P854
P858
P859

TEST PROGRAM FOR CPU P854,P858,P859,CP1BF
TEST OF MEMORY MANAGEMENT PART

***

REMMU1

PROCEDURE 12NC : 5111 991 1039 2

Concerned PV:

PV250-146 (tape)
PV350-146 (cassette)
PV450-146 (floppy)

REMMU1 includes :

Procedure
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1. GENERAL

The test program REMMU1 is used as a complementary test of CP57RE and REPAF.
The objective of this test program is to control the correct processing of the memory management unit part.

The test does not check the extension bits from 32KW to 512 KW.
That is done by the BBRAM or BBMEMO test program.

2. MINIMUM CONFIGURATION REQUIRED

- P854: 2 CPU's and MIOP boards.
- P858, P859: CPU board.

- An input peripheral to load the program (tape, cassette, floppy or disc test resident).
- An operator console.
- A minimum memory module of 32 KW is required.

3. LOADING PROCEDURE

The program supporting medium is preceded by an I.P.L. loader ensuring the print out of the program name and program loading.

P.T.R. Loading

- Load /1020 on console keys (Reader address bits 10 through 15, bit 03 = programmed channel loading.
- Depress "MC"
- Place tape onto reader, push down the tape load lever, switch the reader to "ON".
- Depress IPL.

Cassette Loading

- Place Cassette in drive, on program record face
- Wait for end of rewind
- Depress MC
- Set Control Panel Keys
  - On programmed channel
    /1785 if cassette address 5
    /1795 if cassette address 15
    /17A5 if cassette address 25
  - On multiplex channel
    /0785 if cassette address 5
    /0795 if cassette address 15
    /07A5 if cassette address 25
- Depress IPL

Floppy Loading

- See sticker on diskette envelope

After Loading program stops in /700 (hexa)

4. NORMAL RUNNING OF THE PROGRAM

4.1. Standard initializations

- Page Fault address /7A.

- Program execution initialized - without "one shot" with "stop on error", "STOP on END", and "Edition" execution check 0 to 9 and 11 to 13.

4.2. Program execution :

- After loading the program (stop in/700), depress the RUN button.
- The program automatically executes the checks 00 to 09 and 11 to 13.

The program execution consists in following the information provided by the information codes displayed in A1 register when stops in/5E0 (see chapter 5).
When IF < 15, it is the beginning of a check, the information provided through these codes fall into the following items :

- details about tests executed during this check.
- errors capable of occurring during this test.

For IF >15 follow the information given through these codes :

- When all checks have been executed, the program stops in/700. If the operator wishes to restart the test, he may again depress the RUN button.
- The operator may at any time stop the program and restart at /700.
- In case of a modification of the standard operation refer to chapter 7.2.

NOTE : At any time it is possible to return to /700 by depressing the Control Panel interrupt button. To restart do MC then RUN.

4.3. Error Detection

In the case of an error, the program stops at address /5FO in standard operation (otherwise see paragraph 7).

For the meaning of the error message, displayed in A1 refer to paragraph 6.

4.4. Interference Interrupts

Any interrupt is considered as an interference interrupt (except for PWF/AR and RTC).

In this case, the program stops on its starting address (/700). By depressing the control panel RST button, the operator will obtain the level of the interrupt having occurred. By MC and RUN, the program may restart normally.

4.5. Power Failure-Automatic Restart

After a power failure and if the control panel key was in Lock position, as soon as conditions go back to normal, the program is automatically started at the beginning of the check which was being executed. In the case where the current check was in Inhibit Mode, and the interrupt could not be treated within a delay < than 2 ms, the correct operation cannot be guaranteed.

4.6. Restarting address

After a power off, the registers A8, A9 and A10 can be re-initialized by restarting at address /6EE.

5. INFORMATION CODES

The codes permit the test program running to be followed. They also permit the dialog between the test program and the operator to be carried out.
Through each error code, the following information items are given :

- operator action
- description of the tests carried out during the check IF ≤15.
- error codes that can be expressed under this IF code.

IF 0000 check 00 : TLR, TSR, TL, TS : system mode
IF 0001 check 01 : ELR, ESR, EL, ES : system mode
IF 0002 check 02 : MVSU, MVUS : system mode
IF 0003 check 03 : Privileged instructions : user mode
IF 0004 check 04 : user program in successive pages
IF 0005 check 05 : user program in random pages
IF 0006 check 06 : test bit Modify
IF 0007 check 07 : test bit Page Error
IF 0008 check 08 : test bit Read Only
IF 0009 check 09 : system mode : non error performing

IF 0011 check 11 : MVB, MVF, Page Fault resuming
IF 0012 check 12 : ML, Page Fault resuming
IF 0013 check 13 : Test bit read only if memory <32K.

IF 0000

TLR, TSR, TL, TS : System mode

- Operator action :

  None

- Check description :

  + Execution of " Table Load" and Table Store" instructions.
    - in system mode
    - in the addressing mode : T3 to T7
    - with various patterns of the segment table :
      - /0000
      - /5555
      - /AAAA
      - shift table : 1, 2, 4, 8 .....

  + Verifications :
    - CR unchanged after each instruction
    - Correct transmission through the scratchpad : comparison between the emitter buffer and the receiver buffer after the execution of Table Load and Table Store instructions.

- Possible errors

  ER 0001
  ER 0002
  ER 0003
  ER 0004
  ER 0005
  ER 0006
  ER 0007
  ER 0008
  ER 0009
  ER 0010
  ER 0011
  ER 0012

IF 0001 — ELR. ESR. EL. ES : System mode

- Operator action :

None

- Check description :

The check 01 is executed in system mode.

1 execution of Extended Load and Extended Store instructions:

+ in addressing mode T3 to T7
+ through a segment table addressing the memory 16K to 32K.
+ with various values of the loaded and stored data : 0, /5555, /8888, /FFFF

2 Verifications :

+ correct value of the CR - successively positionned to : 0, <0,> 0 by Entended Load instructions,
  - unchanged by Extended Store instructions.

- Possible errors :

ER 0013
ER 0014
"
"
"
"
ER 0041

IF 0002 MVSU. MVUS : System mode

- Operator action :

None

- Check description :

The check 02 is executed in system mode.

1. MVSU test :
   - Execution of a"Move Table from System to User" of one word and of two K words through a segment table addressing the memory 16K to 32K.
   - Verifications : - CR, A1 and A2 unchanged
     - R2 = 3 is set to zero

2. MVUS test :
   - Execution of a Move Table from user to system of one word and two K words through a segment table addressing the memory 16K to 32K.
   - Verifications after execution :
     + CR unchanged
     + A1 and A2 point on the first address after the buffer.
     + R2 = 3 is set to zero.

- Possible errors :

ER 0042
ER 0043
"
"
"
"
ER 0057

IF 0003 Privileged instructions : user mode

- Operator action :

  None

- Check description :

  The privileged instructions TLR, TSR, ELR, ESR, TL, TS, EL, ES, MVSU (with R2 = 15) and MVUS (with R2 = 15) are programmed successively in user mode. It is verified each instruction is trapped in user mode.

- Possible errors :

  ER 0058
  ER 0059
  "
  "
  "
  "
  ER 0069

IF 0004 User program in successive pages

- Operator action :

None

- Check description :

The check 04 tests the correct execution in user mode of a "user program" stored in successive pages. It consists of :

- loading in system mode of a segment table addressing the memory from 16K to 32K words.
- storing the user program in system mode.

```
16K      ADK   A5, 1
 "        "
 "        "
 "        "
32KW-2   LKM
32KW
```

- program execution in user mode through the segment table translation.
- return to system mode by LKM for error checking
- test of the result in A5.

- Possible error :

ER 0070

IF 0005 — User program in random pages

- Operator action :

None

- Check description :

The check 05 verifies the correct execution in user mode of a "user program" stored in random pages. The user program consists of 4 parts:

ADS (label C05 ADS)
CMP (label C05 CMP)
EA
CONST

situated in various pages :

Logical addresses	physical addresses	user program
/0C00 ÷ /0FFE	16K ÷18K (/2000)	ADS
/1000 ÷ /13FE	20K ÷22K (/2800)	CMP
/2C00 ÷ /2FFE	18K ÷20K (/2400)	EA
/3000 ÷ /33FE	22K ÷24K (/2C00)	CONST
/4C00 ÷ /4FFE	20K ÷22K (/2800)	ADS
/5000 ÷ /53FE	24K ÷26K (/3000)	CMP
/6C00 ÷ /6FFE	22K ÷24K (/2C00)	EA
/7000 ÷ /73FE	26K ÷28K (/3400)	CONST
/8C00 ÷ /8FFE	24K ÷26K (/3000)	ADS
/9000 ÷ /93FE	28K ÷30K (/3800)	CMP
/AC00 ÷ /AFFE	26K ÷28K (/3400)	EA
/B000 ÷ /B3FE	30K ÷32K (/3C00)	CONST
/CC00 ÷ /CFFE	28K ÷30K (/3800)	ADS
/D000 ÷ /DC00	16K ÷18K (/2000)	CMP
/EC00 ÷ /EFFE	30K ÷32K (/3C00)	EA
/F000 ÷ /F3FE	18K ÷20K (/2400)	CONST

User program execution : . addition (programmed in C05ADS) of the A7 register contents with the memory effective address EA contents.
. result comparison (programmed in C05CMP) with a memory buffer CONST (correct result).

- Possible error :

ER 0071

IF 0006 Test bit "Modify"

- Operator action :

  None

- Check description :

  - Execution, in user mode, through a segment table with bit Modify initialized to 0 of clear Memory of one memory case in each page.

  - Verification of the bit Modify (bit 08) set to 1 in each word of the segment table.

- Possible error :

  ER 0072

IF 0007 Test page error

- Operator action :

None

- Check description :

Execution :

- Test 07A : Attempt to execute in user mode an instruction in each page protected by the bit Page Error.
- Test 07B : Attempt to execute, in user mode, a Clear Memory in a memory case of each page protected by the bit Page Error.

Each time a Page Fault is generated in the routine (P a f 07B : 1) it is verified that + The Clear Memory was not executed :

bit Modify = 0 in the appropriate word of the segment table. + the stack corresponding to the Page Fault is correctly loaded.

2) The segment table is modified to suppress the Page Error bit in the appropriate word of the segment table.

3) The Clear Memory is effectively executed.

- Test 07C : In user mode :

- execution of one short instruction located in an unprotected page.
- attempt to execute an instruction in a protected page to verify the corresponding P' contents in the page fault stack.

- Verifications :

Each time a Page Fault is generated, the page fault stack is verified :

+ first word : P' is the program counter contents saved at the beginning of each instruction.

+ third word : S' is the logical page address which generated Page Fault.

- Possible errors :

ER	0073
"	"
"	"
ER	0077
ER	0121
ER	0122
ER	0124
ER	0125
ER	0126

IF 0008 — Test Read Only for 32K memory
(for 16K memory use check 13)

- Operator action :

None

- Check description :

- Test of the execution of a Clear Memory in one memory case of each page : + in user mode,
+ through a segment table (16K to 32K words) with the bit Modify initialized to 0 and the bit Read Only initialized to 1 in each word of the segment table.

- Verifications : Each time a Page Fault generated :
+ the page fault stack is verified :
- first word : P' is the program counter contents saved at the beginning of each instruction,
- third word : S' is the logical page address which generated the page fault.
+ it is verified that the Clear Memory was not executed: bit Modify = 0 in the appropriate segment table word.

- Possible errors :

ER 0078
ER 0079
ER 0080
ER 0123

IF 0009 System mode : nonerror performing

- Operator action :

  None

- Check description :

  - Execution in system mode of an Extended Load and an Extended Store instructions through a segment table (addressing the memory 16K to 32K words) with the bits Page Error and Read Only initialized to 1 and the bit Modify initialized to 0 in each segment table word.

  - Verifications :

    - The instructions are correctly executed.
    - There is no Page Fault.
    - The bit Modify is set to 1 in the appropriate segment table word after an Extended Store execution.

- Possible errors :

  ER 0082
  ER 0083
  ER 0084

IF 0011 - MVB,MVF, Page Fault resuming

- Operator action :
  None
- Check description :
  Test of the instructions Move Table Backward (MVB) and Move Table Forward (MVF)broken in user mode by Page Fault (either reading the source buffer, either writting the destination buffer).
  The check 11 consists of :
  - Storage in system mode of : +a source buffer (/C000 to /FFFE : user program with /1FFF instructions ADK A4,1 and LKM to return to system mode),
    +a Move Table instruction in /7FFE.
  - Execution in user mode of the Move Table instruction. Each time a Page Fault is generated, the Move Table goes on after modification of the appropriate segment table word. After the complete execution of the Move Table instruction, the user program (contents of the buffer moved in the physical address /8000 to /C000) is executed.
  - Verifications in system mode after execution :
    + A4 register : result controlling the correctness of the Move execution.
    + The registers A1,A2, and R2 = 3 defining the transfer parameters for the Move Table :
      - A3 = 0
      - after MVF, A1 and A2 contains their initial value,
      - after MVB, A1 and A2 points on the first addresses after the buffer,

- Possible errors :

  ER 0095
  "
  ER 0109
  ER 0118

IF 0012 — ML. Page Fault resuming

- Operator action :
  None
- Description of the check :
  The check 12 tests the correct execution of the Multiple Load instruction broken by Page Fault.
  It consists of :
  - The execution of the Multiple Load,
    + in user mode,
    + in addressing mode T3, T5, T7,
    + with the registers A1 to A7,
    + in different memory cases from 16K to 32 K words.

    The buffers are stored in successive addresses of two different pages.
    Each time there is a Page Fault, the corresponding segment table word is modified and the ML instruction is resumed.

- Verifications : + CR = 1 (A1 being > 0)
  + A1 to A7, contents are correct.

- Possible errors :

  ER 0110
  "
  "
  ER 0116
  ER 0120

IF 0013 — See IF 0008.

IF 0016 "One shot" function selected

- Operator action :
  The program being stopped in /5EO at the end of each check, depress the RUN button to execute the subsequent test.

6. ERROR CODES :

ER 0001 : (check 00) CR modified by a TLR execution.
(A2) pattern loaded in the segment table.
(0, /FFFF, /5555, or /AAAA).

ER 0002 : (check 00) CR modified by a TSR execution.
(A2) pattern loaded in the segment table.
(0, /FFFF, /5555 or /AAAA).

ER 0003 : (check 00) Pattern error or MMU not present.
Verify if the MMU card is in the configuration.
After a TLR and a TLS executions, the result is not correct in the receiver buffer SCRTCH.
(A2) correct pattern (0, /FFFF, /5555, or /AAAA).
$(A3)_2$ number of the segment table word with incorrect contents.

ER 0004 : (check 00) CR modified by TL executed in addressing mode T4.

ER 0005 : (check 00) CR modified by TS execution in addressing mode T4.

ER 0006 : (check 00) Pattern error.
After a TL and a TS executions, the result is not correct in the receiver buffer SCRTCH.
(A2) = correct word (word 0 + A6)
(A3) = (A7) : incorrect word (SCRTCH + A6).
(A4) = 5, 6 or 7 : addressing mode (T5, T6 or T7).

