

# HP 2100 MEMORY REFERENCE INSTRUCTION TEST



HP Product No. HP 24209



11000 Wolfe Road  
Cupertino, California 95014

Manual of Diagnostics  
Diagnostic Program Procedure  
02100-90018

June 1971



**HP Computer Museum**  
**[www.hpmuseum.net](http://www.hpmuseum.net)**

**For research and education purposes only.**

# HP 2100 MEMORY REFERENCE INSTRUCTION TEST

The HP 2100 Memory Reference Instruction Test program confirms that all 14 memory reference instructions operate correctly. This program should be the first one run in an HP 2100 computer, followed by the HP 2100 Alter-Skip Instruction Test and the HP 2100 Shift-Rotate Instruction Test programs.

## HARDWARE CONFIGURATION

This program is run in any HP 2100 computer. No peripheral devices are used; errors and messages to the user are read from the program listing at the end of this text, according to the location at which a halt occurs.

## PROGRAM ORGANIZATION

The program includes one pre-test routine and ten test modules.

The pre-test routine is a loop that confirms operation of four instructions and the switch register: LIA 1 (load the contents of the switch register into the A-register), HLT (halt), OTA 1 (output the contents of the A-register to the switch register), and JMP LPØ (jump back to the start of the routine).

After the pre-test routine, the main portion of the Memory Reference Instruction Test program is started. The ten test modules perform the following functions:

### BASIC TESTS

Checks for proper operation of simple alter-skip instructions that are used later within this module and within other modules. After the simple alter-skip instructions, this module tests simple uses of each memory reference instruction.

#### MEMORY REFERENCES TO A & B

Checks operation of each memory reference instruction through the A- and B-registers.

#### E & OV REGISTER CHECKS

Checks the results in the extend and overflow registers after execution of ADA and ADB instructions.

#### INDIRECT ADDRESSING TESTS

Tests each memory reference instruction for one and two levels of indirect addressing.

#### INDIRECT ADDRESSING TO PAGE 1

Test each memory reference instruction for indirect addressing to page 1 from the base page (page 0).

*NOTE: The base page (page 0) includes locations 0 through 1777<sub>8</sub>, and page 1 includes locations 2000<sub>8</sub> through 3777<sub>8</sub>.*

#### INDIRECT ADDRESSING TO THE BASE PAGE (PAGE 0)

Tests each memory reference instruction for indirect addressing to the base page (page 0) from page 1.

#### REGISTER INTERACTION TESTS

Confirms that each memory reference instruction affects only the proper register(s). For example, an LDA instruction must not change the B, E, or OV (overflow) registers.

#### INDIRECT ADDRESSING VIA THE A & B REGISTERS

Tests each memory reference instruction for indirect addressing via the A- and B-registers.

## ITERATIVE TESTS

Repeats each memory reference instruction in a loop 65K times to ensure it executes consistently. If an intermittent failure exists, this routine possibly will find it.



## DATA PATTERN TESTS

Checks the load, store, and compare instructions throughout two pages (2K) of memory (less the last 100<sub>g</sub> locations). Then this routine checks the ADA, ADB, IOR, XOR, and AND instructions for execution with 10 pairs of arbitrary arguments.

Normally after each module has completed its tests, the program advances to the next module through an NOP (no operation) instruction. However, the user may consult the listing of this program (at the end of this text) and change any NOP instruction (through front panel access) to a HLT or a JMP instruction, if needed.

## ERROR ANALYSIS

If the program detects an error, it halts with 102000<sub>g</sub> displayed. To determine the error, press M to display the halt address, then consult the program listing, at the rear of this text.

In most cases, two steps are used to determine what specific failure occurred. First, read the comments in the program listing for that halt. Then use the INSTRUCTION STEP button to step through the program one-instruction-at-a-time from the instruction following the *preceding* halt. Carefully check the results of each instruction after each press of the INSTRUCTION STEP button. After the error has been analyzed, the program may be resumed by setting the next instruction address, pressing INTERNAL and EXTERNAL PRESET, then pressing RUN.

At the end of a complete cycle, the program tests bit 15 of the switch register. If that bit is set on, the program halts with 102077<sub>8</sub> displayed. If bit 15 is set off, the program restarts at the Basic Tests module.

A complete cycle of the program occurs in 30 to 40 seconds.

If the computer halts with 107077<sub>8</sub> in the DISPLAY REGISTER, the program has advanced to an unused location. (When the program is loaded, all unused locations are set to the special halt instruction 107077<sub>8</sub>.) Isolate the program module that caused the error by patching and by trial and error. For example, the NOP instruction at the end of a program module may be changed to an HLT or a JMP instruction.

*NOTE: It may be necessary to reload the program first.*

### OPERATING INSTRUCTIONS

- a. Use the Basic Binary Loader to load the HP 2100 Memory Reference Instruction Test program.

*NOTE: If the Basic Binary Loader does not appear to operate correctly, refer to the SOFTWARE OPERATING PROCEDURES manual.*

- b. The pre-test routine (summarized in the Program Organization section of this text) can be used or skipped. To use it, skip to step f, otherwise proceed directly to step c.
- c. Start the main portion of the HP 2100 Memory Reference Instruction Test program:
  1. Set the starting address 100<sub>8</sub>.
  2. Clear the switch register.
  3. Press INTERNAL and EXTERNAL PRESET then press RUN.
- d. The program runs continuously until an error is detected or it is halted as described in step e.

- e. To halt the program at the end of a complete cycle ( $102077_8$  is displayed), set switch register bit 15 on. (While the program is running the S button is lit, indicating that the switch register may be set through the DISPLAY REGISTER.) Or, to halt the program at any time, press HALT/CYCLE.
- f. To use the pre-test routine, consult the listing of the program at the rear of this text. The pre-test routine resides in memory locations  $10_8$  through  $13_8$ . Use the INSTRUCTION STEP button to step through this routine one-instruction-at-a-time. Carefully check the results of each instruction after each press of the INSTRUCTION STEP button. When finished, return to step c.



ASMB, A, 0, L, J, T

0001 000010  
 LP0 000100  
 START 000453  
 X1 000454  
 X2 000503  
 X4 000515  
 X5 000522  
 RTN1 000526  
 RTN2 000531  
 P3 000532  
 RTN3 000542  
 P4 000543  
 RTN4 000644  
 X20 000654  
 X21 000665  
 X22 000675  
 X23 000704  
 X24 001301  
 IR1 001303  
 IR2 001307  
 RA3 001320  
 RA4 001612  
 JMP2 001615  
 .P3 001616  
 .P4 001625  
 M1 001626  
 M2 001627  
 .0 001630  
 .1 001631  
 EVEN1 001632  
 ODD1 001633  
 K1 001634  
 PHAX 001635  
 BIT15 001636  
 MLT0 001637  
 H7077 001640  
 T1 001641  
 ADDR1 001642  
 ADDR3 001643  
 ADDR4 001644  
 JR1 001645  
 JR2 001646  
 JR3 001647  
 JR4 000000  
 A 000001  
 B 001650  
 ADDR2 001651  
 ADDR4 001652  
 ADDR7 001653  
 IA1 001654  
 IA2 001655  
 IA3 001661  
 IA4 001662  
 IA5 001663  
 IA6 001664  
 IA7 001665

IAB 001664  
 IA9 001665  
 IA10 001666  
 K7 001667  
 IR11 001670  
 IR12 001671  
 IR13 001672  
 IR14 001673  
 ADR13 001674  
 ADR14 001675  
 .P1 001676  
 .P2 001677  
 K10 001700  
 K11 001701  
 K12 001702  
 T2A 001703  
 JMP1A 001704  
 SRI1A 001705  
 .ADR3 001706  
 P99A 001710  
 FCA 001711  
 LCA 001712  
 JS87 001716  
 JMP5 001777  
 P61 002062  
 P6 002065  
 P7 002066  
 P9 002223  
 P99 002224  
 X99 002542  
 RA11 002545  
 RA12 002551  
 P13 002552  
 X13 002566  
 P14 002567  
 X14 002623  
 LP1 002632  
 LP2 002641  
 LP3 002650  
 LP4 002657  
 LP5 002667  
 LP6 002677  
 LP7 002707  
 LP8 002717  
 LP9 002726  
 LP10 002736  
 LP11 002746  
 LP12 002756  
 LP13 002766  
 LP14 002776  
 LP15 003006  
 LP16 003015  
 LP17 003024  
 LP18 003034  
 LP19 003052  
 LP20 003052

LP21 003070  
 LP22 003106  
 LP23 003124  
 LP24 003142  
 LP25 003160  
 LP26 003176  
 LP27 003214  
 Z1 003217  
 Z2 003220  
 PT1 003247  
 PT2 003257  
 PT3 003260  
 PT4 003274  
 PT5 003275  
 A1A 003362  
 A2A 003363  
 SUMA 003364  
 IORA 003365  
 XORA 003366  
 ANDA 003367  
 K10A 003370  
 K11A 003371  
 T1A 003372  
 K12A 003373  
 JMP5A 003374  
 JSB7A 003375  
 P7A 003376  
 T8LA 003377  
 T8L.1 003400  
 T8L.2 003406  
 T8L.3 003414  
 T8L.4 003422  
 T8L.5 003430  
 T8L.6 003436  
 T8L.7 003444  
 T8L.8 003452  
 T8L.9 003460  
 T8.10 003466  
 T8LE 003474  
 T2 003475  
 SRI 003476  
 JMP1 003500  
 \*\* NO ERRORS\*

0001  
 0003\* ASMB,A,B,L,T  
 0004 00002 ORG 2  
 0005\* THE FOLLOWING SOURCE LINES ARE SUPPRESSED  
 0006\* UNL SUPPRESS SOURCE LISTING  
 REP 1982 PUT 107077 HALTS IN CORE  
 OCT 107077 LOCATIONS 2 THRU 3677 (2K)  
 0008\* LST RESUME SOURCE LISTING  
 0012

0014\* THE FOLLOWING IS A SIMPLE LOOP WHICH CAN BE USED TO CHECK THE  
 0015\* SWITCH REGISTER, HLT INSTRUCTION, & JMP INSTRUCTION.

0016\*  
 0017 00010 ORG 100  
 0018 00010 102501 LPA  
 0019 00011 102000 LIA 1  
 0020 00012 102501 HLT 0  
 0021 00013 024010 OTA 1  
 JMP LP0  
 SWITCH REGISTER TO A REG.  
 T=102000, ASMB. REG. CONTENTS  
 SW. REG. ← A REG.  
 DO AGAIN



```

0023 00100          ORG 100B
0024* CHECK SIMPLE ALTER-SKIP INSTRUCTIONS
0025*
0026*
0027 00100 002001  START RSS
0028 00101 102000  HLT 0      RSS FAILED
0029*
0030 00102 002400  CLA
0031 00103 002002  SZA
0032 00104 102000  HLT 0      CLA/SZA FAILED
0033*
0034 00105 002400  CLA
0035 00106 002003  SZA,RSS
0036 00107 002001  RSS
0037 00110 102000  HLT 0      CLA/SZA,RSS FAILED
0038*
0039 00111 006400  CLB
0040 00112 006002  SZB
0041 00113 102000  HLT 0      CLB/SZB FAILED
0042*
0043 00114 006400  CLB
0044 00115 006003  SZB,RSS
0045 00116 002001  RSS
0046 00117 102000  HLT 0      CLB/SZB,RSS FAILED
0047*
0048* CHECK CPA INSTRUCTION
0049*
0050 00120 002400  CLA
0051 00121 051627  CPA .0
0052 00122 002001  RSS
0053 00123 102000  HLT 0      CLA/CPA .0 FAILED
0054*
0055 00124 002400  CLA
0056 00125 051625  CPA M1
0057 00126 102000  HLT 0      CLA/CPA M1 FAILED
0058*
0059 00127 003400  CCA
0060 00130 051625  CPA M1
0061 00131 002001  RSS
0062 00132 102000  HLT 0      CCA/CPA M1 FAILED
0063*
0064 00133 002404  CLA,INA
0065 00134 002003  SZA,RSS
0066 00135 102000  HLT 0      CLA,INA/SZA,RSS FAILED
0067*
0068 00136 002404  CLA,INA
0069 00137 051630  CPA .1
0070 00140 002001  RSS
0071 00141 102000  HLT 0      CLA,INA/CPA .1 FAILED
0072*
0073* CHECK LDA & CPA INSTRUCTIONS
0074*
0075 00142 061627  LDA .0
0076 00143 051627  CPA .0
0077 00144 002001  RSS
0078 00145 102000  HLT 0      LDA .0/CPA .0 FAILED

```

```

0079* LDA M1
0080 00146 061625  CPA M1
0081 00147 051625  RSS
0082 00150 002001  HLT 0      LDA M1/CPA M1 FAILED
0083 00151 102000
0084* LDA EVEN1
0085 00152 061631  CPA EVEN1
0086 00153 051631  RSS
0087 00154 002001  HLT 0      LDA EVEN1/CPA EVEN1 FAILED
0088 00155 102000
0089* LDA ODD1
0090 00156 061632  CPA ODD1
0091 00157 051632  RSS
0092 00160 002001  HLT 0      LDA ODD1 /CPA ODD1 FAILED
0093 00161 102000
0094* CLA
0095 00162 002400  CPA M1
0096 00163 051625  HLT 0      CLA/CPA M1 FAILED
0097 00164 102000
0098* LDA EVEN1
0099 00165 061631  CPA ODD1
0100 00166 051632  HLT 0      LDA EVEN1/CPA ODD1 FAILED
0101 00167 102000
0102* CHECK STA INSTRUCTION
0103*
0104*
0105*
0106 00170 002400  CLA T1
0107 00171 071640  CPA T1
0108 00172 051640  RSS
0109 00173 002001  HLT 0      CLA/STA T1/CPA T1 FAILED
0110 00174 102000
0111* CCA
0112 00175 003400  STA T1
0113 00176 071640  CPA T1
0114 00177 051640  RSS
0115 00200 002001  HLT 0      CLA/STA T1/CPA T1 FAILED
0116 00201 102000
0117* LDA EVEN1
0118 00202 061631  STA T1
0119 00203 071640  CPA T1
0120 00204 051640  RSS
0121 00205 002001  HLT 0      LDA EVEN1/STA T1/CPA T1 FAILED
0122 00206 102000
0123* LDA ODD1
0124 00207 061632  STA T1
0125 00210 071640  CPA T1
0126 00211 051640  RSS
0127 00212 002001  HLT 0      LDA ODD1/STA T1/CPA T1 FAILED
0128 00213 102000
0129* CHECK AND INSTRUCTION
0130*
0131*
0132*
0133 00214 003400  CCA
0134 00215 011625  AND M1

```

|       |                       |        |        |                          |
|-------|-----------------------|--------|--------|--------------------------|
| 0135  | 00216                 | 051625 | CPA M1 |                          |
| 0136  | 00217                 | 002001 | RSS    |                          |
| 0137  | 00220                 | 102000 | HLT 0  | CCA/AND M1/CPA M1 FAILED |
| 0138* |                       |        |        |                          |
| 0139  | 00221                 | 002400 | CLA    |                          |
| 0140  | 00222                 | 011625 | AND M1 |                          |
| 0141  | 00223                 | 002002 | SZA    |                          |
| 0142  | 00224                 | 102000 | HLT 0  | CLA/AND M1/SZA FAILED    |
| 0143* |                       |        |        |                          |
| 0144  | 00225                 | 002400 | CLA    |                          |
| 0145  | 00226                 | 011627 | AND .0 |                          |
| 0146  | 00227                 | 002002 | SZA    |                          |
| 0147  | 00230                 | 102000 | HLT 0  | CLA/AND .0/SZA FAILED    |
| 0148* |                       |        |        |                          |
| 0149  | 00231                 | 003400 | CCA    |                          |
| 0150  | 00232                 | 011627 | AND .0 |                          |
| 0151  | 00233                 | 002002 | SZA    |                          |
| 0152  | 00234                 | 102000 | HLT 0  | CCA/AND .0/SZA FAILED    |
| 0153* |                       |        |        |                          |
| 0154* | CHECK IOR INSTRUCTION |        |        |                          |
| 0155* |                       |        |        |                          |
| 0156  | 00235                 | 002400 | CLA    |                          |
| 0157  | 00236                 | 031627 | IOR .0 |                          |
| 0158  | 00237                 | 002002 | SZA    |                          |
| 0159  | 00240                 | 102000 | HLT 0  | CLA/IOR .0/SZA FAILED    |
| 0160* |                       |        |        |                          |
| 0161  | 00241                 | 002400 | CLA    |                          |
| 0162  | 00242                 | 031625 | IOR M1 |                          |
| 0163  | 00243                 | 051625 | CPA M1 |                          |
| 0164  | 00244                 | 002001 | RSS    |                          |
| 0165  | 00245                 | 102000 | HLT 0  | CLA/IOR M1/CPA M1 FAILED |
| 0166* |                       |        |        |                          |
| 0167  | 00246                 | 003400 | CCA    |                          |
| 0168  | 00247                 | 031625 | IOR M1 |                          |
| 0169  | 00250                 | 051625 | CPA M1 |                          |
| 0170  | 00251                 | 002001 | RSS    |                          |
| 0171  | 00252                 | 102000 | HLT 0  | CCA/IOR M1/CPA M1 FAILED |
| 0172* |                       |        |        |                          |
| 0173  | 00253                 | 003400 | CCA    |                          |
| 0174  | 00254                 | 031627 | IOR .0 |                          |
| 0175  | 00255                 | 051625 | CPA M1 |                          |
| 0176  | 00256                 | 002001 | RSS    |                          |
| 0177  | 00257                 | 102000 | HLT 0  | CCA/IOR .0/CPA M1 FAILED |
| 0178* |                       |        |        |                          |
| 0179* | CHECK XOR INSTRUCTION |        |        |                          |
| 0180* |                       |        |        |                          |
| 0181  | 00260                 | 002400 | CLA    |                          |
| 0182  | 00261                 | 021627 | XOR .0 |                          |
| 0183  | 00262                 | 002002 | SZA    |                          |
| 0184  | 00263                 | 102000 | HLT 0  | CLA/XOR .0/SZA FAILED    |
| 0185* |                       |        |        |                          |
| 0186  | 00264                 | 003400 | CCA    |                          |
| 0187  | 00265                 | 021627 | XOR .0 |                          |
| 0188  | 00266                 | 051625 | CPA M1 |                          |
| 0189  | 00267                 | 002001 | RSS    |                          |
| 0190  | 00270                 | 102000 | HLT 0  | CCA/XOR .0/CPA M1 FAILED |

