PRINT NO ERROR	MPT32150
2050	C554 231C	3216	CLHI	R5,NOERRA(R4)		MPT32160
2054	2333	3217	BES	DONE3		MPT32170
2056	2641	3218	AIS	R4,1		MPT32180
2058	2208	3219	BS	DONE12		MPT32190
	0000 205A	3220	DONE3	EQU *		MPT32200
205A	4800 2340	3221	LH	RO,CONOFF		MPT32210
205E	4330 2066	3222	BZ	DONE33		MPT32220
2062	41F0 206E	3223	BAL	R15,TIM		MPT32230
2066	4100 2080	3224	DONE33	BAL R13,PRTTOT	PRINT TOTAL & TOTAL ERROR	MPT32240
206A	4300 20DA	3225	TOWT	B WT000F		MPT32250
	0000 206E	3226	TIM	EQU *		MPT32260
206E	C800 FFFF	3227	LHI	RO,X'FFFF'		MPT32270
2072	2701	3228	TIME	SIS RO,1		MPT32280
2074	2031	3229	BNZS	TIME		MPT32290
2076	C800 FFFF	3230	LHI	RO,X'FFFF'		MPT32300
207A	2701	3231	TIME2	SIS RO,1		MPT32310
207C	2031	3232	BNZS	TIME2		MPT32320
207E	030F	3233	BR	R15		MPT32330
2080	C800 00FF	3234	PRTTOT	LHI RO,X'FF'	PRINT TOTAL & TOTAL ERROR	MPT32340
2084	41E0 2112	3235	BAL	R14,WRITE1		MPT32350
2088	41E0 2112	3236	BAL	R14,WRITE1		MPT32360
208C	41E0 2112	3237	BAL	R14,WRITE1		MPT32370
2090	240D	3238	LIS	RO,13		MPT32380
2092	41E0 2112	3239	BAL	R14,WRITE1		MPT32390
2096	C800 00FF	3240	LHI	RO,X'FF'		MPT32400
209A	41E0 2112	3241	BAL	R14,WRITE1		MPT32410
209E	240A	3242	LIS	RO,10		MPT32420
20A0	41E0 2112	3243	BAL	R14,WRITE1		MPT32430
20A4	48F0 233C	3244	LH	R15,TOTAL	PRINT TOTAL	MPT32440
20A8	41C0 20E2	3245	BAL	R12,PRNTRF		MPT32450
20AC	C800 0020	3246	LHI	RO,X'20'		MPT32460
20B0	41E0 2112	3247	BAL	R14,WRITE1		MPT32470
20B4	41E0 2112	3248	BAL	R14,WRITE1		MPT32480
20B8	41E0 2112	3249	BAL	R14,WRITE1		MPT32490
20BC	41E0 2112	3250	BAL	R14,WRITE1		MPT32500
20C0	48F0 233E	3251	LH	R15,TOTERR	PRINT TOTERR	MPT32510
20C4	41C0 20E2	3252	BAL	R12,PRNTRF		MPT32520
20C8	240D	3253	LIS	RO,13		MPT32530
20CA	41E0 2112	3254	BAL	R14,WRITE1		MPT32540
20CE	41E0 2112	3255	BAL	R14,WRITE1		MPT32550
20D2	240A	3256	LIS	RO,10		MPT32560
20D4	41E0 2112	3257	BAL	R14,WRITE1		MPT32570
20D8	030D	3258	BR	R13		MPT32580
	0000 20DA	3259	WT000F	EQU *		MPT32590
20DA	4300 0112	3260	B	ENTRY1	NO OP THIS BRANCH TO BYPASS	MPT32600
20DE	4300 02F6	3261	B	ENTRY3	INITIAL SET UP	MPT32610
		3262	*			MPT32620
		3263	*	PRINT THE CONTENTS OF REG. 15 IN HEX.		MPT32630
		3264	*			MPT32640
		3265	*	EXIT ON R12		MPT32650

20E2	080F	3266	*				MPT32660
20E4	900C	3267	PRNTRF	LHR	RO,R15		MPT32670
20E6	41E0 2102	3268		SRLS	RO,12		MPT32680
20EA	080F	3269		BAL	R14,PRNTRD	PRINT MSB HEX NUMBER	MPT32690
20EC	9008	3270		LHR	RO,R15		MPT32700
20EE	41E0 2102	3271		SRLS	RO,8		MPT32710
20F2	080F	3272		BAL	R14,PRNTRD		MPT32720
20F4	9004	3273		LHR	RO,R15		MPT32730
20F6	41E0 2102	3274		SRLS	RO,4		MPT32740
20FA	080F	3275		BAL	R14,PRNTRD		MPT32750
20FC	41E0 2102	3276		LHR	RO,R15		MPT32760
2100	030C	3277		BAL	R14,PRNTRD	PRINT LSB HEX NUMBER	MPT32770
2102	C400 000F	3278		BR	R12		MPT32780
2106	CA00 0030	3279	PRNTRD	NHI	RO,15	MASK OF ALL OTHER BITS	MPT32790
210A	C500 003A	3280		AHI	RO,X'30'	FORM ASCII CHARACTER	MPT32800
210E	2182	3281		CLHI	RO,X'3A'	LESS THAN A	MPT32810
2110	2607	3282		BLS	WRITE1	YES, BRANCH	MPT32820
2112	D320 234A	3283		AIS	RO,7	A-F	MPT32830
2116	DE20 234D	3284	WRITE1	LB	R2,OUTDEV		MPT32840
211A	9023	3285		OC	R2,OUTCMD		MPT32850
211C	021E	3286	WRIT	SSR	R2,R3		MPT32860
211E	4280 211A	3287		BTCR	1,R14		MPT32870
2122	9A20	3288		BTC	8,WRIT		MPT32880
2124	030E	3289		WDR	R2,RO	PRINT ON CONSOLE	MPT32890
		3290		BR	R14		MPT32900
		3291	*				MPT32910
2126	240D	3292	CRLF	LIS	RO,13		MPT32920
2128	41E0 2112	3293		BAL	R14,WRITE1		MPT32930
212C	240A	3294		LIS	RO,10		MPT32940
212E	41E0 2112	3295		BAL	R14,WRITE1	LINE FEED	MPT32950
2132	030C	3296		BR	R12	RETURN	MPT32960
		3297	*				MPT32970
	0000 2134	3298	ASCWRT	EQU	*		MPT32980
2134	D300 2349	3299		LB	RO,ASCNUMB	GET NUMBER TO BE PRINTED	MPT32990
2138	41E0 2112	3300		BAL	R14,WRITE1		MPT33000
213C	2601	3301		AIS	RO,1	INCRMENT COUNT	MPT33010
213E	D200 2349	3302		STB	RO,ASCNUMB		MPT33020
2142	D310 2348	3303		LB	R1,ASCOUNT		MPT33030
2146	2611	3304		AIS	R1,1		MPT33040
2148	D210 2348	3305		STB	R1,ASCOUNT		MPT33050
214C	C500 003A	3306		CLHI	RO,X'3A'	PRINTED 1-9	MPT33060
2150	4230 215C	3307		BNE	ASCWRT1	NO, BRANCH	MPT33070
2154	C800 0030	3308		LHI	RO,X'30'		MPT33080
2158	D200 2349	3309		STB	RO,ASCNUMB	ZERO	MPT33090
215C	D300 2348	3310	ASCWRT1	LB	RO,ASCOUNT		MPT33100
2160	C500 003C	3311		CLHI	RO,60	PRINTED 60 CHAR ON SCREEN (ONE LINE)	MPT33110
2164	028F	3312		BLR	R15	NO, RETURN	MPT33120
2166	41C0 2126	3313		BAL	R12,CRLF	YES ..CRLF	MPT33130
216A	2400	3314		LIS	RO,0		MPT33140
216C	D200 2348	3315		STB	RO,ASCOUNT	ZERO COUNT	MPT33150
2170	C800 0031	3316		LHI	RO,X'31'		MPT33160
2174	D200 2349	3317		STB	RO,ASCNUMB		MPT33170
2178	030F	3318		BR	R15		MPT33180
		3319	*				MPT33190
		3320	*				MPT33200

217A	0000 217A	3321	READ1	EQU	*		MPT33210	
217A	0320 234B	3322		LB	R2,INDEV	GET REC'VR ADDRESS	MPT33220	
217E	0E20 234C	3323		OC	R2,INCMND	READ MODE	MPT33230	
2182	4810 2356	3324		LH	R1,MICFLAG		MPT33240	
2186	4230 219A	3325		BNZ	READ3	BRANCH IF MICRO I/O	MPT33250	
218A	9B23	3326		RDR	R2,R3	DUMMY READ	MPT33260	
218C	9D23	3327		SSR	R2,R3		MPT33270	
218E	2281	3328		BFBS	8,1		MPT33280	
2190	9D23	3329	READ2	SSR	R2,R3		MPT33290	
2192	4290 2190	3330		BTC	9,READ2		MPT33300	
2196	9820	3331		RDR	R2,R0		MPT33310	
2198	2306	3332		BS	READ33		MPT33320	
219A	9D23	3333	READ3	SSR	R2,R3		MPT33330	
219C	4290 219A	3334		BTC	9,READ3		MPT33340	
21A0	9B20	3335		RDR	R2,R0		MPT33350	
21A2	9A20	3336		WDR	R2,R0		MPT33360	
21A4	C400 007F	3337	READ33	NHI	R0,X'7F'	STRIP PARTITY	MPT33370	
21A8	030E	3338		BR	R14		MPT33380	
		3339		*****				MPT33390
		3340		*			MPT33400	
		3341		*	AN INTERRUPT IS DETECTED		MPT33410	
		3342		*			MPT33420	
21AA	24F1	3343	FLPTNT	LIS	R15,1	FLPT ARITH. FAULT INTRPT.	MPT33430	
21AC	2309	3344		BS	ERRF		MPT33440	
21AE	24F2	3345	ILGINT	LIS	R15,2	ILL. INSTR. INTRPT.	MPT33450	
21B0	2307	3346		BS	ERRF		MPT33460	
21B2	24F3	3347	MALFTN	LIS	R15,3	MACH. MALFTN. INTRPT.	MPT33470	
21B4	2305	3348		BS	ERRF		MPT33480	
21B6	24F4	3349	EXTINT	LIS	R15,4	EXTERNAL INTERRUPT	MPT33490	
21B8	9FAB	3350		AIR	R10,R11		MPT33500	
21BA	2302	3351		BS	ERRF		MPT33510	
21BC	24F5	3352	DVOFLT	LIS	R15,5	FIXD. PT. DIV. FAULT INTRPT	MPT33520	
21BE	2307	3353		BS	ERRORF		MPT33530	
21C0	24F6	3354	SQINT	LIS	R15,6	SYSTEM QUEUE INTERRUPT	MPT33540	
21C2	2305	3355		BS	ERRORF		MPT33550	
21C4	24F7	3356	SVCERR	LIS	R15,7		MPT33560	
21C6	2303	3357		BS	ERRORF		MPT33570	
21C8	0000	3358	DEVERR	DC	0		MPT33580	
21CA	24F8	3359		LIS	R15,8		MPT33590	
21CC	C6F0 00F0	3360	ERRORF	OHI	R15,X'F0'		MPT33600	
21D0	D2F0 235A	3361		STB	R15,ERRIND		MPT33610	
21D4	C800 0046	3362		LHI	R13,X'46'	F ERRORS	MPT33620	
21D8	91D8	3363		SLLS	R13,8		MPT33630	
21DA	C4F0 000F	3364		NHI	R15,X'000F'		MPT33640	
21DE	C6F0 0030	3365		OHI	R15,X'30'	FORM FX ERROR NUMBER	MPT33650	
21E2	06FD	3366		OHR	R15,R13		MPT33660	
21E4	40F0 231A	3367		STH	R15,ERRNO	ERROR NUMBER	MPT33670	
21E8	C200 21EC	3368		LPSW	WAITF	PUT THE WAIT LIGHT ON	MPT33680	
21EC	8000	3369	WAITF	DC	X'8000',ERFSS		MPT33690	
21EE	21F0							
		3370		*			MPT33700	
21F0	4300 2232	3371	ERFSS	B	ERR0F		MPT33710	
		3372		*			MPT33720	
		3373		*	NXTST = RETURN ADD. IF TTY IS TURNED OFF		MPT33730	
		3374		*			MPT33740	

			3375 *	R14 = PSW WHEN THE ERROR OCCURED		MPT33750
			3376 *			MPT33760
			3377 *	ERRIND = ERROR NO. INTO IND.		MPT33770
			3378 *			MPT33780
			3379 *	TESTNO = 31NN , NN = TEST NO. 1 THRU E		MPT33790
			3380 *			MPT33800
	0000	21F4	3381	ERROR EQU *		MPT33810
21F4	0000	23B2	3382	ERRA STM R0,REGSAV	SAVE REGISTERS	MPT33820
21F8	95EE		3383	EPSR R14,R14	STORE CURRENT PSW	MPT33830
21FA	0300	235A	3384	ERRA6 LB R0,ERRIND	CONVERT ERRIND INTO	MPT33840
21FE	C850	0030	3385	LHI R5,X'30'		MPT33850
2202	C500	0010	3386	CLHI R0,16	TWO BYTES TO PRINT	MPT33860
2206	2383		3387	BNLS ERRB		MPT33870
2208	0805		3388	LHR R0,R5		MPT33880
220A	2307		3389	BS ERRB2		MPT33890
220C	9004		3390	ERRB SRLS R0,4		MPT33900
220E	0A05		3391	AHR R0,R5		MPT33910
2210	C500	003A	3392	CLHI R0,X'3A'		MPT33920
2214	2182		3393	BLS ERRB2		MPT33930
2216	2607		3394	AIS R0,7		MPT33940
			3395 *			MPT33950
			3396 *	ERRNO = 2 BYTES TO PRINT		MPT33960
			3397 *			MPT33970
2218	D200	231A	3398	ERRB2 STB R0,ERRNO		MPT33980
221C	0300	235A	3399	LB R0,ERRIND		MPT33990
2220	C400	000F	3400	ERRB4 NHI R0,15		MPT34000
2224	0A05		3401	AHR R0,R5		MPT34010
2226	C500	003A	3402	CLHI R0,X'3A'		MPT34020
222A	2182		3403	BLS ERRB6		MPT34030
222C	2607		3404	AIS R0,7		MPT34040
222E	D200	231B	3405	ERRB6 STB R0,ERRNO+1		MPT34050
	0000	2232	3406	ERRC6 EQU *		MPT34060
2232	4800	233E	3407	LH R0,TOTERR	COUNT TOTAL ERRORS	MPT34070
2236	2601		3408	AIS R0,1		MPT34080
2238	4000	233E	3409	STM R0,TOTERR		MPT34090
223C	C500	FFFF	3410	CLHI R0,X'FFFF'	IF TOTERR = FFFF	MPT34100
2240	4330	226A	3411	BE WFFFF		MPT34110
2244	D320	234A	3412	LB R2,OUTDEV		MPT34120
2248	9D23		3413	SSR R2,R3		MPT34130
224A	4250	225C	3414	BTC 5,NEXT		MPT34140
224E	C430	00FC	3415	NHI R3,X'FC'		MPT34150
2252	C530	000C	3416	CLHI R3,X'0C'		MPT34160
2256	2333		3417	BES NEXT		MPT34170
2258	4300	229A	3418	B PRTRR		MPT34180
225C	4800	235C	3419	NEXT LH R0,NXTST	IF CON IS OFF GO TO NEXT TEST	MPT34190
2260	C500	0316	3420	CLHI R0,TEST1		MPT34200
2264	4330	1FCC	3421	BE TSTEND		MPT34210
2268	0300		3422	BR R0	CONTINUE THE NEXT TEST	MPT34220
226A	C200	226E	3423	WFFFF LPSW WAITFF		MPT34230
226E	8000		3424	WAITFF DC X'8000',CONT	WAIT UNTIL EXE IS DEPRESSED	MPT34240
2270	2272					
2272	D320	234A	3425	CONT LB R2,OUTDEV		MPT34250
2276	DE20	234D	3426	OC R2,OUTCMD		MPT34260
227A	9D25		3427	SSR R2,R5		MPT34270
227C	4210	226A	3428	BTC 1,WFFFF		MPT34280

2280	C450	00FC	3429	NHI	R5,X'FC'		MPT34290
2284	C550	000C	3430	CLHI	R5,X'0C'	PASLA DU?	MPT34300
2288	4330	226A	3431	BE	WFFFF	YES, BRANCH	MPT34310
228C	C840	22FC	3432	LHI	R4,FFFF		MPT34320
2290	C850	230D	3433	LHI	R5,FFFFRR	PRINT 'ERRORS'	MPT34330
2294	9624		3434	WBR	R2,R4		MPT34340
2296	4300	20DA	3435	B	WT000F		MPT34350
229A	C840	230E	3436	PRTRR	LHI R4,PRTERR		MPT34360
			3437	*			MPT34370
	0000	229E	3438	PRTR	EQU *		MPT34380
			3439	*			MPT34390
229E	D320	234A	3440	LB	R2,OUTDEV		MPT34400
22A2	DE20	234D	3441	OC	R2,OUTCMD		MPT34410
22A6	9D23		3442	PRTBSY	SSR R2,R3		MPT34420
22A8	2081		3443	BTBS	8,1		MPT34430
22AA	DA24	0000	3444	WD	R2,0(R4)	PRINT ERROR PTXX	MPT34440
22AE	2641		3445	AIS	R4,1		MPT34450
22B0	C540	231E	3446	CLHI	R4,ERRNO+4		MPT34460
22B4	2038		3447	BNES	PRTR		MPT34470
22B6	4800	231A	3448	LH	R13,ERRNO	GET ERROR NUMBER	MPT34480
22BA	C400	4600	3449	NHI	R13,X'4600'		MPT34490
22BE	C500	4600	3450	CLHI	R13,X'4600'		MPT34500
22C2	4330	22F6	3451	BE	PRTEND		MPT34510
22C6	D300	2319	3452	LB	R0,TESTNO+1	GET TEST NUMBER	MPT34520
22CA	C500	0038	3453	CLHI	R0,C'8'	IF IT IS TEST 8	MPT34530
22CE	2335		3454	BES	TST812	BRANCH TO TST812	MPT34540
22D0	C500	0042	3455	CLHI	R0,C'B'	IF IT IS NOT TEST11	MPT34550
22D4	4230	22F6	3456	BNE	PRTEND	BRANCH TO PRTEND	MPT34560
22D8	C870	238A	3457	TST812	LHI R7,REGSAV+8	GET THE POINTER TO REG SAVE AREA	MPT34570
22DC	4887	0000	3458	LH	R8,0(R7)	NUMBER OF REGISTERS TO BE PRINTED	MPT34580
22E0	2672		3459	LOOPXX	AIS R7,2	INCREMENT THE POINTER	MPT34590
22E2	48F7	0000	3460	LH	R15,0(R7)	GET THE REGISTER CONTENTS	MPT34600
22E6	41C0	20E2	3461	BAL	R12,PRNTRF	PRINT THE CONTENTS	MPT34610
22EA	C800	0020	3462	LHI	R0,X'20'		MPT34620
22EE	41E0	2112	3463	BAL	R14,WRITE1	PRINT A BLANK	MPT34630
22F2	2781		3464	SIS	R8,1		MPT34640
22F4	203A		3465	BNZS	LOOPXX	IF NOT DONE GO TO LOOPXX	MPT34650
22F6	2404		3466	PRTEND	LIS R0,4		MPT34660
22F8	4300	205A	3467	B	DONE3		MPT34670
			3468	*			MPT34680
22FC	000A		3469	FFFF	DC X'D0A'		MPT34690
22FE	4646	4646 2045 5252	3470	DC	C'FFFF ERRORS'		MPT34700
2306	4F52	5320					
230A	000A		3471	DC	X'D0A'		MPT34710
230C	FFFF		3472	DCX	FFFF		MPT34720
	0000	230D	3473	FFFFRR	EQU *-1		MPT34730
230E	000A		3474	PRTERR	DC X'D0A'		MPT34740
2310	4552	524F 5220	3475	DC	C'ERROR'		MPT34750
2316	2000		3476	DC	X'2000'		MPT34760
2318	3130		3477	TESTNO	DC X'3130'		MPT34770
231A	3030		3478	ERRNO	DC X'3030'		MPT34780
231C	000A		3479	NOERRA	DC X'D0A'		MPT34790
231E	000A		3480	DC	X'D0A'		MPT34800
2320	4E4F	2045 5252 4F52	3481	DC	C'NO ERROR'		MPT34810
2328	000A		3482	DC	X'D0A'		MPT34820

232A	FFFF	3483	DCX	FFFF		MPT34830
	0000 232B	3484	NOERRB	EQU	*-1	MPT34840
		3485	*			MPT34850
		3486	*			MPT34860
		3487	*****			MPT34870
		3488	*			MPT34880
		3489	*	DATA CONSTANTS		MPT34890
		3490	*			MPT34900
		3491	*****			MPT34910
		3492	*			MPT34920
232C	0000	3493	DC	0		MPT34930
232E	0000	3494	TABLE	DC	0	MPT34940
2330	0000	3495	DC	0	12 BYTES	MPT34950
2332	0000	3496	DC	0		MPT34960
2334	0000	3497	DC	0		MPT34970
2336	0000	3498	DC	0		MPT34980
2338	0000	3499	DC	0		MPT34990
233A	0000	3500	TEMP	DC	0	MPT35000
233C	0000	3501	TOTAL	DC	0	MPT35010
233E	0000	3502	TOTERR	DC	0	MPT35020
2340	0000	3503	CONOFF	DC	0	MPT35030
2342	0000	3504	CPUNO	DC	0	MPT35040
2344	0000	3505	CPUFLAG	DCX	0	MPT35050
2346	00	3506	M7DSWT	DB	0	MPT35060
2347	80	3507	NORM	DB	X'80'	MPT35070
2348	00	3508	ASCOUNT	DB	0	MPT35080
2349	00	3509	ASCNUMB	DB	0	MPT35090
		3510	*			MPT35100
		3511	*****			MPT35110
		3512	*			MPT35120
234A	C0	3513	OUTDEV	DB	X'C0'	MPT35130
234B	C0	3514	INDEV	DB	X'C0'	MPT35140
234C	82	3515	INCMND	DB	X'82'	MPT35150
234D	02	3516	OUTCMD	DB	X'02'	MPT35160
234E	ABB9	3517	CRTOUT	DCX	ABB9	MPT35170
2350	0282	3518	CONOUT	DCX	0282	MPT35180
2352	A3A1	3519	CAROUT	DCX	A3A1	MPT35190
2354	0000	3520	CRTFLG	DCX	0	MPT35200
2356	0000	3521	MICFLAG	DCX	0	MPT35210
2358	0000	3522	FIRSTCMD	DCX	0	MPT35220
235A	0000	3523	DB	*		MPT35230
235A	0000	3524	ERRIND	DC	0	MPT35240
235C	0000	3525	NXTST	DC	0	MPT35250
		3526	*			MPT35260
235E	0000	3527	ZERO	DC	0	MPT35270
2360	0000	3528	DC	0		MPT35280
2362	FFFF	3529	ONE	DC	X'FFFF'	MPT35290
2364	0000	3530	DC	0		MPT35300
2366	5555	3531	FIVE	DC	X'5555'	MPT35310
2368	0000	3532	DC	0		MPT35320
236A	AAAA	3533	TEN	DC	X'AAAA'	MPT35330
236C	0000	3534	DC	0		MPT35340
		3535	*			MPT35350
236E	0D	3536	TITLE1	DB	13	MPT35360
236F	0A	3537	DB	10	CR	MPT35370
					LF	