ER 0007 to ER 0012 : (check 00) CR modified.
ER 0007 : by TL executed in addressing mode T5
ER 0008 : by TS executed in addressing mode T5
ER 0009 : by TL executed in addressing mode T6
ER 0010 : by TS executed in addressing mode T6
ER 0011 : by TL executed in addressing mode T7
ER 0012 : by TS executed in addressing mode T7

ER 0013 : (check 01) CR not coorectly positionned by the ELR execution. :
correct value = 2 (loaded pattern being : A2 =/8888).

ER 0014 : (check 01) Pattern error : Data not correctly loaded in A3 by the ELR.
(A2) = /8888 : correct value.
(A3) = incorrect value loaded by the ELR.

ER 0015 : (check 01) CR not correctly positionned by the ELR execution.
correct value = 0 (loaded pattern being 0).

ER 0016 : (check 01) Pattern error : The data loaded in A3 by the ELR is not correct :
(A2) = 0 correct value.
(A3) = incorrect value loaded by the ELR .

ER 0017 : (check 01) CR error :
CR is not positionned to "1" by an ELR execution :
(A2) = /5555 (constant loaded during ELR).
ER 0017 is also indicated when the system memory is less than 32K.

ER 0018 : (check 01) Pattern error :
The data is not correctly loaded in A3 by the ELR.
(A2) = /5555 correct value.
(A3) = incorrect value loaded by the ELR.

ER 0019 : (check 01) : CR error:
CR is not positionned to "2" by an EL execution
(addressing mode T4)
(A2) /8888 (constant loaded during EL).

ER 0020 : (check 01) : Pattern error :
The data is not correctly loaded in A3 by the EL (T4)
(A2) = /8888 correct value
(A3) = incorrect value loaded during the EL execution.

ER 0021 : (check 01) CR error.
CR is not positionned to "1" by an EL execution
(addressing mode T5) while the constant loaded
= /5555.

ER 0022 : (check 01) Pattern error :
The data is not correctly loaded by the EL (T5)
(A2) = /5555 (correct value).
(A3) = incorrect value loaded during the EL execution.

ER 0023 : (check 01) CR error :
CR not positionned to "0" by EL execution (T6)
while loaded constant = 0.

ER_0024 : (check 01) Pattern error :
The data is not correctly loaded by the EL (T6).
(A2) = 0 correct value.
(A3) = incorrect value loaded during the EL execution.

ER_0025 : (check 01) CR error :
CR not positionned to "0" by EL execution (T7)
while the loaded constant = 0.

ER_0026 : (check 01) : Pattern error .
The data is not correctly loaded by the EL (T7) :
(A2) = 0 (correct value)
(A3) = incorrect value loaded during the EL execution.

ER_0027 : (check 01) : CR error :
CR not positionned to "1" by the execution (T7)
while the loaded constant = /5555.

ER_0028 : (check 01) : Pattern error :
Data loaded by the EL (T7) is incorrect.
(A2) = /5555 (correct value)
(A3) = incorrect value loaded during the EL.

ER_0029 : (check 01) CR error :
CR modified by the ESR execution.
It was positionned to 0 before the instruction.

ER_0030 : (check 01) Pattern error.
The data is not correctly stored by the ESR.
(A2) = /FFFF correct value to store.
(A3) = incorrect value stored by ESR in the physical address /97FE.

ER 0031 : (check 01) : CR modified by the ESR execution :
It was positionned to 1 before the instruction.

ER 0032 : (check 01) : Pattern error.
The data is not correctly stored by the ESR.
(A2) = 0 correct value to store.
(A3) = incorrect value stored by ESR in the physical address /B7FE.

ER 0033 : (check 01) : CR modified by the ESR.
It was positionned to 2 before the instruction execution.

ER 0034 : (check 01) : Pattern error.
The data is not correctly stored by the ESR.
(A2) = /5555 : correct value to store.
(A3) = incorrect value stored by ESR in the physical address /F7FE.

ER 0035 : (check 01) : CR modified by the ES (T4).
It was positionned to 1 before the ES execution.

ER 0036 - 37 - 38 : (check 01) : Pattern error :
The data is not correctly stored by the ES.

	A2 correct value to store	A3 = incorrect value stored by ES in the physical addresses	addressing mode Tx
ER 0036	/8888	/E7FE	4
ER 0037	/FFFF	/BFFE	5
ER 0038	/5555	/9FFE	6

ER 0039 : (check 01) CR modified by the ES (T7) execution :
It was positionned to 2 (LDKL A7, /87FE) before the ES execution.

ER 0040 - 41 : (check 01) : Pattern error :
The data is not correctly stored by the ES (T7).

	ER 0040	ER 0041
(A2) = correct value to store :	0	/8888
(A3) = incorrect value stored by ES in the physical addresses :	/C7FE	/FFFE

ER 0042 : (check 02) CR modified by the MVSU (one word).
It was positionned to 1 (LDKL A2, /4000) before the MVSU execution.

ER 0043 : (check 02) : data error during MVSU (one word).
The data moved by MVSU from the physical address /7000 to the physical address /A000 is incorrect.
(A2) = 0 correct value to move.
(A3) = incorrect value moved by MVSU.

ER 0044 : (check 02) : (A1) incorrect after MVSU execution.
(A1) should have the value /7000 : starting physical address of the emitter buffer.

ER 0045 : (check 02) : (A2) incorrect after MVSU execution.
(A2) should have the value /4000 : starting logical address of the receiver buffer.

ER 0046 - 47 : (check 02) : Incorrect transfer during MVSU execution :
After MVSU execution, (A3) should have the value "0".
Before the MVSU execution, (A3) was loaded by the double of the number of transfers :
either (A3) = 2 (ER 0046) transfer of 1 word
either (A3) = /1000 (ER 0047) transfer of 2 K words.

Result :
(A2) = correct value = 0
(A3) = incorrect value : residual length of transfers.

ER 0048 : (check 02) : Data error during MVSU (2K words) :
The data moved by MVSU from the physical address /7000 to the physical address /A000 is incorrect.
(A2) = correct value
(A3) = incorrect value moved.

ER 0049 : (check 02) CR modified by the MVUS (one word) execution:
It was positionned to 1 (LDKL A2, /7000) before the MVUS execution.

ER 0050 : (check 02) : (A1) incorrect after MVUS (one word) execution :
(A1) should have the value /4002 (first logical address after the emitter buffer).

ER 0051 : (check 02) :
(A2) incorrect after MVUS (one word) execution:
(A2) should have the value /7002 (first physical address after the receiver buffer).

ER 0052 : (check 02) : Incorrect transfer during MVUS (one word):
After MVUS execution, (A3) should have the value "0".
Before the MVUS execution, (A3) was loaded by the double of the number of transfers : 2.
(A2) = correct value = 0
(A3) = incorrect value = residual length of transfers.

ER 0053 : (check 02) : Data error during MVUS (one word) :
The data moved by MVUS from the physical address /A000 to the physical address /7000 is incorrect.
(A2) = correct value.
(A3) = incorrect value moved.

ER 0054 : (check 02) : (A1) incorrect after MVUS (2 K words) execution :
(A1) should have the value /5000 (first logical address after the receiver buffer).

ER 0055 : (check 02) : (A2) incorrect after MVUS (2 K words) execution :
(A2) should have the value /8000 (first physical address after the receiver buffer).

ER 0056 : (check 02) : Incorrect transfer during MVUS (1 k word) :
After MVUS execution, (A3) should have the value "0".
Before the MVUS execution, (A3) was loaded by the double of the number of transfers : /1000.
(A2) = correct value
(A3) = incorrect value : residual length of transfers.

ER 0057 : (check 02) : Data error during MVUS (1K word) :
The data moved by MVUS from the physical address /A000 to the physical address /7000 is incorrect.
(A2) = correct value
(A3) = incorrect value moved.

ER 0058 to ER 0067 : (check 03) : Privileged instructions are not trapped in user mode.
Verify (A7) : (A7) is set to 1 before the privileged instruction execution and reset to 0 during the trap routine.

ER 0058 : error TLR
ER 0059 : error TSR
ER 0060 : error ELR
ER 0061 : error ESR
ER 0062 : error TL
ER 0063 : error TS
ER 0064 : error EL
ER 0065 : error ES
ER 0066 : error MVSU with R2 = 15
ER 0067 : error MVUS with R2 = 15

ER 0068 - ER 0069 : (check 03) : Trap error
The program goes to the trap routine.
- See the check number in CCHEC4 (/EA).
  The bit that is "1" indicates the running check.
- Verify the trap routine address was correctly loaded.

ER 0070 : (check 04) : Incorrect result of the user program execution.

The user program consists of the execution of /3FFF instructions ADK A5, 1 stored in successive pages in the physical addresses from /8000 to /FFFC. The result should have the value /3FFF

(A5) = incorrect result.

ER 0071 : (check 05) : error during the execution of a user program stored in random pages.

The user program consists of the addition of A7 (programmed in CO5ADS) with the memory effective address EA and comparison (by CO5CMP) with a memory buffer CONST.

Verify - The good storage of CO5ADS, CO5CMP, EA and CONST.
- The correct passage between the different buffers.
- For a value of the flag A4, the result of CO5ADS addition in EA must have the value of the appropriate memory case of CONST.

(A2) = reference CONST (A3 should have be that correct value).

(A3) = incorrect result (stored in EA) of the last addition.

(A4) = flag incremented of "34" from an addition to the next to execute a new loop.
(CO5ADS, CO5 CMP).

ER 0072 : (check 06) : Bit Modify incorrect.

The bit Modify is not set to "1" when a Clear Memory is executed in the appropriate page.

Verify - The segment table
- The cleared memory cases.

($A2_2$) = word number of the segment table in which the bit modify is not correct.

ER 0073 to ER 0076 : (check 07) : Stack error during Page Fault:

The page fault stack verification consists of :

- verification of the first word P' : program counter contents saved at the beginning of each instruction,
- verification of the third word S' : logical page address which generated the Page Fault.

ER 0073 : S' error during Test 07A
ER 0074 : P' error during Test 07A
ER 0075 : S' error during TST 07B
ER 0076 : P' error during TST07B

(A2) = correct logical address for ER0073 and 75

$(\underline{A2})_2$ = protected segment number for ER 0074 and 76

(A3) = incorrect value

ER 0077 : (check 07) : A protected page is modified in user mode :

The instruction which generates Page Fault is executed in user mode.

Verify the Clear Memory (user program C678) execution.

$(\underline{A2})_2$ = protected segment number

ER 0078 : (check 08) : S' (third word of the page fault stack)
(check 13)

Each page is protected by the bit Read Only.

A Page Fault occured for each Clear Memory of C678 user program.

$(\underline{A2})_2$ = protected segment number

(A3) = incorrect S'.

If during check 13 $\frac{A2}{2}$ = 0018 the test program is destroyed.

ER 0079 : (check 08) : P' (first word of the page fault stack)
(check 13) error.

Each page is protected by the bit Read Only.
A Page Fault occured for each Clear Memory of C678 user program.

(A2) = reference value (P')
(A3) = incorrect P'

ER 0080 : (check 08) : Bit Modify error . It is set to "1"
(check 13)
during the testing of Clear Memory execution in page protected by the bit Read Only.

(A2) = number of the segment which generates a Page Fault
2

ER 0081 : (check 09) : Page Fault occurs in system mode

(A2) = /9A : Page Fault occurs during the Extended Load execution.

(A2) = /9B : Page Fault occurs during the Extended Store execution.

Verify the system is in system mode.

ER 0082 : (check 09) : Extended Load not correctly executed :

(A2) = /9A : correct value to load in A3 by EL.

(A3) = incorrect value loaded during EL execution.

ER 0083 : (check 09) : Extended Store not correctly executed :

(A2) = /9B correct value stored by ES

(A3) = incorrect value stored by ES.

ER_0084 : (check 09) : Bit Modify error after Extended Store execution in a protected page :
Verify in the word 1 of the segment table SCRTCH that
- the bit 6 (Page Error) = 1
- the bit 7 (Read Only) = 1

ER_0095 : (check 11) :
(A1) incorrect after MVB execution broken by Page Fault in reading the source buffer.
Verify the (A1) evolution. During Page Fault, A1 points on the first location on which the execution must be resumed.
After MVB execution, (A1) should have the value of the first address after the emitting buffer (logical address: /9000).
(A1) = incorrect value.

ER 0096 : (check 11) :

(A2) incorrect after MVB execution broken by Page Fault in reading the source buffer.

Verify the (A2) evolution. During Page Fault, A2 points on the first location on which the execution must be resumed.

- After MVB execution, (A2) should have the value of the first address after the receiving buffer (logical address /5000).

(A2) = incorrect value.

ER 0097 : (check 11) : Residual length is not 0 in (A3) after MVB execution with Page Fault in reading the source buffer A3 was initialized to /4000 (double of the number of transfers).

Verify the evolution of (A3). when a Page Fault occurs, the contents of A3 is updated with the residual length of transfers.

After MOVE execution, (A3) = incorrect value of the length of transfers.

ER 0098 : (check 11) : Incorrect result of the user program execution after MVB with Page Fault in writting the destination buffer :

The user program consists of the execution of /1FFF instructions ADK A4, 1 stored from 16K to 24K words by the MOVE instruction.

(A4) should have the value /1FFF

(A4) = incorrect result.

Verify the MOVE execution : before that instruction, the user program is loaded from 24K to 32K words and (A4)=0

ER 0099 : (check 11) :
(A1) incorrect after MVB execution with Page Fault in writting the destination buffer.
See ER 0095.

ER 0100 : (check 11):
(A2) incorrect after MVB execution with Page Fault in writting the destination buffer.
See ER 0096.

ER 0101 : (check 11) : Residual length is not 0 in (A3) after MVB execution with Page Fault in writting the destination buffer.
See ER 0097.

ER 0102 : (check 11) : Incorrect result of the moved user program execution after MVB with Page Fault in writting the destination buffer :
See ER 0098.

ER 0103 : (check 11) :
(A1) incorrect after MVF execution with Page Fault in reading the source buffer :
When Page Fault occurs and after the MVF execution,
(A1) should have the value of the starting address of the emitting buffer : (logical address : /5000).
(A1) = incorrect value.

ER 0104 : (check 11) :
(A2) incorrect after MVF execution with Page Fault in reading the source buffer :
When Page Fault occurs and after the MVF execution,
(A2) should have the value of the starting address of the receiving buffer : (logical address : /1000).
(A2) = incorrect value.

ER_0105 : (check 11) : Residual length is not 0 in (A3) after MVF execution with Page Fault in reading the source buffer :
See ER 0097.

ER_0106 : (check 11) : Incorrect result of the moved user program execution after MVF with Page Fault in reading the source buffer :
See ER 0098.

ER_0107 : (check 11) :

(A1) incorrect after MVF execution with Page Fault in writting the destination buffer :
See ER 0103.