|       |                              |        |           |                            |
|-------|------------------------------|--------|-----------|----------------------------|
| 0191* |                              |        |           |                            |
| 0192  | 00271                        | 002400 | CLA       |                            |
| 0193  | 00272                        | 021625 | XOR M1    |                            |
| 0194  | 00273                        | 051625 | CPA M1    |                            |
| 0195  | 00274                        | 002001 | RSS       |                            |
| 0196  | 00275                        | 102000 | HLT 0     | CLA/XOR M1/CPA M1 FAILED   |
| 0197* |                              |        |           |                            |
| 0198  | 00276                        | 003400 | CCA       |                            |
| 0199  | 00277                        | 021625 | XOR M1    |                            |
| 0200  | 00300                        | 002002 | SZA       |                            |
| 0201  | 00301                        | 102000 | HLT 0     | CCA/XOR M1/SZA FAILED      |
| 0202* |                              |        |           |                            |
| 0203* | CHECK CPB INSTRUCTION        |        |           |                            |
| 0204* |                              |        |           |                            |
| 0205  | 00302                        | 006400 | CLB       |                            |
| 0206  | 00303                        | 055627 | CPB .0    |                            |
| 0207  | 00304                        | 002001 | RSS       |                            |
| 0208  | 00305                        | 102000 | HLT 0     | CLB/CPB .0 FAILED          |
| 0209* |                              |        |           |                            |
| 0210  | 00306                        | 006400 | CLB       |                            |
| 0211  | 00307                        | 055625 | CPB M1    |                            |
| 0212  | 00310                        | 102000 | HLT 0     | CLB/CPB M1 FAILED          |
| 0213* |                              |        |           |                            |
| 0214  | 00311                        | 007400 | CCA       |                            |
| 0215  | 00312                        | 055625 | CPB M1    |                            |
| 0216  | 00313                        | 002001 | RSS       |                            |
| 0217  | 00314                        | 102000 | HLT 0     | CCR/CPB M1 FAILED          |
| 0218* |                              |        |           |                            |
| 0219  | 00315                        | 006404 | CLR,INB   |                            |
| 0220  | 00316                        | 006003 | SZB,RSS   |                            |
| 0221  | 00317                        | 102000 | HLT 0     | CLB,INB/SZB,RSS FAILED     |
| 0222* |                              |        |           |                            |
| 0223  | 00320                        | 006404 | CLR,INB   |                            |
| 0224  | 00321                        | 055630 | CPB .1    |                            |
| 0225  | 00322                        | 002001 | RSS       |                            |
| 0226  | 00323                        | 102000 | HLT 0     | CLB,INR/CPB .1 FAILED      |
| 0227* |                              |        |           |                            |
| 0228* | CHECK LDR & CPH INSTRUCTIONS |        |           |                            |
| 0229* |                              |        |           |                            |
| 0230  | 00324                        | 065627 | LDB .0    |                            |
| 0231  | 00325                        | 055627 | CPB .0    |                            |
| 0232  | 00326                        | 002001 | RSS       |                            |
| 0233  | 00327                        | 102000 | HLT 0     | LDB .0/CPB .0 FAILED       |
| 0234* |                              |        |           |                            |
| 0235  | 00330                        | 065625 | LDB M1    |                            |
| 0236  | 00331                        | 055625 | CPB M1    |                            |
| 0237  | 00332                        | 002001 | RSS       |                            |
| 0238  | 00333                        | 102000 | HLT 0     | LDR M1/CPB M1 FAILED       |
| 0239* |                              |        |           |                            |
| 0240  | 00334                        | 065631 | LDR FVEN1 |                            |
| 0241  | 00335                        | 055631 | CPB FVEN1 |                            |
| 0242  | 00336                        | 002001 | RSS       |                            |
| 0243  | 00337                        | 102000 | HLT 0     | LDR EVEN1/CPB EVEN1 FAILED |
| 0244* |                              |        |           |                            |
| 0245  | 00340                        | 065632 | LDB ODD1  |                            |
| 0246  | 00341                        | 055632 | CPB ODD1  |                            |

| PAGE  | 0009  | #01    | RASIC TESTS | PAGE  | 0010  | #01    | RASIC TESTS           |
|-------|-------|--------|-------------|-------|-------|--------|-----------------------|
| 0247  | 00342 | 002001 | RSS         | 0303* |       |        |                       |
| 0248  | 00343 | 102000 | HLT 0       | 0304  | 00415 | 061631 | LDA EVEN1             |
| 0249* |       |        |             | 0305  | 00416 | 041631 | ADA EVEN1             |
| 0250  | 00344 | 006400 | CLB         | 0306  | 00417 | 051632 | CPA ODD1              |
| 0251  | 00345 | 055625 | CPB M1      | 0307  | 00420 | 002001 | RSS                   |
| 0252  | 00346 | 102000 | HLT 0       | 0308  | 00421 | 102000 | HLT 0                 |
| 0253* |       |        |             | 0309* |       |        |                       |
| 0254  | 00347 | 065631 | LDB EVEN1   | 0310* |       |        | CHECK ADR INSTRUCTION |
| 0255  | 00350 | 055632 | CPB ODD1    | 0311* |       |        |                       |
| 0256  | 00351 | 102000 | HLT 0       | 0312  | 00422 | 006400 | CLB                   |
| 0257* |       |        |             | 0313  | 00423 | 045625 | ADR M1                |
| 0258* |       |        |             | 0314  | 00424 | 055625 | CPB M1                |
| 0259* |       |        |             | 0315  | 00425 | 002001 | RSS                   |
| 0260  | 00352 | 006400 | CLB         | 0316  | 00426 | 102000 | HLT 0                 |
| 0261  | 00353 | 075640 | STB T1      | 0317* |       |        |                       |
| 0262  | 00354 | 055640 | CPB T1      | 0318  | 00427 | 007400 | CCB                   |
| 0263  | 00355 | 002001 | RSS         | 0319  | 00430 | 045625 | ADR M1                |
| 0264  | 00356 | 102000 | HLT 0       | 0320  | 00431 | 055626 | CPB M2                |
| 0265* |       |        |             | 0321  | 00432 | 002001 | RSS                   |
| 0266  | 00357 | 007400 | CCB         | 0322  | 00433 | 102000 | HLT 0                 |
| 0267  | 00360 | 075640 | STB T1      | 0323* |       |        |                       |
| 0268  | 00361 | 055640 | CPB T1      | 0324  | 00434 | 065632 | LDB ODD1              |
| 0269  | 00362 | 002001 | RSS         | 0325  | 00435 | 045632 | ADB ODD1              |
| 0270  | 00363 | 102000 | HLT 0       | 0326  | 00436 | 055633 | CPB K1                |
| 0271* |       |        |             | 0327  | 00437 | 002001 | RSS                   |
| 0272  | 00364 | 065631 | LDB EVEN1   | 0328  | 00440 | 102000 | HLT 0                 |
| 0273  | 00365 | 075640 | STB T1      | 0329* |       |        |                       |
| 0274  | 00366 | 055640 | CPB T1      | 0330  | 00441 | 065631 | LDR EVEN1             |
| 0275  | 00367 | 002001 | RSS         | 0331  | 00442 | 045631 | ADB EVEN1             |
| 0276  | 00370 | 102000 | HLT 0       | 0332  | 00443 | 055632 | CPB ODD1              |
| 0277* |       |        |             | 0333  | 00444 | 002001 | RSS                   |
| 0278  | 00371 | 065632 | LDB ODD1    | 0334  | 00445 | 102000 | HLT 0                 |
| 0279  | 00372 | 075640 | STB T1      | 0335* |       |        |                       |
| 0280  | 00373 | 055640 | CPB T1      | 0336* |       |        |                       |
| 0281  | 00374 | 002001 | RSS         | 0337* |       |        |                       |
| 0282  | 00375 | 102000 | HLT 0       | 0338  | 00446 | 024450 | JMP **2               |
| 0283* |       |        |             | 0339  | 00447 | 102000 | HLT 0                 |
| 0284* |       |        |             | 0340* |       |        |                       |
| 0285* |       |        |             | 0341* |       |        | CHECK JSB INSTRUCTION |
| 0286  | 00376 | 002400 | CLA         | 0342* |       |        |                       |
| 0287  | 00377 | 041625 | ADA M1      | 0343  | 00450 | 002400 | CLA                   |
| 0288  | 00400 | 051625 | CPA M1      | 0344  | 00451 | 070454 | STA X2                |
| 0289  | 00401 | 002001 | RSS         | 0345  | 00452 | 014454 | JSB **2               |
| 0290  | 00402 | 102000 | HLT 0       | 0346  | 00453 | 102000 | HLT 0                 |
| 0291* |       |        |             | 0347  | 00454 | 000000 | X1                    |
| 0292  | 00403 | 003400 | CCA         | 0348  | 00455 | 060454 | X2                    |
| 0293  | 00404 | 041625 | ADA M1      | 0349  | 00456 | 051641 | LDA X2                |
| 0294  | 00405 | 051625 | CPA M2      | 0350  | 00457 | 002001 | CPA ADDR1             |
| 0295  | 00406 | 002001 | RSS         | 0351  | 00460 | 102000 | RSS                   |
| 0296  | 00407 | 102000 | HLT 0       | 0352* |       |        |                       |
| 0297* |       |        |             | 0353* |       |        | CHECK ISZ INSTRUCTION |
| 0298  | 00410 | 061632 | LDA ODD1    | 0354* |       |        |                       |
| 0299  | 00411 | 041632 | ADA ODD1    | 0355  | 00461 | 002400 | CLA                   |
| 0300  | 00412 | 051633 | CPA K1      | 0356  | 00462 | 071640 | STA T1                |
| 0301  | 00413 | 002001 | RSS         | 0357  | 00463 | 035640 | ISZ T1                |
| 0302  | 00414 | 102000 | HLT 0       | 0358  | 00464 | 002001 | RSS                   |

A = 052525  
A = 125252

LDA EVEN1/ADA EVEN1/CPA ODD1 FAI

CLB/ADR M1/CPB M1 FAILED

CCB/ADR M1/CPB M2 FAILED

LDB ODD1/ ADR ODD1/CPB K1 FAILED

R=125252  
R=052524

LDB EVEN1/ADR EVEN1/CPB ODD1 FAI

JMP FAILED

NOP LOCATION X2

JSB FAILED

ADDR1 = ADDRESS X1

JSB FAILED - BAD RETURN ADDRESS

T1=M

|       |       |        |         |    |                  |       |       |        |           |                            |
|-------|-------|--------|---------|----|------------------|-------|-------|--------|-----------|----------------------------|
| 0359  | 00465 | 102000 | HLT 0   |    |                  | 0388  | 00516 | 061644 | LDA JRI   | A ← JMP RTN1               |
| 0360  | 00466 | 065640 | LDB T1  |    |                  | 0389  | 00517 | 065636 | LDB HLT0  | B ← 102000                 |
| 0361  | 00467 | 055630 | CPB .1  |    |                  | 0390  | 00520 | 024000 | JMP A     | JMP A FAILED               |
| 0362  | 00470 | 002001 | RSS     |    |                  | 0391  | 00521 | 102000 | HLT 0     |                            |
| 0363  | 00471 | 102000 | HLT 0   |    |                  | 0392* |       |        |           |                            |
| 0364* | 00472 | 003400 | CCA     |    |                  | 0393  | 00522 | 061636 | LDA HLT0  | A ← 102000                 |
| 0365  | 00473 | 071640 | STA T1  |    |                  | 0394  | 00523 | 065645 | LDB JR2   | B ← JMP RTN2               |
| 0366  | 00474 | 035640 | ISZ T1  |    |                  | 0395  | 00524 | 024001 | JMP B     | JMP B FAILED               |
| 0367  | 00475 | 102000 | HLT 0   |    |                  | 0396  | 00525 | 102000 | HLT 0     |                            |
| 0368  | 00476 | 061640 | LDA T1  |    |                  | 0397* |       |        |           |                            |
| 0369  | 00477 | 002002 | SZA     |    |                  | 0398  | 00526 | 002400 | CLA       | A ← NOP                    |
| 0370  | 00477 | 002002 | SZA     |    |                  | 0399  | 00527 | 065646 | LDB JRS   | B ← JMP RTN3               |
| 0371  | 00500 | 102000 | HLT 0   |    |                  | 0400  | 00530 | 014000 | JSB A     |                            |
| 0372* |       |        |         |    |                  | 0401  | 00531 | 102000 | HLT 0     | JSB A FAILED               |
| 0373  | 00501 | 002400 | CLA     |    |                  | 0402  | 00532 | 051642 | CPA ADDR3 | ADDR3 = LOCATION P3        |
| 0374  | 00502 | 071640 | STA T1  |    |                  | 0403  | 00533 | 002001 | RSS       |                            |
| 0375  | 00503 | 002004 | INA     | X4 |                  | 0404  | 00534 | 102000 | HLT 0     | BAD RETURN ADDRESS IN A    |
| 0376  | 00504 | 002003 | SZA,RSS |    |                  | 0405* |       |        |           |                            |
| 0377  | 00505 | 024515 | JMP X5  |    |                  | 0406  | 00535 | 061636 | LDA HLT0  | A ← 102000                 |
| 0378  | 00506 | 035640 | ISZ T1  |    |                  | 0407  | 00536 | 065647 | LDR JR4   |                            |
| 0379  | 00507 | 002001 | RSS     |    |                  | 0408  | 00537 | 074002 | STB 2     | 2 ← JMP RTN4               |
| 0380  | 00510 | 102000 | HLT 0   |    |                  | 0409  | 00540 | 006400 | CLB       | B ← NOP                    |
| 0381  | 00511 | 051640 | CPA T1  |    |                  | 0410  | 00541 | 014001 | JSB 0     |                            |
| 0382  | 00512 | 024503 | JMP X4  |    |                  | 0411  | 00542 | 102000 | HLT 0     | JSB B FAILED               |
| 0383  | 00513 | 102000 | HLT 0   |    |                  | 0412  | 00543 | 055643 | CPB ADDR4 | ADDR4 = LOCATION P4        |
| 0384  | 00514 | 024503 | JMP X4  |    |                  | 0413  | 00544 | 002001 | RSS       |                            |
| 0385* |       |        |         |    |                  | 0414  | 00545 | 102000 | HLT 0     | BAD RETURN ADDRESS IN B    |
| 0386  | 00515 | 000000 | NOP     | X5 | **** MODULE LOOP | 0415* |       |        |           |                            |
|       |       |        |         |    |                  | 0416  | 00546 | 061637 | LDA H7077 | H7077 = 107077             |
|       |       |        |         |    |                  | 0417  | 00547 | 070002 | STA 2     | RESTORE HALT TO LOCATION 2 |
|       |       |        |         |    |                  | 0418* |       |        |           |                            |
|       |       |        |         |    |                  | 0419  | 00550 | 065631 | LDR FVEN1 |                            |
|       |       |        |         |    |                  | 0420  | 00551 | 060001 | LDA R     |                            |
|       |       |        |         |    |                  | 0421  | 00552 | 051631 | CPA EVEN1 |                            |
|       |       |        |         |    |                  | 0422  | 00553 | 002001 | RSS       |                            |
|       |       |        |         |    |                  | 0423  | 00554 | 102000 | HLT 0     | LDA B FAILED               |
|       |       |        |         |    |                  | 0424* |       |        |           |                            |
|       |       |        |         |    |                  | 0425  | 00555 | 061632 | LDA 00D1  |                            |
|       |       |        |         |    |                  | 0426  | 00556 | 064000 | LDB A     |                            |
|       |       |        |         |    |                  | 0427  | 00557 | 055632 | CPA 00D1  |                            |
|       |       |        |         |    |                  | 0428  | 00560 | 002001 | RSS       |                            |
|       |       |        |         |    |                  | 0429  | 00561 | 102000 | HLT 0     | LDB A FAILED               |
|       |       |        |         |    |                  | 0430* |       |        |           |                            |
|       |       |        |         |    |                  | 0431  | 00562 | 007400 | CCB       |                            |
|       |       |        |         |    |                  | 0432  | 00563 | 002400 | CLA       |                            |
|       |       |        |         |    |                  | 0433  | 00564 | 070001 | STA R     |                            |
|       |       |        |         |    |                  | 0434  | 00565 | 006002 | SZB       |                            |
|       |       |        |         |    |                  | 0435  | 00566 | 102000 | HLT 0     | STA B FAILED               |
|       |       |        |         |    |                  | 0436* |       |        |           |                            |
|       |       |        |         |    |                  | 0437  | 00567 | 003400 | CCA       |                            |
|       |       |        |         |    |                  | 0438  | 00570 | 006400 | CLB       |                            |
|       |       |        |         |    |                  | 0439  | 00571 | 074000 | STB A     |                            |
|       |       |        |         |    |                  | 0440  | 00572 | 002002 | SZA       |                            |
|       |       |        |         |    |                  | 0441  | 00573 | 102000 | HLT 0     | STB A FAILED               |
|       |       |        |         |    |                  | 0442* |       |        |           |                            |
|       |       |        |         |    |                  | 0443  | 00574 | 061631 | LDA EVEN1 |                            |

