Publication Number 06-211

MODEL 8/16 E PROCESSOR

TEST PART 1

Consists of:

Program Description	**06-211M95A15**
16-Bit Program Listing	**06-211M96A13**
Bootstrap Object Tape	**06-211M17**

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MODEL 8/16E PROCESSOR TEST PART 1

1. MODEL 8/16E PROCESSOR TEST PART 1 — 06-211R00

1.1 Related Documents

Test Program Listing	06-211R00M96A13
Test Program Tape	06-211R00M17

1.2 Test Programs to be Run Prior to Running this Test

Model 8/16E Memory Test	06-221

1.3 Other Applicable Test Programs

Common Teletype Basic Confidence Test	06-004
Common Current Loop Interface	06-134
Common Carousel Test	06-183
Common CRT Test	06-146
Series 16 Floating Point Test	06-205

2. PURPOSE OF TEST

This program exhaustively tests the Model 9/16 Processor. All the logic and arithmetic instructions are tested. The Floating Point instructions are not tested (refer to Test 06-205).

3. MINIMUM HARDWARE REQUIRED

3.1 Processor

Model 8/16E Processor
10KB of Memory

3.2 Console Device

Teletype
CRT
Carousel 15, 30, 35 or 300

3.3 Paper Tape Reader

Teletype, High Speed Paper Tape Reader, or Carousel 35

4. REQUIREMENTS OF MACHINE UNDER TEST

Location IO contains X'02' for the Console address. If the Console address is different, this location must be changed. (See Appendix 1 for appropriate setup.)

5. LOADING PROCEDURES

5.1 Test Tape Format

The test tape 06-211R00A13 is in absolute, non-zoned object type (M17) with a front end bootloader. This test occupies approximately 9KB of Memory.

5.2 Normal Loading Procedure

Manually enter the X'50' sequence as shown below into memory:

	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'
For TTY or Carousel 35	X'78'	X'0294'
HSPTR	X'78'	X'0399'
HSPTR/P	X'78'	X'1399'

Place the program tape in the paper tape reader. Execute at address X'30'.

When the Processor halts, observe the Display Panel. If zero is shown loading is complete; otherwise repeat the loading procedure.

5.3 Multi-Media Diagnostic Loading Procedure

To load this program from the INTERDATA Multi-Media Diagnostic System, refer to Publication Number 06-176A15.

5.4 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:

```
Model 8/16E PROCESSOR TEST PART 1  06-211R00
CPU
*
```

6. OPERATING PROCEDURES

6.1 Normal Testing

After loading is complete, and the proper Processor number has been entered (see Appendix 2), the following is printed:

```
Enter Ø 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 4 for meaning of errors.)

6.2 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 and is also continuously copied into the Display Panel 2. 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). In this case, the error, which is 1NF1 through 1NF9 (N = subtest number in which the error occurred), is copied into the Display Panel and 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'. In this case, X'FFFF' is copied into the Display Panel and 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.

7. ERROR PROCEDURES

In case of an error, further action depends on the type of error (see Appendix 4 for a description of each error number).

Case 1 - the program detects an error; the error number in Display 2 is the same as the error number printed on the Console. The error number dictionary in Appendix 4 should be referred to pinpoint the error.

Case 2 - If a spurious interrupt is detected, the error number is copied into the Display Panel 2 and 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 4. 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 4. 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 4. 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.

7.1 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 4. 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 is 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 4. 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 Dividend = 0	FFFF Divisor = -1	0000 0000 actual values of remainder and quotient	0000 0000 expected values of remainder and quotient	1000 PSW after division	1000 PSW before division

7777 actual divide fault interrupt flag	0000 expected divide fault interrupt 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.

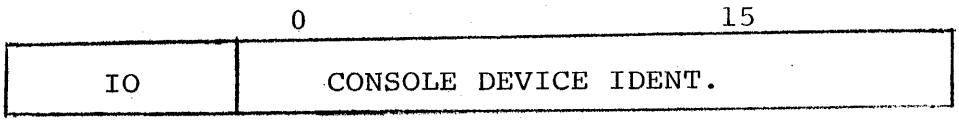
For further diagnosis of the problem, the program can be run in single step starting from the instruction which sets the error number to X'C' (in this case DLOOP2+4).

8. RESTART PROCEDURES

The starting address for PART 1 is X'100'. However, the program can be restarted without selecting the Processor number through the Console by starting the program at ENTRY2 (see listing). To restart the program without selecting the Processor number and the zero or one (for the memory size) through the console, start the program at ENTRY3 (see listing).

APPENDIX 1
USER DEVICE DEFINITION

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



Console Device Identifier	Explanation
X'0101'	CRT on PASLA/PALM Interface strapped for FDX at highest baud.
X'0202'	TTY, Carousel 15,30,35 on TTY Interface or GDT/CRT on Current Loop Interface.
X'0404'	Carousel 300 on PASLA/PALM Interface strapped for FDX at highest baud rate.

Location CONADR should be equal to the address of the Console Device except if connected through a PALM/PASLA Interface. In that case, location PASADR should equal the receive/send addresses.

APPENDIX 2
CPU SELECTION

MODEL UNDER TEST	REQUIRED INPUT (CPU) PART 1
8/16E BASIC	8A
8/16E BASIC with Multiply/Divide	8B
8/16E BASIC Single Precision Floating Point	8C
8/16E BASIC Single/Double Precision Floating Point	8D

APPENDIX 3

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 4
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	DDDD	....Max. 10 halfwords
(i)	(ii)	(iii)		printed

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.

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.

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	"

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	

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

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

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).

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 product 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

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

Other Errors

Error No.	Type of Failure
lNF1	Floating Point Arithmetic Fault Interrupt is detected.
lNF2	Illegal Instruction Interrupt is detected.
lNF3	Machine Malfunction Interrupt is detected.
lNF4	External Interrupt is detected.
lNF5	Fixed Point Divide Fault Interrupt is detected.
lNF6	Channel I/O Termination Interrupt is detected.
lNF7	Termination Queue Overflow Interrupt is detected.
lNF8	SVC is performed from an incorrect location (one of X'9C' through X'13A')
lNF9	Incorrect Service Pointer used (one of X'D0' through X'2CE')

NOTE

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

PROG= PT211   ASSEMBLED BY CAL 03-066R05-00   (32-BIT)

```
                               CROSS                                                      PT100010
                               WIDTH 120                                                  PT100020
                               TARGT 16                                                   PT100030
                       PT211   PROG  MODEL 8/16E PROCESSOR TEST PART 1  06-211M96R00A13   PT100040
                       *                                                                  PT100050
                       *       COPYRIGHT  INTERDATA,INC    (MAY 77)                     P PT100060
                       *                                                                  PT100070
                       *                                                                  PT100080
                       *       THIS PROGRAM IS DESIGNED TO TEST MODEL 8/16E PROCESSORS    PT100090
                       *                                                                  PT100100
                       *                                                                  PT100110
                       *                                                                  PT100120
                       *                                                                  PT100130
         0000 0000     R0      EQU   0                                                    PT100140
         0000 0001     R1      EQU   1                                                    PT100150
         0000 0002     R2      EQU   2                                                    PT100160
         0000 0003     R3      EQU   3                                                    PT100170
         0000 0004     R4      EQU   4                                                    PT100180
         0000 0005     R5      EQU   5                                                    PT100190
         0000 0006     R6      EQU   6                                                    PT100200
         0000 0007     R7      EQU   7                                                    PT100210
         0000 0008     R8      EQU   8                                                    PT100220
         0000 0009     R9      EQU   9                                                    PT100230
         0000 000A     R10     EQU   10                                                   PT100240
         0000 000B     R11     EQU   11                                                   PT100250
         0000 000C     R12     EQU   12                                                   PT100260
         0000 000D     R13     EQU   13                                                   PT100270
         0000 000E     R14     EQU   14                                                   PT100280
         0000 000F     R15     EQU   15                                                   PT100290
         0000 5302     SETM    EQU   X'5302'                                              PT100300
         0000 1308     SETMR   EQU   X'1308'                                              PT100310
         0000 7302     LPS     EQU   X'7302'                                              PT100320
         0000 3308     LPSR    EQU   X'3308'                                              PT100330
                       *                                                                  PT100340
0000R                          ORG   X'80'                                                PT100350
                       *                                                                  PT100360
0080     2421                  LIS   R2,1                                                 PT100370
0082     2303                  BS    BOOT                                                 PT100380
0084     0110                  DC    Z(PSWAVE)                                            PT100390
0086     2344                  DC    Z(REGSAV)                                            PT100400
0088     4020 0022     BOOT    STH   R2,X'22'                                             PT100410
008C     C810 0100             LHI   R1,X'100'                                            PT100420
0090     C830 2344             LHI   R3,LNZB                                              PT100430
0094     C860 0000     MN      LHI   R6,0                                                 PT100440
0098     D340 0078             LB    R4,X'78'                                             PT100450
009C     DE40 0079             OC    R4,X'79'                                             PT100460
00A0     9045          LEADER  SSR   R4,R5                                                PT100470
00A2     2091                  BTBS  9,1                                                  PT100480
00A4     9B45                  RDR   R4,R5                                                PT100490
00A6     0855                  LDAR  R5,R5                                                PT100500
00A8     2234                  BZS   LEADER                                               PT100510
00AA     D251 0000     LOAD    STB   R5,0(R1)                                             PT100520
00AE     D351 0000             LB    R5,0(R1)                                             PT100530
```