ER_0108 : (check 11) :

(A2) incorrect after MVF execution with Page Fault in writting the destination buffer :
See ER 0104.

ER_0109 : (check 11) : Incorrect result of the moved user program execution after MVF with Page Fault in writting the destination buffer :
See ER 0098.

ER_0110 : (check 12) : CR error after Multiple Load execution :
The CR should have the value "1" [(A1) being /1FFE]
$\frac{(A13)-4}{2}$ = segment number in which the Page Fault occurs during the last Multiple Load execution.

ER 0111 to ER 0116 : (check 12) : Loaded register incorrect after Multiple Load executed in user mode with Page Fault :

ER 0111 : (A1) is not /1111 (incorrect value of A1 → A11)
ER 0112 : (A2) is not /2222 " " " "
ER 0113 : (A3) is not /3333 " " " "
ER 0114 : (A4) is not /4444 " " " "
ER 0115 : (A5) is not /5555 " " " "
ER 0116 : (A6) is not /6666 " " " "

$\frac{(A13)-4}{2}$ = segment number in which the Page Fault occurs during the last Multiple Load execution.
Verify that the Multiple Load is integrally executed after a Page Fault.

ER 0117 : (check 10) : The timer of the segment table word 0 is not incremented : (working set window constant loaded by WER = 1).
If the external register address is correct (address introduced in A8 corresponds to the stapples on the card).
Verify : - execute a Table Load with 0 in the timer of the segment table word 0.
- execute one ELR from the segment 0.
- execute a Table Store to verify the segment table word 0 contents.

ER 0118 : (check 11) : Residual length is not 0 in (A3) after MVF execution with Page Fault in writting the destination buffer :
See ER 0097.

ER 0119 : (check 10): The pointed timer is not reset to zero.
Verify that : - the register A5 for ELR addresses the segment 0.
- the bits 9 to 15 of the segment table word 0 are 0 after ELR and Table Store executions.
(A5) = working set window constant loaded by WER.

ER 0120 : (check 12) :
(A7) incorrect after a Multiple Load execution in user mode with Page Fault :
(A7) should have the value /7777.
Verify that the Multiple Load is executed from the beginning after a Page Fault.
(A7) = incorrect value
$\frac{(A3)-4}{2}$ = segment number in which the Page Fault occurs during the last Multiple Load execution.

ER 0121 : (check 07) : Incorrect test page error during Test 07B. If (A2) is not "32", the second part of the check 07 is not correctly executed. Normally the segment table is entirely modified without bit page error after the execution of the user program C678.
Verify - the segment table : SCRTCH
- the memories cleared by the Clear Memory of the user program C678.
- if the PAF07B routine is correctly executed.
$\frac{(A2)-2}{2}$ = protected segment number

ER 0122 : (check 07) : Incorrect test Page Error during Test 07A.
During the first part of the check 07 (Test 07A), each page is protected. The user program consists of instructions LKM stored in each page and they have not to be executed.
Verify - the bit PE in each word of the segment table.
- the execution of the PAF07A routine.

ER 0123 :(check 08-13):Incorrect test Read Only.
If (A2) is not "32", the check 08 is not correctly executed. Normally, (A2) is incremented of 2 for each Page Fault.
Verify : - the segment table has the bit Read Only = 1 in each word.
- that the instructions Clear Memory of the user program C678 were not executed.
- if the PAF08 routine is correctly executed.

$\frac{(A2)-2}{2}$ = number of the segment in which the Page Fault occurs.

ER 0124 : (check 07) : S' error in the Page Fault stack during Test 07C :
(A3) = incorrect value of S'.
(A3) should have the value /200 (bits 4 to 7 corresponds to the logical address which generated Page Fault).

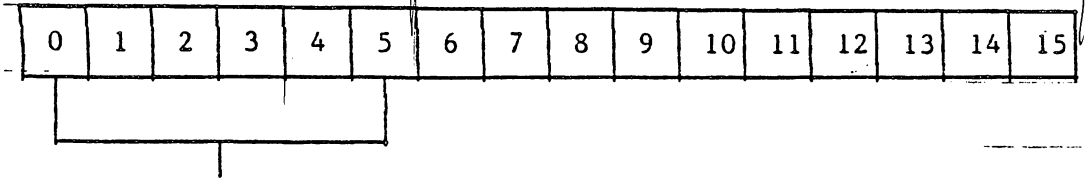
ER 0125 : (check 07) : P' error in the Page Fault stack during Test 07C.
(A3) = incorrect value of P'
(A3) should have the value /2000 (program counter value saved at the beginning of the last instruction).

ER 0126 : (check 07) : Incorrect test page error during Test 07C.
In Test 07C, the LKM instruction stored in a protected page has not to be executed.
Verify - the bit Page Error in the segment 2 after a Table Store execution.
- the execution of the PAF07C routine.

7. PROGRAM MODIFICATION

After loading, the program stops in /700. For a non standard initialization (see paragraph 4.1), the operator should load A8, A9 and A10 to introduce the parameters relating to MMU operation and program processing.

7.1 Parameters relating to MMU operation : A8 register

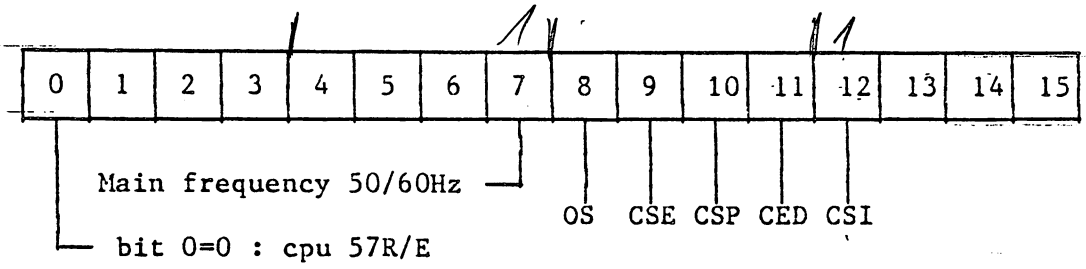


7.2 Parameters related to program processing :

- "one shoot" OS command
- "clear stop on error" CSE command
- "clear stop on program" CSP command
- "clear edition" CED command
- "clear stop information" CSI command
- "checks" to be executed command

7.2.1. A9 register :

In standard operation (see paragraph 4.1), the bits 8 to 12 are initialized at 0.



- "One shoot" (OS):

  Bit 08 =1 : Stop in /5E0(hexa) after the running of each check, before going to the next one. Depress the run button to carry on.

- "clear stop on error" (CSE):

  Bit 09 =1 : Suppress the in /5F0 in case of error.

- Main frquency

  Bit 07 =0 : 50Hz
  =1 : 60Hz

  In case of 50Hz, it is possible to set bit 7 to "1" that will increase by 20% all delays. This permits to determine if problem is due to a critical timming or real fault.

- "Clear Stop on Program" (CPS) :

  Bit 10 = 1 : Suppress the stop in "700" (hexa) after the program has been executed (loop again on test).

- "Clear Edition" (CED) :

  Bit 11 = 1 : Suppress the printing out of error and information Messages :

  CSI at 0 : stop in /5E0 : information Code in A1.

  CSE at 0 : stop in /5F0 : error code in A1.

- "Clear Stop on Information" (CSI) :

  Bit 12 = 1 : Suppress the stop in /5E0 (hexa).

7.2.2. A 10 register :

	0	1.	2	3	4	5	6	7	8	9	10	11	12	13	14	15
check N°	0	1	2	3	4	5	6	7	8		10	11	12	13		

(running in normal operation)

In non standard operation, load A10 before starting the program.