0444 00575 065631 LDR EVEN1  
 0445 00576 050001 CPA R  
 0446 00577 002001 RSS  
 0447 00600 102000 HLT 0 CPA B FAILED  
 0448 00601 054000 CPH A  
 0449 00602 002001 RSS  
 0450 00603 102000 HLT 0 CPB A FAILED  
 0451\*  
 0452 00604 065625 LDR M1  
 0453 00605 002400 CLA  
 0454 00606 030001 JDR R  
 0455 00607 051625 CPA M1  
 0456 00610 002001 RSS  
 0457 00611 102000 HLT 0 IOR B FAILED  
 0458\*  
 0459 00612 007400 CCR  
 0460 00613 002400 CLA  
 0461 00614 020001 XOR R  
 0462 00615 051625 CPA M1  
 0463 00616 002001 RSS  
 0464 00617 102000 HLT 0 XOR B FAILED  
 0465\*  
 0466 00620 007400 CCH  
 0467 00621 061631 LDA EVEN1  
 0468 00622 010001 AND R  
 0469 00623 051631 CPA EVEN1  
 0470 00624 002001 RSS  
 0471 00625 102000 HLT 0 AND B FAILED  
 0472\*  
 0473 00626 065631 LDB EVEN1  
 0474 00627 002400 CLA  
 0475 00630 040001 ADA R  
 0476 00631 051631 CPA EVEN1  
 0477 00632 002001 RSS  
 0478 00633 102000 HLT 0 ADA R FAILED  
 0479\*  
 0480 00634 061632 LDA ODD1  
 0481 00635 006400 CLB  
 0482 00636 044000 ADR A  
 0483 00637 055632 CPR ODD1  
 0484 00640 002001 KSS  
 0485 00641 102000 HLT 0 ADR A FAILED  
 0486\*  
 0487 00642 002400 CLA  
 0488 00643 006400 CLB  
 0489 00644 006004 X20  
 0490 00645 006002 INB  
 0491 00646 024654 SZB  
 0492 00647 034000 ISZ A  
 0493 00650 102000 HLT 0 ISZ A FAILED - DID NOT SKIP  
 0494 00651 002002 SZA  
 0495 00652 102000 HLT 0 IS7 FAILED - A NOT 0  
 0496 00653 024665 JMP X22  
 0497 00654 034000 ISZ A  
 0498 00655 002001 RSS  
 0499 00656 102000 HLT 0 ISZ A FAILED - UNEXPECTED SKIP

0500 00657 050001 CPA R  
 0501 00660 024644 JMP X20  
 0502 00661 102000 HLT 0 ISZ A FAILED - BAD CONTENTS IN A  
 0503 00662 024644 JMP X20  
 0504\*  
 0505 00663 002400 CLA  
 0506 00664 006400 INB  
 0507 00665 002004 X22  
 0508 00666 002002 SZA  
 0509 00667 024675 JMP X23  
 0510 00670 034001 ISZ R  
 0511 00671 102000 HLT 0 ISZ B FAILED - DID NOT SKIP  
 0512 00672 006002 SZB  
 0513 00673 102000 HLT 0 ISZ FAILED - B NOT 0  
 0514 00674 024704 JMP X24  
 0515 00675 034001 ISZ R  
 0516 00676 002001 RSS  
 0517 00677 102000 HLT 0 ISZ B FAILED - UNEXPECTED SKIP  
 0518 00700 054000 CPH A  
 0519 00701 024665 JMP X22  
 0520 00702 102000 HLT 0 ISZ B FAILED - BAD CONTENTS IN B  
 0521 00703 024665 JMP X22  
 0522\*  
 0523 00704 061631 LDA EVEN1  
 0524 00705 050000 CPA A  
 0525 00706 002001 RSS  
 0526 00707 102000 HLT 0 CPA A FAILED  
 0527\*  
 0528 00710 065632 LDB ODD1  
 0529 00711 054001 CPR R  
 0530 00712 002001 RSS  
 0531 00713 102000 HLT 0 CPB B FAILED  
 0532\*  
 0533 00714 061632 LDA ODD1  
 0534 00715 060000 LDA A  
 0535 00716 050000 CPA A  
 0536 00717 002001 RSS  
 0537 00720 102000 HLT 0 LDA A/CPA A FAILED  
 0538\*  
 0539 00721 065631 LDH EVEN1  
 0540 00722 064001 LDR R  
 0541 00723 054001 CPH R  
 0542 00724 002001 RSS  
 0543 00725 102000 HLT 0 LDH B/CPB B FAILED  
 0544\*  
 0545 00726 003400 CCA  
 0546 00727 070000 STA A  
 0547 00730 051625 CPA M1  
 0548 00731 002001 RSS  
 0549 00732 102000 HLT 0 STA A FAILED  
 0550\*  
 0551 00733 065632 LDH ODD1  
 0552 00734 074001 STB R  
 0553 00735 055632 CPB ODD1  
 0554 00736 002001 RSS  
 0555 00737 102000 HLT 0 STR B FAILED

|       |       |        |                       |       |       |        |                                          |
|-------|-------|--------|-----------------------|-------|-------|--------|------------------------------------------|
| 0556* | 00740 | 061631 | LDA EVENI             | 0556* | 00771 | 000040 | CLE                                      |
| 0557  | 00741 | 040000 | ADA A                 | 0589  | 00772 | 002040 | SEZ                                      |
| 0558  | 00742 | 051632 | CPA ODD1              | 0590  | 00773 | 102000 | HLT 0                                    |
| 0559  | 00743 | 002001 | RSS                   | 0591* |       |        | CLE/SEZ FAILED                           |
| 0560  | 00744 | 102000 | HLT 0                 | 0592  | 00774 | 000040 | CLE                                      |
| 0561  | 00745 | 065632 | LDB ODD1              | 0593  | 00775 | 002041 | SEZ,RSS                                  |
| 0562* | 00746 | 044001 | ADB 0                 | 0594  | 00776 | 002001 | RSS                                      |
| 0563  | 00747 | 055633 | CPR K1                | 0595  | 00777 | 102000 | HLT 0                                    |
| 0564  | 00750 | 002001 | RSS                   | 0596* |       |        | CLE/SEZ,RSS/RSS FAILED                   |
| 0565  | 00751 | 102000 | HLT 0                 | 0597  | 01000 | 002300 | CCE                                      |
| 0566* | 00752 | 003400 | CCA                   | 0598  | 01001 | 002041 | SEZ,RSS                                  |
| 0569  | 00753 | 030000 | IOR A                 | 0599  | 01002 | 102000 | HLT 0                                    |
| 0570  | 00754 | 051625 | CPA M1                | 0600* |       |        | CCE/SEZ,RSS FAILED                       |
| 0571  | 00755 | 002001 | RSS                   | 0601  | 01003 | 002300 | CCE                                      |
| 0572  | 00756 | 102000 | HLT 0                 | 0602  | 01004 | 002040 | SEZ                                      |
| 0573  | 00757 | 003400 | CCA                   | 0603  | 01005 | 002001 | RSS                                      |
| 0574* | 00758 | 002001 | RSS                   | 0604  | 01006 | 102000 | HLT 0                                    |
| 0575  | 00759 | 003400 | CCA                   | 0605* |       |        | CCE/SEZ/RSS FAILED                       |
| 0576  | 00760 | 010000 | AND A                 | 0606  | 01007 | 103101 | CLO                                      |
| 0577  | 00761 | 051625 | CPA M1                | 0607  | 01010 | 102201 | SOC                                      |
| 0578  | 00762 | 002001 | RSS                   | 0608  | 01011 | 102000 | HLT 0                                    |
| 0579  | 00763 | 102000 | HLT 0                 | 0609* |       |        | CLO/SOC FAILED                           |
| 0580* | 00764 | 003400 | CCA                   | 0610  | 01012 | 103101 | CLO                                      |
| 0581  | 00765 | 020000 | XOR A                 | 0611  | 01013 | 102301 | SOS                                      |
| 0582  | 00766 | 002002 | SZA                   | 0612  | 01014 | 002001 | RSS                                      |
| 0583  | 00767 | 102000 | HLT 0                 | 0613  | 01015 | 102000 | HLT 0                                    |
| 0584* | 00770 | 000000 | NOP ***** MODULE LOOP | 0614* |       |        | CLO/SOS/RSS FAILED                       |
| 0585* |       |        |                       | 0615  | 01016 | 102101 | STO                                      |
| 0586  |       |        |                       | 0616  | 01017 | 102301 | SOS                                      |
|       |       |        |                       | 0617  | 01020 | 102000 | HLT 0                                    |
|       |       |        |                       | 0618* |       |        | STO/SOS FAILED                           |
|       |       |        |                       | 0619  | 01021 | 102101 | STO                                      |
|       |       |        |                       | 0620  | 01022 | 102201 | SOC                                      |
|       |       |        |                       | 0621  | 01023 | 002001 | RSS                                      |
|       |       |        |                       | 0622  | 01024 | 102000 | HLT 0                                    |
|       |       |        |                       | 0623* |       |        | STO/SOC/RSS FAILED                       |
|       |       |        |                       | 0624  | 01025 | 102101 | STO                                      |
|       |       |        |                       | 0625  | 01026 | 103301 | SOS C                                    |
|       |       |        |                       | 0626  | 01027 | 102000 | HLT 0                                    |
|       |       |        |                       | 0627  | 01030 | 102201 | SOC                                      |
|       |       |        |                       | 0628  | 01031 | 102000 | HLT 0                                    |
|       |       |        |                       | 0629* |       |        | SOS,C DID NOT CLEAR OV                   |
|       |       |        |                       | 0630* |       |        | CHECK F & OV RFSULTS FOR ADA INSTRUCTION |
|       |       |        |                       | 0631* |       |        |                                          |
|       |       |        |                       | 0632  | 01032 | 000040 | CLE                                      |
|       |       |        |                       | 0633  | 01033 | 103101 | CLO                                      |
|       |       |        |                       | 0634  | 01034 | 061634 | LDA PHAX                                 |
|       |       |        |                       | 0635  | 01035 | 041630 | ADA 1                                    |
|       |       |        |                       | 0636  | 01036 | 051635 | CPA HIT15                                |
|       |       |        |                       | 0637  | 01037 | 002001 | RSS                                      |
|       |       |        |                       | 0638  | 01040 | 102000 | HLT 0                                    |
|       |       |        |                       | 0639  | 01041 | 002040 | SEZ                                      |
|       |       |        |                       | 0640  | 01042 | 102000 | HLT 0                                    |
|       |       |        |                       | 0641  | 01043 | 102301 | SOS                                      |
|       |       |        |                       | 0642  | 01044 | 102000 | HLT 0                                    |
|       |       |        |                       | 0643* |       |        | OV NOT 1                                 |



|       |       |        |                                          |                     |  |  |  |
|-------|-------|--------|------------------------------------------|---------------------|--|--|--|
| 0644  | 01045 | 000040 | CLE                                      |                     |  |  |  |
| 0645  | 01046 | 103101 | CLO                                      |                     |  |  |  |
| 0646  | 01047 | 061625 | LDA M1                                   | ADD 177777 + 177777 |  |  |  |
| 0647  | 01050 | 041625 | LDA M2                                   |                     |  |  |  |
| 0648  | 01051 | 051626 | CPA M1                                   |                     |  |  |  |
| 0649  | 01052 | 002001 | RSS                                      |                     |  |  |  |
| 0650  | 01053 | 102000 | HLT 0                                    | SUM NOT 177776      |  |  |  |
| 0651  | 01054 | 002041 | SEZ,RSS                                  |                     |  |  |  |
| 0652  | 01055 | 102000 | HLT 0                                    | E NOT 1             |  |  |  |
| 0653  | 01056 | 102201 | SOC                                      |                     |  |  |  |
| 0654  | 01057 | 102000 | HLT 0                                    | OV NOT 0            |  |  |  |
| 0655* |       |        |                                          |                     |  |  |  |
| 0656  | 01060 | 000040 | CLE                                      |                     |  |  |  |
| 0657  | 01061 | 103101 | CLO                                      |                     |  |  |  |
| 0658  | 01062 | 061625 | LDA M1                                   | ADD 177777 + 000001 |  |  |  |
| 0659  | 01063 | 041630 | ADA .1                                   |                     |  |  |  |
| 0660  | 01064 | 002002 | SZA                                      |                     |  |  |  |
| 0661  | 01065 | 102000 | HLT 0                                    | SUM NOT 000000      |  |  |  |
| 0662  | 01066 | 002041 | SEZ,RSS                                  |                     |  |  |  |
| 0663  | 01067 | 102000 | HLT 0                                    | E NOT 1             |  |  |  |
| 0664  | 01070 | 102201 | SOC                                      |                     |  |  |  |
| 0665  | 01071 | 102000 | HLT 0                                    | OV NOT 0            |  |  |  |
| 0666* |       |        |                                          |                     |  |  |  |
| 0667  | 01072 | 000040 | CLE                                      |                     |  |  |  |
| 0668  | 01073 | 103101 | CLO                                      |                     |  |  |  |
| 0669  | 01074 | 002400 | CLA                                      |                     |  |  |  |
| 0670  | 01075 | 041627 | ADA .0                                   | ADD 000000 + 000000 |  |  |  |
| 0671  | 01076 | 002002 | SZA                                      |                     |  |  |  |
| 0672  | 01077 | 102000 | HLT 0                                    | SUM NOT 000000      |  |  |  |
| 0673  | 01100 | 002040 | SEZ                                      |                     |  |  |  |
| 0674  | 01101 | 102000 | HLT 0                                    | E NOT 0             |  |  |  |
| 0675  | 01102 | 102201 | SOC                                      |                     |  |  |  |
| 0676  | 01103 | 102000 | HLT 0                                    | OV NOT 0            |  |  |  |
| 0677* |       |        |                                          |                     |  |  |  |
| 0678  | 01104 | 000040 | CLE                                      |                     |  |  |  |
| 0679  | 01105 | 103101 | CLO                                      |                     |  |  |  |
| 0680  | 01106 | 061634 | LDA PMAX                                 | ADD 077777 + 077777 |  |  |  |
| 0681  | 01107 | 041634 | ADA PMAX                                 |                     |  |  |  |
| 0682  | 01110 | 051626 | CPA M2                                   |                     |  |  |  |
| 0683  | 01111 | 002001 | RSS                                      |                     |  |  |  |
| 0684  | 01112 | 102000 | HLT 0                                    | SUM NOT 177776      |  |  |  |
| 0685  | 01113 | 002040 | SEZ                                      |                     |  |  |  |
| 0686  | 01114 | 102000 | HLT 0                                    | E NOT 0             |  |  |  |
| 0687  | 01115 | 102301 | SOS                                      |                     |  |  |  |
| 0688  | 01116 | 102000 | HLT 0                                    | OV NOT 1            |  |  |  |
| 0689* |       |        |                                          |                     |  |  |  |
| 0690  | 01117 | 000040 | CLE                                      |                     |  |  |  |
| 0691  | 01120 | 103101 | CLO                                      |                     |  |  |  |
| 0692  | 01121 | 061635 | LDA RIT15                                | ADD 100000 + 100000 |  |  |  |
| 0693  | 01122 | 041635 | ADA RIT15                                |                     |  |  |  |
| 0694  | 01123 | 002002 | SZA                                      |                     |  |  |  |
| 0695  | 01124 | 102000 | HLT 0                                    | SUM NOT 000000      |  |  |  |
| 0696  | 01125 | 002041 | SEZ,RSS                                  |                     |  |  |  |
| 0697  | 01126 | 102000 | HLT 0                                    | E NOT 1             |  |  |  |
| 0698  | 01127 | 102301 | SOS                                      |                     |  |  |  |
| 0699  | 01130 | 102000 | HLT 0                                    | OV NOT 1            |  |  |  |
| 0700* |       |        |                                          |                     |  |  |  |
| 0701  | 01131 | 000040 | CLE                                      |                     |  |  |  |
| 0702  | 01132 | 103101 | CLO                                      |                     |  |  |  |
| 0703  | 01133 | 061635 | LDA RIT15                                | ADD 100000 + 077777 |  |  |  |
| 0704  | 01134 | 041634 | ADA PMAX                                 |                     |  |  |  |
| 0705  | 01135 | 051626 | CPA M1                                   |                     |  |  |  |
| 0706  | 01136 | 002001 | RSS                                      |                     |  |  |  |
| 0707  | 01137 | 102000 | HLT 0                                    | SUM NOT 177777      |  |  |  |
| 0708  | 01140 | 002040 | SEZ                                      |                     |  |  |  |
| 0709  | 01141 | 102000 | HLT 0                                    | E NOT 0             |  |  |  |
| 0710  | 01142 | 102201 | SOC                                      |                     |  |  |  |
| 0711  | 01143 | 102000 | HLT 0                                    | OV NOT 0            |  |  |  |
| 0712* |       |        |                                          |                     |  |  |  |
| 0713  | 01144 | 002300 | CCE                                      | F + 1               |  |  |  |
| 0714  | 01145 | 102101 | STO                                      | OV + 1              |  |  |  |
| 0715  | 01146 | 061630 | LDA .1                                   |                     |  |  |  |
| 0716  | 01147 | 041630 | ADA .1                                   |                     |  |  |  |
| 0717  | 01150 | 002041 | SEZ,RSS                                  |                     |  |  |  |
| 0718  | 01151 | 102000 | HLT 0                                    | E NOT 1             |  |  |  |
| 0719  | 01152 | 102301 | SOS                                      |                     |  |  |  |
| 0720  | 01153 | 102000 | HLT 0                                    | OV NOT 1            |  |  |  |
| 0721* |       |        |                                          |                     |  |  |  |
| 0722* |       |        | CHECK F & OV RESULTS FOR ADB INSTRUCTION |                     |  |  |  |
| 0723* |       |        |                                          |                     |  |  |  |
| 0724  | 01154 | 000040 | CLE                                      |                     |  |  |  |
| 0725  | 01155 | 103101 | CLO                                      |                     |  |  |  |
| 0726  | 01156 | 006400 | CLR                                      |                     |  |  |  |
| 0727  | 01157 | 045627 | ADR .0                                   | ADD 000000 + 000000 |  |  |  |
| 0728  | 01160 | 006002 | SZR                                      |                     |  |  |  |
| 0729  | 01161 | 102000 | HLT 0                                    | SUM NOT 000000      |  |  |  |
| 0730  | 01162 | 002040 | SEZ                                      |                     |  |  |  |
| 0731  | 01163 | 102000 | HLT 0                                    | E NOT 0             |  |  |  |
| 0732  | 01164 | 102201 | SOC                                      |                     |  |  |  |
| 0733  | 01165 | 102000 | HLT 0                                    | OV NOT 0            |  |  |  |
| 0734* |       |        |                                          |                     |  |  |  |
| 0735  | 01166 | 000040 | CLE                                      |                     |  |  |  |
| 0736  | 01167 | 103101 | CLO                                      |                     |  |  |  |
| 0737  | 01170 | 065634 | LDR PMAX                                 | ADD 077777 + 077777 |  |  |  |
| 0738  | 01171 | 045634 | ADB PMAX                                 |                     |  |  |  |
| 0739  | 01172 | 055626 | CPB M2                                   |                     |  |  |  |
| 0740  | 01173 | 002001 | RSS                                      |                     |  |  |  |
| 0741  | 01174 | 102000 | HLT 0                                    | SUM NOT 177776      |  |  |  |
| 0742  | 01175 | 002040 | SEZ                                      |                     |  |  |  |
| 0743  | 01176 | 102000 | HLT 0                                    | E NOT 0             |  |  |  |
| 0744  | 01177 | 102301 | SOS                                      |                     |  |  |  |
| 0745  | 01200 | 102000 | HLT 0                                    | OV NOT 1            |  |  |  |
| 0746* |       |        |                                          |                     |  |  |  |
| 0747  | 01201 | 000040 | CLE                                      |                     |  |  |  |
| 0748  | 01202 | 103101 | CLO                                      |                     |  |  |  |
| 0749  | 01203 | 065634 | LDR PMAX                                 | ADD 077777 + 000001 |  |  |  |
| 0750  | 01204 | 045630 | ADB .1                                   |                     |  |  |  |
| 0751  | 01205 | 055635 | CPB RIT15                                |                     |  |  |  |
| 0752  | 01206 | 002001 | RSS                                      |                     |  |  |  |
| 0753  | 01207 | 102000 | HLT 0                                    | SUM NOT 100000      |  |  |  |
| 0754  | 01210 | 002040 | SEZ                                      |                     |  |  |  |
| 0755  | 01211 | 102000 | HLT 0                                    | E NOT 0             |  |  |  |