```
00B2   0765              XAR    R6,R5                                                  PT100540
00B4   9481              EXBR   R8,R1                                                  PT100550
00B6   9828              WHR    R2,R8                                                  PT100560
00B8   9045              SSR    R4,R5                                                  PT100570
00BA   2091              BTBS   9,1                                                    PT100580
00BC   9845              RDR    R4,R5                                                  PT100590
00BE   C110 00AA         BXLE   R1,LOAD                                                PT100600
00C2   9486              EXBR   R8,R6                                                  PT100610
00C4   9828              WHR    R2,R8                                                  PT100620
00C6   2478     LOWT     LIS    R7,8                                                   PT100630
00C8   917C              SLLS   R7,12                                                  PT100640
00CA   9557              EPSR   R5,R7                                                  PT100650
00CC   2203              BS     LOWT                                                   PT100660
00CE                     ORG    X'100'                                                 PT100670
0100   4300 0112 ORIGIN1 B      ENTRY1                                                 PT100680
                *****************************************************************      PT100690
0104   0202     IO       DCX    0202           IO INDICATOR                            PT100700
0106   0101     CRT      DCX    0101           CRT  VALUE                              PT100710
0108   0404     CAR      DCX    0404           CAROUSEL VALUE                          PT100720
010A   0202     CONADR   DCX    0202           CONSOLE ADDRESS                         PT100730
010C   1011     PASADR   DCX    1011           PASLA ADDRESS REC/SND DEFAULT 1011      PT100740
010E   000A     NTIMES   DC     10                                                     PT100750
0110   0000     PSWAVE   DC     0                                                      PT100760
                *                                                                      PT100770
                *                                                                      PT100780
                *                SET UP FOR SPURIOUS INTERRUPTS                        PT100790
                *                                                                      PT100800
0112   C800 0000 ENTRY1  LHI    R0,0                                                   PT100810
0116   4000 002C M5001   STH    R0,X'2C'                                               PT100820
011A   4000 0034         STH    R0,X'34'                                               PT100830
011E   4000 003C         STH    R0,X'3C'                                               PT100840
0122   4000 0044         STH    R0,X'44'                                               PT100850
0126   4000 004C         STH    R0,X'4C'                                               PT100860
012A   4000 0086         STH    R0,X'86'                                               PT100870
012E   4000 0090 M5002   STH    R0,X'90'                                               PT100880
                *                                                                      PT100890
0132   C800 2346         LHI    R0,LNZB+2                                              PT100900
0136   4000 0022         STH    R0,X'22'                                               PT100910
013A   C800 212E         LHI    R0,FLPTNT                                              PT100920
013E   4000 002E         STH    R0,X'2E'                                               PT100930
0142   C800 2132         LHI    R0,ILGINT                                              PT100940
0146   4000 0036         STH    R0,X'36'                                               PT100950
014A   C800 2136         LHI    R0,MALFTN                                              PT100960
014E   4000 003E         STH    R0,X'3E'                                               PT100970
0152   C800 213A         LHI    R0,EXTINT                                              PT100980
0156   4000 0046         STH    R0,X'46'                                               PT100990
015A   C800 2140         LHI    R0,DVDFLT                                              PT101000
015E   4000 004E         STH    R0,X'4E'                                               PT101010
0162   C800 22CC         LHI    R0,TABLE                                               PT101020
0166   4000 0080         STH    R0,X'80'                                               PT101030
016A   C800 2144         LHI    R0,CHANIO                                              PT101040
016E   4000 0088         STH    R0,X'88'                                               PT101050
0172   C800 2148         LHI    R0,OVRFLO                                              PT101060
0176   4000 0092         STH    R0,X'92'                                               PT101070
                *                                                                      PT101080
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                    *   SET UP INPUT OUTPUT DEVICES                                   PT101090
                    *                                                                 PT101100
017A   C800 F800                LHI    R0,X'F800'                                     PT101110
017E   4000 22F0                STH    R0,FIRSTCMD                                    PT101120
0182   D300 0104        IOTEST  LB     R0,IO                                          PT101130
0186   C500 0004                CLHI   R0,4                                           PT101140
018A   4230 0196                BNE    CRTIO                                          PT101150
018E   C800 F000                LHI    R0,X'F000'                                     PT101160
0192   4000 22F0                STH    R0,FIRSTCMD                                    PT101170
0196   D300 0104        CRTIO   LB     R0,IO                                          PT101180
019A   C500 0002                CLHI   R0,2                                           PT101190
019E   4330 01C0                BE     TTYIO                                          PT101200
01A2   D310 22EB                LB     R1,CRTOUT+1                                    PT101210
01A6   D210 22E7                STB    R1,INCMND                                      PT101220
01AA   D310 010D                LB     R1,PASADR+1                                    PT101230
01AE   D320 22EA                LB     R2,CRTOUT                                      PT101240
01B2   DE10 22F0                OC     R1,FIRSTCMD                                    PT101250
01B6   2531                     LCS    R3,1                                           PT101260
01B8   4030 22EE                STH    R3,CRTFLG                                      PT101270
01BC   4300 01D8                B      IO2                                            PT101280
       0000 01C0        TTYIO   EQU    *                                              PT101290
01C0   C810 00A4                LHI    R1,X'A4'                                       PT101300
01C4   D210 22E7                STB    R1,INCMND                                      PT101310
01C8   C810 0000                LHI    R1,0                                           PT101320
01CC   4010 22EE                STH    R1,CRTFLG                                      PT101330
01D0   D310 010A                LB     R1,CONADR                                      PT101340
01D4   D320 22EC                LB     R2,CONOUT                                      PT101350
       0000 01D8        IO2     EQU    *                                              PT101360
01D8   D210 22E6                STB    R1,OUTDEV                                      PT101370
01DC   D220 22E8                STB    R2,OUTCMD                                      PT101380
01E0   D320 22E6                LB     R2,OUTDEV        R2 = OUTDEV = TTYADR.         PT101390
01E4   DE20 22E8                OC     R2,OUTCMD                                      PT101400
01E8   9D23                     SSR    R2,R3                                          PT101410
01EA   4210 02AA                BTC    1,ENTRY2                                       PT101420
01EE   C430 00FC                NHI    R3,X'FC'                                       PT101430
01F2   C530 000C                CLHI   R3,X'0C'                                       PT101440
01F6   4330 02AA                BE     ENTRY2                                         PT101450
01FA   9D23             PRTTLE  SSR    R2,R3                                          PT101460
01FC   4240 02AA                BTC    4,ENTRY2                                       PT101470
0200   4280 01FA                BTC    8,PRTTLE                                       PT101480
0204   4840 22E2                LH     R4,CPUFLAG                                     PT101490
0208   C540 0001                CLHI   R4,X'1'                                        PT101500
020C   4330 0216                BE     PRTCPU1                                        PT101510
0210   C840 2306                LHI    R4,TITLE1                                      PT101520
0214   2303                     BS     PRTCPU                                         PT101530
0216   C840 2334        PRTCPU1 LHI    R4,TITLE2                                      PT101540
021A   D304 0000        PRTCPU  LB     R0,0(R4)         PRINT                         PT101550
021E   41E0 211A                BAL    R14,WRITE1       CPU                           PT101560
0222   2641                     AIS    R4,1             *                             PT101570
0224   C540 2344                CLHI   R4,TITEND                                      PT101580
0228   2037                     BNES   PRTCPU                                         PT101590
022A   2441                     LIS    R4,1                                           PT101600
022C   4040 22E2                STH    R4,CPUFLAG                                     PT101610
       0000 0230        PRTCP   EQU    *                                              PT101620
0230   4800 22EE                LH     R0,CRTFLG                                      PT101630
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0234  2339                BZS   RD                                                 PT101640
0236  D320 010C           LB    R2,PASADR                                          PT101650
023A  DE20 22E7           OC    R2,INCMND                                          PT101660
023E  9023                SSR   R2,R3                                              PT101670
0240  2281                BFBS  8,1                                                PT101680
0242  4300 024A           B     RDCPU1                                             PT101690
      0000 0246   RD      EQU   *                                                  PT101700
0246  DE20 22E7           OC    R2,INCMND          TTY IN READ MODE                PT101710
024A  9023        RDCPU1  SSR   R2,R3                                              PT101720
024C  2081                BTBS  8,1                                                PT101730
024E  9B20                RDR   R2,R0              R0 = FIRST KEY READ             PT101740
0250  C400 007F           NHI   R0,X'7F'                                           PT101750
0254  9023        RDCPU2  SSR   R2,R3                                              PT101760
0256  4280 0254           BTC   8,RDCPU2                                           PT101770
025A  9B21                RDR   R2,R1              R1 = SECOND KEY READ            PT101780
025C  C410 007F           NHI   R1,X'7F'                                           PT101790
0260  9108                SLLS  R0,8                                               PT101800
0262  0601                OHR   R0,R1              R0 = 2 KEYS                     PT101810
0264  C500 3841           CLHI  R0,C'8A'                                           PT101820
0268  4330 0296           BE    MOD5                                               PT101830
026C  C500 3842           CLHI  R0,C'8B'                                           PT101840
0270  4330 0296           BE    MOD5                                               PT101850
0274  C500 3843           CLHI  R0,C'8C'                                           PT101860
0278  4330 0296           BE    MOD5                                               PT101870
027C  C500 3844           CLHI  R0,C'8D'                                           PT101880
0280  4330 0296           BE    MOD5                                               PT101890
0284  C800 003F   CPUERR  LHI   R0,C'?'                                            PT101900
0288  41E0 211A           BAL   R14,WRITE1                                         PT101910
028C  0744                XHR   R4,R4                                              PT101920
028E  4040 22E2           STH   R4,CPUFLAG                                         PT101930
0292  4300 01FA           B     PRTTLE                                             PT101940
0296  4000 22E0   MOD5    STH   R0,CPUNO                                           PT101950
029A  C800 000D   MOD     LHI   R0,X'D'                                            PT101960
029E  41E0 211A           BAL   R14,WRITE1                                         PT101970
02A2  C800 000A           LHI   R0,X'A'                                            PT101980
02A6  41E0 211A           BAL   R14,WRITE1                                         PT101990
                  *                                                                PT102000
      0000 02AA   ENTRY2  EQU   *                                                  PT102010
02AA  07EE        WMEM    XHR   R14,R14            MESSAGE ROUTINE FOR TEST 12 ONLY PT102020
02AC  C840 1F40           LHI   R4,MESMEM1         BEGINNING ADDRESS OF MESSAGE    PT102030
02B0  C850 1F55           LHI   R5,MESMEM2         ENDING ADDRESS OF MESSAGE       PT102040
02B4  D320 22E6           LB    R2,OUTDEV                                          PT102050
02B8  DE20 22E8           OC    R2,OUTCMD          WRITE COMMAND                   PT102060
02BC  9023                SSR   R2,R3                                              PT102070
02BE  2081                BTBS  8,1                                                PT102080
02C0  9624                WBR   R2,R4              WRITE MESSAGE                   PT102090
02C2  4800 22EE           LH    R0,CRTFLG                                          PT102100
02C6  2308                BZS   WMEM1                                              PT102110
02C8  D320 010C           LB    R2,PASADR                                          PT102120
02CC  DE20 22E7           OC    R2,INCMND                                          PT102130
02D0  9023                SSR   R2,R3                                              PT102140
02D2  2281                BFBS  8,1                                                PT102150
02D4  2303                BS    WMEM2                                              PT102160
02D6  DE20 22E7   WMEM1   OC    R2,INCMND                                          PT102170
02DA  9023        WMEM2   SSR   R2,R3                                              PT102180
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02DC  2061            219          BTBS  8,1                                    PT102190
02DE  9B2E            220          RDR   R2,R14          READ IN 0 OR 1        PT102200
02E0  C4E0 007F       221          NHI   R14,X'7F'                             PT102210
02E4  C5E0 0030       222          CLHI  R14,X'30'                             PT102220
02E8  2335            223          BES   WMEM3                                 PT102230
02EA  C5E0 0031       224          CLHI  R14,X'31'                             PT102240
02EE  4230 02AA       225          BNE   WMEM                                  PT102250
02F2  C4E0 000F       226  WMEM3   NHI   R14,X'F'                              PT102260
02F6  40E0 1F56       227          STH   R14,MEMSTO      STORE FLAG IN STORAGE AREA PT102270
                      228  *                                                   PT102280
      0000 02FA       229  ENTRY4  EQU   *                                     PT102290
02FA  C800 0000       230          LHI   R0,0                                  PT102300
02FE  4000 22DE       231          STH   R0,TTYOFF                             PT102310
0302  4000 22DA       232          STH   R0,TOTAL                              PT102320
0306  4000 22DC       233          STH   R0,TOTERR                             PT102330
      0000 030A       234  ENTRY3  EQU   *                                     PT102340
030A  C800 0001       235          LHI   R0,X'1'                               PT102350
030E  DE00 22E5       236          OC    R0,NORM                               PT102360
      0000 0312       237  ENT3A   EQU   *                                     PT102370
0312  0320 22E6       238          LB    R2,OUTDEV                             PT102380
0316  9D25            239          SSR   R2,R5                                 PT102390
0318  4210 032C       240          BTC   1,ENT3B                               PT102400
031C  C450 00FC       241          NHI   R5,X'FC'                              PT102410
0320  C550 000C       242          CLHI  R5,X'0C'                              PT102420
0324  4330 032C       243          BE    ENT3B                                 PT102430
0328  4300 0334       244          B     TEST1                                 PT102440
      0000 032C       245  ENT3B   EQU   *                                     PT102450
032C  C850 0001       246          LHI   R5,X'1'                               PT102460
0330  4050 22DE       247          STH   R5,TTYOFF                             PT102470
                      248  ********************************************************************** PT102480
                      249  *                                                   PT102490
                      250  *       TEST1 CHECKS THE INSTRUCTIONS               PT102500
                      251  *                                                   PT102510
                      252  *       LPSW, BTC,BFC,BTFS,BTBS,BFFS                PT102520
                      253  *                                                   PT102530
0334  C800 0508       254  TEST1   LHI   R0,TEST2                              PT102540
0338  4000 22F4       255          STH   R0,NXTST                              PT102550
033C  C800 3131       256          LHI   R0,C'11'                              PT102560
0340  4000 2288       257          STH   R0,TESTNO                             PT102570
0344  C800 0111       258          LHI   R0,X'0111'                            PT102580
0348  4000 22F2       259          STH   R0,ERRIND                             PT102590
      0000 034C       260  LPSW    EQU   *                                     PT102600
034C  C200 0350       261          LPSW  T1                                    PT102610
0350  0000            262  T1      DC    0,T1A                                 PT102620
0352  0358
0354  4300 2182       263  T1AA    B     ERROR                                 PT102630
0358  4300 0364       264  T1A     B     T1B                                   PT102640
035C  4300 036C       265  T1A2    B     T1C                                   PT102650
0360  4300 2182       266  T1ERR1  B     ERROR                                 PT102660
0364  4300 035C       267  T1B     B     T1A2                                  PT102670
0368  4300 2182       268          B     ERROR                                 PT102680
      0000 036C       269  BTC     EQU   *                                     PT102690
036C  4210 0380       270  T1C     BTC   1,T1ERR2        COND. CODE = 0000 , SO PT102700
0370  4220 0380       271          BTC   2,T1ERR2        ERR. IF BRANCH ON TRUE PT102710
0374  4240 0380       272          BTC   4,T1ERR2                              PT102720
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0378   4280 0380     273            BTC    8,T1ERR2                                    PT102730
       0000 037C     274  BFC       EQU    *                                           PT102740
037C   4310 038C     275            BFC    1,T1D1        COND. CODE = 0000             PT102750
0380   C800 0211     276  T1ERR2    LHI    R0,X'0211'    ERROR  1102                   PT102760
0384   4000 22F2     277            STH    R0,ERRIND                                   PT102770
0388   4300 2182     278            B      ERROR                                       PT102780
038C   4320 0394     279  T1D1      BFC    2,T1D2                                      PT102790
0390   4300 0380     280            B      T1ERR2                                      PT102800
0394   4340 039C     281  T1D2      BFC    4,T1D3                                      PT102810
0398   4300 0380     282            B      T1ERR2                                      PT102820
039C   4380 03A4     283  T1D3      BFC    8,T1D4                                      PT102830
03A0   4300 0380     284            B      T1ERR2                                      PT102840
03A4   C200 03A8     285  T1D4      LPSW   T1D8                                        PT102850
03A8   000F          286  T1D8      DC     15,T1D9                                     PT102860
03AA   03AC
03AC   4310 03D8     287  T1D9      BFC    1,T1ERR3      COND CODE = 1111 , SO         PT102870
03B0   4320 03D8     288            BFC    2,T1ERR3      ERR. IF BRANCH ON ZERO        PT102880
03B4   4340 03D8     289            BFC    4,T1ERR3                                    PT102890
03B8   4380 03D8     290            BFC    8,T1ERR3                                    PT102900
03BC   4210 03C4     291            BTC    1,T1E1        COND. CODE = 1111 , SO        PT102910
03C0   4300 03D8     292            B      T1ERR3        ERR. IF BRANCH NOT TAKEN      PT102920
03C4   4220 03CC     293  T1E1      BTC    2,T1E2                                      PT102930
03C8   4300 03D8     294            B      T1ERR3                                      PT102940
03CC   4240 03D4     295  T1E2      BTC    4,T1E3                                      PT102950
03D0   4300 03D8     296            B      T1ERR3                                      PT102960
03D4   4280 03E4     297  T1E3      BTC    8,T1E4                                      PT102970
03D8   C800 0311     298  T1ERR3    LHI    R0,X'0311'    ERROR  1103                   PT102980
03DC   4000 22F2     299            STH    R0,ERRIND                                   PT102990
03E0   4300 2182     300            B      ERROR                                       PT103000
       0000 03E4     301  BFFS      EQU    *                                           PT103010
03E4   2301          302  T1E4      BFFS   0,1           BS +1                         PT103020
03E6   2302          303            BFFS   0,2           BS+2                          PT103030
03E8   2302          304            BFFS   0,2                                         PT103040
03EA   2303          305            BFFS   0,3           BS+3                          PT103050
03EC   4300 0486     306            B      T1ERR4                                      PT103060
03F0   2303          307            BFFS   0,3           BS+3                          PT103070
03F2   4300 0486     308            B      T1ERR4                                      PT103080
03F6   2307          309            BFFS   0,7           BS+7      1                   PT103090
03F8   4300 0486     310            B      T1ERR4                                      PT103100
03FC   2306          311            BFFS   0,6           BS+6      3                   PT103110
03FE   4300 0486     312            B      T1ERR4                                      PT103120
0402   2306          313            BFFS   0,6           BS+6                          PT103130
0404   2204          314            BFBS   0,4           BS-4      2                   PT103140
0406   2302          315            BFFS   0,2           BS+2                          PT103150
0408   2203          316            BFBS   0,3           BS-3      4                   PT103160
040A   4300 0486     317            B      T1ERR4                                      PT103170
                     318  *                                                            PT103180
040E   230F          319  T1F       BFFS   0,15          BS+15   1                     PT103190
0410   2302          320            BFFS   0,2                                         PT103200
0412   2303          321            BFFS   0,3           BS+3                          PT103210
0414   2302          322            BFFS   0,2                                         PT103220
0416   230E          323            BFFS   0,14          BS+14     3                   PT103230
0418   2302          324            BFFS   0,2                                         PT103240
041A   230D          325            BFFS   0,13          BS+13     5                   PT103250
041C   2302          326            BFFS   0,2                                         PT103260
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041E   230C           327          BFFS  0,12            BS+12    7              PT103270
0420   2302           328          BFFS  0,2                                     PT103280
0422   230B           329          BFFS  0,11            BS+11    9              PT103290
0424   2302           330          BFFS  0,2                                     PT103300
0426   230A           331          BFFS  0,10            BS+10    11             PT103310
0428   2303           332          BFFS  0,3                                     PT103320
042A   2309           333          BFFS  0,9             BS+9     13 TO T1F2     PT103330
042C   2208           334          BFBS  0,11            BS-11    2              PT103340
042E   4300 0486      335          B     T1ERR4                                  PT103350
0432   220C           336          BFBS  0,12            BS-12    4              PT103360
0434   220B           337          BFBS  0,11            BS-11    6              PT103370
0436   220A           338          BFBS  0,10            BS-10    8              PT103380
0438   2209           339          BFBS  0,9             BS-9     10             PT103390
043A   2208           340          BFBS  0,8             BS-8     12             PT103400
                      341  *                                                     PT103410
043C   2308           342  T1F2    BFFS  0,8             BS+8     1              PT103420
043E   2302           343          BFFS  0,2                                     PT103430
0440   2307           344          BFFS  0,7             BS+7     3              PT103440
0442   2302           345          BFFS  0,2                                     PT103450
0444   2306           346          BFFS  0,6             BS+6    5               PT103460
0446   2302           347          BFFS  0,2                                     PT103470
0448   2305           348          BFFS  0,5             BS+5     7              PT103480
044A   2306           349          BFFS  0,6                                     PT103490
044C   2206           350          BFBS  0,6             BS-6     2              PT103500
044E   2205           351          BFBS  0,5             BS-5     4              PT103510
0450   2204           352          BFBS  0,4             BS-4     6              PT103520
0452   2304           353          BFFS  0,4             BS+4     8              PT103530
0454   2301           354          BFFS  0,1             BS+1                    PT103540
0456   4300 0486      355          B     T1ERR4                                  PT103550
                      356  *                                                     PT103560
045A   230F           357          BS    T1F3                                    PT103570
045C   2302           358          BFFS  0,2                                     PT103580
045E   2307           359          BFFS  0,7             9      BS+7             PT103590
0460   2302           360          BFFS  0,2                                     PT103600
0462   230F           361          BFFS  0,15            6      BS+15            PT103610
0464   2302           362          BFFS  0,2                                     PT103620
0466   2204           363          BFBS  0,4             8      BS-4             PT103630
0468   2304           364          BFFS  0,4                                     PT103640
046A   2300           365          BFFS  0,13                                    PT103650
046C   230C           366          BS    T1F4                                    PT103660
046E   2308           367          BFFS  0,8             4      BS+8             PT103670
0470   2302           368          BFFS  0,2                                     PT103680
0472   2202           369          BFBS  0,2             3      BS-3             PT103690
0474   2303           370          BFFS  0,3                                     PT103700
0476   2202           371          BFBS  0,2             2      BS-2             PT103710
0478   2201           372  T1F3    BFBS  0,1             1      BS-1             PT103720
047A   2306           373          BS    T1ERR4                                  PT103730
047C   2305           374          BS    T1ERR4                                  PT103740
047E   220E           375          BFBS  0,14            5      BS-14            PT103750
0480   220D           376          BFBS  0,13            7      BS-13            PT103760
0482   2302           377          BS    T1ERR4                                  PT103770
0484   2309           378  T1F4    BS    T1G2                                    PT103780
0486   C800 0411      379  T1ERR4  LHI   R0,X'0411'       ERROR  1104            PT103790
048A   4000 22F2      380          STH   R0,ERRIND                               PT103800
048E   4300 2182      381          B     ERROR                                   PT103810
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                       *                                                    PT103820
                       *          COND CODE = 1111                          PT103830
                       *                                                    PT103840
         0000 0492     BTFS       EQU   *                                   PT103840
0492     2134          T1G        BTFS  3,4              3                  PT103850
0494     2302                     BFFS  0,2                                 PT103860
0496     2154          T1G2       BTFS  5,4              1                  PT103870
0498     2302                     BFFS  0,2                                 PT103880
049A     218A                     BTFS  8,10             4                  PT103890
049C     2302                     BFFS  0,2                                 PT103900
         0000 049E     BTBS       EQU   *                                   PT103910
049E     2056                     BTBS  5,6              2                  PT103920
04A0     2302                     BFFS  0,2                                 PT103930
04A2     2174                     BTFS  7,4              6                  PT103940
04A4     2302                     BFFS  0,2                                 PT103950
04A6     2117                     BTFS  1,7              8                  PT103960
04A8     2302                     BFFS  0,2                                 PT103970
04AA     2092                     BTBS  9,2              7                  PT103980
04AC     2302                     BFFS  0,2                                 PT103990
04AE     2046                     BTBS  4,6              5                  PT104000
04B0     4300 04F8                B     T1ERR5                              PT104010
04B4     2315                     BFFS  1,5              COND CODE = 111 , SO PT104020
04B6     2344                     BFFS  4,4                                 PT104030
04B8     2393                     BFFS  9,3              ERR. IF BRANCH     PT104040
04BA     2372                     BFFS  7,2                                 PT104050
04BC     2303                     BFFS  0,3                                 PT104060
04BE     4300 04F8                B     T1ERR5                              PT104070
                       *                                                    PT104080
04C2     C200 04C6                LPSW  T1H                                 PT104090
04C6     0000          T1H        DC    0,T1H1                              PT104100
04C8     04D0                                                               PT104110
04CA     2304                     BS    T1H1+2
04CC     2334                     BFFS  3,4              3                  PT104120
04CE     2302                     BFFS  0,2                                 PT104130
04D0     2354          T1H1       BFFS  5,4              1                  PT104140
04D2     2302                     BFFS  0,2                                 PT104150
04D4     238A                     BFFS  8,10             4                  PT104160
04D6     2302                     BFFS  0,2                                 PT104170
04D8     2256                     BFBS  5,6              2                  PT104180
04DA     2302                     BFFS  0,2                                 PT104190
04DC     2374                     BFFS  7,4              6                  PT104200
04DE     2302                     BFFS  0,2                                 PT104210
04E0     2317                     BFFS  1,7              8                  PT104220
04E2     2302                     BFFS  0,2                                 PT104230
04E4     2292                     BFBS  9,2              7                  PT104240
04E6     2302                     BFFS  0,2                                 PT104250
04E8     2246                     BFBS  4,6              5                  PT104260
04EA     4300 04F8                B     T1ERR5                              PT104270
                       *                                                    PT104280
04EE     2115                     BTFS  1,5              COND CODE = 0000 , SO PT104290
04F0     2144                     BTFS  4,4                                 PT104300
04F2     2193                     BTFS  9,3              ERR. IF BRANCH     PT104310
04F4     2172                     BTFS  7,2                                 PT104320
04F6     2307                     BFFS  0,7                                 PT104330
04F8     C800 0511     T1ERR5     LHI   R0,X'0511'       ERROR  1105        PT104340
                                                                            PT104350
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04FC   4000 22F2          436          STH    R0,ERRIND                                          PT104360
0500   4300 2182          437          B      ERROR                                              PT104370
0504   4300 0508          438  T1END   B      TEST2                                              PT104380
                          439  ************************************************************      PT104390
                          440  *                                                                 PT104400
                          441  *       TEST 2 CHECKS THE INSTRUCTIONS                            PT104410
                          442  *                                                                 PT104420
                          443  *       LH, CLHR, CLHI, LHI, CLH, LIS, LHR, LCS                   PT104430
                          444  *                                                                 PT104440
                          445  *       MEMORY LOCATIONS USED ARE                                 PT104450
                          446  *                                                                 PT104460
                          447  *       ZERO   0                                                  PT104470
                          448  *       ONE    X'FFFF'                                            PT104480
                          449  *       FIVE   X'5555'                                            PT104490
                          450  *       TEN    X'AAAA'                                            PT104500
                          451  *                                                                 PT104510
0508   C800 0622          452  TEST2   LHI    R0,TEST3                                           PT104520
050C   4000 22F4          453          STH    R0,NXTST                                           PT104530
0510   C800 0112          454          LHI    R0,X'0112'                                         PT104540
0514   4000 22F2          455          STH    R0,ERRIND           ERRIND = 0112                  PT104550
0518   C800 3132          456          LHI    R0,X'3132'          PART1 , TEST2                  PT104560
051C   4000 22B8          457          STH    R0,TESTNO                                          PT104570
0520   C200 0524          458          LPSW   T2                                                 PT104580
0524   7C00               459  T2      DC     X'7C00',T2A                                        PT104590
0526   0528
                          460  *                                                                 PT104600
0528   2400               461  T2A     LIS    R0,0                R0 = 0                         PT104610
052A   213C               462          BNZS   T2R1                                               PT104620
       0000 052C          463  LHR     EQU    *                                                  PT104630
052C   0810               464          LHR    R1,R0               R1 = R0 = 0                    PT104640
052E   213A               465          BNZS   T2R1                                               PT104650
0530   0821               466          LHR    R2,R1               R2 = R1 = 0                    PT104660
0532   0832               467          LHR    R3,R2               R3 = R2 = 0                    PT104670
0534   0843               468          LHR    R4,R3               R4 = R3 = 0                    PT104680
0536   0504               469          CLHR   R0,R4               IS R0 = R4 (=0)                PT104690
0538   2135               470          BNES   T2R1                                               PT104700
053A   0853               471          LHR    R5,R3               R5 = R3 = 0                    PT104710
053C   0865               472          LHR    R6,R5               R6 = R5 = 0                    PT104720
053E   0536               473          CLHR   R3,R6               IS R3 = R6 (=0)                PT104730
0540   2332               474          BES    T2B                                                PT104740
0542   230E               475  T2R1    BS     T2R2                                               PT104750
       0000 0544          476  LH      EQU    *                                                  PT104760
0544   4870 22F6          477  T2B     LH     R7,ZERO             R7 = 0                         PT104770
0548   C570 0000          478          CLHI   R7,0                                               PT104780
054C   2139               479          BNES   T2R2                                               PT104790
054E   4530 22F6          480          CLH    R3,ZERO             IS R3 = ZERO (=0)              PT104800
0552   2136               481          BNES   T2R2                                               PT104810
0554   48A0 2302          482          LH     R10,TEN             R10 = AAAA                     PT104820
0558   C5A0 AAAA          483          CLHI   R10,X'AAAA'                                        PT104830
055C   2332               484          BES    T2C                                                PT104840
055E   230D               485  T2R2    BS     T2R3                                               PT104850
0560   C5A0 AAA9          486  T2C     CLHI   R10,X'AAA9'         R10 > AAA9                     PT104860
0564   218A               487          BLS    T2R3                                               PT104870
0566   2339               488          BES    T2R3                                               PT104880
0568   45A0 22FA          489          CLH    R10,ONE             R10 = AAAA , ONE = FFFF        PT104890
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056C  2386                    BNLS  T2R3                                      PT104900
056E  2385                    BNCS  T2R3                                      PT104910
0570  4850 22FE               LH    R5,FIVE          R5 = FIVE = 5555          PT104920
      0000 0574         CLHR  EQU   *                                         PT104930
0574  055A                    CLHR  R5,R10           R5 = 5555B R10 = AAAA     PT104940
0576  2182                    BLS   T2D                                       PT104950
0578  230D              T2R3  BS    T2R4                                      PT104960
057A  0553              T2D   CLHR  R5,R3            R5 = 5555, R3 = 0         PT104970
057C  218B                    BLS   T2R4                                      PT104980
057E  233A                    BES   T2R4                                      PT104990
0580  C8F0 5555               LHI   R15,X'5555'                               PT105000
0584  055F                    CLHR  R5,R15           R5 = R15 = 5555           PT105010
0586  2136                    BNES  T2R4                                      PT105020
0588  0505                    CLHR  R0,R5            R0 = 0, R5 = 5555         PT105030
058A  2384                    BNLS  T2R4                                      PT105040
      0000 058C         CLH   EQU   *                                         PT105050
058C  4550 22FE               CLH   R5,FIVE          R5 = 5555 , FIVE = 5555   PT105060
0590  2332                    BES   T2E                                       PT105070
0592  230E              T2R4  BS    T2R5                                      PT105080
0594  4540 22F6         T2E   CLH   R4,ZERO          R4 = 0000 = ZERO = 0      PT105090
0598  213B                    BNES  T2R5                                      PT105100
059A  45A0 22FE               CLH   R10,FIVE         R10 = AAAA, FIVE = 5555   PT105110
059E  2188                    BLS   T2R5                                      PT105120
05A0  2337                    BES   T2R5                                      PT105130
05A2  C5A0 AAAB               CLHI  R10,X'AAAB'      R10 = AAAB                PT105140
05A6  2384                    BNLS  T2R5                                      PT105150
      0000 05A8         CLHI  EQU   *                                         PT105160
05A8  C540 0003               CLHI  R4,3             R4 = 0 <3                 PT105170
05AC  2183                    BLS   T2F                                       PT105180
05AE  4300 2182         T2R5  B     ERROR                                     PT105190
05B2  48F0 22FA         T2F   LH    R15,ONE          R15 = ONE = FFFF          PT105200
05B6  C5F0 FFFF               CLHI  R15,X'FFFF'                               PT105210
05BA  213B                    BNES  T2R6                                      PT105220
05BC  48A0 22FE               LH    R10,FIVE         R10 = 5555                PT105230
05C0  05A5                    CLHR  R10,R5                                    PT105240
05C2  2137                    BNES  T2R6                                      PT105250
05C4  4850 2302               LH    R5,TEN           R5 = AAAA                 PT105260
      0000 05C8         LHI   EQU   *                                         PT105270
05C8  C8A0 AAAA               LHI   R10,X'AAAA'      R10 = AAAA                PT105280
05CC  055A                    CLHR  R5,R10           IS R5 = R10 (=AAAA)       PT105290
05CE  2332                    BES   T2G                                       PT105300
05D0  230D              T2R6  BS    T2R7                                      PT105310
      0000 05D2         LIS   EQU   *                                         PT105320
05D2  2477              T2G   LIS   R7,7             R7 = 7                    PT105330
05D4  C570 0007               CLHI  R7,7                                      PT105340
05D8  2139                    BNES  T2R7                                      PT105350
05DA  2488                    LIS   R8,8             R8 = 8                    PT105360
05DC  24DD                    LIS   R13,13           R13=13                    PT105370
05DE  C580 0008               CLHI  R8,8                                      PT105380
05E2  2134                    BNES  T2R7                                      PT105390
05E4  C5D0 000D               CLHI  R13,13                                    PT105400
05E8  2333                    BES   T2H                                       PT105410
05EA  4300 060C         T2R7  B     T2R8                                      PT105420
      0000 05EE         LCS   EQU   *                                         PT105430
05EE  25E1              T2H   LCS   R14,1            R14=FFFF                  PT105440
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05F0  2233           545          BZS   T2R7                                    PT105450
05F2  2024           546          BPS   T2R7                                    PT105460
05F4  05EF           547          CLHR  R14,R15          R14 = R15 FFFF ?         PT105470
05F6  213B           548          BNES  T2R8                                    PT105480
05F8  25BB           549          LCS   R11,11           R11 = FFF5               PT105490
05FA  2129           550          BPS   T2R8                                    PT105500
05FC  25CC           551          LCS   R12,12           R12 = FFF4               PT105510
05FE  2127           552          BPS   T2R8                                    PT105520
0600  C5B0 FFF5      553          CLHI  R11,X'FFF5'                             PT105530
0604  2134           554          BNES  T2R8                                    PT105540
0606  C5C0 FFF4      555          CLHI  R12,X'FFF4'                             PT105550
060A  2333           556          BES   T2END                                   PT105560
060C  4300 2182      557  T2R8    B     ERROR            ERROR  1201            PT105570
0610  4300 0622      558  T2END   B     TEST3                                   PT105580
0614  0000           559          DC    0                                       PT105590
0616  0000           560  T2WRD0  DC    0                                       PT105600
0618  0000           561          DC    0                                       PT105610
061A  0000           562  T2WRD1  DC    0                                       PT105620
061C  0000           563          DC    0                                       PT105630
061E  0000           564  T2WRD2  DC    0                                       PT105640
0620  0000           565          DC    0                                       PT105650
                     566  ********************************************************************** PT105660
                     567  *                                                                      PT105670
                     568  *       TEST 3 CHECKS THE INSTRUCTIONS                                 PT105680
                     569  *                                                                      PT105690
                     570  *       STH , LM AND STM                                               PT105700
                     571  *                                                                      PT105710
                     572  *       T3BUF0 = 16 HW'S OF ZEROS                                      PT105720
                     573  *                                                                      PT105730
                     574  *       T3BUF2 = 16 HW'S OF DATA 0,1,2,.....,14,15                     PT105740
                     575  *                                                                      PT105750
                     576  *       T3BUF1 = T3BUF2 + 14, (STARTS AT HW = 7)                       PT105760
                     577  *                                                                      PT105770
                     578  *       T3BUF3 = 16 HW'S OF STORAGE AREA                               PT105780
                     579  *                                                                      PT105790
0622  C800 078C      580  TEST3   LHI   R0,TEST4                                 PT105800
0626  4000 22F4      581          STH   R0,NXTST                                  PT105810
062A  C800 0113      582          LHI   R0,X'0113'                                PT105820
062E  4000 22F2      583          STH   R0,ERRIND        ERRIND = 0113            PT105830
0632  C800 3133      584          LHI   R0,X'3133'                                PT105840
0636  4000 2268      585          STH   R0,TESTNO                                 PT105850
                     586  *                                                       PT105860
063A  2501           587          LCS   R0,1             R0=FFFF                  PT105870
063C  2512           588          LCS   R1,2                                      PT105880
063E  2523           589          LCS   R2,3                                      PT105890
      0000 0640      590  STH     EQU   *                                         PT105900
0640  4000 0616      591          STH   R0,T2WRD0        T2WRD0 = R0 = FFFF       PT105910
0644  4010 061A      592          STH   R1,T2WRD1        T2WRD1 = R1 = FFFE       PT105920
0648  4020 061E      593          STH   R2,T2WRD2        T2WRD2 = R2 = FFFD       PT105930
064C  4310 2182      594          BNM   ERROR                                     PT105940
0650  4860 0616      595          LH    R6,T2WRD0                                 PT105950
0654  4870 061A      596          LH    R7,T2WRD1                                 PT105960
0658  4880 061E      597          LH    R8,T2WRD2                                 PT105970
065C  0506           598          CLHR  R0,R6                                     PT105980
065E  4230 2182      599          BNE   ERROR                                     PT105990
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0662   0528                    CLHR   R2,R8                                                PT106000
0664   4230 2182               BNE    ERROR                                                PT106010
0668   C800 0213               LHI    R0,X'213'                                            PT106020
066C   4000 22F2               STH    R0,ERRIND                                            PT106030
       0000 0670        LM     EQU    *                                                    PT106040
0670   D100 0752        T3B    LM     R0,T3BUF0          ZERO INTO ALL REG. R0 THRU R15    PT106050
0674   0800                    LHR    R0,R0                                                PT106060
0676   2135                    BNZS   T3R1                                                 PT106070
0678   050F                    CLHR   R0,R15             IS R0 = R15 (=0)                  PT106080
067A   2133                    BNES   T3R1                                                 PT106090
067C   0507                    CLHR   R0,R7                                                PT106100
067E   2332                    BES    T3C                                                  PT106110
0680   230D             T3R1   BS     T3R2                                                 PT106120
0682   D170 0782        T3C    LM     R7,T3BUF1          REG7=7,.....,REG15=15             PT106130
0686   0800                    LHR    R0,R0              R0 THRU R6 MUST BE UNCHANGED      PT106140
0688   2139                    BNZS   T3R2                                                 PT106150
068A   0866                    LHR    R6,R6                                                PT106160
068C   2137                    BNZS   T3R2                                                 PT106170
068E   C570 0007               CLHI   R7,7                                                 PT106180
0692   2134                    BNES   T3R2                                                 PT106190
0694   C580 0008               CLHI   R8,8                                                 PT106200
0698   2332                    BES    T3D                                                  PT106210
069A   230F             T3R2   BS     T3R3                                                 PT106220
069C   C5F0 000F        T3D    CLHI   R15,15                                               PT106230
06A0   213C                    BNES   T3R3                                                 PT106240
06A2   C5E0 000E               CLHI   R14,14                                               PT106250
06A6   2139                    BNES   T3R3                                                 PT106260
06A8   2544                    LCS    R4,4               R4=FFFC                           PT106270
06AA   2555                    LCS    R5,5               R5=FFFB                           PT106280
06AC   2565                    LCS    R6,5               R6=FFFB                           PT106290
06AE   D150 0752               LM     R5,T3BUF0          ALL REG. R5 THRU R15 = 0          PT106300
06B2   C540 FFFC               CLHI   R4,X'FFFC'                                           PT106310
06B6   2332                    BES    T3E                                                  PT106320
06B8   230D             T3R3   BS     T3R4                                                 PT106330
06BA   0800             T3E    LHR    R0,R0                                                PT106340
06BC   213B                    BNZS   T3R4                                                 PT106350
06BE   0505                    CLHR   R0,R5                                                PT106360
06C0   2139                    BNES   T3R4                                                 PT106370
06C2   0506                    CLHR   R0,R6                                                PT106380
06C4   2137                    BNES   T3R4                                                 PT106390
06C6   050F                    CLHR   R0,R15                                               PT106400
06C8   2135                    BNES   T3R4                                                 PT106410
06CA   050E                    CLHR   R0,R14                                               PT106420
06CC   2133                    BNES   T3R4                                                 PT106430
06CE   0509                    CLHR   R0,R9                                                PT106440
06D0   2333                    BES    T3F                                                  PT106450
06D2   4300 2182        T3R4   B      ERROR              ERROR  1302                       PT106460
06D6   C800 0313        T3F    LHI    R0,X'313'                                            PT106470
06DA   4000 22F2               STH    R0,ERRIND                                            PT106480
06DE   2466                    LIS    R6,6               270                               PT106490
06E0   D106 076E               LM     R0,T3BUF2-6(R6)    REG 0=0 REG 1=1 ETC               PT106500
       0000 06E4        STM    EQU    *                                                    PT106510
06E4   D008 078E               STM    R0,T3BUF3-8(R8)                                      PT106520
06E8   4800 0796               LH     R0,T3BUF3          0                                 PT106530
06EC   213D                    BNZS   T3R5                                                 PT106540
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06EE   4800 0798           LH    R0,T3BUF3+2       1                 PT106550
06F2   0501                CLHR  R0,R1                               PT106560
06F4   2139                BNES  T3R5                                PT106570
06F6   4800 079A           LH    R0,T3BUF3+4       2                 PT106580
06FA   0502                CLHR  R0,R2                               PT106590
06FC   2135                BNES  T3R5                                PT106600
06FE   4800 07B4           LH    R0,T3BUF3+30      15                PT106610
0702   050F                CLHR  R0,R15                              PT106620
0704   2332                BES   T3G                                 PT106630
0706   230D        T3R5    BS    T3R6                                PT106640
0708   4800 07B2   T3G     LH    R0,T3BUF3+28      14                PT106650
070C   050E                CLHR  R0,R14                              PT106660
070E   2139                BNES  T3R6                                PT106670
0710   4800 07A8           LH    R0,T3BUF3+18                        PT106680
0714   0590                CLHR  R9,R0                               PT106690
0716   2135                BNES  T3R6                                PT106700
0718   4800 07A0           LH    R0,T3BUF3+10      5                 PT106710
071C   0505                CLHR  R0,R5                               PT106720
071E   2333                BES   T3H                                 PT106730
0720   4300 2182   T3R6    B     ERROR             ERROR  1303       PT106740
0724   D100 0752   T3H     LM    R0,T3BUF0         EACH REG. =0      PT106750
0728   D000 0796           STM   R0,T3BUF3         T3BUF3 = 0        PT106760
072C   4800 0796           LH    R0,T3BUF3         0                 PT106770
0730   213E                BNZS  T3R7                                PT106780
0732   4800 0798           LH    R0,T3BUF3+2       1                 PT106790
0736   213B                BNZS  T3R7                                PT106800
0738   4800 07B4           LH    R0,T3BUF3+30      15                PT106810
073C   2138                BNZS  T3R7                                PT106820
073E   4800 07A4           LH    R0,T3BUF3+14      7                 PT106830
0742   2135                BNZS  T3R7                                PT106840
0744   4800 07AA           LH    R0,T3BUF3+20      10                PT106850
0748   4330 07B8           BZ    T3END                               PT106860
074C   4300 2182   T3R7    B     ERROR             ERROR  1303       PT106870
0750   FFFF                DC    X'FFFF'                             PT106880
0752   0000        T3BUF0  DC    0                 0                 PT106890
0754   0000                DC    0                 1                 PT106900
0756   0000                DC    0                 2                 PT106910
0758   0000                DC    0                 3                 PT106920
075A   0000                DC    0                 4                 PT106930
075C   0000                DC    0                 5                 PT106940
075E   0000                DC    0                 6                 PT106950
0760   0000                DC    0                 7                 PT106960
0762   0000                DC    0                 8                 PT106970
0764   0000                DC    0                 9                 PT106980
0766   0000                DC    0                 10                PT106990
0768   0000                DC    0                 11                PT107000
076A   0000                DC    0                 12                PT107010
076C   0000                DC    0                 13                PT107020
076E   0000                DC    0                 14                PT107030
0770   0000                DC    0                 15                PT107040
0772   FFFF                DC    X'FFFF'                             PT107050
0774   0000        T3BUF2  DC    0                                   PT107060
0776   0001                DC    1                                   PT107070
0778   0002                DC    2                                   PT107080
077A   0003                DC    3                                   PT107090
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077C  0004                      DC    4                                   PT107100
077E  0005                      DC    5                                   PT107110
0780  0006                      DC    6                                   PT107120
0782  0007           T3BUF1     DC    7                                   PT107130
0784  0008                      DC    8                                   PT107140
0786  0009                      DC    9                                   PT107150
0788  000A                      DC    10                                  PT107160
078A  000B                      DC    11                                  PT107170
078C  000C                      DC    12                                  PT107180
078E  000D                      DC    13                                  PT107190
0790  000E                      DC    14                                  PT107200
0792  000F                      DC    15                                  PT107210
0794  FFFF                      DC    X'FFFF'                             PT107220
0796  0000           T3BUF3     DC    0                  0                PT107230
0798  0000                      DC    0                  1                PT107240
079A  0000                      DC    0                  2                PT107250
079C  0000                      DC    0                  3                PT107260
079E  0000                      DC    0                  4                PT107270
07A0  0000                      DC    0                  5                PT107280
07A2  0000                      DC    0                  6                PT107290
07A4  0000                      DC    0                  7                PT107300
07A6  0000                      DC    0                  8                PT107310
07A8  0000                      DC    0                  9                PT107320
07AA  0000                      DC    0                  10               PT107330
07AC  0000                      DC    0                  11               PT107340
07AE  0000                      DC    0                  12               PT107350
07B0  0000                      DC    0                  13               PT107360
07B2  0000                      DC    0                  14               PT107370
07B4  0000                      DC    0                  15               PT107380
07B6  0000                      DC    0                                   PT107390
07B8  4300 07BC      T3END      B     TEST4                               PT107400
                     ******************************************************** PT107410
                     *                                                    PT107420
                     *          TEST 4 CHECKS THE LOGIC INSTRUCTIONS      PT107430
                     *                                                    PT107440
                     *          XHR , XHI , XH  :  OHR , OHI , OH  :  NHR , NHI , NH   PT107450
                     *                                                    PT107460
07BC  C800 09BA      TEST4      LHI   R0,TEST5                            PT107470
07C0  4000 22F4                 STH   R0,NXTST                            PT107480
07C4  C800 0114                 LHI   R0,X'0114'                          PT107490
07C8  4000 22F2                 STH   R0,ERRIND          ERRIND = 0114    PT107500
07CC  C800 3134                 LHI   R0,X'3134'                          PT107510
07D0  4000 22B8                 STH   R0,TESTNO                           PT107520
                     *                                                    PT107530
07D4  D100 0752                 LM    R0,T3BUF0          EACH REG. R0 THRU R15=0  PT107540
07D8  4850 22FE                 LH    R5,FIVE            R5=5555          PT107550
07DC  48A0 2302                 LH    R10,TEN            R10=AAAA         PT107560
07E0  25F1                      LCS   R15,1                               PT107570
      0000 07E2      XHR        EQU   *                                   PT107580
07E2  0705                      XHR   R0,R5              R0=R5=5555       PT107590
07E4  233D                      BZS   T4R1                                PT107600
07E6  21CC                      BTFS  12,12                               PT107610
07E8  050F                      CLHR  R0,R15                              PT107620
07EA  238A                      BNLS  T4R1                                PT107630
07EC  070A                      XHR   R0,R10             R0=FFFF          PT107640
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07EE   2338              765          BZS   T4R1                                   PT107650
07F0   21C7              766          BTFS  12,7                                   PT107660
07F2   050F              767          CLHR  R0,R15                                 PT107670
07F4   2135              768          BNES  T4R1                                   PT107680
07F6   0703              769          XHR   R0,R3           R0=FFFF,R3=0           PT107690
07F8   2333              770          BZS   T4R1                                   PT107700
07FA   050F              771          CLHR  R0,R15          R0 = FFFF              PT107710
07FC   2333              772          BES   T4B                                    PT107720
07FE   4300 2182         773  T4R1    B     ERROR           ERROR  1401            PT107730
0802   070A              774  T4B     XHR   R0,R10          R0 = 5555              PT107740
0804   2233              775          BZS   T4R1                                   PT107750
0806   20C4              776          BTBS  12,4                                   PT107760
0808   0505              777          CLHR  R0,R5                                  PT107770
080A   2036              778          BNES  T4R1                                   PT107780
080C   0705              779          XHR   R0,R5                                  PT107790
080E   2038              780          BNZS  T4R1                                   PT107800
0810   0800              781          LHR   R0,R0           R0 = 0                 PT107810
0812   203A              782          BNZS  T4R1                                   PT107820
0814   C700 5555         783          XHI   R0,X'5555'      R0 = 5555              PT107830
0818   223D              784          BZS   T4R1                                   PT107840
081A   20CE              785          BTBS  12,14                                  PT107850
081C   0505              786          CLHR  R0,R5                                  PT107860
081E   213D              787          BNES  T4R2                                   PT107870
       0000 0820         788  XHI     EQU   *                                      PT107880
0820   C700 AAAA         789          XHI   R0,X'AAAA'      R0 = FFFF              PT107890
0824   233A              790          BZS   T4R2                                   PT107900
0826   21C9              791          BTFS  12,9                                   PT107910
0828   050F              792          CLHR  R0,R15                                 PT107920
082A   2137              793          BNES  T4R2                                   PT107930
082C   C700 0000         794          XHI   R0,0            R0 = FFFF              PT107940
0830   2334              795          BZS   T4R2                                   PT107950
0832   21C3              796          BTFS  12,3                                   PT107960
0834   050F              797          CLHR  R0,R15                                 PT107970
0836   2333              798          BES   T4D                                    PT107980
0838   4300 2182         799  T4R2    B     ERROR           ERROR  1401            PT107990
083C   C700 5555         800  T4D     XHI   R0,X'5555'      R0 = AAAA              PT108000
0840   2234              801          BZS   T4R2                                   PT108010
0842   050A              802          CLHR  R0,R10                                 PT108020
0844   2036              803          BNES  T4R2                                   PT108030
0846   C700 AAAA         804          XHI   R0,X'AAAA'      R0 = 0                 PT108040
084A   2039              805          BNZS  T4R2                                   PT108050
084C   0800              806          LHR   R0,R0                                  PT108060
084E   203B              807          BNZS  T4R2                                   PT108070
       0000 0850         808  XH      EQU   *                                      PT108080
0850   4700 22FE         809          XH    R0,FIVE         R0 = 5555              PT108090
0854   223E              810          BZS   T4R2                                   PT108100
0856   0505              811          CLHR  R0,R5                                  PT108110
0858   213B              812          BNES  T4R3                                   PT108120
085A   4700 2302         813          XH    R0,TEN          R0 = FFFF              PT108130
085E   2338              814          BZS   T4R3                                   PT108140
0860   050F              815          CLHR  R0,R15                                 PT108150
0862   2136              816          BNES  T4R3                                   PT108160
0864   4700 22F6         817          XH    R0,ZERO         R0 = FFFF              PT108170
0868   2333              818          BZS   T4R3                                   PT108180
086A   050F              819          CLHR  R0,R15                                 PT108190
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086C   2333                  BES   T4E                               PT108200
086E   4300 2182     T4R3    B     ERROR          ERROR  1401        PT108210
                     *                                               PT108220
0872   C870 0214     T4E     LHI   R7,X'214'                         PT108230
0876   4070 22F2             STH   R7,ERRIND      ERRIND = 0214      PT108240
                     *                                               PT108250
087A   4700 2302             XH    R0,TEN         R0 = 5555          PT108260
087E   2238                  BZS   T4R3                              PT108270
0880   0505                  CLHR  R0,R5                             PT108280
0882   203A                  BNES  T4R3                              PT108290
0884   4700 22FE             XH    R0,FIVE        R0 = 0             PT108300
0888   203D                  BNZS  T4R3                              PT108310
088A   0800                  LHR   R0,R0                             PT108320
088C   203F                  BNZS  T4R3                              PT108330
                     *                                               PT108340
                     *       THE REG. HAVE THE VALUES:               PT108350
                     *                                               PT108360
                     *       R0=0,R5=5555,R10=AAAA,R15=FFFF          PT108370
                     *                                               PT108380
                     *       ALL OTHERS=0                            PT108390
                     *                                               PT108400
088E   087F                  LHR   R7,R15         R7=R15=FFFF        PT108410
       0000 0890     OHR     EQU   *                                 PT108420
0890   0640                  OHR   R4,R0          R4=R0=0            PT108430
0892   213F                  BNZS  T4R4                              PT108440
0894   0540                  CLHR  R4,R0          R4=R0=0 ?          PT108450
0896   213D                  BNES  T4R4                              PT108460
       0000 0898     OHI     EQU   *                                 PT108470
0898   C640 0000             OHI   R4,0           R4=0               PT108480
089C   213A                  BNZS  T4R4                              PT108490
089E   0540                  CLHR  R4,R0                             PT108500
08A0   2138                  BNES  T4R4                              PT108510
       0000 08A2     OH      EQU   *                                 PT108520
08A2   4640 22F6             OH    R4,ZERO        R4=ZERO=0          PT108530
08A6   2135                  BNZS  T4R4                              PT108540
08A8   C540 0000             CLHI  R4,R0                             PT108550
08AC   4330 08B4             BE    T4G                               PT108560
08B0   4300 2182     T4R4    B     ERROR          ERROR  1402        PT108570
08B4   0674          T4G     OHR   R7,R4          R7=FFFF,R4=0       PT108580
08B6   2233                  BZS   T4R4                              PT108590
08B8   20C4                  BTBS  12,4                              PT108600
08BA   057F                  CLHR  R7,R15         R7=R15=FFFF?       PT108610
08BC   2036                  BNES  T4R4                              PT108620
08BE   0540                  CLHR  R4,R0          R4=R0=0?           PT108630
08C0   2038                  BNES  T4R4                              PT108640
08C2   C670 0000             OHI   R7,0           R7=FFFF            PT108650
08C6   223B                  BZS   T4R4                              PT108660
08C8   057F                  CLHR  R7,R15         R7=R15=FFFF?       PT108670
08CA   203D                  BNES  T4R4                              PT108680
08CC   4670 22F6             OH    R7,ZERO        R7=FFFF,ZERO=0     PT108690
08D0   233E                  BZS   T4R5                              PT108700
08D2   21CC                  BTFS  12,12                             PT108710
08D4   057F                  CLHR  R7,R15         R7=R15=FFFF?       PT108720
08D6   213B                  BNES  T4R5                              PT108730
08D8   0647                  OHR   R4,R7          R4=R7=FFFF         PT108740
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08DA   2339            875          BZS   T4R5                                  PT108750
08DC   21C7            876          BTFS  12,7                                  PT108760
08DE   054F            877          CLHR  R4,R15           R4=R15=FFFF?         PT108770
08E0   2136            878          BNES  T4R5                                  PT108780
08E2   2135            879          BNES  T4R5                                  PT108790
08E4   057F            880          CLHR  R7,R15                                PT108800
08E6   C600 FFFF       881          OHI   R0,X'FFFF'       R0=FFFF              PT108810
08EA   2133            882          BNZS  T4H                                   PT108820
08EC   4300 2182       883  T4R5    B     ERROR            ERROR  1402          PT108830
08F0   050F            884  T4H     CLHR  R0,R15           R0=R15=FFFF?         PT108840
08F2   2043            885          BNES  T4R5                                  PT108850
08F4   4680 22FA       886          OH    R8,ONE                                PT108860
08F8   2236            887          BZS   T4R5                                  PT108870
08FA   20C6            888          BTBS  12,6                                  PT108880
08FC   058F            889          CLHR  R8,R15           R8=R15=FFFF?         PT108890
08FE   064F            890          OHR   R4,R15           R4=FFFF,R15=FFFF     PT108900
0900   223A            891          BZS   T4R5                                  PT108910
0902   20C9            892          BTBS  12,9                                  PT108920
0904   C600 0000       893          OHI   R0,0             R0=FFFF              PT108930
0908   2338            894          BZS   T4R6                                  PT108940
090A   050F            895          CLHR  R0,R15           R0=R15=FFFF?         PT108950
090C   2136            896          BNES  T4R6                                  PT108960
090E   4680 22FA       897          OH    R8,ONE           R8=FFFF,ONE=FFFF     PT108970
0912   2333            898          BZS   T4R6                                  PT108980
0914   058F            899          CLHR  R8,R15                                PT108990
0916   2333            900          BES   T4J                                   PT109000
0918   4300 2182       901  T4R6    B     ERROR            ERROR  1402          PT109010
                       902  *                                                   PT109020
                       903  *       THE REG. HAVE THE VALUES:                   PT109030
                       904  *                                                   PT109040
                       905  *       R0=R4=R8=FFFF                               PT109050
                       906  *                                                   PT109060
                       907  *       R5=5555,R10=AAAA,R15=FFFF                   PT109070
                       908  *                                                   PT109080
                       909  *       ALL OTHERS=0                                PT109090
                       910  *                                                   PT109100
091C   C800 0314       911  T4J     LHI   R0,X'314'                             PT109110
0920   4000 22F2       912          STH   R0,ERRIND        ERRIND = 0314        PT109120
                       913  *                                                   PT109130
0924   2400            914          LIS   R0,0             R0=0                 PT109140
0926   2490            915          LIS   R9,0             R9=0                 PT109150
       0000 0928       916  NHR     EQU   *                                     PT109160
0928   0490            917          NHR   R9,R0                                 PT109170
092A   213F            918          BNZS  T4R7                                  PT109180
092C   0899            919          LHR   R9,R9                                 PT109190
092E   213D            920          BNZS  T4R7                                  PT109200
0930   0590            921          CLHR  R9,R0            R9=R0=0?             PT109210
0932   213B            922          BNZS  T4R7                                  PT109220
       0000 0934       923  NH      EQU   *                                     PT109230
0934   4490 22F6       924          NH    R9,ZERO          R9=0,ZERO=0          PT109240
0938   2138            925          BNZS  T4R7                                  PT109250
093A   0590            926          CLHR  R9,R0            R9=R0=0?             PT109260
093C   2136            927          BNES  T4R7                                  PT109270
       0000 093E       928  NHI     EQU   *                                     PT109280
093E   C490 0000       929          NHI   R9,0                                  PT109290
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0942  2133                    BNZS  T4R7                                        PT109300
0944  0590                    CLHR  R9,R0            R9=0000                    PT109310
0946  2333                    BES   T4K                                         PT109320
0948  4300 2182       T4R7    B     ERROR            ERRO-  1403                PT109330
094C  0478            T4K     NHR   R9,R8            R9=0,R8=FFFF               PT109340
094E  2033                    BNZS  T4R7                                        PT109350
0950  058F                    CLHR  R8,R15           R8=R15=FFFF?               PT109360
0952  2035                    BNES  T4R7                                        PT109370
0954  0590                    CLHR  R9,R0            R9=R0=0?                   PT109380
0956  2037                    BNES  T4R7                                        PT109390
0958  C490 FFFF               NHI   R9,X'FFFF'       R9=0                       PT109400
095C  203A                    BNZS  T4R7                                        PT109410
095E  0590                    CLHR  R9,R0            R9=R0=0?                   PT109420
0960  203C                    BNES  T4R7                                        PT109430
0962  4490 22FA               NH    R9,ONE           R9=0,ONE=FFFF              PT109440
0966  203F                    BNZS  T4R7                                        PT109450
0968  0590                    CLHR  R9,R0                                       PT109460
096A  0448                    NHR   R4,R8            R4=FFFF,R8=FFFF            PT109470
096C  233A                    BZS   T4R8                                        PT109480
096E  21C9                    BTFS  12,9                                        PT109490
0970  054F                    CLHR  R4,R15           R4=R15=FFFF?               PT109500
0972  2137                    BNES  T4R8                                        PT109510
0974  058F                    CLHR  R8,R15           R8=R15=FFFF?               PT109520
0976  C440 FFFF               NHI   R4,X'FFFF'                                  PT109530
097A  2333                    BZS   T4R8                                        PT109540
097C  054F                    CLHR  R4,R15           R4=R15=FFFF?               PT109550
097E  2333                    BES   T4L                                         PT109560
0980  4300 2182       T4R8    B     ERROR            ERROR  1403                PT109570
0984  4440 22FA       T4L     NH    R4,ONE                                      PT109580
0988  2234                    BZS   T4R8                                        PT109590
098A  20C5                    BTBS  12,5                                        PT109600
098C  054F                    CLHR  R4,R15           R4=R15=FFFF?               PT109610
098E  2037                    BNES  T4R8                                        PT109620
0990  0440                    NHR   R4,R0            R4=FFFF,R0=0 R4=R0=0       PT109630
0992  2039                    BNZS  T4R8                                        PT109640
0994  0844                    LHR   R4,R4                                       PT109650
0996  203B                    BNZS  T4R8                                        PT109660
0998  0540                    CLHR  R4,R0                                       PT109670
099A  213C                    BNES  T4R9                                        PT109680
099C  C480 0000               NHI   R8,0             R8=FFFF R8=0               PT109690
09A0  2139                    BNZS  T4R9                                        PT109700
09A2  0580                    CLHR  R8,R0            R8=R0=0?                   PT109710
09A4  2137                    BNES  T4R9                                        PT109720
09A6  087F                    LHR   R7,R15           R7=R15=FFFF                PT109730
09A8  4470 22F6               NH    R7,ZERO          R7=FFFF,ZERO=0 R7=0        PT109740
09AC  2133                    BNZS  T4R9                                        PT109750
09AE  0570                    CLHR  R7,R0                                       PT109760
09B0  2333                    BES   T4END                                       PT109770
09B2  4300 2182       T4R9    B     ERROR            ERROR  1403                PT109780
09B6  4300 09BA       T4END   B     TEST5                                       PT109790
                      ***************************************************************  PT109800
                      *                                                         PT109810
                      *       TEST 5 TESTS THE INSTRUCTIONS                     PT109820
                      *                                                         PT109830
                      *                                                         PT109840
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                                985  *       BAL , BXLE , BXH , BR , BTCR,BFCR , BALR                        PT109850
                                986  *                                                                       PT109860
                                987  *       (ERR1, ERR2,3,4    ERR5,6,7)                                    PT109870
                                988  *                                                                       PT109880
09BA   C800 0B14                989  TEST5   LHI   R0,TEST6                                                 PT109890
09BE   4000 22F4                990          STH   R0,NXTST                                                 PT109900
09C2   C800 0115                991          LHI   R0,X'0115'                                               PT109910
09C6   4000 22F2                992          STH   R0,ERRIND          ERRIND = 0115                         PT109920
09CA   C800 3135                993          LHI   R0,X'3135'                                               PT109930
09CE   4000 22B8                994          STH   R0,TESTNO                                                PT109940
                                995  *                                                                       PT109950
       0000 09D2                996  BAL     EQU   *                                                        PT109960
09D2   4100 09D8                997          BAL   R0,T5A2                                                  PT109970
09D6   230C                     998  T5A1    BS    T5ERR1             ERROR  1501                           PT109980
09D8   C810 09D6                999  T5A2    LHI   R1,T5A1                                                 PT109990
09DC   0501                    1000          CLHR  R0,R1                                                    PT110000
09DE   2138                    1001          BNES  T5ERR1                                                   PT110010
09E0   4130 09E6               1002          BAL   R3,T5B2                                                  PT110020
09E4   2305                    1003  T5B1    BS    T5ERR1             ERROR  1501                           PT110030
09E6   C820 09E4               1004  T5B2    LHI   R2,T5B1                                                 PT110040
09EA   0523                    1005          CLHR  R2,R3                                                    PT110050
09EC   2333                    1006          BES   T5C                                                      PT110060
09EE   4300 2182               1007  T5ERR1  B     ERROR              ERROR  1501                           PT110070
09F2   C800 0A18               1008  T5C     LHI   R0,T5D2            R0 = ADD. OF T5D2 STORED              PT110080
09F6   2440                    1009          LIS   R4,0               R4 = 0,0                              PT110090
09F8   2451                    1010          LIS   R5,1               R5 = INCRE. = 1                       PT110100
09FA   2468                    1011          LIS   R6,8               R6 = 8 = FINAL VALUE                  PT110110
09FC   C540 0009               1012  T5D     CLHI  R4,9                                                     PT110120
0A00   233A                    1013          BES   T5ERR2                                                   PT110130
       0008 0A02               1014  BXLE    EQU   *                                                        PT110140
0A02   C140 09FC               1015          BXLE  R4,T5D                                                   PT110150
0A06   C540 0009               1016          CLHI  R4,9                                                     PT110160
0A0A   2135                    1017          BNES  T5ERR2                                                   PT110170
0A0C   C560 0008               1018          CLHI  R6,8                                                     PT110180
0A10   2132                    1019          BNES  T5ERR2                                                   PT110190
0A12   230D                    1020          BS    T5D3                                                     PT110200
0A14   4300 0A6E               1021  T5ERR2  B     T5ERR4             ERROR                                 PT110210
0A18   4300 0A7E               1022  T5D2    B     T5E1               (2) TO T5E1                           PT110220
0A1C   4300 0A86               1023  T5E2    B     T5F                (4) TO T5F                            PT110230
0A20   2411                    1024          LIS   R1,1               DUMMY                                 PT110240
0A22   2408                    1025  T5F2    LIS   R0,8                                                     PT110250
0A24   4300 0A92               1026          B     T5G                (6) TO T5G                            PT110260
0A28   4300 0AFE               1027  T5Q     B     T5Q2                                                     PT110270
0A2C   C870 9684               1028  T5D3    LHI   R7,X'9684'         R7 = INIT. VALUE                      PT110280
0A30   2482                    1029          LIS   R8,2                                                     PT110290
0A32   C890 F436               1030          LHI   R9,X'F436'                                               PT110300
0A36   C570 F437               1031  T5D4    CLHI  R7,X'F437'                                               PT110310
0A3A   2389                    1032          BNLS  T5ERR3                                                   PT110320
0A3C   C170 0A36               1033          BXLE  R7,T5D4                                                  PT110330
0A40   C570 F438               1034          CLHI  R7,X'F438'                                               PT110340
0A44   2134                    1035          BNES  T5ERR3                                                   PT110350
0A46   C590 F436               1036          CLHI  R9,X'F436'                                               PT110360
0A4A   2333                    1037          BES   T5D5                                                     PT110370
0A4C   4300 0A6E               1038  T5ERR3  B     T5ERR4                                                   PT110380
0A50   C840 7328               1039  T5D5    LHI   R4,X'7328'                                               PT110390
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0A54  2452
0A56  C860 9648
0A5A  C540 9649
0A5E  2388
      0000 0A60
0A60  C040 0A66
0A64  2205
0A66  C540 964A
0A6A  2182
0A6C  2307
0A6E  C800 0215
0A72  4000 22F2
0A76  4300 2182
      0000 0A7A
0A7A  0300
0A7C  230A
0A7E  C860 0A1C
0A82  0306
0A84  2306
0A86  2400
0A88  2410
0A8A  C850 0A22
0A8E  0305
0A90  2308
0A92  C500 0008
0A96  2138
0A98  0811
0A9A  2136
0A9C  4300 0AC0
0AA0  4300 0AD2
0AA4  2301
0AA6  4300 0804
0AAA  4300 0AE2
0AAE  2204
0AB0  C820 0AEA
0AB4  0512
0AB6  2038
0AB8  C830 0AEC
0ABC  0143
0ABE  220C