2370	5345 5249 4553 2053	3538	DC	C'SERIES SIXTEEN PROCESSOR TEST PART 1 06-242F01R00'	MPT35380
2378	4958 5445 454E 2050				
2380	524F 4345 5353 4F52				
2388	2054 4553 5420 5041				
2390	5254 2031 2020 3036				
2398	2032 3432 4630 3152				
23A0	3030				
23A2	FFFF	3539	TITLE2 DCX	FFFF	MPT35390
23A4	000A	3540	DCX	000A	MPT35400
23A6	FFFF	3541	DCX	FFFF	MPT35410
23A8	4350 5520	3542	DC	C'CPU'	MPT35420
23AC	000A	3543	DCX	000A	MPT35430
23AE	2A	3544	DB	C'*'	MPT35440
2380	FFFF	3545	DCX	FFFF	MPT35450
	0000 2382	3546	TITEND EQU	*	MPT35460
	0000 2382	3547	LNZB EQU	*	MPT35470
23B2		3548	REGSAV DS	32	MPT35480
		3549	*	CHKSUM	MPT35490
		3550	*	(THE FOLLOWING CODE IS NOT PART OF THE TEST.)	MPT35500
		3551	*		MPT35510
		3552	*		MPT35520
23D2	2400	3553	\$CHKSUM LIS	R0,0	PUNCH M17 TAPE WITH CHECKSUM
23D4	9510	3554	EPSR	R1,R0	SELECT REG. SET 0
		3555	*		MPT35550
23D6	C810 0100	3556	LDAI	R1,ORIGIN1	START
23DA	2421	3557	LIS	R2,1	INCREMENT
23DC	C830 2382	3558	LDAI	R3,LNZB	FINAL
23E0	2440	3559	LIS	R4,0	CHECKSUM BYTE
23E2	D351 0000	3560	\$GEN	LB R5,0(R1)	MPT35600
23E6	0745	3561	XAR	R4,R5	MPT35610
23E8	C110 23E2	3562	BXLE	R1,\$GEN	MPT35620
23EC	D240 0097	3563	STB	R4,MN+3	CHECKSUM BYTE TO BOOT LOADER
		3564	*		MPT35640
23F0	C810 0080	3565	\$TAPE	LHI R1,X'0080'	MPT35650
23F4	9E21	3566	OCR	R2,R1	DISPLAY : NORMAL MODE
23F6	9444	3567	EXBR	R4,R4	MPT35670
23F8	9824	3568	WHR	R2,R4	CHECKSUM BYTE TO D1
23FA	9411	3569	EXBR	R1,R1	MPT35690
23FC	8800	3570	DC	X'8800'	BREAKPOINT GO TO CONSOLE
					MPT35700
23FE	D360 007A	3572	\$PUNCH	LB R6,X'7A'	GET BOUTDV (PUNCH) ADDRESS.
2402	0E60 007B	3573	OC	R6,X'7B'	START TAPE PUNCH
2406	9D60	3574	SSR	R6,R0	MPT35740
2408	2081	3575	BTBS	8,1	MPT35750
240A	41F0 244C	3576	BAL	R15,\$STAPL	PUNCH LEADER
240E	9411	3577	EXBR	R1,R1	(R1) = X'0080'
2410	C830 00CF	3578	LHI	R3,X'CF'	MPT35780
2414	DA61 0000	3579	\$PNCH1	WD R6,0(R1)	PUNCH BOOT LOADER
2418	9D60	3580	SSR	R6,R0	MPT35800
241A	2081	3581	BTBS	8,1	MPT35810
241C	C110 2414	3582	BXLE	R1,\$PNCH1	MPT35820
2420	41F0 2452	3583	BAL	R15,\$STAPL1	PUNCH ONE-FOLD GAP.
		3584	*		MPT35840
2424	D340 0097	3585	LB	R4,MN+3	GET CHECKSUM BYTE
					MPT35850

2428	C810 0100	3586		LDAI R1,ORIGIN1	(NORMALLY X'AOO')	MPT35860
242C	C830 2382	3587		LDAI R3,LNZB		MPT35870
2430	D351 0000	3588	SPNCH2	LB R5,0(R1)	PUNCH PROGRAM	MPT35880
2434	0745	3589		XAR R4,R5		MPT35890
2436	9A65	3590		WDR R6,R5		MPT35900
2438	9401	3591		EX9R R0,R1		MPT35910
243A	9820	3592		WHR R2,R0	DATA ADDRESS TO DISPLAY.	MPT35920
243C	9D60	3593		SSR R6,R0		MPT35930
243E	2081	3594		BTBS 8,1		MPT35940
2440	C110 2430	3595		5XLE R1,SPNCH2		MPT35950
2444	41F0 244C	3596		BAL R15,STAPL	PUNCH TRAILER.	MPT35960
2448	4300 23F0	3597		B \$TAPE	DISPLAY CHECKSUM, HALT PROCESSOR.	MPT35970
244C	C800 0100	3599	STAPL	LHI R0,256	TO PUNCH BLANK LEADER	MPT35990
2450	2303	3600		BS \$TAPLP		MPT36000
2452	C800 0055	3601	STAPL1	LHI R0,85	TO PUNCH 1-FOLD GAP	MPT36010
2456	2701	3602	STAPLP	SIS R0,1		MPT36020
2458	032F	3603		BNPR R15	RETURN	MPT36030
245A	2430	3604		LIS R3,0		MPT36040
245C	9A63	3605		WDR R6,R3	PUNCH BLANK FRAME	MPT36050
245E	9D68	3606		SSR R6,R8		MPT36060
2460	2081	3607		BTBS 8,1		MPT36070
2462	2206	3608		BS \$TAPLP	CONTINUE.	MPT36080
		3609	*			MPT36090
2464		3610		END		MPT36100

CH12	0000	1ED4	3051	3079*					
CH13	0000	1EFE	3052	3080	3092*				
CHANST	0000	1CC2	2783	2891*					
CHBYT	0000	1CDE	2899*	2904					
CHF1	0000	1DCE	2968	2990*					
CHF3	0000	1E06	2991	3007*					
CHFI	0000	1C14	2820	2829*					
CHLPS	0000	1F5A	2893	2914	3132*				
CHLPS1	0000	1F60	2895	3134*					
CLS	0000	008C	1433*						
CLM	0000	056E	501*						
CLMI	0000	058A	514*						
CLHR	0000	0556	488*						
CONADR	0000	010A	65*	125					
CONOFF	0000	2340	209	225	3197	3204	3221	3503*	
CONOUT	0000	2350	123	128	3518*				
CONT	0000	2272	3424	3425*					
CPUERR	0000	0282	179*						
CPUFLAG	0000	2344	142	154	182	3505*			
CPUNO	0000	2342	184	2017	2072	2771	3504*		
CRLF	0000	2126	185	204	205	3292*	3313		
CRT	0000	0106	63*						
CRTFLG	0000	2354	74	120	3520*				
CRTIO	0000	0196	107	110*					
CRTOUT	0000	234E	112	117	3517*				
DEVERR	0000	21C8	3358*						
DFAULT	0000	19F4	2584	2659*					
DH	0000	1962	2602*						
DHR	0000	1954	2595*						
DIVD2	0000	1A92	2588	2707*					
DLOOP2	0000	1948	2590*	2607					
DOCOMP	0000	1E34	2954	2993	3025*				
DOILLEG	0000	1442	2074	2079*					
DONE	0000	2020	3195	3199*					
DONE0	0000	2016	3192	3196*					
DONE11	0000	2038	3205	3207*					
DONE12	0000	2048	3213*	3219					
DONE2	0000	204C	3215*						
DONE3	0000	205A	3209	3217	3220*	3467			
DONE33	0000	2066	3222	3224*					
DVDCHK	0000	192E	2582*						
DVDFLT	0000	218C	94	3352*					
ENT3B	0000	0310	218	221	223*				
ENTRY1	0000	0112	60	73*	3188	3260			
ENTRY2	0000	029C	187*						
ENTRY3	0000	02F6	215*	3203	3261				
ENTRY4	0000	02DA	136	139	207*				
EPSR	0000	0810	1183*						
ERFSS	0000	21F0	3369	3371*					
ERR1	0000	1272	1876	1885	1890	1894	1895*		
ERR11	0000	1238	1829	1836	1843	1872*			
ERR12	0000	1244	1859	1870	1877*				
ERR13	0000	125C	1704	1706	1708	1722	1724	1726	1886*
ERR14	0000	1268	1812	1891*					
ERR2	0000	19E4	2642	2654*					

		2657	2667	2670	2769	2770	2771	2772	2777	2778	2877	2879	2880	2884
		2886	3099	3101	3104	3108	3110	3112	3134	3142	3152	3158	3161	3163
		3165	3174	3175	3176	3177	3200	3204	3208	3221	3227	3228	3230	3231
		3234	3238	3240	3242	3246	3253	3256	3267	3268	3270	3271	3273	3274
		3276	3279	3280	3281	3283	3289	3292	3294	3299	3301	3302	3306	3308
		3309	3310	3311	3314	3315	3316	3317	3331	3335	3336	3337	3382	3384
		3326	3388	3390	3391	3392	3394	3398	3399	3400	3401	3402	3404	3405
		3407	3408	3409	3410	3419	3420	3422	3452	3453	3455	3462	3466	3553
		3554	3574	3580	3591	3592	3593	3599	3601	3602				
R1	0000 0001	15*	38	48	49	51	55	108	109	112	113	114	115	116
		118	123	124	125	126	127	131	159	162	164	456	458	595
		601	672	1036	1037	1061	1101	1107	1107	1116	1124	1125	1125	1135
		1141	1185	1185	1188	1192	1194	1196	1196	1198	1201	1202	1207	1207
		1209	1209	1415	1421	1424	1430	1451	1455	1492	1547	1547	1552	1556
		1556	1561	1565	1569	1572	1627	1634	1681	1681	1694	1705	1712	1723
		1723	1731	1739	1753	1755	1758	1759	1762	1763	1767	1768	1777	1778
		1782	1785	1799	1801	1820	1822	1826	1831	1835	1838	1842	1845	1856
		1875	1880	1888	1941	1950	1951	1952	1953	1954	1955	1956	1990	1991
		1996	2044	2045	2045	2059	2060	2068	2490	2496	2509	2515	2531	2537
		2549	2556	2564	2570	2593	2600	2615	2623	2635	2646	2668	2669	2784
		2789	2800	2801	2809	2841	2842	2851	2915	2920	2935	2935	2945	2946
		2957	2974	2974	3020	3020	3025	3039	3064	3075	3090	3141	3144	3151
		3154	3303	3304	3305	3324	3554	3556	3560	3562	3565	3566	3569	3569
		3577	3577	3579	3582	3586	3588	3591	3595					
R10	0000 000A	24*	476	477	480	483	489	508	511	522	523	527	528	773
		783	793	823	1391	1392	1394	1417	1423	1428	1438	1549	1558	1569
		1574	1878	2032	2042	2042	2047	2494	2499	2512	2513	2518	2519	2534
		2535	2540	2541	2553	2554	2559	2560	2568	2574	2590	2592	2599	2617
		2635	2644	2647	2672	2775	2775	2780	2814	2856	2872	2875	2875	2882
		2882	2908	2908	2911	2962	3044	3093	3097	3097	3106	3106	3200	3202
		3350												
R11	0000 000B	25*	552	556	1470	1471	1474	1480	1483	1492	1496	1879	2034	2052
		2052	2054	2064	2593	2600	2632	2651	2652	2787	2790	2803	2843	2871
		2918	2921	2936	3036	3094	3350							
R12	0000 000C	26*	185	204	205	554	558	1475	1481	1485	1493	1499	1566	1570
		1573	1578	1578	1595	1604	1617	1622	1626	1636	1650	1665	1674	1736
		1752	1757	1776	1780	1798	1803	1811	1893	2491	2491	2497	2497	2510
		2510	2516	2516	2532	2532	2538	2538	2550	2550	2557	2557	2565	2565
		2571	2571	2596	2611	2631	2633	2645	2648	2895	2901	3035	3049	3068
		3092	3092	3245	3252	3278	3296	3313	3461					
R13	0000 000D	27*	538	541	1476	1482	1487	1494	1501	1696	1701	1846	1862	2621
		2630	2647	2649	2804	2830	2898	2899	2900	2901	2903	2937	2954	3187
		3224	3258	3362	3363	3366	3448	3449	3450					
R14	0000 000E	28*	149	156	158	180	188	188	196	547	550	637	656	682
		1567	1575	1697	1698	1809	1809	1810	1811	1892	2610	2610	2611	2623
		2630	2631	2652	2653	2665	2671	2766	2789	2891	2892	2909	2920	3235
		3236	3237	3239	3241	3243	3247	3248	3249	3250	3254	3255	3257	3269
		3272	3275	3277	3287	3290	3293	3295	3300	3338	3383	3383	3463	
R15	0000 000F	29*	495	496	519	520	550	619	635	654	678	774	781	786
		790	813	818	838	842	864	889	895	900	905	908	912	917
		918	923	927	970	984	986	989	995	1007	2625	2767	2768	2899
		2900	2916	2929	2951	2965	2979	2987	3003	3017	3032	3047	3062	3073
		3088	3186	3201	3206	3223	3233	3244	3251	3267	3270	3273	3276	3312
		3318	3343	3345	3347	3349	3352	3354	3356	3359	3360	3361	3364	3365
		3366	3367	3460	3576	3583	3596	3603						

R2	0000 0002	16*	33	37	117	128	132	133	134	135	140	191	192	193
		195	216	217	458	459	596	602	609	675	1041	1042	1115	1116
		1452	1457	1494	1548	1548	1553	1557	1557	1562	1574	1667	1671	1682
		1682	1693	1703	1711	1721	1721	1732	1742	1754	1755	1765	1771	1783
		1785	1795	1800	1804	1821	1881	1889	2501	2501	2502	2507	2508	2525
		2525	2526	2529	2530	2543	2543	2544	2547	2548	2582	2582	2583	2586
		2587	2589	2606	2664	2664	2671	2784	2785	2788	2796	2796	2797	2798
		2811	2812	2816	2817	2822	2823	2824	2825	2845	2846	2847	2848	2853
		2854	2858	2859	2864	2865	2866	2906	2907	2915	2916	2919	2925	2926
		2927	2928	2929	2943	2944	2949	2950	2951	2959	2960	2964	2965	2975
		2976	2978	2979	2981	2982	2983	2984	2986	2987	3001	3002	3003	3015
		3016	3017	3027	3028	3030	3031	3032	3041	3042	3046	3047	3056	3057
		3058	3059	3061	3062	3069	3070	3072	3073	3082	3083	3084	3085	3087
		3088	3102	3103	3133	3179	3180	3190	3191	3212	3213	3215	3284	3285
		3286	3289	3322	3323	3326	3327	3329	3331	3333	3335	3336	3412	3413
		3425	3426	3427	3434	3440	3441	3442	3444	3557	3566	3568	3592	
R3	0000 0003	17*	39	119	120	135	137	138	140	193	459	460	463	465
		474	492	788	1039	1042	1118	1119	1379	1380	1384	1580	1589	1605
		1608	1637	1648	1652	1661	1683	1683	1692	1694	1701	1712	1716	1719
		1719	1733	1744	1744	1784	1793	1822	1823	1824	1825	1831	1832	1833
		1838	1839	1840	1874	1943	1944	1948	1949	1957	1958	1972	1973	1975
		1976	1978	1979	1988	1989	1994	1995	2072	2073	2088	2089	2091	2091
		2482	2486	2490	2531	2564	2573	2584	2585	2587	2591	2598	2638	2641
		2655	2656	2801	2809	2842	2851	2932	2946	2957	3026	3039	3067	3067
		3137	3140	3147	3150	3213	3286	3326	3327	3329	3333	3413	3415	3416
		3442	3558	3578	3587	3604	3605							
R4	0000 0004	18*	41	42	43	45	52	54	142	143	145	147	148	150
		151	153	154	181	181	182	189	195	460	461	506	516	640
		645	868	870	874	876	881	883	886	891	902	905	918	981
		984	987	989	992	995	997	999	999	1001	1046	1049	1052	1053
		1076	1079	1084	1086	1119	1133	1136	1144	1203	1204	1205	1265	1266
		1268	1270	1272	1274	1276	1278	1281	1281	1285	1286	1288	1290	1292
		1295	1298	1300	1302	1545	1606	1611	1618	1619	1628	1631	1666	1668
		1684	1684	1690	1693	1698	1711	1715	1717	1717	1734	1747	1826	1832
		1834	1847	1853	1855	1863	1872	1877	1886	1891	1942	1944	1945	1946
		1989	1993	1995	2018	2021	2026	2031	2044	2048	2050	2055	2056	2059
		2186	2189	2192	2195	2198	2201	2203	2205	2207	2209	2212	2214	2217
		2220	2223	2227	2236	2238	2242	2244	2248	2251	2255	2257	2262	2264
		2269	2271	2273	2277	2280	2284	2286	2290	2292	2297	2298	2302	2302
		2391	2392	2401	2414	2426	2439	2446	2453	2483	2487	2496	2549	2570
		2639	2640	2643	2794	2794	2812	2826	2848	2854	2867	2868	2897	2934
		2934	2947	2947	2960	2972	2999	3000	3012	3034	3042	3053	3063	3076
		3089	3135	3136	3144	3147	3154	3210	3215	3216	3218	3432	3434	3436
		3444	3445	3446	3559	3561	3563	3567	3567	3568	3585	3589		
R5	0000 0005	19*	43	45	46	46	48	49	50	52	54	157	160	190
		217	219	220	224	225	463	464	486	489	492	496	498	503
		523	525	528	641	644	650	688	772	778	796	798	805	834
		851	1047	1077	1102	1103	1123	1132	1416	1422	1426	1435	1596	1599
		1623	1624	1675	1676	1685	1696	1735	1749	1828	1833	1834	1835	1840
		1841	1842	1845	1847	1848	1849	1852	1853	1854	1855	1858	1861	1863
		1869	1873	1875	1878	1880	1887	1892	2187	2202	2213	2229	2240	2246
		2253	2259	2261	2266	2266	2270	2275	2282	2288	2294	2300	2393	2394
		2403	2416	2428	2441	2448	2455	2484	2486	2503	2509	2517	2545	2552
		2556	2636	2638	2644	2774	2797	2799	2799	2811	2835	2836	2844	2844
		2845	2853	2861	2863	2864	2867	2869	2896	2897	2907	2927	2930	2930

RTWOFI	0000	1F3E	2785	2798	2817	2825	2847	2859	2866	3115*
SCH	0000	105C	1713*							
SCHECK	0000	1A08	2512	2518	2534	2540	2553	2559	2664*	
SCONT1	0000	1868	2504	2506	2509*					
SCONT2	0000	18AA	2528	2531*						
SCONT3	0000	18E2	2546	2549*						
SER	0000	18A8	2782	2788*						
SERO	0000	189C	2781	2784*						
SEROB	0000	100C	2912	2915*						
SERB	0000	1016	2913	2919*						
SET0	0000	1890	2780*	2805	2827	2849	2870			
SET00	0000	1CF6	2898	2908*						
SET001	0000	1000	2911*	2938	2955	2980	2988	3006	3021	3037
SET01	0000	18B2	2779	2794*	2873				3065	3077
SET01B	0000	1E5C	3036	3039*						
SET0A	0000	18D6	2803	2809*	2871					
SET0A.1	0000	1090	2963	2967*						
SET0A.2	0000	1E7A	3045	3049*						
SET0A1	0000	1C00	2822*	2837						
SET0A2	0000	18F6	2815	2819*						
SET0AB	0000	1070	2936	2957*	3094					
SET0B	0000	1C4C	2843	2851*						
SET0B.1	0000	1C90	2862	2871*						
SET0B.2	0000	1C6E	2857	2861*						
SET1	0000	1020	2910	2925*	3095					
SETAB	0000	104A	2937	2943*	3008					
SETB	0000	1C30	2804	2841*						
SETERA	0000	1C9A	2810	2852	2875*					
SETERA1	0000	1CA4	2876	2879*						
SETERA1B	0000	1F14	3098	3101*						
SETERAB	0000	1F0A	2958	3040	3097*					
SETERB	0000	1C80	2813	2855	2882*					
SETERB1	0000	1CBA	2833	2836*						
SETERB1B	0000	1F30	3107	3110*						
SETERBB	0000	1F26	2961	3043	3106*					
SETERC	0000	1F36	2756	2818	2860	2917	2966	3048	3112*	
SETERR	0000	1CA8	2878	2880*	2885	2887	3160			
SETERR1	0000	1F80	3159*	3162	3164	3166				
SETERRB	0000	1F18	3100	3102*	3109	3111	3113			
SFLAG	0000	1854	2502	2508	2526	2530	2544	2548	2665	2750*
SH	0000	0F42	1614*							
SHI	0000	0F3A	1610*							
SHR	0000	103E	1700*							
SINT	0000	1372	1999*							
SIS	0000	0F98	1643*							
SLA	0000	1500	2194*							
SLHL	0000	0860	1227*							
SLL	0000	14F4	2188*							
SLLS	0000	0858	1217*							
SQINT	0000	21C0	98	3354*						
SRA	0000	1506	2197*							
SRMA	0000	0876	1238*							
SRHL	0000	0866	1231*							
SRL	0000	14FA	2191*							
SRLS	0000	085C	1222*							



SERIES SIXTEEN
PROCESSOR TEST DESCRIPTION, PART 2

1. GENERAL

This program exhaustively tests the Series Sixteen Processors. All the logic and arithmetic instructions are tested. The Floating Point instructions are not tested (refer to Test 06-205).