|       |              |           |  |          |  |  |  |  |  |
|-------|--------------|-----------|--|----------|--|--|--|--|--|
| 0756  | 01212 102301 | SOS       |  |          |  |  |  |  |  |
| 0757  | 01213 102000 | HLT 0     |  | OV NOT 1 |  |  |  |  |  |
| 0758* |              | CLE       |  |          |  |  |  |  |  |
| 0759  | 01214 000040 | CLO       |  |          |  |  |  |  |  |
| 0760  | 01215 103101 | LDB M1    |  |          |  |  |  |  |  |
| 0761  | 01216 065625 | ADR M1    |  |          |  |  |  |  |  |
| 0762  | 01217 045625 | CPR M2    |  |          |  |  |  |  |  |
| 0763  | 01220 055626 | RSS       |  |          |  |  |  |  |  |
| 0764  | 01221 002001 | HLT 0     |  |          |  |  |  |  |  |
| 0765  | 01222 102000 | SEZ,RSS   |  |          |  |  |  |  |  |
| 0766  | 01223 002041 | HLT 0     |  |          |  |  |  |  |  |
| 0767  | 01224 102000 | SOC       |  |          |  |  |  |  |  |
| 0768  | 01225 102201 | HLT 0     |  |          |  |  |  |  |  |
| 0769  | 01226 102000 | CLE       |  |          |  |  |  |  |  |
| 0770* |              | CLO       |  |          |  |  |  |  |  |
| 0771  | 01227 000040 | LDR M1    |  |          |  |  |  |  |  |
| 0772  | 01230 103101 | ADR .1    |  |          |  |  |  |  |  |
| 0773  | 01231 065625 | SZR       |  |          |  |  |  |  |  |
| 0774  | 01232 045630 | HLT 0     |  |          |  |  |  |  |  |
| 0775  | 01233 006002 | SEZ,RSS   |  |          |  |  |  |  |  |
| 0776  | 01234 102000 | HLT 0     |  |          |  |  |  |  |  |
| 0777  | 01235 002041 | SOC       |  |          |  |  |  |  |  |
| 0778  | 01236 102000 | HLT 0     |  |          |  |  |  |  |  |
| 0779  | 01237 102201 | CLE       |  |          |  |  |  |  |  |
| 0780  | 01240 102000 | CLO       |  |          |  |  |  |  |  |
| 0781* |              | LDB RIT15 |  |          |  |  |  |  |  |
| 0782  | 01241 000040 | ADB RIT15 |  |          |  |  |  |  |  |
| 0783  | 01242 103101 | SZR       |  |          |  |  |  |  |  |
| 0784  | 01243 065635 | HLT 0     |  |          |  |  |  |  |  |
| 0785  | 01244 045635 | SEZ,RSS   |  |          |  |  |  |  |  |
| 0786  | 01245 006002 | HLT 0     |  |          |  |  |  |  |  |
| 0787  | 01246 102000 | SOC       |  |          |  |  |  |  |  |
| 0788  | 01247 002041 | HLT 0     |  |          |  |  |  |  |  |
| 0789  | 01250 102000 | CLE       |  |          |  |  |  |  |  |
| 0790  | 01251 102301 | CLO       |  |          |  |  |  |  |  |
| 0791  | 01252 102000 | LDB RIT15 |  |          |  |  |  |  |  |
| 0792* |              | ADB PMAX  |  |          |  |  |  |  |  |
| 0793  | 01253 000040 | CPR M1    |  |          |  |  |  |  |  |
| 0794  | 01254 103101 | RSS       |  |          |  |  |  |  |  |
| 0795  | 01255 065635 | HLT 0     |  |          |  |  |  |  |  |
| 0796  | 01256 045634 | SEZ       |  |          |  |  |  |  |  |
| 0797  | 01257 055625 | HLT 0     |  |          |  |  |  |  |  |
| 0798  | 01260 002001 | SOC       |  |          |  |  |  |  |  |
| 0799  | 01261 102000 | HLT 0     |  |          |  |  |  |  |  |
| 0800  | 01262 002040 | CLE       |  |          |  |  |  |  |  |
| 0801  | 01263 102000 | CLO       |  |          |  |  |  |  |  |
| 0802  | 01264 102201 | LDB RIT15 |  |          |  |  |  |  |  |
| 0803  | 01265 102000 | ADB PMAX  |  |          |  |  |  |  |  |
| 0804* |              | CPR M1    |  |          |  |  |  |  |  |
| 0805  | 01266 002300 | RSS       |  |          |  |  |  |  |  |
| 0806  | 01267 102101 | HLT 0     |  |          |  |  |  |  |  |
| 0807  | 01270 065630 | SEZ       |  |          |  |  |  |  |  |
| 0808  | 01271 045630 | HLT 0     |  |          |  |  |  |  |  |
| 0809  | 01272 002041 | SOC       |  |          |  |  |  |  |  |
| 0810  | 01273 102000 | HLT 0     |  |          |  |  |  |  |  |
| 0811  | 01274 102301 | SOS       |  |          |  |  |  |  |  |

|       |              |           |  |  |  |  |  |  |  |
|-------|--------------|-----------|--|--|--|--|--|--|--|
| 0812  | 01275 102000 | HLT 0     |  |  |  |  |  |  |  |
| 0813* |              | CLE       |  |  |  |  |  |  |  |
| 0814  | 01276 000000 | CLO       |  |  |  |  |  |  |  |
|       |              | LDR M1    |  |  |  |  |  |  |  |
|       |              | ADR .1    |  |  |  |  |  |  |  |
|       |              | SZR       |  |  |  |  |  |  |  |
|       |              | HLT 0     |  |  |  |  |  |  |  |
|       |              | SEZ,RSS   |  |  |  |  |  |  |  |
|       |              | HLT 0     |  |  |  |  |  |  |  |
|       |              | SOC       |  |  |  |  |  |  |  |
|       |              | HLT 0     |  |  |  |  |  |  |  |
|       |              | CLE       |  |  |  |  |  |  |  |
|       |              | CLO       |  |  |  |  |  |  |  |
|       |              | LDB RIT15 |  |  |  |  |  |  |  |
|       |              | ADB RIT15 |  |  |  |  |  |  |  |
|       |              | SZR       |  |  |  |  |  |  |  |
|       |              | HLT 0     |  |  |  |  |  |  |  |
|       |              | SEZ,RSS   |  |  |  |  |  |  |  |
|       |              | HLT 0     |  |  |  |  |  |  |  |
|       |              | SOC       |  |  |  |  |  |  |  |
|       |              | HLT 0     |  |  |  |  |  |  |  |
|       |              | CLE       |  |  |  |  |  |  |  |
|       |              | CLO       |  |  |  |  |  |  |  |
|       |              | LDB RIT15 |  |  |  |  |  |  |  |
|       |              | ADB PMAX  |  |  |  |  |  |  |  |
|       |              | CPR M1    |  |  |  |  |  |  |  |
|       |              | RSS       |  |  |  |  |  |  |  |
|       |              | HLT 0     |  |  |  |  |  |  |  |
|       |              | SEZ       |  |  |  |  |  |  |  |
|       |              | HLT 0     |  |  |  |  |  |  |  |
|       |              | SOC       |  |  |  |  |  |  |  |
|       |              | HLT 0     |  |  |  |  |  |  |  |
|       |              | CCF       |  |  |  |  |  |  |  |
|       |              | STO       |  |  |  |  |  |  |  |
|       |              | LDB .1    |  |  |  |  |  |  |  |
|       |              | ADR .1    |  |  |  |  |  |  |  |
|       |              | SEZ,RSS   |  |  |  |  |  |  |  |
|       |              | HLT 0     |  |  |  |  |  |  |  |
|       |              | SOS       |  |  |  |  |  |  |  |



```

0816* CHECK JMP INDIRECT
0817*
0818 01277 125653 JMP IA1,I IA1 = DEF IRI
0819 01300 102000 HLT 0 JMP,I FAILED - 1 INDIRECT LEVEL
0820*
0821 01301 125654 IRI JMP IA2,I
0822 01302 102000 HLT 0 JMP,I FAILED - 2 INDIRECT LEVELS
0823*
0824* CHECK JSR INDIRECT
0825*
0826 01303 002400 IR2 CLA
0827 01304 071307 STA RA3
0828 01305 115656 JSR IA3,I
0829 01306 102000 HLT 0 JSB,I FAILED - 1 INDIRECT LEVEL
0830 01307 000000 RA3 NOP
0831 01310 061307 LDA RA3
0832 01311 051650 CPA ADDR2
0833 01312 002001 RSS
0834 01313 102000 HLT 0 JSB,I FAILED - BAD RETURN ADDR.
0835*
0836 01314 002400 CLA
0837 01315 071320 STA RA4
0838 01316 115657 JSR IA4,I
0839 01317 102000 HLT 0 JSB,I FAILED - 2 INDIRECT LEVELS
0840 01320 000000 RA4 NOP
0841 01321 061320 LDA RA4
0842 01322 051651 CPA ADDR2
0843 01323 002001 RSS
0844 01324 102000 HLT 0 JSB,I FAILED - BAD RETURN ADDR.
0845*
0846* CHECK LDA INDIRECT
0847*
0848 01325 002400 CLA
0849 01326 161661 LDA IA5,I
0850 01327 051625 CPA M1
0851 01330 002001 RSS
0852 01331 102000 HLT 0 LDA,I FAILED - 1 INDIRECT LEVEL
0853*
0854 01332 002400 CLA
0855 01333 161662 LDA IA6,I
0856 01334 051625 CPA M1
0857 01335 002001 RSS
0858 01336 102000 HLT 0 LDA,I FAILED - 2 INDIRECT LEVELS
0859*
0860* CHECK LDB INDIRECT
0861*
0862 01337 006400 CLB
0863 01340 165661 LDR IA5,I
0864 01341 055625 CPB M1
0865 01342 002001 RSS
0866 01343 102000 HLT 0 LDB,I FAILED - 1 INDIRECT LEVEL
0867*
0868 01344 006400 CLB
0869 01345 165662 LDR IA6,I
0870 01346 055625 CPB M1
0871 01347 002001 RSS
    
```

```

0872 01350 102000 HLT 0 LDR,I FAILED - 2 INDIRECT LEVELS
0873*
0874* CHECK CPA INDIRECT
0875*
0876 01351 061631 LDA FVEN1
0877 01352 151663 CPA IA7,I
0878 01353 002001 RSS
0879 01354 102000 HLT 0 CPA,I FAILED - 1 INDIRECT LEVEL
0880*
0881 01355 061631 LDA FVEN1
0882 01356 151664 CPA IA8,I
0883 01357 002001 RSS
0884 01360 102000 HLT 0 CPA,I FAILED - 2 INDIRECT LEVELS
0885*
0886* CHECK CPR INDIRECT
0887*
0888 01361 065631 LDR FVEN1
0889 01362 155663 CPA IA7,I
0890 01363 002001 RSS
0891 01364 102000 HLT 0 CPR,I FAILED - 1 INDIRECT LEVEL
0892*
0893 01365 065631 LDR FVEN1
0894 01366 155664 CPA IA8,I
0895 01367 002001 RSS
0896 01370 102000 HLT 0 CPR,I FAILED - 2 INDIRECT LEVELS
0897*
0898* CHECK STA INDIRECT
0899*
0900 01371 003400 CCA
0901 01372 171665 STA IA9,I
0902 01373 051640 CPA T1
0903 01374 002001 RSS
0904 01375 102000 HLT 0 STA,I FAILED - 1 INDIRECT LEVEL
0905*
0906 01376 002400 CLA
0907 01377 171666 STA IA10,I
0908 01400 051640 CPA T1
0909 01401 002001 RSS
0910 01402 102000 HLT 0 STA,I FAILED - 2 INDIRECT LEVELS
0911*
0912* CHECK STR INDIRECT
0913*
0914 01403 007400 CCR
0915 01404 175665 STR IA9,I
0916 01405 055640 CPB T1
0917 01406 002001 RSS
0918 01407 102000 HLT 0 STR,I FAILED - 1 INDIRECT LEVEL
0919*
0920 01410 006400 CLB
0921 01411 175666 STR IA10,I
0922 01412 055640 CPB T1
0923 01413 002001 RSS
0924 01414 102000 HLT 0 STR,I FAILED - 2 INDIRECT LEVELS
0925*
0926* CHECK ADA INDIRECT
0927*
    
```

PAGE 0023 #01 INDIRECT ADDRESSING TESTS

```

0928 01415 061631 LDA FVEN1 EVEN1 = 052525
0929 01416 141663 ADA IA7,I IA7 = DEF EVEN1
0930 01417 051632 CPA ODD1 EXPECT A = 125252
0931 01420 002001 RSS
0932 01421 102000 HLT 0 ADA,I FAILED - 1 INDIRECT LEVEL
0933*
0934 01422 061631 LDA EVEN1
0935 01423 141664 ADA IAB,I IAB = DEF IA7,I
0936 01424 051632 CPA ODD1
0937 01425 002001 RSS
0938 01426 102000 HLT 0 ADA,I FAILED - 2 INDIRECT LEVELS
0939*
0940* CHECK ADR INDIRECT
0941*
0942 01427 065631 LDR EVEN1 EVEN1 = 052525
0943 01430 145663 ADB IA7,I IA7 = DEF FVEN1
0944 01431 055632 CPB ODD1 EXPECT H = 125252
0945 01432 002001 RSS
0946 01433 102000 HLT 0 ADB,I FAILED - 1 INDIRECT LEVEL
0947*
0948 01434 065631 LDB EVEN1
0949 01435 145664 ADB IAB,I IAB = DEF IA7,I
0950 01436 055632 CPB ODD1
0951 01437 002001 RSS
0952 01440 102000 HLT 0 ADB,I FAILED - 2 INDIRECT LEVELS
0953*
0954* CHECK AND INDIRECT
0955*
0956 01441 003400 CCA
0957 01442 111663 AND IA7,I IA7 = DEF EVEN1
0958 01443 051631 CPA EVEN1
0959 01444 002001 RSS
0960 01445 102000 HLT 0 AND,I FAILED - 1 INDIRECT LEVEL
0961*
0962 01446 003400 CCA
0963 01447 111664 AND IAB,I IAB = DEF EVEN1
0964 01450 051631 CPA FVEN1
0965 01451 002001 RSS
0966 01452 102000 HLT 0 AND,I FAILED - 2 INDIRECT LEVELS
0967*
0968* CHECK IOR INDIRECT
0969*
0970 01453 002400 CLA
0971 01454 131663 IOR IA7,I IA7 = DEF EVEN1
0972 01455 051631 CPA EVEN1
0973 01456 002001 RSS
0974 01457 102000 HLT 0 IOR,I FAILED - 1 INDIRECT LEVEL
0975*
0976 01460 002400 CLA
0977 01461 131664 IOR IAB,I IAB = DEF IA7,I
0978 01462 051631 CPA FVEN1
0979 01463 002001 RSS
0980 01464 102000 HLT 0 IOR,I FAILED - 2 INDIRECT LEVELS
0981*
0982* CHECK XOR INDIRECT
0983*