- checks to be run : bits corresponding of A10 initialized at 1.
- checks absents : bits corresponding of A10 initialized at 0.

```
00000                          IDENT     REMMU1
00001                  *
00002                  *
00003                  *
00004                  *
00005                  *
00006                  *       APPLICABLE TO :
00007                  *
00008                  *       PROCEDURE       5111 991 (T,B,F,)
00009                  *
00010                  *       LISTING         5111 991 (T,B,F,)
00011                  *
00012                  *       TAPE            5111 199 (T,B,F,)
00013                  *
00014                  *       CASSETTE        5111 199 (T,B,F,)
00015                  *
00016                  *
00017                  *
00018                  *
00019                  *
00020                  DEB       EQU     *
00021                  ************************************
00022                  *              UPACKU              *
00023                  *       LEVEL 7  78 02 09          *
00024                  ************************************
00025                             NLIST
00683                             LIST
00684                  *
00685                  *
00686                  *
00687                  *
00688                  ************************************************
00689                  *                                              *
00690                  *       MEMORY MANAGEMENT TEST                 *
00691                  *                                              *
00692                  ************************************************
00693                  *
00694                  *
00695                  *
00696                  *
00697  0600  0000  F   PARAM     DATA      INITIA      INITIALIZATIONS
00698  0602  0000  F   PARAMC    DATA      CHK00       TLR,TSR,TL,TS : SYSTEM MODE
00699  0604  0000  F             DATA      CHK01       ELR,ESR,EL,ES : SYSTEM MODE
00700  0606  0000  F             DATA      CHK02       MVSU,MVUS : SYSTEM MODE
00701  0608  0000  F             DATA      CHK03       PRIVILEGED INSTRUCTIONS :USER MODE
00702  060A  0000  F             DATA      CHK04       USER PROGRAM IN SUCCESSIVE PAGES
00703  060C  0000  F             DATA      CHK05       USER PROGRAM IN RANDOM PAGES
00704  060E  0000  F             DATA      CHK06       TEST BIT "MODIFY"
00705  0610  0000  F             DATA      CHK07       TEST PAGE ERROR
00706  0612  0000  F             DATA      CHK08       TEST READ ONLY
```

```
00707  0614  0000  F          DATA    CHK09      SYSTEM MODE ; NONERROR PERFORMING
00708  0616  0000             DATA    0
00709  0618  0000  F          DATA    CHK11      MVB,MVF,PAGE FAULT RESUMING
00710  061A  0000  F          DATA    CHK12      ML ,PAGE FAULT RESUMING
00711  061C  0000  F          DATA    CHK13                 TEST READ ONLY FOR MEM SIZE=16K
00712  061E  0000             DATA    0
00713  0620  0000             DATA    0
00714                  *
00715                  *
00716                  *   COMMAND
00717                  *
00718                  *
```

```
00719
00720
                EJECT
                RORG    DEB+/6EE
```

```
00721                           EJECT
00722                   *
00723                   *   STANDARD INITIALIZATIONS
00724                   *
00725  06EE  80A0       STAND   LDKL    A8,/7A00            PAF ADDRESS
       06F0  7A00
00726  06F2  81A0               LDKL    A9,0        "STOP ON ERROR,STOP ON END,EDITION"
       06F4  0000
00727  06F6  82A0               LDKL    A10,/FFDC           CHECKS TO EXECUTE
       06F8  FFDC
00728  06FA  87A0               LDKL    A15,/13E
       06FC  013E
00729  06FE  207F       STOPI   HLT
00730                   *
00731                   *   FOR NO STANDARD CONDITIONS: LOAD A8,A9,A10
00732                   *
00733  0700  8F20               ABL     START
       0702  0080  R
```

```
00734                          EJECT
00735                  *
00736                  *
00737                  *   PROGRAM INITIALIZATIONS
00738                  *
00739                  *
00740                  INITIA  EQU     *
00741  0704  E702              ECR     A7,A8                   PAF LEVEL
00742  0706  277E              ANK     A7,/7E
00743  0708  8741              ST      A7,PPAF
       070A  0000  F
00744  070C  8120              LDKL    A1,ITHALT
       070E  00F6  R
00745  0710  8141              ST      A1,2
       0712  0002
00746  0714  8161              ST*     A1,PPAF
       0716  0000  F
00747  0718  F03A              RTN     A14
```

```
00748                                   EJECT
00749                           *
00750                           *
00751                           *   CHECK00: TLR,TSR,TL,TS: SYSTEM MODE
00752                           *
00753                           *
00754                           CHK00   EQU     *
00755  071A  0100                      LDK     A1,0
00756  071C  F7A1                      CF      A15,EDITIF
       071E  0552  R
00757  0720  8720                      LDKL    A7,/FFFF    " SCRATCH "FORMATION
       0722  FFFF
00758  0724  0600                      LDK     A6,0
00759  0726  8759              STSCRA  ST      A7,SCRTCH,A6
       0728  0000  F
00760  072A  1602                      ADK     A6,2
00761  072C  EE20                      CWK     A6,32
       072E  0020
00762  0730  5C0C                      RB(4)   STSCRA
00763                           *   TLR,TSR :SYSTEM MODE ,TABLE LOADED WITH /0000
00764  0732  0200              TEST0A  LDK     A2,0
00765  0734  0300                      LDK     A3,0
00766  0736  83C0                      LD      A11,PTABLE
       0738  0000  F
00767  073A  824D                      ST      A2,WORD0,A3
       073C  0000  F
00768  073E  1302                      ADK     A3,2
00769  0740  EB20                      CWK     A3,32
       0742  0020
00770  0744  5C0C                      RB(4)   TEST0A+8
00771  0746  1301                      ADK     A3,1        SET CR=1
00772  0748  B82E                      TLR     A11
00773  074A  5108                      RF(1)   *+10
00774  074C  8120                      LDKL    A1,/1001    ER1:CR MODIFIED
       074E  1001
00775  0750  F7A1                      CF      A15,EDITER
       0752  0528  R
00776  0754  8640                      LD      A6,PSCRCH
       0756  0000  F
00777  0758  B839                      TSR     A6
00778  075A  5108                      RF(1)   *+10
00779  075C  8120                      LDKL    A1,/1002    ER2: CR MODIFIED
       075E  1002
00780  0760  F7A1                      CF      A15,EDITER
       0762  0528  R
00781  0764  0300                      LDK     A3,0
00782  0766  EA4C              CMP0    CW      A2,SCRTCH,A3
       0768  0000  F
00783  076A  5008                      RF(0)   *+10
00784  076C  8120                      LDKL    A1,/2003    ER3: PATTERN ERROR
```

```
                076E  2003
00785           0770  F7A1                CF        A15,EDITER
                0772  0528  R
00786           0774  1302                ADK       A3,2
00787           0776  EB20                CWK       A3,32
                0778  0020
00788           077A  5C16                RB(4)     CMP0
00789                                *   TLR,TSR:SYSTEM MODE: TABLE LOADED WITH:
00790           077C  8220                LDKL      A2,/FFFF                  /FFFF
                077E  FFFF
00791           0780  F6A1                CF        A14,LOOP0A
                0782  0000  F
00792           0784  8220                LDKL      A2,/5555                  /5555
                0786  5555
00793           0788  F6A1                CF        A14,LOOP0A
                078A  0000  F
00794           078C  8220                LDKL      A2,/AAAA                  /AAAA
                078E  AAAA
00795           0790  F6A1                CF        A14,LOOP0A
                0792  0000  F
00796                                *   TL,TS: SYSTEM MODE
00797                                TEST0B    EQU       *
00798           0794  0580                LDK       A5,/80       INDEX FOR T5,T7 ADDRESSING MODE
00799           0796  83C0                LD        A11,PTABLE    FORMATION SHIFT TABLE
                0798  0000  F
00800           079A  0710                LDK       A7,16
00801           079C  0101                LDK       A1,1
00802           079E  812F           SHFTAB   STR       A1,A11
00803           07A0  1F01                SUK       A7,1
00804           07A2  5008                RF(0)     *+10
00805           07A4  93A0                ADKL      A11,2
                07A6  0002
00806           07A8  3941                SLL       A1,1
00807           07AA  5F0E                RB        SHFTAB
00808                                *   TL,TS: ADRESSING MODE:T4
00809           07AC  B840                TL        WORD0
                07AE  0000  F
00810           07B0  5006                RF(0)     *+8
00811           07B2  0104                LDK       A1,4         ER4:CR MODIFIED
00812           07B4  F7A1                CF        A15,EDITER
                07B6  0528  R
00813           07B8  B841                TS        SCRTCH
                07BA  0000  F
00814           07BC  5006                RF(0)     *+8
00815           07BE  0105                LDK       A1,5         ER5:CR MODIFIED
00816           07C0  F7A1                CF        A15,EDITER
                07C2  0528  R
00817           07C4  0404                LDK       A4,4
00818           07C6  F6A1                CF        A14,CMPTAB
                07C8  0000  F
```

```
00819                          *   TL,TS: ADDRESSING MODE: T5
00820  07CA  B854                     TL        WORD0-/80,A5
       07CC  0000  F
00821  07CE  5006                     RF(0)     *+8
00822  07D0  0107                     LDK       A1,7          ER7: CR MODIFIED
00823  07D2  F7A1                     CF        A15,EDITER
       07D4  0528  R
00824  07D6  B855                     TS        SCRTCH-/80,A5
       07D8  0000  F
00825  07DA  5006                     RF(0)     *+8
00826  07DC  0108                     LDK       A1,8          ER8:CR MODIFIED
00827  07DE  F7A1                     CF        A15,EDITER
       07E0  0528  R
00828  07E2  F6A1                     CF        A14,CMPTAB
       07E4  0000  F
00829                          *  TL ADDRESSING MODE T6
00830  07E6  B860                     TL*       PTABLE
       07E8  0000  F
00831  07EA  5006                     RF(0)     *+8
00832  07EC  0109                     LDK       A1,9          ER9:CR MODIFIED
00833  07EE  F7A1                     CF        A15,EDITER
       07F0  0528  R
00834                          *  TS ADDRESSING MODE T6
00835  07F2  B861                     TS*       PSCRCH
       07F4  0000  F
00836  07F6  5006                     RF(0)     *+8
00837  07F8  0110                     LDK       A1,/10        ER10:CR MODIFIED
00838  07FA  F7A1                     CF        A15,EDITER
       07FC  0528  R
00839  07FE  F6A1                     CF        A14,CMPTAB
       0800  0000  F
00840                          *  TL ADDRESSING MODE T7
00841  0802  B874                     TL*       PTABLE-/80,A5
       0804  0000  F
00842  0806  5006                     RF(0)     *+8
00843  0808  0111                     LDK       A1,/11        ER11:CR MODIFIED
00844  080A  F7A1                     CF        A15,EDITER
       080C  0528  R
00845                          *  TS ADDRESSING MODE T7
00846  080E  B875                     TS*       PSCRCH-/80,A5
       0810  0000  F
00847  0812  5006                     RF(0)     *+8
00848  0814  0112                     LDK       A1,/12        ER12:CR MODIFIED
00849  0816  F7A1                     CF        A15,EDITER
       0818  0528  R
00850  081A  F6A1                     CF        A14,CMPTAB
       081C  0000  F
00851  081E  F03A               COEND RTN       A14
00852                          *   LOOP FOR TLR,TSR TESTS IN SYSTEM MODE
00853  0820  0300               LOOP0A LDK      A3,0
```

```
00854  0822  83C0              LD      A11,PTABLE
       0824  0000  F
00855  0826  824D              ST      A2,WORD0,A3
       0828  0000  F
00856  082A  1302              ADK     A3,2
00857  082C  EB20              CWK     A3,32
       082E  0020
00858  0830  5C0C              RB(4)   LOOP0A+6
00859  0832  B82E              TLR     A11
00860  0834  5008              RF(0)   *+10
00861  0836  8120              LDKL    A1,/1001    ER1: CR MODIFIED
       0838  1001
00862  083A  F7A1              CF      A15,EDITER
       083C  0528  R
00863  083E  8640              LD      A6,PSCRCH
       0840  0000  F
00864  0842  83A0              LDKL    A11,0       SET CR TO ZERO
       0844  0000
00865  0846  B839              TSR     A6
00866  0848  5008              RF(0)   *+10
00867  084A  8120              LDKL    A1,/1002    ER2:CR MODIFIED
       084C  1002
00868  084E  F7A1              CF      A15,EDITER
       0850  0528  R
00869  0852  0300              LDK     A3,0
00870  0854  EA4C      CWSCRA  CW      A2,SCRTCH,A3
       0856  0000  F
00871  0858  5008              RF(0)   *+10
00872  085A  8120              LDKL    A1,/2003    ER3: PATTERN ERROR
       085C  2003
00873  085E  F7A1              CF      A15,EDITER
       0860  0528  R
00874  0862  1302              ADK     A3,2
00875  0864  EB20              CWK     A3,32
       0866  0020
00876  0868  5C16              RB(4)   CWSCRA
00877  086A  F03A              RTN     A14
00878  086C  0600      CMPTAB  LDK     A6,0        COMPARE (SHIFT TABLE) (SCRATCH TABLE)
00879  086E  8758              LD      A7,SCRTCH,A6
       0870  0000  F
00880  0872  EF58              CW      A7,WORD0,A6
       0874  0000  F
00881  0876  500E              RF(0)   *+16
00882  0878  8120              LDKL    A1,/3006    ER6:DIFFERENT TABLE CONTENTS
       087A  3006
00883  087C  831C              LDR     A3,A7
00884  087E  8258              LD      A2,WORD0,A6
       0880  0000  F
00885  0882  F7A1              CF      A15,EDITER
       0884  0528  R
```

```
00886  0886  1602          ADK     A6,2
00887  0888  EE20          CWK     A6,32
       088A  0020
00888  088C  5C20          RB(4)   CMPTAB+2
00889  088E  1401          ADK     A4,1
00890  0890  84A0          LDKL    A12,0       SET CR TO ZERO
       0892  0000
00891  0894  F03A          RTN     A14
```

```
                                EJECT
                        *
                        *
                        *   CHECK01: ELR,ESR,EL,ES :SYSTEM MODE
                        *
                        *
                        CHK01   EQU     *
0896  0101                      LDK     A1,1
0898  F7A1                      CF      A15,EDITIF
089A  0552  R
089C  8620                      LDKL    A6,/2000
089E  2000
08A0  F6A1                      CF      A14,TBUSER  LOAD TABLE 16K TO 32K
08A2  0000  F
                        *   ELR TEST
08A4  8220              TST01A  LDKL    A2,/8888
08A6  8888
08A8  8241                      ST      A2,/87FE
08AA  87FE
08AC  0300                      LDK     A3,0
08AE  8620                      LDKL    A6,/07FE    SET CR=1 AND CLEAR SCRATCH
08B0  07FE
08B2  D338                      ELR     A3,A6
08B4  5206                      RF(2)   *+8
08B6  0113                      LDK     A1,/13      ER13:CR NOT NEGATIVE
08B8  F7A1                      CF      A15,EDITER
08BA  0528  R
08BC  EB08                      CWR     A3,A2
08BE  5008                      RF(0)   *+10
08C0  8120                      LDKL    A1,/2014    ER14:PATTERN ERROR
08C2  2014
08C4  F7A1                      CF      A15,EDITER
08C6  0528  R
08C8  0200                      LDK     A2,0
08CA  8241                      ST      A2,/AFFE
08CC  AFFE
08CE  8620                      LDKL    A6,/5FFE    SET CR=1
08D0  5FFE
08D2  D338                      ELR     A3,A6
08D4  5006                      RF(0)   *+8
08D6  0115                      LDK     A1,/15      ER15:CR NOT ZERO
08D8  F7A1                      CF      A15,EDITER
08DA  0528  R
08DC  EB08                      CWR     A3,A2
08DE  5008                      RF(0)   *+10
08E0  8120                      LDKL    A1,/2016    ER16:PATTERN ERROR
08E2  2016
08E4  F7A1                      CF      A15,EDITER
08E6  0528  R
08E8  8220                      LDKL    A2,/5555
```

```
                08EA  5555
00928           08EC  8241              ST      A2,/DFFE
                08EE  DFFE
00929           08F0  8620              LDKL    A6,/BFFE    SET CR=2
                08F2  BFFE
00930           08F4  D338              ELR     A3,A6
00931           08F6  5106              RF(1)   *+8
00932           08F8  0117              LDK     A1,/17      ER17:CR NOT POSITIVE
00933           08FA  F7A1              CF      A15,EDITER
                08FC  0528  R
00934           08FE  EB08              CWR     A3,A2
00935           0900  5008              RF(0)   *+10
00936           0902  8120              LDKL    A1,/2018    ER18:PATTERN ERROR
                0904  2018
00937           0906  F7A1              CF      A15,EDITER
                0908  0528  R
00938                           *   EL : ADDRESSING MODE T4
00939           090A  8220              LDKL    A2,/8888
                090C  8888
00940           090E  8241              ST      A2,/8FFE
                0910  8FFE
00941           0912  D340              EL      A3,/1FFE
                0914  1FFE
00942           0916  5208              RF(2)   *+10
00943           0918  8120              LDKL    A1,/1019    ER19:CR NOT NEGATIVE
                091A  1019
00944           091C  F7A1              CF      A15,EDITER
                091E  0528  R
00945           0920  EB08              CWR     A3,A2
00946           0922  5008              RF(0)   *+10
00947           0924  8120              LDKL    A1,/2020    ER20:PATTERN ERROR
                0926  2020
00948           0928  F7A1              CF      A15,EDITER
                092A  0528  R
00949                           *   EL:ADDRESSING MODE T5
00950           092C  8520              LDKL    A5,/200     INDEX
                092E  0200
00951           0930  8220              LDKL    A2,/5555
                0932  5555
00952           0934  8241              ST      A2,/EFFE
                0936  EFFE
00953           0938  8120              LDKL    A1,0        SET CR=0
                093A  0000
00954           093C  D354              EL      A3,/DFFE-/200,A5
                093E  DDFE
00955           0940  5106              RF(1)   *+8
00956           0942  0121              LDK     A1,/21      ER21:CR NOT POSITIVE
00957           0944  F7A1              CF      A15,EDITER
                0946  0528  R
00958           0948  EB08              CWR     A3,A2
```

```
00959  094A  5008              RF(0)     *+10
00960  094C  8120              LDKL      A1,/2022    ER22:PATTERN ERROR
       094E  2022
00961  0950  F7A1              CF        A15,EDITER
       0952  0528  R
00962                     *   EL:ADDRESSING MODE T6
00963  0954  0200              LDK       A2,0
00964  0956  8241              ST        A2,/CFFE
       0958  CFFE
00965  095A  8120              LDKL      A1,/9FFE    SET CR=2
       095C  9FFE
00966  095E  8141              ST        A1,PAT01
       0960  0000  F
00967  0962  D360              EL*       A3,PAT01
       0964  0000  F
00968  0966  5006              RF(0)     *+8
00969  0968  0123              LDK       A1,/23      ER23:CR NOT ZERO
00970  096A  F7A1              CF        A15,EDITER
       096C  0528  R
00971  096E  EB08              CWR       A3,A2
00972  0970  5008              RF(0)     *+10
00973  0972  8120              LDKL      A1,/2024    ER24:PATTERN ERROR
       0974  2024
00974  0976  F7A1              CF        A15,EDITER
       0978  0528  R
00975                     *   EL: ADDRESSING MODE T7
00976  097A  8241              ST        A2,/A7FE
       097C  A7FE
00977  097E  8320              LDKL      A3,/47FE
       0980  47FE
00978  0982  8341              ST        A3,PAT01
       0984  0000  F
00979  0986  D374              EL*       A3,PAT01-/200,A5
       0988  0000  F
00980  098A  5006              RF(0)     *+8
00981  098C  0125              LDK       A1,/25      ER25:CR NOT ZERO
00982  098E  F7A1              CF        A15,EDITER
       0990  0528  R
00983  0992  EB08              CWR       A3,A2
00984  0994  5008              RF(0)     *+10
00985  0996  8120              LDKL      A1,/2026    ER26:PATTERN ERROR
       0998  2026
00986  099A  F7A1              CF        A15,EDITER
       099C  0528  R
00987  099E  8220              LDKL      A2,/5555
       09A0  5555
00988  09A2  8241              ST        A2,/D7FE
       09A4  D7FE
00989  09A6  8120              LDKL      A1,/A7FE    SET CR=2
       09A8  A7FE
```

```
00990   09AA  8141          ST      A1,PAT01
        09AC  0000  F
00991   09AE  D374          EL*     A3,PAT01-/200,A5
        09B0  0000  F
00992   09B2  5106          RF(1)   *+8
00993   09B4  0127          LDK     A1,/27      ER27:CR NOT ONE
00994   09B6  F7A1          CF      A15,EDITER
        09B8  0528  R
00995   09BA  EB08          CWR     A3,A2
00996   09BC  5008          RF(0)   *+10
00997   09BE  8120          LDKL    A1,/2028    ER28:PATTERN ERROR
        09C0  2028
00998   09C2  F7A1          CF      A15,EDITER
        09C4  0528  R
00999                   *   ESR TEST
01000   09C6  0100      TST01B  LDK     A1,0
01001   09C8  8141          ST      A1,/97FE
        09CA  97FE
01002   09CC  8220          LDKL    A2,/FFFF
        09CE  FFFF
01003   09D0  8620          LDKL    A6,/27FE
        09D2  27FE
01004   09D4  8720          LDKL    A7,0        SET CR=0
        09D6  0000
01005   09D8  D239          ESR     A2,A6
01006   09DA  5006          RF(0)   *+8
01007   09DC  0129          LDK     A1,/29      ER29:CR NOT UNCHANGED
01008   09DE  F7A1          CF      A15,EDITER
        09E0  0528  R
01009   09E2  8340          LD      A3,/97FE
        09E4  97FE
01010   09E6  EA0C          CWR     A2,A3
01011   09E8  5008          RF(0)   *+10
01012   09EA  8120          LDKL    A1,/2030    ER30:PATTERN ERROR
        09EC  2030
01013   09EE  F7A1          CF      A15,EDITER
        09F0  0528  R
01014   09F2  8320          LDKL    A3,/FFFF
        09F4  FFFF
01015   09F6  8341          ST      A3,/B7FE
        09F8  B7FE
01016   09FA  0200          LDK     A2,0
01017   09FC  8620          LDKL    A6,/67FE    SET CR=1
        09FE  67FE
01018   0A00  D239          ESR     A2,A6
01019   0A02  5106          RF(1)   *+8
01020   0A04  0131          LDK     A1,/31      ER31:CR NOT UNCHANGED
01021   0A06  F7A1          CF      A15,EDITER
        0A08  0528  R
01022   0A0A  8340          LD      A3,/B7FE
```

```
        0A0C  B7FE
01023   0A0E  EA0C              CWR     A2,A3
01024   0A10  5008              RF(0)   *+10
01025   0A12  8120              LDKL    A1,/2032    ER32: PATTERN ERROR
        0A14  2032
01026   0A16  F7A1              CF      A15,EDITER
        0A18  0528  R
01027   0A1A  0300              LDK     A3,0
01028   0A1C  8341              ST      A3,/F7FE
        0A1E  F7FE
01029   0A20  8220              LDKL    A2,/5555
        0A22  5555
01030   0A24  8620              LDKL    A6,/E7FE    SET CR=2
        0A26  E7FE
01031   0A28  D239              ESR     A2,A6
01032   0A2A  5206              RF(2)   *+8
01033   0A2C  0133              LDK     A1,/33      ER33:CR NOT UNCHANGED
01034   0A2E  F7A1              CF      A15,EDITER
        0A30  0528  R
01035   0A32  8340              LD      A3,/F7FE
        0A34  F7FE
01036   0A36  EA0C              CWR     A2,A3
01037   0A38  5008              RF(0)   *+10
01038   0A3A  8120              LDKL    A1,/2034    ER34: PATTERN ERROR
        0A3C  2034
01039   0A3E  F7A1              CF      A15,EDITER
        0A40  0528  R
01040                   *   ES: ADDRESSING MODE T4
01041   0A42  8220              LDKL    A2,/8888
        0A44  8888
01042   0A46  0300              LDK     A3,0
01043   0A48  8341              ST      A3,/E7FE
        0A4A  E7FE
01044   0A4C  8420              LDKL    A4,4        T4= SET CR=1
        0A4E  0004
01045   0A50  D241              ES      A2,/C7FE
        0A52  C7FE
01046   0A54  5106              RF(1)   *+8
01047   0A56  0135              LDK     A1,/35      ER35:CR NOT UNCHANGED
01048   0A58  F7A1              CF      A15,EDITER
        0A5A  0528  R
01049   0A5C  8340              LD      A3,/E7FE
        0A5E  E7FE
01050   0A60  EA0C              CWR     A2,A3
01051   0A62  5008              RF(0)   *+10
01052   0A64  8120              LDKL    A1,/3036    ER36:PATTERN ERROR
        0A66  3036
01053   0A68  F7A1              CF      A15,EDITER
        0A6A  0528  R
01054                   *   ES : ADDRESSING MODE T5
```

```
01055  0A6C  0100              LDK     A1,0
01056  0A6E  8141              ST      A1,/BFFE
       0A70  BFFE
01057  0A72  8220              LDKL    A2,/FFFF
       0A74  FFFF
01058  0A76  D255              ES      A2,/7FFE-/200,A5
       0A78  7DFE
01059  0A7A  8340              LD      A3,/BFFE
       0A7C  BFFE
01060  0A7E  EA0C              CWR     A2,A3
01061  0A80  500A              RF(0)   *+12
01062  0A82  0405              LDK     A4,5        T5
01063  0A84  8120              LDKL    A1,/3037    ER37:PATTERN ERROR
       0A86  3037
01064  0A88  F7A1              CF      A15,EDITER
       0A8A  0528  R
01065                      *   ES: ADDRESSING MODE T6
01066  0A8C  0100              LDK     A1,0
01067  0A8E  8141              ST      A1,/9FFE
       0A90  9FFE
01068  0A92  8220              LDKL    A2,/5555
       0A94  5555
01069  0A96  8120              LDKL    A1,/3FFE
       0A98  3FFE
01070  0A9A  8141              ST      A1,PAT01
       0A9C  0000  F
01071  0A9E  D261              ES*     A2,PAT01
       0AA0  0000  F
01072  0AA2  8340              LD      A3,/9FFE
       0AA4  9FFE
01073  0AA6  EA0C              CWR     A2,A3
01074  0AA8  500A              RF(0)   *+12
01075  0AAA  0406              LDK     A4,6        T6
01076  0AAC  8120              LDKL    A1,/3038    ER38:PATTERN ERROR
       0AAE  3038
01077  0AB0  F7A1              CF      A15,EDITER
       0AB2  0528  R
01078                      *   ES: ADDRESSING MODE T7
01079  0AB4  8320              LDKL    A3,/FFFF
       0AB6  FFFF
01080  0AB8  8341              ST      A3,/C7FE
       0ABA  C7FE
01081  0ABC  0200              LDK     A2,0
01082  0ABE  8720              LDKL    A7,/87FE
       0AC0  87FE
01083  0AC2  8741              ST      A7,PAT01
       0AC4  0000  F
01084  0AC6  D275              ES*     A2,PAT01-/200,A5
       0AC8  0000  F
01085  0ACA  5206              RF(2)   *+8
```

```
01086  0ACC  0139          LDK     A1,/39      ER39:CR NOT UNCHANGED
01087  0ACE  F7A1          CF      A15,EDITER
       0AD0  0528  R
01088  0AD2  8340          LD      A3,/C7FE
       0AD4  C7FE
01089  0AD6  EA0C          CWR     A2,A3
01090  0AD8  5008          RF(0)   *+10
01091  0ADA  8120          LDKL    A1,/2040    ER40:PATTERN ERROR
       0ADC  2040
01092  0ADE  F7A1          CF      A15,EDITER
       0AE0  0528  R
01093  0AE2  0300          LDK     A3,0
01094  0AE4  8341          ST      A3,/FFFE
       0AE6  FFFE
01095  0AE8  8220          LDKL    A2,/8888
       0AEA  8888
01096  0AEC  8720          LDKL    A7,/FFFE
       0AEE  FFFE
01097  0AF0  8741          ST      A7,PAT01
       0AF2  0000  F
01098  0AF4  D275          ES*     A2,PAT01-/200,A5
       0AF6  0000  F
01099  0AF8  8340          LD      A3,/FFFE
       0AFA  FFFE
01100  0AFC  EA0C          CWR     A2,A3
01101  0AFE  5008          RF(0)   *+10
01102  0B00  8120          LDKL    A1,/2041    ER41:PATTERN ERROR
       0B02  2041
01103  0B04  F7A1          CF      A15,EDITER
       0B06  0528  R
01104  0B08  F03A    C1END RTN     A14
01105  0B0A          PAT01 RES     1
```

```
                                    EJECT
                          *
                          *
                          *      CHECK02: MVSU,MVUS : SYSTEM MODE
                          *
                          *
                          CHK02    EQU     *
0B0C  0102                         LDK     A1,2
0B0E  F7A1                         CF      A15,EDITIF
0B10  0552  R
0B12  8620                         LDKL    A6,/2000
0B14  2000
0B16  F6A1                         CF      A14,TBUSER  SEGMENT TABLE FORMATION
0B18  0000  F
                          *   MVSU
0B1A  0500                         LDK     A5,0
0B1C  8555                BUFEMS   ST      A5,/7000,A5   SYSTEM BUFFER FORMATION
0B1E  7000
0B20  1502                         ADK     A5,2
0B22  ED20                         CWK     A5,/1000
0B24  1000
0B26  5C0C                         RB(4)   BUFEMS
0B28  0500                         LDK     A5,0
0B2A  8620                         LDKL    A6,/FFFF
0B2C  FFFF
0B2E  8655                BFRECU   ST      A6,/A000,A5   USER BUFFER INITIALIZATION
0B30  A000
0B32  1502                         ADK     A5,2
0B34  ED20                         CWK     A5,/1000
0B36  1000
0B38  5C0C                         RB(4)   BFRECU
0B3A  8120                TST02A   LDKL    A1,/7000     MVSU EXECUTION (ONE WORD)
0B3C  7000
0B3E  8220                         LDKL    A2,/4000     SET CR=1 -PAGE /A000
0B40  4000
0B42  0302                         LDK     A3,2         DOUBLE OF THE NUMBER OF TRANSFERS
0B44  708C                         MVSU    A3           DATA=0
0B46  5106                         RF(1)   *+8
0B48  0142                         LDK     A1,/42       ER42:CR NOT UNCHANGED
0B4A  F7A1                         CF      A15,EDITER
0B4C  0528  R
0B4E  8440                         LD      A4,/A000
0B50  A000
0B52  500C                         RF(0)   *+14
0B54  8310                         LDR     A3,A4
0B56  0200                         LDK     A2,0
0B58  8120                         LDKL    A1,/2043     ER43:DATA ERROR
0B5A  2043
0B5C  F7A1                         CF      A15,EDITER
0B5E  0528  R
```

```
01142  0B60  E920          CWK     A1,/7000    INCORRECT IF ERROR 43 OCCURED
       0B62  7000
01143  0B64  5006          RF(0)   *+8
01144  0B66  0144          LDK     A1,/44      ER44:A1 INCORRECT
01145  0B68  F7A1          CF      A15,EDITER
       0B6A  0528  R
01146  0B6C  EA20          CWK     A2,/4000    INCORRECT IF ERROR 43 OCCURED
       0B6E  4000
01147  0B70  5006          RF(0)   *+8
01148  0B72  0145          LDK     A1,/45      ER45:A2 INCORRECT
01149  0B74  F7A1          CF      A15,EDITER
       0B76  0528  R
01150  0B78  0700          LDK     A7,0
01151  0B7A  EF0C          CWR     A7,A3
01152  0B7C  500A          RF(0)   *+12
01153  0B7E  0200          LDK     A2,0
01154  0B80  8120          LDKL    A1,/2046    ER46:R2 INCORRECT
       0B82  2046
01155  0B84  F7A1          CF      A15,EDITER
       0B86  0528  R
01156  0B88  8641          ST      A6,/A000
       0B8A  A000
01157  0B8C  8320          LDKL    A3,/1000
       0B8E  1000
01158  0B90  708C          MVSU    A3          MVSU:2KWORDS
01159  0B92  0200          LDK     A2,0
01160  0B94  EA0C          CWR     A2,A3
01161  0B96  5008          RF(0)   *+10
01162  0B98  8120          LDKL    A1,/2047    ER47:INCORRECT TRANSFER
       0B9A  2047
01163  0B9C  F7A1          CF      A15,EDITER
       0B9E  0528  R
01164  0BA0  0200          LDK     A2,0
01165  0BA2  8348    CMPBUF LD      A3,/A000,A2
       0BA4  A000
01166  0BA6  EA0C          CWR     A2,A3
01167  0BA8  5008          RF(0)   *+10
01168  0BAA  8120          LDKL    A1,/2048    ER48:DATA ERROR
       0BAC  2048
01169  0BAE  F7A1          CF      A15,EDITER
       0BB0  0528  R
01170  0BB2  1202          ADK     A2,2
01171  0BB4  EA20          CWK     A2,/1000
       0BB6  1000
01172  0BB8  5C18          RB(4)   CMPBUF
01173                  *   MVUS
01174  0BBA  0500          LDK     A5,0
01175  0BBC  8655    BFRECS ST      A6,/7000,A5   RECEIVER BUFFER INITIALIZATION
       0BBE  7000
01176  0BC0  1502          ADK     A5,2
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01177  0BC2  ED20            CWK     A5,/1000
       0BC4  1000
01178  0BC6  5C0C            RB(4)   BFRECS
01179  0BC8  8120    TST02C  LDKL    A1,/4000    EMMITTER BUFFER
       0BCA  4000
01180  0BCC  8220            LDKL    A2,/7000
       0BCE  7000
01181  0BD0  0302            LDK     A3,2
01182  0BD2  788C            MVUS    A3          MVUS: TRANSFER OF ONE WORD:DATA=0
01183  0BD4  5106            RF(1)   *+8
01184  0BD6  0149            LDK     A1,/49      ER49: CR NOT UNCHANGED
01185  0BD8  F7A1            CF      A15,EDITER
       0BDA  0528  R
01186  0BDC  E920            CWK     A1,/4002
       0BDE  4002
01187  0BE0  5006            RF(0)   *+8
01188  0BE2  0150            LDK     A1,/50      ER50: A1 INCORRECT
01189  0BE4  F7A1            CF      A15,EDITER
       0BE6  0528  R
01190  0BE8  EA20            CWK     A2,/7002
       0BEA  7002
01191  0BEC  5006            RF(0)   *+8
01192  0BEE  0151            LDK     A1,/51      ER51:A2 INCORRECT
01193  0BF0  F7A1            CF      A15,EDITER
       0BF2  0528  R
01194  0BF4  0200            LDK     A2,0
01195  0BF6  EA0C            CWR     A2,A3
01196  0BF8  5008            RF(0)   *+10
01197  0BFA  8120            LDKL    A1,/2052    ER52:R2 INCORRECT
       0BFC  2052
01198  0BFE  F7A1            CF      A15,EDITER
       0C00  0528  R
01199  0C02  8340            LD      A3,/7000
       0C04  7000
01200  0C06  0200            LDK     A2,0
01201  0C08  EA0C            CWR     A2,A3
01202  0C0A  5008            RF(0)   *+10
01203  0C0C  8120            LDKL    A1,/2053    ER53:DATA ERROR
       0C0E  2053
01204  0C10  F7A1            CF      A15,EDITER
       0C12  0528  R
01205  0C14  8641            ST      A6,/7000
       0C16  7000
01206                  TST02D  EQU     *           MVUS :2KWORDS
01207  0C18  8120            LDKL    A1,/4000
       0C1A  4000
01208  0C1C  8220            LDKL    A2,/7000
       0C1E  7000
01209  0C20  8320            LDKL    A3,/1000
       0C22  1000
```