2. REQUIREMENTS

The following is a list of the minimum hardware requirements for this test:

- Series Sixteen Processor
- 8kb of Memory
- Console Device: CRT, or Model 550, 1100, or 1200 Terminals, Carousel 15, 30, 35, or 300
- Object input device or multimedia loader

The following test programs should be run prior to loading this test:

- Series Sixteen Memory Test Program 06-214
- Series Sixteen Processor Test Program 06-242 F01

The following test programs are also applicable:

- Model 1100 Test program 06-217
- Model 1200 Test Program 06-218
- Model 550 Test Program 06-243

3. LOADING PROCEDURES

The program is self-loading using the X'50' sequence shown below.

LOCATION	CONTENTS	
X'30'	X'0000'	
X'32'	X'0000'	
X'34'	X'0000'	
X'36'	X'0050'	
X'50'	X'D500'	
X'52'	X'00CF'	
X'54'	X'4300'	
X'56'	X'0080'	
X'78'	X'85A1'	For 800 BPI Mag Tape
X'78'	X'C186'	For Floppy Media Disc
X'78'	X'1399'	HSPTR/P

Execute from address X'30'.

To load this program from the Perkin-Elmer Multi-media Diagnostic System, refer to Publication Number 06-176M95A15.

4. PROGRAM EXECUTION

4.1 NORMAL TESTING

Each test assumes that the Series Sixteen Processor Test Part 1 was run successfully without detecting an error; therefore, in order to get any meaningful results out of the error Number Dictionary, Part 1 must be run prior to Part 2. Load Part 2 of the Processor Test as explained in Loading Procedures and execute at X'2D0'.

Observe that the following is printed:
SERIES SIXTEEN PROCESSOR TEST PART 2
CPU
*

Depress 2 numeric keys corresponding to the Processor under test. See Appendix B for appropriate key entry.

Observe that the following is printed:

SUBTEST
*

Enter a zero (and a carriage return) and the I/O test will be executed. This test should be executed initially to insure that the I/O instructions are operating correctly.

Observe that the following is printed:

DEPRESS KEYS
1234567890

If this is not printed, the WB instruction failed. When it is printed, depress keys 1 through 9 and 0. If the test is aborted while depressing any of these keys, and an error message is printed, refer to the Error Procedures.

After all the keys are depressed, observe the printout. It should be:

DEPRESS KEYS
1234567890

If keys 1,2,3,4,5,6,7,8 are not printed, the WBR instruction failed. If key 9 is not printed, WH did not work. If key 0 is not printed, WHR did not work. If these characters are printed, depress keys 1 through 9 and 0 and observe the printout. If characters:

SUBTEST

*

are printed, the I/O test has detected no errors. Otherwise refer to Error Procedures. Now select desired subtest in accordance with Appendix D.

4.2 OPTIONAL TESTING

The Series Sixteen Processor Test Part 2 is divided into 7 different subtests. Each subtest can be selected individually. A subtest should be selected only if the Processor under test has the features tested by the Subtest; e.g., Subtest 4 should be performed only if the machine has Machine Malfunction Interrupt and Power Fail/Auto Restart.

5. ERROR PROCEDURES

Each error message is printed using a WB command. Refer to Appendix E for Error Number Table.

If one of the spurious interrupt errors occurs, the Processor is halted by loading a PSW of X'8000'. The error number has the form X'2TFN', where T is the test number which was executing at the time of the error; N defines the spurious interrupt. See the error numbers in Appendix E. When the EXECUTE switch is depressed twice, the error number is printed.

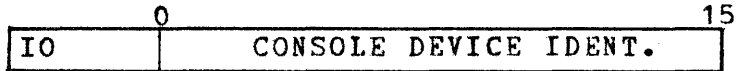
6. RESTART PROCEDURES

The starting address is X'2D0'.



APPENDIX A
USER DEVICE DEFINITION

The halfword labeled IO (see listing) has the default value for micro I/O bus as an Input/Output Console Device. If the console is different, it must be changed as follows:



Console Device Identifier	Explanation
X'0101'	GDT/CRT on PASLA/PALM Interface strapped for FDX at highest baud.
X'0404'	Carousel 300 on PASLA/PALM Interface strapped for FDX at highest baud rate.
X'0505'	Micro I/O Bus.

1. The GDT (Graphic Display Terminal), CRT, or Carousel 300 used on PASLA/PALM interface, should be strapped for device address X'10' and X'11' for the Receive and Transmit sides respectively. If the addresses are different, then the halfword labeled PASADR (see the program listing) must be changed accordingly.
2. Location CONADR and CONADRS+1 should equal the address of the Micro I/O Bus interface. If not, they should be changed appropriately.



APPENDIX B
PROCESSOR AND SUBTEST SELECTION

MODEL UNDER TEST	REQUIRED INPUT (CPU) Part 2
1610 Basic M/D	1M
1620 Basic M/D	2M
1630 Basic M/D	3M
1620 with single precision floating point	2S
1630 with single precision floating point	3S
1620 with double precision floating point	2D
1630 with double precision floating point	3D



APPENDIX C
EXPECTED RESULTS

SERIES SIXTEEN PROCESSOR TEST PART 2
CPU
*3D

SUBTEST

*0 Input by User

DEPRESS KEYS

1234566780

1234567890

USER

DEPRESS KEYS

1234567890

1234567890

USER

NO ERROR

SUBTEST

*1

USER

PRESS BRK

NO ERROR

SUBTEST

*2

NO ERROR

SUBTEST

USER

*3

PRESS INIT

PRESS BRK

NO ERROR

SUBTEST

USER

*4

PRESS INIT

PRESS BRK

NO ERROR

SUBTEST

USER

*5

NO ERROR

APPENDIX C (Continued)

SUBTEST

*6

NO ERROR

SUBTEST

7

*

FIRST ENABLE EXTERNAL CLOCK
THEN DISABLE EXTERNAL CLOCK
PRESS BREAK KEY

NO ERROR

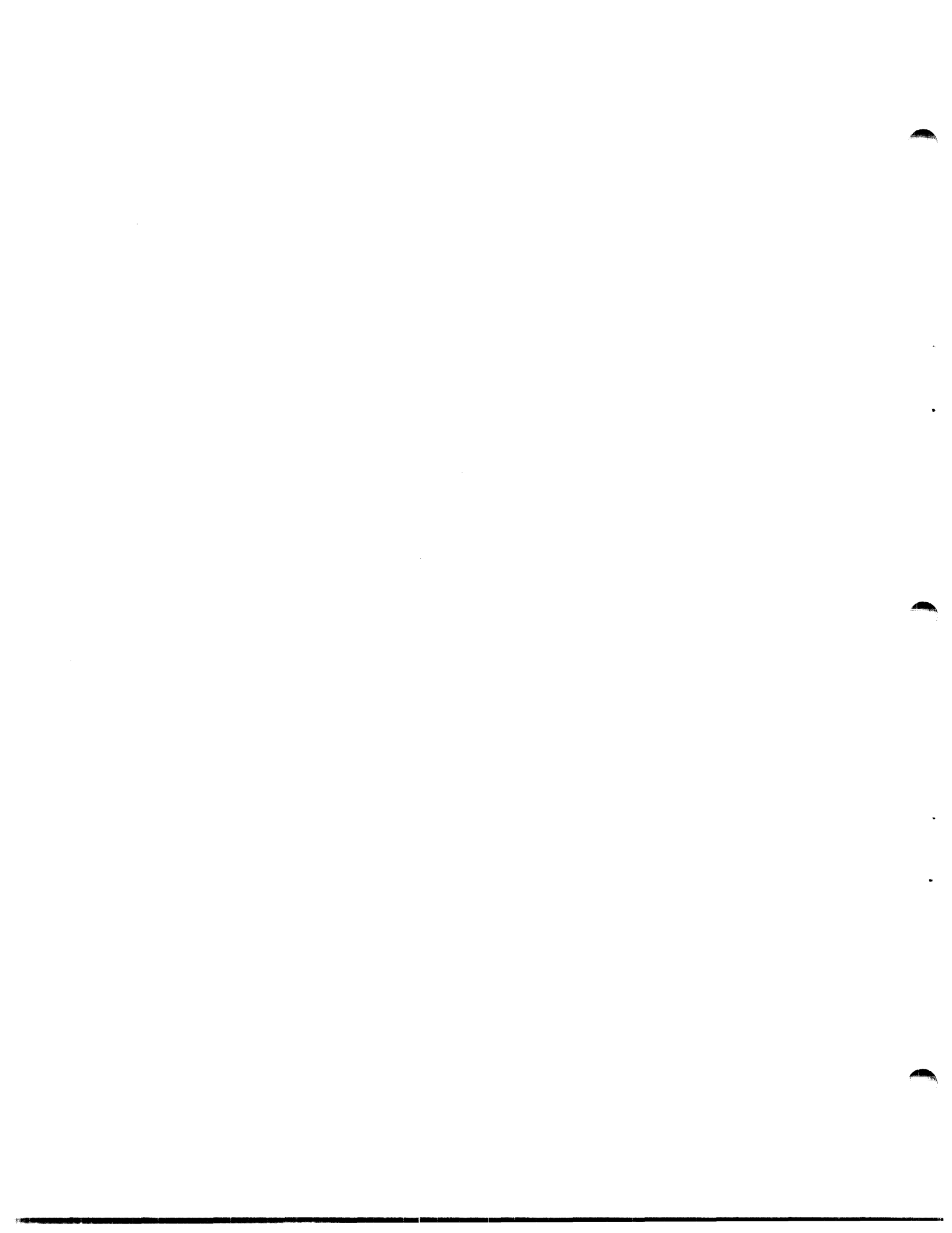
SUBTEST

*

APPENDIX D

The following table indicates the particular instructions or optional features checked in each test.

TEST NUMBER	INSTRUCTION or FEATURE
TEST 1	ACK, ACKR, Break Key Interrupt
TEST 2	List Instructions, System Queue Interrupt
TEST 3	Initialize, Power Fail, Auto Restart (Machine Malfunction disabled)
TEST 4	Initialize, Power Fail, Auto Restart (Machine Malfunction enabled)
TEST 5	Privilege Instructions
TEST 6	SVC Instructions
TEST 7	External Clock Test



APPENDIX E
ERROR MESSAGES

SUBTEST NUMBER	ERROR NUMBER	TYPE OF FAILURE, INSTRUCTIONS FAILED
I/O Test	2001	RDR
	2002	SS (Even Address)
	2003	RD (Even Address)
	2004	SS (Odd Address)
	2005	RD (Odd Address)
	2006	RH (Odd Address)
	2007	RH (Odd Address)
	2008	RBR
	2009	RB
	200A	RHR
1	2101	AIR, AI, False SYNC from device zero incorrect.
	2102	No interrupt generated when TTY mode changed from Read to Write.
	2103	AIR console address and status not received correctly.
	2104	External Interrupt not generated properly when the break key on the Console is depressed.
2	2201	Condition Code fails for List instructions.
	2202	Entry into table placed in wrong location of memory.
	2203	RBL does not set the Next Top Pointer to the maximum slot number during a List Wrap condition.
	2204	ATL does not set the Next Bottom Pointer to maximum slot number during a List Wrap condition.
	2205	RTL does not set the Next Top Pointer to zero during a List Wrap condition.
	2206	ABL does not set the Next Bottom Pointer to zero during a List Wrap condition.

APPENDIX E (Continued)

SUBTEST NUMBER	ERROR NUMBER	TYPE OF FAILURE, INSTRUCTIONS FAILED
	2207	System Q interrupt did not occur.
3	2301	Contents of one or more registers destroyed when initialized.
	2302	Registers not stored in memory correctly by the microprogram when initialized.
	2303	Current PSW not stored properly at X'24'.
	2304	Machine Malfunction Interrupt taken when it was disabled.
4	2401	Contents of one or more registers destroyed when initialized.
	2402	Registers not stored in memory correctly by the microprogram when initialized.
	2403	PSW not stored properly at X'24' or registers destroyed when initialized.
5	2501	Privileged Instruction performed while in Protect Mode.
	2502	PSW swap not OK when a privileged instruction is attempted while in Protect Mode.
	2503	SVC is not performed correctly in Protect Mode.
6	2601	SVC Instruction Error.
7	2701	External clock interrupt not generated.

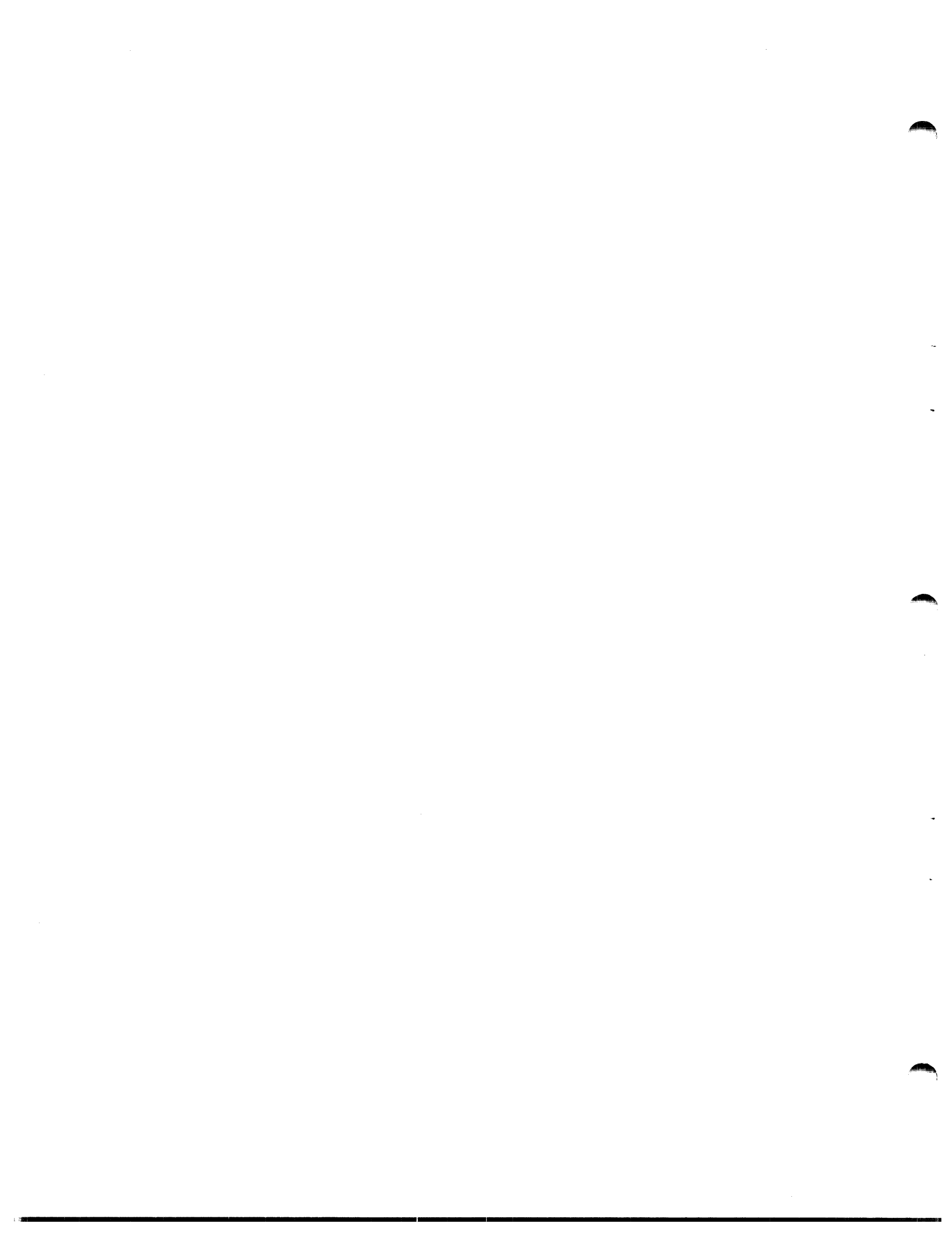
APPENDIX E (Continued)

OTHER ERRORS

ERROR NUMBER	TYPE OF FAILURE
2TF1	Floating Point Arithmetic Fault Interrupt is detected.
2TF2	Illegal Instruction Interrupt is detected.
2TF3	Machine Malfunction Interrupt is detected.
2TF4	External Interrupt is detected.
2TF5	Fixed Point Divide Fault Interrupt is detected.
2TF6	System Queue Interrupt detected.
2TF7	SVC is performed from an incorrect location (one of X'9C' through X'BA').
2TF8	Incorrect Service Pointer used (one of X'D0'-X'2CE').

NOTE

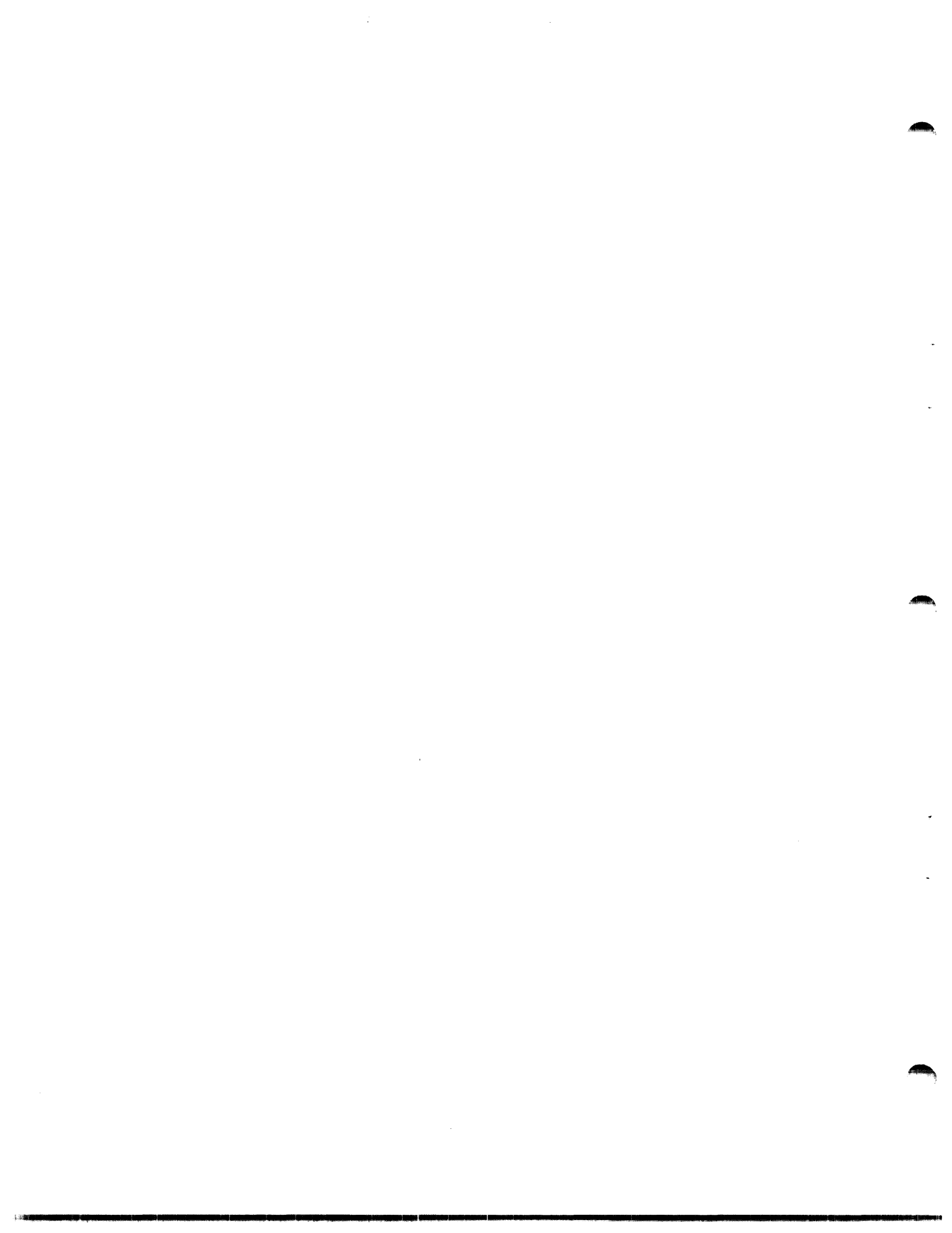
T - test number from 1 through 7.