```

PAGE 0024 #01 INDIRECT ADDRESSING TESTS

```

0984 01465 003400 CCA
0985 01466 121663 XOR IA7,I IA7 = DEF EVEN1
0986 01467 051632 CPA ODD1
0987 01470 002001 RSS
0988 01471 102000 HLT 0 XOR,I FAILED - 1 INDIRECT LEVEL
0989*
0990 01472 003400 CCA
0991 01473 121664 XOR IAB,I IAB = DEF IA7,I
0992 01474 051632 CPA ODD1
0993 01475 002001 RSS
0994 01476 102000 HLT 0 XOR,I FAILED - 2 INDIRECT LEVELS
0995*
0996* CHECK ISZ INDIRECT
0997*
0998 01477 003400 CCA
0999 01500 071640 STA T1 T1 = 177777
1000 01501 135665 ISZ IA9,I IA9 = DEF T1
1001 01502 102000 HLT 0 ISZ,I FAILED - 1 INDIRECT LEVEL
1002 01503 061640 LDA T1
1003 01504 002002 SZA
1004 01505 102000 HLT 0 ISZ,I FAILED - 1 INDIRECT LEVEL
1005*
1006 01506 003400 CCA
1007 01507 071640 STA T1 T1 = 177777
1008 01510 135666 ISZ IA10,I IA10 = DEF IA9,I
1009 01511 102000 HLT 0 ISZ,I FAILED - 2 INDIRECT LEVELS
1010 01512 061640 LDA T1
1011 01513 002002 SZA
1012 01514 102000 HLT 0 ISZ,I FAILED - 2 INDIRECT LEVELS
1013*
1014 01515 000000 NOP ***** MODULE LOOP

```

|       |       |        |           |                             |                |       |       |        |             |                                   |
|-------|-------|--------|-----------|-----------------------------|----------------|-------|-------|--------|-------------|-----------------------------------|
| 1016  | 01516 | 161676 | LDA .P1,I | .P1 = DEF TBL.1,            | TBL.1 = 015366 | 1072  | 01575 | 102000 | HLT 0       | AND,I FAILED                      |
| 1017  | 01517 | 051700 | CPA K10   | K10 = 015366                |                | 1073* | 01576 | 002400 | CLA         |                                   |
| 1018  | 01520 | 002001 | RSS       |                             |                | 1074  | 01577 | 141677 | ADA .P2,I   | .P2 = DEF TBL.2, TBL.2 = 051463   |
| 1019  | 01521 | 102000 | HLT 0     | LDA,I FAILED                |                | 1075  | 01577 | 051701 | CPA K11     | K11 = 051463                      |
| 1020* | 01522 | 165677 | LDB .P2,I | .P2 = DEF TBL.2,            | TBL.2 = 051463 | 1076  | 01600 | 002001 | RSS         |                                   |
| 1021  | 01523 | 055701 | CPB K11   | K11 = 051463                |                | 1077  | 01601 | 102000 | HLT 0       | ADA,I FAILED                      |
| 1022  | 01524 | 002001 | RSS       |                             |                | 1078  | 01602 | 102000 | HLT 0       |                                   |
| 1023  | 01525 | 102000 | HLT 0     | LDB,I FAILED                |                | 1079* | 01603 | 006400 | CLB         |                                   |
| 1024* | 01526 | 061701 | LDA K11   | K11 = 051463                |                | 1080  | 01604 | 145676 | ADB .P1,I   | .P1 = DEF TBL.1, TBL.1 = 015366   |
| 1026  | 01527 | 151677 | CPA .P2,I | .P2 = DEF TBL.2,            | TBL.2 = 051463 | 1082  | 01605 | 055700 | CPB K10     | K10 = 015366                      |
| 1028  | 01530 | 002001 | RSS       |                             |                | 1083  | 01606 | 002001 | RSS         |                                   |
| 1029  | 01531 | 102000 | HLT 0     | CPA,I FAILED                |                | 1084  | 01607 | 102000 | HLT 0       | ADB,I FAILED                      |
| 1030* | 01532 | 065700 | LDB K10   | K10 = 015366                |                | 1085* | 01610 | 125704 | JMP JMP1A,I | JMP TO JMP1(INDIRECT), THEN JMP2  |
| 1031  | 01533 | 155676 | CPB .P1,I | .P1 = DEF TBL.1,            | TBL.1 = 015366 | 1086  | 01611 | 102000 | HLT 0       | JMP,I FAILED                      |
| 1032  | 01534 | 002001 | RSS       |                             |                | 1087  | 01612 | 002400 | JMP2        |                                   |
| 1033  | 01535 | 102000 | HLT 0     | CPB,I FAILED                |                | 1088* | 01613 | 171705 | STA SRIA,I  | SRIA = DEF SRI < SRI ← NOP>       |
| 1034  | 01536 | 003400 | CCA T2A,I | T2A = DEF T2                |                | 1089  | 01614 | 115705 | JSB SRIA,I  | JSB,I FAILED                      |
| 1036  | 01537 | 171703 | CPA T2A,I |                             |                | 1090  | 01615 | 102000 | .P3         |                                   |
| 1037  | 01540 | 151703 | RSS       |                             |                | 1091  | 01616 | 161705 | .P4         |                                   |
| 1038  | 01541 | 002001 | RSS       |                             |                | 1092  | 01617 | 051706 | CPA .ADR3   | .ADR3 = DEF .P3                   |
| 1039  | 01542 | 102000 | HLT 0     | STA,I/CPA,I FAILED          |                | 1093  | 01621 | 102000 | HLT 0       | JSB,I FAILED = BAD RETURN ADDRESS |
| 1040  | 01543 | 065631 | LDB EVEN1 | EVEN1 = 052525              |                | 1094  | 01622 | 000000 | NOP         | ***** MODULE LOOP                 |
| 1041* | 01544 | 175703 | STR T2A,I |                             |                | 1095  | 01623 | 025777 | JMP PG1     | GOTO END OF PAGE 0                |
| 1043  | 01545 | 155703 | CPB T2A,I |                             |                | 1100  | 01624 | 102000 | HLT 0       | JMP FAILED                        |
| 1044  | 01546 | 002001 | RSS       |                             |                | 1101  | 01625 | 177777 | DEC -1      |                                   |
| 1045  | 01547 | 102000 | HLT 0     | STB,I/CPB,I FAILED          |                | 1103  | 01626 | 177776 | DEC -2      |                                   |
| 1046  | 01548 | 102000 | HLT 0     |                             |                | 1104  | 01627 | 000000 | DEC 0       |                                   |
| 1047* | 01550 | 003400 | CCA T2A,I | T2A = DEF T2                |                | 1105  | 01630 | 000001 | DEC 1       |                                   |
| 1048  | 01551 | 171703 | STA T2A,I | ISZ,I FAILED = DID NOT SKIP |                | 1106  | 01631 | 052525 | FVEN1       | OCT 52525                         |
| 1049  | 01552 | 135703 | ISZ T2A,I |                             |                | 1107  | 01632 | 125252 | DD01        | OCT 125252                        |
| 1050  | 01553 | 102000 | HLT 0     |                             |                | 1108  | 01633 | 052524 | K1          | OCT 52524                         |
| 1051  | 01554 | 161703 | LDA T2A,I | ISZ,I FAILED = T2 NOT 0     |                | 1109  | 01634 | 077777 | PHAX        | OCT 77777                         |
| 1052  | 01555 | 002002 | SZA       |                             |                | 1110  | 01635 | 100000 | BIT15       | OCT 100000                        |
| 1053  | 01556 | 102000 | HLT 0     |                             |                | 1111  | 01636 | 102000 | HLT0        | HLT 0                             |
| 1054  | 01557 | 002400 | CLA       |                             |                | 1112  | 01637 | 107077 | H7077       | OCT 107077                        |
| 1055* | 01558 | 131676 | IOR .P1,I | .P1 = DEF TBL.1,            | TBL.1 = 015366 | 1113  | 01640 | 000000 | T1          | NOP                               |
| 1057  | 01560 | 051700 | CPA K10   | K10 = 015366                |                | 1114  | 01641 | 000453 | ADDR1       | DEF X1                            |
| 1059  | 01562 | 002001 | RSS       |                             |                | 1115  | 01642 | 000531 | ADDR3       | DEF P3                            |
| 1060  | 01563 | 102000 | HLT 0     | IOR,I FAILED                |                | 1116  | 01643 | 000542 | ADDR4       | DEF P4                            |
| 1061* | 01564 | 003400 | CCA       |                             |                | 1117  | 01644 | 024522 | JR1         | JMP RTN1                          |
| 1062  | 01565 | 121676 | XOR .P1,I | .P1 = DEF TBL.1,            | TBL.1 = 015366 | 1118  | 01645 | 024526 | JR2         | JMP RTN2                          |
| 1063  | 01566 | 051702 | CPA K12   | K12 = 102411                |                | 1119  | 01646 | 024532 | JR3         | JMP RTN3                          |
| 1064  | 01567 | 002001 | RSS       |                             |                | 1120  | 01647 | 024543 | JR4         | JMP RTN4                          |
| 1065  | 01568 | 102000 | HLT 0     | XOR,I FAILED                |                | 1121  | 00000 | A      | F0U 0       |                                   |
| 1066  | 01571 | 003400 | CCA       |                             |                | 1122  | 00001 | R      | F0U 1       |                                   |
| 1067* | 01572 | 111676 | AND .P1,I | .P1 = DEF TBL.1,            | TBL.1 = 015366 | 1123  | 00001 |        |             |                                   |
| 1069  | 01573 | 051700 | CPA K10   | K10 = 015366                |                |       |       |        |             |                                   |
| 1070  | 01574 | 002001 | RSS       |                             |                |       |       |        |             |                                   |

|       |       |        |       |      |        |       |       |        |     |        |                              |
|-------|-------|--------|-------|------|--------|-------|-------|--------|-----|--------|------------------------------|
| 1124* | 01650 | 001306 | ADDR2 | DEF  | RA3=1  | 1174  | 02400 | 163371 | LDA | K11A,I | K11 = DEF K11, K11 = 051463  |
| 1125  | 01651 | 001317 | ADDR1 | DEF  | RA4=1  | 1175  | 02001 | 053406 | CPA | TBL.2  | TBL.2 = 051463               |
| 1126  | 01652 | 003217 | ADDR7 | DEF  | Z1     | 1176  | 02002 | 002000 | RSS |        |                              |
| 1127  | 01652 | 003217 | ADDR7 | DEF  | Z1     | 1176  | 02003 | 102000 | HLT | 0      | LDA,I FAILED                 |
| 1128  | 01653 | 001301 | IA1   | DEF  | IR1    | 1177* |       |        |     |        |                              |
| 1129  | 01654 | 001655 | IA2   | DEF  | **+1,I | 1178  | 02004 | 167370 | LDR | K10A,I | K10A = DEF K10, K10 = 015366 |
| 1130  | 01655 | 001303 | DEF   | IR2  |        | 1179  | 02005 | 057400 | CPB | TBL.1  | TBL.1 = 015366               |
| 1131  | 01656 | 001307 | IA3   | DEF  | RA3    | 1180  | 02006 | 002200 | RSS |        |                              |
| 1132  | 01657 | 001660 | IA4   | DEF  | **+1,I | 1181  | 02007 | 102000 | HLT | 0      | LDR,I FAILED                 |
| 1133  | 01660 | 001320 | DEF   | RA4  |        | 1182* |       |        |     |        |                              |
| 1134  | 01661 | 001625 | IA5   | DEF  | M1     | 1183  | 02010 | 063400 | LDA | TBL.1  | TBL.1 = 015366               |
| 1135  | 01662 | 001661 | IA6   | DEF  | IA5,I  | 1184  | 02011 | 153370 | CPA | K10A,I | K10A = DEF K10, K10 = 015366 |
| 1136  | 01663 | 001631 | IA7   | DEF  | EVEN1  | 1185  | 02012 | 002001 | RSS |        |                              |
| 1137  | 01664 | 001663 | IA8   | DEF  | IA7,I  | 1186  | 02013 | 102000 | HLT | 0      | CPA,I FAILED                 |
| 1138  | 01665 | 001640 | IA9   | DEF  | T1     | 1187* |       |        |     |        |                              |
| 1139  | 01666 | 001665 | IA10  | DEF  | IA9,I  | 1188  | 02014 | 067406 | LDB | TBL.2  | TBL.2 = 051463               |
| 1140  | 01667 | 034075 | K7    | DEC  | 14397  | 1189  | 02015 | 157371 | CPB | K11A,I | K11A = DEF K11, K11 = 051463 |
| 1141* |       |        |       |      |        | 1190  | 02016 | 002001 | RSS |        |                              |
| 1142  | 01670 | 002542 | IR11  | DEF  | RA11   | 1191  | 02017 | 102000 | HLT | 0      | CPB,I FAILED                 |
| 1143  | 01671 | 002545 | IR12  | DEF  | RA12   | 1192* |       |        |     |        |                              |
| 1144  | 01672 | 002552 | IR13  | DEF  | X13    | 1193  | 02020 | 061631 | LDA | EVEN1  |                              |
| 1145  | 01673 | 002567 | IR14  | DEF  | X14    | 1194  | 02021 | 173372 | STA | T1A,I  | T1A = DEF T1                 |
| 1146  | 01674 | 002551 | ADR13 | DEF  | P13    | 1195  | 02022 | 051640 | CPA | T1     |                              |
| 1147  | 01675 | 002566 | ADR14 | DEF  | P14    | 1196  | 02023 | 002001 | RSS |        |                              |
| 1148* |       |        |       |      |        | 1197  | 02024 | 102000 | HLT | 0      | STA,I/CPA FAILED             |
| 1149  | 01676 | 003400 | .P1   | DEF  | TBL.1  | 1198* |       |        |     |        |                              |
| 1150  | 01677 | 003406 | .P2   | DEF  | TBL.2  | 1199  | 02025 | 065632 | LDB | 0DD1   |                              |
| 1151  | 01700 | 015366 | K10   | OCT  | 015366 | 1200  | 02026 | 177372 | STR | T1A,I  | T1A = DEF T1                 |
| 1152  | 01701 | 051463 | K11   | OCT  | 051463 | 1201  | 02027 | 055640 | CPB | T1     |                              |
| 1153  | 01702 | 162411 | K12   | OCT  | 162411 | 1202  | 02030 | 002001 | RSS |        |                              |
| 1154  | 01703 | 003475 | T2A   | DEF  | T2     | 1203  | 02031 | 102000 | HLT | 0      | STR,I/CPB FAILED             |
| 1155  | 01704 | 003500 | JMP1A | DEF  | JMP1   | 1204* |       |        |     |        |                              |
| 1156  | 01705 | 003476 | SRI1A | DEF  | SRI1   | 1205  | 02032 | 003400 | CCA |        |                              |
| 1157  | 01706 | 001615 | .ADR3 | DEF  | .P3    | 1206  | 02033 | 071640 | STA | T1     |                              |
| 1158  | 01707 | 002223 | P99A  | DEF  | P99    | 1207  | 02034 | 137372 | ISZ | T1A,I  | T1A = DEF T1                 |
| 1159  | 01710 | 000002 | FCA   | DEF  | 2      | 1208  | 02035 | 102000 | HLT | 0      | ISZ,I FAILED - DID NOT SKIP  |
| 1160  | 01711 | 003677 | LCA   | DEF  | 3677B  | 1209  | 02036 | 061640 | LDA | T1     |                              |
| 1161* |       |        |       |      |        | 1210  | 02037 | 002002 | SZA |        |                              |
| 1162  | 01712 | 000000 | JSB7  | NOP  |        | 1211  | 02040 | 102000 | HLT | 0      | ISZ,I FAILED - T1 NOT 0      |
| 1163  | 01713 | 125715 |       | JMP  | **+2,I | 1212* |       |        |     |        |                              |
| 1164  | 01714 | 102000 |       | HLT  | 0      | 1213  | 02041 | 002400 | CLA |        |                              |
| 1165  | 01715 | 002066 |       | DEF  | P9     | 1214  | 02042 | 133371 | IOR | K11A,I | K11A = DEF K11, K11 = 051463 |
| 1166  | 01716 | 125720 |       | JMP5 | **+2,I | 1215  | 02043 | 053406 | CPA | TBL.2  | TBL.2 = 051463               |
| 1167  | 01717 | 102000 |       | HLT  | 0      | 1216  | 02044 | 002001 | RSS |        |                              |
| 1168  | 01720 | 002062 |       | DEF  | P6     | 1217  | 02045 | 102000 | HLT | 0      | IOR,I FAILED                 |
| 1170  | 01777 | 000000 | PG1   | ORG  | 1777B  | 1219  | 02046 | 003400 | CCA |        |                              |
| 1171  | 01777 | 000000 | PG1   | NOP  |        | 1220  | 02047 | 123373 | XOR | K12A,I | K12A = DEF K12, K12 = 162411 |
|       |       |        |       |      |        | 1221  | 02050 | 053400 | CPA | TBL.1  |                              |
|       |       |        |       |      |        | 1222  | 02051 | 002001 | RSS |        |                              |
|       |       |        |       |      |        | 1223  | 02052 | 102000 | HLT | 0      | XOR,I FAILED                 |
|       |       |        |       |      |        | 1224* |       |        |     |        |                              |
|       |       |        |       |      |        | 1225  | 02053 | 003400 | CCA |        |                              |
|       |       |        |       |      |        | 1226  | 02054 | 113370 | AND | K10A,I | K10A = DEF K10, K10 = 015366 |
|       |       |        |       |      |        | 1227  | 02055 | 053400 | CPA | TBL.1  | TBL.1 = 015366               |
|       |       |        |       |      |        | 1228  | 02056 | 002001 | RSS |        |                              |