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01210  0C24  788C                MVUS    A3
01211  0C26  E920                CWK     A1,/5000
       0C28  5000
01212  0C2A  5006                RF(0)   *+8
01213  0C2C  0154                LDK     A1,/54      ER54:A1 INCORRECT
01214  0C2E  F7A1                CF      A15,EDITER
       0C30  0528  R
01215  0C32  EA20                CWK     A2,/8000
       0C34  8000
01216  0C36  5006                RF(0)   *+8
01217  0C38  0155                LDK     A1,/55      ER55:A2 INCORRECT
01218  0C3A  F7A1                CF      A15,EDITER
       0C3C  0528  R
01219  0C3E  0200                LDK     A2,0
01220  0C40  EA0C                CWR     A2,A3
01221  0C42  5008                RF(0)   *+10
01222  0C44  8120                LDKL    A1,/2056    ER56:R2 INCORRECT
       0C46  2056
01223  0C48  F7A1                CF      A15,EDITER
       0C4A  0528  R
01224  0C4C  0200                LDK     A2,0
01225  0C4E  8348      COMPBF    LD      A3,/7000,A2
       0C50  7000
01226  0C52  EA0C                CWR     A2,A3
01227  0C54  5008                RF(0)   *+10
01228  0C56  8120                LDKL    A1,/2057    ER57:DATA ERROR
       0C58  2057
01229  0C5A  F7A1                CF      A15,EDITER
       0C5C  0528  R
01230  0C5E  1202                ADK     A2,2
01231  0C60  EA20                CWK     A2,/1000
       0C62  1000
01232  0C64  5C18                RB(4)   COMPBF
01233  0C66  F03A      C2END     RTN     A14
```

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01234                          EJECT
01235                    *
01236                    *
01237                    *   CHECK 03: PRIVILEGED INSTRUCTIONS:USER MODE
01238                    *
01239                    *
01240                    CHK03     EQU       *
01241  0C68  0103                 LDK       A1,3
01242  0C6A  F7A1                 CF        A15,EDITIF
       0C6C  0552  R
01243  0C6E  8640                 LD        A6,PTABLE
       0C70  0000  F
01244  0C72  0710                 LDK       A7,16
01245  0C74  0500                 LDK       A5,0
01246  0C76  8539          TABSLF STR       A5,A6          SEGMENT TABLE FORMATION
01247  0C78  1F01                 SUK       A7,1
01248  0C7A  5008                 RF(0)     *+10
01249  0C7C  1602                 ADK       A6,2
01250  0C7E  9520                 ADKL      A5,/400
       0C80  0400
01251  0C82  5F0E                 RB(7)     TABSLF
01252  0C84  8840                 TL        WORD0          SEGMENT TABLE LOADING
       0C86  0000  F
01253  0C88  0603                 LDK       A6,3
01254  0C8A  0700                 LDK       A7,0           FLAG INITIALIZATION
01255  0C8C  8540                 LD        A5,PRTRPA
       0C8E  0000  F
01256  0C90  8541                 ST        A5,/7E
       0C92  007E
01257  0C94  8120                 LDKL      A1,LKM3        INITIALIZATION LKM ROUTINE
       0C96  0000  F
01258  0C98  8141                 ST        A1,2
       0C9A  0002
01259  0C9C  8540          TST03A LD        A5,PTABLE
       0C9E  0000  F
01260  0CA0  2801                 DATA      /2801           USER MODE (SMD)
01261  0CA2  8834                 TLR       A5             TLR EXECUTION
01262  0CA4  1F01                 SUK       A7,1
01263  0CA6  5008                 RF(0)     *+10
01264  0CA8  0158                 LDK       A1,/58         ER58:NO TRAP.
01265  0CAA  F7A1                 CF        A15,EDITER
       0CAC  0528  R
01266  0CAE  0700                 LDK       A7,0
01267  0CB0  8540                 LD        A5,PSCRCH
       0CB2  0000  F
01268  0CB4  8835                 TSR       A5             TSR EXECUTION
01269  0CB6  1F01                 SUK       A7,1
01270  0CB8  5008                 RF(0)     *+10
01271  0CBA  0159                 LDK       A1,/59         ER59:NO TRAP.
01272  0CBC  F7A1                 CF        A15,EDITER
```