APPENDIX F
RELATED DOCUMENTS

Program Listing 06-242F02M96A13

Program Tape 06-242F02M17



PROG= 06242 ASSEMBLED BY CAL 03-066R07-00 (32-BIT)

	1	CROSS		MPT20010
	2	WIDTH 120		MPT20020
	3	TARGT 16		MPT20030
	4	06242	PROG SERIES SIXTEEN PROCESSOR TEST PART 2 06-242M96F02A13	MPT20040
	5	*		MPT20050
	6	* COPYRIGHT 1979	PERKIN ELMER CORP. 1979 FEBRUARY	MPT20060
	7	*		MPT20070
	8	R0	EQU 0	MPT20080
	9	R1	EQU 1	MPT20090
	10	R2	EQU 2	MPT20100
	11	R3	EQU 3	MPT20110
	12	R4	EQU 4	MPT20120
	13	R5	EQU 5	MPT20130
	14	R6	EQU 6	MPT20140
	15	R7	EQU 7	MPT20150
	16	R8	EQU 8	MPT20160
	17	R9	EQU 9	MPT20170
	18	R10	EQU 10	MPT20180
	19	R11	EQU 11	MPT20190
	20	R12	EQU 12	MPT20200
	21	R13	EQU 13	MPT20210
	22	R14	EQU 14	MPT20220
	23	R15	EQU 15	MPT20230
	24	*		MPT20240
0000R	25	ORG	X'80'	MPT20250
	26	*		MPT20260
0080	2421	LIS	R2,1	MPT20270
0082	2303	BS	BOOT	MPT20280
0084	02DE	OC	Z(PSWSAVE)	MPT20290
0086	0CC8	DC	Z(RSAVE)	MPT20300
0088	4020 0022	31	BOOT	MPT20310
008C	C810 02D0	32	LHI R1,X'200'	MPT20320
0090	C830 1407	33	LHI R3,LNZB	MPT20330
0094	C860 0000	34	MN LHI R6,0	MPT20340
0098	D340 0078	35	LB R4,X'78'	MPT20350
009C	DE40 0079	36	OC R4,X'79'	MPT20360
00A0	9D45	37	LEADER SSR R4,R5	MPT20370
00A2	2091	38	BTBS 9,1	MPT20380
00A4	9B45	39	RDR R4,R5	MPT20390
00A6	0855	40	LDAR R5,R5	MPT20400
00A8	2234	41	BZS LEADER	MPT20410
00AA	D251 0000	42	LOADER STB R5,0(R1)	MPT20420
00AE	D351 0000	43	LB R5,0(R1)	MPT20430
00B2	0765	44	XAR R6,R5	MPT20440
00B4	9D45	45	SSR R4,R5	MPT20450
00B6	2091	46	BTBS 9,1	MPT20460
00B8	9B45	47	RDR R4,R5	MPT20470
00BA	C110 00AA	48	EXLE R1,LOADER	MPT20480
00BE	9800	49	DCX 8800	MPT20490

BREAK POINT

00C0		51		ORG	X'2D0'		MPT20510	
02D0	4300 02E2	52	ORIGIN1	B	ENTRY1		MPT20520	
		53	*****					MPT20530
02D4	0505	54	IO	DCX	0505	IO INDICATOR	MPT20540	
02D6	0101	55	CRT	DCX	0101	CRT VALUE	MPT20550	
02D8	C0C0	56	CONADR	DCX	C0C0	CONSL	MPT20560	
02DA	0404	57	CAR	DCX	0404	CAROUSEL VALUE	MPT20570	
02DC	1011	58	PASADR	DCX	1011	PASLA ADDRESS REC/SND DEFAULT 1	MPT20580	
02DE	0000	59	PSWSAVE	DC	0		MPT20590	
02E0	0007	60	CLKADR	DCX	0007	EXTERNAL CLOCK ADDRESS	MPT20600	
		61	*					MPT20610
		62	*					MPT20620
	0000 02E2	63	ENTRY1	EQU	*		MPT20630	
02E2	C200 02E6	64	PART2	LPSW	PART2A		MPT20640	
02E6	0000	65	PART2A	DC	0,PART2AA		MPT20650	
02E8	02EA							
		66	*****					MPT20660
	0000 02EA	67	PART2AA	EQU	*		MPT20670	
02EA	2400	68		LIS	RO,0		MPT20680	
02EC	4000 13E8	69		STH	RO,CRTFLG	CLEAR PASLA FLAG	MPT20690	
02F0	4000 13E6	70		STH	RO,MICFLAG	CLEAR MICRO I/O BUS FLAG	MPT20700	
02F4	C800 1407	71		LHI	RO,LNZB		MPT20710	
02F8	4000 0D22	72		STH	RO,X'22'	POWER FAIL INDICATOR	MPT20720	
02FC	C800 F800	73		LHI	RO,X'F800'		MPT20730	
0300	4000 13EA	74		STH	RO,FIRSTCMD		MPT20740	
0304	D300 02D4	75	IOTEST1	LB	RO,IO		MPT20750	
0308	C500 0004	76		CLHI	RO,4	IS IT A CAROUSEL 300?	MPT20760	
030C	2135	77		BNES	CRTIO	NO, BRANCHH	MPT20770	
030E	C810 F000	78		LHI	R1,X'F000'		MPT20780	
0312	4010 13EA	79		STH	R1,FIRSTCMD		MPT20790	
0316	C500 0005	80	CRTIO	CLHI	RO,5	IS IT ON MICRO I/O	MPT20800	
031A	4330 0364	81		BE	MICROIO	YES, BRANCH/	MPT20810	
031E	C800 B979	82		LHI	RO,X'B979'	STORE PASLA R-W COMMANDS	MPT20820	
0322	4000 13F4	83		STH	RO,\$C4		MPT20830	
0326	C800 6B6B	84		LHI	RO,X'6B6B'		MPT20840	
032A	4000 13F6	85		STH	RO,\$58		MPT20850	
032E	C800 7979	86		LHI	RO,X'7979'		MPT20860	
0332	4000 13F8	87		STH	RO,\$44		MPT20870	
0336	C800 7979	88		LHI	RO,X'7979'		MPT20880	
033A	4000 13FA	89		STH	RO,\$66		MPT20890	
033E	D320 13E2	90		LB	R2,CRTOUT		MPT20900	
0342	D310 13E3	91		LB	R1,CRTOUT+1		MPT20910	
0346	D210 13E1	92		STB	R1,INCMND		MPT20920	
034A	D310 02DC	93		LB	R1,PASADR	GET PASLA ADDRESS	MPT20930	
034E	D210 13FD	94		STB	R1,INDEV	RECEIVE SIDE ADDRESS	MPT20940	
0352	D310 02D0	95		LB	R1,PASADR+1		MPT20950	
0356	DE10 13EA	96		OC	R1,FIRSTCMD	OUT PUT INITIAL COMMAND	MPT20960	
035A	2531	97		LCS	R3,1		MPT20970	
035C	4030 13E8	98		STH	R3,CRTFLG		MPT20980	
0360	4300 039A	99		B	IO2		MPT20990	
0364	D310 13E5	100	MICROIO	LB	R1,CONOUT+1	GET READ COMMAND	MPT21000	
0368	D210 13E1	101		STB	R1,INCMND	SAVE	MPT21010	
036C	2511	102		LCS	R1,1		MPT21020	
036E	4010 13E6	103		STH	R1,MICFLAG	SET MICROFLAG	MPT21030	
0372	C800 9292	104		LHI	RO,X'9292'		MPT21040	

0376	4000	13F4	105		STH	RO,\$C4	READ COMMAND	MPT21050
037A	4000	13FA	106		STH	RO,\$66		MPT21060
037E	4000	13F8	107		STH	RO,\$44		MPT21070
0382	C800	3232	108		LHI	RO,X'3232'	WRITE WITH INT. ENABLED	MPT21080
0386	4000	13F6	109		STH	RO,\$58		MPT21090
038A	D310	02D8	110		LB	R1,CONADR	GET MICRO I/O ADDRESS	MPT21100
038E	D210	13F0	111		STB	R1,INDEV	SAVE RECEIVE ADDRESS	MPT21110
0392	DE10	13F1	112		OC	R1,RESET		MPT21120
0396	D320	13E4	113		LB	R2,CONOUT	GET OUTPUT COMMAND	MPT21130
	0000	039A	114	I02	EQU	*		MPT21140
039A	D210	13EF	115		STB	R1,OUTDEV		MPT21150
039E	D220	13E0	116		STB	R2,OUTCMD		MPT21160
03A2	D320	13EF	117	PART2B	LB	R2,OUTDEV	R2 = ADD. OF TTY	MPT21170
03A6	C8A0	135E	118		LHI	R10,TITLE2	PRINT	MPT21180
03AA	C880	139F	119		LHI	R11,TITEND		MPT21190
03AE	DE20	13E0	120	PART2C	OC	R2,OUTCMD	PROCESSOR TEST PART 2	MPT21200
03B2	9023		121	PART2D	SSR	R2,R3		MPT21210
03B4	4210	03AE	122		BTC	1,PART2C	CON DEV. UNAVA. ?	MPT21220
03B8	4280	03B2	123		BTC	8,PART2D	CON BUSY ?	MPT21230
03BC	C430	00FC	124		NHI	R3,X'FC'		MPT21240
03C0	C530	000C	125		CLHI	R3,X'0C'	PASLA DU?	MPT21250
03C4	4330	03B2	126		BE	PART2D		MPT21260
03C8	D30A	0000	127	PART2E	LB	RO,0(R10)		MPT21270
03CC	41E0	11EC	128		BAL	R14,WRITE1	PRINT TITLE	MPT21280
03D0	26A1		129		AIS	R10,1		MPT21290
03D2	05AB		130		CLHR	R10,R11		MPT21300
			131	*				MPT21310
03D4	4230	03C8	132		BNE	PART2E		MPT21320
			133	*				MPT21330
03D8	41E0	11BC	134		BAL	R14,READ1		MPT21340
03DC	D200	13DC	135		STB	RO,CPUNO		MPT21350
03E0	41E0	11BC	136		BAL	R14,READ1		MPT21360
03E4	D200	13DD	137		STB	RO,CPUNO+1		MPT21370
03E8	4800	13DC	138		LH	RO,CPUNO		MPT21380
03EC	C500	3140	139		CLHI	RO,C'1M'	IS IT 1610 PROCESSOR	MPT21390
03F0	4330	0430	140		BE	RENTRY	YES	MPT21400
03F4	C500	324D	141		CLHI	RO,C'2M'	1620	MPT21410
03F8	4330	0430	142		BE	RENTRY		MPT21420
03FC	C500	334D	143		CLHI	RO,C'3M'	1630?	MPT21430
0400	4330	0430	144		BE	RENTRY	YES, BRANCH	MPT21440
0404	C500	3253	145		CLHI	RO,C'2S'	1620 WITH SINGLE PRECISION?	MPT21450
0408	4330	0430	146		BE	RENTRY	YES	MPT21460
040C	C500	3353	147		CLHI	RO,C'3S'	1630 WITH SINGLE PRECISION?	MPT21470
0410	4330	0430	148		BE	RENTRY	YES	MPT21480
0414	C500	3244	149		CLHI	RO,C'2D'	1620 WITH DOUBLE PRECISION?	MPT21490
0418	4330	0430	150		BE	RENTRY	YES	MPT21500
041C	C500	3344	151		CLHI	RO,C'3D'	1630 WITH DOUBLE PRECISION?	MPT21510
0420	4330	0430	152		BE	RENTRY	YES	MPT21520
0424	C800	003F	153	CPUERR	LHI	RO,C'?'	NONE OF ABOVE ?	MPT21530
0428	41E0	11EC	154		BAL	R14,WRITE1		MPT21540
042C	4300	02E2	155		B	PART2	LOOP BACK	MPT21550
			156	*				MPT21560
			157	*				MPT21570
			158	*	FLPTNT	= FLPT ARITHMETIC FAULT INTERRUPT		MPT21580
			159	*				MPT21590

		160	*	ILGINT = ILLEGAL INSTRUCTION INTERRUPT	MPT21600
		161	*		MPT21610
		162	*	MALFTN = MACHINE MALFUNCTION INTERRUPT	MPT21620
		163	*		MPT21630
		164	*	EXTINT = EXTERNAL INTERRUPT	MPT21640
		165	*		MPT21650
		166	*	DVDFLT = FIXED POINT DIVIDE FAULT INTERRUPT	MPT21660
		167	*		MPT21670
		168	*		MPT21680
		169	*	QVRFLO = TERMINATION QUEUE OVERFLOW INTERRUPT	MPT21690
		170	*		MPT21700
		171	*		MPT21710
		172	*	SVCERR = INCORRECT SVC INTRPT	MPT21720
		173	*		MPT21730
		174	*	DEVERR = INCORRECT SERVICE POINTER USED OR	MPT21740
		175	*	* = INCORRECT DEV. GENERATED INTRPT.	MPT21750
		176	*		MPT21760
0430	4100	1202		RENTRY BAL R12,CRLF	MPT21770
0434	2430			LIS R3,0	MPT21780
0436	9513			EPSR R1,R3	MPT21790
0438	4030	13EC		STH R3,IOERHW	MPT21800
043C	4030	002C		181 M5008 STH R3,X'2C'	MPT21810
0440	4030	0034		182 STH R3,X'34'	MPT21820
0444	4030	003C		183 STH R3,X'3C'	MPT21830
0448	4030	0044		184 STH R3,X'44'	MPT21840
044C	4030	004C		185 STH R3,X'4C'	MPT21850
0450	4030	0086		186 M5009 STH R3,X'86'	MPT21860
		187	*		MPT21870
		188	*		MPT21880
0454	C810	1226		189 LHI R1,ILGINT	MPT21890
0458	4010	0036		190 STH R1,X'36'	MPT21900
045C	C810	122A		191 LHI R1,MALFTN	MPT21910
0460	4010	003E		192 STH R1,X'3E'	MPT21920
0464	C810	122E		193 LHI R1,EXTINT	MPT21930
0468	4010	0046		194 STH R1,X'46'	MPT21940
046C	C810	1222		195 LHI R1,FLPTNT	MPT21950
0470	4010	002E		196 STH R1,X'2E'	MPT21960
0474	C810	1232		197 LHI R1,DVDFLT	MPT21970
0478	4010	004E		198 STH R1,X'4E'	MPT21980
047C	C810	13FC		199 LHI R1,TABLE	MPT21990
0480	4010	0080		200 STH R1,X'80'	MPT22000
0484	C810	1236		201 LHI R1,SQINT	MPT22010
0488	4010	0088		202 STH R1,X'88'	MPT22020
		203	*		MPT22030
		204	*		MPT22040
048C	C800	0CA8		205 LHI R0,BUFR2	MPT22050
0490	4000	0022		206 STH R0,X'22'	MPT22060
		207	*		MPT22070
0494	C800	123A		208 LHI R0,SVCERR	MPT22080
0498	C840	009C		209 LHI R4,X'9C'	MPT22090
049C	4004	0000		210 RENTRO STH R0,0(R4)	MPT22100
04A0	2642			211 AIS R4,2	MPT22110
04A2	C540	00D0		212 CLHI R4,X'D0'	MPT22120
04A6	2035			213 BNES RENTRO	MPT22130
		214	*		MPT22140

DISABLE INTERRUPTS

NEW PSW FLPT ARITH. FAULT INTRPT.
 NEW PSW ILLG. INSTR. INTRPT.
 NEW PSW MCHN. MALFNTN. INTRPT.
 NEW PSW EXTERNAL INTRPT.
 NEW PSW FXDPT. DIV. FAULT INTRPT.
 NNEW PSW FOR SYSTEM Q INTERRUPT

NEW PSW ADDRESS FOR
 ILLEGAL INSTR. INTRPT.
 NEW PSW ADDRESS FOR
 MACHINE MALFUNCTION INTERRUPT
 NEW PSW ADDRESS FOR
 EXTERNAL INTERRUPT
 NEW PSW ADDRESS FOR
 FLPT ARITH. FAULT INTRPT.
 NEW PSW ADDRESS FOR
 FIXED PT. DIV. FAULT INTRPT.

NEW PSW ADRS FOR SYSTEM Q INTP.

SVC ERROR

04A8	C800	123E	215		LHI	R0,DEVERR	DEVERR = ADDR. FOR	MPT22150
04AC	4004	0000	216	RENTR2	STH	R0,0(R4)	STORE THIS ADR.	MPT22160
04B0	2642		217		AIS	R4,2	IN ALL SERVICE POINTERS	MPT22170
04B2	C540	02D0	218		CLHI	R4,X'2D0'		MPT22180
04B6	2035		219		BNES	RENTR2		MPT22190
			220	*				MPT22200
			221	*				MPT22210
			222	*		RESET THE TABLE		MPT22220
04B8	C800	0400	223		LHI	R0,X'400'		MPT22230
04BC	4000	13FC	224		STH	R0, TABLE		MPT22240
			225	*				MPT22250
			226	*				MPT22260
04C0	D320	13EF	227		LB	R2,OUTDEV		MPT22270
04C4	DE20	13E0	228		OC	R2,OUTCMD		MPT22280
04C8	C840	139D	229		LHI	R4,SUBTST-3		MPT22290
04CC	C850	13AF	230		LHI	R5,SUBTSTND	PRINT SUBTEST TT	MPT22300
04D0	2641		231	RENTR4	AIS	R4,1		MPT22310
04D2	D364	0000	232		LB	R6,0(R4)		MPT22320
04D6	9D23		233	RENTR1	SSR	R2,R3		MPT22330
04D8	4290	04D6	234		BTC	9,RENTR1		MPT22340
04DC	9A26		235		WDR	R2,R6		MPT22350
04DE	0545		236		CLHR	R4,R5		MPT22360
04E0	4230	04D0	237		BNE	RENTR4		MPT22370
04E4	41E0	118C	238		BAL	R14,READ1	RO = KEY READ FROM TTY	MPT22380
04E8	C500	0030	239		CLHI	R0,X'30'	LOOK FOR A NUMERIC KEY	MPT22390
04EC	2184		240		BLS	RENTR3	FROM 0 THROU 8	MPT22400
04EE	C500	0038	241		CLHI	R0,X'38'		MPT22410
04F2	2187		242		BLS	RENTR6		MPT22420
04F4	C800	003F	243	RENTR3	LHI	R0,C'?'	PRINT ?	MPT22430
04F8	41E0	11EC	244		BAL	R14,WRITE1		MPT22440
04FC	4300	0430	245		B	RENTY		MPT22450
0500	D200	1345	246	RENTR6	STB	R0,TESTNO+1		MPT22460
0504	C400	000F	247		NHI	R0,15		MPT22470
0508	D200	13EE	248		STB	R0,SUBTNO	SUBTNO = SUBTEST NO. STORED	MPT22480
050C	41E0	118C	249		BAL	R14,READ1	RO = KEY READ	MPT22490
0510	C500	000D	250		CLHI	R0,X'0D'	CR	MPT22500
0514	4230	04F4	251		BNE	RENTR3		MPT22510
0518	240A		252		LIS	R0,10	LF	MPT22520
051A	41E0	11EC	253		BAL	R14,WRITE1		MPT22530
051E	D300	13EE	254		LB	R0,SUBTNO		MPT22540
0522	9102		255		SLLS	R0,2		MPT22550
0524	C810	0534	256		LHI	R1,RENTR8		MPT22560
0528	JA10		257		AHR	R1,R0		MPT22570
052A	C200	052E	258		LPSW	**4		MPT22580
052E	7C00		259	KPI01	DC	X'7C00',**2		MPT22590
0530	0532							
0532	0301		260		BR	R1		MPT22600
0534	4300	0554	261	RENTR8	B	IOTEST		MPT22610
0538	4300	0784	262		B	SUBT1		MPT22620
053C	4300	C904	263		B	SUBT2		MPT22630
0540	4300	0A8C	264		B	SUBT3		MPT22640
0544	4300	0ACA	265		B	SUBT4		MPT22650
0548	4300	0ECA	266		B	SUBT5		MPT22660
054C	4300	0F92	267		B	SUBT6		MPT22670
0550	4300	107A	268		B	SUBT7	TEST 7	MPT22680

		269	*			MPT22690
		270	*****			MPT22700
		271	*			MPT22710
		272	* TEST 0.....I/O TEST			MPT22720
		273	*			MPT22730
0554	24F0	274	IOTEST	LIS R15,0		MPT22740
0556	950F	275		EPSR R0,R15	DISABLE INTERRUPTS	MPT22750
0558	40F0 135A	276		STH R15,TEMP		MPT22760
055C	41C0 1202	277		BAL R12,CRLF		MPT22770
0560	C800 0030	278		LHI R0,C'0'	TEST 0	MPT22780
0564	D200 1345	279		STB R0,TESTNO+1		MPT22790
		280	*			MPT22800
	0000 0568	281	IOSTA	EQU *		MPT22810
0568	D320 13EF	282		LB R2,OUTDEV		MPT22820
056C	DE20 13E0	283	IOSTA1	OC R2,OUTCMD	OUTPUT COMMAND	MPT22830
0570	9D20	284		SSR R2,R0		MPT22840
0572	2081	285		BTBS 8,1		MPT22850
0574	D620 0A9A	286		WB R2,WBSTRT	1234567890	MPT22860
0578	D320 13F0	287	IOA2	LB R2,INDEV		MPT22870
057C	DE20 13E1	288		OC R2,INCMND		MPT22880
0580	4810 13E6	289		LH R1,MICFLAG	IS IT MICRO I/O	MPT22890
0584	2139	290		BZIS IOA21	YES, BRANCH	MPT22900
0586	9D23	291		SSR R2,R3		MPT22910
0588	2281	292		BFBS 8,1	LOOP ON NOT BUSY	MPT22920
058A	9D23	293	IOA20	SSR R2,R3		MPT22930
058C	4280 058A	294		BTC 8,IOA20	LOOP ON BUSY	MPT22940
0590	9B21	295		RDR R2,R1	READ KEY 1 IN R1	MPT22950
0592	4300 05A0	296		B IOA22		MPT22960
0596	9D23	297	IOA21	SSR R2,R3	MICO IO BUS	MPT22970
0598	4280 0596	298		BTC 8,IOA21		MPT22980
059C	9B21	299		RDR R2,R1		MPT22990
059E	9A21	300		WDR R2,R1	ECHO	MPT23000
05A0	C410 007F	301	IOA22	NHI R1,X'7F'		MPT23010
05A4	C510 0031	302		CLHI R1,X'31'	IS IT ONE	MPT23020
05A8	4230 079A	303		BNE IOERR1	NO, ERROR	MPT23030
05AC	DD20 1358	304	IOA4	SS R2,TEMP+1	SENSE STATUS TEST	MPT23040
05B0	4280 05AC	305		BTC 8,IOA4		MPT23050
05B4	9D23	306		SSR R2,R3		MPT23060
05B6	4530 135A	307		CLH R3,TEMP	STATUS SAME IN BOTH CASES	MPT23070
05BA	4230 0798	308		BNE IOERR2	NO, ERROR	MPT23080
05BE	D820 135A	309		RD R2,TEMP	READ KEY 2 IN TEMP	MPT23090
05C2	4810 13E6	310		LH R1,MICFLAG	IS IT MICRO I/O BUS?	MPT23100
05C6	4330 05CE	311		BZ IOA44	NO, BRANCH	MPT23110
05CA	DA20 135A	312		WD R2,TEMP	ECHO	MPT23120
05CE	4110 07A6	313	IOA44	BAL R1,PARITY	STRIP PARTIY	MPT23130
05D2	C800 3200	314	TERM1	LHI R0,X'3200'	IS IT 2	MPT23140
05D6	4500 135A	315		CLH R0,TEMP		MPT23150
05DA	4230 0796	316		BNE IOERR3		MPT23160
05DE	DD20 1358	317	IOA6	SS R2,TEMP+1	TTY STATUS IN TEMP	MPT23170
05E2	4280 05DE	318		BTC 8,IOA6		MPT23180
05E6	4500 135A	319		CLH R0,TEMP		MPT23190
05EA	4230 0794	320		BNE IOERR4		MPT23200
05EE	DB20 1358	321		RD R2,TEMP+1	READ KEY 3 IN TEMP	MPT23210
05F2	4810 13E6	322		LH R1,MICFLAG	IS IT MICRO I/O BUS	MPT23220
05F6	4330 05FE	323		BZ IOA66	NO	MPT23230