FIRST CORE ADDRESS  
 LAST CORE ADDRESS (2K)  
 SUBROUTINE FROM PAGE 1  
 RETURN TO PAGE 1  
 JMP,I FAILED  
 GO BACK TO PAGE 1  
 JMP

| Address | Instruction | Register  | Value        | Comment                                                       |
|---------|-------------|-----------|--------------|---------------------------------------------------------------|
| 1229    | HLT 0       |           |              |                                                               |
| 1230*   | JMP JMP5A,I |           |              |                                                               |
| 1231    | HLT 0       |           |              |                                                               |
| 1232    | CLA         | P6        | 002400       |                                                               |
| 1233*   | STA JSB7    |           |              |                                                               |
| 1234    | JSR JSB7A,I |           |              |                                                               |
| 1235    | HLT 0       |           |              |                                                               |
| 1236    | LDA JSB7    |           |              |                                                               |
| 1237    | CPA P7A     |           |              |                                                               |
| 1238    | RSS         |           |              |                                                               |
| 1239    | HLT 0       |           |              |                                                               |
| 1240    | NOP         |           |              | **** MODULE LOOP                                              |
| 1241    |             |           |              |                                                               |
| 1242*   |             |           |              |                                                               |
| 1243    |             |           |              |                                                               |
| 1245*   |             |           |              | THIS SECTION CHECKS THAT ALL OTHER REGISTERS REMAIN UNCHANGED |
| 1246*   |             |           |              | WHEN A MEMORY REFERENCE INSTRUCTION IS EXECUTED.              |
| 1247*   |             | CLB       | 02073 006400 |                                                               |
| 1248    |             | CLE       | 02074 000040 |                                                               |
| 1249    |             | CLO       | 02075 103101 |                                                               |
| 1250    |             | LDA M1    | 02076 061625 | M1 = 177777                                                   |
| 1251    |             | SZB       | 02077 006002 | LDA = R CHANGED                                               |
| 1252    |             | HLT 0     |              |                                                               |
| 1253    |             | SEZ       | 02101 002000 | LDA = E CHANGED                                               |
| 1254    |             | HLT 0     |              |                                                               |
| 1255    |             | SOC       | 02103 102201 | LDA = OV CHANGED                                              |
| 1256    |             | CPA M1    | 02104 102000 |                                                               |
| 1257    |             | RSS       | 02105 051625 | CPA FAILED                                                    |
| 1258    |             | HLT 0     |              |                                                               |
| 1259    |             | SZB       | 02107 102000 | CPA = R CHANGED                                               |
| 1260    |             | HLT 0     |              |                                                               |
| 1261    |             | SEZ       | 02111 102000 | CPA = E CHANGED                                               |
| 1262    |             | HLT 0     |              |                                                               |
| 1263    |             | SOC       | 02113 102000 | CPA = OV CHANGED                                              |
| 1264    |             | CLA       | 02114 102201 |                                                               |
| 1265    |             | CLE       | 02115 102000 |                                                               |
| 1266    |             | CLO       | 02116 002400 |                                                               |
| 1267*   |             | LDB EVEN1 | 02121 065631 | EVEN1 = 052525                                                |
| 1268    |             | HLT 0     |              |                                                               |
| 1269    |             | SZA       | 02123 102000 | LDB = A CHANGED                                               |
| 1270    |             | HLT 0     |              |                                                               |
| 1271    |             | SEZ       | 02124 002040 | LDB = E CHANGED                                               |
| 1272    |             | HLT 0     |              |                                                               |
| 1273    |             | SOC       | 02126 102000 | LDB = OV CHANGED                                              |
| 1274    |             | CPB EVEN1 | 02130 055631 | CPB FAILED                                                    |
| 1275    |             | RSS       | 02131 002001 |                                                               |
| 1276    |             | HLT 0     |              |                                                               |
| 1277    |             | SZA       | 02133 002002 | CPB = A CHANGED                                               |
| 1278    |             | HLT 0     |              |                                                               |
| 1279    |             | SEZ       | 02135 002040 | CPB = E CHANGED                                               |
| 1280    |             | HLT 0     |              |                                                               |
| 1281    |             | SOC       | 02137 102201 | CPB = OV CHANGED                                              |
| 1282    |             | LDA 0DD1  | 02141 061632 | 0DD1 = 125252                                                 |
| 1283    |             | CCB       | 02142 007400 |                                                               |
| 1284    |             | CCE       | 02143 002300 |                                                               |
| 1285    |             | STO       | 02144 102101 |                                                               |
| 1286    |             | STA T1    | 02145 071640 |                                                               |
| 1287*   |             | SEZ,RSS   | 02146 002041 | STA = E CHANGED                                               |
| 1288    |             | HLT 0     |              |                                                               |
| 1289    |             | SOS       | 02147 102000 | STA = OV CHANGED                                              |
| 1290    |             | HLT 0     |              |                                                               |
| 1291    |             | CPB M1    | 02151 102000 |                                                               |
| 1292    |             | RSS       | 02153 002001 |                                                               |
| 1293    |             | HLT 0     |              |                                                               |
| 1294    |             | CPA T1    | 02154 102000 | STA = R CHANGED                                               |
| 1295    |             | CPA M1    | 02155 051640 |                                                               |
| 1296    |             | HLT 0     |              |                                                               |
| 1297    |             | CPA T1    |              |                                                               |
| 1298    |             | HLT 0     |              |                                                               |
| 1299    |             | CPA M1    |              |                                                               |
| 1300    |             | HLT 0     |              |                                                               |

```

1301 02156 0020001 R55
1302 02157 1020000 HLT 0
1303*
1304 02160 0656311 I08 EVFNI
1305 02161 0024000 CLA
1306 02162 0000000 CLE
1307 02163 1031001 CLO
1308 02164 0756400 STR T1
1309 02165 0020002 SZA
1310 02166 1020000 HLT 0
1311 02167 0020000 SEZ
1312 02170 1020000 HLT 0
1313 02171 1022001 SOC
1314 02172 1020000 HLT 0
1315 02173 0556400 CPB T1
1316 02174 0020001 R55
1317 02175 1020000 HLT 0
1318*
1319 02176 1031001 CLO
1320 02177 0000000 CLE
1321 02200 0024000 CLA
1322 02201 0066400 CLR
1323 02202 0262004 JMP **2
1324 02203 1020000 HLT 0
1325 02204 0020002 SZA
1326 02205 1020000 HLT 0
1327 02206 0066002 SZB
1328 02207 1020000 HLT 0
1329 02210 0020000 SEZ
1330 02211 1021000 HLT 0
1331 02212 1022001 SOC
1332 02213 1020000 HLT 0
1333*
1334 02214 0024000 CLA
1335 02215 0722204 STA X99
1336 02216 0034000 CCA
1337 02217 0074000 CCB
1338 02220 1021001 ST0
1339 02221 0023000 CCF
1340 02222 0162204 JSB **2
1341 02223 1020000 HLT 0
1342 02224 0000001 P99
1343 02225 0020001 X99
1344 02226 1020000 SEZ, P55
1345 02227 1023001 HLT 0
1346 02230 1020000 S0S
1347 02231 0516205 HLT 0
1348 02232 0020001 CPA M1
1349 02233 1020000 HLT 0
1350 02234 0556205 CPB M1
1351 02235 0020001 R55
1352 02236 1020000 HLT 0
1353 02237 0622204 I0A X99
1354 02240 0517007 CPA P99A
1355 02241 0020001 R55
1356 02242 1020000 HLT 0
    
```

```

1357*
1358 02243 0024000 CLA
1359 02244 0066400 CLR
1360 02245 0410205 ADA M1
1361 02246 0066002 SZB
1362 02247 1020000 HLT 0
1363*
1364 02250 0024000 CLA
1365 02251 0066400 CLB
1366 02252 0456532 ADB DDD1
1367 02253 0020002 SZA
1368 02254 1020000 HLT 0
1369*
1370 02255 0024000 CLA
1371 02256 0066400 CLR
1372 02257 1031001 CLO
1373 02260 0000000 CLE
1374 02261 0316311 I0R EVEN1
1375 02262 0216322 XOR DDD1
1376 02263 0110205 AND M1
1377 02264 0066002 SZB
1378 02265 1020000 HLT 0
1379 02266 1022001 SOC
1380 02267 1020000 HLT 0
1381 02270 0020000 SEZ
1382 02271 1020000 HLT 0
1383 02272 0510205 CPA M1
1384 02273 0020001 R55
1385 02274 1020000 HLT 0
1386*
1387 02275 0034000 CCA
1388 02276 0716400 STA T1
1389 02277 0024000 CLA
1390 02300 0066400 CLB
1391 02301 0000000 CLE
1392 02302 1031001 CLO
1393 02303 0356400 ISZ T1
1394 02304 1020000 HLT 0
1395 02305 0020002 SZA
1396 02306 1020000 HLT 0
1397 02307 0066002 SZB
1398 02310 1020000 HLT 0
1399 02311 0020000 SEZ
1400 02312 1020000 HLT 0
1401 02313 1022001 SOC
1402 02314 1020000 HLT 0
1403*
1404 02315 0000000 NOP ***** MODULE LOOP
    
```





|       |       |        |           |                                 |       |       |        |           |                           |
|-------|-------|--------|-----------|---------------------------------|-------|-------|--------|-----------|---------------------------|
| 1406  | 02316 | 061661 | LDA IA5   | IA5 = DEF M1, M1 = 177777       | 1462  | 02377 | 174000 | STR A,I   | STR A,I FAILED            |
| 1407  | 02317 | 160000 | LDA A,I   |                                 | 1463  | 02400 | 061640 | LDA T1    | IA9 = DEF T1              |
| 1408  | 02320 | 051625 | CPA M1    |                                 | 1464  | 02401 | 051625 | CPA M1    |                           |
| 1409  | 02321 | 002001 | RSS       |                                 | 1465  | 02402 | 002001 | RSS       |                           |
| 1410  | 02322 | 102000 | HLT 0     | LDA A,I FAILED                  | 1466  | 02403 | 102000 | HLT 0     | STR A,I FAILED            |
| 1411* | 02323 | 065663 | LDB IA7   | IA7 = DEF EVEN1, EVEN1 = 052525 | 1467* | 02404 | 061665 | LDA IA9   |                           |
| 1412  | 02324 | 160001 | LDA B,I   |                                 | 1468  | 02405 | 071640 | STA T1    |                           |
| 1413  | 02325 | 051631 | CPA EVEN1 |                                 | 1469  | 02406 | 150000 | CPA A,I   |                           |
| 1414  | 02326 | 002001 | RSS       |                                 | 1470  | 02407 | 002001 | RSS       |                           |
| 1415  | 02327 | 102000 | HLT 0     | LDA B,I FAILED                  | 1471  | 02410 | 102000 | HLT 0     |                           |
| 1416* | 02330 | 065661 | LDB IA5   | IA5 = DEF M1, M1 = 177777       | 1472  | 02411 | 065665 | LDB IA9   | CPA A,I FAILED            |
| 1417  | 02331 | 164001 | LDB R,I   |                                 | 1473  | 02412 | 075640 | STR T1    | IA9 = DEF T1              |
| 1418  | 02332 | 055625 | CPB M1    |                                 | 1474  | 02413 | 154001 | CPB R,I   |                           |
| 1419  | 02333 | 002001 | RSS       |                                 | 1475  | 02414 | 002001 | RSS       |                           |
| 1420  | 02334 | 102000 | HLT 0     | LDB B,I FAILED                  | 1476  | 02415 | 102000 | HLT 0     | CPB B,I FAILED            |
| 1421  | 02335 | 061663 | LDA IA7   | IA7 = DEF EVEN1, EVEN1 = 052525 | 1477* | 02416 | 061665 | LDA IA9   | IA9 = DEF T1              |
| 1422  | 02336 | 164000 | LDB A,I   |                                 | 1478* | 02417 | 071640 | STA T1    |                           |
| 1423* | 02337 | 055631 | CPB EVEN1 |                                 | 1479  | 02420 | 065665 | LDB IA9   |                           |
| 1424  | 02340 | 002001 | RSS       |                                 | 1480  | 02421 | 150001 | CPA R,I   |                           |
| 1425  | 02341 | 102000 | HLT 0     | LDB A,I FAILED                  | 1481  | 02422 | 002001 | RSS       |                           |
| 1426  | 02342 | 006400 | CLB       |                                 | 1482  | 02423 | 102000 | HLT 0     | CPA B,I FAILED            |
| 1427  | 02343 | 075640 | STR T1    | T1 = 0                          | 1483  | 02424 | 154000 | CPB A,I   |                           |
| 1428  | 02344 | 061665 | LDA IA9   | IA9 = DEF T1                    | 1484  | 02425 | 002001 | RSS       |                           |
| 1429  | 02345 | 170000 | STA A,I   |                                 | 1485  | 02426 | 102000 | HLT 0     | CPB A,I FAILED            |
| 1430  | 02346 | 065640 | LDB T1    |                                 | 1486* | 02427 | 061663 | LDA IA7   | IA7 = DEF EVEN1           |
| 1431  | 02347 | 055640 | CPB T1    |                                 | 1487  | 02430 | 041631 | ADA FVEN1 | EVEN1 = 052525            |
| 1432  | 02348 | 002001 | RSS       |                                 | 1488  | 02431 | 071640 | STA T1    |                           |
| 1433  | 02349 | 102000 | HLT 0     | STA A,I FAILED                  | 1489  | 02432 | 061663 | LDA IA7   |                           |
| 1434  | 02350 | 002001 | RSS       |                                 | 1490  | 02433 | 140000 | ADA A,I   |                           |
| 1435  | 02351 | 102000 | HLT 0     |                                 | 1491  | 02434 | 051640 | CPA T1    |                           |
| 1436  | 02352 | 002400 | CLA       |                                 | 1492  | 02435 | 002001 | RSS       |                           |
| 1437  | 02353 | 071640 | STA T1    | T1 = 0                          | 1493  | 02436 | 102000 | HLT 0     | ADA A,I FAILED            |
| 1438* | 02354 | 065665 | LDB IA9   | IA9 = DEF T1                    | 1494  | 02437 | 065661 | LDB IA5   | IA5 = DEF M1              |
| 1439  | 02355 | 174001 | STR B,I   |                                 | 1495  | 02440 | 045625 | ADR M1    | M1 = 177777               |
| 1440  | 02356 | 061640 | LDA T1    |                                 | 1496  | 02441 | 075640 | STR T1    |                           |
| 1441  | 02357 | 051640 | CPA T1    |                                 | 1497* | 02442 | 065661 | LDB IA5   |                           |
| 1442  | 02358 | 002001 | RSS       |                                 | 1498  | 02443 | 144001 | ADR B,I   |                           |
| 1443  | 02359 | 102000 | HLT 0     | STR B,I FAILED                  | 1499  | 02444 | 055640 | CPB T1    |                           |
| 1444  | 02360 | 002001 | RSS       |                                 | 1500  | 02445 | 002001 | RSS       |                           |
| 1445  | 02361 | 102000 | HLT 0     |                                 | 1501  | 02446 | 102000 | HLT 0     | ADB B,I FAILED            |
| 1446  | 02362 | 002400 | CLA       |                                 | 1502  | 02447 | 002400 | CLA       |                           |
| 1447* | 02363 | 071640 | STA T1    | T1 = 0                          | 1503  | 02450 | 065661 | LDB IA5   | IA5 = DEF M1, M1 = 177777 |
| 1448  | 02364 | 003400 | CCA       | A = 177777                      | 1504  | 02451 | 140001 | ADA H,I   |                           |
| 1449  | 02365 | 065665 | LDB IA9   | IA9 = DEF T1                    | 1505  | 02452 | 051625 | CPA M1    |                           |
| 1450  | 02366 | 170001 | STA R,I   |                                 | 1506* | 02453 | 002001 | RSS       |                           |
| 1451  | 02367 | 065640 | LDB T1    |                                 | 1507  | 02454 | 102000 | HLT 0     | ADA B,I FAILED            |
| 1452  | 02368 | 055625 | CPB M1    |                                 | 1508  | 02455 | 006400 | CLB       |                           |
| 1453  | 02369 | 002001 | RSS       |                                 | 1509  | 02456 | 061663 | LDA IA7   |                           |
| 1454  | 02370 | 102000 | HLT 0     | STA B,I FAILED                  | 1510  | 02457 | 144000 | ADH A,I   |                           |
| 1455  | 02371 | 002001 | RSS       |                                 | 1511  | 02458 | 055631 | CPB EVEN1 |                           |
| 1456  | 02372 | 002000 | HLT 0     |                                 | 1512  | 02459 | 002001 | RSS       |                           |
| 1457* | 02373 | 006400 | CLB       |                                 | 1513* | 02460 | 055631 | CPB EVEN1 |                           |
| 1458  | 02374 | 075640 | STR T1    | T1 = 0                          | 1514  | 02461 | 002001 | RSS       |                           |
| 1459  | 02375 | 007400 | CCB       | B = 177777                      | 1515  | 02462 | 002001 | RSS       |                           |
| 1460  | 02376 | 061665 | LDA IA9   | IA9 = DEF T1                    | 1516  | 02463 | 002001 | RSS       |                           |
| 1461  | 02377 | 002001 | RSS       |                                 | 1517  | 02464 | 002001 | RSS       |                           |