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                0CBE  0528  R
01273           0CC0  0700                LDK     A7,0
01274           0CC2  D134                ELR     A1,A5       ELR EXECUTION
01275           0CC4  1F01                SUK     A7,1
01276           0CC6  5008                RF(0)   *+10
01277           0CC8  0160                LDK     A1,/60      ER60:NO TRAP,
01278           0CCA  F7A1                CF      A15,EDITER
                0CCC  0528  R
01279           0CCE  0700                LDK     A7,0
01280           0CD0  D525                ESR     A5,A1       ESR EXECUTION
01281           0CD2  1F01                SUK     A7,1
01282           0CD4  5008                RF(0)   *+10
01283           0CD6  0161                LDK     A1,/61      ER61:NO TRAP,
01284           0CD8  F7A1                CF      A15,EDITER
                0CDA  0528  R
01285           0CDC  0700                LDK     A7,0
01286           0CDE  8440                LD      A4,PRTRPB
                0CE0  0000  F
01287           0CE2  8441                ST      A4,/7E
                0CE4  007E
01288           0CE6  B840      TST03B    TL      WORD0       TL EXECUTION
                0CE8  0000  F
01289           0CEA  1F01                SUK     A7,1
01290           0CEC  5008                RF(0)   *+10
01291           0CEE  0162                LDK     A1,/62      ER62:NO TRAP,
01292           0CF0  F7A1                CF      A15,EDITER
                0CF2  0528  R
01293           0CF4  0700                LDK     A7,0
01294           0CF6  B841                TS      SCRTCH      TS EXECUTION
                0CF8  0000  F
01295           0CFA  1F01                SUK     A7,1
01296           0CFC  5008                RF(0)   *+10
01297           0CFE  0163                LDK     A1,/63      ER63:NO TRAP
01298           0D00  F7A1                CF      A15,EDITER
                0D02  0528  R
01299           0D04  0700                LDK     A7,0
01300           0D06  D140                EL      A1,WORD0    EL EXECUTION
                0D08  0000  F
01301           0D0A  1F01                SUK     A7,1
01302           0D0C  5008                RF(0)   *+10
01303           0D0E  0164                LDK     A1,/64      ER64:NO TRAP,
01304           0D10  F7A1                CF      A15,EDITER
                0D12  0528  R
01305           0D14  0700                LDK     A7,0
01306           0D16  D141                ES      A1,SCRTCH   ES EXECUTION
                0D18  0000  F
01307           0D1A  1F01                SUK     A7,1
01308           0D1C  5008                RF(0)   *+10
01309           0D1E  0165                LDK     A1,/65      ER65:NO TRAP
01310           0D20  F7A1                CF      A15,EDITER
```

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                0D22  0528  R
01311           0D24  0700                LDK       A7,0
01312           0D26  8440                LD        A4,PRTRPA
                0D28  0000  F
01313           0D2A  8441                ST        A4,/7E
                0D2C  007E
01314           0D2E  8120          TST03C LDKL     A1,/7000
                0D30  7000
01315           0D32  8220                LDKL      A2,/7500
                0D34  7500
01316           0D36  709E                MVSU      A15           MVSU EXECUTION
01317           0D38  1F01                SUK       A7,1
01318           0D3A  5008                RF(0)     *+10
01319           0D3C  0166                LDK       A1,/66        ER66:NO TRAP,
01320           0D3E  F7A1                CF        A15,EDITER
                0D40  0528  R
01321           0D42  0700                LDK       A7,0
01322           0D44  789E                MVUS      A15           MVUS EXECUTION
01323           0D46  1F01                SUK       A7,1
01324           0D48  5006                RF(0)     *+8
01325           0D4A  0167                LDK       A1,/67        ER67:NO TRAP,
01326           0D4C  F7A1                CF        A15,EDITER
                0D4E  0528  R
01327           0D50  2804                LKM
01328           0D52  20FB          LKM3  RIT       /1D
01329           0D54  8120                LDKL      A1,ITHALT
                0D56  00F6  R
01330           0D58  8141                ST        A1,2
                0D5A  0002
01331           0D5C  8141                ST        A1,/7E
                0D5E  007E
01332           0D60  8720                LDKL      A7,C3END
                0D62  0000  F
01333           0D64  F6A1                CF        A14,RSTLKM
                0D66  0000  F
01334           0D68  F03E                RTN       A15
01335           0D6A  F03A          C3END RTN       A14
01336                               *   TRAP, ROUTINES FOR CHECK 03
01337           0D6C  EE20          RTRPA CWK       A6,3          CHECK03?
                0D6E  0003
01338           0D70  5006                RF(0)     *+8
01339           0D72  0168                LDK       A1,/68        ER68: TRAP ERROR
01340           0D74  F7A1                CF        A15,EDITER
                0D76  0528  R
01341           0D78  1701                ADK       A7,1          FLAG INCREMENTATION
01342           0D7A  841E                LDR       A4,A15
01343           0D7C  1404                ADK       A4,4
01344           0D7E  0102                LDK       A1,2
01345           0D80  9131                ADRS      A1,A4
01346           0D82  F03E                RTN       A15
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01347  0D84  EE20       RTRPB   CWK     A6,3
       0D86  0003
01348  0D88  5006               RF(0)   *+8
01349  0D8A  0169               LDK     A1,/69      ER69:TRAP ERROR
01350  0D8C  F7A1               CF      A15,EDITER
       0D8E  0528  R
01351  0D90  1701               ADK     A7,1        FLAG INCREMENTATION
01352  0D92  841E               LDR     A4,A15
01353  0D94  1404               ADK     A4,4
01354  0D96  0104               LDK     A1,4
01355  0D98  9131               ADRS    A1,A4
01356  0D9A  F03E               RTN     A15
```

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01357                          EJECT
01358                  *
01359                  *
01360                  *   CHECK04:USER PROGRAM IN SUCCESSIVE PAGES
01361                  *
01362                  *
01363                  CHK04     EQU     *
01364  0D9C  0104                LDK     A1,4
01365  0D9E  F7A1                CF      A15,EDITIF
       0DA0  0552  R
01366  0DA2  0500                LDK     A5,0          SEGMENT TABLE: /2000  (0)
01367  0DA4  8620                LDKL    A6,/2000                     /2400  (1)
       0DA6  2000
01368  0DA8  8655                ST      A6,WORD0,A5                  /2800  (2)
       0DAA  0000  F
01369  0DAC  1502                ADK     A5,2                         /2C00  (3)
01370  0DAE  9620                ADKL    A6,/400                      /3000  (4)
       0DB0  0400
01371  0DB2  ED20                CWK     A5,16                        /3400  (5)
       0DB4  0010
01372  0DB6  5A10                RB(2)   *-14                         /3800  (6)
01373  0DB8  8620                LDKL    A6,/F000                     /3C00  (7)
       0DBA  F000
01374  0DBC  8655                ST      A6,WORD0,A5                  /F000  (8)
       0DBE  0000  F
01375  0DC0  1502                ADK     A5,2
01376  0DC2  ED20                CWK     A5,32                        /F000   TO
       0DC4  0020
01377  0DC6  5A0C                RB(2)   *-10                         /F000  (15)
01378  0DC8  B840                TL      WORD0
       0DCA  0000  F
01379  0DCC  0500                LDK     A5,0          USER PROGRAM FORMATION
01380  0DCE  8620                LDKL    A6,/1501      CODE "ADK A5,1"
       0DD0  1501
01381  0DD2  8655                ST      A6,/8000,A5
       0DD4  8000
01382  0DD6  1502                ADK     A5,2
01383  0DD8  ED20                CWK     A5,/7FFE
       0DDA  7FFE
01384  0DDC  5A0C                RB(2)   *-10
01385  0DDE  8620                LDKL    A6,/2804      CODE"LKM"
       0DE0  2804
01386  0DE2  8641                ST      A6,/FFFE
       0DE4  FFFE
01387  0DE6  8120                LDKL    A1,LKM4       INITIALIZATION :ADDRESS OF"LKM4"ROUTINE
       0DE8  0000  F
01388  0DEA  8141                ST      A1,2
       0DEC  0002
01389  0DEE  0700                LDK     A7,0          STACK FORMATION
01390  0DF0  F6A1                CF      A14,GNSTCK
```

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       0DF2  0000  F
01391  0DF4  0500                LDK     A5,0
01392  0DF6  F03E                RTN     A15          GO TO USER PROGRAM
01393  0DF8  20FB        LKM4    RIT     /1D          TEST OF THE RESULT
01394  0DFA  8120                LDKL    A1,ITHALT
       0DFC  00F6  R
01395  0DFE  8141                ST      A1,2
       0E00  0002
01396  0E02  8720                LDKL    A7,C4END
       0E04  0000  F
01397  0E06  F6A1                CF      A14,RSTLKM
       0E08  0000  F
01398  0E0A  F03E                RTN     A15
01399  0E0C  ED20        C4END   CWK     A5,/3FFF
       0E0E  3FFF
01400  0E10  500A                RF(0)   *+12
01401  0E12  8120                LDKL    A1,/7070     ER70:BAD RESULT
       0E14  7070
01402  0E16  F7A1                CF      A15,EDITER
       0E18  0528  R
01403  0E1A  0400                DATA    /400
01404  0E1C  F03A                RTN     A14
```

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01405                          EJECT
01406                    *
01407                    *
01408                    *   CHECK05: USER PROGRAM IN RANDOM PAGES
01409                    *
01410                    *
01411                    CHK05     EQU       *
01412  0E1E  0105                  LDK       A1,5
01413  0E20  F7A1                  CF        A15,EDITIF
       0E22  0552  R
01414  0E24  8140                  LD        A1,PC5ADS    USER PROGRAM LOADING
       0E26  0000  F
01415  0E28  8220                  LDKL      A2,/8C00
       0E2A  8C00
01416  0E2C  0507                  LDK       A5,7
01417  0E2E  041E                  LDK       A4,30        LOOP NUMBER
01418  0E30  0322                  LDK       A3,34        LOOP LENGTH
01419  0E32  700C                  MVF       A3
01420  0E34  1222                  ADK       A2,34
01421  0E36  1C01                  SUK       A4,1
01422  0E38  5C0A                  RB(4)     *-8
01423  0E3A  1D01                  SUK       A5,1
01424  0E3C  521E                  RF(2)     *+32         GO TO THE LOADING OF ZONE "EA"
01425  0E3E  5106                  RF(1)     *+8
01426  0E40  8220                  LDKL      A2,/8000
       0E42  8000
01427  0E44  5F18                  RB(7)     *-22
01428  0E46  ED20                  CWK       A5,3
       0E48  0003
01429  0E4A  5006                  RF(0)     *+8
01430  0E4C  9220                  ADKL      A2,/1C04
       0E4E  1C04
01431  0E50  5F24                  RB(7)     *-34
01432  0E52  8140                  LD        A1,PC5CMP
       0E54  0000  F
01433  0E56  8220                  LDKL      A2,/A000
       0E58  A000
01434  0E5A  5F2E                  RB(7)     *-44
01435  0E5C  0722                  LDK       A7,34        BUFFER "EA" LOADING
01436  0E5E  8620                  LDKL      A6,/9C00
       0E60  9C00
01437  0E62  0400                  LDK       A4,0
01438  0E64  8739                  STR       A7,A6
01439  0E66  1602                  ADK       A6,2
01440  0E68  1402                  ADK       A4,2
01441  0E6A  EC20                  CWK       A4,/3FE
       0E6C  03FE
01442  0E6E  5C0C                  RB(4)     *-10
01443  0E70  EE20                  CWK       A6,/FFFE
       0E72  FFFE
```

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01444  0E74  5006          RF(0)    *+8
01445  0E76  9620          ADKL     A6,/1C02
       0E78  1C02
01446  0E7A  5F1A          RB(7)    *-24
01447  0E7C  0700          LDK      A7,0          BUFFER "CONST" LOADING
01448  0E7E  8620          LDKL     A6,/B000
       0E80  B000
01449  0E82  0400          LDK      A4,0
01450  0E84  8739          STR      A7,A6
01451  0E86  1602          ADK      A6,2
01452  0E88  1402          ADK      A4,2
01453  0E8A  EC20          CWK      A4,/3FE
       0E8C  03FE
01454  0E8E  5C0C          RB(4)    *-10
01455  0E90  EE20          CWK      A6,/93FE
       0E92  93FE
01456  0E94  5012          RF(0)    *+20
01457  0E96  EE20          CWK      A6,/F3FE
       0E98  F3FE
01458  0E9A  5006          RF(0)    *+8
01459  0E9C  9620          ADKL     A6,/1C02
       0E9E  1C02
01460  0EA0  5F20          RB(7)    *-30
01461  0EA2  8620          LDKL     A6,/9000
       0EA4  9000
01462  0EA6  5F26          RB(7)    *-36
01463  0EA8  0744          LDK      A7,68
01464  0EAA  8620          LDKL     A6,/B000
       0EAC  B000
01465  0EAE  0500          LDK      A5,0
01466  0EB0  8739          STR      A7,A6
01467  0EB2  1722          ADK      A7,34
01468  0EB4  1622          ADK      A6,34
01469  0EB6  1501          ADK      A5,1
01470  0EB8  ED20          CWK      A5,30
       0EBA  001E
01471  0EBC  5C0E          RB(4)    *-12
01472  0EBE  EF20          CWK      A7,/C38
       0EC0  0C38
01473  0EC2  510E          RF(1)    *+16
01474  0EC4  5006          RF(0)    *+8
01475  0EC6  9620          ADKL     A6,/1C04
       0EC8  1C04
01476  0ECA  5F1E          RB(7)    *-28
01477  0ECC  8620          LDKL     A6,/9000
       0ECE  9000
01478  0ED0  5F24          RB(7)    *-34
01479  0ED2  8720          LDKL     A7,/0C00      STACK LOADING
       0ED4  0C00
01480  0ED6  F6A1          CF       A14,GNSTCK
```