0AC0  C800 0AA0
0AC4  C850 0AA4
0AC8  2418
0ACA  0511
      0000 0ACC
0ACC  0330
0ACE  4300 0A6E
      0000 0AD2
0AD2  0235
0AD4  C840 0AAA
0AD8  C860 0AAE
0ADC  0516
0ADE  0284
0AE0  230A
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1040                LIS   R5,2
1041                LHI   R6,X'9648'
1042  T5B3          CLHI  R4,X'9649'
1043                BNLS  T5ERR4
1044  RXH           EQU   *
1045                BXH   R4,T5B4
1046                BS    T5B3
1047  T5B4          CLHI  R4,X'964A'
1048                BLS   T5ERR4
1049                BS    T5E
1050  T5ERR4        LHI   R0,X'0215'
1051                STH   R0,ERRIND
1052                B     ERROR
1053  BR            EQU   *
1054  T5E           BR    R0
1055                BS    T5R5
1056  T5E1          LHI   R6,T5E2
1057                BR    R6
1058                BS    T5R5
1059  T5F           LIS   R0,0
1060                LIS   R1,0
1061                LHI   R5,T5F2
1062                BR    R5
1063  T5R5          BS    T5ERR5
1064  T5G           CLHI  R0,8
1065                BNES  T5ERR5
1066                LHR   R1,R1
1067                BNZS  T5ERR5
1068                B     T5K1
1069  T5H1          B     T5K2
1070  T5H2          BS    T5ERR5
1071  T5ERR5        B     T5ERR7
1072  T5H3          B     T5K3
1073  T5H4          BS    T5ERR5
1074  T5J1          LHI   R2,T5L
1075                CLHR  R1,R2
1076                BNES  T5ERR5
1077                LHI   R3,T5M
1078                BALR  R4,R3
1079  T5J3          BS    T5ERR5
1080  *
1081  T5K1          LHI   R0,T5H1
1082                LHI   R5,T5H2
1083                LIS   R1,8
1084                CLHR  R1,R1
1085  BFCR          EQU   *
1086                BFCR  3,R0
1087                B     T5ERR4
1088  BTCR          EQU   *
1089  T5K2          BTCR  3,R5
1090                LHI   R4,T5H3
1091                LHI   R6,T5H4
1092                CLHR  R1,R6
1093                BTCR  8,R4
1094                BS    T5ERR6
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                                                                    PT110400
                                                                    PT110410
                                                                    PT110420
                                                                    PT110430
                                                                    PT110440
                                                                    PT110450
                                                                    PT110460
                                                                    PT110470
                                                                    PT110480
                                                                    PT110490
ERRIND = 0215                                                       PT110500
                                                                    PT110510
ERROR  1502                                                         PT110520
                                                                    PT110530
R0 = ADD. OF T5D2 (1) TO T5D2                                       PT110540
                                                                    PT110550
                                                                    PT110560
(3) TO T5E2                                                         PT110570
                                                                    PT110580
                                                                    PT110590
                                                                    PT110600
                                                                    PT110610
(5) TO T5F2                                                         PT110620
ERROR  1503                                                         PT110630
NO ERR. IF R4 = 8                                                   PT110640
                                                                    PT110650
R1  MUST BE ZERO                                                    PT110660
                                                                    PT110670
(7) TO T5K1                                                         PT110680
(9) TO T5K2                                                         PT110690
                                                                    PT110700
ERROR  1503                                                         PT110710
(11) TO T5K3                                                        PT110720
                                                                    PT110730
                                                                    PT110740
                                                                    PT110750
                                                                    PT110760
R3 = (T5M)                                                          PT110770
(13) TO T5M , R4 = (T5J3)                                           PT110780
                                                                    PT110790
                                                                    PT110800
R0 = ADD. OF T5H1                                                   PT110810
R5 = ADD. OF T5H2                                                   PT110820
                                                                    PT110830
COND. CODE = 0000                                                   PT110840
                                                                    PT110850
(8) TO T5H1                                                         PT110860
ERR. IF NO BRANCH TAKEN                                             PT110870
                                                                    PT110880
ERR. IF BRANCH TO R5 (T5H2)                                         PT110890
R4 = ADD. OF T5H3                                                   PT110900
R6 = ADD. OF T5H4                                                   PT110910
R1 < R6 , COND. CODE = 1000                                         PT110920
(10) TO T5H3                                                        PT110930
                                                                    PT110940
```

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    MODEL 8/16E PROCESSOR TEST PART 1  06-211M96R00A13        PAGE  21  09:54:45  11/04/78

0AE2    0386              1095  T5K3      BFCR  8,R6              ERR. IF BRANCH                  PT110950
                          1096  *                                                                 PT110960
0AE4    C890 0AB0         1097            LHI   R9,T5J1                                           PT110970
0AE8    0119              1098            BALR  R1,R9             (12) TO T5J1 , R1 = (T5L)       PT110980
0AEA    2305              1099  T5L       BS    T5ERR6                                            PT110990
0AEC    C880 0ABE         1100  T5M       LHI   R8,T5J3                                           PT111000
0AF0    0548              1101            CLHR  R4,R8                                             PT111010
0AF2    2332              1102            BES   T5P                                               PT111020
0AF4    2308              1103  T5ERR6    BS    T5ERR7            ERROR  1503                     PT111030
0AF6    C870 0A28         1104  T5P       LHI   R7,T5Q            R7 = ADD. OF T5Q                PT111040
        0000 0AFA         1105  BALR      EQU   *                                                 PT111050
0AFA    0177              1106            BALR  R7,R7                                             PT111060
0AFC    2304              1107  T5R7      BS    T5ERR7                                            PT111070
0AFE    C570 0AFC         1108  T5Q2      CLHI  R7,T5R7           IS  R7 = ADD. OF T5R7           PT111080
0B02    2337              1109            BES   T5END                                             PT111090
0B04    C800 0315         1110  T5ERR7    LHI   R0,X'0315'        ERROR  1503                     PT111100
0B08    4000 22F2         1111            STH   R0,ERRIND                                         PT111110
0B0C    4300 2182         1112            B     ERROR                                             PT111120
0B10    4300 0B14         1113  T5END     B     TEST6                                             PT111130
                          1114  *****************************************************************  PT111140
                          1115  *                                                                 PT111150
                          1116  *         TEST 6 CHECKS THE INSTRUCTIONS                          PT111160
                          1117  *                                                                 PT111170
                          1118  *         EPSR  , SLLS , SRLS    , SLHL , SRHL                    PT111180
                          1119  *                                                                 PT111190
                          1120  *         (T6R1  , T6R2,T6R3,T6R4 , T6R5,T6R6   )                 PT111200
                          1121  *                                                                 PT111210
                          1122  *                                                                 PT111220
                          1123  *         SLHA  , SRHA     , THI                                  PT111230
                          1124  *                                                                 PT111240
                          1125  *        (T6R7,T6R8,T6R9  , T6RA )                                PT111250
                          1126  *                                                                 PT111260
0B14    C800 0D5C         1127  TEST6     LHI   R0,TEST7                                          PT111270
0B18    4000 22F4         1128            STH   R0,NXTST                                          PT111280
0B1C    C800 3136         1129            LHI   R0,C'16'                                          PT111290
0B20    4000 22B8         1130            STH   R0,TESTNO                                         PT111300
0B24    C800 0116         1131            LHI   R0,X'0116'                                        PT111310
0B28    4000 22F2         1132            STH   R0,ERRIND         ERRIND = 0116                   PT111320
                          1133  *                                                                 PT111330
0B2C    2400              1134            LIS   R0,0                                              PT111340
        0000 0B2E         1135  EPSR      EQU   *                                                 PT111350
0B2E    9510              1136            EPSR  R1,R0                                             PT111360
0B30    2511              1137            LCS   R1,1                                              PT111370
0B32    2400              1138            LIS   R0,0                                              PT111380
0B34    9510              1139            EPSR  R1,R0             PSW INTO R1 , R0 INTO PSW       PT111390
0B36    213B              1140            BNZS  T6R1                                              PT111400
0B38    0800              1141            LHR   R0,R0                                             PT111410
0B3A    2139              1142            BNZS  T6R1                                              PT111420
0B3C    0510              1143            CLHR  R1,R0                                             PT111430
0B3E    2137              1144            BNES  T6R1                                              PT111440
0B40    2511              1145            LCS   R1,1                                              PT111450
0B42    2400              1146            LIS   R0,0              COND. CODE = 0 , R0 =0          PT111460
0B44    9511              1147            EPSR  R1,R1             R1 = PSW = 0  ?                 PT111470
0B46    2133              1148            BNZS  T6R1                                              PT111480
0B48    0510              1149            CLHR  R1,R0                                             PT111490
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0B4A  2333           1150           BES   T6A1
0B4C  4300 2182      1151  T6R1     B     ERROR          ERROR  1601                PT111500
0B50  C810 7C0F      1152  T6A1     LHI   R1,X'7C0F'                                 PT111510
0B54  9501           1153           EPSR  R0,R1          NEW PSW = R1 = 7C0F         PT111520
0B56  2440           1154           LIS   R4,0                                        PT111530
0B58  9540           1155           EPSR  R4,R0          R4 = NEW PSW = 7C0F         PT111540
0B5A  C540 7C00      1156  M5004    CLHI  R4,X'7C00'                                  PT111550
0B5E  2039           1157           BNES  T6R1                                        PT111560
0B60  9511           1158           EPSR  R1,R1                                       PT111570
0B62  2038           1159           BNZS  T6R1                                        PT111580
0B64  0811           1160           LHR   R1,R1                                       PT111590
0B66  203D           1161           BNZS  T6R1                                        PT111600
0B68  2402           1162  T6B      LIS   R0,2                                        PT111610
0B6A  D200 22F2      1163           STB   R0,ERRIND      ERRIND = 0216               PT111620
                     1164  *                                                         PT111630
0B6E  C860 D288      1165           LHI   R6,X'D288'     R6 = 1101,0010,1011,1011    PT111640
0B72  C870 DD4B      1166           LHI   R7,X'DD4B'     R7 = 1101,1101,0100,1011    PT111650
      0000 0B76      1167  SLLS     EQU   *                                           PT111660
0B76  9170           1168           SLLS  R7,0           SHIFT LEFT SHORT  0         PT111670
0B78  218C           1169           BCS   T6R2                                        PT111680
      0000 0B7A      1170  SRLS     EQU   *                                           PT111690
0B7A  9070           1171           SRLS  R7,0           SHIFT RIGHT SHORT 0         PT111700
0B7C  212A           1172           BPS   T6R2                                        PT111710
      0000 0B7E      1173  SLHL     EQU   *                                           PT111720
0B7E  CD70 0000      1174           SLHL  R7,0           SHIFT LEFT HW     0         PT111730
0B82  2187           1175           BCS   T6R2                                        PT111740
      0000 0B84      1176  SRHL     EQU   *                                           PT111750
0B84  CC70 0000      1177           SRHL  R7,0           SHIFT RIGHT HW    0         PT111760
0B88  2124           1178           BPS   T6R2                                        PT111770
0B8A  CF60 0000      1179           SLHA  R6,0                                        PT111780
0B8E  2383           1180           BNCS  T6B2                                        PT111790
0B90  4300 2182      1181  T6R2     B     ERROR          ERROR  1602                PT111800
      0000 0B94      1182  SRHA     EQU   *                                           PT111810
0B94  CE60 0000      1183  T6B2     SRHA  R6,0                                        PT111820
0B98  2024           1184           BPS   T6R2                                        PT111830
0B9A  C560 D288      1185           CLHI  R6,X'D288'                                  PT111840
0B9E  2037           1186           BNES  T6R2                                        PT111850
0BA0  C570 DD4B      1187           CLHI  R7,X'DD4B'                                  PT111860
0BA4  203A           1188           BNES  T6R2                                        PT111870
0BA6  9161           1189           SLLS  R6,1           SHIFT LEFT SHORT  1         PT111880
0BA8  228C           1190           BNCS  T6R2                                        PT111890
0BAA  C560 A576      1191  T6B4     CLHI  R6,X'A576'                                  PT111900
0BAE  213D           1192           BNES  T6R3                                        PT111910
0BB0  9162           1193           SLLS  R6,2           SHIFT LEFT SHORT  2         PT111920
0BB2  2188           1194           BCS   T6R3                                        PT111930
0BB4  C560 95D8      1195           CLHI  R6,X'95D8'                                  PT111940
0BB8  2138           1196           BNES  T6R3                                        PT111950
0BBA  9164           1197           SLLS  R6,4           SHIFT LEFT SHORT  4         PT111960
0BBC  2386           1198           BNCS  T6R3                                        PT111970
0BBE  C560 5D80      1199           CLHI  R6,X'5D80'                                  PT111980
0BC2  2133           1200           BNES  T6R3                                        PT111990
0BC4  9168           1201           SLLS  R6,8           SHIFT LEFT SHORT  8         PT112000
0BC6  2183           1202           BCS   T6B6                                        PT112010
0BC8  4300 2182      1203  T6R3     B     ERROR          ERROR  1602                PT112020
0BCC  C560 8000      1204  T6B6     CLHI  R6,X'8000'                                  PT112030
                                                                                     PT112040
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0BD0   2034            1205        BNES   T6R3                                    PT112050
0BD2   C570 DD48       1206        CLHI   R7,X'DD48'     R7 MUST BE UNCHANGED     PT112060
0BD6   2097            1207        BNES   T6R3                                    PT112070
0BD8   C840 2369       1208  T6C   LHI    R4,X'2369'                              PT112080
0BDC   9041            1209        SRLS   R4,1           SHIFT RIGHT SHORT  1     PT112090
0BDE   228B            1210        BNCS   T6R3                                    PT112100
0BE0   C540 11B4       1211        CLHI   R4,X'11B4'                              PT112110
0BE4   219D            1212        BNES   T6R4                                    PT112120
0BE6   9042            1213        SRLS   R4,2           SHIFT RIGHT SHORT  2     PT112130
0BE8   218B            1214        BCS    T6R4                                    PT112140
0BEA   C540 046D       1215        CLHI   R4,X'46D'                               PT112150
0BEE   2138            1216        BNES   T6R4                                    PT112160
0BF0   9044            1217        SRLS   R4,4           SHIFT RIGHT SHORT  4     PT112170
0BF2   2386            1218        BNCS   T6R4                                    PT112180
0BF4   C540 0046       1219        CLHI   R4,X'46'                                PT112190
0BF8   2133            1220        BNES   T6R4                                    PT112200
0BFA   9048            1221        SRLS   R4,8           SHIFT RIGHT SHORT  8     PT112210
0BFC   2333            1222        BZS    T6C3                                    PT112220
0BFE   4300 2182       1223  T6R4  B      ERROR          ERROR  1602              PT112230
0C02   0844            1224  T6C3  LHR    R4,R4                                   PT112240
0C04   2033            1225        BNZS   T6R4                                    PT112250
0C06   2403            1226  T6D   LIS    R0,3                                    PT112260
0C08   D200 22F2       1227        STB    R0,ERRIND      ERRIND = 0316            PT112270
0C0C   C840 D28B       1228        LHI    R4,X'D28B'                              PT112280
0C10   CD40 0001       1229        SLHL   R4,1           SHIFT LEFT HW  1         PT112290
0C14   238E            1230        BNCS   T6R5                                    PT112300
0C16   C540 A576       1231        CLHI   R4,X'A576'                              PT112310
0C1A   213B            1232        BNES   T6R5                                    PT112320
0C1C   CD40 0002       1233        SLHL   R4,2           SHIFT LEFT HW  2         PT112330
0C20   2188            1234        BCS    T6R5                                    PT112340
0C22   C540 95D8       1235        CLHI   R4,X'95D8'                              PT112350
0C26   2135            1236        BNES   T6R5                                    PT112360
0C28   2474            1237        LIS    R7,4                                    PT112370
0C2A   CD47 0000       1238        SLHL   R4,0(R7)                                PT112380
0C2E   2183            1239        BCS    T6D2                                    PT112390
0C30   4300 2182       1240  T6R5  B      ERROR          ERROR  1603              PT112400
0C34   C540 5D80       1241  T6D2  CLHI   R4,X'5D80'                              PT112410
0C38   2034            1242        BNES   T6R5                                    PT112420
0C3A   CD40 0008       1243        SLHL   R4,8           SHIFT LEFT HW  8         PT112430
0C3E   2287            1244        BNCS   T6R5                                    PT112440
0C40   C540 8000       1245        CLHI   R4,X'8000'                              PT112450
0C44   203A            1246        BNES   T6R5                                    PT112460
0C46   C860 2369       1247  T6E   LHI    R6,X'2369'                              PT112470
0C4A   CC60 0001       1248        SRHL   R6,1           SHIFT RIGHT HW   1       PT112480
0C4E   238D            1249        BNCS   T6R6                                    PT112490
0C50   C560 11B4       1250        CLHI   R6,X'11B4'                              PT112500
0C54   213A            1251        BNES   T6R6                                    PT112510
0C56   CC60 0002       1252        SRHL   R6,2           SHIFT RIGHT HW   2       PT112520
0C5A   2187            1253        BCS    T6R6                                    PT112530
0C5C   C560 046D       1254        CLHI   R6,X'46D'                               PT112540
0C60   2194            1255        BNES   T6R6                                    PT112550
0C62   CC60 0004       1256        SRHL   R6,4           SHIFT RIGHT HW   4       PT112560
0C66   2183            1257        BCS    T6E2                                    PT112570
0C68   4300 2182       1258  T6R6  B      ERROR          ERROR  1603              PT112580
0C6C   C560 0046       1259  T6E2  CLHI   R6,X'46'                                PT112590
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0C70   2034               1260          BNES  T6R6                                        PT112600
0C72   2478               1261          LIS   R7,8                                        PT112610
0C74   CC67 0000          1262          SRHL  R6,0(R7)                                    PT112620
0C78   2038               1263          BNZS  T6R6                                        PT112630
0C7A   0866               1264          LHR   R6,R6                                       PT112640
0C7C   203A               1265          BNZS  T6R6                                        PT112650
0C7E   2404               1266   T6F    LIS   R0,4                                        PT112660
0C80   D200 22F2          1267          STB   R0,ERRIND        ERRIND = 0416              PT112670
0C84   C860 496C          1268          LHI   R6,X'496C'                                  PT112680
0C88   CF60 0001          1269          SLHA  R6,1             SHIFT LEFT HW ARITH.  1    PT112690
0C8C   238E               1270          BNCS  T6R7                                        PT112700
0C8E   C560 1208          1271          CLHI  R6,X'1208'                                  PT112710
0C92   213B               1272          BNES  T6R7                                        PT112720
0C94   CF60 0002          1273          SLHA  R6,2             SHIFT LEFT HW ARITH.  2    PT112730
0C98   2188               1274          BCS   T6R7                                        PT112740
0C9A   C560 4860          1275          CLHI  R6,X'4860'                                  PT112750
0C9E   2135               1276          BNES  T6R7                                        PT112760
0CA0   9161               1277          SLLS  R6,1             R6  =  96C0  = -VE NO.     PT112770
0CA2   CF60 0004          1278          SLHA  R6,4             SHIFT LEFT HW ARITH.  4    PT112780
0CA6   2383               1279          BNCS  T6F3                                        PT112790
0CA8   4300 2182          1280   T6R7   B     ERROR            ERROR  1604                PT112800
0CAC   C560 EC00          1281   T6F3   CLHI  R6,X'EC00'                                  PT112810
0CB0   2034               1282          BNES  T6R7                                        PT112820
0CB2   C860 ECAA          1283          LHI   R6,X'ECAA'                                  PT112830
0CB6   CF60 0008          1284          SLHA  R6,8             SHIFT LEFT HW ARITH.  8    PT112840
0CBA   2289               1285          BNCS  T6R7                                        PT112850
0CBC   C560 AA00          1286          CLHI  R6,X'AA00'                                  PT112860
0CC0   203C               1287          BNES  T6R7                                        PT112870
0CC2   C870 6729          1288   T6G    LHI   R7,X'6729'                                  PT112880
0CC6   CE70 0001          1289          SRHA  R7,1             SHIFT RIGHT HW ARITH. 1    PT112890
0CCA   238C               1290          BNCS  T6R8                                        PT112900
0CCC   232B               1291          BNPS  T6R8                                        PT112910
0CCE   C570 3394          1292          CLHI  R7,X'3394'                                  PT112920
0CD2   2138               1293          BNES  T6R8                                        PT112930
0CD4   CE70 0002          1294          SRHA  R7,2             SHIFT RIGHT HW ARITH. 2    PT112940
0CD8   2185               1295          BCS   T6R8                                        PT112950
0CDA   2324               1296          BNPS  T6R8                                        PT112960
0CDC   C570 0CE5          1297          CLHI  R7,X'CE5'                                   PT112970
0CE0   2333               1298          BES   T6G4                                        PT112980
0CE2   4300 2182          1299   T6R8   B     ERROR            ERROR  1604                PT112990
0CE6   C860 948A          1300   T6G4   LHI   R6,X'948A'       R6 = -VE NO.               PT113000
0CEA   CE60 0004          1301          SRHA  R6,4             SHIFT RIGHT HW ARITH. 4    PT113010
0CEE   2286               1302          BNCS  T6R8                                        PT113020
0CF0   2027               1303          BPS   T6R8                                        PT113030
0CF2   C560 F948          1304          CLHI  R6,X'F948'                                  PT113040
0CF6   203A               1305          BNES  T6R8                                        PT113050
0CF8   CE60 0008          1306          SRHA  R6,8             SHIFT RIGHT HW ARITH. 8    PT113060
0CFC   2185               1307          BCS   T6R9                                        PT113070
0CFE   2124               1308   T6G8   BPS   T6R9                                        PT113080
0D00   C560 FFF9          1309          CLHI  R6,X'FFF9'                                  PT113090
0D04   2333               1310          BES   T6H                                         PT113100
0D06   4300 2182          1311   T6R9   B     ERROR            ERROR  1604                PT113110
0D0A   2405               1312   T6H    LIS   R0,5                                        PT113120
0D0C   D200 22F2          1313          STB   R0,ERRIND        ERRIND = 0516              PT113130
0D10   2400               1314          LIS   R0,0                                        PT113140
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0D12  C300 0000          1315          THI   R0,0                                    PT113150
0D16  2139               1316          BNZS  T6RA                                    PT113160
0D18  0800               1317          LHR   R0,R0                                   PT113170
0D1A  2137               1318          BNZS  T6RA                                    PT113180
0D1C  2437               1319          LIS   R3,7                                    PT113190
0D1E  C330 5555          1320          THI   R3,X'5555'                              PT113200
0D22  2323               1321          BNPS  T6RA                                    PT113210
0D24  4310 0D2C          1322          BFC   1,T6H3                                  PT113220
0D28  4300 2182          1323  T6RA    B     ERROR             ERROR  1605          PT113230
0D2C  C530 0007          1324  T6H3    CLHI  R3,7                                    PT113240
0D30  2034               1325          BNES  T6RA                                    PT113250
0D32  2035               1326          BNES  T6RA                                    PT113260
0D34  C880 8000          1327          LHI   R8,X'8000'                              PT113270
      0000 0D38          1328  THI     EQU   *                                       PT113280
0D38  C380 AAAA          1329          THI   R8,X'AAAA'                              PT113290
0D3C  4330 0D54          1330          BFC   3,T6GA                                  PT113300
0D40  9181               1331          SLLS  R8,1                                    PT113310
0D42  2139               1332          BNZS  T6GA                                    PT113320
0D44  C8A0 AAAA          1333          LHI   R10,X'AAAA'                             PT113330
0D48  C3A0 0000          1334          THI   R10,0                                   PT113340
0D4C  2134               1335          BNZS  T6GA                                    PT113350
0D4E  45A0 2302          1336          CLH   R10,TEN                                 PT113360
0D52  2331               1337          BES   T6GA                                    PT113370
      0000 0D54          1338  T6GA    EQU   *                                       PT113380
0D54  4300 0D58          1339          B     T6END                                   PT113390
0D58  4300 0D5C          1340  T6END   B     TEST7                                   PT113400
                         1341  ********************************************************PT113410
                         1342  *                                                       PT113420
                         1343  *       TEST 7 CHECKS THE BYTE HANDLING INSTRUCTIONS     PT113430
                         1344  *                                                       PT113440
                         1345  *       LB, STB, CLB, LBR, STBR, EXBR                   PT113450
                         1346  *                                                       PT113460
0D5C  C800 0E8A          1347  TEST7   LHI   R0,TEST8                                PT113470
0D60  4000 22F4          1348          STH   R0,NXTST                                PT113480
0D64  C800 0117          1349          LHI   R0,X'0117'                              PT113490
0D68  4000 22F2          1350          STH   R0,ERRIND           ERRIND = 0117       PT113500
0D6C  C800 3137          1351          LHI   R0,X'3137'                              PT113510
0D70  4000 2288          1352          STH   R0,TESTNO                               PT113520
                         1353  *                                                       PT113530
0D74  2501               1354          LCS   R0,1                                    PT113540
0D76  4000 0616          1355          STH   R0,T2WRD0           T2WRD0 = FFFF       PT113550
0D7A  4000 061A          1356          STH   R0,T2WRD1           T2WRD1 = FFFF       PT113560
0D7E  4000 061E          1357          STH   R0,T2WRD2           T2WRD2 = FFFF       PT113570
0D82  0810               1358          LHR   R1,R0               R1 = R0 = FFFF      PT113580
0D84  0850               1359          LHR   R5,R0               R5 = R0 = FFFF      PT113590
0D86  08A0               1360          LHR   R10,R0              R10 = R0 = FFFF     PT113600
      0000 0D88          1361  LB      EQU   *                                       PT113610
0D88  D310 22FA          1362          LB    R1,ONE              R1=00FF             PT113620
0D8C  D350 22FE          1363          LB    R5,FIVE             R5 = 0055           PT113630
0D90  D3A0 2302          1364          LB    R10,TEN             R10 = 00AA          PT113640
0D94  C510 00FF          1365          CLHI  R1,X'FF'            CHECK BYTES LOADED INTO PT113650
0D98  210D               1366          BNES  T7R1                R1                  PT113660
0D9A  C550 0055          1367          CLHI  R5,X'55'                                PT113670
0D9E  213A               1368          BNES  T7R1                R5                  PT113680
0DA0  C5A0 00AA          1369          CLHI  R10,X'AA'                               PT113690
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0DA4  2137                   BNES  T7R1           R10                            PT113700
0DA6  D410 22FB              CLB   R1,ONE+1       TEST CLB INSTRUCTION USING     PT113710
0DAA  2134                   BNES  T7R1           R1                             PT113720
      0040 0DAC      CLB     EQU   *                                             PT113730
0DAC  D450 22FF              CLB   R5,FIVE+1                                     PT113740
0DB0  2333                   BES   T7B            R5                             PT113750
0DB2  4300 2182      T7R1    B     ERROR          ERROR  1701                    PT113760
0DB6  D4A0 2302      T7B     CLB   R10,TEN        R10                            PT113770
0DBA  2034                   BNES  T7R1                                          PT113780
0DBC  C870 0123              LHI   R7,X'0123'     R7 = 0123                      PT113790
0DC0  C880 4567              LHI   R8,X'4567'     R8 = 4567                      PT113800
0DC4  C890 89AB              LHI   R9,X'89AB'     R9 = 89AB                      PT113810
      0000 0DC8      STB     EQU   *                                             PT113820
0DC8  D270 0617              STB   R7,T2WRD0+1    T2WRD0 = FF23                  PT113830
0DCC  D280 0618              STB   R8,T2WRD1+1    T2WRD1 = FF67                  PT113840
0DD0  D290 061E              STB   R9,T2WRD2      T2WRD2 = 89FF                  PT113850
0DD4  4310 0E02              BNM   T7R2                                          PT113860
0DD8  4800 0616              LH    R0,T2WRD0      R0 = FF23                      PT113870
0DDC  4810 061A              LH    R1,T2WRD1      R1 = FF6(                      PT113880
0DE0  4820 061E              LH    R2,T2WRD2      R8 = ABFF                      PT113890
0DE4  C500 FF23              CLHI  R0,X'FF23'                                    PT113900
0DE8  213D                   BNES  T7R2                                          PT113910
0DEA  C510 FF67              CLHI  R1,X'FF67'                                    PT113920
0DEE  213A                   BNES  T7R2                                          PT113930
0DF0  C520 ABFF              CLHI  R2,X'ABFF'                                    PT113940
0DF4  2137                   BNES  T7R2                                          PT113950
0DF6  D470 0617              CLB   R7,T2WRD0+1    R7 = 0123, T2WRD0 = FF23       PT113960
0DFA  2134                   BNES  T7R2                                          PT113970
0DFC  D480 0618              CLB   R8,T2WRD1+1    R8=4567, T2WRD1=FF67           PT113980
0E00  2333                   BES   T7C                                           PT113990
0E02  4300 2182      T7R2    B     ERROR          ERROR  1701                    PT114000
0E06  D490 061E      T7C     CLB   R9,T2WRD2      R9=89AB, T2WRD2=ABFF           PT114010
0E0A  2034                   BNES  T7R2                                          PT114020
0E0C  D400 061A              CLB   R0,T2WRD1      R0=FF238T2WRD1=FF67            PT114030
0E10  2237                   BES   T7R2                                          PT114040
0E12  D470 22F8              CLB   R7,ZERO+2      R7=0123, ZERO=0000             PT114050
0E16  223A                   BES   T7R2                                          PT114060
0E18  24B0                   LIS   R11,0                                         PT114070
0E1A  D4B0 22FA              CLB   R11,ONE                                       PT114080
0E1E  223E                   BES   T7R2                                          PT114090
                     *                                                           PT114100
0E20  25B1                   LCS   R11,1          R11 = FFFF                     PT114110
0E22  25C2                   LCS   R12,2          R12 = FFFE                     PT114120
0E24  25D3                   LCS   R13,3          R13=FFFD                       PT114130
      0000 0E26      STBR    EQU   *                                             PT114140
0E26  927B                   STBR  R7,R11                                        PT114150
0E28  928C                   STBR  R8,R12                                        PT114160
0E2A  929D                   STBR  R9,R13                                        PT114170
0E2C  C5B0 FF23              CLHI  R11,X'FF23'                                   PT114180
0E30  213E                   BNES  T7R3                                          PT114190
0E32  C5C0 FF67              CLHI  R12,X'FF67'                                   PT114200
0E36  213B                   BNES  T7R3                                          PT114210
0E38  C5D0 FFAB              CLHI  R13,X'FFAB'                                   PT114220
0E3C  2138                   BNES  T7R3                                          PT114230
      0000 0E3E      LBR     EQU   *                                             PT114240
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0E3E  93B1            1425          LBR   R11,R1          R1=FF678 R11=FF23          PT114250
0E40  93C0            1426          LBR   R12,R0          R0=FF23, R12=FF67          PT114260
0E42  93D2            1427          LBR   R13,R2          R2=ABFF, R13=FFAB          PT114270
0E44  2134            1428          BNZS  T7R3                                       PT114280
0E46  C5B0 0067       1429          CLHI  R11,X'0067'                                PT114290
0E4A  2333            1430          BES   T7E                                        PT114300
0E4C  43V0 2182       1431  T7R3    B     ERROR           ERROR  1701               PT114310
0E50  C5C0 0023       1432  T7E     CLHI  R12,X'0023'                                PT114320
0E54  2034            1433          BNES  T7R3                                       PT114330
0E56  C5D0 00FF       1434          CLHI  R13,X'00FF'                                PT114340
0E5A  2037            1435          BNES  T7R3                                       PT114350
                      1436  *                                                        PT114360
      0000 0E5C       1437  EXBR    EQU   *                                          PT114370
0E5C  9478            1438          EXBR  R7,R8           R7=0123, R8=4567           PT114380
                      1439  *                            R7 = 6745 , R8 = 4567      PT114390
0E5E  C5?0 6745       1440          CLHI  R7,X'6745'                                 PT114400
0E62  203B            1441          BNES  T7R3                                       PT114410
0E64  C580 4567       1442          CLHI  R8,X'4567'                                 PT114420
0E68  203E            1443          BNES  T7R3                                       PT114430
0E6A  9489            1444          EXBR  R8,R9           R8 = AB89 , R9 = 89AB      PT114440
0E6C  213B            1445          BNES  T7R4                                       PT114450
0E6E  C580 AB89       1446          CLHI  R8,X'AB89'                                 PT114460
0E72  9499            1447          EXBR  R9,R9           R9 = AB89                  PT114470
0E74  9488            1448          EXBR  R8,R8           R8 = 89AB                  PT114480
0E76  C580 89AB       1449          CLHI  R8,X'89AB'                                 PT114490
0E7A  2134            1450          BNES  T7R4                                       PT114500
0E7C  C590 AB89       1451          CLHI  R9,X'AB89'                                 PT114510
0E80  2333            1452          BES   T7END                                      PT114520
0E82  4300 2182       1453  T7R4    B     ERROR           ERROR  1701               PT114530
0E86  4300 0E8A       1454  T7END   B     TEST8                                      PT114540
                      1455  ***************************************************************PT114550
                      1456  *                                                        PT114560
                      1457  *       TEST8 CHECKS THE INSTRUCTIONS                    PT114570
                      1458  *                                                        PT114580
                      1459  *       AH , AHR , AHI , AHM , AIS , ACH , ACHI          PT114590
                      1460  *                                                        PT114600
                      1461  *       SH , SHR , SHI ,       SIS , SCH , SCHI          PT114610
                      1462  *                                                        PT114620
                      1463  *                                                        PT114630
                      1464  *       TEST8 CHECKS THE FIXED POINT                     PT114640
                      1465  *       ADD,SUBTRACT,AND COMPARE INSTRUCTIONS            PT114650
                      1466  *                                                        PT114660
      0000 000F       1467  TOT     EQU   15                                         PT114670
                      1468  *                                                        PT114680
0E8A  C800 12C4       1469  TEST8   LHI   R0,TEST9                                   PT114690
0E8E  4000 22F4       1470          STH   R0,NXTST                                   PT114700
0E92  C800 0118       1471          LHI   R0,X'0118'                                 PT114710
0E96  4000 22F2       1472          STH   R0,ERRIND                                  PT114720
0E9A  C800 3138       1473          LHI   R0,C'18'                                   PT114730
0E9E  4000 22B8       1474          STH   R0,TESTNO                                  PT114740
0EA2  24F1            1475          LIS   TOT,1           SET ERROR NUMBER=1         PT114750
0EA4  2445            1476          LIS   R4,5            SET INDEX OFFSET=5         PT114760
0EA6  0700            1477          XHR   R0,R0           CARRY IN=0                 PT114770
0EA8  0711            1478          XHR   R1,R1           INITIAL M=0                PT114780
0EAA  0722            1479          XHR   R2,R2           INITIAL N=0                PT114790
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0EAC   C8A0 0101           LHI   R10,X'0101'     INCREMENT=X'0101'                         PT114800
0EB0   4180 0EE2           BAL   R8,TEST85       CHECK FOR ALL COMBINATIONS OF M AND N     PT114810
0EB4   2408                LIS   R0,8            CARRYIN=1                                 PT114820
0EB6   C810 0040           LHI   R1,X'0040'      INITIAL M                                 PT114830
0EBA   C820 00C0           LHI   R2,X'00C0'      INITIAL N                                 PT114840
0EBE   4180 0EE2           BAL   R8,TEST85       CHECK FOR ALL COMBINATION OF M AND N      PT114850
0EC2   0700                XHR   R0,R0           CARRY IN=0                                PT114860
0EC4   0711                XHR   R1,R1           INITIAL M=0                               PT114870
0EC6   0722                XHR   R2,R2           INITIAL N=0                               PT114880
0EC8   C8A0 1010           LHI   R10,X'1010'     INCREMENT=X'1010'                         PT114890
0ECC   4180 0EE2           BAL   R8,TEST85       CHECK FOR ALL COMBINATIONS OF M AND N     PT114900
0ED0   2408                LIS   R0,8            CARRY IN = 1                              PT114910
0ED2   C810 0404           LHI   R1,X'0404'      INITIAL M                                 PT114920
0ED6   C820 0C0C           LHI   R2,X'0C0C'      INITIAL N                                 PT114930
0EDA   4180 0EE2           BAL   R8,TEST85       CHECK FOR ALL COMBINATIONS OF M AND N     PT114940
0EDE   4300 0F04           B     OVTEST          GO TO NEXT PART OF TEST                   PT114950
0EE2   4010 12C2   TEST85  STH   R1,INITM        SAVE INITIAL M                            PT114960
0EE6   24CF                LIS   R12,15          COUNTER 1                                 PT114970
0EE8   24EF                LIS   R14,15          COUNTER 2                                 PT114980
0EEA   4190 11B8   LOOP85  BAL   R9,TEST83                                                 PT114990
0EEE   0A1A                AHR   R1,R10          INCREMENT M                               PT115000
0EF0   27C1                SIS   R12,1           DECREMENT COUNTER 1                       PT115010
0EF2   2214                BNMS  LOOP85          LOOP IF COUNT IS NONNEGATIVE              PT115020
0EF4   4810 12C2           LH    R1,INITM        INITIALIZE M                              PT115030
0EF8   24CF                LIS   R12,15          INITIALIZE COUNTER 1                      PT115040
0EFA   0A2A                AHR   R2,R10          INCREMENT  N                              PT115050
0EFC   27E1                SIS   R14,1           DECREMENT COUNTER 2                       PT115060
0EFE   4310 0EEA           BNM   LOOP85          LOOP IF COUNT IS NON-NEGATIVE             PT115070
0F02   0308                BR    R8                                                        PT115080
0F04   07CC        OVTEST  XHR   R12,R12         EXPECTED    CC=0                          PT115090
0F06   0700                XHR   R0,R0           (R0)=0                                    PT115100
0F08   4830 12A6           LH    R3,CD3          (R3)=X'7FFE'                              PT115110
0F0C   4880 12B0           LH    R8,CD8          (R8)=X'FFFF'                              PT115120
0F10   24F6                LIS   TOT,6           SET ERROR NUMBER=6                        PT115130
0F12   2600                AIS   R0,0                                                      PT115140
0F14   4190 11A6           BAL   R9,TESTCC                                                 PT115150
                   *     ERROR NUMBER=7                                                    PT115160
0F18   0B00                SHR   R0,R0                                                     PT115170
0F1A   4190 11A6           BAL   R9,TESTCC                                                 PT115180
                   *     ERROR NUMBER=8                                                    PT115190
0F1E   CB30 7FFE           SHI   R3,X'7FFE'                                                PT115200
0F22   4190 11A6           BAL   R9,TESTCC                                                 PT115210
                   *     ERROR NUMBER=9                                                    PT115220
0F26   4B80 12B0           SH    R8,CD8                                                    PT115230
0F2A   4190 11A6           BAL   R9,TESTCC                                                 PT115240
                   *     ERROR NUMBER=X'A'                                                 PT115250
0F2E   24C1                LIS   R12,1           EXPECTED CC=1                             PT115260
0F30   4850 12AA           LH    R5,CD5          (R5)='8001'                               PT115270
0F34   4860 12AC           LH    R6,CD6          (R6)='8002'                               PT115280
       0000 0F38   AH      EQU   *                                                         PT115290
0F38   4A50 12A6           AH    R5,CD3          '8001'+'7FFE'                             PT115300
0F3C   4190 11A6           BAL   R9,TESTCC                                                 PT115310
0F40   2761                SIS   R6,1            '8002'-'0001'                             PT115320
0F42   4190 11A6           BAL   R9,TESTCC                                                 PT115330
                   *     ERROR NUMBER=X'C'                                                 PT115340
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0F46   24C2           1535         LIS   R12,2           EXPECTED  CC=2          PT115350
0F48   4830 12A6      1536         LH    R3,CD3          (R3)='7FFE'             PT115360
0F4C   4840 12A8      1537         LH    R4,CD4          (R4)='7FFF'             PT115370
0F50   4880 12B0      1538         LH    R8,CD8          (R8)='FFFF'             PT115380
0F54   2631           1539         AIS   R3,1            '7FFE'+1='7FFF'         PT115390
0F56   4190 11A6      1540         BAL   R9,TESTCC                               PT115400
       0000 0F5A      1541   SHI   EQU   *                                       PT115410
0F5A   CB40 7FFE      1542         SHI   R4,X'7FFE'      '7FFF'-'7FFE'           PT115420
0F5E   4190 11A6      1543         BAL   R9,TESTCC                               PT115430
                      1544   *     ERROR NUMBER=X'E'                             PT115440
       0000 0F62      1545   SH    EQU   *                                       PT115450
0F62   4B80 12AE      1546         SH    R8,CD7          'FFFF'-'FFFE'           PT115460
0F66   4190 11A6      1547         BAL   R9,TESTCC                               PT115470
0F6A   C8C0 0005      1548         LHI   R12,5           EXPECTED CC=5           PT115480
0F6E   4840 12A8      1549         LH    R4,CD4          (R4)= '7FFF'            PT115490
0F72   4A40 12A6      1550         AH    R4,CD3          '7FFE'+'7FFF'           PT115500
0F76   4190 11A6      1551         BAL   R9,TESTCC                               PT115510
                      1552   *     ERROR NUMBER=X'10'                            PT115520
0F7A   24C6           1553         LIS   R12,6           EXPECTED CC=6           PT115530
0F7C   4850 12AA      1554         LH    R5,CD5          (R5)='8001'             PT115540
0F80   CB50 7FFF      1555         SHI   R5,X'7FFF'      '8001'- '7FFF'          PT115550
0F84   4190 11A6      1556         BAL   R9,TESTCC                               PT115560
0F88   24C8           1557         LIS   R12,8           EXPECTED CC=8           PT115570
0F8A   4810 12A2      1558         LH    R1,CD1          (R1)=1                  PT115580
0F8E   4840 12A8      1559         LH    R4,CD4          (R4)=X'7FFF'            PT115590
0F92   4880 12B0      1560         LH    R8,CD8          (R8)='FFFF'             PT115600
       0000 0F96      1561   AHI   EQU   *                                       PT115610
0F96   CA40 8001      1562         AHI   R4,X'8001'                              PT115620
0F9A   4190 11A6      1563         BAL   R9,TESTCC                               PT115630
       0000 0F9E      1564   AHR   EQU   *                                       PT115640
0F9E   0A18           1565         AHR   R1,R8           X'0001' + X'FFFF'       PT115650
0FA0   4190 11A6      1566         BAL   R9,TESTCC                               PT115660
0FA4   24C9           1567         LIS   R12,9           EXPECTED    CC=9        PT115670
0FA6   4830 12A6      1568         LH    R3,CD3          (R3)= X'7FFE'           PT115680
0FAA   4870 12AE      1569         LH    R7,CD7          (R7)=X'FFFE'            PT115690
0FAE   4880 12B0      1570         LH    R8,CD8          (R8)=X'FFFF'            PT115700
0FB2   0A87           1571         AHR   R8,R7           'FFFF'+ 'FFFE'          PT115710
0FB4   4190 11A6      1572         BAL   R9,TESTCC                               PT115720
                      1573   *     ERROR NUMBER=X'14'                            PT115730
       0000 0FB8      1574   SIS   EQU   *                                       PT115740
0FB8   2701           1575         SIS   R0,1            0-1                     PT115750
0FBA   4190 11A6      1576         BAL   R9,TESTCC                               PT115760
0FBE   CB70 FFFF      1577         SHI   R7,X'FFFF'      'FFFE'-'FFFF'           PT115770
0FC2   4190 11A6      1578         BAL   R9,TESTCC                               PT115780
0FC6   4B30 12A8      1579         SH    R3,CD4          '7FFE'-'7FFF'           PT115790
0FCA   4190 11A6      1580         BAL   R9,TESTCC                               PT115800
0FCE   24CA           1581         LIS   R12,X'A'        EXPECTED CC=  'A'       PT115810
0FD0   0700           1582         XHR   R0,R0           (R0)=0                  PT115820
0FD2   4830 12A6      1583         LH    R3,CD3          (R3)=X'7FFE'            PT115830
0FD6   4860 12AC      1584         LH    R6,CD6          (R6)='8002'             PT115840
0FDA   4880 12B0      1585         LH    R8,CD8          (R8)= 'FFFF'            PT115850
       0000 0FDE      1586   AIS   EQU   *                                       PT115860
0FDE   2682           1587         AIS   R8,2            'FFFF'+2                PT115870
0FE0   4190 11A6      1588         BAL   R9,TESTCC                               PT115880
                      1589   *     ERROR NUMBER=X'18'                            PT115890
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0FE4   CB00 FFFF                SHI   R0,X'FFFF'       0-'FFFF'                                  PT115900
0FE8   4190 11A6                BAL   R9,TESTCC                                                  PT115910
0FEC   4B30 12B0                SH    R3,CD8           '7FFE'-'FFFF'                             PT115920
0FF0   4190 11A6                BAL   R9,TESTCC                                                  PT115930
0FF4   CA60 7FFF                AHI   R6,X'7FFF'       '8002' + '7FFF'= '0001'                   PT115940
0FF8   4190 11A6                BAL   R9,TESTCC                                                  PT115950
0FFC   24CD                     LIS   R12,X'D'         EXPECTED  CC='D'                          PT115960
0FFE   4840 12A8                LH    R4,CD4           (R4)='7FFF'                               PT115970
1002   4820 12A4                LH    R2,CD2           (R2)=2                                    PT115980
1006   4B40 12AE                SH    R4,CD7           '7FFF'-'FFFE'                             PT115990
100A   4190 11A6                BAL   R9,TESTCC                                                  PT116000
                         *      ERROR NUMBER=X'1C'                                               PT116010
100E   CB20 8001                SHI   R2,X'8001'       2-'8001'                                  PT116020
1012   4190 11A6                BAL   R9,TESTCC                                                  PT116030
                         *      ERROR NUMBER=X'1D'                                               PT116040
1016   C8C0 000E                LHI   R12,X'E'         EXPECTED  CC = 'E'                        PT116050
101A   4850 12AA                LH    R5,CD5           (R5)='8001'                               PT116060
101E   CA50 FFFE                AHI   R5,X'FFFE'       '8001'+'FFFE'                             PT116070
1022   4190 11A6                BAL   R9,TESTCC                                                  PT116080
                         *      ERROR NUMBER=X'1E'                                               PT116090
                         *      MULTIPLE  PRECISION ADD  SUBTRACT CHECK                          PT116100
1026   0700                     XHR   R0,R0             (R0) = 0  FIRST WORD OF RESULT           PT116110
1028   0711                     XHR   R1,R1             (R1) = 0  SECOND WORD OF RESULT          PT116120
102A   0722                     XHR   R2,R2             (R2) = 0  THIRD WORD OF RESULT           PT116130
102C   0733                     XHR   R3,R3             (R3) = 0  FIRST WORD OF INCREMENT        PT116140
102E   0744                     XHR   R4,R4             (R4) = 0  SECOND WORD OF ENCREMENT       PT116150
1030   C850 1110                LHI   R5,X'1110'        (R5) = '1110' MSB OF FINAL VALUE OF IN   PT116160
1034   C860 EEEF                LHI   R6,X'EEEF'        (R6) ='EEEF' LSB OF FINAL VALUE OF INC   PT116170
1038   C870 0888                LHI   R7,X'0888'        FIRST WORD  OF  EXPECTED RESULT          PT116180
103C   C880 7777                LHI   R8,X'7777'        SECOND WORD  OF  EXPECTED RESULT         PT116190