|       |       |        |           |                                 |  |
|-------|-------|--------|-----------|---------------------------------|--|
| 1510  | 02461 | 002001 | RSS       |                                 |  |
| 1519  | 02462 | 102000 | HLT 0     | ADB A,I FAILED                  |  |
| 1520* | 02463 | 061661 | LDA IA5   | IA5 = DEF M1, M1 = 177777       |  |
| 1521  | 02464 | 130000 | TOR A,I   |                                 |  |
| 1522  | 02465 | 051625 | CPA M1    |                                 |  |
| 1523  | 02466 | 002001 | RSS       |                                 |  |
| 1524  | 02467 | 102000 | HLT 0     | IOR A,I FAILED                  |  |
| 1525  | 02470 | 002400 | CLA       |                                 |  |
| 1526* | 02471 | 065663 | LDR IA7   | IA7 = DEF EVEN1, EVEN1 = 052525 |  |
| 1527  | 02472 | 130001 | TOR B,I   |                                 |  |
| 1528  | 02473 | 051631 | CPA EVEN1 |                                 |  |
| 1529  | 02474 | 002001 | RSS       |                                 |  |
| 1530  | 02475 | 102000 | HLT 0     | IOR B,I FAILED                  |  |
| 1531  | 02476 | 061661 | LDA IA5   | IA5 = DEF M1, M1 = 177777       |  |
| 1532  | 02477 | 110000 | AND A,I   |                                 |  |
| 1533* | 02500 | 051661 | CPA IA5   |                                 |  |
| 1534  | 02501 | 002001 | RSS       |                                 |  |
| 1535  | 02502 | 102000 | HLT 0     | AND A,I FAILED                  |  |
| 1536  | 02503 | 061631 | LDA EVEN1 | EVEN1 = 052525                  |  |
| 1537  | 02504 | 065661 | LDB IA5   | IA5 = DEF M1, M1 = 177777       |  |
| 1538  | 02505 | 110001 | AND R,I   |                                 |  |
| 1539* | 02506 | 051631 | CPA EVEN1 |                                 |  |
| 1540  | 02507 | 002001 | RSS       |                                 |  |
| 1541  | 02508 | 102000 | HLT 0     | AND B,I FAILED                  |  |
| 1542  | 02510 | 102000 | HLT 0     |                                 |  |
| 1543  | 02511 | 065631 | LDR EVEN1 |                                 |  |
| 1544  | 02512 | 007000 | CMB       | H ← 052525                      |  |
| 1545  | 02513 | 055632 | CPB ODD1  |                                 |  |
| 1546* | 02514 | 002001 | RSS       |                                 |  |
| 1547  | 02515 | 102000 | HLT 0     | CMB FAILED                      |  |
| 1548  | 02516 | 007000 | CMB       |                                 |  |
| 1549  | 02517 | 055631 | CPB EVEN1 |                                 |  |
| 1550  | 02520 | 002001 | RSS       |                                 |  |
| 1551  | 02521 | 102000 | HLT 0     | CMB FAILED                      |  |
| 1552  | 02522 | 065661 | LDB IA5   | IA5 = DEF M1, M1 = 177777       |  |
| 1553  | 02523 | 007000 | CMB       |                                 |  |
| 1554  | 02524 | 061661 | LDA IA5   |                                 |  |
| 1555  | 02525 | 120000 | XOR A,I   |                                 |  |
| 1556  | 02526 | 050001 | CPA R     |                                 |  |
| 1557  | 02527 | 002001 | RSS       |                                 |  |
| 1558* | 02530 | 102000 | HLT 0     | XOR A,I FAILED                  |  |
| 1559  | 02531 | 061631 | LDA EVEN1 | EVEN1 = 052525                  |  |
| 1560  | 02532 | 065661 | LDB IA5   | IA5 = DEF M1, M1 = 177777       |  |
| 1561  | 02533 | 120001 | XOR R,I   |                                 |  |
| 1562  | 02534 | 051632 | CPA ODD1  |                                 |  |
| 1563  | 02535 | 002001 | RSS       |                                 |  |
| 1564  | 02536 | 102000 | HLT 0     | XOR B,I FAILED                  |  |
| 1565  | 02537 | 002000 | HLT 0     |                                 |  |
| 1566* | 02538 | 002000 | HLT 0     |                                 |  |
| 1567  | 02539 | 061631 | LDA EVEN1 |                                 |  |
| 1568  | 02540 | 065661 | LDB IA5   |                                 |  |
| 1569  | 02541 | 120001 | XOR R,I   |                                 |  |
| 1570  | 02542 | 051632 | CPA ODD1  |                                 |  |
| 1571  | 02543 | 002001 | RSS       |                                 |  |
| 1572  | 02544 | 102000 | HLT 0     |                                 |  |
| 1573* | 02545 | 002000 | HLT 0     |                                 |  |

|       |       |        |           |                                  |  |
|-------|-------|--------|-----------|----------------------------------|--|
| 1574  | 02537 | 061670 | LDA IR11  | IR11 = DEF RA11                  |  |
| 1575  | 02540 | 120000 | JMP A,I   |                                  |  |
| 1576  | 02541 | 102000 | HLT 0     | JMP A,I FAILED                   |  |
| 1577* | 02542 | 065671 | RA11      | IR12 = DEF RA12                  |  |
| 1578  | 02543 | 120001 | JMP R,I   |                                  |  |
| 1579  | 02544 | 102000 | HLT 0     | JMP B,I FAILED                   |  |
| 1580  | 02545 | 002000 | CLA       |                                  |  |
| 1581* | 02546 | 072552 | STA X13   | X13 ← NOP                        |  |
| 1582  | 02547 | 061672 | LDA IR13  | IR13 = DEF X13                   |  |
| 1583  | 02550 | 114000 | JSB A,I   |                                  |  |
| 1584  | 02551 | 102000 | HLT 0     | JSB A,I FAILED                   |  |
| 1585  | 02552 | 000000 | NOP       |                                  |  |
| 1586  | 02553 | 051672 | CPA IR13  |                                  |  |
| 1587  | 02554 | 002001 | RSS       |                                  |  |
| 1588  | 02555 | 102000 | HLT 0     | JSB A,I FAILED = A REG. CHANGED  |  |
| 1589  | 02556 | 065674 | LDR ADR13 | ADR13 = DEF P13                  |  |
| 1590  | 02557 | 056552 | CPB X13   |                                  |  |
| 1591  | 02558 | 002001 | RSS       |                                  |  |
| 1592  | 02559 | 102000 | HLT 0     | JSB A,I FAILED = BAD RETURN ADDR |  |
| 1593  | 02560 | 002001 | RSS       |                                  |  |
| 1594  | 02561 | 102000 | HLT 0     |                                  |  |
| 1595* | 02562 | 006400 | CLB       |                                  |  |
| 1596  | 02563 | 076567 | STB X14   | X14 ← NOP                        |  |
| 1597  | 02564 | 065673 | LDB IR14  | IR14 = DEF X14                   |  |
| 1598  | 02565 | 114001 | JSR R,I   |                                  |  |
| 1599  | 02566 | 102000 | HLT 0     | JSB B,I FAILED                   |  |
| 1600  | 02567 | 000000 | NOP       |                                  |  |
| 1601  | 02570 | 055673 | CPB IR14  |                                  |  |
| 1602  | 02571 | 002001 | RSS       |                                  |  |
| 1603  | 02572 | 102000 | HLT 0     | JSB B,I FAILED = B REG. CHANGED  |  |
| 1604  | 02573 | 065675 | LDR ADR14 | ADR14 = DEF P14                  |  |
| 1605  | 02574 | 056567 | CPB X14   |                                  |  |
| 1606  | 02575 | 002001 | RSS       |                                  |  |
| 1607  | 02576 | 102000 | HLT 0     | JSB B,I FAILED = BAD RETURN ADDR |  |
| 1608  | 02577 | 061633 | LDA K1    |                                  |  |
| 1609* | 02578 | 071640 | STA T1    | T1 = K1 = 052524                 |  |
| 1610  | 02579 | 061665 | LDA IA9   | IA9 = DEF Y1                     |  |
| 1611  | 02580 | 134001 | ISZ A,I   |                                  |  |
| 1612  | 02581 | 002001 | RSS       |                                  |  |
| 1613  | 02582 | 002001 | HLT 0     | ISZ A,I FAILED = IT SKIPPED      |  |
| 1614  | 02583 | 102000 | LDR T1    |                                  |  |
| 1615  | 02584 | 065640 | CPB EVEN1 | EVEN1 = 052525                   |  |
| 1616  | 02585 | 055631 | RSS       |                                  |  |
| 1617  | 02586 | 002001 | HLT 0     | ISZ A,I FAILED = T1 NOT 052525   |  |
| 1618  | 02587 | 102000 | HLT 0     |                                  |  |
| 1619  | 02588 | 007400 | CCR T1    |                                  |  |
| 1620* | 02589 | 075640 | STR T1    | T1 = 177777                      |  |
| 1621  | 02590 | 065665 | LDR IA9   | IA9 = DEF M1, M1 = 177777        |  |
| 1622  | 02591 | 134001 | ISZ B,I   |                                  |  |
| 1623  | 02592 | 102000 | HLT 0     | ISZ B,I FAILED = DID NOT SKIP    |  |
| 1624  | 02593 | 061640 | LDA T1    |                                  |  |
| 1625  | 02594 | 002002 | SZA       |                                  |  |
| 1626  | 02595 | 102000 | HLT 0     | ISZ B,I FAILED = T1 NOT 0        |  |
| 1627  | 02596 | 102000 | HLT 0     |                                  |  |
| 1628  | 02597 | 102000 | HLT 0     |                                  |  |
| 1629* | 02598 | 102000 | HLT 0     |                                  |  |

|       |                                             |  |  |                    |
|-------|---------------------------------------------|--|--|--------------------|
| 1632* | THESE TESTS TRY TO FIND INTERMITTANT ERRORS |  |  |                    |
| 1633* |                                             |  |  |                    |
| 1634* | LDA/CPA ITERATIVE TESTS                     |  |  |                    |
| 1635* |                                             |  |  |                    |
| 1636  | 02622 006400 CLR                            |  |  |                    |
| 1637  | 02623 061631 LP1 LDA EVEN1                  |  |  | A#052525           |
| 1638  | 02624 051631 CPA EVEN1                      |  |  |                    |
| 1639  | 02625 002001 RSS                            |  |  |                    |
| 1640  | 02626 102000 HLT 0                          |  |  | LDA/CPA FAILED     |
| 1641  | 02627 034001 ISZ R                          |  |  |                    |
| 1642  | 02630 026623 JMP LP1                        |  |  |                    |
| 1643* |                                             |  |  |                    |
| 1644  | 02631 006400 CLR                            |  |  |                    |
| 1645  | 02632 061632 LP2 LDA ODD1                   |  |  | A#125252           |
| 1646  | 02633 051632 CPA ODD1                       |  |  |                    |
| 1647  | 02634 002001 RSS                            |  |  |                    |
| 1648  | 02635 102000 HLT 0                          |  |  | LDA/CPA FAILED     |
| 1649  | 02636 034001 ISZ R                          |  |  |                    |
| 1650  | 02637 026632 JMP LP2                        |  |  |                    |
| 1651* |                                             |  |  |                    |
| 1652* | LDB/CPB ITERATIVE TESTS                     |  |  |                    |
| 1653* |                                             |  |  |                    |
| 1654  | 02640 002400 CLA                            |  |  |                    |
| 1655  | 02641 065631 LP3 LDB EVEN1                  |  |  | H#052525           |
| 1656  | 02642 055631 CPB EVEN1                      |  |  |                    |
| 1657  | 02643 002001 RSS                            |  |  |                    |
| 1658  | 02644 102000 HLT 0                          |  |  | LDB/CPB FAILED     |
| 1659  | 02645 034000 ISZ A                          |  |  |                    |
| 1660  | 02646 026641 JMP LP3                        |  |  |                    |
| 1661* |                                             |  |  |                    |
| 1662  | 02647 002400 CLA                            |  |  |                    |
| 1663  | 02650 065632 LP4 LDH ODD1                   |  |  | B#125252           |
| 1664  | 02651 055632 CPB ODD1                       |  |  |                    |
| 1665  | 02652 002001 RSS                            |  |  |                    |
| 1666  | 02653 102000 HLT 0                          |  |  | LDB/CPB FAILED     |
| 1667  | 02654 034000 ISZ A                          |  |  |                    |
| 1668  | 02655 026650 JMP LP4                        |  |  |                    |
| 1669* |                                             |  |  |                    |
| 1670* | LDA/STA/CPA ITERATIVE TESTS                 |  |  |                    |
| 1671* |                                             |  |  |                    |
| 1672  | 02656 006400 CLR                            |  |  |                    |
| 1673  | 02657 061631 LP5 LDA EVEN1                  |  |  | A#052525           |
| 1674  | 02660 071640 STA T1                         |  |  |                    |
| 1675  | 02661 051640 CPA T1                         |  |  |                    |
| 1676  | 02662 002001 RSS                            |  |  |                    |
| 1677  | 02663 102000 HLT 0                          |  |  | LDA/STA/CPA FAILED |
| 1678  | 02664 034001 ISZ R                          |  |  |                    |
| 1679  | 02665 026657 JMP LP5                        |  |  |                    |
| 1680* |                                             |  |  |                    |
| 1681  | 02666 006400 CLR                            |  |  |                    |
| 1682  | 02667 061632 LP6 LDA ODD1                   |  |  | A#125252           |
| 1683  | 02670 071640 STA T1                         |  |  |                    |
| 1684  | 02671 051640 CPA T1                         |  |  |                    |
| 1685  | 02672 002001 RSS                            |  |  |                    |
| 1686  | 02673 102000 HLT 0                          |  |  | LDA/STA/CPA FAILED |
| 1687  | 02674 034001 ISZ B                          |  |  |                    |

PAGE 0039 #01 ITERATIVE TESTS

1688 02675 026667 JMP LP6  
 1689\* LDB/STR/CPB ITERATIVE TESTS  
 1690\* LDB/STR/CPB ITERATIVE TESTS  
 1691\*  
 1692 02676 002400 CLA LDB FVEN1  
 1693 02677 065631 LP7 STB T1  
 1694 02700 075640 CPB T1  
 1695 02701 055640 RSS  
 1696 02702 002000 HLT 0  
 1697 02703 102000 ISZ A  
 1698 02704 034000 JMP LP7  
 1699 02705 026677  
 1700\*  
 1701 02706 002400 CLA LDB ODD1  
 1702 02707 065632 LP8 STR T1  
 1703 02710 075640 CPB T1  
 1704 02711 055640 RSS  
 1705 02712 002000 HLT 0  
 1706 02713 102000 ISZ A  
 1707 02714 034000 JMP LP8  
 1708 02715 026707  
 1709\*  
 1710\* AND ITERATIVE TESTS  
 1711\*  
 1712 02716 006400 CLB LDB FVEN1  
 1713 02717 061631 LP0 LDA EVEN1  
 1714 02720 011632 AND ODD1  
 1715 02721 002002 SZA  
 1716 02722 102000 HLT 0  
 1717 02723 034001 ISZ R  
 1718 02724 026717 JMP LP9  
 1719\*  
 1720 02725 006400 CLB LDB FVEN1  
 1721 02726 061631 LP10 LDA EVEN1  
 1722 02727 011631 AND FVEN1  
 1723 02730 051631 CPA FVEN1  
 1724 02731 002001 RSS  
 1725 02732 102000 HLT 0  
 1726 02733 034001 ISZ R  
 1727 02734 026726 JMP LP10  
 1728\*  
 1729 02735 006400 CLB LDB FVEN1  
 1730 02736 061632 LP11 LDA ODD1  
 1731 02737 011632 AND ODD1  
 1732 02740 051632 CPA ODD1  
 1733 02741 002001 RSS  
 1734 02742 102000 HLT 0  
 1735 02743 034001 ISZ R  
 1736 02744 026736 JMP LP11  
 1737\*  
 1738\* IOR ITERATIVE TESTS  
 1739\*  
 1740 02745 006400 CLB LDB FVEN1  
 1741 02746 061631 LP12 LDA FVEN1  
 1742 02747 031632 IOR ODD1  
 1743 02750 051625 CPA M1