05FA	DA20	1358	324		WD	R2,TEMP+1		MPT23240
05FE	4110	07A6	325	IOA66	BAL	R1,PARITY		MPT23250
0602	C800	3233	326		LHI	RO,X'3233'		MPT23260
0606	4500	135A	327		CLH	RO,TEMP		MPT23270
060A	4230	0792	328		BNE	IOERR5		MPT23280
060E	9023		329	IOA8	SSR	R2,R3	TTY STATUS IN R3	MPT23290
0610	4280	060E	330		BTC	8,IOA8		MPT23300
0614	0920	135A	331		RH	R2,TEMP	READ KEY 4 TEMP	MPT23310
0618	4810	13E6	332		LH	R1,MICFLAG	IS IT A MICRO I/O BUS	MPT23320
061C	4330	0624	333		BZ	IOA88		MPT23330
0620	DA20	135A	334		WD	R2,TEMP		MPT23340
0624	4110	07A6	335	IOA88	BAL	R1,PARITY		MPT23350
0628	C800	3434	336		LHI	RO,X'3434'		MPT23360
062C	4500	135A	337		CLH	RO,TEMP		MPT23370
0630	4230	0790	338		BNE	IOERR6		MPT23380
0634	9023		339	IOA10	SSR	R2,R3	TTY STATUS IN R3	MPT23390
0636	4280	0634	340		BTC	8,IOA10		MPT23400
063A	0920	1358	341		RH	R2,TEMP+1(RO)	READ KEY 5 IN TEMP	MPT23410
063E	4810	13E6	342		LH	R1,MICFLAG		MPT23420
0642	4330	064A	343		BZ	IOA100		MPT23430
0646	DA20	1358	344		WD	R2,TEMP+1		MPT23440
			345	*			(DUMMY INDEX REGISTER)	MPT23450
064A	4110	07A6	346	IOA100	BAL	R1,PARITY		MPT23460
064E	C800	0035	347		LHI	RO,X'35'		MPT23470
0652	0400	1358	348		CLB	RO,TEMP+1		MPT23480
0656	4230	078E	349		BNE	IOERR7		MPT23490
065A	0180	0C60	350		LM	R11,BUFR0	R11 THRU R15 = 0	MPT23500
065E	0080	0CA8	351		STM	R11,BUFR2		MPT23510
0662	C880	0CA8	352		LHI	R11,BUFR2		MPT23520
0666	C8C0	0CAC	353		LHI	R12,BUFR2+4		MPT23530
066A	972B		354		RBR	R2,R11		MPT23540
066C	4810	13E6	355		LH	R1,MICFLAG		MPT23550
0670	4330	067E	356		BZ	IOA8		MPT23560
0674	DE20	13E0	357		OC	R2,OUTCMD	SET IN WRITE MODE	MPT23570
0678	9023		358		SSR	R2,R3		MPT23580
067A	2081		359		BTBS	8,1	LOOP ON BUSY	MPT23590
067C	962B		360		WBR	R2,R11	ECHO	MPT23600
067E	4800	0CA8	361	IOA8	LH	RO,BUFR2		MPT23610
0682	C400	7F7F	362		NHI	RO,X'7F7F'		MPT23620
0686	4000	0CA8	363		STH	RO,BUFR2		MPT23630
068A	4800	0CAA	364		LH	RO,BUFR2+2		MPT23640
068E	C400	7F7F	365		NHI	RO,X'7F7F'		MPT23650
0692	4000	0CAA	366		STH	RO,BUFR2+2		MPT23660
0696	0300	0CAC	367		LB	RO,BUFR2+4		MPT23670
069A	C400	7F7F	368		NHI	RO,X'7F7F'		MPT23680
069E	0200	0CAC	369		STB	RO,BUFR2+4		MPT23690
06A2	C800	3637	370		LHI	RO,X'3637'		MPT23700
06A6	4500	0CA8	371		CLH	RO,BUFR2		MPT23710
06AA	4230	078C	372		BNE	IOERR8		MPT23720
06AE	C800	3839	373		LHI	RO,X'3839'		MPT23730
06B2	4500	0CAA	374		CLH	RO,BUFR2+2	CHECK KEYS 8 , 9	MPT23740
06B6	4230	078C	375		BNE	IOERR8		MPT23750
06BA	C800	0030	376		LHI	RO,X'30'		MPT23760
06BE	0400	0CAC	377		CLB	RO,BUFR2+4	CHECK KEY 0	MPT23770
06C2	4230	078C	378		BNE	IOERR8		MPT23780

06C6	41C0 1202	379	BAL	R12,CRLF	CR LF	MPT23790
		380	*			MPT23800
06CA	D320 13EF	381	LB	R2,OUTDEV		MPT23810
06CE	C840 0A9E	382	LHI	R4,S26MSG	PRINT CHARACTERS	MPT23820
06D2	C850 0A83	383	LHI	R5,S26MSG1	DEPRESS KEYS	MPT23830
06D6	DE20 13E0	384	OC	R2,OUTCMD	1234567890	MPT23840
06DA	9624	385	WBR	R2,R4		MPT23850
06DC	9D23	386	SSR	R2,R3		MPT23860
06DE	2081	387	BTBS	8,1		MPT23870
06E0	D820 0A8A	388	WH	R2,SS9	PRINT 9	MPT23880
06E4	9D23	389	SSR	R2,R3		MPT23890
06E6	2081	390	BTBS	8,1		MPT23900
06E8	C860 FF30	391	LHI	R6,X'FF30'	PRINT 0	MPT23910
06EC	9826	392	WHR	R2,R6		MPT23920
06EE	41C0 1202	393	BAL	R12,CRLF		MPT23930
06F2	9D23	394	SSR	R2,R3		MPT23940
06F4	2081	395	BTBS	8,1		MPT23950
06F6	D320 13F0	396	LB	R2,INDEV		MPT23960
06FA	DE20 13E1	397	OC	R2,INCMND		MPT23970
06FE	9D23	398	SSR	R2,R3		MPT23980
0700	2281	399	BFSB	8,1		MPT23990
0702	D720 0CA4	400	RB	R2,BF2ST	READ 10 KEYS IN BUFR2	MPT24000
0706	4810 13E6	401	LH	R1,MICFLAG		MPT24010
070A	4330 071A	402	BZ	IOAC		MPT24020
070E	DE20 13E0	403	OC	R2,OUTCMD	SET IN WRITE MODE	MPT24030
0712	9D23	404	SSR	R2,R3		MPT24040
0714	2081	405	BTBS	8,1		MPT24050
0716	D620 0CA4	406	WB	R2,BF2ST		MPT24060
071A	2458	407	IOAC	LIS R5,8		MPT24070
	0000 071C	408	PARTY1	EQU *		MPT24080
071C	4865 0CA8	409	LH	R6,BUFR2(R5)	STRIP PARITY	MPT24090
0720	C460 7F7F	410	NHI	R6,X'7F7F'		MPT24100
0724	4065 0CA8	411	STH	R6,BUFR2(R5)		MPT24110
0728	2752	412	SIS	R5,2		MPT24120
072A	2217	413	BNMS	PARTY1		MPT24130
072C	C800 3132	414	LHI	R0,X'3132'	1,2 ?	MPT24140
0730	4500 0CA8	415	CLH	R0,BUFR2		MPT24150
0734	4230 078A	416	BNE	IOERR9	NO, ERROR	MPT24160
0738	C800 3334	417	LHI	R0,X'3334'	3,4	MPT24170
073C	4500 0CAA	418	CLH	R0,BUFR2+2		MPT24180
0740	4230 078A	419	BNE	IOERR9	ERROR	MPT24190
0744	C800 3536	420	LHI	R0,X'3536'	5,6	MPT24200
0748	4500 0CAC	421	CLH	R0,BUFR2+4		MPT24210
074C	4230 078A	422	BNE	IOERR9	NO, ERROR	MPT24220
0750	C800 3738	423	LHI	R0,X'3738'	7,8	MPT24230
0754	4500 0CAE	424	CLH	R0,BUFR2+6		MPT24240
0758	4230 078A	425	BNE	IOERR9	NOT EQUAL ERROR	MPT24250
075C	C800 0039	426	LHI	R0,X'39'	9?	MPT24260
0760	D400 0C80	427	CLB	R0,BUFR2+8		MPT24270
0764	4230 078A	428	BNE	IOERR9	NO, ERROR	MPT24280
0768	DE20 13E1	429	IOA9	OC R2,INCMND	OUTPUT READ COMMAND	MPT24290
076C	9D23	430	SSR	R2,R3		MPT24300
076E	2081	431	BTBS	8,1		MPT24310
0770	9924	432	RHR	R2,R4		MPT24320
0772	4810 13E6	433	LH	R1,MICFLAG		MPT24330

0776	4330	077C	434	BZ	IOA99		MPT24340
077A	9824		435	WHR	R2,R4		MPT24350
077C	C440	7F7F	436	IOA99	NHI	R4,X'7F7F'	MPT24360
0780	C540	3030	437		CLHI	R4,X'3030'	MPT24370
0784	4330	128E	438		BE	NOERR	MPT24380
0788	26F1		439	IOERRA	AIS	R15,1	MPT24390
078A	26F1		440	IOERR9	AIS	R15,1	MPT24400
078C	26F1		441	IOERR8	AIS	R15,1	MPT24410
078E	26F1		442	IOERR7	AIS	R15,1	MPT24420
0790	26F1		443	IOERR6	AIS	R15,1	MPT24430
0792	26F1		444	IOERR5	AIS	R15,1	MPT24440
0794	26F1		445	IOERR4	AIS	R15,1	MPT24450
0796	26F1		446	IOERR3	AIS	R15,1	MPT24460
0798	26F1		447	IOERR2	AIS	R15,1	MPT24470
079A	26F1		448	IOERR1	AIS	R15,1	MPT24480
079C	2501		449	IOERR	LCS	RO,1	MPT24490
079E	4000	13EC	450		STH	RO,IOERHW	MPT24500
07A2	4300	1256	451		B	ERROR	MPT24510
	0000	07A6	452	PARITY	EQU	*	MPT24520
07A6	4800	135A	453		LH	RO,TEMP	MPT24530
07AA	C400	7F7F	454		NHI	RO,X'7F7F'	MPT24540
07AE	4000	135A	455		STH	RO,TEMP	MPT24550
07B2	0301		456		BR	R1	MPT24560
			457	*			MPT24570
			458	*			MPT24580
			459	*****			MPT24590
			460	*	TEST 1		MPT24600
			461	*	TEST INSTRUCTIONS ACK AND ACKR		MPT24610
			462	*			MPT24620
	0000	07B4	463	SUBT1	EQU	*	MPT24630
07B4	C200	07B8	464		LPSW	SUB12	MPT24640
07B8	2C00		465	SUB12	DC	X'2C00',SUB13	MPT24650
07BA	07BC						
	0000	07BC	466	SUB13	EQU	*	MPT24660
07BC	C800	3231	467		LHI	RO,C'21'	MPT24670
07C0	4000	1344	468		STH	RO,TESTNO	MPT24680
			469	*			MPT24690
07C4	2400		470		LIS	RO,0	MPT24700
07C6	2410		471		LIS	R1,0	MPT24710
07C8	9F01		472		ACKR	RO,R1	MPT24720
07CA	4340	07E0	473		BFC	4,S1RA	MPT24730
07CE	0800		474		LHR	RO,RO	MPT24740
07D0	2138		475		BNZS	S1RA	MPT24750
07D2	C510	0004	476		CLHI	R1,4	MPT24760
07D6	2135		477		BNES	S1RA	MPT24770
07D8	2400		478		LIS	RO,0	MPT24780
07DA	9F00		479		ACKR	RO,RO	MPT24790
07DC	4240	07E6	480		BTC	4,S1P	MPT24800
07E0	24F1		481	S1RA	LIS	R15,1	MPT24810
07E2	4300	1256	482		B	ERROR	MPT24820
07E6	C500	0004	483	S1P	CLHI	RO,4	MPT24830
07EA	2035		484		BNES	S1RA	MPT24840
07EC	2500		485	S1P2	LCS	RO,0	MPT24850
07EE	4000	135A	486		STH	RO,TEMP	MPT24860
07F2	0F00	135A	487		ACK	RO,TEMP	MPT24870

PART2,SUBTEST1

V FLAG SHOULD BE SET..NO INTERRUPT
ERROR IF OVERFLO = 0
RO SHOULD BE UNCHANGED

STATUS =4
NO, ERROR

ERROR IF OVERFLO = 0

IS RO = 4 = EX. (FALSE SYNC)
NO, ERROR

07F6	4340	07E0	488	BFC	4,S1RA	V=0, ERROR	MPT24880
07FA	0800		489	LHR	RO,R0	R0 SHOULD BE UNCHANGED?	MPT24890
07FC	4230	07E0	490	BNZ	S1RA	NO, ERROR	MPT24900
0800	2404		491	LIS	RO,4		MPT24910
0802	0400	135A	492	CLB	RO,TEMP	IS TEMP = 4 = EX. (FALSE SYNC)	MPT24920
0806	4230	07E0	493	BNE	S1RA		MPT24930
080A	9F22		494	ACKR	R2,R2		MPT24940
080C	0320	13F0	495	LB	R2,INDEV		MPT24950
0810	0310	13F4	496	LB	R1,\$C4	LOAD COMMAND BYTE	MPT24960
0814	9E21		497	OCR	R2,R1	CON IN READ MODE	MPT24970
0816	2500		498	LCS	RO,0		MPT24980
0818	4000	0040	499	STH	RO,X'40'	OLD PSW EXT. INTRPT.	MPT24990
081C	2400		500	LIS	RO,0		MPT25000
081E	4000	0044	501	STH	RO,X'44'	NEW PSW EXT. INTRPT.	MPT25010
0822	C830	0862	502	LHI	R3,S1INT		MPT25020
0826	4030	0046	503	STH	R3,X'46'		MPT25030
082A	0310	13F5	504	LB	R1,\$54	LOAD COMMAND BYTE	MPT25040
082E	9E21		505	OCR	R2,R1	CON IN READ MODE	MPT25050
0830	4800	13E8	506	LH	RO,CRTFLG		MPT25060
0834	2332		507	BZS	S1M		MPT25070
0836	9F00		508	ACKR	RO,R0		MPT25080
0838	9D23		509	SSR	R2,R3	R3 = TTY STATUS	MPT25090
083A	4380	0838	510	BFC	B,S1M	WAIT TIL TTY BUSY	MPT25100
083E	C200	0842	511	LPSW	S1QQ		MPT25110
0842	4000		512	DC	X'4000',**2	ENABLE EXT. INT.	MPT25120
0844	0846						
0846	0310	13F6	513	LB	R1,\$58	LOAD COMMAND BYTE	MPT25130
084A	0320	13EF	514	LB	R2,OUTDEV		MPT25140
084E	9E21		515	OCR	R2,R1		MPT25150
0850	9D23		516	SSR	R2,R3		MPT25160
0852	2081		517	BTBS	B,1		MPT25170
0854	0A20	1358	518	WD	R2,NULL		MPT25180
0858	41E0	128C	519	BAL	R14,TSTBRK		MPT25190
085C	24F2		520	S1RB	LIS	R15,2	MPT25200
085E	4300	1256	521	B	ERROR	ERROR 2102 *****	MPT25210
0862	2500		522	S1INT	LCS	RO,0	MPT25220
0864	2510		523	LCS	R1,0		MPT25230
0866	9F01		524	ACKR	RO,R1		MPT25240
0868	4240	085C	525	BO	S1RB		MPT25250
086C	0520		526	CLHR	R2,RO	IS RO = R2 = CON ADD.	MPT25260
086E	213F		527	BNES	S1RB1		MPT25270
0870	4300	0880	528	TERM2	B	KPI02	MPT25280
0874	C510	0010	529	CLHI	R1,X'10'		MPT25290
0878	4230	088C	530	BNE	S1RB1		MPT25300
087C	4300	0892	531	B	S1K		MPT25310
0880	0811		532	KPI02	LHR	R1,R1	MPT25320
0882	2338		533	KPI03	BZS	S1K	MPT25330
0884	C510	0008	534	CLHI	R1,8		MPT25340
0888	4330	0892	535	BE	S1K		MPT25350
088C	24F3		536	S1RB1	LIS	R15,3	MPT25360
088E	4300	1256	537	B	ERROR	ERROR 2103 *****	MPT25370
0892	4800	0040	538	S1K	LH	RO,X'40'	MPT25380
0896	C400	FFFF0	539	NHI	RO,X'FFFF0'	OLD PSW EXT. INTRPT.	MPT25390
089A	C500	4000	540	CLHI	RO,X'4000'	IS IT = 4000 ?	MPT25400
089E	2039		541	BNES	S1RB1		MPT25410

08A3	C840 13CE	542		LHI	R4,PRBRK	PRINT	MPT25420
08A4	C850 13DB	543		LHI	R5,BRK	PRESS BRK	MPT25430
08A8	D320 13EF	544		LB	R2,OUTDEV		MPT25440
08AC	DE20 13E0	545		OC	R2,OUTCMD		MPT25450
08B0	9624	546		WBR	R2,R4		MPT25460
08B2	C800 080C	547		LHI	RO,S1XINT	EXT. INT. ADR.	MPT25470
08B6	4000 0046	548		STH	RO,X'46'		MPT25480
08BA	D310 13F5	549		LB	R1,\$54	LOAD COMMAND BYTE	MPT25490
08BE	D320 13F0	550		LB	R2,INDEV		MPT25500
08C2	9E21	551		OCR	R2,R1		MPT25510
08C4	9D23	552	S1MM	SSR	R2,R3		MPT25520
08C6	4380 08C4	553		BFC	8,S1MM		MPT25530
08CA	C200 08CE	554		LPSW	S1PP		MPT25540
08CE	E000	555	S1PP	DC	X'E000',**2		MPT25550
08D0	0802						
08D2	41F0 1284	556		BAL	R15,TSTBRKC		MPT25560
08D6	24F4	557	S1R4	LIS	R15,4	ERROR 2104 *****	MPT25570
08D8	4300 1256	558		B	ERROR		MPT25580
		559	*				MPT25590
08DC	9F03	560	S1XINT	ACKR	RO,R3		MPT25600
08DE	9025	561	S1T	SSR	R2,R5		MPT25610
08E0	C350 0020	562		THI	R5,X'20'		MPT25620
08E4	2233	563		BZS	S1T		MPT25630
08E6	0502	564		CLHR	RO,R2		MPT25640
08E8	4230 08D6	565		BNE	S1R4		MPT25650
08EC	C330 0020	566		THI	R3,X'20'		MPT25660
08F0	4330 08D6	567		BZ	S1R4		MPT25670
08F4	C8F0 0900	568		LHI	R15,S1END		MPT25680
08F8	40F0 0CC6	569		STH	R15,BUFR2+X'1E'		MPT25690
08FC	4300 12D4	570		B	TSTBRK12		MPT25700
0900	4300 128E	571	S1END	B	NOERR		MPT25710
		572	*****				MPT25720
		573	*			MPT25730	
		574	*	THIS SUBJECT CHECKS THE		MPT25740	
		575	*			MPT25750	
		576	*	LIST INSTRUCTIONS		MPT25760	
		577	*			MPT25770	
		578	*			MPT25780	
		579	*			MPT25790	
		580	SUBT2	EQU	* T23A	MPT25800	
0904	C880 0936	581		LHI	R11,T23A	MPT25810	
0908	C800 0400	582	S2	LHI	RO,X'400'	SET UP THE LIST CALLED TABLE	MPT25820
090C	4000 13FC	583		STH	RO,TABLE	FOR A TOTAL OF 4 ENTRIES	MPT25830
0910	2400	584		LIS	RO,0	MPT25840	
0912	2303	585		BS	SKIP	MPT25850	
0914	4030 13FC	586	RESTORE	STH	R3,TABLE	ZERO TABLE	MPT25860
0918	4000 13FE	587	SKIP	STH	RO,TABLE+2	MPT25870	
091C	4000 1400	588		STH	RO,TABLE+4	MPT25880	
0920	4000 1402	589		STH	RO,TABLE+6	MPT25890	
0924	4000 1404	590		STH	RO,TABLE+8	MPT25900	
0928	4000 1406	591		STH	RO,TABLE+10	MPT25910	
		592	*			MPT25920	
092C	C200 0930	593		LPSW	T23	MPT25930	
0930	7C00	594	T23	DC	X'7C00',T23B	MPT25940	
0932	0934						