1040   C890 8000                LHI   R9,X'8000'        THIRD WORD OF EXPECTED RESULT            PT116200
1044   4A40 12B4         LOOP1  AH    R4,ININC2         INCREMENT THE INCREMENT  BY '00001111    PT116210
       0000 1048         ACH    EQU   *                                                          PT116220
1048   4E30 12B2                ACH   R3,ININC1                                                  PT116230
104C   0A24                     AHR   R2,R4             ADD THE  INCREMENT  TO  TRIPLE           PT116240
104E   0E13                     ACHR  R1,R3             PRECISION  RESULT                        PT116250
1050   4E00 22F6                ACH   R0,ZERO                                                    PT116260
1054   08D5                     LHR   R13,R5                                                     PT116270
1056   08E6                     LHR   R14,R6                                                     PT116280
1058   0BE4                     SHR   R14,R4                                                     PT116290
105A   4230 1044                BNZ   LOOP1                                                      PT116300
       0000 105E         SHR    EQU   *                                                          PT116310
105E   0BD3                     SHR   R13,R3                                                     PT116320
1060   4230 1044                BNZ   LOOP1                                                      PT116330
1064   0592                     CLHR  R9,R2             COMPARE TRIPLE                           PT116340
1066   4230 127C                BNE   ERR13             PRECISION CALCULATED                     PT116350
106A   0581                     CLHR  R8,R1             AND EXPECTED                             PT116360
106C   4230 127C                BNE   ERR13                                                      PT116370
1070   0570                     CLHR  R7,R0             RESULTS                                  PT116380
1072   4230 127C                BNE   ERR13                                                      PT116390
1076   26F1                     AIS   TOT,1             INCR. ERROR NUMBER BY 1                  PT116400
                         *      ERROR NUMBER=X'1F'                                               PT116410
1078   0B24              LOOP2  SHR   R2,R4             SUBTRACT  THE DECREMENT FROM             PT116420
107A   0F13                     SCHR  R1,R3             TRIPLE  PRECISION RESULT                 PT116430
       0000 107C         SCH    EQU   *                                                          PT116440
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107C  4F00 22F6          SCH   R0,ZERO                                          PT116450
1080  4B40 12B4          SH    R4,ININC2       DECR. THE DECREMENT BY '00001111'  PT116460
1084  4F30 12B2          SCH   R3,ININC1                                        PT116470
1088  0844               LHR   R4,R4                                            PT116480
108A  4230 1078          BNZ   LOOP2                                            PT116490
108E  0833               LHR   R3,R3                                            PT116500
1090  4230 1078          BNZ   LOOP2                                            PT116510
1094  0822               LHR   R2,R2                                            PT116520
1096  4230 127C          BNZ   ERR13                                            PT116530
109A  0811               LHR   R1,R1                                            PT116540
109C  4230 127C          BNZ   ERR13                                            PT116550
10A0  0800               LHR   R0,R0                                            PT116560
10A2  4230 127C          BNZ   ERR13                                            PT116570
                    *    FIXED POINT  COMPARE  CHECK                            PT116580
10A6  26F1               AIS   TOT,1           ERROR NUMBER=X'20'               PT116590
10A8  2475               LIS   R7,5            SET INDEX OFFSET=5               PT116600
10AA  4800 22F6          LH    R0,ZERO         (R0)= 0                          PT116610
10AE  4810 12A2          LH    R1,CD1          (R1) = 1                         PT116620
10B2  4820 12A8          LH    R2,CD4          (R2) = '7FFF'                    PT116630
10B6  4830 12AA          LH    R3,CD5          (R3) = '8001'                    PT116640
10BA  4840 12AE          LH    R4,CD7          (R4) = 'FFFE'                    PT116650
10BE  4850 12B0          LH    R5,CD8          (R5) = 'FFFF'                    PT116660
10C2  08C0               LHR   R12,R0          EXPECTED  CC = 0                 PT116670
10C4  0500               CLHR  R0,R0                                            PT116680
10C6  4190 11A6          BAL   R9,TESTCC                                        PT116690
10CA  4517 129D          CLH   R1,CD1-5(R7)                                     PT116700
10CE  4190 11A6          BAL   R9,TESTCC                                        PT116710
                    *    ERROR NUMBER=X'22'                                     PT116720
10D2  C520 7FFF          CLHI  R2,X'7FFF'                                       PT116730
10D6  4190 11A6          BAL   R9,TESTCC                                        PT116740
10DA  0933               CHR   R3,R3                                            PT116750
10DC  4190 11A6          BAL   R9,TESTCC                                        PT116760
                    *    ERROR NUMBER=X'24'                                     PT116770
10E0  4940 12AE          CH    R4,CD7                                           PT116780
10E4  4190 11A6          BAL   R9,TESTCC                                        PT116790
10E8  C950 FFFF          CHI   R5,X'FFFF'                                       PT116800
10EC  4190 11A6          BAL   R9,TESTCC                                        PT116810
                    *    ERROR NUMBER=X'26'                                     PT116820
10F0  24C1               LIS   R12,1           EXPECTED  CC=1                   PT116830
10F2  4810 12AC          LH    R1,CD6          (R1) ='8002'                     PT116840
10F6  4820 12A2          LH    R2,CD1          (R2) = '0001'                    PT116850
10FA  0512               CLHR  R1,R2                                            PT116860
10FC  4190 11A6          BAL   R9,TESTCC                                        PT116870
1100  C8C0 0002          LHI   R12,2           EXPECTED CC=2                    PT116880
1104  4810 12A8          LH    R1,CD4          (R1)='7FFF'                      PT116890
1108  4510 12A6          CLH   R1,CD3          COMPARE WITH '7FFE'              PT116900
110C  4190 11A6          BAL   R9,TESTCC       CHECK  CC                        PT116910
                    *    ERROR NUMBER X'28'                                     PT116920
1110  4810 12AC          LH    R1,CD6          (R1)='8002'                      PT116930
1114  C510 8001          CLHI  R1,X'8001'                                       PT116940
1118  4190 11A6          BAL   R9,TESTCC                                        PT116950
111C  4820 12B0          LH    R2,CD8          (R2)= X'FFFF'                    PT116960
1120  4800 22F6          LH    R0,ZERO         (R0) = 0                         PT116970
1124  4810 12A2          LH    R1,CD1          (R1)=1                           PT116980
1128  0910               CHR   R1,R0                                            PT116990
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112A  4190 11A6                 BAL   R9,TESTCC                                PT117000
                          *     ERROR NUMBER=X'2A'                             PT117010
112E  4927 12A9                 CH    R2,CD7-5(R7)     COMPARE 'FFFF' AND 'FFFE'    PT117020
1132  4190 11A6                 BAL   R9,TESTCC                                PT117030
1136  C900 8001                 CHI   R0,X'8001'       COMPARE   0  AND '8001'  PT117040
113A  4190 11A6                 BAL   R9,TESTCC                                PT117050
                          *     ERROR NUMBER=X'2C'                             PT117060
113E  24C6                      LIS   R12,6            EXPECTED  CC=6          PT117070
1140  4810 12AA                 LH    R1,CD5           (R1) ='8001'            PT117080
1144  4510 12A4                 CLH   R1,CD2           COMPARE '8001' AND '0002'    PT117090
1148  4190 11A6                 BAL   R9,TESTCC                                PT117100
114C  24C9                      LIS   R12,9            EXPECTED CC=9           PT117110
114E  4800 22F6                 LH    R0,ZERO          (R0)=0                  PT117120
1152  4810 12AE                 LH    R1,CD7           (R1)='FFFE'             PT117130
1156  4820 12B0                 LH    R2,CD8           (R2)='FFFF'             PT117140
115A  4830 12AA                 LH    R3,CD5           (R3)='8001'             PT117150
115E  0512                      CLHR  R1,R2                                    PT117160
1160  4190 11A6                 BAL   R9,TESTCC                                PT117170
                          *     ERROR NUMBER=X'2E'                             PT117180
1164  C500 0001                 CLHI  R0,1             COMPARE 0 AND 1         PT117190
1168  4190 11A6                 BAL   R9,TESTCC                                PT117200
116C  C900 0001                 CHI   R0,1                                     PT117210
1170  4190 11A6                 BAL   R9,TESTCC                                PT117220
                          *     ERROR NUMBER=X'30'                             PT117230
1174  4930 12AC                 CH    R3,CD6           COMPARE '8001' AND '8002'    PT117240
1178  4190 11A6                 BAL   R9,TESTCC                                PT117250
117C  0920                      CHR   R2,R0            COMPARE  'FFFF' AND 0   PT117260
117E  4190 11A6                 BAL   R9,TESTCC                                PT117270
                          *     ERROR NUMBER=X'32'                             PT117280
1182  C8C0 000A                 LHI   R12,X'A'         EXPECTED CC=X'A'        PT117290
1186  4810 12A6                 LH    R1,CD3           (R1) = '7FFE'           PT117300
118A  4820 12A8                 LH    R2,CD4           (R2) = '7FFF'           PT117310
118E  4510 12B0                 CLH   R1,CD8           COMPARE '7FFE' AND 'FFFF'    PT117320
1192  4190 11A6                 BAL   R9,TESTCC                                PT117330
1196  C8C0 000D                 LHI   R12,X'D'         EXPECTED CC=X'D'        PT117340
119A  C520 FFFE                 CLHI  R2,X'FFFE'       COMPARE '7FFF' AND 'FFFE'    PT117350
119E  4190 11A6                 BAL   R9,TESTCC                                PT117360
                          *     ERROR NUMBER=X'34'                             PT117370
11A2  4300 12C4           T8END B     TEST9                                    PT117380
                          *     SUBROUTINES USED IN TEST8                      PT117390
11A6  95EE                TESTCC EPSR R14,R14          OBTAIN  CC FROM  CURRENT PSW  PT117400
11A8  C4E0 000F                 NHI   R14,X'F'                                 PT117410
11AC  05EC                      CLHR  R14,R12                                  PT117420
11AE  4230 1288                 BNE   ERR14                                    PT117430
11B2  26F1                      AIS   TOT,1                                    PT117440
11B4  4309 0000                 B     0(R9)            RETURN                  PT117450
                          *     R0 CONTAINS 1 IF CARRY-IN IS 1                 PT117460
                          *     R0 CONTAINS  0 IF CARRY-IN IS ZERO             PT117470
                          *     R1  AND R2 CONTAINS VALUES OF M AND N          PT117480
      0000 11B8           AHM   EQU   *                                        PT117490
11B8  24F1                TEST83 LIS  TOT,1            SET ERROR NUMBER=1      PT117500
11BA  4010 12B8                 STH   R1,PLUSM         STORE M                 PT117510
11BE  4020 12BA                 STH   R2,PLUSN         STORE N                 PT117520
11C2  0831                      LHR   R3,R1            M                       PT117530
11C4  C730 FFFF                 XHI   R3,X'FFFF'                               PT117540
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11C8   2631                  AIS   R3,1               GET - M                            PT117550
11CA   4030 1286             STH   R3,MINUSM          STORE-M                            PT117560
11CE   6114 1281             AHM   R1,MINUSM-5(R4)    M+(-M)=0                           PT117570
11D2   4200 0000             NOP                                                         PT117580
11D6   4850 1286             LH    R5,MINUSM          GET M+(-M)                         PT117590
11DA   4230 1258             BNZ   ERR11                                                 PT117600
11DE   24F2                  LIS   TOT,2              SET ERROR NUMBER=2                 PT117610
11E0   0831                  LHR   R3,R1              M                                  PT117620
11E2   0A34                  AHR   R3,R4              M+(R4)=M+5                         PT117630
11E4   0853                  LHR   R5,R3                                                 PT117640
11E6   0B54                  SHR   R5,R4              M+(R4)-(R4)=M?                     PT117650
11E8   0551                  CLHR  R5,R1                                                 PT117660
11EA   4230 1258             BNE   ERR11                                                 PT117670
11EE   24F3                  LIS   TOT,3              SET ERROR NUMBER =3                PT117680
11F0   0831                  LHR   R3,R1              M                                  PT117690
11F2   CA30 789A             AHI   R3,X'789A'         M+X'789A'                          PT117700
11F6   0853                  LHR   R5,R3                                                 PT117710
11F8   CB50 789A             SHI   R5,X'789A'                                            PT117720
11FC   0551                  CLHR  R5,R1                                                 PT117730
11FE   4230 1258             BNE   ERR11                                                 PT117740
1202   24F4                  LIS   TOT,4              SET ERROR NUMBER=4                 PT117750
1204   0851                  LHR   R5,R1              M                                  PT117760
1206   95D0                  EPSR  R13,R0             SET CARRY FLAG IF CARRY IN         PT117770
1208   4E54 1285             ACH   R5,PLUSN-5(R4)     M+N+C                              PT117780
120C   4050 128C             STH   R5,MPNPC           STORE M+N+C                        PT117790
1210   4850 1288             LH    R5,PLUSM           M                                  PT117800
1214   0800                  LHR   R0,R0              EXAMINE  CARRY IN                  PT117810
1216   4330 121C             BZ    NCRY1              IF NO CARRY IN GOTO NCRY1          PT117820
121A   2751                  SIS   R5,1                                                  PT117830
121C   4B54 1285      NCRY1  SH    R5,PLUSN-5(R4)     M-N-C                              PT117840
1220   4050 128E             STH   R5,MMNMC           STORE  M-N-C                       PT117850
1224   4A54 1287             AH    R5,MPNPC-5(R4)     GET (M+N+C)+(M-N-C)=2M             PT117860
1228   0871                  LHR   R7,R1              M                                  PT117870
122A   CD70 0001             SLHL  R7,1               GET 2*M                            PT117880
122E   0557                  CLHR  R5,R7              IF(M+N+C)+(M-N-C) IS NOT=2*M       PT117890
1230   4230 1264             BNE   ERR12              BRANCH TO ERR1                     PT117900
1234   24F5                  LIS   TOT,5              SET ERROR NUMBER=5                 PT117910
1236   4850 128C             LH    R5,MPNPC           M+N+C                              PT117920
123A   95D0                  EPSR  R13,R0                                                PT117930
123C   4F54 1289             SCH   R5,MMNMC-5(R4)     (M+N+C)-(M-N-C)-C =2N+C            PT117940
1240   4870 128A             LH    R7,PLUSN           N                                  PT117950
1244   CD70 0001             SLHL  R7,1               2*N                                PT117960
1248   0800                  LHR   R0,R0              EXAMINE IF CARRY IN HAS            PT117970
124A   4330 1250             BZ    NOCRY              BEEN SPECIFIED                     PT117980
124E   2671                  AIS   R7,1               2*N+C                              PT117990
1250   0557           NOCRY  CLHR  R5,R7              IF (M+N+C)-(M-N-C)-C               PT118000
1252   4230 1264             BNE   ERR12              IS NOT=2*N+C,BRANCH TO ERR1        PT118010
1256   0309                  BR    R9                 RETURN                             PT118020
1258   2443           ERR11  LIS   R4,3               THREE  VALUES  FOR  PRINT OUT      PT118030
125A   0875                  LHR   R7,R5              ACTUAL RESULT                      PT118040
125C   0863                  LHR   R6,R3              -M OR M+(R4)OR  M+X'789A'          PT118050
125E   0851                  LHR   R5,R1              VALUE OF M                         PT118060
1260   4300 1292             B     ERR1                                                  PT118070
1264   2447           ERR12  LIS   R4,7               SEVEN VALUES ARE TO BE PRINTED     PT118080
1266   08A5                  LHR   R10,R5             ACTUAL RESULT                      PT118090
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1268 0867           1810          LHR   R11,R7          EXPECTED RESULT                  PT118100
126A 0851           1811          LHR   R5,R1           M                                PT118110
126C 0862           1812          LHR   R6,R2           N                                PT118120
126E 0870           1813          LHR   R7,R0           CARRY IN                         PT118130
1270 4880 128C      1814          LH    R8,MPNPC        M+N+C                            PT118140
1274 4890 128E      1815          LH    R9,MMNMC        M-N-C                            PT118150
1278 4300 1292      1816          B     ERR1                                             PT118160
127C 2443           1817  ERR13   LIS   R4,3            THREE VALUES TO BE PRINTED       PT118170
127E 0850           1818          LHR   R5,R0           ACTUAL                           PT118180
1280 0861           1819          LHR   R6,R1           TRIPAL PRECISION                 PT118190
1282 0872           1820          LHR   R7,R2           RESULT                           PT118200
1284 4300 1292      1821          B     ERR1                                             PT118210
1288 2442           1822  ERR14   LIS   R4,2            TWO VALUES TO BE PRINTED         PT118220
128A 085E           1823          LHR   R5,R14          ACTUAL CONDITION CODE            PT118230
128C 086C           1824          LHR   R6,R12          EXPECTED CONDITION CODE          PT118240
128E 4300 1292      1825          B     ERR1                                             PT118250
1292 C800 0018      1826  ERR1    LHI   R0,X'0018'                                       PT118260
1296 91F8           1827          SLLS  TOT,8                                            PT118270
1298 060F           1828          OHR   R0,TOT                                           PT118280
129A 4000 22F2      1829          STH   R0,ERRINC                                        PT118290
129E 4300 2182      1830          B     ERROR                                            PT118300
                    1831  *       DATA OF TEST 8                                         PT118310
12A2 0001           1832  CD1     DC    1                                                PT118320
12A4 0002           1833  CD2     DC    2                                                PT118330
12A6 7FFE           1834  CD3     DC    X'7FFE'                                          PT118340
12A8 7FFF           1835  CD4     DC    X'7FFF'                                          PT118350
12AA 8001           1836  CD5     DC    X'8001'                                          PT118360
12AC 8002           1837  CD6     DC    X'8002'                                          PT118370
12AE FFFE           1838  CD7     DC    X'FFFE'                                          PT118380
12B0 FFFF           1839  CD8     DC    X'FFFF'                                          PT118390
12B2 0000           1840  ININC1  DC    0                                                PT118400
12B4 1111           1841  ININC2  DC    X'1111'                                          PT118410
12B6                1842  MINUSM  DS    2                                                PT118420
12B8                1843  PLUSM   DS    2                                                PT118430
12BA                1844  PLUSN   DS    2                                                PT118440
12BC                1845  MPNPC   DS    2                                                PT118450
12BE                1846  MMNMC   DS    2                                                PT118460
12C0                1847  MMMNMC  DS    2                                                PT118470
12C2                1848  INITM   DS    2                                                PT118480
                    1849  *                                                              PT118490
                    1850  ********************************************************************** PT118500
                    1851  *                                                              PT118510
                    1852  *       TEST 9 CHECKS THE INSTRUCTIONS                         PT118520
                    1853  *                                                              PT118530
                    1854  *       SINT AND ILLG. INSTR. INTRPR.                          PT118540
                    1855  *                                                              PT118550
                    1856  *       T90INT=ADD. FOR INTERRUPT                              PT118560
                    1857  *                                                              PT118570
                    1858  *       T90SNT=ADD. SIMULATE INTERRUPT                         PT118580
                    1859  *                                                              PT118590
                    1860  *       OLDPSW=ADD. OF INSTR. AFTER T90SNT                     PT118600
                    1861  *                                                              PT118610
                    1862  *       T90DEV=DEV. NO. 0 THRU 255 OF THE INTRPT. DEV.         PT118620
                    1863  *                                                              PT118630
12C4 C800 14D2      1864  TEST9   LHI   R0,TEST10                                        PT118640
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12C8  4000 22F4
12CC  C800 0119
12D0  4000 22F2
12D4  C800 3139
12D8  4000 22B8

12DC  2410
12DE  C840 00FE
12E2  C830 1322
12E6  4034 0000
12EA  2742
12EC  C540 00D0
12F0  2035
12F2  C830 2182
12F6  4030 0046
12FA  4010 0044
12FE  4010 0040
1302  4010 0042
1306  4010 1394
130A  4010 1322
130E  4010 1324
1312  4010 1326
1316  C830 1336
131A  4030 00D0
131E  4300 138A
1322  0000
1324  0000
1326  0000
1328  C800 0219
132C  4000 22F2
1330  4300 2182

1334  0000
1336  0000
1338  0000
133A  0000
133C  2440
133E  4830 1336
1342  C540 4000
1346  213A
1348  C830 1396
134C  4530 1338
1350  2135
1352  9530
1354  C430 FFF0
1358  2335
135A  C800 0419
135E  4300 139A



1362  4000 1336
1366  4000 1338
136A  C830 1322
136E  4034 0000
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1865                STH   R0,NXTST
1866                LHI   R0,X'0119'
1867                STH   R0,ERRIND
1868                LHI   R0,C'19'
1869                STH   R0,TESTNO
1870  *
1871                LIS   R1,0
1872                LHI   R4,X'FE'
1873                LHI   R3,T90R2
1874  T90A9         STH   R3,0(R4)
1875                SIS   R4,2
1876                CLHI  R4,X'D0'
1877                BNES  T90A9
1878  T90A2         LHI   R3,ERROR
1879                STH   R3,X'46'
1880                STH   R1,X'44'
1881                STH   R1,X'40'
1882                STH   R1,X'42'
1883                STH   R1,T90DEV
1884                STH   R1,T90R2
1885                STH   R1,T90R2+2
1886                STH   R1,T90R2+4
1887                LHI   R3,T90INT
1888                STH   R3,X'D0'
1889                B     T90SNT
1890  T90R2         DC    0
1891                DC    0
1892                DC    0
1893  T90R2B        LHI   R0,X'0219'
1894                STH   R0,ERRIND
1895                B     ERROR
1896  *
1897                DC    0
1898  T90INT        DC    0
1899                DC    0
1900                DC    0
1901                LIS   R0,0
1902                LH    R3,T90INT
1903                CLHI  R3,X'4000'
1904                BNES  T90R4
1905                LHI   R3,OLDPSW
1906                CLH   R3,T90INT+2
1907                BNES  T90R4
1908                EPSR  R3,R0
1909                NHI   R3,X'FFF0'
1910                BZS   T90D
1911  T90R4         LHI   R0,X'0419'
1912                B     T90R34
1913  *
1914  *             NO ERROR DETECTED
1915  *
1916  T90D          STH   R0,T90INT
1917                STH   R0,T90INT+2
1918                LHI   R3,T90R2
1919                STH   R3,0(R4)
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                                                                    PT118650
                                                                    PT118660
ERRIND = 0119                                                       PT118670
                                                                    PT118680
                                                                    PT118690
                                                                    PT118700
R1=ADD. OF INTRPT. DEV.                                             PT118710
                                                                    PT118720
ERROR ADD. FOR INCORRECT                                            PT118730
SERVICE POINTER                                                     PT118740
                                                                    PT118750
STORED AT ALL LOCATIONS                                             PT118760
X'D0' THRU X'2CE'                                                   PT118770
ERR. ADD. EXT. I/O INTRPT.                                          PT118780
NEW PSW EXT. I/O INTRPT.                                            PT118790
                                                                    PT118800
OLD PSW EXT. I/O INT. (PSW)                                         PT118810
OLD PSW EXT. I/O INT. (LOC.)                                        PT118820
T90DEV=SINT DEV. ADDRESS                                            PT118830
OLD PSW INCORRECT DEV. ADD.                                         PT118840
                                                                    PT118850
                                                                    PT118860
                                                                    PT118870
                                                                    PT118880
                                                                    PT118890
                                                                    PT118900
                                                                    PT118910
ERRIND = 0219                                                       PT118920
                                                                    PT118930
ERROR  1902                                                         PT118940
                                                                    PT118950
                                                                    PT118960
OLD PSW                                                             PT118970
OLD PSW LOCATION                                                    PT118980
NEW PSW                                                             PT118990
                                                                    PT119000
OLD PSW=4000?                                                       PT119010
                                                                    PT119020
                                                                    PT119030
                                                                    PT119040
OLD PSW LOC.                                                        PT119050
                                                                    PT119060
CURRENT PSW MUST BE ZERO                                            PT119070
                                                                    PT119080
                                                                    PT119090
                                                                    PT119100
ERRIND = 0419                                                       PT119110
ERROR  1904                                                         PT119120
                                                                    PT119130
                                                                    PT119140
                                                                    PT119150
RESET OLD PSW STORAGE LOC.                                          PT119160
                                                                    PT119170
LOAD ERROR ADD. AT                                                  PT119180
DEV. NO. JUST TESTED                                                PT119190
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1372  2611
1374  C510 0018
1378  4330 13A2
137C  2642
137E  C850 1336
1382  4034 0000
1386  4010 1394
138A  C200 138E
138E  4000
1390  1392
      0000 1392
1392  E200
1394  0000
      0000 1396
1396  C800 0319
139A  4000 22F2
139E  4300 2182

13A2  4800 22E0
13A6  C840 1478
13AA  C500 3841
13AE  4330 13CA
13B2  C840 147E
13B6  C500 3842
13BA  2338
13BC  C840 148F
13C0  C500 3843
13C4  2333
13C6  C840 14A0
13CA  24A0
13CC  2460
13CE  24B0
13D0  2400
13D2  4000 0034
13D6  C800 1450
13DA  4000 0036
13DE  2501
13E0  4000 0030
13E4  4000 0032
13E8  08AA
13EA  4230 1404
13EE  D314 0000
13F2  0811
13F4  2135
13F6  24A1

1920          AIS   R1,1                                          PT119200
1921          CLHI  R1,X'18'                                      PT119210
1922          BE    T90E                                          PT119220
1923          AIS   R4,2              SERVICE POINTER FOR NEXT DEV. PT119230
1924          LHI   R3,T90INT         STORE INTERRUPT ADDRESS     PT119240
1925          STH   R3,0(R4)                                      PT119250
1926          STH   R1,T90DEV                                     PT119260
1927  T90SNT  LPSW  *+4                                           PT119270
1928          DC    X'4000',*+2                                   PT119280

1929  SINT    EQU   *                                             PT119290
1930          DC    X'E200'           SINT INSTR. CODE            PT119300
1931  T90DEV  DC    0                 DEV. NO.                    PT119310
1932  OLDPSW  EQU   *                                             PT119320
1933  T90R3   LHI   R0,X'0319'        ERROR  1903                 PT119330
1934  T90R34  STH   R0,ERRIND                                     PT119340
1935          B     ERROR             ERROR  1903  OR  1904      PT119350
1936  *                                                           PT119360
1937  *       TEST ILLEGAL INSTRUCTION INTERRUPT FOR INSTRUCTIONS PT119370
1938  *                                                           PT119380
1939  *       10 THRU 1F , 30 THRU 3F , 50 THRU 5F , 70 THRU 7F   PT119390
1940  *                                                           PT119400
1941  *       80 THRU 8F , A0 THRU AF , B0 THRU BF , F0 THRU FF   PT119410
1942  *                                                           PT119420
1943  *       ILLEGAL  =  ADD. OF THE ILLEGAL INSTRUCTION         PT119430
1944  *                                                           PT119440
1945  *       ILGINT  =  ILLG. INSTR. INTRPT. ADDRESS             PT119450
1946  *                                                           PT119460
1947  T90E    LH    R0,CPUNO                                      PT119470
1948          LHI   R4,T908A                                      PT119480
1949          CLHI  R0,C'8A'                                      PT119490
1950          BE    T906                                          PT119500
1951          LHI   R4,T9088                                      PT119510
1952          CLHI  R0,C'8B'                                      PT119520
1953          BES   T906                                          PT119530
1954          LHI   R4,T908C                                      PT119540
1955          CLHI  R0,C'8C'                                      PT119550
1956          BES   T906                                          PT119560
1957          LHI   R4,T9080                                      PT119570
1958  T906    LIS   R10,0                                         PT119580
1959          LIS   R6,0                                          PT119590
1960          LIS   R11,0                                         PT119600
1961  T90H    LIS   R0,0                                          PT119610
1962          STH   R0,X'34'          NEW PSW , ILLG. INSTR.      PT119620
1963          LHI   R0,T90ILG                                     PT119630
1964          STH   R0,X'36'                                      PT119640
1965          LCS   R0,1                                          PT119650
1966          STH   R0,X'30'                                      PT119660
1967          STH   R0,X'32'                                      PT119670
1968          LHR   R10,R10                                       PT119680
1969          BNZ   T90K              IF R10 = 1 , TEST ODD ILLG. INST. PT119690
1970          LB    R1,0(R4)          OTHERWISE GET NEXT ILLG. INSTR. PT119700
1971          LHR   R1,R1                                         PT119710
1972          BNZS  T90J                                          PT119720
1973          LIS   R10,1             R1 = 0                      PT119730
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13F8  C840 14B8          LHI   R4,T900DD
13FC  2302               BS    T90JJ
13FE  2641      T90J     AIS   R4,1
1400  4300 1426 T90JJ    B     T90L
1404  08BB      T90K     LHR   R11,R11
1406  2338               BZS   T90KK
1408  24B0               LIS   R11,0
140A  2641               AIS   R4,1
140C  C540 14BE          CLHI  R4,T90LST+1
1410  4330 14BE          BE    T90Z
1414  2460               LIS   R6,0
1416  D314 0000 T90KK    LB    R1,0(R4)          R11 = 0
141A  0A16      T90P1    AHR   R1,R6
141C  2661               AIS   R6,1
141E  C560 0010          CLHI  R6,16
1422  2132               BNES  T90L
1424  24B1               LIS   R11,1
                *
                *        R1 = ILLEGAL INSTRUCTION
                *
1426  D210 1446 T90L     STB   R1,ILLEGL
142A  4800 1446          LH    R0,ILLEGL
142E  C500 1300          CLHI  R0,X'1300'
1432  4330 13D0          BE    T90H
1436  C500 5300          CLHI  R0,X'5300'
143A  4330 13D0          BE    T90H
143E  C200 1442          LPSW  T90M
1442  7C05      T90M     DC    X'7C05',ILLEGL
1444  1446
1446  0000      ILLEGL   DC    0                 ILLEGAL INSTRUCTION
1448  C800 0519 T90R7    LHI   R0,X'0519'        ERRIND = 0519
144C  4300 1470          B     T90R78            ERROR  1905
                *
1450  4800 0030 T90ILG   LH    R0,X'30'
1454  C500 7C05 M5006    CLHI  R0,X'7C05'        IS LOC-30 = OLD PSW
1458  4230 146C          BNE   T90R8
145C  C830 1446          LHI   R3,ILLEGL
1460  4530 0032          CLH   R3,X'32'          IS LOC-32 = ADD. OF ILLEGL
1464  2134               BNES  T90R8
1466  9533               EPSR  R3,R3
1468  4330 13D0          BZ    T90H
146C  C800 0619 T90R8    LHI   R0,X'0619'        ERRIND = 0619
1470  4000 22F2 T90R78   STH   R0,ERRIND
1474  4300 2182          B     ERROR             ERROR   1905  OR  1906
                *
1478  0C        T908A    DB    X'0C'             MHR
1479  0D                 DB    X'0D'             DHR
147A  4C                 DB    X'4C'             MH
147B  4D                 DB    X'4D'             DH
147C  9C                 DB    X'9C'             MHUR
147D  DC                 DB    X'DC'             MHU
                *
147E  28        T908B    DB    X'28'             LER
147F  29                 DB    X'29'             CER
1480  2A                 DB    X'2A'             AER
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1481  2B        2028          DB    X'2B'    SER          PT120280
1482  2C        2029          DB    X'2C'    MER          PT120290
1483  2D        2030          DB    X'2D'    DER          PT120300
1484  60        2031          DB    X'60'    STE          PT120310
1485  68        2032          DB    X'68'    LE           PT120320
1486  69        2033          DB    X'69'    CE           PT120330
1487  6A        2034          DB    X'6A'    AE           PT120340
1488  6B        2035          DB    X'6B'    SE           PT120350
1489  6C        2036          DB    X'6C'    ME           PT120360
148A  6D        2037          DB    X'6D'    DE           PT120370
148B  2E        2038          DB    X'2E'    FXR          PT120380
148C  2F        2039          DB    X'2F'    FLR          PT120390
148D  71        2040          DB    X'71'    STME         PT120400
148E  72        2041          DB    X'72'    LME          PT120410
148F  38        2042  T908C   DB    X'38'    LDR          PT120420
1490  39        2043          DB    X'39'    CDR          PT120430
1491  3A        2044          DB    X'3A'    ADR          PT120440
1492  3B        2045          DB    X'3B'    SDR          PT120450
1493  3C        2046          DB    X'3C'    MDR          PT120460
1494  3D        2047          DB    X'3D'    DDR          PT120470
1495  3E        2048          DB    X'3E'    FXDR         PT120480
1496  3F        2049          DB    X'3F'    FLDR         PT120490
1497  70        2050          DB    X'70'    STD          PT120500
1498  78        2051          DB    X'78'    LD           PT120510
1499  79        2052          DB    X'79'    CD           PT120520
149A  7A        2053          DB    X'7A'    AD           PT120530
149B  7B        2054          DB    X'7B'    SD           PT120540
149C  7C        2055          DB    X'7C'    MD           PT120550
149D  7D        2056          DB    X'7D'    DD           PT120560
149E  7E        2057          DB    X'7E'    STMD         PT120570
149F  7F        2058          DB    X'7F'    LMD          PT120580
      0000 14A0 2059  T908D   EQU   *                     PT120590
14A0  30        2060          DB    X'30'                 PT120600
14A1  31        2061          DB    X'31'                 PT120610
14A2  32        2062          DB    X'32'                 PT120620
14A3  34        2063          DB    X'34'                 PT120630
14A4  35        2064          DB    X'35'                 PT120640
14A5  36        2065          DB    X'36'                 PT120650
14A6  37        2066          DB    X'37'                 PT120660
14A7  74        2067          DB    X'74'                 PT120670
14A8  75        2068          DB    X'75'                 PT120680
14A9  76        2069          DB    X'76'                 PT120690
14AA  77        2070          DB    X'77'                 PT120700
14AB  62        2071          DB    X'62'                 PT120710
14AC  63        2072          DB    X'63'                 PT120720
14AD  6E        2073          DB    X'6E'                 PT120730
14AE  6F        2074          DB    X'6F'                 PT120740
14AF  E0        2075          DB    X'E0'                 PT120750
14B0  E3        2076          DB    X'E3'                 PT120760
14B1  E4        2077          DB    X'E4'                 PT120770
14B2  E5        2078          DB    X'E5'                 PT120780
14B3  E6        2079          DB    X'E6'                 PT120790
14B4  E7        2080          DB    X'E7'                 PT120800
14B5  E8        2081          DB    X'E8'                 PT120810
14B6  E9        2082          DB    X'E9'                 PT120820
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14B7   00              2083           DB    X'00'                                                      PT120830
14B8   10              2084  T900DD   DB    X'10'                                                      PT120840
14B9   50              2085           DB    X'50'                                                      PT120850
14BA   80              2086           DB    X'80'                                                      PT120860
14BB   A0              2087           DB    X'A0'                                                      PT120870
14BC   B0              2088           DB    X'B0'                                                      PT120880
14BD   F0              2089  T90LST   DB    X'F0'                                                      PT120890
14BE                   2090           DB    *                                                          PT120900
                       2091  *                                                                         PT120910
14BE   C800 213A       2092  T90Z     LHI   R0,EXTINT                                                  PT120920
14C2   4000 0046       2093           STH   R0,X'46'            RESTORE EXTINT ERROR ADRS.             PT120930
14C6   C800 2132       2094           LHI   R0,ILGINT                                                  PT120940
14CA   4000 0036       2095           STH   R0,X'36'            RESTORE ILGINT ERROR ADRS.             PT120950
14CE   4300 14D2       2096  T9END    B     TEST10                                                     PT120960
                       2097  *****************************************************************        PT120970
                       2098  *                                                                         PT120980
                       2099  *        TEST 10 CHECKS THE INSTRUCTIONS                                  PT120990
                       2100  *                                                                         PT121000
                       2101  *        SLL , SRL , SLA , SRA , RLL , RRL                                PT121010
                       2102  *                                                                         PT121020
14D2   C200 14D6       2103  TEST10   LPSW  T10                                                        PT121030
14D6   7C00            2104  T10      DC    X'7C00',T10A                                               PT121040
14D8   14DA
14DA   C800 17F0       2105  T10A     LHI   R0,TEST11                                                  PT121050
14DE   4000 22F4       2106           STH   R0,NXTST                                                   PT121060
14E2   C800 011A       2107           LHI   R0,X'011A'                                                 PT121070
14E6   4000 22F2       2108           STH   R0,ERRIND           ERRIND = 011A                          PT121080
14EA   C800 3142       2109           LHI   R0,X'3142'                                                 PT121090
14EE   4000 22B8       2110           STH   R0,TESTNO                                                  PT121100
                       2111  *                                                                         PT121110
14F2   2440            2112           LIS   R4,0                R4 = 0,0,0,0                           PT121120
14F4   2450            2113           LIS   R5,0                R5 = 0,0,0,0                           PT121130
       0000 14F6       2114  SLL      EQU   *                   THIS SECTION CHECKS THE SL,SRL,        PT121140
14F6   ED40 0000       2115           SLL   R4,0                SRA,SLA INSTRUCTIONS FOR ZERO SHIFT    PT121150
14FA   213A            2116           BNZS  T10R1               COND. CODE = 0   ?                     PT121160
       0000 14FC       2117  SRL      EQU   *                                                          PT121170
14FC   EC40 0000       2118           SRL   R4,0                                                       PT121180
1500   2137            2119           BNZS  T10R1                                                      PT121190
       0000 1502       2120  SLA      EQU   *                                                          PT121200
1502   EF40 0000       2121           SLA   R4,0                                                       PT121210
1506   2134            2122           BNZS  T10R1                                                      PT121220
       0000 1508       2123  SRA      EQU   *                                                          PT121230
1508   EE40 0000       2124           SRA   R4,0                                                       PT121240
150C   2333            2125           BZS   T10B1                                                      PT121250
150E   4300 2182       2126  T10R1    B     ERROR               ERROR  1A01                            PT121260
1512   C840 0101       2127  T10B1    LHI   R4,X'0101'                                                 PT121270
1516   2450            2128           LIS   R5,0                                                       PT121280
1518   ED40 0000       2129           SLL   R4,0                                                       PT121290
151C   2247            2130           BFBS  2,T10R1             CHECK G FLAG FOR SLL                   PT121300
151E   EC40 0000       2131           SRL   R4,0                                                       PT121310
1522   222A            2132           BFBS  2,T10R1             CHECK G FLAG FOR SLA                   PT121320
1524   EF40 0000       2133           SLA   R4,0                                                       PT121330
1528   2324            2134           BFFS  2,T10R2A            CHECK G FLAG FOR SLA                   PT121340
152A   EE40 0000       2135           SRA   R4,0                                                       PT121350
152E   2123            2136           BTFS  2,T10B              CHECK G FLAG FOR SRA                   PT121360
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1530 4300 2182          2137 T10R2A  B     ERROR                                  PT121370
1534 C840 D28B          2138 T10B    LHI   R4,X'D28B'      R4=1101,0011,1111,1111 PT121380
1538 C850 2D55          2139         LHI   R5,X'2D55'      R5=0010,1101,0101,0101 PT121390
153C ED40 0000          2140         SLL   R4,0            ZERO SHIFT             PT121400
1540 2088               2141         BCS   T10R2A          CHECK C FLAG FOR SLL   PT121410
1542 2219               2142         BNMS  T10R2A          CHECK L FLAG FOR SLL   PT121420
1544 EC40 0000          2143         SRL   R4,0                                   PT121430
1548 208C               2144         BCS   T10R2A          CHECK C FLAG FOR SRL   PT121440
154A 231F               2145         BNMS  T10R2           CHECK L FLAG FOR SRL   PT121450
154C EF40 0000          2146         SLA   R4,0                                   PT121460
1550 218C               2147         BCS   T10R2           CHECK C FLAG FOR SLA   PT121470
1552 2318               2148         BNMS  T10R2           CHECK L FLAG FOR SLA   PT121480
1554 EE40 0000          2149         SRA   R4,0                                   PT121490
1558 2188               2150         BCS   T10R2           CHECK C FLAG FOR SRA   PT121500
155A 2317               2151         BNMS  T10R2           CHECK L FLAG FOR SRA   PT121510
                        2152 *                                                    PT121520
155C C540 D288          2153         CLHI  R4,X'D288'      CHECK FOR SHIFTS OF ZERO ONLY PT121530
1560 2134               2154         BNES  T10R2                                  PT121540
1562 C550 2D55          2155         CLHI  R5,X'2D55'                             PT121550
1566 2327               2156         BES   T10D                                   PT121560
1568 4300 2182          2157 T10R2   B     ERROR           ERROR  1A01            PT121570
156C C800 021A          2158         LHI   R0,X'021A'                             PT121580
1570 4000 22F2          2159 T10R2B  STH   R0,ERRIND        ERRIND 021A            PT121590
                        2160 *                                                    PT121600
     0000 1574          2161 T10D    EQU   *                                      PT121610
1574 ED40 0001          2162         SLL   R4,1            SHIFT LEFT 1           PT121620
1578 2284               2163         BNCS  T10R2B                                 PT121630
157A C540 A576          2164         CLHI  R4,X'A576'                             PT121640
157E 2037               2165         BNES  T10R2B                                 PT121650
1580 C550 5AAA          2166         CLHI  R5,X'5AAA'                             PT121660
1584 213D               2167         BNES  T10R3                                  PT121670
1586 ED40 0002          2168         SLL   R4,2            SHIFT LEFT 2           PT121680
158A 218A               2169         BCS   T10R3                                  PT121690
158C C540 95D9          2170         CLHI  R4,X'95D9'                             PT121700
1590 2137               2171         BNES  T10R3                                  PT121710
1592 C550 6AA8          2172         CLHI  R5,X'6AA8'                             PT121720
1596 2134               2173         BNES  T10R3                                  PT121730
1598 ED40 0004          2174         SLL   R4,4            SHIFT LEFT 4           PT121740
159C 2183               2175         BCS   T10E                                   PT121750
159E 4300 2182          2176 T10R3   B     ERROR           ERROR  1A02            PT121760
15A2 C540 5D96          2177 T10E    CLHI  R4,X'5D96'                             PT121770
15A6 2034               2178         BNES  T10R3                                  PT121780
15A8 C550 AA80          2179         CLHI  R5,X'AA80'                             PT121790
15AC 2037               2180         BNES  T10R3                                  PT121800
15AE ED40 0008          2161         SLL   R4,8            SHIFT LEFT 8           PT121810
15B2 228A               2182         BNCS  T10R3                                  PT121820
15B4 C540 96AA          2183         CLHI  R4,X'96AA'                             PT121830
15B8 203D               2184         BNES  T10R3                                  PT121840
15BA C550 8000          2185         CLHI  R5,X'8000'                             PT121850
15BE 213B               2186         BNES  T10R4                                  PT121860
15C0 C850 67A5          2187         LHI   R5,X'67A5'                             PT121870
15C4 ED40 0010          2188         SLL   R4,16           SHIFT LEFT 16          PT121880
15C8 2186               2189         BCS   T10R4                                  PT121890
15CA C540 67A5          2190         CLHI  R4,X'67A5'                             PT121900
15CE 2133               2191         BNES  T10R4                                  PT121910
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15D0  0855           2192          LHR   R5,R5                                    PT121920
15D2  2333           2193          BZS   T10F                                     PT121930
15D4  4300 2182      2194  T10R4   B     ERROR          ERROR  1A02              PT121940
15D8  C840 AAB4      2195  T10F    LHI   R4,X'AAB4'                               PT121950
15DC  C850 2D55      2196          LHI   R5,X'2D55'                               PT121960
15E0  EC40 0001      2197          SRL   R4,1           SHIFT RIGHT  1            PT121970
15E4  238A           2198          BNCS  T10R5                                    PT121980
15E6  C540 555A      2199          CLHI  R4,X'555A'                               PT121990
15EA  2137           2200          BNES  T10R5                                    PT122000
15EC  C550 16AA      2201          CLHI  R5,X'16AA'                               PT122010
15F0  2134           2202          BNES  T10R5                                    PT122020
15F2  EC40 0002      2203          SRL   R4,2           SHIFT RIGHT  2            PT122030
15F6  2183           2204          BCS   T10G                                     PT122040
15F8  4300 2182      2205  T10R5   B     ERROR                                    PT122050
15FC  C540 1556      2206  T10G    CLHI  R4,X'1556'                               PT122060
1600  2034           2207          BNES  T10R5                                    PT122070
1602  C550 85AA      2208          CLHI  R5,X'85AA'                               PT122080
1606  2037           2209          BNES  T10R5                                    PT122090
1608  EC40 0004      2210          SRL   R4,4           SHIFT RIGHT  4            PT122100
160C  228A           2211          BNCS  T10R5                                    PT122110
160E  C540 0155      2212  T10H    CLHI  R4,X'0155'                               PT122120
1612  213D           2213          BNES  T10R6                                    PT122130
1614  C550 685A      2214          CLHI  R5,X'685A'                               PT122140
1618  213A           2215          BNES  T10R6                                    PT122150
161A  EC40 0008      2216          SRL   R4,8           SHIFT RIGHT  8            PT122160
161E  2187           2217          BCS   T10R6                                    PT122170
1620  C540 0001      2218          CLHI  R4,1                                     PT122180
1624  2134           2219          BNES  T10R6                                    PT122190
1626  C550 5568      2220          CLHI  R5,X'5568'                               PT122200
162A  2333           2221          BES   T10H2                                    PT122210
162C  4300 2182      2222  T10R6   B     ERROR          ERROR  1A02              PT122220
1630  C840 AA95      2223  T10H2   LHI   R4,X'AA95'                               PT122230
1634  EC40 0010      2224          SRL   R4,16          SHIFT RIGHT 16            PT122240
1638  2086           2225          BCS   T10R6                                    PT122250
163A  C550 AA95      2226          CLHI  R5,X'AA95'                               PT122260
163E  2039           2227          BNES  T10R6                                    PT122270
1640  0844           2228          LHR   R4,R4                                    PT122280
1642  203B           2229          BNZS  T10R6                                    PT122290
1644  C840 031A      2230  T10J    LHI   R0,X'31A'                               PT122300
1648  4000 22F2      2231          STH   R0,ERRIND      ERRIND = 031A             PT122310
164C  C860 496C      2232          LHI   R6,X'496C'     R6 = 0100,1001,0110,1100  PT122320
1650  C870 B5E3      2233          LHI   R7,X'B5E3'     R7 = 1011,0101,1110,0011  PT122330
1654  EF60 0001      2234          SLA   R6,1           SHIFT LEFT ARITH.  1      PT122340
1658  238D           2235          BNCS  T10R7                                    PT122350
165A  C560 12D9      2236          CLHI  R6,X'12D9'                               PT122360
165E  213A           2237          BNES  T10R7                                    PT122370
1660  C570 68C6      2238          CLHI  R7,X'68C6'                               PT122380
1664  2137           2239          BNES  T10R7                                    PT122390
1666  EF60 0002      2240          SLA   R6,2           SHIFT LEFT ARITH.  2      PT122400
166A  2184           2241          BCS   T10R7                                    PT122410
166C  C560 4B65      2242          CLHI  R6,X'4B65'                               PT122420
1670  2333           2243          BES   T10K                                     PT122430
1672  4300 2182      2244  T10R7   B     ERROR          ERROR  1A03              PT122440
1676  C570 AF18      2245  T10K    CLHI  R7,X'AF18'                               PT122450
167A  2034           2246          BNES  T10R7                                    PT122460
```