PAGE 0040 #01 ITERATIVE TESTS

1744 02751 002001 RSS  
 1745 02752 102000 HLT 0  
 1746 02753 034001 ISZ H  
 1747 02754 026746 JMP LP12  
 1748\*  
 1749 02755 006400 CLR LDB FVEN1  
 1750 02756 061632 LP13 LDA ODD1  
 1751 02757 031631 TOR FVEN1  
 1752 02760 051625 CPA M1  
 1753 02761 002001 RSS  
 1754 02762 102000 HLT 0  
 1755 02763 034001 ISZ R  
 1756 02764 026756 JMP LP13  
 1757\*  
 1758 02765 006400 CLB LDB FVEN1  
 1759 02766 061631 LP14 LDA EVEN1  
 1760 02767 031631 TOR FVEN1  
 1761 02770 051631 CPA FVEN1  
 1762 02771 002001 RSS  
 1763 02772 102000 HLT 0  
 1764 02773 034001 ISZ B  
 1765 02774 026766 JMP LP14  
 1766\*  
 1767 02775 006400 CLB LDB FVEN1  
 1768 02776 061632 LP15 LDA ODD1  
 1769 02777 031632 TOR ODD1  
 1770 03000 051632 CPA ODD1  
 1771 03001 002001 RSS  
 1772 03002 102000 HLT 0  
 1773 03003 034001 ISZ R  
 1774 03004 026776 JMP LP15  
 1775\*  
 1776\* XOR ITERATIVE TESTS  
 1777\*  
 1778 03005 006400 CLB LDB FVEN1  
 1779 03006 061631 LP16 LDA EVEN1  
 1780 03007 021631 XOR FVEN1  
 1781 03010 002002 SZA  
 1782 03011 102000 HLT 0  
 1783 03012 034001 ISZ R  
 1784 03013 027006 JMP LP16  
 1785\*  
 1786 03014 006400 CLB LDB FVEN1  
 1787 03015 061632 LP17 LDA ODD1  
 1788 03016 021632 XOR ODD1  
 1789 03017 002002 SZA  
 1790 03020 102000 HLT 0  
 1791 03021 034001 ISZ R  
 1792 03022 027015 JMP LP17  
 1793\*  
 1794 03023 006400 CLB LDB FVEN1  
 1795 03024 061631 LP18 LDA FVEN1  
 1796 03025 021632 XOR ODD1  
 1797 03026 051625 CPA M1  
 1798 03027 002001 RSS  
 1799 03030 102000 HLT 0  
 IOR FAILED  
 IOR FAILED  
 IOR FAILED  
 XOR FAILED  
 XOR FAILED  
 XOR FAILED  
 XOR FAILED

PAGE 0041 #01 ITERATIVE TESTS

1800 03031 034001 IZ R  
 1801 03032 027024 JMP LP18  
 1802\*  
 1803\* ADA ITERATIVE TESTS  
 1804\*  
 1805 03033 006400 CLH  
 1806 03034 000040 LP19 CLE  
 1807 03035 103101 CLO  
 1808 03036 061631 LDA EVEN1  
 1809 03037 041632 ADA ODD1  
 1810 03040 051625 CPA M1  
 1811 03041 002001 RSS  
 1812 03042 102000 HLT 0  
 1813 03043 002040 SEZ  
 1814 03044 102000 HLT 0  
 1815 03045 102201 SOC  
 1816 03046 102000 HLT 0  
 1817 03047 034001 IZ R  
 1818 03050 027034 JMP LP19  
 1819\*  
 1820 03051 006400 CLB  
 1821 03052 102101 STO LP20  
 1822 03053 002300 CCE  
 1823 03054 061632 LDA ODD1  
 1824 03055 041631 ADA EVEN1  
 1825 03056 051625 CPA M1  
 1826 03057 002001 RSS  
 1827 03060 102000 HLT 0 LP20  
 1828 03061 002041 SEZ, RSS  
 1829 03062 102000 HLT 0  
 1830 03063 102301 SOS  
 1831 03064 102000 HLT 0  
 1832 03065 034001 IZ R  
 1833 03066 027052 JMP LP20  
 1834\*  
 1835 03067 006400 CLB  
 1836 03070 000040 LP21 CLE  
 1837 03071 103101 CLO  
 1838 03072 061631 LDA EVEN1  
 1839 03073 041631 ADA EVEN1  
 1840 03074 051632 CPA ODD1  
 1841 03075 002001 RSS  
 1842 03076 102000 HLT 0  
 1843 03077 002040 SEZ  
 1844 03100 102000 HLT 0  
 1845 03101 102301 SOS  
 1846 03102 102000 HLT 0  
 1847 03103 034001 IZ R  
 1848 03104 027070 JMP LP21  
 1849\*  
 1850 03105 006400 CLB  
 1851 03106 000040 LP22 CLE  
 1852 03107 103101 CLO  
 1853 03110 061632 LDA ODD1  
 1854 03111 041632 ADA ODD1  
 1855 03112 051633 CPA K1

PAGE 0042 #01 ITERATIVE TESTS

1856 03113 002001 RSS  
 1857 03114 102000 HLT 0  
 1858 03115 002041 SEZ, RSS  
 1859 03116 102000 HLT 0  
 1860 03117 102301 SOS  
 1861 03120 102000 HLT 0  
 1862 03121 034001 IZ B  
 1863 03122 027106 JMP LP22  
 1864\*  
 1865\* ADA ITERATIVE TESTS  
 1866\*  
 1867 03123 002400 CLA  
 1868 03124 000040 LP23 CLE  
 1869 03125 103101 CLO  
 1870 03126 065631 LDA EVEN1  
 1871 03127 045632 ADA ODD1  
 1872 03130 055625 CPB M1  
 1873 03131 002001 RSS  
 1874 03132 102000 HLT 0  
 1875 03133 002040 SEZ  
 1876 03134 102000 HLT 0  
 1877 03135 102201 SOC  
 1878 03136 102000 HLT 0  
 1879 03137 034000 IZ A  
 1880 03140 027124 JMP LP23  
 1881\*  
 1882 03141 002400 CLA  
 1883 03142 002300 LP24 CCE  
 1884 03143 102101 STO  
 1885 03144 065632 LDB ODD1  
 1886 03145 045631 ADA EVEN1  
 1887 03146 055625 CPB M1  
 1888 03147 002001 RSS  
 1889 03150 102000 HLT 0  
 1890 03151 002041 SEZ, RSS  
 1891 03152 102000 HLT 0  
 1892 03153 102301 SOS  
 1893 03154 102000 HLT 0  
 1894 03155 034000 IZ A  
 1895 03156 027142 JMP LP24  
 1896\*  
 1897 03157 002400 CLA  
 1898 03160 000040 LP25 CLE  
 1899 03161 103101 CLO  
 1900 03162 065631 LDA EVEN1  
 1901 03163 045631 ADA FVEN1  
 1902 03164 055632 CPB ODD1  
 1903 03165 002001 RSS  
 1904 03166 102000 HLT 0  
 1905 03167 002040 SEZ  
 1906 03170 102000 HLT 0  
 1907 03171 102301 SOS  
 1908 03172 102000 HLT 0  
 1909 03173 034000 IZ A  
 1910 03174 027160 JMP LP25  
 1911\*

```

1912 03175 002400 CLA
1913 03176 000400 LP26
1914 03177 103101 CLE
1915 03200 005632 LDB NDD1
1916 03201 045632 ADB NDD1
1917 03202 055633 CPB K1
1918 03203 002001 RSS
1919 03204 102000 HLT 0
1920 03205 002001 SEL,RSS
1921 03206 102000 HLT 0
1922 03207 102301 SOS
1923 03210 102000 HLT 0
1924 03211 034000 ISZ A
1925 03212 027176 JMP LP26
1926*
1927* JSR ITERATIVE TEST
1928*
1929 03213 006400 CLR
1930 03214 002400 LP27
1931 03215 073220 STA Z2
1932 03216 017220 JSR **2
1933 03217 102000 Z1
1934 03220 000000 Z2
1935 03221 003220 LDA Z2
1936 03222 051652 CPA ADDR7
1937 03223 002001 RSS
1938 03224 102000 HLT 0
1939 03225 034001 ISZ R
1940 03226 027214 JMP LP27
1941*
1942* ADA & ISZ ITERATIVE TEST
1943*
1944 03227 002400 CLA T1
1945 03230 071640 STA T1
1946 03231 041667 ADA K7
1947 03232 035640 ISZ T1
1948 03233 027231 JMP **2
1949 03234 002002 SZA
1950 03235 102000 HLT 0
1951*
1952* ADR & ISZ ITERATIVE TEST
1953*
1954 03236 006400 CLR
1955 03237 075640 STB T1
1956 03240 045667 ADB K7
1957 03241 035640 ISZ T1
1958 03242 027240 JMP **2
1959 03243 006002 SZB
1960 03244 102000 HLT 0
1961*
1962 03245 000000 NOP ***** MODULE LOOP
    
```

```

1964* LDA/CPA = ALL OF CORE = 1ST 2 PAGES
1965*
1966 03246 065710 LDB FCA 1ST CORE ADDRESS = 0000002
1967 03247 100001 PT1 LDA R,I
1968 03250 150001 CPA R,I
1969 03251 002001 RSS
1970 03252 102000 HLT 0 LDA/CPA FAILED! B = ADDRESS
1971 03253 055711 CPB LCA LAST CORE ADDRESS = 003677
1972 03254 027257 JMP PT2
1973 03255 006004 INR NEXT CORE ADDRESS
1974 03256 027247 JMP PT1 CONTINUE
1975*
1976* LDB/CPB/STB/CPR = ALL OF CORE = 1ST 2 PAGES
1977*
1978 03257 061710 PT2 LDA FCA 1ST CORE ADDRESS = 0000002
1979 03260 164000 PT3 LDR A,I
1980 03261 154000 CPB A,I
1981 03262 002001 RSS
1982 03263 102000 HLT 0 LDR/CPR FAILED! A = ADDRESS
1983 03264 174000 STB A,I
1984 03265 154000 CPB A,I
1985 03266 002001 RSS
1986 03267 102000 HLT 0 STB/CPR FAILED! A = ADDRESS
1987 03270 051711 CPA LCA LAST CORE ADDRESS = 003677
1988 03271 027274 JMP PT4
1989 03272 002004 JNA
1990 03273 027260 JMP PT3
1991*
1992* ADA = ADR = IOR = XOR = AND USING TABLE VALUES
1993*
1994 03274 067377 PT4 LDB TBLA FWA TABLE
1995 03275 077362 PT5 STB A1A ARG 1 ADDRESS
1996 03276 006004 INB ARG 2 ADDRESS
1997 03277 077363 STB A2A
1998 03300 006004 INB SUM ADDRESS
1999 03301 077364 STB SUMA
2000 03302 006004 INB IOR RESULT ADDRESS
2001 03303 077365 STB IORA
2002 03304 006004 INB XOR RESULT ADDRESS
2003 03305 077366 STB XORA
2004 03306 006004 INB AND RESULT ADDRESS
2005 03307 077367 STR ANDA
2006 03310 163362 LDA A1A,I
2007 03311 143363 ADA A2A,I
2008 03312 153364 CPA SUMA,I
2009 03313 002001 RSS
2010 03314 102000 HLT 0 ADA FAILED
2011 03315 167362 LDB A1A,I
2012 03316 147363 ADR A2A,I
2013 03317 157364 CPH SUMA,I
2014 03320 002001 RSS
2015 03321 102000 HLT 0
2016 03322 163362 LDA A1A,I
2017 03323 133363 IOR A2A,I
2018 03324 153365 CPA IORA,I
2019 03325 002001 RSS
    
```



```

2020 03326 102000 HLT 0 IOR FAILED
2021 03327 163362 LDA A1A,I
2022 03330 123363 XOR A2A,I
2023 03331 153366 CPA XORA,I
2024 03332 002001 RSB
2025 03333 102000 HLT 0 XOR FAILED
2026 03334 163362 LDA A1A,I
2027 03335 113363 AND A2A,I
2028 03336 153367 CPA ANDA,I
2029 03337 002001 RSB
2030 03340 102000 HLT 0 AND FAILED
2031 03341 067367 LDB ANDA
2032 03342 006004 INR
2033 03343 057474 CPR TBL
2034 03344 002001 RSB
2035 03345 027275 JMP PT5
2036*
2037 03346 000000 NOP ***** MODULE LOOP
    
```

```

2039* END OF DIAGNOSTIC CYCLE
2040*
2041 03347 002400 CLA
2042 03350 002020 SRA
2043 03351 102000 HLT 0 CLA/SSA FAILED
2044*
2045 03352 061635 LDA BIT15
2046 03353 002020 SRA
2047 03354 002001 RSB
2048 03355 102000 HLT 0 LDA BIT15/SSA/RSS FAILED
2049*
2050 03356 102501 LIA 1
2051 03357 002020 SRA
2052 03360 102077 HLT 778
2053 03361 022410 JMP START
    
```

```

2055 03362 000000 A1A NOP ARGUMENT POINTER
2056 03363 000000 A2A NOP ARGUMENT POINTER
2057 03364 000000 SUMA NOP SUM POINTER
2058 03365 000000 IORA NOP IOR RESULT POINTER
2059 03366 000000 XORA NOP XOR RESULT POINTER
2060 03367 000000 ANDA NOP AND RESULT POINTER
2061 03370 001700 K10A DEF K10
2062 03371 001701 K11A DEF K11
2063 03372 001640 T1A DEF T1
2064 03373 001702 K12A DEF K12
2065 03374 001716 JMP5A DEF JMP5
2066 03375 001712 JSB7A DEF JSB7
2067 03376 002065 P7A DEF P7
2068*
2069 03377 003400 TBLA DEF TBL.1
2070 03400 015366 TBL.1 OCT 15366
2071 03401 127541 OCT 127541
    
```

```

2072 03402 145127 OCT 145127
2073 03403 137767 OCT 137767 IOR RESULT
2074 03404 132627 OCT 132627 XOR RESULT
2075 03405 005140 OCT 5140 AND RESULT
2076 03406 051463 TBL.2 OCT 51463 ARG 1 - 2ND PAIR
2077 03407 031465 OCT 31465
2078 03410 103150 OCT 103150
2079 03411 071467 OCT 71467
2080 03412 000006 OCT 00006
2081 03413 011461 OCT 11461
2082 03414 161271 TBL.3 OCT 161271 ARG 1 - 3TH PAIR
2083 03415 025636 OCT 25636 ARG 2
2084 03416 007127 OCT 7127
2085 03417 165677 OCT 165677 IOR RESULT
2086 03420 144447 OCT 144447 XOR RESULT
2087 03421 021230 OCT 21230 AND RESULT
2088 03422 105560 TBL.4 OCT 105560 ARG 1 - 4TH PAIR
2089 03423 133410 OCT 133410
2090 03424 041170 OCT 41170
2091 03425 137570 OCT 137570
2092 03426 036170 OCT 36170
2093 03427 101400 OCT 101400
2094 03430 141055 TBL.5 OCT 141055 ARG 1 - 5TH PAIR
2095 03431 035334 OCT 35334
2096 03432 177211 OCT 177211
2097 03433 175775 OCT 175775
2098 03434 174561 OCT 174561
2099 03435 001214 OCT 1214
2100 03436 175752 TBL.6 OCT 175752 ARG 1 - 6TH PAIR
2101 03437 137257 OCT 137257
2102 03440 135231 OCT 135231
2103 03441 177757 OCT 177757
2104 03442 042505 OCT 42505
2105 03443 135252 OCT 135252
2106 03444 032047 TBL.7 OCT 32047 ARG 1 - 7TH PAIR
2107 03445 041163 OCT 41163
2108 03446 073232 OCT 73232
2109 03447 073167 OCT 73167
2110 03450 073124 OCT 73124
2111 03451 000043 OCT 43
2112 03452 066144 TBL.8 OCT 66144 ARG 1 - 8TH PAIR
2113 03453 143106 OCT 143106
2114 03454 031252 OCT 31252
2115 03455 167146 OCT 167146
2116 03456 125042 OCT 125042
2117 03457 042104 OCT 42104
2118 03460 122241 TBL.9 OCT 122241 ARG 1 - 9TH PAIR
2119 03461 045032 OCT 45032
2120 03462 167273 OCT 167273
2121 03463 167273 OCT 167273
2122 03464 167273 OCT 167273
2123 03465 000000 OCT 0
2124 03466 156336 TBL.10 OCT 156336 ARG 1 - 10TH PAIR
2125 03467 146755 OCT 146755
2126 03470 125313 OCT 125313
2127 03471 156777 OCT 156777
    
```

PAGE 0047 #01 SOME DATA PATTERN TESTS

|       |       |        |      |     |        |  |  |            |                   |
|-------|-------|--------|------|-----|--------|--|--|------------|-------------------|
| 2128  | 03472 | 010463 |      | OCT | 10463  |  |  |            |                   |
| 2129  | 03473 | 146314 |      | OCT | 146314 |  |  |            |                   |
| 2130  | 03474 | 003474 | TBLE | DEF | *      |  |  | LWA        | TABLE             |
| 2131* |       |        |      |     |        |  |  |            |                   |
| 2132  | 03475 | 000000 | T2   | NOP |        |  |  | TEMPORARY  | STORAGE           |
| 2133  | 03476 | 000000 | SR1  | NOP |        |  |  | SUBROUTINE | FROM BASE PAGE    |
| 2134  | 03477 | 025616 |      | JMP | ,P4    |  |  | GO         | BACK              |
| 2135  | 03500 | 025612 | JMP1 | JMP | JMP2   |  |  | GO         | BACK TO BASE PAGE |
| 2136* |       |        |      |     |        |  |  |            |                   |
| 2137  |       |        |      |     |        |  |  | END        |                   |

\*\* NO ERRORS\*