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                0ED8  0000  F
01481           0EDA  8120              LDKL    A1,LKM5     INITIALIZATION ROUTINE LKM
                0EDC  0000  F
01482           0EDE  8141              ST      A1,2
                0EE0  0002
01483           0EE2  8620              LDKL    A6,/2000    SEGMENT TABLE FORMATION
                0EE4  2000
01484           0EE6  8641              ST      A6,WORD0
                0EE8  0000  F
01485           0EEA  8641              ST      A6,WORD13
                0EEC  0000  F
01486           0EEE  8620              LDKL    A6,/2800
                0EF0  2800
01487           0EF2  8641              ST      A6,WORD1
                0EF4  0000  F
01488           0EF6  8641              ST      A6,WORD4
                0EF8  0000  F
01489           0EFA  8620              LDKL    A6,/2400
                0EFC  2400
01490           0EFE  8641              ST      A6,WORD2
                0F00  0000  F
01491           0F02  8641              ST      A6,WORD15
                0F04  0000  F
01492           0F06  8620              LDKL    A6,/2C00
                0F08  2C00
01493           0F0A  8641              ST      A6,WORD3
                0F0C  0000  F
01494           0F0E  8641              ST      A6,WORD6
                0F10  0000  F
01495           0F12  8620              LDKL    A6,/3000
                0F14  3000
01496           0F16  8641              ST      A6,WORD5
                0F18  0000  F
01497           0F1A  8641              ST      A6,WORD8
                0F1C  0000  F
01498           0F1E  8620              LDKL    A6,/3400
                0F20  3400
01499           0F22  8641              ST      A6,WORD7
                0F24  0000  F
01500           0F26  8641              ST      A6,WORD10
                0F28  0000  F
01501           0F2A  8620              LDKL    A6,/3800
                0F2C  3800
01502           0F2E  8641              ST      A6,WORD9
                0F30  0000  F
01503           0F32  8641              ST      A6,WORD12
                0F34  0000  F
01504           0F36  8620              LDKL    A6,/3C00
                0F38  3C00
01505           0F3A  8641              ST      A6,WORD11
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        0F3C  0000  F
01506   0F3E  8641            ST      A6,WORD14
        0F40  0000  F
01507   0F42  B840            TL      WORD0       SEGMENT TABLE LOADING
        0F44  0000  F
01508   0F46  8420            LDKL    A4,/0C00    INITIALIZATIONS FOR USER PROGRAM
        0F48  0C00
01509   0F4A  0722            LDK     A7,34
01510   0F4C  0500            LDK     A5,0
01511   0F4E  F03E            RTN     A15         GO TO USER MODE
01512   0F50  20FB      LKM5  RIT     /1D
01513   0F52  8120            LDKL    A1,ITHALT
        0F54  00F6  R
01514   0F56  8141            ST      A1,2
        0F58  0002
01515   0F5A  EC20            CWK     A4,/CFFC    TEST END OF CHECK OR ERROR
        0F5C  CFFC
01516   0F5E  500C            RF(0)   *+14            AFTER USER PROGRAM EXECUTION
01517   0F60  8120            LDKL    A1,/3071    ER71:ERROR DURING USER PROGRAM EXECUTION
        0F62  3071
01518   0F64  D350            EL      A3,/2000,A4
        0F66  2000
01519   0F68  F7A1            CF      A15,EDITER
        0F6A  0528  R
01520   0F6C  8720            LDKL    A7,C5END
        0F6E  0000  F
01521   0F70  F6A1            CF      A14,RSTLKM
        0F72  0000  F
01522   0F74  F03E            RTN     A15
01523   0F76  F03A      C5END RTN     A14
01524                   *   USER PROGRAM
01525   0F78  9751      C05ADS ADS    A7,/2000,A4
        0F7A  2000
01526   0F7C  8250            LD      A2,/2400,A4
        0F7E  2400
01527   0F80  1501            ADK     A5,1
01528   0F82  1722            ADK     A7,34
01529   0F84  8590            LDR     A13,A4
01530   0F86  95A0            ADKL    A13,/400
        0F88  0400
01531   0F8A  8F16            ABR     A13
01532   0F8C  207F            HLT
01533   0F8E  207F            HLT
01534   0F90  207F            HLT
01535   0F92  207F            HLT
01536   0F94  207F            HLT
01537   0F96  207F            HLT
01538   0F98  207F            HLT
01539   0F9A  EA50      C05CMP CW     A2,/2000,A4
        0F9C  2000
```

```
01540  0F9E  5002            RF(0)    *+4
01541  0FA0  2804            LKM                ERROR OR CHECK END
01542  0FA2  1422            ADK      A4,34     34=2X17WORDS
01543  0FA4  ED20            CWK      A5,30     30 LOOPS BY SEGMENT
       0FA6  001E
01544  0FA8  8C10            ABR(4)   A4
01545  0FAA  EC20            CWK      A4,/CFFC
       0FAC  CFFC
01546  0FAE  5810            RB(0)    *-14
01547  0FB0  0500            LDK      A5,0
01548  0FB2  9420            ADKL     A4,/3C04
       0FB4  3C04
01549  0FB6  8F10            ABR(7)   A4
01550  0FB8  207F            HLT
01551  0FBA  207F            HLT
01552  0FBC  0F78  R  PC5ADS  DATA     C05ADS
01553  0FBE  0F9A  R  PC5CMP  DATA     C05CMP
01554  0FC0          DEB05    RES      1
```

```
01555                                   EJECT
01556                           *
01557                           *
01558                           *   CHECK06: TEST BIT "MODIFY"
01559                           *
01560                           *
01561                           CHK06   EQU     *
01562  0FC2  0106                       LDK     A1,6
01563  0FC4  F7A1                       CF      A15,EDITIF
       0FC6  0552  R
01564  0FC8  8620                       LDKL    A6,/2000        SEGMENT TABLE FORMATION
       0FCA  2000
01565  0FCC  F6A1                       CF      A14,TBUSER
       0FCE  0000  F
01566  0FD0  8120                       LDKL    A1,C678         USER PROGRAM LOADING
       0FD2  0000  F
01567  0FD4  8220                       LDKL    A2,/8000
       0FD6  8000
01568  0FD8  0342                       LDK     A3,66
01569  0FDA  700C                       MVF     A3
01570  0FDC  0700                       LDK     A7,0            STACK FORMATION
01571  0FDE  F6A1                       CF      A14,GNSTCK
       0FE0  0000  F
01572  0FE2  8120                       LDKL    A1,LKM6         INITIALIZATION ROUTINE LKM
       0FE4  0000  F
01573  0FE6  8141                       ST      A1,2
       0FE8  0002
01574  0FEA  F03E                       RTN     A15             GO TO USER MODE
01575                           *   SYSTEM MODE AFTER USER PROGRAM EXECUTION
01576  0FEC  20FB               LKM6    RIT     /1D
01577  0FEE  8120                       LDKL    A1,ITHALT
       0FF0  00F6  R
01578  0FF2  8141                       ST      A1,2
       0FF4  0002
01579  0FF6  8720                       LDKL    A7,C6END
       0FF8  0000  F
01580  0FFA  F6A1                       CF      A14,RSTLKM
       0FFC  0000  F
01581  0FFE  F03E                       RTN     A15
01582  1000  B841               C6END   TS      SCRTCH
       1002  0000  F
01583  1004  0680                       LDK     A6,/80          BIT MODIFY TEST
01584  1006  0200                       LDK     A2,0
01585  1008  A649                       ANS     A6,SCRTCH,A2
       100A  0000  F
01586  100C  EE48                       CW      A6,SCRTCH,A2
       100E  0000  F
01587  1010  5008                       RF(0)   *+10
01588  1012  8120                       LDKL    A1,/1072        ER72:BIT "MODIFY" INCORRECT
       1014  1072
```

```
01589  1016  F7A1          CF      A15,EDITER
       1018  0528  R
01590  101A  1202          ADK     A2,2
01591  101C  EA20          CWK     A2,32
       101E  0020
01592  1020  5C1A          RB(4)   *-24
01593  1022  F03A          RTN     A14
```

```
01594                                   EJECT
01595                           *
01596                           *
01597                           *   CHECK07:TEST PAGE ERROR
01598                           *
01599                           *
01600                           CHK07   EQU     *
01601  1024  0107                       LDK     A1,7
01602  1026  F7A1                       CF      A15,EDITIF
       1028  0552  R
01603  102A  8620                       LDKL    A6,/2200        SEGMENT TABLE FORMATION
       102C  2200
01604  102E  F6A1                       CF      A14,TBUSER
       1030  0000  F
01605                           *   TEST07A: TEST PAGE ERROR IN EACH SEGMENT
01606                           C7USRA  EQU     *               USER PROGRAM FORMATION AND LOADING
01607  1032  8120                       LDKL    A1,/2804        CODE LKM
       1034  2804
01608  1036  8320                       LDKL    A3,/8000        LOADING ADDRESS
       1038  8000
01609  103A  812D                       STR     A1,A3
01610  103C  EB20                       CWK     A3,/F800
       103E  F800
01611  1040  5006                       RF(0)   *+8
01612  1042  9320                       ADKL    A3,/800         TO THE NEXT PAGE
       1044  0800
01613  1046  5F0E                       RB(7)   *-12
01614  1048  0700                       LDK     A7,0            STACK FORMATION
01615  104A  F6A1                       CF      A14,GNSTCK
       104C  0000  F
01616  104E  0200                       LDK     A2,0            INITIALIZATIONS FOR PAF07A
01617  1050  8120                       LDKL    A1,PAF07A
       1052  0000  F
01618  1054  8161                       ST*     A1,PPAF
       1056  0000  F
01619  1058  8120                       LDKL    A1,LKM7A        INITIALIZATION ROUTINE LKM
       105A  0000  F
01620  105C  8141                       ST      A1,2
       105E  0002
01621  1060  F03E                       RTN     A15             GO TO USER MODE
01622  1062  20FB              LKM7A    RIT     /1D
01623  1064  8120                       LDKL    A1,/122         ER122:TEST07A INCORRECT
       1066  0122
01624  1068  F7A1                       CF      A15,EDITER
       106A  0528  R
01625  106C  8F20                       ABL     LKM7ND
       106E  0000  F
01626  1070  833E              PAF07A   LDR*    A3,A15          PAF ROUTINE (FIRST PART OF THE CHECK07)
01627  1072  A320                       ANKL    A3,/0F00
       1074  0F00
```

```
01628  1076  3B27            SRA     A3,7
01629  1078  EB08            CWR     A3,A2
01630  107A  5008            RF(0)   *+10
01631  107C  8120            LDKL    A1,/2073    ER73:S/ ERROR
       107E  2073
01632  1080  F7A1            CF      A15,EDITER
       1082  0528  R
01633  1084  871E            LDR     A7,A15
01634  1086  1704            ADK     A7,4
01635  1088  833C            LDR*    A3,A7
01636  108A  EB48            CW      A3,NEWP,A2
       108C  0000  F
01637  108E  5008            RF(0)   *+10
01638  1090  8120            LDKL    A1,/2074    ER74:P/ ERROR
       1092  2074
01639  1094  F7A1            CF      A15,EDITER
       1096  0528  R
01640  1098  1202            ADK     A2,2
01641  109A  EA20            CWK     A2,32
       109C  0020
01642  109E  5008            RF(0)   *+10        END OF CHECK 07A
01643  10A0  8648            LD      A6,NEWP,A2
       10A2  0000  F
01644  10A4  863D            STR     A6,A7
01645  10A6  F03E            RTN     A15
01646                  *   TEST07B:EXECUTION OF AN USER PROGRAM WITH PAGE ERRORS
01647  10A8  8620            LDKL    A6,TST07B
       10AA  0000  F
01648  10AC  863D            STR     A6,A7
01649  10AE  8620            LDKL    A6,/FCC0
       10B0  FCC0
01650  10B2  1F02            SUK     A7,2
01651  10B4  863D            STR     A6,A7
01652  10B6  F03E            RTN     A15
01653  10B8  8120     TST07B LDKL    A1,C678     USER PROGRAM LOADING
       10BA  0000  F
01654  10BC  8220            LDKL    A2,/8000
       10BE  8000
01655  10C0  0342            LDK     A3,66
01656  10C2  700C            MVF     A3
01657  10C4  0700            LDK     A7,0        STACK FORMATION
01658  10C6  F6A1            CF      A14,GNSTCK
       10C8  0000  F
01659  10CA  8120            LDKL    A1,LKM7     INITIALIZATION ROUTINE LKM
       10CC  0000  F
01660  10CE  8141            ST      A1,2
       10D0  0002
01661  10D2  0200            LDK     A2,0        INITIALIZATIONS FOR PAF07B
01662  10D4  8120            LDKL    A1,PAF07B
       10D6  0000  F
```