0934	0308	595	T23B	BR	R11		MPT25950
		596	*				MPT25960
0936	C8D0 1256	597	T23A	LHI	R13,ERROR		MPT25970
093A	24F1	598		LIS	R15,1		MPT25980
093C	C800 0400	599		LHI	RO,X'400'	SET UP THE LIST CALLED TABLE	MPT25990
0940	4000 13FC	600		STM	RO, TABLE	FOR FOUR ENTRIES	MPT26000
0944	2400	601		LIS	RO,0	ZERO OTHER	MPT26010
0946	4000 13FE	602		STM	RO, TABLE+2	CONTROL BYTES	MPT26020
094A	6730 13FC	603		RBL	3, TABLE	LIST IS EMPTY	MPT26030
094E	0340	604		BFCR	4, R13	IS COND CODE V = 1	MPT26040
0950	6630 13FC	605		RTL	R3, TABLE	YES	MPT26050
0954	0340	606		BFCR	4, R13	IS COND CODE V = 1	MPT26060
0956	2401	607		LIS	RO,1	YES, SET RO TO 1	MPT26070
0958	6400 13FC	608		ATL	RO, TABLE	SET TOP OF LIST = 1	MPT26080
095C	02FD	609		BTCR	X'F', R13	IS COND CODE C, V, G, L = 0	MPT26090
095E	2601	610		AIS	RO,1	RO = 2 NOW	MPT26100
0960	6500 13FC	611		ABL	RO, TABLE	ENTRY 2 = 2	MPT26110
0964	02FD	612		BTCR	X'F', R13	IS COND CODE C, V, G, L = 0	MPT26120
0966	2601	613		AIS	RO,1	RO = 3 NOW	MPT26130
0968	6500 13FC	614		ABL	RO, TABLE	ENTRY 3 = 3	MPT26140
096C	02FD	615		BTCR	X'F', R13	IS COND CODE C, V, G, L = 0	MPT26150
096E	2601	616		AIS	RO,1	RO = 4 NOW	MPT26160
0970	6500 13FC	617		ABL	RO, TABLE	ENTRY 4 = 4	MPT26170
0974	02FD	618		BTCR	X'F', R13	IS COND CODE C, V, G, L = 0	MPT26180
		619	*				MPT26190
0976	D1C0 1400	620	CHEKTAB	LM	R12, TABLE+4	CHECK IF TABLE ENTRIES IN	MPT26200
097A	C5C0 0002	621		CLHI	R12,2	PROPER MEMORY LOCATION	MPT26210
097E	213A	622		BNES	TAERR		MPT26220
0980	C5D0 0003	623		CLHI	R13,3		MPT26230
0984	2137	624		BNES	TAERR		MPT26240
0986	C5E0 0004	625		CLHI	R14,4		MPT26250
098A	2134	626		BNES	TAERR		MPT26260
098C	C5F0 0001	627		CLHI	R15,1		MPT26270
0990	2334	628		BES	CONTIN		MPT26280
		629	*				MPT26290
0992	24F2	630	TAERR	LIS	R15, X'2'	ERROR 2202	MPT26300
0994	4300 1256	631		B	ERROR		MPT26310
		632	*			THE LIST IS NOW FULL , WITH FOUR ENTRIES	MPT26320
		633	*				MPT26330
		634	*			1,2,3,4 FROM TOP TO BOTTOM	MPT26340
		635	*				MPT26350
0998	C8D0 1256	636	CONTIN	LHI	R13,ERROR		MPT26360
099C	2601	637		AIS	RO,1	RO = 5 NOW	MPT26370
099E	6500 13FC	638		ABL	RO, TABLE	ADD TO FULL LIST, TEST OVRFLO	MPT26380
09A2	0340	639		BFCR	X'4', R13	IS COND CODE V = 1	MPT26390
09A4	6400 13FC	640		ATL	RO, TABLE	OVERFLOW THE LIST AGAIN	MPT26400
09A8	0340	641		BFCR	X'4', R13	IS COND CODE V = 1	MPT26410
09AA	6600 13FC	642		RTL	RO, TABLE	FETCH TOP ENTRY WHICH IS 1	MPT26420
09AE	032D	643		BFCR	X'2', R13	IS COND CODE G = 1	MPT26430
09B0	C500 0001	644		CLMI	RO,1	IS TOP ENTRY REMOVED = 1	MPT26440
09B4	02FD	645		BTCR	X'F', R13		MPT26450
09B6	6700 13FC	646		RBL	RO, TABLE	FETCH BOTTOM ENTRY WHICH IS 4	MPT26460
09BA	032D	647		BFCR	X'2', R13	IS COND CODE G = 1	MPT26470
09BC	C500 0004	648		CLMI	RO,4	IS THE ENTRY REMOVED = 4	MPT26480
09C0	02FD	649		BTCR	X'F', R13		MPT26490

09C2	6600 13FC	650	RTL	R0, TABLE	FETCH NEW TOP ENTRY (= 2)	MPT26500
09C6	032D	651	BFCR	2, R13	IS COND CODE G = 1	MPT26510
09C8	C500 0002	652	CLHI	R0, 2	IS THE ENTRY REMOVED = 2	MPT26520
09CC	02FD	653	BTCR	X'F', R13	IS COND CODE C, V, G, L = 0	MPT26530
09CE	6700 13FC	654	RBL	R0, TABLE	REMOVE THE LAST ENTRY	MPT26540
0902	02FD	655	BTCR	X'F', R13	IS COND CODE C, V, G, L = 0	MPT26550
0904	C500 0003	656	CLHI	R0, 3	IS THE ENTRY REMOVED = 3	MPT26560
0908	02FD	657	BTCR	X'F', R13		MPT26570
		658	*			MPT26580
		659	*	THE LIST IS NOW EMPTY		MPT26590
		660	*			MPT26600
09DA	6700 13FC	661	RBL	R0, TABLE	REMOVE FROM EMPTY LIST	MPT26610
09DE	034D	662	BFCR	4, R13	IS COND CODE V = 1	MPT26620
09E0	6600 13FC	663	RTL	R0, TABLE	REMOVE FROM EMPTY LIST	MPT26630
09E4	034D	664	BFCR	4, R13		MPT26640
09E6	C880 09F4	665	LHI	R11, CHRBL		MPT26650
09EA	2400	666	LIS	R0, 0		MPT26660
09EC	C830 0400	667	LHI	R3, X'400'		MPT26670
09F0	4300 0914	668	B	RESTORE		MPT26680
		669	*			MPT26690
		670	*			MPT26700
09F4	2421	671	CHRBL	LIS R2, 1	CHECK LIST WRAP CONDITON FOR RBL	MPT26710
09F6	6420 13FC	672	ATL	R2, TABLE		MPT26720
09FA	6720 13FC	673	RBL	R2, TABLE		MPT26730
09FE	0310 13FF	674	LB	R1, TABLE+3		MPT26740
0A02	C510 0003	675	CLHI	R1, 3		MPT26750
0A06	2135	676	BNES	LIS400		MPT26760
0A08	C880 0A1A	677	LHI	R11, CHATL		MPT26770
0A0C	4300 0914	678	B	RESTORE		MPT26780
		679	*			MPT26790
0A10	24F3	680	LIS400	LIS R15, 3	LIST WRAP ERROR ON RBL INSTRUCTION	MPT26800
0A12	4300 1256	681	LIERR1	B ERROR	ERROR 2203 *****	MPT26810
0A16	24F4	682	LIS401	LIS R15, 4	LIST WRAP ERROR ON ATL INSTRUCTION	MPT26820
0A18	2203	683	9S	LIERR1	ERROR 2204 *****	MPT26830
		684	*			MPT26840
		685	*			MPT26850
0A1A	6420 13FC	686	CHATL	ATL R2, TABLE	CHECK LIST WRAP CONDITION FOR ATL	MPT26860
0A1E	0310 13FE	687	LB	R1, TABLE+2		MPT26870
0A22	C510 0003	688	CLHI	R1, 3		MPT26880
0A26	2038	689	BNES	LIS401		MPT26890
0A28	C880 0A38	690	LHI	R11, CHRTL		MPT26900
0A2C	C830 0402	691	LHI	R3, X'0402'		MPT26910
0A30	C800 0303	692	LHI	R0, X'0303'		MPT26920
0A34	4300 0914	693	B	RESTORE		MPT26930
		694	*			MPT26940
0A38	6620 13FC	695	CHRTL	RTL R2, TABLE	CHECK LIST WRAP CONDITION FOR RTL	MPT26950
0A3C	0310 13FE	696	LB	R1, TABLE+2		MPT26960
0A40	C510 0000	697	CLHI	R1, 0		MPT26970
0A44	2135	698	BNES	LIS040		MPT26980
0A46	C880 0A58	699	LHI	R11, CHABL		MPT26990
0A4A	4300 0914	700	B	RESTORE		MPT27000
		701	*			MPT27010
0A4E	24F5	702	LIS040	LIS R15, 5	LIST WRAP ERROR ON RTL INSTRUCTION	MPT27020
0A50	4300 1256	703	LIERR2	B ERROR	ERROR 2205 ****	MPT27030
0A54	24F6	704	LIS041	LIS R15, 6	LIST WRAP ERROR ON ABL INSTRUCTION	MPT27040

0A56	2203	705	BS	LIERR2	ERROR 2206 *****	MPT27050
		706	*			MPT27060
0A58	6520 13FC	707	CHABL	ABL R2, TABLE	CHECK LIST WRAP CONDITION FOR ABL	MPT27070
0A5C	D310 13FF	708		LB R1, TABLE+3		MPT27080
0A60	C510 0000	709		CLHI R1, 0		MPT27090
0A64	2038	710		BNES LIS041	CONCLUSION OF LIST INSTRUCTION TEST	MPT27100
		711	*			MPT27110
		712	*	SYSTEM QUEUE INTERRUPT TEST		MPT27120
		713	*			MPT27130
0A66	C800 0400	714		LHI R0, X'400'		MPT27140
0A6A	4000 13FC	715		STH R0, TABLE	SET UP TABLE FOR 4 ENTRIES	MPT27150
0A6E	2400	716		LIS R0, 0		MPT27160
0A70	4000 13FE	717		STH R0, TABLE+2		MPT27170
0A74	6400 13FC	718		ATL R0, TABLE		MPT27180
0A78	C810 0A8E	719		LHI R1, LISINT		MPT27190
0A7C	4010 0088	720		STH R1, X'88'	SET SYSTEM Q INTRPT VECTOR	MPT27200
0A80	C200 0A84	721		LPSW T24		MPT27210
0A84	7E00	722	T24	DC X'7E00', T241	SYSTEM Q INTERRUPTS ENABLED	MPT27220
0A86	0A88					
0A88	24F7	723	T241	LIS R15, 7	SYSTEM Q INTERRUPT DID NOT OCCUR	MPT27230
0A8A	4300 1256	724		B ERROR		MPT27240
	0000 0A8E	725	LISINT	EQU *		MPT27250
0A8E	C810 1236	726		LHI R1, SQINT		MPT27260
0A92	4010 0088	727		STH R1, X'88'	RESTORE VECTOR	MPT27270
0A96	4300 128E	728		B NOERR		MPT27280
		729	*			MPT27290
0A9A	0A9E	730	WBSTRT	DC S26MSG		MPT27300
0A9C	0AB9	731		DC S26MSD		MPT27310
	0000 0A9E	732	S26MSG	EQU *		MPT27320
0A9E	4445 5052 4553 5320	733		DC C'DEPRESS KEYS'		MPT27330
0AA6	4845 5953					
0AAA	0D0A	734		DC X'0D0A'		MPT27340
0AAC	3132 3334 3536 3738	735		DC C'1234567890'		MPT27350
0AB4	3930					
	0000 0AB3	736	S26MSG1	EQU *-3		MPT27360
0AB6	0D0A	737		DC X'0D0A'		MPT27370
0AB8	FFFF	738		DCX FFFF		MPT27380
	0000 0AB9	739	S26MSD	EQU *-1		MPT27390
		740	*			MPT27400
0ABA	FF39	741	SS9	DC X'FF39'		MPT27410
		742	*			MPT27420
		743	*****			MPT27430
		744	*			MPT27440
		745	*	TEST 3		MPT27450
		746	*			MPT27460
	0000 0ABC	747	SUBT3	EQU *		MPT27470
		748	*	THIS SUBTEST CHECKS INITIALIZE/POWER FAIL/AUTO RESTART		MPT27480
		749	*	MACHINE MALFUNCTION INTERRUPT IS DISABLED.		MPT27490
		750	*			MPT27500
0ABC	2400	751		LIS R0, 0		MPT27510
0ABE	4000 0EC8	752		STH R0, S3MM	S3MM = 0 : MMINT DISABLED	MPT27520
0AC2	C200 0AC6	753		LPSW S3A		MPT27530
0AC6	5C00	754	S3A	DC X'5C00', S34B		MPT27540
0AC8	0A08	755	*			MPT27550

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756 * MPT27560
757 ***** MPT27570
758 * MPT27580
759 * TEST 4 MPT27590
760 * MPT27600
0000 OACA 761 SUBT4 EQU * MPT27610
762 * THIS SUBTEST CHECKS INITIALIZE/POWER FAIL/AUTO RESTART MPT27620
763 * MACHINE MALFUNCTION INTERRUPT IS ENABLED. P MPT27630
764 * MPT27640
OACA 2501 765 LCS R0,1 MPT27650
OACC 4000 DEC8 766 STH R0,S3MM S3MM = FFFF : MMINT ENABLED. MPT27660
OADO C200 OAD4 767 LPSW S4A MPT27670
OAO4 7C00 768 S4A DC X'7C00',S34B MPT27680
OAO6 OAD8

769 * MPT27690
770 * THE FOLLOWING IS COMMON CODE FOR SUBTESTS 3 AND 4. MPT27700
771 * MPT27710
OAO8 C800 OB80 772 S34B LHI R0,S3INT MPT27720
OADC 4000 003E 773 STH R0,X'3E' MMINT NEW PSW LOC MPT27730
OAE0 C800 OCA8 774 LHI R0,BUFR2 MPT27740
OAE4 4000 0022 775 STH R0,X'22' PPF REGISTER SAVE POINTER MPT27750
OAE8 D100 0C60 776 LM R0,BUFR0 ALL REGS = 0 MPT27760
OAE0 0000 OCA8 777 STM R0,BUFR2 INITIALIZE SAVE AREA MPT27770
OAF0 4000 0024 778 STH R0,X'24' CURRENT PSW PPF SAVE AREA MPT27780
OAF4 4000 0026 779 STH R0,X'26' CURRENT PSW PPF SAVE AREA MPT27790
OAF8 4000 0038 780 STH R0,X'38' MMINT OLD PSW STATUS MPT27800
OAF0 4000 003A 781 STH R0,X'3A' MMINT OLD PSW LOC MPT27810
OB00 4000 003C 782 STH R0,X'3C' MMINT NEW PSW STATUS MPT27820
783 * MPT27830
OB04 D320 13EF 784 S34C LB R2,OUTDEV MPT27840
OB08 C840 1380 785 LHI R4,PRESS MPT27850
OB0C C850 13DB 786 LHI R5,BRK MPT27860
OB10 9624 787 WBR R2,R4 'PRESS INIT PRESS BRK' MPT27870
788 * MPT27880
OB12 D100 0C80 789 LM R0,BUFR1 SET SINGLE BIT IN EACH REGISTER MPT27890
OB16 41F0 0C08 790 S3B BAL R15,CMPARE CHECK REGISTERS MPT27900
OB1A 2334 791 BES S3B4 MPT27910
792 * MPT27920
OB1C 24F1 793 S4R1 LIS R15,1 REGISTERS CHANGED ***** MPT27930
OB1E 4300 1256 794 B ERROR MPT27940
795 * MPT27950
0000 0822 796 S3B4 EQU * MPT27960
OB22 0320 13EF 797 LB R2,OUTDEV GET TRANSMITTER ADDRES MPT27970
OB26 DE20 13E0 798 OC R2,OUTCMD SET IN WRITE MODE MPT27980
OB2A 0A20 1358 799 WD R2,NULL MPT27990
OB2E 0320 13F0 800 LB R2,INDEV GET RECEIVER ADDRESS MPT28000
OB32 9020 801 S3B5 SSR R2,R0 MPT28010
OB34 C300 0020 802 THI R0,X'20' MPT28020
OB38 4230 0844 803 BNZ S3B6 MPT28030
OB3C 2422 804 LIS R2,2 MPT28040
OB3E 2400 805 LIS R0,0 MPT28050
OB40 4300 0816 806 B S3B MPT28060
0000 0844 807 S3B6 EQU * MPT28070
OB44 9023 808 SSR R2,R3 MPT28080
OB46 C8F0 0852 809 LHI R15,S3B61 MPT28090

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0BEC	0385	865	*		EXECUTE A 1-MS DELAY BEFORE POWER RESTORE INTERRUPT TAKEN.		MPT28650
		866	*		IF NO INTERRUPT, ERROR 2404 RESULTS.		MPT28660
		867	*				MPT28670
0BE2	9500	868	S4INT2	EPSR	RO,RO	CAPTURE POWER RESTORE NEW PSW	MPT28680
0BE4	4000 0C06	869		STH	RO,S4PSW2		MPT28690
0BE8	C900 122A	870		LHI	RO,MALFTN	IN CASE OF 3RD INTERRUPT,	MPT28700
0BEC	4000 003E	871		STH	RO,X'3E'	RESTORE POINTER.	MPT28710
0BF0	2400	872		LIS	RO,0	(WORK REGISTER)	MPT28720
0BF2	2422	873		LIS	R2,2		MPT28730
0BF4	4300 0816	874		B	S3B	TO WAIT FOR BRK KEY	MPT28740
		875	*				MPT28750
0BF8	24F5	876	S4R5	LIS	R15,5	CC NOT 0001 ON EPF	***** MPT28760
0BFA	4300 1256	877		B	ERROR		MPT28770
		878	*				MPT28780
0BFE	24F6	879	S4R6	LIS	R15,6	CC NOT 0000 ON POWER RESTORE	***** MPT28790
0C00	4300 1256	880		B	ERROR		MPT28800
		881	*				MPT28810
0C04	0000	882	S4PSW1	DCX	0		MPT28820
0C06	0000	883	S4PSW2	DCX	0		MPT28830
		884	*				MPT28840
		885	*				MPT28850
0C08	0800	886	CMPARE	LHR	RO,RO		MPT28860
0C0A	023F	887		BNZR	R15		MPT28870
0C0C	C510 0001	888		CLHI	R1,1	R1 = 1 ?	MPT28880
0C10	023F	889		BNER	R15		MPT28890
0C12	C520 0002	890		CLHI	R2,2		MPT28900
0C16	023F	891		ENER	R15		MPT28910
0C18	C530 0004	892		CLHI	R3,4	R3 = 4 ?	MPT28920
0C1C	023F	893		BNER	R15		MPT28930
0C1E	C540 0008	894		CLHI	R4,8	R4 = 8 ?	MPT28940
0C22	023F	895		BNER	R15		MPT28950
0C24	C550 0010	896		CLHI	R5,16		MPT28960
0C28	023F	897		BNER	R15		MPT28970
0C2A	C560 0020	898		CLHI	R6,X'20'	R6 = 0020 ?	MPT28980
0C2E	023F	899		BNER	R15		MPT28990
0C30	C570 0040	900		CLHI	R7,X'40'	R7 = 0040 ?	MPT29000
0C34	023F	901		BNER	R15		MPT29010
0C36	C580 0080	902		CLHI	R8,X'80'		MPT29020
0C3A	023F	903		BNER	R15		MPT29030
0C3C	C590 0100	904		CLHI	R9,X'100'		MPT29040
0C40	023F	905		BNER	R15		MPT29050
0C42	C5A0 0200	906		CLHI	R10,X'200'		MPT29060
0C46	023F	907		BNER	R15		MPT29070
0C48	C5B0 0400	908		CLHI	R11,X'400'	R11 = 0400	MPT29080
0C4C	023F	909		BNER	R15		MPT29090
0C4E	C5C0 0800	910		CLHI	R12,X'800'	R12 = 0800 ?	MPT29100
0C52	023F	911		BNER	R15		MPT29110
0C54	C5D0 1000	912		CLHI	R13,X'1000'		MPT29120
0C58	023F	913		BNER	R15		MPT29130
0C5A	C5E0 2000	914		CLHI	R14,X'2000'		MPT29140
0C5E	030F	915		BR	R15		MPT29150
		916	*				MPT29160
0C60	0000	917	BUFRO	DC	0		MPT29170
0C62	0000	918		DC	0		MPT29180

0C64	0000	919	DC	0		MPT29190
0C66	0000	920	DC	0		MPT29200
0C68	0000	921	DC	0		MPT29210
0C6A	0000	922	DC	0		MPT29220
0C6C	0000	923	DC	0		MPT29230
0C6E	0000	924	DC	0		MPT29240
0C70	0000	925	DC	0		MPT29250
0C72	0000	926	DC	0		MPT29260
0C74	0000	927	DC	0		MPT29270
0C76	0000	928	DC	0		MPT29280
0C78	0000	929	DC	0		MPT29290
0C7A	0000	930	DC	0		MPT29300
0C7C	0000	931	DC	0		MPT29310
0C7E	0000	932	DC	0		MPT29320
0C80	0000	933	DC	0	BUFR1	MPT29330
0C82	0001	934	DC	1		MPT29340
0C84	0002	935	DC	2		MPT29350
0C86	0004	936	DC	4		MPT29360
0C88	0008	937	DC	8		MPT29370
0C8A	0010	938	DC	16		MPT29380
0C8C	0020	939	DC	32		MPT29390
0C8E	0040	940	DC	64		MPT29400
0C90	0080	941	DC	128		MPT29410
0C92	0100	942	DC	X*100*		MPT29420
0C94	0200	943	DC	X*200*		MPT29430
0C96	0400	944	DC	X*400*		MPT29440
0C98	0800	945	DC	X*800*		MPT29450
0C9A	1000	946	DC	X*1000*		MPT29460
0C9C	2000	947	DC	X*2000*		MPT29470
0C9E	4000	948	DC	X*4000*		MPT29480
0CA0	8000	949	DC	X*8000*		MPT29490
0CA2	0000	950	DC	0		MPT29500
		951	*			MPT29510
		952	*			MPT29520
0CA4	0CA8	953	BF2ST	DC	BUFR2	MPT29530
0CA6	0CB0	954		DC	BUFR2+8	MPT29540
0CA8	0000	955	BUFR2	DC	0	MPT29550
0CAA	0000	956		DC	0	MPT29560
0CAC	0000	957		DC	0	MPT29570
0CAE	0000	958		DC	0	MPT29580
0CB0	0000	959		DC	0	MPT29590
0CB2	0000	960		DC	0	MPT29600
0CB4	0000	961		DC	0	MPT29610
0CB6	0000	962		DC	0	MPT29620
0CB8	0000	963		DC	0	MPT29630
0CBA	0000	964		DC	0	MPT29640
0CBC	0000	965		DC	0	MPT29650
0CBE	0000	966		DC	0	MPT29660
0CC0	0000	967		DC	0	MPT29670
0CC2	0000	968		DC	0	MPT29680
0CC4	0000	969		DC	0	MPT29690
0CC6	0000	970		DC	0	MPT29700
0CC8		971	RSAVE	DS	512	MPT29710
		972	*			MPT29720
0EC8	0000	973	S3MM	DC	0	MPT29730