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167C  9161
167E  EF60 0004
1682  2088
1684  C560 ECAA
1688  203B
168A  C570 F180
168E  205E
1690  2488
1692  EF68 0000
1696  238C
1698  C560 AAF1
169C  2139
169E  C570 8000
16A2  2136
16A4  C870 550E
16A8  EF60 0010
16AC  2383
16AE  4300 2182
16B2  C560 D50E
16B6  2034
16B8  0877
16BA  2036

16BC  C860 4576
16C0  C870 6729
16C4  EE60 0001
16C8  228D
16CA  222E
16CC  C560 2288
16D0  213F
16D2  C570 3394
16D6  213C
16D8  2482
16DA  EE68 0000
16DE  2188
16E0  2327
16E2  C560 08AE
16E6  2134
16E8  C570 CCE5
16EC  2333
16EE  4300 2182
16F2  C860 AB0F
16F6  C870 148A
16FA  EE60 0004
16FE  2288
1700  2029
1702  C560 FA80
1706  205C
1708  C570 F148
170C  213B
170E  EE60 0008
1712  2188
1714  2127
```

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2247                SLLS  R6,1
2248                SLA   R6,4
2249                BCS   T10R7
2250                CLHI  R6,X'ECAA'
2251                BNES  T10R7
2252                CLHI  R7,X'F180'
2253                BNES  T10R7
2254                LIS   R8,8
2255                SLA   R6,0(R8)
2256                BNCS  T10R8
2257                CLHI  R6,X'AAF1'
2258                BNES  T10R8
2259                CLHI  R7,X'8000'
2260                BNES  T10R8
2261                LHI   R7,X'550E'
2262                SLA   R6,16
2263                BNCS  T10K2
2264  T10R8         B     ERROR
2265  T10K2         CLHI  R6,X'D50E'
2266                BNES  T10R8
2267                LHR   R7,R7
2268                BNZS  T10R8
2269  *
2270  *             SRA
2271  *
2272  T10L          LHI   R6,X'4576'
2273                LHI   R7,X'6729'
2274                SRA   R6,1
2275                BNCS  T10R8
2276                BNPS  T10R8
2277                CLHI  R6,X'2288'
2278                BNES  T10R9
2279                CLHI  R7,X'3394'
2280                BNES  T10R9
2281                LIS   R8,2
2282                SRA   R6,0(R8)
2283                BCS   T10R9
2284                BNPS  T10R9
2285                CLHI  R6,X'08AE'
2286                BNES  T10R9
2287                CLHI  R7,X'CCE5'
2288                BES   T10L3
2289  T10R9         B     ERROR
2290  T10L3         LHI   R6,X'AB0F'
2291                LHI   R7,X'148A'
2292                SRA   R6,4
2293                BNCS  T10R9
2294                BPS   T10R9
2295                CLHI  R6,X'FA80'
2296                BNES  T10R9
2297                CLHI  R7,X'F148'
2298                BNES  T10R95
2299                SRA   R6,8
2300                BCS   T10R95
2301                BPS   T10R95
```

```
R6 =96CA
SHIFT LEFT ARITH.  4                                  PT122470
                                                      PT122480
                                                      PT122490
                                                      PT122500
                                                      PT122510
                                                      PT122520
                                                      PT122530
                                                      PT122540
                                                      PT122550
                                                      PT122560
                                                      PT122570
                                                      PT122580
                                                      PT122590
                                                      PT122600
SHIFT LEFT ARITH. 16                                  PT122610
                                                      PT122620
ERROR  1A03                                           PT122630
                                                      PT122640
                                                      PT122650
                                                      PT122660
                                                      PT122670
                                                      PT122680
                                                      PT122690
                                                      PT122700
                                                      PT122710
                                                      PT122720
SHIFT RIGHT ARITH  1                                  PT122730
                                                      PT122740
                                                      PT122750
                                                      PT122760
                                                      PT122770
                                                      PT122780
                                                      PT122790
                                                      PT122800
                                                      PT122810
                                                      PT122820
                                                      PT122830
                                                      PT122840
                                                      PT122850
                                                      PT122860
                                                      PT122870
ERROR  1A03                                           PT122880
                                                      PT122890
                                                      PT122900
SHIFT RIGHT ARITH. 4                                  PT122910
                                                      PT122920
                                                      PT122930
                                                      PT122940
                                                      PT122950
                                                      PT122960
                                                      PT122970
SHIFT RIGHT ARITH. 8                                  PT122980
                                                      PT122990
                                                      PT123000
                                                      PT123010
```