BUFFER FOR READING DATA
AND STORING REGISTERS

		974	*			MPT29740
	0000 0EC9	975	S4MM	EQU	*-1	MPT29750
		976	*			MPT29760
		977	*****			MPT29770
		978	*			MPT29780
		979	*	TEST 5		MPT29790
		980	*			MPT29800
		981	*	THIS TEST CHECKS THE PRIVILEGED INSTRUCTIONS.		MPT29810
		982	*			MPT29820
	0ECA 4810 13DC	983	SUBT5	LH	R1,CPUNO	MPT29830
	0ECE C510 314D	984		CLHI	R1,C*1M'	MPT29840
	0ED2 4330 128E	985		BE	NOERR	MPT29850
	0ED6 2410	986		LIS	R1,0	MPT29860
	0ED8 C840 0F78	987		LHI	R4,T52BYT	MPT29870
		988	T52	EQU	*	MPT29880
	0EDC D364 0000	989	T52D	LB	R6,0(R4)	MPT29890
	0EE0 0260 0F02	990		STB	R6,T52PRV	MPT29900
	0EE4 2400	991		LIS	R0,0	MPT29910
	0EE6 4000 0030	992		STH	R0,X'30'	MPT29920
	0EEA 4000 0032	993		STH	R0,X'32'	MPT29930
	0EEE 4000 0034	994		STH	R0,X'34'	MPT29940
	0EF2 C830 0FOA	995		LHI	R3,T52INT	MPT29950
	0EF6 4030 0036	996		STH	R3,X'36'	MPT29960
	0EFA C200 0EFE	997		LPSW	T52A	MPT29970
	0EFE 0100	998	T52A	DC	X'100',T52B	MPT29980
	0F00 0F02					
		999	T52B	EQU	*	MPT29990
	0F02 0000 0F02	1000	T52PRV	DC	0	MPT30000
	0F04 24F1	1001	T52R1	LIS	R15,1	MPT30010
	0F06 4300 1256	1002		B	ERROR	MPT30020
	0F0A 0811	1003	T52INT	LHR	R1,R1	MPT30030
	0F0C 4230 0F60	1004		BNZ	T52R3	MPT30040
	0F10 C830 0100	1005		LHI	R3,X'100'	MPT30050
	0F14 4530 0030	1006		CLH	R3,X'30'	MPT30060
	0F18 2138	1007		BNES	T52R2	MPT30070
	0F1A C830 0F02	1008		LHI	R3,T52PRV	MPT30080
	0F1E 4530 0032	1009		CLH	R3,X'32'	MPT30090
	0F22 2133	1010		BNES	T52R2	MPT30100
	0F24 9533	1011		EPSR	R3,R3	MPT30110
	0F26 2334	1012		BZS	T52F	MPT30120
	0F28 24F2	1013	T52R2	LIS	R15,2	MPT30130
	0F2A 4300 1256	1014		B	ERROR	MPT30140
		1015	*			MPT30150
		1016	*	PRIV. INST. DETECTED AND PSW SWAP OK		MPT30160
		1017	*			MPT30170
	0F2E 2641	1018	T52F	AIS	R4,1	MPT30180
	0F30 C540 0F91	1019		CLHI	R4,T52LST+1	MPT30190
	0F34 4230 0EDC	1020		ENE	T52	MPT30200
		1021	*			MPT30210
		1022	*	ALL PRIVILEGED INSTRUCTIONS TESTED		MPT30220
		1023	*			MPT30230
	0F38 C800 1226	1024		LHI	R0,ILGINT	MPT30240
	0F3C 4000 0036	1025		STH	R0,X'36'	MPT30250
	0F40 2411	1026		LIS	R1,1	MPT30260
	0F42 C830 0F66	1027	T52HB	LHI	R3,T52SVC	MPT30270

0F46	4030	009C	1026	STH	R3,X'9C'		MPT30280
0F4A	2400		1029	LIS	R0,0		MPT30290
0F4C	400C	0096	1030	STH	R0,X'96'	OLD PSW SVC	MPT30300
0F50	4000	009A	1031	STH	R0,X'9A'	NEW PSW SVC 0	MPT30310
0F54	C200	0F58	1032	LPSW	T52HC		MPT30320
0F58	0100		1033	DC	X'100',T52K		MPT30330
0F5A	0F5C						
0F5C	E100	0004	1034	T52K	SVC	D,R4	MPT30340
0F60	24F3		1035	T52R3	LIS	R15,3	MPT30350
0F62	4300	1256	1036	B	ERROR		MPT30360
0F66	C830	0100	1037	T52SVC	LHI	R3,X'100'	MPT30370
0F6A	4530	0096	1038	CLH	R3,X'96'		MPT30380
0F6E	2037		1039	BNES	T52R3		MPT30390
0F70	9533		1040	EPSR	R3,R3		MPT30400
0F72	2039		1041	BNZS	T52R3		MPT30410
0F74	4300	128E	1042	T52END	B	NOERR	MPT30420
0F78	13		1043	T52BYT	DB	X'13'	MPT30430
0F79	33		1044		DB	X'33'	MPT30440
0F7A	53		1045		DB	X'53'	MPT30450
0F7B	73		1046		DB	X'73'	MPT30460
0F7C	96		1047		DB	X'96'	MPT30470
0F7D	97		1048		DB	X'97'	MPT30480
0F7E	98		1049		DB	X'98'	MPT30490
0F7F	99		1050		DB	X'99'	MPT30500
0F80	9A		1051		DB	X'9A'	MPT30510
0F81	9B		1052		DB	X'9B'	MPT30520
0F82	9D		1053		DB	X'9D'	MPT30530
0F83	9E		1054		DB	X'9E'	MPT30540
0F84	9F		1055		DB	X'9F'	MPT30550
0F85	C2		1056		DB	X'C2'	MPT30560
0F86	D5		1057		DB	X'05'	MPT30570
0F87	D6		1058		DB	X'06'	MPT30580
0F88	D7		1059		DB	X'07'	MPT30590
0F89	D8		1060		DB	X'08'	MPT30600
0F8A	D9		1061		DB	X'09'	MPT30610
0F8B	DA		1062		DB	X'0A'	MPT30620
0F8C	DB		1063		DB	X'0B'	MPT30630
0F8D	DD		1064		DB	X'0D'	MPT30640
0F8E	DE		1065		DB	X'0E'	MPT30650
0F8F	DF		1066		DB	X'0F'	MPT30660
0F90	E2		1067	T52LST	DB	X'E2'	MPT30670
0F91	00		1068		DB	*	MPT30680
			1069	*			MPT30690
			1070	*****			MPT30700
			1071	*			MPT30710
			1072	*	TEST 6		MPT30720
			1073	*			MPT30730
			1074	*	THIS TEST CHECKS THE SVC INSTRUCTIONS		MPT30740
			1075	*			MPT30750
0F92	C800	1074	1076	SUBT6	LHI	R13,TERR13	MPT30760
0F96	C830	009C	1077		LHI	R3,X'9C'	MPT30770
0F9A	4003	0000	1078	SVC004	STH	R13,0(R3)	MPT30780
0F9E	2632		1079		AIS	R3,2	MPT30790
0FA0	C530	008C	1080		CLHI	R3,X'BC'	MPT30800
0FA4	2035		1081		BNES	SVC004	MPT30810

R13 = ADDRESS OF ERROR ROUTINE

0FA6	246E	1082		LIS	R6,14		MPT30820
0FA8	2410	1083		LIS	R1,0		MPT30830
0FAA	2400	1084	SVC100	LIS	R0,0	RO = 0	MPT30840
0FAC	4000 0094	1085		STH	R0,X'94'	SVC ARGUMENT POINTER	MPT30850
0FBD	4000 0096	1086		STH	R0,X'96'	OLD PSW	MPT30860
0FB4	4000 0098	1087		STH	R0,X'98'		MPT30870
0FB8	4000 009A	1088		STH	R0,X'9A'	NEW PSW	MPT30880
0FBC	0831	1089		LHR	R3,R1	R1 = SVC CALL 0 THRU 15	MPT30890
0FBE	9131	1090		SLLS	R3,1	R3 = R1 X 2	MPT30900
0FC0	CA30 009C	1091		AHI	R3,X'9C'	R3 = R1 X 2 + 9C	MPT30910
0FC4	C800 1046	1092		LHI	R0,SVCINT		MPT30920
0FC8	4003 0000	1093		STH	R0,0(R3)		MPT30930
0FCC	0801	1094		LHR	R0,R1		MPT30940
0FCE	9102	1095		SLLS	R0,2	RO = 4 X R1	MPT30950
0FCD	0841	1096		LHR	R4,R1		MPT30960
0FD2	9141	1097		SLLS	R4,1	R4 = 2 X R1	MPT30970
0FD4	0A04	1098		AHR	R0,R4	RO = 6 X R1	MPT30980
0FD6	C850 0FE6	1099		LHI	R5,SVC200		MPT30990
0FDA	0A05	1100		AHR	R0,R5		MPT31000
0FDC	C200 0FE0	1101		LPSW	SVC150		MPT31010
0FDE	2805	1102	SVC150	DC	X'2805',SVC175		MPT31020
0FE2	0FE4						
0FE4	0300	1103	SVC175	BR	R0		MPT31030
0FE6	E100 0000	1104	SVC200	SVC	0,R0		MPT31040
0FEA	0300	1105		BR	R13		MPT31050
	0000 0FEC	1106	SVC	EQU	*		MPT31060
0FEC	E110 0001	1107	SVC201	SVC	1,R1		MPT31070
0FF0	0300	1108		BR	R13		MPT31080
0FF2	E120 0002	1109	SVC202	SVC	2,R2		MPT31090
0FF6	0300	1110		BR	R13		MPT31100
0FF8	E130 0003	1111		SVC	3,R3		MPT31110
0FFC	0300	1112		BR	R13		MPT31120
0FFE	E140 0004	1113		SVC	4,R4		MPT31130
1002	0300	1114		BR	R13		MPT31140
1004	E150 0005	1115		SVC	5,R5		MPT31150
1008	0300	1116		BR	13		MPT31160
100A	E160 0006	1117		SVC	6,R6		MPT31170
100E	0300	1118		BR	R13		MPT31180
1010	E170 0007	1119		SVC	7,R7		MPT31190
1014	0300	1120		BR	R13		MPT31200
1016	E180 0008	1121	SVC208	SVC	8,R8		MPT31210
101A	0300	1122		BR	R13		MPT31220
101C	E190 0009	1123		SVC	9,R9		MPT31230
1020	0300	1124		BR	R13		MPT31240
1022	E1A0 000A	1125		SVC	10,R10		MPT31250
1026	0300	1126		BR	R13		MPT31260
1028	E1B0 000B	1127		SVC	11,R11		MPT31270
102C	0300	1128		BR	13		MPT31280
102E	E1C0 000C	1129	SVC212	SVC	12,R12		MPT31290
1032	0300	1130		BR	13		MPT31300
1034	E1D0 000D	1131		SVC	13,R13		MPT31310
1038	0300	1132		BR	R13		MPT31320
103A	E1E6 0000	1133		SVC	14,0(R6)		MPT31330
103E	0300	1134		BR	R13		MPT31340
1040	E1F0 000F	1135	SVC215	SVC	15,R15		MPT31350

1044	0300	1136		BR	R13		MPT31360	
		1137	*				MPT31370	
1046	4840 0094	1138	SVCINT	LH	R4,X'94'	SUPVC CALL ARGU. POINTER	MPT31380	
104A	0541	1139		CLHR	R4,R1	MUST EQUAL R1	MPT31390	
104C	0230	1140		BNER	R13		MPT31400	
104E	4840 0096	1141		LH	R4,X'96'	OLD PSW	MPT31410	
1052	0540 2805	1142	M5005	CLHI	R4,X'2805'		MPT31420	
1056	0230	1143		BNER	R13		MPT31430	
1058	4840 0098	1144		LH	R4,X'98'	OLD PSW LOCATION	MPT31440	
105C	2604	1145		AIS	R0,4	MUST EQUAL R3 + 4	MPT31450	
105E	0504	1146		CLHR	R0,R4		MPT31460	
1060	0230	1147		BNER	R13		MPT31470	
1062	4003 0000	1148		STH	R13,C(R3)	RESTORE ERR. ADD. AT SVC TESTED	MPT31480	
1066	2611	1149		AIS	R1,1		MPT31490	
1068	0510 0010	1150		CLHI	R1,16		MPT31500	
106C	4230 0FAA	1151		BNE	SVC100		MPT31510	
1070	4300 128E	1152		B	NOERR		MPT31520	
		1153	*				MPT31530	
1074	24F1	1154	TERR13	LIS	R15,1		MPT31540	
1076	4300 1256	1155		B	ERROR		MPT31550	
		1156	*				MPT31560	
		1157	*****					MPT31570
		1158	*				MPT31580	
		1159	*	TEST	7		MPT31590	
		1160	*				MPT31600	
		1161	*	THIS TEST CHECKS THAT THE EXTERNAL CLOCK WILL INTERRUPT			MPT31610	
		1162	*	WHEN ENABLED.			MPT31620	
		1163	*				MPT31630	
		1164	*****					MPT31640
		1165	*				MPT31650	
		1166	SUBT7	EQU	*		MPT31660	
107A	0000 107A	1167		LHI	R1,INTETAKN		MPT31670	
107E	4820 02E0	1168		LH	R2,CLKADR	GET EXT. CLOCK ADDRESS	MPT31680	
1082	9121	1169		SLLS	R2,1	DOUBLE	MPT31690	
1084	4012 0000	1170		STH	R1,X'D0'(R2)	INTERRUPT VECTOR FOR CLOCK	MPT31700	
1088	0810 10F0	1171		LHI	R1,CLO3		MPT31710	
108C	0320 13F0	1172		LB	R2,INDEV	GET CONSOLE ADDRESS	MPT31720	
1090	0832	1173		LHR	R3,R2		MPT31730	
1092	9131	1174		SLLS	R3,1		MPT31740	
1094	4013 0000	1175		STH	R1,X'D0'(R3)	INTERRUPT VECTOR FOR CONSOLE	MPT31750	
1098	0840 1164	1176		LHI	R4,CLOCBEQ		MPT31760	
109C	0850 1188	1177		LHI	R5,CLOCEND+1		MPT31770	
10A0	0788	1178		XHR	R8,R8		MPT31780	
10A2	9578	1179		EPSR	R7,R8	DISABLE INTERRUPTS	MPT31790	
10A4	4810 13E6	1180		LH	R1,MICFLAG	IS IT ON MICRO I/O	MPT31800	
10A8	4230 10D2	1181		BNZ	CLO5	YES, BRANCH	MPT31810	
10AC	0320 13EF	1182		LB	R2,OUTDEV	GET TRANSMITTER ADDRESS	MPT31820	
10B0	0E20 13E0	1183		OC	R2,OUTCMC	OUTPUT COMMAND	MPT31830	
10B4	9023	1184		SSR	R2,R3		MPT31840	
10B6	2081	1185		BTBS	8,1	LOOP ON BUSY	MPT31850	
10B8	9624	1186		WSR	R2,R4	PRINT MESSAGE ENABLE CLOCK...	MPT31860	
10BA	0320 13F0	1187		LB	R2,INDEV	DISABLE & PRESS BREAK	MPT31870	
10BE	0E20 13E1	1188		OC	R2,INCMND		MPT31880	
10C2	C200 10CE	1189		LPSW	CLO6		MPT31890	
10C6	41F0 1234	1190	CLO7	3AL	R15,TSTBRKC	WAIT FOR BREAK	MPT31900	

100A	4300	1102	1191	B	CL04		MPT31910
100E	6800		1192	CL06	DC	X'6800',CL07	MPT31920
1000	10C6						
1002	DE20	13E4	1193	CL05	OC	R2,CONOUT	MPT31930
1006	9023		1194		SSR	R2,R3	MPT31940
1008	2081		1195		BTBS	8,1	MPT31950
100A	9624		1196		WBR	R2,R4	MPT31960
100C	DE20	13E1	1197		OC	R2,INCMND	MPT31970
100E	C200	10E4	1198		LPSW	CL0	MPT31980
10E4	6800		1199	CL0	DC	X'6800',CL02	MPT31990
10E6	10E8						
10E8	41F0	12B4	1200	CL02	BAL	R15,TSTBRKC	MPT32000
10EC	4300	1102	1201		B	CL04	MPT32010
			1202	*			MPT32020
10F0	0000		1203	CL03	DCX	0	MPT32030
10F2	0000		1204		DCX	0	MPT32040
10F4	0000		1205		DCX	0	MPT32050
10F6	C8F0	1102	1206		LHI	R15,CL04	MPT32060
10FA	40F0	0CC6	1207		STH	R15,8UFR2+X'1E'	MPT32070
10FE	4300	12B4	1208		B	TSTBRK	MPT32080
1102	24F0		1209	CL04	LIS	R15,0	MPT32090
1104	954F		1210		EPSR	R4,R15	MPT32100
1106	24F1		1211		LIS	R15,1	MPT32110
1108	4300	1256	1212		B	ERROR	MPT32120
			1213	*			MPT32130
110C	0000		1214	INTETAKN	DC	0	MPT32140
110E	0000		1215		DC	0	MPT32150
1110	0000		1216		DC	0	MPT32160
1112	C810	115A	1217		LHI	R1,INTE1	MPT32170
1116	4830	02E0	1218		LH	R3,CLKADR	MPT32180
111A	9131		1219		SLLS	R3,1	MPT32190
111C	4013	0000	1220		STH	R1,X'D0'(R3)	MPT32200
1120	0832		1221		LHR	R3,R2	MPT32210
1122	9131		1222		SLLS	R3,1	MPT32220
1124	4013	0000	1223		STH	R1,X'D0'(R3)	MPT32230
1128	41F0	12B4	1224		BAL	R15,TSTBRKC	MPT32240
112C	C200	1130	1225		LPSW	CL08	MPT32250
1130	6800		1226	CL08	DC	X'6800',CL09	MPT32260
1132	1134						
1134	0777		1227	CL09	XHR	R7,R7	MPT32270
1136	2671		1228	CL0A	AIS	R7,1	MPT32280
1138	C570	1F00	1229		CLHI	R7,X'1F00'	MPT32290
113C	4230	1136	1230		BL	CL0A	MPT32300
1140	0832		1231	CL0B	LHR	R3,R2	MPT32310
1142	9131		1232		SLLS	R3,1	MPT32320
1144	C810	123E	1233		LHI	R1,DEVERR	MPT32330
1148	4013	0000	1234		STH	R1,X'D0'(R3)	MPT32340
114C	4830	02E0	1235		LH	R3,CLKADR	MPT32350
1150	9131		1236		SLLS	R3,1	MPT32360
1152	4013	0000	1237		STH	R1,X'D0'(R3)	MPT32370
1156	4300	128E	1238		B	NOERR	MPT32380
			1239	*			MPT32390
115A	0000		1240	INTE1	DC	0	MPT32400
115C	0000		1241		DC	0	MPT32410
115E	0000		1242		DCX	0	MPT32420

1160	4300 1136	1243	INTE2	B	CLOA		MPT32430
		1244	*				MPT32440
		1245	*				MPT32450
1164	000A	1246	CLOCBEQ	DCX	000A		MPT32460
1166	FFFF	1247		DC	X'FFFF'		MPT32470
1168	4649 5253 5420 454E	1248		DC	C'FIRST ENABLE EXTERNAL CLOCK'		MPT32480
1170	4142 4C45 2045 5854						
1172	4552 4E41 4C20 434C						
1180	4F43 4820						
1184	0A00	1249		DCX	0A00		MPT32490
1186	FFFF	1250		DCX	FFFF		MPT32500
1188	5448 454E 2044 4953	1251		DC	C'THEN DISABLE EXTERNAL CLOCK'		MPT32510
1190	4142 4C45 2045 5854						
1198	4552 4E41 4C20 434C						
11A0	4F43 4820						
11A4	000A	1252		DC	X'000A'		MPT32520
11A6	FFFF	1253		DCX	FFFF		MPT32530
11A8	5052 4553 5320 4252	1254		DC	C'PRESS BREAK KEY'		MPT32540
11B0	4541 4820 4845 5920						
11B8	000A	1255		DC	X'000A'		MPT32550
11BA	FFFF	1256	CLOCEND	DC	X'FFFF'		MPT32560
		1257	*				MPT32570
		1258	*				MPT32580
		1259	*				MPT32590
		1260					MPT32600
		1261	*				MPT32610
		1262	READ1	EQU	*		MPT32620
11B0	0000 118C	1263		LB	R2,INDEV		MPT32630
11C0	D320 13F0	1264		OC	R2,INCMND		MPT32640
11C4	4810 13E6	1265		LH	R1,MICFLAG	IS IT ON MICRO I/O	MPT32650
11C8	4230 110C	1266		BNZ	READ3	YES, BRANCH	MPT32660
11CC	9823	1267		RDR	R2,R3		MPT32670
11CE	9023	1268		SSR	R2,R3		MPT32680
11D0	2281	1269		BFBS	R,1		MPT32690
11D2	9023	1270	READ2	SSR	R2,R3	RR2 = 2 , R3 = CON STATUS	MPT32700
11D4	4290 11D2	1271		BTC	9,READ2		MPT32710
11D8	9820	1272		RDR	R2,R0	READ THE KEY PRESSED IN R0	MPT32720
11DA	2306	1273		BS	READ33		MPT32730
11DC	9023	1274	READ3	SSR	R2,R3		MPT32740
11DE	4290 110C	1275		BTC	9,READ3		MPT32750
11E2	9820	1276		RDR	R2,R0		MPT32760
11E4	9A20	1277		WDR	R2,R0	ECHO	MPT32770
11E6	C400 007F	1278	READ33	NHI	R0,X'7F'	ZERO OUT THE PARITY BIT	MPT32780
11EA	030E	1279		BR	R14		MPT32790
11EC	D320 13EF	1280	WRITE1	LB	R2,OUTDEV	OUTPUT ROUTINE	MPT32800
11F0	DE20 13E0	1281		OC	R2,OUTCMD		MPT32810
11F4	9023	1282	WRITE3	SSR	R2,R3		MPT32820
11F6	4210 11EC	1283		BTC	1,WRITE1		MPT32830
11FA	4280 11F4	1284		BTC	8,WRITE3		MPT32840
11FE	9A20	1285		WDR	R2,R0		MPT32850
1200	030E	1286		BR	R14		MPT32860
1202	C800 000D	1287	CRLF	LHI	R0,13	PRINT CR LF	MPT32870
1206	41E0 11E8	1288		BAL	R14,WRITE1		MPT32880
120A	C800 000A	1289		LHI	R0,10		MPT32890
120E	41E0 11EC	1290		BAL	R14,WRITE1		MPT32900

1212	C800	00FF	1291	LHI	R0,X'FF'		MPT32910
1216	41E0	11EC	1292	BAL	R14,WRITE1	WRITE NULLS	MPT32920
121A	41EC	11EC	1293	BAL	R14,WRITE1		MPT32930
121E	030C		1294	BR	R12		MPT32940
1220	030C		1295	BR	R12		MPT32950
			1296	*			MPT32960
			1297	*			MPT32970
1222	24F1		1298	FLPTNT	LIS R15,1	FLPT ARITH. FAULT INTRPT.	MPT32980
1224	230A		1299	BS	ERR2F		MPT32990
1226	24F2		1300	ILGINT	LIS R15,2	ILL. INSTR. INTRPT.	MPT33000
1228	2308		1301	BS	ERR2F		MPT33010
122A	24F3		1302	MALFTN	LIS R15,3	MACH. MALFTN. INTRPT.	MPT33020
122C	2306		1303	BS	ERR2F		MPT33030
122E	24F4		1304	EXTINT	LIS R15,4	EXTERNAL INTRPT.	MPT33040
1230	2304		1305	BS	ERR2F		MPT33050
1232	24F5		1306	DVDFLT	LIS R15,5	FIXD. PT. DIV. FAULT INTRPT.	MPT33060
1234	2302		1307	BS	ERR2F		MPT33070
1236	24F6		1308	SQINT	LIS R15,6	SYSTEM Q INTERRUPT	MPT33080
1238	2307		1309	ERR2F	BS ERR2FF		MPT33090
123A	24F7		1310	SVCERR	LIS R15,7		MPT33100
123C	2305		1311	BS	ERR2FF		MPT33110
123E	0000		1312	DEVERR	DC 0		MPT33120
1240	0000		1313	DC	0		MPT33130
1242	0000		1314	DC	0		MPT33140
1244	24F8		1315	LIS	R15,8		MPT33150
1246	C800	0046	1316	ERR2FF	LHI R0,C'F'	'F' ERRORS	MPT33160
124A	C200	124E	1317	LPSW	WAITF		MPT33170
124E	8000		1318	WAITF	DC X'8000',ERR2		MPT33180
1250	126C						
1252	4000	1344	1319	STH	R0,TESTNO		MPT33190
			1320	*			MPT33200
1256	950D		1321	ERROR	EPSR R13,R13	SAVE COND. CODE FOR SUBT. 4	MPT33210
1258	2471		1322	LIS	R7,1		MPT33220
125A	080F		1323	LHR	R0,R15		MPT33230
125C	9108		1324	SLLS	R0,8		MPT33240
125E	900C		1325	SRLS	R0,12		MPT33250
1260	CA00	0030	1326	AHI	R0,X'30'		MPT33260
1264	C500	003A	1327	CLHI	R0,X'3A'		MPT33270
1268	2182		1328	ELS	ERR2		MPT33280
126A	2607		1329	AIS	R0,7		MPT33290
126C	D200	1346	1330	ERR2	STB R0,ERRNO		MPT33300
1270	C4F0	000F	1331	NHI	R15,15		MPT33310
1274	CAFC	0030	1332	AHI	R15,X'30'		MPT33320
1278	C5FC	003A	1333	CLHI	R15,X'3A'		MPT33330
127C	2182		1334	BLS	ERR4		MPT33340
127E	26F7		1335	AIS	R15,7		MPT33350
1280	D2FC	1347	1336	ERR4	STB R15,ERRNO+1		MPT33360
			1337	*			MPT33370
1284	C840	133A	1338	LHI	R4,ERRMSG		MPT33380
1288	C950	1349	1339	LHI	R5,ERRMSG+15		MPT33390
128C	2306		1340	BS	PRTMSG		MPT33400
			1341	*			MPT33410
128E	2470		1342	NOERR	LIS R7,0		MPT33420
1290	C840	134C	1343	LHI	R4,NOER		MPT33430
1294	C850	1357	1344	LHI	R5,NOER+11		MPT33440

1298	D320	13EF	1345	PRTMSG	LB	R2,OUTDEV	MPT33450
129C	DE20	13E0	1346		JC	R2,OUTCMD	MPT33460
12A0	9023		1347		SSR	R2,R3	MPT33470
12A2	4290	1298	1348		BTC	9,PRTMSG	MPT33480
12A6	9524		1349		WBR	R2,R4	MPT33490
12A8	4200	13EC	1350		LH	RO,IOERHW	MPT33500
12AC	4230	02E2	1351		BNZ	PART2	MPT33510
12B0	4300	0430	1352		B	RENTRY	MPT33520
			1353	*			MPT33530
	0000	1284	1354	TSTBRK0	EQU	*	MPT33540
12B4	2400		1355		LIS	RO,0	MPT33550
12B6	4000	13DE	1356		STM	RO,OUTFLAG	MPT33560
12BA	2304		1357		BS	TBRK	MPT33570
	0000	128C	1358	TSTBRK	EQU	*	MPT33580
12BC	2401		1359		LIS	RO,1	MPT33590
12BE	4000	13DE	1360		STM	RO,OUTFLAG	MPT33600
	0000	12C2	1361	TBRK	EQU	*	MPT33610
12C2	0000	0CA8	1362		STM	RO,BUFR2	MPT33620
12C6	0320	13F0	1363		LB	R2,INDEV	MPT33630
	0C00	12CA	1364	TSTBRK1	EQU	*	MPT33640
12CA	9023		1365		SSR	R2,R3	MPT33650
12CC	C330	0020	1366		THI	R3,X'20'	MPT33660
12D0	4330	132C	1367		BZ	TSTBRK8	MPT33670
	0000	12D4	1368	TSTBRK12	EQU	*	MPT33680
12D4	4810	13E6	1369		LH	R1,MICFLAG	MPT33690
12D8	4230	130C	1370		BNZ	TSTBRK14	MPT33700
12DC	4800	13E8	1371		LH	RO,CRTFLG	MPT33710
12E0	2334		1372		BZS	TSTBRK11	MPT33720
12E2	C530	0024	1373		CLHI	R3,X'24'	MPT33730
12E6	4230	12CA	1374		BNE	TSTBRK1	MPT33740
12EA	9824		1375		RDR	R2,R4	MPT33750
12EC	9023		1376		SSR	R2,R3	MPT33760
12EE	2281		1377		BFB5	8,1	MPT33770
12F0	0844		1378		LHR	R4,R4	MPT33780
12F2	2336		1379		BZS	TSTBRK3	MPT33790
	0000	12F4	1380	TSTBRK11	EQU	*	MPT33800
12F4	9023		1381		SSR	R2,R3	MPT33810
12F6	C330	0020	1382		THI	R3,X'20'	MPT33820
12FA	4230	12D4	1383		BNZ	TSTBRK12	MPT33830
12FE	C800	7FFF	1384	TSTBRK3	LHI	RO,X'7FFF'	MPT33840
1302	2701		1385	TSTBRK4	SIS	RO,1	MPT33850
1304	2031		1386		BNZS	TSTBRK4	MPT33860
	0000	1306	1387	TSTBRK2	EQU	*	MPT33870
1306	0100	0CA8	1388		LM	RO,BUFR2	MPT33880
130A	030F		1389		BR	R15	MPT33890
130C	C330	0020	1390	TSTBRK14	THI	R3,X'20'	MPT33900
1310	4330	1306	1391		BZ	TSTBRK2	MPT33910
1314	C800	7FFF	1392	TSTBRK16	LHI	RO,X'7FFF'	MPT33920
1318	2701		1393	TSTBRK17	SIS	RO,1	MPT33930
131A	2031		1394		BNZS	TSTBRK17	MPT33940
131C	9824		1395		RDR	R2,R4	MPT33950
131E	9023		1396		SSR	R2,R3	MPT33960
1320	C330	0024	1397		THI	R3,X'24'	MPT33970
1324	4230	1314	1398		BNZ	TSTBRK16	MPT33980
1328	4300	1306	1399		B	TSTBRK2	MPT33990

IF IOERHW = 0 , I/O ERR.

SENSE STATUS
BREAK KEY PRESSED

IS IT MICRO I/O BUS
YES, BRANCH
IS IT PASALA

READ DUMMY CHARACTER

WAIT FOR BRK RELEASED

DELAY

NOT A BREAK, BRANCH
DELAY ROUTINE

DO A READ TO CLEAR BREAK

13CA	000A		1446	DC	X'D0A'		MPT34460
13CC	FFFF		1447	DCX	FFFF		MPT34470
13CE	5052	4553 5320 4252	1448	PRBRK	DC	C'PRESS BRK'	MPT34480
13D6	4820						
13D8	000A		1449	DC	X'D0A'		MPT34490
13DA	FFFF		1450	DCX	FFFF		MPT34500
	0000	13D6	1451	BRK	EQU	*-1	MPT34510
			1452	*			MPT34520
			1453	*			MPT34530
			1454	*			MPT34540
13DC	0000		1455	CPUNO	DC	0	MPT34550
13DE	0000		1456	OUTFLAG	DC	0	MPT34560
13E0	0282		1457	OUTCMD	DC	X'0282'	MPT34570
	0000	13E1	1458	INCMND	EQU	OUTCMD+1	MPT34580
13E2	ABB9		1459	CRTOUT	DCX	ABB9	MPT34590
13E4	0282		1460	CONOUT	DCX	0282	MPT34600
13E6	0000		1461	MICFLAG	DCX	0	MPT34610
13E8	0000		1462	CRTFLG	DCX	0	MPT34620
13EA	0000		1463	FIRSTCMD	DCX	0	MPT34630
13EC	0000		1464	IOERHW	DC	0	MPT34640
13EE	00		1465	SUBTNO	DB	0	MPT34650
13EF	00		1466	OUTDEV	DB	X'00'	MPT34660
13F0	00		1467	INDEV	DB	X'00'	MPT34670
13F1	03		1468	RESET	DB	X'03'	MPT34680
13F2	00		1469	STATUS	DB	0	MPT34690
13F3	00		1470		DB	*	MPT34700
13F4	00		1471	\$C4	DB	0	MPT34710
13F5	00		1472	\$54	DB	0	MPT34720
13F6	00		1473	\$58	DB	0	MPT34730
13F7	00		1474	\$48	DB	0	MPT34740
13F8	00		1475	\$44	DB	0	MPT34750
13F9	00		1476	\$56	DB	0	MPT34760
13FA	00		1477	\$66	DB	0	MPT34770
13FB	00		1478	\$64	DB	0	MPT34780
			1479	*			MPT34790
13FC			1480	TABLE	DS	12	MPT34800
			1481	*			MPT34810
	0000	1407	1482	LNZB	EQU	*-1	MPT34820
			1483	*	CHKSUM		MPT34830
			1484	*	(THE FOLLOWING CODE IS NOT PART OF THE TEST.)		MPT34840
			1485	*			MPT34850
			1486	*			MPT34860
1408	2400		1487	SCHKSUM	LIS	R0,0	MPT34870
140A	9510		1488		EPSR	R1,R0	MPT34880
			1489	*			MPT34890
140C	C810	0200	1490		LDAI	R1,ORIGIN1	MPT34900
1410	2421		1491		LIS	R2,1	MPT34910
1412	C830	1407	1492		LDAI	R3,LNZB	MPT34920
1416	2440		1493		LIS	R4,0	MPT34930
1418	0351	0000	1494	\$GEN	LB	R5,0(R1)	MPT34940
141C	0745		1495		XAR	R4,R5	MPT34950
141E	C110	1418	1496		BXLE	R1,\$GEN	MPT34960
1422	0240	0097	1497		STB	R4,MN+3	MPT34970
			1498	*			MPT34980
1426	C810	0080	1499	STAPE	LHI	R1,X'0080'	MPT34990

CRT WRITE - READ COMMANDS
MICRO I-O COMMANDS

SUBTEST NO. 1 THROUGH 7
OUTDEV = 5 = MIC ADDRESS

PUNCH M17 TAPE WITH CHECKSUM
SELECT REG. SET 0

START
INCREMENT
FINAL
CHECKSUM BYTE

CHECKSUM BYTE TO BOOT LOADER

142A	9E21	1500		OCR	R2,R1	DISPLAY : NORMAL MODE	MPT35000
142C	9444	1501		EXBR	R4,R4		MPT35010
142E	9824	1502		WHR	R2,R4	CHECKSUM BYTE TO D1	MPT35020
1430	9411	1503		EXBR	R1,R1		MPT35030
1432	9501	1504		EPSR	R0,R1	HALT PROCESSOR.	MPT35040
1434	D360 007A	1506	\$PUNCH	LB	R6,X'7A'	GET BOUTDV (PUNCH) ADDRESS.	MPT35060
1438	DE60 007B	1507		OC	R6,X'7B'	START TAPE PUNCH	MPT35070
143C	9D60	1508		SSR	R6,R0		MPT35080
143E	2081	1509		BTBS	8,1		MPT35090
1440	41F0 1482	1510		BAL	R15,\$STAPL	PUNCH LEADER	MPT35100
1444	9411	1511		EXBR	R1,R1	(R1) = X'0080'	MPT35110
1446	C830 00CF	1512		LHI	R3,X'CF'		MPT35120
144A	DA61 0000	1513	\$PNCH1	WD	R6,0(R1)	PUNCH BOOT LOADER	MPT35130
144E	9D60	1514		SSR	R6,R0		MPT35140
1450	2081	1515		BTBS	8,1		MPT35150
1452	C110 144A	1516		BXLE	R1,\$PNCH1		MPT35160
1456	41F0 1488	1517		BAL	R15,\$STAPL1	PUNCH ONE-FOLD GAP.	MPT35170
		1518	*				MPT35180
145A	D340 0097	1519		LB	R4,MN+3	GET CHECKSUM BYTE	MPT35190
145E	C810 0200	1520		LDAI	R1,ORIGIN1	(NORMALLY X'A00')	MPT35200
1462	C830 1407	1521		LJAI	R3,LNZB		MPT35210
1466	D351 0000	1522	\$PNCH2	LB	R5,0(R1)	PUNCH PROGRAM	MPT35220
146A	0745	1523		XAR	R4,R5		MPT35230
146C	9A65	1524		WDR	R6,R5		MPT35240
146E	9401	1525		EXBR	R0,R1		MPT35250
1470	9820	1526		WHR	R2,R0	DATA ADDRESS TO DISPLAY.	MPT35260
1472	9D60	1527		SSR	R6,R0		MPT35270
1474	2081	1528		BTBS	8,1		MPT35280
1476	C110 1466	1529		BXLE	R1,\$PNCH2		MPT35290
147A	41F0 1482	1530		BAL	R15,\$STAPL	PUNCH TRAILER.	MPT35300
147E	4300 1426	1531		B	STAPE	DISPLAY CHECKSUM, HALT PROCESSOR.	MPT35310
1482	C800 0100	1533	\$TAPL	LHI	R0,256	TO PUNCH BLANK LEADER	MPT35330
1486	2303	1534		BS	\$TAPLP		MPT35340
1488	C800 0055	1535	\$TAPL1	LHI	R0,85	TO PUNCH 1-FOLD GAP	MPT35350
148C	2701	1536	\$TAPLP	SIS	R0,1		MPT35360
148E	032F	1537		BNPR	R15	RETURN	MPT35370
1490	2430	1538		LIS	R3,0		MPT35380
1492	9A63	1539		WDR	R6,R3	PUNCH BLANK FRAME	MPT35390
1494	9D68	1540		SSR	R6,R8		MPT35400
1496	2081	1541		BTBS	8,1		MPT35410
1498	2206	1542		BS	\$TAPLP	CONTINUE.	MPT35420
		1543	*				MPT35430
149A		1544		END			MPT35440

PURETOP 0000 0000R
 RO 0000 0000

8*	68	69	70	71	72	73	74	75	76	80	82	83
84	85	86	87	88	89	104	105	106	107	108	109	127
135	137	138	139	141	143	145	147	149	151	153	205	206
208	210	215	216	223	224	239	241	243	246	247	248	250
252	254	255	257	275	278	279	284	314	315	319	326	327
336	337	341	347	348	361	362	363	364	365	366	367	368
369	370	371	373	374	376	377	414	415	417	418	420	421
423	424	426	427	449	450	453	454	455	467	468	470	472
474	474	478	479	479	483	485	486	487	489	489	491	492
498	499	500	501	506	508	508	522	524	526	538	539	540
547	548	560	564	582	583	584	587	588	589	590	591	599
600	601	602	607	608	610	611	613	614	616	617	637	638
640	642	644	646	648	650	652	654	656	661	663	666	692
714	715	716	717	718	751	752	765	766	772	773	774	775
776	777	778	779	780	781	782	789	801	802	805	814	815
823	824	826	827	828	834	835	838	839	842	843	844	848
848	859	860	861	862	868	868	869	870	871	872	886	886
991	992	993	994	1024	1025	1029	1030	1031	1084	1085	1086	1087
1038	1092	1093	1094	1095	1098	1100	1103	1104	1145	1146	1272	1276
1277	1278	1285	1287	1289	1291	1316	1319	1323	1324	1325	1326	1327
1329	1330	1350	1355	1356	1359	1360	1362	1371	1384	1385	1388	1392
1393	1401	1403	1487	1488	1504	1508	1514	1525	1526	1527	1533	1535
1536												

R1 0000 0001

9*	32	42	43	48	78	79	91	92	93	94	95	96
100	101	102	103	110	111	112	115	179	189	190	191	192
193	194	195	196	197	198	199	200	201	202	256	257	260
289	295	299	300	301	302	310	313	322	325	332	335	342
346	355	401	433	456	471	472	476	496	497	504	505	513
515	523	524	529	532	532	534	549	551	674	675	687	688
696	697	708	709	719	720	726	727	888	983	984	986	1003
1003	1026	1083	1089	1094	1096	1107	1139	1149	1150	1167	1170	1171
1175	1180	1217	1220	1223	1233	1234	1237	1265	1369	1488	1490	1494
1496	1499	1500	1503	1503	1504	1511	1511	1513	1516	1520	1522	1525
1529												

R10 0000 000A

18*	118	127	129	130	906	1125						
19*	119	130	350	351	352	354	360	581	595	665	677	690
699	908	1127										

R12 0000 000C

20*	177	277	353	379	393	620	621	910	1129	1294	1295	
21*	597	604	606	609	612	615	618	623	636	639	641	643
645	647	649	651	653	655	657	662	664	912	1076	1078	1105

R13 0000 000D

1108	1110	1112	1114	1118	1120	1122	1124	1126	1131	1132	1134	1136
1140	1143	1147	1148	1321	1321							

R14 0000 000E

22*	128	134	136	154	238	244	249	253	519	625	914	1279
1286	1288	1290	1292	1293	1404							

R15 0000 000F

23*	274	275	276	439	440	441	442	443	444	445	446	447
448	481	520	536	556	557	568	569	598	627	630	680	682
702	704	723	790	793	809	810	817	820	831	852	876	879
887	889	891	893	895	897	899	901	903	905	907	909	911
913	915	1001	1013	1035	1135	1154	1190	1200	1206	1207	1209	1210
1211	1224	1296	1300	1302	1304	1306	1308	1310	1315	1323	1331	1332
1333	1335	1336	1389	1510	1517	1530	1537					

R2 0000 0002

10*	27	31	90	113	116	117	120	121	227	228	233	235
282	283	284	286	287	288	291	293	295	297	299	300	304
306	309	312	317	321	324	329	331	334	339	341	344	354

S1RA	0000 07E0	473	475	477	481*	484	488	490	493
S1RB	0000 085C	520*	525						
S1RB1	0000 088C	527	530	536*	541				
S1T	0000 08DE	561*	563						
S1XINT	0000 08DC	547	560*						
S2	0000 0908	582*							
S26MSD	0000 0AB9	731	739*						
S26MSG	0000 0A9E	382	730	732*					
S26MSG1	0000 0AB3	383	736*						
S34B	0000 0AD8	754	768	772*					
S34C	0000 0B04	784*							
S3A	0000 0AC6	753	754*						
S3B	0000 0B16	790*	806	874					
S3B4	0000 0B22	791	796*						
S3B5	0000 0B32	801*							
S3B6	0000 0B44	803	807*						
S3B61	0000 0B52	809	812*						
S3C	0000 0B66	818	823*						
S3END	0000 0B7A	829*							
S3INT	0000 0B80	772	848*						
S3MM	0000 0EC8	752	766	849	973*				
S3R2	0000 0B60	820*							
S3R3	0000 0B7E	831*	845						
S3R4	0000 0BB8	852*	864						
S3R4B	0000 0BBC	854*	856						
S4A	0000 0AD4	767	768*						
S4B	0000 0BDE	863	864*						
S4D	0000 0B84	825	834*						
S4END	0000 0BAC	846*							
S4INT1	0000 0BCC	850	859*						
S4INT2	0000 0BE2	860	868*						
S4MM	0000 0EC9	975*							
S4PSW1	0000 0C04	834	859	882*					
S4PSW2	0000 0C06	838	869	883*					
S4R1	0000 0B1C	793*							
S4R5	0000 0BF8	836	876*						
S4R6	0000 0BFE	840	879*						
SIP	0000 07E6	480	483*						
SKIP	0000 0918	585	587*						
SQINT	0000 1236	201	726	1308*					
SS9	0000 0ABA	388	741*						
STATUS	0000 13F2	1469*							
SUB12	0000 07B8	464	465*						
SUB13	0000 07BC	465	466*						
SUBT1	0000 07B4	262	463*						
SUBT2	0000 0904	263	580*						
SUBT3	0000 0ABC	264	747*						
SUBT4	0000 0ACA	265	761*						
SUBT5	0000 0ECA	266	983*						
SUBT6	0000 0F92	267	1076*						
SUBT7	0000 107A	268	1166*						
SUBTNO	0000 13EE	248	254	824	1465*				
SUBTST	0000 13A0	229	1436*						
SUBTSTND	0000 13AF	230	1441*						
SVC	0000 0FEC	1106*							