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1716   C560 FFFA        2302          CLHI  R6,X'FFFA'                                    PT123020
171A   2134             2303          BNES  T10R95                                        PT123030
171C   C570 B0F1        2304          CLHI  R7,X'B0F1'                                    PT123040
1720   2333             2305          BES   T10L5                                         PT123050
1722   4300 2182        2306  T10R95  B     ERROR            ERROR  1A03                  PT123060
1726   C860 730E        2307  T10L5   LHI   R6,X'730E'                                    PT123070
172A   EE60 0010        2308          SRA   R6,16            SHIFT RIGHT ARITH, 16        PT123080
172E   2286             2309          BNCS  T10R95                                        PT123090
1730   2227             2310          BNPS  T10R95                                        PT123100
1732   C570 730E        2311          CLHI  R7,X'730E'                                    PT123110
1736   203A             2312          BNES  T10R95                                        PT123120
1738   0866             2313          LHR   R6,R6                                         PT123130
173A   203C             2314          BNZS  T10R95                                        PT123140
173C   C800 041A        2315  T10P    LHI   R0,X'41A'                                     PT123150
1740   4000 22F2        2316          STH   R0,ERRIND        ERRIND = 041A                PT123160
1744   C840 8F70        2317          LHI   R4,X'8F70'                                    PT123170
1748   0864             2318          LHR   R6,R4            R4 = R6 = 8F70               PT123180
174A   C850 E6A0        2319          LHI   R5,X'E6A0'                                    PT123190
174E   0875             2320          LHR   R7,R5            R5 = R7 = E680               PT123200
       0000 1750        2321  RLL     EQU   *                                             PT123210
1750   EB60 0000        2322          RLL   R6,0                                          PT123220
1754   212E             2323          BPS   T10RA            RESULT IS -VE                PT123230
       0000 1756        2324  RRL     EQU   *                                             PT123240
1756   EA60 0000        2325          RRL   R6,0                                          PT123250
175A   212B             2326          BPS   T10RA                                         PT123260
175C   0546             2327          CLHR  R4,R6                                         PT123270
175E   2139             2328          BNES  T10RA                                         PT123280
1760   0557             2329          CLHR  R5,R7                                         PT123290
1762   2137             2330          BNES  T10RA                                         PT123300
1764   EB60 0001        2331          RLL   R6,1             ROTATE LEFT   1              PT123310
1768   2324             2332          BNPS  T10RA                                         PT123320
176A   C560 1EE1        2333          CLHI  R6,X'1EE1'                                    PT123330
176E   2333             2334          BES   T10P2                                         PT123340
1770   4300 2182        2335  T10RA   B     ERROR            ERROR  1A04                  PT123350
1774   C570 C041        2336  T10P2   CLHI  R7,X'C041'                                    PT123360
1778   2034             2337          BNES  T10RA                                         PT123370
177A   EA60 0001        2338          RRL   R6,1             ROTATE RIGHT  1              PT123380
177E   2027             2339          BPS   T10RA                                         PT123390
1780   0546             2340          CLHR  R4,R6                                         PT123400
1782   2039             2341          BNES  T10RA                                         PT123410
1784   0557             2342          CLHR  R5,R7                                         PT123420
1786   203B             2343          BNES  T10RA                                         PT123430
1788   EB60 0002        2344          RLL   R6,2             ROTATE LEFT   2              PT123440
178C   232E             2345          BNPS  T10RB                                         PT123450
178E   C560 3DC3        2346          CLHI  R6,X'3DC3'                                    PT123460
1792   213B             2347          BNES  T10RB                                         PT123470
1794   C570 9A82        2348          CLHI  R7,X'9A82'                                    PT123480
1798   2138             2349          BNES  T10RB                                         PT123490
179A   EA60 0002        2350          RRL   R6,2             ROTATE RIGHT  2              PT123500
179E   2125             2351          BPS   T10RB                                         PT123510
17A0   0546             2352          CLHR  R4,R6                                         PT123520
17A2   2133             2353          BNES  T10RB                                         PT123530
17A4   0557             2354          CLHR  R5,R7                                         PT123540
17A6   2333             2355          BES   T10P4                                         PT123550
17A8   4300 2182        2356  T10RB   B     ERROR            ERROR  1A04                  PT123560
```

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17AC   EB60 0004
17B0   2024
17B2   EB60 0008
17B6   2227
17B8   EA60 0004
17BC   222A
17BE   EA60 0008
17C2   202D
17C4   0546
17C6   213E
17C8   0557
17CA   213C
17CC   EB60 0010
17D0   2129
17D2   2188
17D4   0547
17D6   2136
17D8   0556
17DA   2134
17DC   EA60 0010
17E0   2323
17E2   4300 2182
17E6   0546
17E8   2033
17EA   0557
17EC   2035

17EE   2301



       0000 0000

17F0   C800 1B66
17F4   4000 22F4
17F8   C8U0 011B
17FC   4000 22F2
1800   C800 3142
1804   4000 22B8
1808   4800 22E0
180C   C500 3841
1810   4330 1B66

1814   24F1
1816   C8D0 1A3C
181A   2478
181C   483D 0000
1820   484D 0002
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2357  T10P4    RLL   R6,4          ROTATE LEFT 4                    PT123570
2358             BPS   T10RB                                          PT123580
2359             RLL   R6,8          ROTATE LEFT 8                    PT123590
2360             BNPS  T10RB                                          PT123600
2361             RRL   R6,4          ROTATE RIGHT 4                   PT123610
2362             BNPS  T10RB                                          PT123620
2363             RRL   R6,8          ROTATE RIGHT 8                   PT123630
2364             BPS   T10RB                                          PT123640
2365             CLHR  R4,R6                                          PT123650
2366             BNES  T10RC                                          PT123660
2367             CLHR  R5,R7                                          PT123670
2368             BNES  T10RC                                          PT123680
2369             RLL   R6,16         ROTATE LEFT 16                   PT123690
2370             BPS   T10RC                                          PT123700
2371             BCS   T10RC                                          PT123710
2372             CLHR  R4,R7                                          PT123720
2373             BNES  T10RC                                          PT123730
2374             CLHR  R5,R6                                          PT123740
2375             BNES  T10RC                                          PT123750
2376             RRL   R6,16         ROTATE RIGHT 16                  PT123760
2377             BNPS  T10P8                                          PT123770
2378  T10RC      B     ERROR         ERROR  1A04                      PT123780
2379  T10P8      CLHR  R4,R6                                          PT123790
2380             BNES  T10RC                                          PT123800
2381             CLHR  R5,R7                                          PT123810
2382             BNES  T10RC                                          PT123820
2383  *                                                               PT123830
2384  T10END     BS    TEST11                                         PT123840
2385  ************************************************************** PT123850
2386  *                                                               PT123860
2387  *        TEST11 CHECKS THE INSTRUCTIONS                         PT123870
2388  *                                                               PT123880
2389  *        MH , MHR , MHU , MHUR                                  PT123890
2390  *                                                               PT123900
2391  *        DH , DHR                                               PT123910
2392  *                                                               PT123920
2393  *        TEST11 TESTS THE MULTIPLY AND DIVIDE INSTRUCTIONS      PT123930
2394  *                                                               PT123940
2395  POINT     EQU   13                                             PT123950
2396  *                                                               PT123960
2397  TEST11    LHI   R0,TEST12                                      PT123970
2398            STH   R0,NXTST                                       PT123980
2399            LHI   R0,X'011B'                                     PT123990
2400            STH   R0,ERRINO                                      PT124000
2401            LHI   R0,C'1B'                                       PT124010
2402            STH   R0,TESTNO                                      PT124020
2403            LH    R0,CPUNO                                       PT124030
2404            CLHI  R0,C'8A'                                       PT124040
2405            BE    TEST12                                         PT124050
2406  *                                                              PT124060
2407            LIS   TOT,1         SET ERROR NUMBER=1               PT124070
2408  MCHK2     LHI   POINT,MUD1                                     PT124080
2409            LIS   R7,8                                           PT124090
2410  MLOOP1    LH    R3,0(POINT)   FETCH  A                         PT124100
2411            LH    R4,2(POINT)   FETCH  B                         PT124110
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1824  4850 22F6          2412           LH    R5,ZERO                                    PT124120
1828  4860 22F6          2413           LH    R6,ZERO                                    PT124130
182C  0853               2414           SHR   R5,R3          GET  -A                    PT124140
182E  0864               2415           SHR   R6,R4          GET  -B                    PT124150
1830  488D 0004          2416           LH    R8,4(POINT)    FETCH EXPECTED DOUBLE      PT124160
1834  489D 0006          2417           LH    R9,6(POINT)    LENGTH VALUE OF (A*B)      PT124170
1838  0813               2418           LHR   R1,R3          A                          PT124180
183A  954C               2419           EPSR  R12,R12        SAVE CC                    PT124190
      0000 183C          2420  MH       EQU   *                                         PT124200
183C  4C0D 0002          2421           MH    R0,2(POINT)    A*B                        PT124210
1840  41A0 1980          2422           BAL   R10,TESTC4                                PT124220
1844  24F2               2423           LIS   TOT,2          SET ERROR NUMBER=2         PT124230
1846  0814               2424           LHR   R1,R4          B                          PT124240
1848  95CC               2425           EPSR  R12,R12        SAVE CC                    PT124250
184A  4C0D 0000          2426           MH    R0,0(POINT)    B*A                        PT124260
184E  41A0 1980          2427           BAL   R10,TESTC4                                PT124270
1852  24F3               2428           LIS   TOT,3          SET ERROR NUMBER=3         PT124280
1854  0722               2429           XHR   R2,R2                                     PT124290
1856  4020 185E          2430           STH   R2,SFLAG       RESET SFLAG                PT124300
185A  C550 8000          2431           CLHI  R5,X'8000'                                PT124310
185E  4230 1872          2432           BNE   SCONT1                                    PT124320
1862  C560 8000          2433           CLHI  R6,X'8000'                                PT124330
1866  4330 1872          2434           BE    SCONT1                                    PT124340
186A  C820 7777          2435           LHI   R2,X'7777'                                PT124350
186E  4020 185E          2436           STH   R2,SFLAG       SET SFLAG                  PT124360
1872  0815               2437  SCONT1   LHR   R1,R5          -A                         PT124370
1874  95CC               2438           EPSR  R12,R12        SAVE CC                    PT124380
1876  0C06               2439           MHR   R0,R6          -A*(-B)                    PT124390
1878  41A0 1A12          2440           BAL   R10,SCHECK                                PT124400
187C  41A0 1980          2441           BAL   R10,TESTC4                                PT124410
1880  24F4               2442           LIS   TOT,4          SET ERROR NUMBER=4         PT124420
1882  0816               2443           LHR   R1,R6                                     PT124430
1884  95CC               2444           EPSR  R12,R12                                   PT124440
1886  0C05               2445           MHR   R0,R5          -B*(-A)                    PT124450
1888  41A0 1A12          2446           BAL   R10,SCHECK                                PT124460
188C  41A0 1980          2447           BAL   R10,TESTC4                                PT124470
1890  24F5               2448           LIS   TOT,5          SET ERROR NUMBER=5         PT124480
1892  0788               2449           XHR   R8,R8                                     PT124490
1894  0799               2450           XHR   R9,R9                                     PT124500
1896  489D 0006          2451           SH    R9,6(POINT)    DOUBLE LENGTH              PT124510
189A  4F8D 0004          2452           SCH   R8,4(POINT)    EXPECTED  -(A*B)           PT124520
189E  0722               2453           XHR   R2,R2                                     PT124530
18A0  4020 185E          2454           STH   R2,SFLAG       RESET SFLAG                PT124540
18A4  C560 8000          2455           CLHI  R6,X'8000'                                PT124550
18A8  4230 18B4          2456           BNE   SCONT2                                    PT124560
18AC  C820 7777          2457           LHI   R2,X'7777'                                PT124570
18B0  4020 185E          2458           STH   R2,SFLAG       SET SFLAG                  PT124580
18B4  0813               2459  SCONT2   LHR   R1,R3                                     PT124590
18B6  95CC               2460           EPSR  R12,R12                                   PT124600
18B8  0C06               2461           MHR   R0,R6          A*(-B)                     PT124610
18BA  41A0 1A12          2462           BAL   R10,SCHECK                                PT124620
18BE  41A0 1980          2463           BAL   R10,TESTC4                                PT124630
18C2  24F6               2464           LIS   TOT,6          SET ERROR NUMBER=6         PT124640
18C4  0816               2465           LHR   R1,R6          -B                         PT124650
18C6  95CC               2466           EPSR  R12,R12                                   PT124660
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18C8   4C0D 0000              MH    R0,0(POINT)      (-B)*A                         PT124670
18CC   41A0 1A12              BAL   R10,SCHECK                                      PT124680
18D0   41A0 1980              BAL   R10,TESTC4                                      PT124690
18D4   24F7                   LIS   TOT,7            SET ERROR NUMBER=7             PT124700
18D6   0722                   XHR   R2,R2                                           PT124710
18D8   4020 185E              STH   R2,SFLAG         RESET SFLAG                    PT124720
18DC   C550 8000              CLHI  R5,X'8000'                                      PT124730
18E0   4230 18EC              BNE   SCONT3                                          PT124740
18E4   C820 7777              LHI   R2,X'7777'                                      PT124750
18E8   4020 185E              STH   R2,SFLAG         SET SFLAG                      PT124760
18EC   0814          SCONT3   LHR   R1,R4            B                              PT124770
18EE   95CC                   EPSR  R12,R12                                         PT124780
       0000 18F0     MHR      EQU   *                                               PT124790
18F0   0C05                   MHR   R0,R5            B*(-A)                         PT124800
18F2   41A0 1A12              BAL   R10,SCHECK                                      PT124810
18F6   41A0 1980              BAL   R10,TESTC4                                      PT124820
18FA   24F8                   LIS   TOT,8            SET ERROR NUMBER=8             PT124830
18FC   0815                   LHR   R1,R5            -A                             PT124840
18FE   95CC                   EPSR  R12,R12                                         PT124850
1900   4C0D 0002              MH    R0,2(POINT)      (-A)*B                         PT124860
1904   41A0 1A12              BAL   R10,SCHECK                                      PT124870
1908   41A0 1980              BAL   R10,TESTC4                                      PT124880
190C   24F9                   LIS   TOT,9            SET ERROR NUMBER=9             PT124890
190E   488D 0008              LH    R8,8(POINT)      EXPECTED DOUBLE LENGTH VALUE   PT124900
1912   489D 000A              LH    R9,10(POINT)     OF UNSIGNED PRODUCT OF A AND B PT124910
1916   0813                   LHR   R1,R3            A                              PT124920
1918   95CC                   EPSR  R12,R12                                         PT124930
       0000 191A     MHU      EQU   *                                               PT124940
191A   DC0D 0002              MHU   R0,2(POINT)      A*B UNSIGNED                   PT124950
191E   41A0 1980              BAL   R10,TESTC4                                      PT124960
1922   24FA                   LIS   TOT,10           SET ERROR NUMBER=X'A'          PT124970
1924   0814                   LHR   R1,R4            B                              PT124980
1926   95CC                   EPSR  R12,R12                                         PT124990
       0000 1928     MHUR     EQU   *                                               PT125000
1928   9C03                   MHUR  R0,R3            B*A UNSIGNED                   PT125010
192A   41A0 1980              BAL   R10,TESTC4                                      PT125020
192E   24F1                   LIS   TOT,1                                           PT125030
1930   26DC                   AIS   POINT,12                                        PT125040
1932   2771                   SIS   R7,1                                            PT125050
1934   4230 181C              BNZ   MLOOP1                                          PT125060
                     *                                                              PT125070
       0000 0007     POINTR   EQU   7                                               PT125080
                     *                                                              PT125090
1938   0722          DVDCHK   XHR   R2,R2                                           PT125100
193A   4020 004C              STH   R2,X'4C'                                        PT125110
193E   C830 19FE              LHI   R3,DFAULT                                       PT125120
1942   4030 004E              STH   R3,X'4E'                                        PT125130
1946   C820 1000              LHI   R2,X'1000'       ENABLE DIVIDE FAULT INTERRUPT  PT125140
194A   9532                   EPSR  R3,R2                                           PT125150
194C   C870 1A9C              LHI   POINTR,DIVD2                                    PT125160
1950   242F                   LIS   R2,15                                           PT125170
1952   D1A7 0000     DLOOP2   LM    R10,0(POINTR)                                   PT125180
1956   243C                   LIS   R3,12            SET ERROR NUMBER=X'C'          PT125190
1958   080A                   LHR   R0,R10           DOUBLE LENGTH                  PT125200
195A   081B                   LHR   R1,R11           DIVIDEND                       PT125210
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195C  9588              EPSR  R8,R8          SAVE PSW                          PT125220
      0000 195E  DHR    EQU   *                                                PT125230
195E  0D0C              DHR   R0,R12         DIVIDEND/DIVISOR                  PT125240
1960  4190 1996         BAL   R9,TESTC5                                        PT125250
1964  243D              LIS   R3,13          SET ERROR NUMBER=X'D'             PT125260
1966  080A              LHR   R0,R10         DOUBLE LENGTH                     PT125270
1968  081B              LHR   R1,R11         DIVIDEND                          PT125280
196A  9588              EPSR  R8,R8          SAVE PSW                          PT125290
      0000 196C  DH     EQU   *                                                PT125300
196C  4D07 0004         DH    R0,4(POINTR)   DIVIDEND/DIVISOR                  PT125310
1970  4190 1996         BAL   R9,TESTC5                                        PT125320
1974  267C              AIS   POINTR,12      INCREMENT POINTER BY 12           PT125330
1976  2721              SIS   R2,1           DECREMENT COUNT                   PT125340
1978  4310 1952         BNM   DLOOP2                                           PT125350
197C  4300 1866  T11END B     TEST12                                           PT125360
                 *      SUBROUTINES OF T11                                     PT125370
1980  95EE       TESTC4 EPSR  R14,R14        GET PSW                           PT125380
1982  05CE              CLHR  R12,R14                                          PT125390
1984  4230 19BA         BNE   ERR21                                            PT125400
1988  0580              CLHR  R8,R0                                            PT125410
198A  4230 19BA         BNE   ERR21                                            PT125420
198E  0591              CLHR  R9,R1                                            PT125430
1990  4230 19BA         BNE   ERR21                                            PT125440
1994  030A              BR    R10                                              PT125450
1996  9566       TESTC5 EPSR  R6,R6          GET PSW                           PT125460
1998  0568              CLHR  R6,R8                                            PT125470
199A  4230 19D6         BNE   ERROR1                                           PT125480
199E  050D              CLHR  R0,R13                                           PT125490
19A0  4230 19D6         BNE   ERROR1                                           PT125500
19A4  051E              CLHR  R1,R14                                           PT125510
19A6  4230 19D6         BNE   ERROR1                                           PT125520
19AA  45F0 185C         CLH   R15,IDFLAG                                       PT125530
19AE  4230 19D6         BNE   ERROR1                                           PT125540
19B2  0766              XHR   R6,R6                                            PT125550
19B4  4060 185C         STH   R6,IDFLAG                                        PT125560
19B8  0309              BR    R9                                               PT125570
19BA  08DE       ERR21  LHR   R13,R14        PSW AFTER MULTIPLICATION          PT125580
19BC  08EC              LHR   R14,R12        PSW BEFORE MULTIPLICATION         PT125590
19BE  08B8              LHR   R11,R8         CALCULATED                        PT125600
19C0  08C9              LHR   R12,R9         RESULT                            PT125610
19C2  0890              LHR   R9,R0          EXPECTED                          PT125620
19C4  08A1              LHR   R10,R1         RESULT                            PT125630
19C6  0875              LHR   R7,R5          NEGATIVE OF THE FIRST OPERAND     PT125640
19C8  0886              LHR   R8,R6          NEGATIVE OF THE SECOND OPERAND    PT125650
19CA  0853              LHR   R5,R3          THE FIRST OPERAND                 PT125660
19CC  0864              LHR   R6,R4          THE SECOND OPERAND                PT125670
19CE  244A              LIS   R4,10          TEN VALUES ARE TO BE PRINTED      PT125680
19D0  083F              LHR   R3,TOT                                           PT125690
19D2  4300 19EE         B     ERR2                                             PT125700
19D6  244B       ERROR1 LIS   R4,11          ELEVEN HALF WORDS ARE TO BE PRINTED PT125710
19D8  085A              LHR   R5,R10         MSB OF THE DIVIDEND               PT125720
19DA  087C              LHR   R7,R12         DIVISOR                           PT125730
19DC  0891              LHR   R9,R1          ACTUAL VALUE OF QUOTIENT          PT125740
19DE  08AD              LHR   R10,R13        EXPECTED VALUE OF REMAINDER       PT125750
19E0  08C6              LHR   R12,R6         PSW AFTER DIVISION                PT125760
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19E2  08D8                2577            LHR   R13,R8
19E4  0880                2578            LHR   R8,R0
19E6  086B                2579            LHR   R6,R11
19E8  08BE                2580            LHR   R11,R14
19EA  48E0 185C           2581            LH    R14,IDFLAG
19EE  C800 001B           2582  ERR2      LHI   R0,X'001B'
19F2  9108                2583            SLLS  R3,8
19F4  0603                2584            OHR   R0,R3
19F6  40D0 22F2           2585            STH   R0,ERRIND
19FA  4300 2182           2586            B     ERROR
19FE  4060 1860           2587  DEAULT    STH   R6,TEMPF
1A02  C860 7777           2588            LHI   R6,X'7777'
1A06  4060 185C           2589            STH   R6,IDFLAG
1A0A  4860 1860           2590            LH    R6,TEMPF
1A0E  C200 0048           2591            LPSW  X'48'
1A12  95C2                2592  SCHECK    EPSR  R2,R2
1A14  48E0 185E           2593            LH    R14,SFLAG
1A18  2338                2594            BZS   NCHANG
1A1A  C700 FFFF           2595            XHI   R0,X'FFFF'
1A1E  C710 FFFF           2596            XHI   R1,X'FFFF'
1A22  2611                2597            AIS   R1,1
1A24  4E00 22F6           2598            ACH   R0,ZERO
1A28  95E2                2599  NCHANG    EPSR  R14,R2
1A2A  030A                2600            BR    R10
                          2601  *         DATA OF TEST11
1A2C  0000                2602  MUD2      DC    0,1,X'FFFF'
1A2E  0001
1A30  FFFF
1A32  7FFF                2603            DC    X'7FFF',X'8001'
1A34  8001
1A36  8000                2604            DC    X'8000',X'7777'
1A38  7777
1A3A  79DE                2605            DC    X'79DE'
1A3C  0000                2606  MUD1      DC    0
1A3E  0000                2607            DC    0
1A40  0000                2608            DC    0,0
1A42  0000
1A44  0000                2609            DC    0,0
1A46  0000
1A48  0000                2610            DC    0
1A4A  FFFF                2611            DC    X'FFFF'
1A4C  0000                2612            DC    0,0
1A4E  0000
1A50  0000                2613            DC    0,0
1A52  0000
1A54  7FFF                2614            DC    X'7FFF',0
1A56  0000
1A58  0000                2615            DC    0,0
1A5A  0000
1A5C  0000                2616            DC    0,0
1A5E  0000
1A60  1111                2617            DC    X'1111'
1A62  1111                2618            DC    X'1111'
1A64  0123                2619            DC    X'0123',X'4321'
1A66  4321

                                  PSW BEFORE DIVISION                    PT125770
                                  ACTUAL VALUE OF THE REMAINDER          PT125780
                                  LSB OF THE DIVIDEND                    PT125790
                                  EXPECTED QUOTIENT VALUE                PT125A00
                                  ACTUAL DIVIDE FAULT FLAG               PT125A10
                                                                         PT125A20
                                                                         PT125A30
                                                                         PT125A40
                                                                         PT125A50
                                                                         PT125A60
                                                                         PT125A70
                                                                         PT125A80
                                  SET DIVIDE FAULT INT. FLAG             PT125A90
                                  RESTORE R6                             PT125B00
                                  LOAD NEW PSW & LOC FROM '48'           PT125B10
                                  SAVE PSW                               PT125B20
                                  EXAMINE SFLAG                          PT125B30
                                  IF RESET, DO NOT MODIFY                PT125B40
                                  COMPLEMENT                             PT125B50
                                  THE RESULT                             PT125B60
                                                                         PT125B70
                                  RESTORE PSW                            PT125B80
                                                                         PT125B90
                                                                         PT125C00
                                                                         PT125C10
                                                                         PT125C20

                                                                         PT125C30

                                                                         PT125C40

                                  A                                      PT125C50
                                  B                                      PT125C60
                                  A*B                                    PT125C70
                                                                         PT125C80

                                  A*B UNSIGNED                           PT125C90

                                  A                                      PT125D00
                                  B                                      PT125D10
                                  A*B                                    PT125D20
                                                                         PT125D30

                                  A*B UNSIGNED                           PT125D40

                                                                         PT125D50

                                                                         PT125D60

                                                                         PT125D70

                                  A                                      PT125D80
                                  B                                      PT125D90
                                  A*B                                    PT125E00
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1A68   0123        2620          DC     X'0123',X'4321'     A*B UNSIGNED     PT126200
1A6A   4321
1A6C   1111        2621          DC     X'1111'             A                PT126210
1A6E   FFFF        2622          DC     X'FFFF'             B                PT126220
1A70   FFFF        2623          DC     X'FFFF',X'EEEF'     A*B              PT126230
1A72   EEEF
1A74   1110        2624          DC     X'1110',X'EEEF'     A*B UNSIGNED     PT126240
1A76   EEEF
1A78   FFFF        2625          DC     X'FFFF'             A                PT126250
1A7A   FFFF        2626          DC     X'FFFF'             B                PT126260
1A7C   0000        2627          DC     0,1                 A*B              PT126270
1A7E   0001
1A80   FFFE        2628          DC     X'FFFE',X'0001'     A*B UNSIGNED     PT126280
1A82   0001
1A84   8000        2629          DC     X'8000',X'FFFF'                      PT126290
1A86   FFFF
1A88   0000        2630          DC     0,X'8000'                            PT126300
1A8A   8000
1A8C   7FFF        2631          DC     X'7FFF',X'8000'                      PT126310
1A8E   8000
1A90   8000        2632          DC     X'8000',X'8000'                      PT126320
1A92   8000
1A94   4000        2633          DC     X'4000',0                            PT126330
1A96   0000
1A98   4000        2634          DC     X'4000',0                            PT126340
1A9A   0000
1A9C   0000        2635   DIVD2  DC     0,0,0                                PT126350
1A9E   0000
1AA0   0000
1AA2   0000        2636          DC     0,0,X'7777'                          PT126360
1AA4   0000
1AA6   7777
1AA8   0000        2637          DC     0,1,0                                PT126370
1AAA   0001
1AAC   0000
1AAE   0000        2638          DC     0,1,X'7777'                          PT126380
1AB0   0001
1AB2   7777
1AB4   FFFF        2639          DC     X'FFFF',X'FFFF'                      PT126390
1AB6   FFFF
1AB8   0000        2640          DC     0,X'FFFF',X'FFFF'                    PT126400
1ABA   FFFF
1ABC   FFFF
1ABE   7777        2641          DC     X'7777'                              PT126410
1AC0   0000        2642          DC     0,0,X'7FFF'                          PT126420
1AC2   0000
1AC4   7FFF
1AC6   0000        2643          DC     0,0,0                                PT126430
1AC8   0000
1ACA   0000
1ACC   0000        2644          DC     0,0,X'FFFF'                          PT126440
1ACE   0000
1AD0   FFFF
1AD2   0000        2645          DC     0,0,0                                PT126450
1AD4   0000
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1AD6  0000
1AD8  0000          2646        DC    0,0,X'8000'                    PT126460
1ADA  0000
1ADC  8000
1ADE  0000          2647        DC    0,0,0                          PT126470
1AE0  0000
1AE2  0000
1AE4  3FFF          2648        DC    X'3FFF',X'8000'                PT126480
1AE6  8000
1AE8  7FFF          2649        DC    X'7FFF',X'3FFF'                PT126490
1AEA  3FFF
1AEC  8000          2650        DC    X'8000',X'7777'                PT126500
1AEE  7777
1AF0  C000          2651        DC    X'C000',X'8000'                PT126510
1AF2  8000
1AF4  8001          2652        DC    X'8001',X'C000'                PT126520
1AF6  C000
1AF8  8000          2653        DC    X'8000',X'7777'                PT126530
1AFA  7777
1AFC  3FFF          2654        DC    X'3FFF',X'7FFF'                PT126540
1AFE  7FFF
1B00  7FFF          2655        DC    X'7FFF',X'7FFE'                PT126550
1B02  7FFE
1B04  7FFF          2656        DC    X'7FFF',0                      PT126560
1B06  0000
1B08  C000          2657        DC    X'C000',X'8001'                PT126570
1B0A  8001
1B0C  8001          2658        DC    X'8001',X'8002'                PT126580
1B0E  8002
1B10  7FFF          2659        DC    X'7FFF',0                      PT126590
1B12  0000
1B14  3FFF          2660        DC    X'3FFF',X'FFFE'                PT126600
1B16  FFFE
1B18  8001          2661        DC    X'8001',X'7FFE'                PT126610
1B1A  7FFE
1B1C  8000          2662        DC    X'8000',0                      PT126620
1B1E  0000
1B20  C000          2663        DC    X'C000',X'0002'                PT126630
1B22  0002
1B24  7FFF          2664        DC    X'7FFF',X'8002'                PT126640
1B26  8002
1B28  8000          2665        DC    X'8000',0                      PT126650
1B2A  0000
1B2C  3FFF          2666        DC    X'3FFF',X'FFFF'                PT126660
1B2E  FFFF
1B30  8001          2667        DC    X'8001',X'3FFF'                PT126670
1B32  3FFF
1B34  FFFF          2668        DC    X'FFFF',X'7777'                PT126680
1B36  7777
1B38  C000          2669        DC    X'C000',X'0001'                PT126690
1B3A  0001
1B3C  7FFF          2670        DC    X'7FFF',X'C000'                PT126700
1B3E  C000
1B40  0001          2671        DC    X'0001',X'7777'                PT126710
1B42  7777
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                                                                                        PT126720
1B44   0000          2672            DC     0,1,X'FFFF'
1B46   0001
1B48   FFFF                                                                             PT126730
1B4A   0000          2673            DC     0,X'FFFF',0
1B4C   FFFF
1B4E   0000                                                                             PT126740
1B50   FFFF          2674            DC     X'FFFF',X'FFFC'
1B52   FFFC                                                                             PT126750
1B54   0002          2675            DC     X'0002',0
1B56   0000                                                                             PT126760
1B58   FFFE          2676            DC     X'FFFE',0
1B5A   0000                                                                             PT126770
1B5C   0000          2677  IDFLAG    DC     0                                           PT126780
1B5E   0000          2678  SFLAG     DC     0                                           PT126790
1B60                 2679  TEMPF     DS     2                                           PT126800
1B62   0000          2680  NUMBER    DC     0,X'7FFF'
1B64   7FFF                                                                             PT126810
                     2681  *****************************************************        PT126820
                     2682  *                                                            PT126830
                     2683  *         TEST  12                                           PT126840
                     2684  *                                                            PT126850
                     2685  *  THIS TEST CHECKS SET MAP AND LOAD PROGRAM STATUS INSTRUCTIONS.   PT126860
                     2686  *  THE FIRST PART OF THE TEST CHECKS SETMR AND SETM.         PT126870
                     2687  *  THE SECOND PART OF THE TEST CHECKS LPS AND LPSR.          PT126880
                     2688  *                                                            PT126890
                     2689  *******************************************                  PT126900
                     2690  *                                                            PT126910
                     2691  *  THE COMMENTS BELOW REFER TO BITS 8-11.                    PT126920
                     2692  *  THESE BITS ARE FROM THE SECOND OPERAND (R2).              PT126930
                     2693  *                                                            PT126940
1B66   C8E0 1CBE     2694  TEST12    LHI    R14,STOSETM      STORAGE AREA FOR RX FORMAT INSTR.   PT126950
1B6A   C8F0 0334     2695            LHI    R15,TEST1                                   PT126960
1B6E   40F0 22F4     2696            STH    R15,NXTST                                   PT126970
1B72   C800 3143     2697            LHI    R0,C'1C'                                    PT126980
1B76   4000 2288     2698            STH    R0,TESTNO                                   PT126990
1B7A   C850 7C00     2699            LHI    R5,X'7C00'       ARBITRARY PSW FOR SWITCHING         PT127000
1B7E   07AA          2700            XHR    R10,R10          FLAG DECIDES TO EXEC. SETMR OR SETM  PT127010
1B80   0799          2701            XHR    R9,R9            DOCOMP ROUTINE FLAG        PT127020
1B82   C800 001C     2702            LHI    R0,X'001C'                                  PT127030
1B86   4000 22F2     2703            STH    R0,ERRIND                                   PT127040
1B8A   4300 1B80     2704            B      SET01                                       PT127050
1B8E   C5A0 0001     2705  SET0      CLHI   R10,1            CHECK FLAG                 PT127060
1B92   2184          2706            BLS    SER0             IF FLAG IS ZERO EXECUTE SETMR       PT127070
1B94   2339          2707            BES    SER              IF FLAG IS NOT ZERO EXECUTE SETMR   PT127080
1B96   4300 1CC0     2708            B      CHANST           BRANCH TO CHECK FOR LARGER MEMORY   PT127090
1B9A   1312          2709  SER0      SETMR  R1,R2                                       PT127100
1B9C   4520 1F3C     2710            CLH    R2,RTWOFI        CHECK R2 FIELD TO SEE IF INTACT     PT127110
1BA0   4230 1F34     2711            BNE    SETERC                                      PT127120
1BA4   030B          2712            BR     R11                                         PT127130
1BA6   4020 1CBE     2713  SER       STH    R2,STOSETM       STORE R2 FIELD IN STORAGE LOCATION  PT127140
1BAA   531E 0000     2714            SETM   R1,0(R14)        R14 CONTAINS ADDRESS OF STOSETM     PT127150
1BAE   030B          2715            BR     R11                                         PT127160
                     2716  *                                                            PT127170
                     2717  * BITS 8-11 IN THIS SECTION ARE FROM 0000 TO 0110             PT127180
                     2718  *
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1BB0  0744          2719  SET01   XHR   R4,R4          R4 IS CHECK AGAINST R2 (PSW)          PT127190
1BB2  0766          2720          XHR   R6,R6          R6 IS PSW COUNTER                     PT127200
1BB4  0722          2721          XHR   R2,R2          R2 IS LOCATION FOR NEW PSW'S          PT127210
1BB6  9552          2722          EPSR  R5,R2          SWITCH TO NEW PSW                     PT127220
1BB8  4020 1F3C     2723          STH   R2,RTWOFI                                            PT127230
1BBC  0755          2724          XHR   R5,R5                                                PT127240
1BBE  C810 F0F0     2725          LHI   R1,X'F0F0'     R1 TO BE COMPARE TO                   PT127250
1BC2  0831          2726          LHR   R3,R1          CONSTANT VALUE OF R3                  PT127260
1BC4  C880 0060     2727          LHI   R8,X'0060'     R8 IS UPPER LIMIT FOR COUNTER         PT127270
1BC8  C8B0 1BD4     2728          LHI   R11,SET0A                                            PT127280
1BCC  C8D0 1C2E     2729          LHI   R13,SETB                                             PT127290
1BD0  4300 1B8E     2730          B     SET0                                                 PT127300
                    2731  *                                                                  PT127310
                    2732  *                                                                  PT127320
                    2733  *  THIS SECTION TESTS THE ABOVE SET UPS FOR SETMR AND SETM        PT127330
1BD4  0513          2734  SET0A   CLHR  R1,R3          COMPARE R1 TO EXPECTED VALUE (R3)     PT127340
1BD6  4230 1C98     2735          BNE   SETERA                                               PT127350
1BDA  9525          2736          EPSR  R2,R5          EXCHANGE PSW TO TEST IT               PT127360
1BDC  0524          2737          CLHR  R2,R4          COMPARE R2(PSW) TO EXPECTED PSW(R4)   PT127370
1BDE  4230 1CAE     2738          BNE   SETERB                                               PT127380
1BE2  C5A0 0001     2739          CLHI  R10,1          CHECK IF SETM OR SETMR EXTECUTED      PT127390
1BE6  2137          2740          BNES  SET0A2         IF R10=1, R2 FIELD WAS CHECKED        PT127400
1BE8  4820 1C8E     2741          LH    R2,STOSETM     LOAD R2 FIELD INTO R2 FOR CHECK       PT127410
1BEC  4520 1F3C     2742          CLH   R2,RTWOFI      CHECK IF R2 FIELD IS STILL INTACT     PT127420
1BF0  4230 1F34     2743          BNE   SETERC                                               PT127430
1BF4  0568          2744  SET0A2  CLHR  R6,R8          CHECK IF ALL PSW'S HAVE BEEN TESTED   PT127440
1BF6  4330 1C12     2745          BE    CHFI                                                 PT127450
1BFA  CA60 0010     2746          AHI   R6,X'10'       INCREMENT PSW COUNTER                 PT127460
1BFE  0826          2747  SET0A1  LHR   R2,R6          LOAD NEW PSW INTO R2                  PT127470
1C00  C420 00F0     2748          NHI   R2,X'00F0'     AND OFF UNNECESSARY BITS              PT127480
1C04  C620 4C00     2749          OHI   R2,X'4C00'     OR IN CHECK BITS                      PT127490
1C08  4020 1F3C     2750          STH   R2,RTWOFI      STORE IN R2 FIELD CHECK AREA          PT127500
1C0C  0846          2751          LHR   R4,R6                                                PT127510
1C0E  4300 1B8E     2752          B     SET0           BRANCH TO EXECUTE TEST INSTRUCTION    PT127520
                    2753  *                                                                  PT127530
1C12  C560 7E60     2754  CHFI    CLHI  R6,X'7E60'     COMPARE COUNTER (R6) TO FINAL PSW     PT127540
1C16  033D          2755          BER   R13                                                  PT127550
1C18  C460 FF00     2756          NHI   R6,X'FF00'     REMOVE EXTRANEOUS BITS                PT127560
1C1C  CA60 0200     2757          AHI   R6,X'0200'     INCREMENT FOR NEW PSW                 PT127570
1C20  0886          2758          LHR   R8,R6                                                PT127580
1C22  CA80 0060     2759          AHI   R8,X'60'       ADJUST R8 TO FINAL PSW                PT127590
1C26  9556          2760          EPSR  R5,R6          SWITCH TO NEW PSW                     PT127600
1C28  0856          2761          LHR   R5,R6          R5 TO BE NEW PSW AT COMPAR. ROUTINE   PT127610
1C2A  4300 1BFE     2762          B     SET0A1                                               PT127620
                    2763  *                                                                  PT127630
                    2764  *  BIT 8-11 IN THIS SECTION ARE EQUAL TO 1111 ONLY                 PT127640
                    2765  *                                                                  PT127650
1C2E  C810 F0F0     2766  SETB    LHI   R1,X'F0F0'     LOAD R1 WITH CONSTANT                 PT127660
1C32  0831          2767          LHR   R3,R1          R3 TO BE CHECK AGAINST R1             PT127670
1C34  C8B0 1C4A     2768          LHI   R11,SET0B                                            PT127680
1C38  0755          2769          XHR   R5,R5          R5 TO BE COUNTER                      PT127690
1C3A  9525          2770          EPSR  R2,R5          SWITCH TO NEW PSW                     PT127700
1C3C  C820 00F0     2771          LHI   R2,X'00F0'     SET UP R2 FIELD                       PT127710
1C40  4020 1F3C     2772          STH   R2,RTWOFI      STORE IN R2 FIELD CHECK AREA          PT127720
1C44  0842          2773          LHR   R4,R2          R4 TO BE CHECK AGAINST R2             PT127730
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1C46   4300 1B8E                  B     SET0                                                  PT127740
                          *                                                                   PT127750
1C4A   0513               SET0B   CLHR  R1,R3              COMPARE R1 TO EXPECTED VALUE (R3)  PT127760
1C4C   4230 1C98                  BNE   SETERA                                                PT127770
1C50   9525                       EPSR  R2,R5              GET PSW                            PT127780
1C52   0524                       CLHR  R2,R4              COMPARE PSW(R2) TO EXPECTED PSW(R4) PT127790
1C54   4230 1CAE                  BNE   SETERB                                                PT127800
1C58   C5A0 0001                  CLHI  R10,1              CHECK IF SETM OR SETMR  EXECUTED   PT127810
1C5C   4230 1C6C                  BNE   SET0B.2            IF R10=1, R2 FIELD WAS CHECKED     PT127820
1C60   4820 1CBE                  LH    R2,STOSETM         LOAD R2 FIELD INTO R2              PT127830
1C64   4520 1F3C                  CLH   R2,RTWOFI          CHECK IF R2 FIELD STILL INTACT     PT127840
1C68   4230 1F34                  BNE   SETERC                                                PT127850
1C6C   C550 7E00          SET0B.2 CLHI  R5,X'7E00'         COMPARE COUNTER (R5) TO FINAL PSW  PT127860
1C70   4330 1C8E                  BE    SET0B.1                                               PT127870
1C74   CA50 0200                  AHI   R5,X'200'          INCREMENT COUNTER                  PT127880
1C78   0825                       LHR   R2,R5              SET UP R2 FIELD                    PT127890
1C7A   C620 4CF0                  OHI   R2,X'4CF0'         OR IN CHECK BITS                   PT127900
1C7E   4020 1F3C                  STH   R2,RTWOFI          STORE IN R2 FIELD CHECK AREA       PT127910
1C82   0845                       LHR   R4,R5              R4 TO BE COMPARISON AGAINST NEW PSW PT127920
1C84   C640 00F0                  OHI   R4,X'00F0'         OR IN NECESSARY BITS               PT127930
1C88   9565                       EPSR  R6,R5                                                 PT127940
1C8A   4300 1B8E                  B     SET0                                                  PT127950
1C8E   C8B0 1BD4          SET0B.1 LHI   R11,SET0A                                             PT127960
1C92   26A1                       AIS   R10,1              SET FLAG                           PT127970
1C94   4300 1BB0                  B     SET01                                                 PT127980
                          *                                                                   PT127990
1C98   08AA               SETERA  LHR   R10,R10            CHECK FLAG                         PT128000
1C9A   2134                       BNZS  SETERA1            IF FLAG SET THEN SETM ERROR        PT128010
1C9C   C800 011C                  LHI   R0,X'011C'         ERROR 1C01                         PT128020
1CA0   2303                       BS    SETERR                                                PT128030
1CA2   C800 021C          SETERA1 LHI   R0,X'021C'         ERROR 1C02                         PT128040
1CA6   4000 22F2          SETERR  STH   R0,ERRIND                                             PT128050
1CAA   4300 2182                  B     ERROR                                                 PT128060
1CAE   08AA               SETERB  LHR   R10,R10            CHECK FLAG                         PT128070
1CB0   2134                       BNZS  SETERB1            IF FLAG SET THEN SETM ERROR        PT128080
1CB2   C800 031C                  LHI   R0,X'031C'         ERROR 1C03                         PT128090
1CB6   2208                       BS    SETERR                                                PT128100
1CB8   C800 041C          SETERB1 LHI   R0,X'041C'         ERROR 1C04                         PT128110
1CBC   2208                       BS    SETERR                                                PT128120
                          *                                                                   PT128130
1CBE   0000               STOSETM DC    0                  STORAGE AREA FOR RX FORMAT         PT128140
                          *                                                                   PT128150
1CC0   48E0 1F56          CHANST  LH    R14,MEMSTO         LOAD MEMORY FLAG                   PT128160
1CC4   C5E0 0001                  CLHI  R14,X'1'           IF LESS THAN 32K                   PT128170
1CC8   4230 1F58                  BNE   CHLPS              SKIP TO LPS INSTRUCTIONS           PT128180
1CCC   0799                       XHR   R9,R9              INSURE FLAG (R9) IS ZERO           PT128190
1CCE   C8C0 1F5E                  LHI   R12,CHLPS1         END ADDRESS FOR STORE ROUTINE      PT128200
1CD2   C850 7C00                  LHI   R5,X'7C00'         PSW TO INSURE PROPER MEMORY MODULE PT128210
1CD6   9545                       EPSR  R4,R5              SWITCH TO NEW PSW                  PT128220
1CD8   C8D0 1CF4                  LHI   R13,SET00          LOAD BYTES STARTING FROM SET00     PT128230
1CDC   D3FD 0000          CHBYT   LB    R15,0(R13)         LOAD A BYTE                        PT128240
1CE0   D2FD 8000                  STB   R15,X'8000'(R13)   STORE THE BYTE                     PT128250
1CE4   05DC                       CLHR  R13,R12            IF IT IS THE LAST BYTE             PT128260
1CE6   2334                       BES   SWLPS              CONTINUE WITH THE TEST             PT128270
1CE8   2601                       AIS   R13,1              ADD 1 TO ADDRESS TO GET NEXT BYTE  PT128280
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1CEA   4300 1CDC                  B      CHBYT                                                    PT128290
                           *                                                                      PT128300
1CEE   C820 7C90           SWLPS  LHI    R2,X'7C90'        LOAD PSW TO SWITCH MEMORY MODULE       PT128310
1CF2   9552                SWL1   EPSR   R5,R2             SWITCH TO NEW PSW                      PT128320
1CF4   07AA                SET00  XHR    R10,R10           RESET INSTRUCTION FORMAT FLAG          PT128330
1CF6   C8E0 1F3E                  LHI    R14,STOSETMB      SET UP FOR RX FORMAT                   PT128340
1CFA   4300 1D1E                  B      SET1                                                     PT128350
1CFE   C5A0 0001           SET001 CLHI   R10,1             CHECK FLAG                             PT128360
1D02   2184                       BLS    SER0B             IF FLAG IS ZERO EXECUTE SETMR          PT128370
1D04   2338                       BES    SERB              IF FLAG IS ONE EXECUTE SETM            PT128380
1D06   4300 1F58                  B      CHLPS             IF FLAG>1,BRANCH TO LPS INSTRUCTION    PT128390
1D0A   1312                SER0B  SETMR  R1,R2                                                    PT128400
1D0C   052F                       CLHR   R2,R15                                                   PT128410
1D0E   4230 1F34                  BNE    SETERC                                                   PT128420
1D12   030B                       BR     R11                                                      PT128430
1D14   4020 1F3E           SERB   STH    R2,STOSETMB                                              PT128440
1D18   531E 0000                  SETM   R1,0(R14)         R14 CONTAINS ADDRESS OF STOSETMB       PT128450
1D1C   030B                       BR     R11                                                      PT128460
                           *                                                                      PT128470
                           *  BITS 8-11 IN THIS SECTION ARE FROM 1000 TO 1110, R1 IS POSITIVE     PT128480
                           *                                                                      PT128490
1D1E   C820 0080           SET1   LHI    R2,X'0080'        VALUE OF R2, TO BE NEW PSW             PT128500
1D22   0862                       LHR    R6,R2                                                    PT128510
1D24   9552                       EPSR   R5,R2             SWITCH TO NEW PSW                      PT128520
1D26   C620 4C00                  OHI    R2,X'4C00'                                               PT128530
1D2A   08F2                       LHR    R15,R2                                                   PT128540
1D2C   0755                       XHR    R5,R5                                                    PT128550
1D2E   C880 00E0                  LHI    R8,X'00E0'        UPPER LIMIT FOR COUNTER                PT128560
1D32   C830 8000                  LHI    R3,X'8000'        R3 TO BE CONSTANT FOR CHECK OF R1      PT128570
1D36   0799                       XHR    R9,R9             INSURE INCREMENT PSW FLAG IS ZERO      PT128580
1D38   0744                       XHR    R4,R4             R4 IS CHECK AGAINST R2 (PSW)           PT128590
1D3A   0711                       XHR    R1,R1             RESET R1                               PT128600
1D3C   C8B0 1D6E                  LHI    R11,SET0AB        BR LOC. AFTER TEST INSTR. EXEC.        PT128610
1D40   C8D0 1D48                  LHI    R13,SETAB                                                PT128620
1D44   4300 1CFE                  B      SET001                                                   PT128630
                           *                                                                      PT128640
                           *                                                                      PT128650
                           *  BITS 8-11 IN THIS SECTION ARE FROM 1000 TO 1110, R1 IS NEGATIVE     PT128660
                           *                                                                      PT128670
1D48   C820 0080           SETAB  LHI    R2,X'0080'        VALUE OF R2 TO BE NEW PSW              PT128680
1D4C   0862                       LHR    R6,R2             R6 TO COUNT INCREMENTED PSW            PT128690
1D4E   C810 F0F0                  LHI    R1,X'F0F0'        ARBITRARY VALUE FOR R1                 PT128700
1D52   0831                       LHR    R3,R1             R3 IS CHECK AGAINST R1                 PT128710
1D54   0744                       XHR    R4,R4             R4 IS CHECK AGAINST R2 (NEW PSW)       PT128720
1D56   C880 00E0                  LHI    R8,X'00E0'        R8 IS LIMIT FOR COUNTER                PT128730
1D5A   9552                       EPSR   R5,R2             SWITCH TO NEW PSW                      PT128740
1D5C   C620 4C00                  OHI    R2,X'4C00'        OR IN CHECK BITS                       PT128750
1D60   08F2                       LHR    R15,R2            STORE R2 FIELD IN SAVE REGISTER        PT128760
1D62   0755                       XHR    R5,R5             RESET R5, TO CONTROL MEMORY            PT128770
1D64   2491                       LIS    R9,1              SET FLAG                               PT128780
1D66   C8D0 1E32                  LHI    R13,DOCOMP        BR LOC. AFTER FINAL COMPARE ROUTINE    PT128790
1D6A   4300 1CFE                  B      SET001                                                   PT128800
                           *                                                                      PT128810
1D6E   0513                SET0AB CLHR   R1,R3             COMPARES R1 TO EXPECTED VALUE (R3)     PT128820
1D70   4230 1F08                  BNE    SETERAB                                                  PT128830
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1D74   9525                      EPSR  R2,R5              GET THE PSW INTO R2                 PT128840
1D76   0524                      CLHR  R2,R4              COMPARE R2(PSW) TO EXPECTED PSW(R4) PT128850
1D78   4230 1F24                 BNE   SETERBB                                                PT128860
1D7C   C5A0 0001                 CLHI  R10,1              COMPARE R10 TO CHECK IF             PT128870
1D80   4290 1D8E                 BNE   SET0A.1            SETMR RO SETM TO BE CHECKED         PT128880
1D84   4820 9F3E                 LH    R2,STOSETMB+X'8000' LOAD FROM R2 FIELD SAVE AREA       PT128890
1D88   052F                      CLHR  R2,R15             CHECK IF R2 FIELD IS STILL INTACT   PT128900
1D8A   4230 1F34                 BNE   SETERC             BRANCH TO ERROR 1C09 IF NOT INTACT  PT128910
1D8E   0568             SET0A.1  CLHR  R6,R8              CHECK FOR FINAL PSW                 PT128920
1D90   4330 1DCC                 BE    CHF1                                                   PT128930
1D94   CA60 0010                 AHI   R6,X'10'           INCREMENT COUNTER                   PT128940
1D98   C590 0001                 CLHI  R9,1               CHECK THE FLAG                      PT128950
1D9C   2134                      BNES  RN0                                                    PT128960
1D9E   CA40 0010                 AHI   R4,X'10'           INCREMENT R4 (EXPECTED PSW)         PT128970
1DA2   230A                      BS    RN1                                                    PT128980
1DA4   0711             RN0      XHR   R1,R1              RESET R1                            PT128990
1DA6   0826                      LHR   R2,R6              LOAD INCREMENTED PSW INTO R2        PT129000
1DA8   9552                      EPSR  R5,R2              SWITCH TO NEW PSW                   PT129010
1DAA   0755                      XHR   R5,R5              RESET R5 TO CONTROL MEMORY          PT129020
1DAC   C620 4C00                 OHI   R2,X'4C00'         OR IN CHECK BITS                    PT129030
1DB0   08F2                      LHR   R15,R2             SAVE R2 IN R15 FOR CHECK            PT129040
1DB2   4300 1CFE                 B     SET001                                                 PT129050
1DB6   0826             RN1      LHR   R2,R6              LOAD NEW PSW                        PT129060
1DB8   C420 FF80                 NHI   R2,X'FF80'         AND IN NECESSARY BITS               PT129070
1DBC   9552                      EPSR  R5,R2              SWITCH TO NEW PSW                   PT129080
1DBE   0826                      LHR   R2,R6              SET UP R2 FIELD                     PT129090
1DC0   0755                      XHR   R5,R5              RESET R5, TO CONTROL MEMORY         PT129100
1DC2   C620 4C00                 OHI   R2,X'4C00'         OR IN CHECK BITS                    PT129110
1DC6   08F2                      LHR   R15,R2             SAVE R2 FIELD IN R15                PT129120
1DC8   4300 1CFE                 B     SET001                                                 PT129130
                        *                                                                     PT129140
1DCC   C590 0001        CHF1     CLHI  R9,1               CHECK FOR CHOICE OF PSW INCRE. ROUT. PT129150
1DD0   4230 1E04                 BNE   CHF3                                                   PT129160
1DD4   C560 7EE0                 CLHI  R6,X'7EE0'         COMPARE COUNTER (R6) TO FINAL PSW   PT129170
1DD8   4330 1E32                 BE    DOCOMP                                                 PT129180
1DDC   C460 FF00                 NHI   R6,X'FF00'         REMOVE EXTRANEOUS BITS              PT129190
1DE0   CA60 0200                 AHI   R6,X'200'          INCREMENT COUNTER                   PT129200
1DE4   0755                      XHR   R5,R5              RESET R5, TO BE NEW PSW             PT129210
1DE6   C660 0080                 OHI   R6,X'0080'         SET R6 TO BE NEXT PSW               PT129220
1DEA   9576                      EPSR  R7,R6              SWITCH TO NEW PSW                   PT129230
1DEC   0846                      LHR   R4,R6              R4 TO CHECK AGAINST NEW PSW         PT129240
1DEE   C440 FF7F                 NHI   R4,X'FF7F'         SET UP R4 FOR PSW                   PT129250
1DF2   0826                      LHR   R2,R6              SET UP F2 FIELD                     PT129260
1DF4   C620 4C00                 OHI   R2,X'4C00'         OR IN CHECK BITS                    PT129270
1DF8   08F2                      LHR   R15,R2             STORE R2 FIELD IN R15               PT129280
1DFA   0886                      LHR   R8,R6              R8 TO BE LIMIT FOR BITS 8-12 OF PSW PT129290
1DFC   C680 00E0                 OHI   R8,X'00E0'         INCREMENT R8 TO UPPER LIMIT FOR PSW PT129300
1E00   4300 1CFE                 B     SET001                                                 PT129310
1E04   C560 7EE0        CHF3     CLHI  R6,X'7EE0'         COMAPARE R6 TO CHECK FOR LAST       PT129320
1E08   4330 1D48                 BE    SETAB              PSW (TOTAL PSW)                     PT129330
1E0C   C460 FF00                 NHI   R6,X'FF00'         REMOVE EXTRANEOUS BITS              PT129340
1E10   CA60 0200                 AHI   R6,X'200'          INCREMENT FOR NEXT PSW              PT129350
1E14   0755                      XHR   R5,R5                                                  PT129360
1E16   0846                      LHR   R4,R6              R4 TO BE CHECK AGAINST NEW PSW      PT129370
1E18   C660 0080                 OHI   R6,X'0080'         OR IN CHECK BIT FOR NEW PSW         PT129380
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1E1C  9576
1E1E  0826
1E20  C620 4C00
1E24  08F2
1E26  0886
1E28  C680 00E0
1E2C  0711
1E2E  4300 1CFE


1E32  2410
1E34  C830 8000
1E38  C820 00F0
1E3C  9552
1E3E  C850 7C00
1E42  C420 0070
1E46  C620 4C00
1E4A  08F2
1E4C  2490
1E4E  2440
1E50  24C0
1E52  C880 1E5A
1E56  4300 1CFE

1E5A  0513
1E5C  4230 1F08
1E60  9525
1E62  0524
1E64  4230 1F24
1E68  C5A0 0001
1E6C  2136
1E6E  4820 1F3E
1E72  052F
1E74  4230 1F34
1E78  C5C0 0001
1E7C  4280 1E88
1E80  4330 1ED2
1E84  4300 1EFC
1E88  C540 7E00
1E8C  4390 1EB2
1E90  CA60 0200
1E94  0826
1E96  C620 00F0
1E9A  9552
1E9C  C420 FF70
1EA0  C850 7C00
1EA4  C620 4C00
1EA8  08F2
1EAA  0846
1EAC  2410
1EAE  4390 1CFE

1EB2  0733
1EB4  26C1
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2939            EPSR   R7,R6          SWITCH TO NEW PSW                          PT129390
2940            LHR    R2,R6          SET UP R2 FIELD                            PT129400
2941            OHI    R2,X'4C00'     OR IN CHECK BITS                           PT129410
2942            LHR    R15,R2         STORE R2 FIELD IN R15                      PT129420
2943            LHR    R8,R6          SET UP R8 TO BE COUNTER                    PT129430
2944            OHI    R8,X'00E0'     OF BITS 8-12 OF NEW PSW                    PT129440
2945            XHR    R1,R1          RESET R1 FIELD                             PT129450
2946            B      SET001                                                    PT129460
2947  *                                                                          PT129470
2948  * BITS 8-11 IN THIS SECTION ARE EQUAL TO 0111 ONLY                         PT129480
2949  *                                                                          PT129490
2950  DOCOMP    LIS    R1,0           RESET R1                                   PT129500
2951            LHI    R3,X'8000'     R3 IS CHECK AGAINST R1                     PT129510
2952            LHI    R2,X'00F0'     SET UP NEW PSW                             PT129520
2953            EPSR   R5,R2          SWITCH TO NEW PSW                          PT129530
2954            LHI    R5,X'7C00'     R5 TO BE PSW BEFORE COMPARISON             PT129540
2955            NHI    R2,X'0070'     AND OFF PROPER BITS                        PT129550
2956            OHI    R2,X'4C00'     OR IN CHECK BITS                           PT129560
2957            LHR    R15,R2         STORE R2 FIELD IN R15                      PT129570
2958            LIS    R6,0           R6 IS COUNTER FOR ENTIRE PSW               PT129580
2959            LIS    R4,0           R4 IS CHECK AGAINST R2 (PSW)               PT129590
2960            LIS    R12,0          INCREMENT FLAG                             PT129600
2961            LHI    R11,SET01B                                                PT129610
2962            B      SET001                                                    PT129620
2963  *                                                                          PT129630
2964  SET01B    CLHR   R1,R3          COMPARE R1 TO EXPECTED VALUE (R3)          PT129640
2965            BNE    SETERAB                                                   PT129650
2966            EPSR   R2,R5          GET PSW                                    PT129660
2967            CLHR   R2,R4          COMPARE R2(PSW) TO EXPECTED PSW(R4)        PT129670
2968            BNE    SETERB8                                                   PT129680
2969            CLHI   R10,1          IF SETMR INSTRUCTION THEN R2 FIELD         PT129690
2970            BNES   SET0A,2        HAS ALREADY BEEN CHECKED                   PT129700
2971            LH     R2,STOSETMB    LOAD R2 FIELD INTO R2                      PT129710
2972            CLHR   R2,R15         CHECK R2 FILED TO SEE IF INTACT            PT129720
2973            BNE    SETERC                                                    PT129730
2974  SET0A,2   CLHI   R12,X'1'       COMPARE DOCOMP FLAG (R12)                  PT129740
2975            BL     CH                                                        PT129750
2976            BE     CH12                                                      PT129760
2977            B      CH13                                                      PT129770
2978  CH        CLHI   R4,X'7E00'                                                PT129780
2979            BE     CH11                                                      PT129790
2980            AHI    R6,X'200'      INCREMENT FOR NEXT PSW                     PT129800
2981            LHR    R2,R6          SET UP R2 FIELD                            PT129810
2982            OHI    R2,X'00F0'     OR IN PROPER PSW BITS                      PT129820
2983            EPSR   R5,R2          SWITCH TO NEW PSW                          PT129830
2984            NHI    R2,X'FF70'     AND OFF PROPER BITS FOR R2 FIELD           PT129840
2985            LHI    R5,X'7C00'     R5 TO BE NEW PSW BEFORE COMPARISON         PT129850
2986            OHI    R2,X'4C00'     OR IN CHECK BITS                           PT129860
2987            LHR    R15,R2         STORE R2 FIELD IN R15                      PT129870
2988            LHR    R4,R6          R4 TO BE CHECK AGAINST NEW PSW             PT129880
2989            LIS    R1,0           SET UP R1 FIELD                            PT129890
2990            B      SET001                                                    PT129900
2991  *                                                                          PT129910
2992  CH11      XHR    R3,R3          R3 TO BE CHECK AGAINST R1 FIELD            PT129920
2993            AIS    R12,1                                                     PT129930
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1EB6  C820 00F0          2994           LHI   R2,X'00F0'      SET UP FOR NEW PSW                        PT129940
1EBA  9552               2995           EPSR  R5,R2                                                     PT129950
1EBC  C850 7C00          2996           LHI   R5,X'7C00'      R5 TO BE NEW PSW BEFORE COMPARISON         PT129960
1EC0  C420 0070          2997           NHI   R2,X'0070'      AND IN PROPER BITS INTO R2 FIELD           PT129970
1EC4  08F2               2998           LHR   R15,R2          STORE R5 FIELD IN R15                      PT129980
1EC6  2460               2999           LIS   R6,0                                                      PT129990
1EC8  C810 8000          3000           LHI   R1,X'8000'      SET UP R1 FIELD                           PT130000
1ECC  2440               3001           LIS   R4,0            R4 IS CHECK AGAINST NEW PSWW              PT130010
1ECE  4300 1CFE          3002           B     SET001                                                    PT130020
                         3003  *                                                                        PT130030
1ED2  C560 7E00          3004  CH12     CLHI  R6,X'7E00'                                                PT130040
1ED6  4330 1EFC          3005           BE    CH13                                                      PT130050
1EDA  CA60 0200          3006           AHI   R6,X'200'       INCREMENT COUNTER FOR TOTAL PSW           PT130060
1EDE  0826               3007           LHR   R2,R6           SET UP R2 FIELD                           PT130070
1EE0  C620 00F0          3008           OHI   R2,X'00F0'      OR IN CHECK BITS FOR PSW                  PT130080
1EE4  9552               3009           EPSR  R5,R2           SWITCH TO NEW PSW                         PT130090
1EE6  C420 FF70          3010           NHI   R2,X'FF70'      AND OFF EXTRANEOUS BITS                   PT130100
1EEA  0755               3011           XHR   R5,R5           RESET R5,TO BE PSW AT COMPAR. ROUT.       PT130110
1EEC  C620 4C00          3012           OHI   R2,X'4C00'      OR IN CHECK BITS                          PT130120
1EF0  08F2               3013           LHR   R15,R2          STORE R2 FIELD IN R15                     PT130130
1EF2  0846               3014           LHR   R4,R6           R4 TO CHECK NEW PSW                       PT130140
1EF4  C810 8000          3015           LHI   R1,X'8000'      SET UP R211 FIELD                         PT130150
1EF8  4300 1CFE          3016           B     SET001                                                    PT130160
1EFC  07CC               3017  CH13     XHR   R12,R12         RESET DOCOMP FLAG                         PT130170
1EFE  26A1               3018           AIS   R10,1           INCREMENT TEST INSTRU. FORMAT FLAG        PT130180
1F00  C8B0 1D6E          3019           LHI   R11,SETOAB                                                PT130190
1F04  4300 1D1E          3020           B     SET1                                                      PT130200
                         3021  *                                                                        PT130210
1F08  08AA               3022  SETERAB  LHR   R10,R10         CHECK FLAG                                PT130220
1F0A  2134               3023           BNZS  SETERA1B        IF FLAG NOT ZERO THEN SETM ERROR          PT130230
1F0C  C800 051C          3024           LHI   R0,X'051C'      ERROR 1C05                                PT130240
1F10  2303               3025           BS    SETERRB                                                   PT130250
1F12  C800 061C          3026  SETERA1B LHI   R0,X'061C'      ERROR 1C06                                PT130260
1F16  C820 7C00          3027  SETERRB  LHI   R2,X'7C00'                                                PT130270
1F1A  9552               3028           EPSR  R5,R2                                                     PT130280
1F1C  4000 22F2          3029           STH   R0,ERRIND                                                 PT130290
1F20  4300 2182          3030           B     ERROR                                                     PT130300
1F24  08AA               3031  SETERBB  LHR   R10,R10         CHECK INSTRU. FORMAT FLAG                 PT130310
1F26  2134               3032           BNZS  SETERB1B        IF FLAG NOT ZERO THEN SETM ERROR          PT130320
1F28  C800 071C          3033           LHI   R0,X'071C'      ERROR 1C07                                PT130330
1F2C  220B               3034           BS    SETERRB                                                   PT130340
1F2E  C800 081C          3035  SETERB1B LHI   R0,X'081C'      ERROR 1C08                                PT130350
1F32  220E               3036           BS    SETERRB                                                   PT130360
1F34  C800 091C          3037  SETERC   LHI   R0,X'091C'      ERROR 1C09                                PT130370
1F38  4300 1F16          3038           B     SETERRB                                                   PT130380
                         3039  *                                                                        PT130390
1F3C  0000               3040  RTWOFI   DC    0                                                         PT130400
1F3E  0000               3041  STOSETMB DC    0               STORAGE AREA FOR SETM INSTRU.             PT130410
                         3042  *                                                                        PT130420
1F40  000A               3043  MESMEM1  DC    X'000A'         MESSAGE TO CHECK FOR GREATER              PT130430
1F42  FFFF               3044           DC    X'FFFF'         THAN 32K OF MEMORY                        PT130440
1F44  454E 5445 5220 3020 3045           DC    C'ENTER 0 OR 1' ENTER A ZERO FOR 32K OR                   PT130450
1F4C  4F52 2031
1F50  FFFF               3046           DC    X'FFFF'         LESS OF MEMORY                            PT130460
1F52  000A               3047           DC    X'000A'         ENTER A ONE FOR 64K                       PT130470
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1F54   FFFF                       DC     X'FFFF'             OR MORE OF MEMORY                 PT130480
       0000 1F55        MESMEM2   EQU    *-1                                                   PT130490
                        *                                                                      PT130500
1F56   0000             MEMSTO    DCX    0                   STORAGE AREA FOR MEMORY FLAG      PT130510
                        *                                                                      PT130520
                        ***********************************************                       PT130530
                        *                                                                      PT130540
                        *  THIS PART OF THE TEST CHECKS THE LPS AND LPSR INSTRUCTIONS.         PT130550
                        *                                                                      PT130560
1F58   C850 7C00        CHLPS     LHI    R5,X'7C00'          CHANGE PSW TO INSURE              PT130570
1F5C   9525                       EPSR   R2,R5               CORRECT MEMORY MODULE             PT130580
1F5E   C800 F0F0        CHLPS1    LHI    R0,X'F0F0'          SET R1 FIELD EQUAL TO A CONSTANT  PT130590
1F62   C840 5C00                  LHI    R4,X'5C00'          R4 IS CHECK AGAINST R1 (NEW PSW)  PT130600
1F66   4040 1FC8                  STH    R4,MEMFLAG          STORE NEW PSW IN MEMFLAG          PT130610
1F6A   C830 1FC8                  LHI    R3,MEMFLAG          LOAD ADDR. OF TEST PSW            PT130620
1F6E   C200 1F72                  LPSW   LS                  LOAD A PSW                        PT130630
1F72   3C10             LS        DC     X'3C10',LS1                                           PT130640
1F74   1F76
1F76   7303 0000        LS1       LPS    0(R3)               CHANGE PSW WITH TEST INSTRUCTION  PT130650
** F008 **
1F7A   9515                       EPSR   R1,R5               GET PSW                           PT130660
1F7C   C500 F0F0                  CLHI   R0,X'F0F0'          CHECK R1 FIELD                    PT130670
1F80   4230 1FBC                  BNE    LERR2               IF NOT EQUAL BRANCH TO ERROR      PT130680
1F84   0514                       CLHR   R1,R4               CHECK FOR CORRECT PSW             PT130690
1F86   4230 1FAA                  BNE    LERR                IF NOT CORRECT BRANCH TO ERROR    PT130700
                        *                                                                      PT130710
1F8A   0834                       LHR    R3,R4               LOAD TEST PSW INTO R3             PT130720
1F8C   C200 1F90                  LPSW   LS2                 LOAD A PSW                        PT130730
1F90   3C10             LS2       DC     X'3C10',LS3                                           PT130740
1F92   1F94
1F94   3303             LS3       LPSR   R3                  CHANGE PSW WITH TEST INSTRUCTION  PT130750
** F008 **
1F96   9515                       EPSR   R1,R5               GET PSW                           PT130760
1F98   C500 F0F0                  CLHI   R0,X'F0F0'          CHECK R1 FIELD                    PT130770
1F9C   4230 1FC2                  BNE    LERR3               IF NOT EQUAL BRANCH TO ERROR      PT130780
1FA0   0514                       CLHR   R1,R4               CHECK FOR CORRECT PSW (R1)        PT130790
1FA2   4230 1FB6                  BNE    LERR1               IF NOT CORRECT BRANCH TO ERROR1   PT130800
1FA6   4300 1FCA                  B      TSTEND                                                PT130810
                        *                                                                      PT130820
1FAA   C800 0A1C        LERR      LHI    R0,X'0A1C'          ERROR 1C0A                        PT130830
1FAE   4070 22F2        SETERR1   STH    R7,ERRIND                                             PT130840
1FB2   4300 1CA6                  B      SETERR                                                PT130850
1FB6   C800 0B1C        LERR1     LHI    R0,X'0B1C'          ERROR 1C0B                        PT130860
1FBA   2206                       BS     SETERR1                                               PT130870
1FBC   C800 0C1C        LERR2     LHI    R0,X'0C1C'          ERROR 1C0C                        PT130880
1FC0   2209                       BS     SETERR1                                               PT130890
1FC2   C800 0D1C        LERR3     LHI    R0,X'0D1C'          ERROR 1C0D                        PT130900
1FC6   220C                       BS     SETERR1                                               PT130910
                        *                                                                      PT130920
1FC8   0000             MEMFLAG   DC     X'0000'             STORAGE AREA FOR MEMORY FLAG      PT130930
                        *                                                                      PT130940
                        ************************************************************          PT130950
                        *                                                                      PT130960
                        *         ALL THE TESTS IN PART 1 ARE DONE                             PT130970
                        *                                                                      PT130980
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1FCA   4800 22DA     TSTEND   LH    R0,TOTAL                                   PT130990
1FCE   2601                   AIS   R0,1                                       PT131000
1FD0   4000 22DA              STH   R0,TOTAL                                   PT131010
1FD4   2431                   LIS   R3,1                                       PT131020
1FD6   DE30 22E5              OC    R3,NORM                                    PT131030
1FDA   9400                   EXBR  R0,R0                                      PT131040
1FDC   9830                   WHR   R3,R0          TOTAL INTO CONSOLE IND.     PT131050
1FDE   9400                   EXBR  R0,R0                                      PT131060
1FE0   C500 FFFF              CLHI  R0,X'FFFF'                                 PT131070
1FE4   4230 200C              BNE   NOTFF                                      PT131080
1FE8   D320 22E6     AGTRY    LB    R2,OUTDEV                                  PT131090
1FEC   9D25                   SSR   R2,R5                                      PT131100
1FEE   4210 1FE8              BTC   1,AGTRY                                    PT131110
1FF2   4240 1FE8              BTC   4,AGTRY                                    PT131120
1FF6   C450 00FC              NHI   R5,X'FC'                                   PT131130
1FFA   C550 000C              CLHI  R5,X'0C'                                   PT131140
1FFE   223B                   BES   AGTRY                                      PT131150
2000   41F0 2076              BAL   R15,TIM                                    PT131160
2004   41D0 2088              BAL   R13,PRTTOT                                 PT131170
2008   4300 0112              B     ENTRY1                                     PT131180
       0000 200C     NOTFF    EQU   *                                          PT131190
200C   D320 22E6              LB    R2,OUTDEV                                  PT131200
2010   9D25                   SSR   R2,R5          R5 = TTY STATUS             PT131210
2012   4210 2024              BTC   1,DONE0                                    PT131220
2016   4240 2024              BTC   4,DONE0                                    PT131230
201A   C450 00FC              NHI   R5,X'FC'                                   PT131240
201E   C550 000C              CLHI  R5,X'0C'                                   PT131250
2022   2136                   BNES  DONE                                       PT131260
2024   2451          DONE0    LIS   R5,1                                       PT131270
2026   4050 22DE              STH   R5,TTYOFF      TTYOFF = 1 AND              PT131280
202A   4300 0334              B     TEST1                                      PT131290
       0000 202E     DONE     EQU   *                                          PT131300
202E   4500 010E              CLH   R0,NTIMES                                  PT131310
2032   4260 030A              BL    ENTRY3                                     PT131320
2036   4800 22DE              LH    R0,TTYOFF                                  PT131330
203A   2333                   BZS   DONE11                                     PT131340
203C   41F0 2076              BAL   R15,TIM                                    PT131350
       0000 2040     DONE11   EQU   *                                          PT131360
2040   4800 22DC              LH    R0,TOTERR                                  PT131370
2044   213F                   BNZS  DONE3                                      PT131380
2046   2440                   LIS   R4,0                                       PT131390
2048   C850 22C9              LHI   R5,NOERRB                                  PT131400
204C   DE20 22E8              OC    R2,OUTCMD                                  PT131410
2050   9D23          DONE12   SSR   R2,R3                                      PT131420
2052   2081                   BTBS  8,1                                        PT131430
2054   DA24 22BC     DONE2    WD    R2,NOERRA(R4)                              PT131440
2058   C554 22BC              CLHI  R5,NOERRA(R4)                              PT131450
205C   2333                   BES   DONE3                                      PT131460
205E   2641                   AIS   R4,1                                       PT131470
2060   2208                   BS    DONE12                                     PT131480
       0000 2062     DONE3    EQU   *                                          PT131490
2062   4800 22DE              LH    R0,TTYOFF                                  PT131500
2066   4330 0112              BZ    ENTRY1                                     PT131510
206A   41F0 2076              BAL   R15,TIM                                    PT131520
206E   4100 2088              BAL   R13,PRTTOT                                 PT131530
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2072   4300 20E2    TOWT    B      WT000F                                    PT131540
       0000 2076    TIM     EQU    *                                         PT131550
2076   C800 FFFF            LHI    R0,X'FFFF'                                PT131560
207A   2701         TIME    SIS    R0,1                                      PT131570
207C   2031                 BNZS   TIME                                      PT131580
207E   C800 FFFF            LHI    R0,X'FFFF'                                PT131590
2082   2701         TIME2   SIS    R0,1                                      PT131600
2084   2031                 BNZS   TIME2                                     PT131610
2086   030F                 BR     R15                                       PT131620
2088   C800 00FF    PRTTOT  LHI    R0,X'FF'                                  PT131630
208C   41E0 211A            BAL    R14,WRITE1                                PT131640
2090   41E0 211A            BAL    R14,WRITE1                                PT131650
2094   41E0 211A            BAL    R14,WRITE1                                PT131660
2098   240D                 LIS    R0,13                                     PT131670
209A   41E0 211A            BAL    R14,WRITE1                                PT131680
209E   C800 00FF            LHI    R0,X'FF'                                  PT131690
20A2   41E0 211A            BAL    R14,WRITE1                                PT131700
20A6   240A                 LIS    R0,10                                     PT131710
20A8   41E0 211A            BAL    R14,WRITE1                                PT131720
20AC   48F0 22DA            LH     R15,TOTAL          PRINT TOTAL            PT131730
20B0   41C0 20EA            BAL    R12,PRNTRF                                PT131740
20B4   C800 0020            LHI    R0,X'20'                                  PT131750
20B8   41E0 211A            BAL    R14,WRITE1                                PT131760
20BC   41E0 211A            BAL    R14,WRITE1                                PT131770
20C0   41E0 211A            BAL    R14,WRITE1                                PT131780
20C4   41E0 211A            BAL    R14,WRITE1                                PT131790
20C8   48F0 22DC            LH     R15,TOTERR         PRINT TOTERR           PT131800
20CC   41C0 20EA            BAL    R12,PRNTRF                                PT131810
20D0   240D                 LIS    R0,13                                     PT131820
20D2   41E0 211A            BAL    R14,WRITE1                                PT131830
20D6   41E0 211A            BAL    R14,WRITE1                                PT131840
20DA   240A                 LIS    R0,10                                     PT131850
20DC   41E0 211A            BAL    R14,WRITE1                                PT131860
20E0   030D                 BR     R13                                       PT131870
       0000 20E2    WT000F  EQU    *                                         PT131880
20E2   4300 0112            B      ENTRY1             NO OP THIS BRANCH TO BYPASS  PT131890
20E6   4300 030A            B      ENTRY3             INITIAL SET UP         PT131900
                    *                                                        PT131910
                    *              PRINT THE CONTENTS OF REG. 15 IN HEX.     PT131920
                    *                                                        PT131930
                    *              EXIT ON R12                               PT131940
                    *                                                        PT131950
20EA   080F         PRNTRF  LHR    R0,R15                                    PT131960
20EC   900C                 SRLS   R0,12                                     PT131970
20EE   41E0 210A            BAL    R14,PRNTR0                                PT131980
20F2   080F                 LHR    R0,R15                                    PT131990
20F4   9008                 SRLS   R0,8                                      PT132000
20F6   41E0 210A            BAL    R14,PRNTR0                                PT132010
20FA   080F                 LHR    R0,R15                                    PT132020
20FC   9004                 SRLS   R0,4                                      PT132030
20FE   41E0 210A            BAL    R14,PRNTR0                                PT132040
2102   080F                 LHR    R0,R15                                    PT132050
2104   41E0 210A            BAL    R14,PRNTR0                                PT132060
2108   030C                 BR     R12                                       PT132070
210A   C400 000F    PRNTR0  NHI    R0,15                                     PT132080
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210E  CA00 0030          3209           AHI   R0,X'30'                                        PT132090
2112  C500 003A          3210           CLHI  R0,X'3A'                                        PT132100
2116  2182               3211           BLS   WRITE1                                          PT132110
2118  2607               3212           AIS   R0,7                                            PT132120
211A  D320 22E6          3213  WRITE1   LB    R2,OUTDEV                                       PT132130
211E  DE20 22E8          3214           OC    R2,OUTCMD                                       PT132140
2122  9D23               3215  WRIT     SSR   R2,R3                                           PT132150
2124  021E               3216           BTCR  1,R14                                           PT132160
2126  4280 2122          3217           BTC   8,WRIT                                          PT132170
212A  9A20               3218           WDR   R2,R0                                           PT132180
212C  030E               3219           BR    R14                                             PT132190
                         3220  *                                                              PT132200
                         3221  ************************************************************  PT132210
                         3222  *                                                              PT132220
                         3223  *       AN INTERRUPT IS DETECTED                               PT132230
                         3224  *                                                              PT132240
212E  24F1               3225  FLPTNT   LIS   R15,1              FLPT ARITH. FAULT INTRPT.   PT132250
2130  2309               3226           BS    ERRF                                            PT132260
2132  24F2               3227  ILGINT   LIS   R15,2              ILL. INSTR. INTRPT.         PT132270
2134  2307               3228           BS    ERRF                                            PT132280
2136  24F3               3229  MALFTN   LIS   R15,3              MACH. MALFTN. INTRPT.       PT132290
2138  2305               3230           BS    ERRF                                            PT132300
213A  24F4               3231  EXTINT   LIS   R15,4              EXTERNAL INTERRUPT          PT132310
213C  9FAB               3232           AIR   R10,R11                                         PT132320
213E  2302               3233           BS    ERRF                                            PT132330
2140  24F5               3234  OVDFLT   LIS   R15,5              FIXD. PT. DIV. FAULT INTRPT PT132340
2142  2309               3235  ERRF     BS    ERRORF                                          PT132350
2144  24F6               3236  CHANIO   LIS   R15,6              CHAN. I/O TERM. INTRPT.     PT132360
2146  2307               3237           BS    ERRORF                                          PT132370
2148  24F7               3238  QVRFLO   LIS   R15,7              QUEUE OVERFLO INTRPT.       PT132380
214A  2305               3239           BS    ERRORF                                          PT132390
214C  24F8               3240, SVCERR   LIS   R15,8                                          PT132400
214E  2303               3241           BS    ERRORF                                          PT132410
2150  0000               3242  DEVERR   DC    0                                               PT132420
2152  24F9               3243           LIS   R15,9                                           PT132430
2154  C6F0 00F0          3244  ERRORF   OHI   R15,X'F0'                                       PT132440
2158  D2F0 22F2          3245           STB   R15,ERRIND                                      PT132450
215C  C8D0 0046          3246           LHI   R13,X'46'                                       PT132460
2160  91D8               3247           SLLS  R13,8                                           PT132470
2162  C4F0 000F          3248           NHI   R15,X'000F'                                     PT132480
2166  C6F0 0030          3249           OHI   R15,X'30'                                       PT132490
216A  06FD               3250           OHR   R15,R13                                         PT132500
216C  40F0 22BA          3251           STH   R15,ERRNO                                       PT132510
2170  2431               3252           LIS   R3,1                                            PT132520
2172  D830 22F2          3253           WH    R3,ERRIND                                       PT132530
2176  C200 217A          3254           LPSW  WAITF                                           PT132540
217A  8000               3255  WAITF    DC    X'8000',ERFSS                                   PT132550
217C  217E
                         3256  *                                                              PT132560
217E  4300 21C6          3257  ERFSS    B     ERROF                                           PT132570
                         3258  *                                                              PT132580
                         3259  *       NXTST = RETURN ADD. IF TTY IS TURNED OFF               PT132590
                         3260  *                                                              PT132600
                         3261  *       R14 = PSW WHEN THE ERROR OCCURED                       PT132610
                         3262  *                                                              PT132620
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                     *         ERRIND  =  ERROR NO. INTO IND.                         PT132630
                     *                                                                PT132640
                     *         TESTNO = 31NN , NN = TEST NO. 1 THRU E                 PT132650
                     *                                                                PT132660
      0000 2182      ERROR     EQU   *                                                PT132670
2182  0040 2344      ERRA      STM   R0,REGSAV       SAVE REGISTERS                   PT132680
2186  95EE                     EPSR  R14,R14         STORE CURRENT PSW                PT132690
2188  2431                     LIS   R3,1            R3 = 1 = CONSOLE ADDRESS         PT132700
218A  D830 22F2                WH    R3,ERRIND       ERRNO. INTO CONSOLE IND.         PT132710
218E  D300 22F2      ERRA6     LB    R0,ERRIND       CONVERT ERRIND INTO              PT132720
2192  C850 0030                LHI   R5,X'30'                                         PT132730
2196  C500 0010                CLHI  R0,16           TWO BYTES TO PRINT               PT132740
219A  2383                     BNLS  ERRB                                             PT132750
219C  0805                     LHR   R0,R5                                            PT132760
219E  2307                     BS    ERRB2                                            PT132770
21A0  9004           ERRB      SRLS  R0,4                                             PT132780
21A2  0A05                     AHR   R0,R5                                            PT132790
21A4  C500 003A                CLHI  R0,X'3A'                                         PT132800
21A8  2182                     BLS   ERRB2                                            PT132810
21AA  2607                     AIS   R0,7                                             PT132820
                     *                                                                PT132830
                     *         ERRNO = 2 BYTES TO PRINT                               PT132840
                     *                                                                PT132850
21AC  D200 228A      ERRB2     STB   R0,ERRNO                                         PT132860
21B0  D300 22F2                LB    R0,ERRIND                                        PT132870
21B4  C400 000F      ERRB4     NHI   R0,15                                            PT132880
21B8  0A05                     AHR   R0,R5                                            PT132890
21BA  C500 003A                CLHI  R0,X'3A'                                         PT132900
21BE  2182                     BLS   ERRB6                                            PT132910
21C0  2607                     AIS   R0,7                                             PT132920
21C2  D200 228B      ERRB6     STB   R0,ERRNO+1                                       PT132930
      0040 21C6      ERROF     EQU   *                                                PT132940
21C6  4800 22DC                LH    R0,TOTERR       COUNT TOTAL ERRORS               PT132950
21CA  2601                     AIS   R0,1                                             PT132960
21CC  4000 22DC                STH   R0,TOTERR                                        PT132970
21D0  C500 FFFF                CLHI  R0,X'FFFF'      IF TOTERR = FFFF                 PT132980
21D4  4330 21FE                BE    WTFFFF                                           PT132990
21D8  D320 22E6                LB    R2,OUTDEV                                        PT133000
21DC  9D23                     SSR   R2,R3                                            PT133010
21DE  4250 21F0                BTC   5,NEXT                                           PT133020
21E2  C430 00FC                NHI   R3,X'FC'                                         PT133030
21E6  C530 000C                CLHI  R3,X'0C'                                         PT133040
21EA  2333                     BES   NEXT                                             PT133050
21EC  4300 2232                B     PRTRR                                            PT133060
21F0  4800 22F4      NEXT      LH    R0,NXTST        IF TTY IS OFF GO TO NEXT TEST    PT133070
21F4  C500 0334                CLHI  R0,TEST1                                         PT133080
21F8  4330 1FCA                BE    TSTEND                                           PT133090
21FC  0300                     BR    R0              CONTINUE THE NEXT TEST           PT133100
21FE  2431           WTFFFF    LIS   R3,1            FFFF INTO CO-S-LE &ND.           PT133110
2200  9830                     WHR   R3,R0                                            PT133120
2202  C200 2206                LPSW  WAITFF                                           PT133130
2206  8000           WAITFF    DC    X'8000',CONT    WAIT UNTIL EXE IS DEPRESSED      PT133140
2208  220A
220A  D320 22E6      CONT      LB    R2,OUTDEV                                        PT133150
220E  DE20 22E8                OC    R2,OUTCMD                                        PT133160
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2212    9D25                  3317           SSR    R2,R5                                                    PT133170
2214    4210 21FE             3318           BTC    1,WTFFFF                                                 PT133180
2218    C450 00FC             3319           NHI    R5,X'FC'                                                 PT133190
221C    C550 000C             3320           CLHI   R5,X'0C'                                                 PT133200
2220    4330 21FE             3321           BE     WTFFFF                                                   PT133210
2224    C840 229C             3322           LHI    R4,FFFF                                                  PT133220
2228    C850 22AD             3323           LHI    R5,FFFFRR                                                PT133230
222C    9624                  3324           WBR    R2,R4                                                    PT133240
222E    4300 20E2             3325           B      WT000F                                                   PT133250
2232    C840 22AE             3326  PRTRR    LHI    R4,PRTERR                                                PT133260
2236    D320 22E6             3327           LB     R2,OUTDEV                                                PT133270
223A    DE20 22E8             3328           OC     R2,OUTCMD                                                PT133280
                              3329  *                                                                        PT133290
        0040 223E             3330  PRTR     EQU    *                                                        PT133300
                              3331  *                                                                        PT133310
223E    D320 22E6             3332           LB     R2,OUTDEV                                                PT133320
2242    DE20 22E8             3333           OC     R2,OUTCMD                                                PT133330
2246    9D23                  3334  PRTBSY   SSR    R2,R3                                                    PT133340
2248    2081                  3335           BTBS   8,1                                                      PT133350
224A    DA24 0000             3336           WD     R2,0(R4)                                                 PT133360
224E    2641                  3337           AIS    R4,1                                                     PT133370
2250    C540 22BE             3338           CLHI   R4,ERRNO+4                                               PT133380
2254    203B                  3339           BNES   PRTR                                                     PT133390
2256    48D0 22BA             3340           LH     R13,ERRNO                                                PT133400
225A    C4D0 4600             3341           NHI    R13,X'4600'                                              PT133410
225E    C5D0 4600             3342           CLHI   R13,X'4600'                                              PT133420
2262    4330 2296             3343           BE     PRTEND                                                   PT133430
2266    D300 22B9             3344           LB     R0,TESTNO+1          GET TEST NUMBER                     PT133440
226A    C500 0038             3345           CLHI   R0,C'8'              IF IT IS TEST 8                     PT133450
226E    2335                  3346           BES    TST812               BRANCH TO TST812                    PT133460
2270    C500 0042             3347           CLHI   R0,C'B'              IF IT IS NOT TEST11                 PT133470
2274    4230 2296             3348           BNE    PRTEND               BRANCH TO PRTEND                    PT133480
2278    C870 234C             3349  TST812   LHI    R7,REGSAV+8          GET THE POINTER TO REG SAVE AREA    PT133490
227C    4887 0000             3350           LH     R8,0(R7)             NUMBER OF REGISTERS TO BE PRINTED   PT133500
2280    2672                  3351  LOOPXX   AIS    R7,2                 INCREMENT THE POINTER               PT133510
2282    48F7 0000             3352           LH     R15,0(R7)            GET THE REGISTER CONTENTS           PT133520
2286    41C0 20EA             3353           BAL    R12,PRNTRF           PRINT THE CONTENTS                  PT133530
228A    C800 0020             3354           LHI    R0,X'20'                                                 PT133540
228E    41E0 211A             3355           BAL    R14,WRITE1           PRINT A BLANK                       PT133550
2292    2781                  3356           SIS    R8,1                                                     PT133560
2294    203A                  3357           BNZS   LOOPXX               IF NOT DONE GO TO LOOPXX            PT133570
2296    2404                  3358  PRTEND   LIS    R0,4                                                     PT133580
2298    4300 2062             3359           B      DONE3                                                    PT133590
                              3360  *                                                                        PT133600
229C    0D0A                  3361  FFFF     DC     X'D0A'                                                   PT133610
229E    4646 4646 2045 5252   3362           DC     C'FFFF ERRORS'                                           PT133620
22A6    4F52 5320
22AA    0D0A                  3363           DC     X'D0A'                                                   PT133630
22AC    FFFF                  3364           DCX    FFFF                                                     PT133640
        0000 22AD             3365  FFFFRR   EQU    *-1                                                      PT133650
22AE    0D0A                  3366  PRTERR   DC     X'D0A'                                                   PT133660
22B0    4552 524F 5220        3367           DC     C'ERROR '                                                PT133670
22B6    2000                  3368           DC     X'2000'                                                  PT133680
22B8    3130                  3369  TESTNO   DC     X'3130'                                                  PT133690
22BA    3030                  3370  ERRNO    DC     X'3030'                                                  PT133700
```

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22BC   000A                     NOERRA   DC    X'00A'                                              PT133710
22BE   4E4F 2045 5252 4F52               DC    C'NO ERROR'                                         PT133720
22C6   000A                              DC    X'00A'                                              PT133730
22C8   FFFF                              DCX   FFFF                                                PT133740
       0000 22C9                NOERRB   EQU   *-1                                                 PT133750
                                *                                                                  PT133760
                                *                                                                  PT133770
                                ****************************************************************  PT133780
                                *                                                                  PT133790
                                *        DATA CONSTANTS                                            PT133800
                                *                                                                  PT133810
                                ****************************************************************  PT133820
                                *                                                                  PT133830
22CA   0000                              DC    0                                                   PT133840
22CC   0000                     TABLE    DC    0                   12 BYTES                        PT133850
22CE   0000                              DC    0                                                   PT133860
22D0   0000                              DC    0                                                   PT133870
22D2   0000                              DC    0                                                   PT133880
22D4   0000                              DC    0                                                   PT133890
22D6   0000                              DC    0                                                   PT133900
22D8   0000                     TEMP     DC    0                                                   PT133910
22DA   0000                     TOTAL    DC    0                                                   PT133920
22DC   0000                     TOTERR   DC    0                                                   PT133930
22DE   0000                     TTYOFF   DC    0                                                   PT133940
22E0   0000                     CPUNO    DC    0                                                   PT133950
22E2   0000                     CPUFLAG  DCX   0                                                   PT133960
22E4   00                       M7DSWT   DB    0                                                   PT133970
22E5   80                       NORM     DB    X'80'                                               PT133980
                                *                                                                  PT133990
                                ****************************************************************  PT134000
                                *                                                                  PT134010
22E6   02                       OUTDEV   DB    2                   OUTDEV = 2 = TTY ADDRESS        PT134020
22E7   A4                       INCMND   DB    X'A4'               READ COMMAND FOR TTY            PT134030
22E8   A8                       OUTCMD   DB    X'A8'                                               PT134040
22EA   ABB9                     CRTOUT   DCX   ABB9                                                PT134050
22EC   C8E4                     CONOUT   DCX   C8E4                                                PT134060
22EE   0000                     CRTFLG   DCX   0                                                   PT134070
22F0   0000                     FIRSTCMD DCX   0                                                   PT134080
22F2                                     DB    *                                                   PT134090
22F2   0000                     ERRIND   DC    0                   COPY ERRNO INTO CONSOLE IND.    PT134100
22F4   0000                     NXTST    DC    0                                                   PT134110
                                *                                                                  PT134120
22F6   0000                     ZERO     DC    0                                                   PT134130
22F8   0000                              DC    0                                                   PT134140
22FA   FFFF                     ONE      DC    X'FFFF'                                             PT134150
22FC   0000                              DC    0                                                   PT134160
22FE   5555                     FIVE     DC    X'5555'                                             PT134170
2300   0000                              DC    0                                                   PT134180
2302   AAAA                     TEN      DC    X'AAAA'                                             PT134190
2304   0000                              DC    0                                                   PT134200
                                *                                                                  PT134210
2306   0D                       TITLE1   DB    13                  CR                              PT134220
2307   0A                                DB    10                  LF                              PT134230
2308   4D4F 4445 4C20 382F               DC    C'MODEL 8/16E PROCESSOR TEST PART 1  06-211R00'     PT134240
2310   3156 4520 5052 4F43
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2318   4553 534F 5220 5445
2320   5354 2050 4152 5420
2328   3120 2030 362D 3231
2330   3152 3030
2334   FFFF                    3425  TITLE2   DCX   FFFF                                                    PT134250
2336   000A                    3426           DCX   000A                                                    PT134260
2338   FFFF                    3427           DCX   FFFF                                                    PT134270
233A   4350 5520               3428           DC    C'CPU'                                                  PT134280
233E   000A                    3429           DCX   000A                                                    PT134290
2340   2A                      3430           DB    C'*'                    *                               PT134300
2342   FFFF                    3431           DCX   FFFF                                                    PT134310
       0000 2344               3432  TITEND   EQU   *                                                       PT134320
       0000 2344               3433  LNZB     EQU   *                                                       PT134330
2344                           3434  REGSAV   DS    32                                                      PT134340
                               3435  *        CHKSUM                                                        PT134350
                               3436  *        (THE FOLLOWING CODE IS NOT PART OF THE TEST.)                 PT134360
                               3437  *                                                                      PT134370
                               3438  *                                                                      PT134380
2364   2400                    3439  $CHKSUM  LIS   R0,0                    PUNCH M17 TAPE WITH CHECKSUM    PT134390
2366   9510                    3440           EPSR  R1,R0                   SELECT REG. SET 0               PT134400
                               3441  *                                                                      PT134410
2368   C810 0100               3442           LDAI  R1,ORIGIN1              START                           PT134420
236C   2421                    3443           LIS   R2,1                    INCREMENT                       PT134430
236E   C830 2344               3444           LDAI  R3,LNZB                 FINAL                           PT134440
2372   2440                    3445           LIS   R4,0                    CHECKSUM BYTE                   PT134450
2374   D351 0000               3446  $GEN     LB    R5,0(R1)                                                PT134460
2378   0745                    3447           XAR   R4,R5                                                   PT134470
237A   C110 2374               3448           BXLE  R1,$GEN                                                 PT134480
237E   D240 0097               3449           STB   R4,MN+3                 CHECKSUM BYTE TO BOOT LOADER    PT134490
                               3450  *                                                                      PT134500
2382   C810 0080               3451  $TAPE    LHI   R1,X'0080'                                              PT134510
2386   9E21                    3452           OCR   R2,R1                   DISPLAY : NORMAL MODE           PT134520
2388   9444                    3453           EXBR  R4,R4                                                   PT134530
238A   9824                    3454           WHR   R2,R4                   CHECKSUM BYTE TO D1             PT134540
238C   9411                    3455           EXBR  R1,R1                                                   PT134550
238E   9501                    3456           EPSR  R0,R1                   HALT PROCESSOR.                 PT134560

2390   D360 007A               3458  $PUNCH   LB    R6,X'7A'                GET BOUTDV (PUNCH) ADDRESS.     PT134580
2394   DE60 007B               3459           OC    R6,X'7B'                START TAPE PUNCH                PT134590
2398   9D60                    3460           SSR   R6,R0                                                   PT134600
239A   2081                    3461           BTBS  8,1                                                     PT134610
239C   41F0 23DE               3462           BAL   R15,$TAPL               PUNCH LEADER                    PT134620
23A0   9411                    3463           EXBR  R1,R1                   (R1) = X'0080'                  PT134630
23A2   C830 00CF               3464           LHI   R3,X'CF'                                                PT134640
23A6   DA61 0000               3465  $PNCH1   WD    R6,0(R1)                PUNCH BOOT LOADER               PT134650
23AA   9D60                    3466           SSR   R6,R0                                                   PT134660
23AC   2081                    3467           BTBS  8,1                                                     PT134670
23AE   C110 23A6               3468           BXLE  R1,$PNCH1                                               PT134680
23B2   41F0 23E4               3469           BAL   R15,$TAPL1              PUNCH ONE-FOLD GAP.             PT134690
                               3470  *                                                                      PT134700
23B6   D340 0097               3471           LB    R4,MN+3                 GET CHECKSUM BYTE               PT134710
23BA   C810 0100               3472           LDAI  R1,ORIGIN1              (NORMALLY X'A00')               PT134720
23BE   C830 2344               3473           LDAI  R3,LNZB                                                 PT134730
23C2   D351 0000               3474  $PNCH2   LB    R5,0(R1)                PUNCH PROGRAM                   PT134740
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23C6  0745                      XAR   R4,R5                                             PT134750
23C8  9A65                      WDR   R6,R5                                             PT134760
23CA  9401                      EXBR  R0,R1                                             PT134770
23CC  9820                      WHR   R2,R0          DATA ADDRESS TO DISPLAY.           PT134780
23CE  9060                      SSR   R6,R0                                             PT134790
23D0  2081                      BTBS  8,1                                               PT134800
23D2  C110 23C2                 BXLE  R1,$PNCH2                                         PT134810
23D6  41F0 23DE                 BAL   R15,$TAPL      PUNCH TRAILER.                     PT134820
23DA  4300 2382                 B     $TAPE          DISPLAY CHECKSUM, HALT PROCESSOR.  PT134830

23DE  C800 0100        $TAPL    LHI   R0,256         TO PUNCH BLANK LEADER              PT134850
23E2  2303                      BS    $TAPLP                                            PT134860
23E4  C800 0055        $TAPL1   LHI   R0,85          TO PUNCH 1-FOLD GAP                PT134870
23E8  2701             $TAPLP   SIS   R0,1                                              PT134880
23EA  032F                      BNPR  R15            RETURN                             PT134890
23EC  2430                      LIS   R3,0                                              PT134900
23EE  9A63                      WDR   R6,R3          PUNCH BLANK FRAME                  PT134910
23F0  9D68                      SSR   R6,R8                                             PT134920
23F2  2081                      BTBS  8,1                                               PT134930
23F4  2206                      BS    $TAPLP         CONTINUE.                          PT134940
                       *                                                                PT134950
23F6                            END                                                     PT134960
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ASSEMBLED BY CAL 03-066R05-00 (32-BIT)

START OPTIONS: *NONE*

2 CAL ERRORS PREVIOUS ERROR ON PAGE 58
NO CAL WARNINGS
2 PASSES

$CHKSUM	0000 2364	3439*											
$GEN	0000 2374	3446*	3448										
$PNCH1	0000 23A6	3465*	3468										
$PNCH2	0000 23C2	3474*	3481										
$PUNCH	0000 2390	3458*											
$TAPE	0000 2382	3451*	3483										
$TAPL	0000 23DE	3462	3482	3485*									
$TAPL1	0000 23E4	3469	3487*										
$TAPLP	0000 23E8	3486	3488*	3494									
ABSTOP	0000 23F6												
ACH	0000 1048	1622*											
ADC	0000 0002												
AGTRY	0000 1FE8	3109*	3111	3112	3115								
AH	0000 0F38	1529*											
AHI	0000 0F96	1561*											
AHM	0000 11B8	1749*											
AHR	0000 0F9E	1564*											
AIS	0000 0FDE	1586*											
BAL	0000 09D2	996*											
BALR	0000 0AFA	1105*											
BFC	0000 037C	274*											
BFCR	0000 0ACC	1085*											
BFFS	0000 03E4	301*											
BOOT	0000 0088	38	41*										
BR	0000 0A7A	1053*											
BTBS	0000 049E	392*											
BTC	0000 036C	269*											
BTCR	0000 0AD2	1088*											
BTFS	0000 0492	385*											
BXH	0000 0A60	1044*											
BXLE	0000 0A02	1014*											
CAR	0000 0108	72*											
CD1	0000 12A2	1558	1662	1670	1685	1698	1832*						
CD2	0000 12A4	1598	1709	1833*									
CD3	0000 12A6	1511	1530	1536	1550	1568	1583	1690	1730	1834*			
CD4	0000 12A8	1537	1549	1559	1579	1597	1663	1689	1731	1835*			
CD5	0000 12AA	1527	1554	1606	1664	1708	1715	1836*					
CD6	0000 12AC	1528	1584	1684	1693	1724	1837*						
CD7	0000 12AE	1546	1569	1599	1665	1678	1702	1713	1838*				
CD8	0000 12B0	1512	1523	1538	1560	1570	1585	1592	1666	1696	1714	1732	1839*
CH	0000 1E88	2975	2978*										
CH11	0000 1EB2	2979	2992*										
CH12	0000 1ED2	2976	3004*										
CH13	0000 1EFC	2977	3005	3017*									
CHANIO	0000 2144	104	3236*										
CHANST	0000 1CC0	2708	2816*										
CHBYT	0000 1CDC	2824*	2829										

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CHF1        0000 1DCC       2893   2915*
CHF3        0000 1E04       2916   2932*
CHFI        0000 1C12       2745   2754*
CHLPS       0000 1F58       2818   2839   3057*
CHLPS1      0000 1F5E       2820   3059*
CLB         0000 0DAC       1373*
CLH         0000 058C        505*
CLHI        0000 05A8        516*
CLHR        0000 0574        493*
CONADR      0000 010A         73*   134
CONOUT      0000 22EC        135   3406*
CONT        0000 220A       3314   3315*
CPUERR      0000 0284        190*
CPUFLAG     0000 22E2        149    161    193   3396*
CPUN0       0000 22E0        195   1947   2403   3395*
CRT         0000 0106         71*
CRTFLG      0000 22EE        127    133    163    210   3407*
CRTIO       0000 0196        115    118*
CRTOUT      0000 22EA        121    124   3405*
DEVERR      0000 2150       3242*
DFAULT      0000 19FE       2512   2587*
DH          0000 196C       2530*
DHR         0000 195E       2523*
DIVD2       0000 1A9C       2516   2635*
DLOOP2      0000 1952       2518*  2535
DOCOMP      0000 1E32       2879   2918   2950*
DONE        0000 202E       3126   3130*
DONE0       0000 2024       3122   3123   3127*
DONE11      0000 2040       3134   3136*
DONE12      0000 2050       3142*  3148
DONE2       0000 2054       3144*
DONE3       0000 2062       3138   3146   3149*  3359
DVDCHK      0000 1938       2510*
DVDFLT      0000 2140        100   3234*
ENT3A       0000 0312        237*
ENT3B       0000 032C        240    243    245*
ENTRY1      0000 0112         68     81*  3118   3151   3189
ENTRY2      0000 02AA        142    145    147    201*
ENTRY3      0000 030A        234*  3132   3190
ENTRY4      0000 02FA        229*
EPSR        0000 0B2E       1135*
ERFSS       0000 217E       3255   3257*
ERR1        0000 1292       1807   1816   1821   1825   1826*
ERR11       0000 1258       1760   1767   1774   1803*
ERR12       0000 1264       1790   1801   1808*
ERR13       0000 127C       1635   1637   1639   1653   1655   1657   1817*
ERR14       0000 1288       1743   1822*
ERR2        0000 19EE       2570   2582*
ERR21       0000 198A       2540   2542   2544   2558*
ERRA        0000 2182       3268*
ERRA6       0000 218E       3272*
ERRB        0000 21A0       3275   3278*
ERRB2       0000 21AC       3277   3281   3286*
ERRB4       0000 21B4       3288*
ERRB6       0000 21C2       3291   3293*
```

		3287	3288	3289	3290	3292	3293	3295	3296	3297	3298	3307	3308	3310
		3312	3344	3345	3347	3354	3358	3439	3440	3456	3460	3466	3477	3478
		3479	3485	3487	3488									
R1	0000 0001	15*	42	52	53	55	60	121	122	123	125	130	131	132
		133	134	137	178	179	181	464	466	588	592	656	999	1000
		1024	1060	1066	1066	1075	1083	1084	1084	1092	1098	1136	1137	1139
		1143	1145	1147	1147	1149	1152	1153	1158	1158	1160	1160	1358	1362
		1365	1371	1388	1392	1425	1478	1478	1483	1487	1487	1492	1496	1500
		1503	1558	1565	1612	1612	1625	1636	1643	1654	1654	1662	1670	1684
		1686	1689	1690	1693	1694	1698	1699	1708	1709	1713	1716	1736	1732
		1751	1753	1757	1762	1766	1769	1773	1776	1787	1806	1811	1819	1871
		1880	1881	1882	1883	1884	1885	1886	1920	1921	1926	1970	1971	1971
		1985	1986	1994	2418	2424	2437	2443	2459	2465	2477	2484	2492	249A
		2521	2528	2543	2551	2563	2574	2596	2597	2709	2714	2725	2726	2734
		2766	2767	2776	2840	2845	2860	2860	2870	2871	2882	2899	2899	2945
		2945	2950	2964	2989	3000	3015	3066	3069	3076	3079	3440	3442	3446
		3448	3451	3452	3455	3455	3456	3463	3463	3465	3468	3472	3474	3477
		3481												
R10	0000 000A	24*	482	483	486	489	494	511	514	523	524	528	529	756
		764	774	802	1333	1334	1336	1360	1364	1369	1377	1480	1489	1500
		1505	1809	1958	1968	1968	1973	2422	2427	2440	2441	2446	2447	2462
		2463	2468	2469	2481	2482	2487	2488	2496	2502	2518	2520	2527	2545
		2563	2572	2575	2600	2700	2700	2705	2739	2781	2797	2800	2800	2807
		2807	2835	2833	2836	2887	2969	3018	3022	3022	3031	3031	3232	
R11	0000 000B	25*	549	553	1407	1408	1411	1415	1418	1425	1429	1810	1960	197A
		1978	1980	1990	2521	2528	2560	2579	2580	2712	2715	2728	2768	2796
		2843	2846	2861	2961	3019	3232							
R12	0000 000C	26*	551	555	1412	1416	1420	1426	1432	1497	1501	1504	1509	1509
		1526	1535	1548	1553	1557	1567	1581	1596	1605	1667	1683	1688	1707
		1711	1729	1734	1742	1824	2419	2419	2425	2425	2438	2438	2444	2444
		2460	2460	2466	2466	2478	2478	2485	2485	2493	2493	2499	2499	2524
		2539	2559	2561	2573	2576	2820	2826	2960	2974	2993	3017	3017	3174
		3181	3207	3353										
R13	0000 0000	27*	537	540	1413	1417	1422	1427	1434	1627	1632	1777	1793	2549
		2558	2575	2577	2729	2755	2823	2824	2825	2826	2828	2862	2879	3117
		3153	3187	3246	3247	3250	3340	3341	3342					
R14	0000 000E	28*	156	191	197	199	202	202	220	221	222	224	226	227
		544	547	625	642	666	1498	1506	1628	1629	1740	1740	1741	1742
		1823	2538	2538	2539	2551	2558	2559	2580	2581	2593	2599	2694	2714
		2816	2817	2834	2845	3164	3165	3166	3168	3170	3172	3176	3177	3178
		3179	3183	3184	3186	3198	3201	3204	3206	3216	3219	3269	3269	3355
R15	0000 000F	29*	500	501	520	521	547	608	623	640	662	757	762	767
		771	792	797	815	819	841	861	867	872	877	880	884	889
		890	895	899	936	950	952	955	961	973	2553	2695	2696	2824
		2825	2841	2854	2876	2890	2904	2912	2928	2942	2957	2972	2987	2998
		3013	3116	3135	3152	3162	3173	3180	3196	3199	3202	3205	3225	3227
		3229	3231	3234	3236	3238	3240	3243	3244	3245	3248	3249	3250	3251
		3352	3462	3469	3482	3489								
R2	0000 0002	16*	37	41	56	62	124	135	138	139	140	141	146	165
		166	167	171	172	174	176	178	205	206	207	209	212	213
		214	217	218	220	238	239	466	467	589	593	600	659	1004
		1005	1074	1075	1389	1394	1427	1479	1479	1484	1488	1488	1493	1505
		1598	1602	1613	1613	1624	1634	1642	1652	1652	1663	1673	1685	1686
		1696	1702	1714	1716	1726	1731	1735	1752	1812	1820	2429	2429	2430
		2435	2436	2453	2453	2454	2457	2458	2471	2471	2472	2475	2476	2510

		2510	2511	2514	2515	2517	2534	2592	2592	2599	2709	2710	2713	2721
		2721	2722	2723	2736	2737	2741	2742	2747	2748	2749	2750	2770	2771
		2772	2773	2778	2779	2783	2784	2789	2790	2791	2831	2832	2840	2841
		2844	2850	2851	2852	2853	2854	2868	2869	2874	2875	2876	2884	2885
		2889	2890	2900	2901	2903	2904	2906	2907	2908	2909	2911	2912	2926
		2927	2928	2940	2941	2942	2952	2953	2955	2956	2957	2966	2967	2971
		2972	2981	2982	2983	2984	2986	2987	2994	2995	2997	2998	3007	3008
		3009	3010	3012	3013	3027	3028	3058	3109	3110	3120	3121	3141	3142
		3144	3213	3214	3215	3218	3300	3301	3315	3316	3317	3324	3327	3328
		3332	3333	3334	3336	3443	3452	3454	3478					
R3	0000 0003	17*	43	126	127	141	143	144	146	167	172	176	207	214
		218	467	468	471	473	480	497	769	1002	1005	1077	1078	1319
		1320	1324	1511	1520	1536	1539	1568	1579	1583	1592	1614	1614	1623
		1625	1632	1643	1647	1650	1650	1664	1675	1675	1715	1724	1753	1754
		1755	1756	1762	1763	1764	1769	1770	1771	1805	1873	1874	1878	1879
		1887	1888	1902	1903	1905	1906	1908	1909	1918	1919	1924	1925	2009
		2010	2012	2012	2410	2414	2418	2459	2492	2501	2512	2513	2515	2519
		2526	2566	2569	2583	2584	2726	2734	2767	2776	2857	2871	2882	2951
		2964	2992	2992	3062	3072	3102	3103	3105	3142	3215	3252	3253	3270
		3271	3301	3303	3304	3311	3312	3334	3444	3464	3479	3490	3491	
R4	0000 0004	18*	45	46	47	49	57	59	149	150	152	154	155	157
		158	160	161	192	192	193	203	209	468	469	509	517	627
		631	843	845	848	850	853	855	858	863	874	877	890	947
		950	953	955	958	961	963	965	965	967	1009	1012	1015	1016
		1039	1042	1045	1047	1078	1090	1093	1101	1154	1155	1156	1208	1209
		1211	1213	1215	1217	1219	1221	1224	1224	1228	1229	1231	1233	1235
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		2112	2115	2118	2121	2124	2127	2129	2131	2133	2135	2138	2140	2143
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		2195	2197	2199	2203	2206	2210	2212	2216	2218	2223	2224	2228	2228
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		241	242	246	247	471	472	492	494	497	501	503	506	524
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		1010	1040	1061	1062	1082	1089	1359	1363	1367	1374	1527	1530	1554
		1555	1606	1607	1616	1627	1666	1680	1759	1764	1765	1766	1771	1772
		1773	1776	1778	1779	1780	1783	1784	1785	1786	1789	1792	1794	1800
		1804	1806	1809	1811	1818	1823	2113	2128	2139	2155	2166	2172	2179
		2185	2187	2192	2192	2196	2201	2208	2214	2220	2226	2319	2320	2329
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		3066	3076	3110	3113	3114	3121	3124	3125	3127	3128	3140	3145	3273
		3276	3279	3289	3317	3319	3320	3323	3446	3447	3474	3475	3476	
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SET00     0000 1CF4   2823  2833*
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SET0A.1   0000 1D8E   2888  2892*
SET0A.2   0000 1E78   2970  2974*
SET0A1    0000 1BFE   2747* 2762
SET0A2    0000 1BF4   2740  2744*
SET0AB    0000 1D6E   2861  2882* 3019
SET0B     0000 1C4A   2768  2776*
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SET0B.2   0000 1C6C   2782  2786*
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SETAB     0000 1D48   2862  2868* 2933
SETB      0000 1C2E   2729  2766*
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SETERRB   0000 1F16   3025  3027* 3034  3036  3038
SETM      0000 5302     30*
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SFLAG     0000 1B5E   2430  2436  2454  2458  2472  2476  2593  2678*
SH        0000 0F62   1545*
SHI       0000 0F5A   1541*
SHR       0000 105E   1631*
SINT      0000 1392   1929*
SIS       0000 0FB8   1574*
SLA       0000 1502   2120*
SLHL      0000 0B7E   1173*
SLL       0000 14F6   2114*
SLLS      0000 0B76   1167*
SRA       0000 1508   2123*
SRHA      0000 0B94   1182*
SRHL      0000 0B84   1176*
SRL       0000 14FC   2117*
SRLS      0000 0B7A   1170*
STB       0000 0DC8   1382*
STBR      0000 0E26   1414*
STH       0000 0640    590*
STM       0000 06E4    651*
STOSETM   0000 1CBE   2694  2713  2741  2783  2814*
STOSETMB  0000 1F3E   2834  2844  2889  2971  3041*
SVCENR    0000 214C   3240*
SWL1      0000 1CF2   2832*
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T10F	0000 15D8	2193	2195*							
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T10H	0000 160E	2212*								
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T10J	0000 1644	2230*								
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T10P2	0000 1774	2334	2336*							
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T10P8	0000 17E6	2377	2379*							
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T1AA	0000 0354	263*								
T1B	0000 0364	264	267*							
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T1ERR3    0000 03D8    287   288   289   290   292   294   296   298*
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T1F       0000 040E    319*
T1F2      0000 043C    342*
T1F3      0000 0478    357   372*
T1F4      0000 0484    366   378*
T1G       0000 0492    386*
T1G2      0000 0496    378   388*
T1H       0000 04C6    410   411*
T1H1      0000 04D0    411   412   415*
T2        0000 0524    458   459*
T2A       0000 0528    459   461*
T2B       0000 0544    474   477*
T2C       0000 0560    484   486*
T2D       0000 057A    495   497*
T2E       0000 0594    507   509*
T2END     0000 0610    556   558*
T2F       0000 05B2    518   520*
T2G       0000 05D2    530   533*
T2H       0000 05EE    541   544*
T2R1      0000 0542    462   465   470   475*
T2R2      0000 055E    475   479   481   485*
T2R3      0000 0578    485   487   488   490   491   496*
T2R4      0000 0592    496   498   499   502   504   508*
T2R5      0000 05AE    508   510   512   513   515   519*
T2R6      0000 05D0    522   525   531*
T2R7      0000 05EA    531   535   539   542*  545   546
T2R8      0000 060C    542   548   550   552   554   557*
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T2WRD1    0000 061A    562*  592   596   1356  1384  1388  1398  1403
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T3BUF1    0000 0782    613   713*
T3BUF2    0000 0774    650   706*
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                       685   723*
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T3E       0000 068A    632   634*
T3END     0000 0788    686   740*
T3F       0000 06D6    645   647*
T3G       0000 0708    663   665*
T3H       0000 0724    673   675*
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T3R7      0000 074C    678   680   682   684   687*
T4B       0000 0802    772   774*
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T4K	0000 094C	932	934*											
T4L	0000 0984	956	958*											
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T7B	0000 0DB6	1375	1377*								
T7C	0000 0E06	1399	1401*								
T7E	0000 0E50	1430	1432*								
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T7R4	0000 0E82	1445	1450	1453*							
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T908C	0000 148F	1954	2042*								
T908D	0000 14A0	1957	2059*								
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T90A9	0000 12E6	1874*	1877								
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T90H	0000 13D0	1961*	1997	1999	2013						
T90IL6	0000 1450	1963	2006*								

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TST812	0000	2278	3346	3349*										
TSTEND	0000	1FCA	3081	3099*	3309									
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TTYOFF	0000	22DE	231	247	3128	3133	3150	3394*						
WAITF	0000	217A	3254	3255*										
WAITFF	0000	2206	3313	3314*										
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WMEM1	0000	02D6	211	217*										
WMEM2	0000	02DA	216	218*										
WMEM3	0000	02F2	223	226*										
WRIT	0000	2122	3215*	3217										
WRITE1	0000	211A	156	191	197	199	3164	3165	3166	3168	3170	3172	3176	3177	3178
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WT000F	0000	20E2	3154	3188*	3325									
WTFFFF	0000	21FE	3299	3311*	3318	3321								
XH	0000	0850	808*											
XHI	0000	0840	788*											
XHR	0000	07E2	758*											
ZERO	0000	22F6	477	480	509	817	853	869	924	974	1405	1626	1645	1661	1697
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