```
01663  10D8  8161          ST*     A1,PPAF
       10DA  0000  F
01664  10DC  F03E          RTN     A15         GO TO USER MODE
01665                LKM7   EQU     *
01666  10DE  20FB          RIT     /1D
01667  10E0  EA20          CWK     A2,32
       10E2  0020
01668  10E4  5008          RF(0)   *+10
01669  10E6  8120          LDKL    A1,/1121    ER121:TST07B INCORRECT
       10E8  1121
01670  10EA  F7A1          CF      A15,EDITER
       10EC  0528  R
01671  10EE  8720    LKM7ND LDKL   A7,TST07C
       10F0  0000  F
01672  10F2  F6A1          CF      A14,RSTLKM
       10F4  0000  F
01673  10F6  F03E          RTN     A15
01674                PAF07B EQU     *           PAF ROUTINE (SECOND PART OF THE CHECK07)
01675  10F8  833E          LDR*    A3,A15
01676  10FA  A320          ANKL    A3,/0F00
       10FC  0F00
01677  10FE  3B27          SRA     A3,7
01678  1100  EB08          CWR     A3,A2
01679  1102  5008          RF(0)   *+10
01680  1104  8120          LDKL    A1,/2075    ER75:S/ ERROR
       1106  2075
01681  1108  F7A1          CF      A15,EDITER
       110A  0528  R
01682  110C  871E          LDR     A7,A15
01683  110E  1704          ADK     A7,4
01684  1110  833C          LDR*    A3,A7
01685  1112  3B21          SRA     A3,1        P WAS INCREMENTED BY FOUR (CM T4)
01686  1114  EB08          CWR     A3,A2
01687  1116  5008          RF(0)   *+10
01688  1118  8120          LDKL    A1,/2076    ER76:P/ ERROR
       111A  2076
01689  111C  F7A1          CF      A15,EDITER
       111E  0528  R
01690  1120  B841          TS      SCRTCH
       1122  0000  F
01691  1124  8348          LD      A3,SCRTCH,A2
       1126  0000  F
01692  1128  9B20          SUKL    A3,/200     RESET BIT "PAGE ERROR"
       112A  0200
01693  112C  8349          ST      A3,SCRTCH,A2   SEGMENT TABLE MODIFICATION
       112E  0000  F
01694  1130  2380          ANK     A3,/80
01695  1132  5008          RF(0)   *+10
01696  1134  8120          LDKL    A1,/1077    ER77: BIT MODIFY ERROR
       1136  1077
```

```
01697  1138  F7A1          CF      A15,EDITER
       113A  0528  R
01698  113C  1202          ADK     A2,2
01699  113E  B840          TL      SCRTCH      SEGMENT TABLE LOADING
       1140  0000  F
01700  1142  F03E          RTN     A15         RETURN TO USER PROGRAM
01701  1144  0000    NEWP  DATA    /0
01702  1146  1800          DATA    /1800
01703  1148  2000          DATA    /2000
01704  114A  3800          DATA    /3800
01705  114C  4000          DATA    /4000
01706  114E  5800          DATA    /5800
01707  1150  6000          DATA    /6000
01708  1152  7800          DATA    /7800
01709  1154  8000          DATA    /8000
01710  1156  9800          DATA    /9800
01711  1158  A000          DATA    /A000
01712  115A  B800          DATA    /B800
01713  115C  C000          DATA    /C000
01714  115E  D800          DATA    /D800
01715  1160  E000          DATA    /E000
01716  1162  F800          DATA    /F800
01717                *   TEST 07C: S' AND P' TEST
01718  1164  8620    TST07C LDKL   A6,/2200
       1166  2200
01719  1168  F6A1          CF      A14,TBUSER
       116A  0000  F
01720  116C  8620          LDKL    A6,/2000
       116E  2000
01721  1170  8641          ST      A6,WORD1    SEGMENT TABLE
       1172  0000  F
01722  1174  B840          TL      WORD0
       1176  0000  F
01723  1178  8120          LDKL    A1,/100             USER PROGRAM LOADING: LDK A1,0
       117A  0100
01724  117C  8141          ST      A1,/8FFE
       117E  8FFE
01725  1180  8120          LDKL    A1,/2804                                  LKM
       1182  2804
01726  1184  8141          ST      A1,/9000
       1186  9000
01727  1188  8720          LDKL    A7,/1FFE            STACK FORMATION
       118A  1FFE
01728  118C  F6A1          CF      A14,GNSTCK
       118E  0000  F
01729  1190  8120          LDKL    A1,LKM7C    INITIALIZATIONS: LKM ROUTINE
       1192  0000  F
01730  1194  8141          ST      A1,2
       1196  0002
01731  1198  8120          LDKL    A1,PAF07C
```

```
        119A  0000  F
01732   119C  8161                ST*     A1,PPAF                    PAF ROUTINE
        119E  0000  F
01733   11A0  F03E                RTN     A15
01734   11A2  833E        PAF07C  LDR*    A3,A15
01735   11A4  A320                ANKL    A3,/F00
        11A6  0F00
01736   11A8  EB20                CWK     A3,/200
        11AA  0200
01737   11AC  500A                RF(0)   *+12
01738   11AE  8120                LDKL    A1,/7124           ER124: S' ERROR
        11B0  7124
01739   11B2  F7A1                CF      A15,EDITER
        11B4  0528  R
01740   11B6  1000                DATA    /1000
01741   11B8  871E                LDR     A7,A15
01742   11BA  1704                ADK     A7,4
01743   11BC  833C                LDR*    A3,A7
01744   11BE  EB20                CWK     A3,/2000
        11C0  2000
01745   11C2  500A                RF(0)   *+12
01746   11C4  8120                LDKL    A1,/7125           ER125: P'ERROR
        11C6  7125
01747   11C8  F7A1                CF      A15,EDITER
        11CA  0528  R
01748   11CC  1000                DATA    /1000
01749   11CE  8620        C7ND    LDKL    A6,C7END
        11D0  0000  F
01750   11D2  863D                STR     A6,A7
01751   11D4  8620                LDKL    A6,/FCC0
        11D6  FCC0
01752   11D8  1F02                SUK     A7,2
01753   11DA  863D                STR     A6,A7
01754   11DC  8120                LDKL    A1,ITHALT
        11DE  00F6  R
01755   11E0  8141                ST      A1,2
        11E2  0002
01756   11E4  8161                ST*     A1,PPAF
        11E6  0000  F
01757   11E8  F03E                RTN     A15
01758   11EA  20FB        LKM7C   RIT     /1D
01759   11EC  8120                LDKL    A1,/126            ER126: TST07C INCORRECT
        11EE  0126
01760   11F0  F7A1                CF      A15,EDITER
        11F2  0528  R
01761   11F4  8F20                ABL     C7ND
        11F6  11CE  R
01762   11F8  F03A        C7END   RTN     A14
```

```
                                EJECT
                        *
                        *
                        *   CHECK08: TEST READ ONLY
                        *
                        *
                        CHK08   EQU     *
11FA  0108                      LDK     A1,8
11FC  F7A1                      CF      A15,EDITIF
11FE  0552  R
1200  8620                      LDKL    A6,/2100    SEGMENT TABLE FORMATION-16TO32K
1202  2100
1204  F6A1                      CF      A14,TBUSER
1206  0000  F
1208  8120                      LDKL    A1,C678     USER PROGRAM LOADING
120A  0000  F
120C  8220                      LDKL    A2,/8000
120E  8000
1210  0342                      LDK     A3,66
1212  700C                      MVF     A3
1214  0700                      LDK     A7,0        STACK FORMATION
1216  F6A1                      CF      A14,GNSTCK
1218  0000  F
121A  0200                      LDK     A2,0        INITIALIZATIONS FOR PAF08
121C  8120                      LDKL    A1,PAF08
121E  0000  F
1220  8161                      ST*     A1,PPAF
1222  0000  F
1224  8120                      LDKL    A1,LKM8
1226  0000  F
1228  8141                      ST      A1,2
122A  0002
122C  F03E                      RTN     A15         GO TO USER MODE
                        LKM8    EQU     *
122E  20FB                      RIT     /1D
1230  EA20                      CWK     A2,32
1232  0020
1234  5008                      RF(0)   *+10
1236  8120                      LDKL    A1,/1123    ER123:CHECK08 INCORRECT
1238  1123
123A  F7A1                      CF      A15,EDITER
123C  0528  R
123E  8120                      LDKL    A1,ITHALT
1240  00F6  R
1242  8141                      ST      A1,2
1244  0002
1246  8161                      ST*     A1,PPAF
1248  0000  F
124A  8720                      LDKL    A7,C8END
124C  0000  F
```

```
01796  124E  F6A1          CF      A14,RSTLKM
       1250  0000  F
01797  1252  F03E          RTN     A15
01798  1254  F03A  C8END    RTN     A14
01799  1256  833E  PAF08    LDR*    A3,A15      PAF ROUTINE
01800  1258  A320          ANKL    A3,/0F00
       125A  0F00
01801  125C  3B27          SRA     A3,7
01802  125E  EB08          CWR     A3,A2
01803  1260  5008          RF(0)   *+10
01804  1262  8120          LDKL    A1,/2078    ER78:S/ ERROR
       1264  2078
01805  1266  F7A1          CF      A15,EDITER
       1268  0528  R
01806  126A  871E          LDR     A7,A15
01807  126C  1704          ADK     A7,4
01808  126E  833C          LDR*    A3,A7
01809  1270  3B21          SRA     A3,1
01810  1272  EB08          CWR     A3,A2
01811  1274  5008          RF(0)   *+10
01812  1276  8120          LDKL    A1,/2079    ER79:P/ ERROR
       1278  2079
01813  127A  F7A1          CF      A15,EDITER
       127C  0528  R
01814  127E  8841          TS      SCRTCH
       1280  0000  F
01815  1282  8348          LD      A3,SCRTCH,A2
       1284  0000  F
01816  1286  2380          ANK     A3,/80
01817  1288  5008          RF(0)   *+10
01818  128A  8120          LDKL    A1,/1080    ER80:BIT MODIFY ERROR
       128C  1080
01819  128E  F7A1          CF      A15,EDITER
       1290  0528  R
01820  1292  1202          ADK     A2,2
01821  1294  0604          LDK     A6,4        NEXT P IS LOAD IN STACK
01822  1296  963D          ADRS    A6,A7
01823  1298  F03E          RTN     A15
```

```
                                EJECT
                        *
                        *
                        *   CHECK09: SYSTEM MODE: NONERROR PERFORMING
                        *
                        *
                        CHK09   EQU     *
129A  0109                      LDK     A1,9
129C  F7A1                      CF      A15,EDITIF
129E  0552  R
12A0  8620                      LDKL    A6,/2300    SEGMENT TABLE :          BIT PE=1
12A2  2300
12A4  F6A1                      CF      A14,TBUSER                           BIT RO=1
12A6  0000  F
12A8  8120                      LDKL    A1,PAF09    INITIALIZATION FOR ERROR ROUTINE
12AA  0000  F
12AC  8161                      ST*     A1,PPAF
12AE  0000  F
12B0  029A                      LDK     A2,/9A
12B2  8241                      ST      A2,/8000
12B4  8000
12B6  D340                      EL      A3,/1000
12B8  1000
12BA  EB20                      CWK     A3,/9A
12BC  009A
12BE  500A                      RF(0)   *+12
12C0  8120                      LDKL    A1,/7082    ER82:EL NOT EXECUTED
12C2  7082
12C4  F7A1                      CF      A15,EDITER
12C6  0528  R
12C8  3000                      DATA    /3000
12CA  029B                      LDK     A2,/9B
12CC  D241                      ES      A2,/1000
12CE  1000
12D0  8340                      LD      A3,/8000
12D2  8000
12D4  EB20                      CWK     A3,/9B
12D6  009B
12D8  500A                      RF(0)   *+12
12DA  8120                      LDKL    A1,/7083    ER83:ES NOT EXECUTED
12DC  7083
12DE  F7A1                      CF      A15,EDITER
12E0  0528  R
12E2  3000                      DATA    /3000
12E4  B841                      TS      SCRTCH
12E6  0000  F
12E8  8340                      LD      A3,SCRTCH+2
12EA  0000  F
12EC  2380                      ANK     A3,/80
12EE  5100  F                   RF(1)   C9END
```

```
01857  12F0  0184                LDK     A1,/84       ER84: BIT MODIFY NOT CORRECT
01858  12F2  F7A1                CF      A15,EDITER
       12F4  0528  R
01859  12F6  5700  F             RF      C9END
01860  12F8  8120       PAF09    LDKL    A1,/1081     ER81: PAGE FAULT IN SYSTEM MODE
       12FA  1081
01861  12FC  F7A1                CF      A15,EDITER
       12FE  0528  R
01862  1300  873E                LDR*    A7,A15
01863  1302  8720                LDKL    A7,C9END
       1304  0000  F
01864  1306  F6A1                CF      A14,RSTLKM
       1308  0000  F
01865  130A  F03E                RTN     A15
01866  130C  8120       C9END    LDKL    A1,ITHALT
       130E  00F6  R
01867  1310  8161                ST*     A1,PPAF
       1312  0000  F
01868  1314  F03A                RTN     A14
```

```
01869                                   EJECT
01870                           *
01871                           *
01872                           *   CHECK11: MVB,MVF,PAGE FAULT RESUMING
01873                           *
01874                           *
01875                           CHK11   EQU     *
01876  1316  0111                      LDK     A1,/11
01877  1318  F7A1                      CF      A15,EDITIF
       131A  0552  R
01878  131C  0500                      LDK     A5,0            TBRE AND TBWE CREATION
01879  131E  8220                      LDKL    A2,/1C00
       1320  1C00
01880  1322  8241                      ST      A2,TBRE
       1324  0000  F
01881  1326  8241                      ST      A2,TBWE
       1328  0000  F
01882  132A  9220                      ADKL    A2,/200
       132C  0200
01883  132E  1502                      ADK     A5,2
01884  1330  9220                      ADKL    A2,/200
       1332  0200
01885  1334  8255                      ST      A2,TBRE,A5
       1336  0000  F
01886  1338  9220                      ADKL    A2,/200
       133A  0200
01887  133C  8255                      ST      A2,TBWE,A5
       133E  0000  F
01888  1340  ED20                      CWK     A5,8
       1342  0008
01889  1344  5C18                      RB(4)   *-22
01890  1346  1502                      ADK     A5,2
01891  1348  9220                      ADKL    A2,/200
       134A  0200
01892  134C  8255                      ST      A2,TBWE,A5
       134E  0000  F
01893  1350  9220                      ADKL    A2,/200
       1352  0200
01894  1354  8255                      ST      A2,TBRE,A5
       1356  0000  F
01895  1358  EA20                      CWK     A2,/3E00
       135A  3E00
01896  135C  5C18                      RB(4)   *-22
01897  135E  8120                      LDKL    A1,/F000
       1360  F000
01898  1362  1502                      ADK     A5,2
01899  1364  8155                      ST      A1,TBRE,A5
       1366  0000  F
01900  1368  8155                      ST      A1,TBWE,A5
       136A  0000  F
```

```
01901  136C  ED20            CWK     A5,30
       136E  001E
01902  1370  5C10            RB(4)   *-14
01903  1372  8120            LDKL    A1,/1401    CREATION OF THE EMITTER BUFFER
       1374  1401
01904  1376  0500            LDK     A5,0        CODE ADK A4,1 :/1401
01905  1378  8155            ST      A1,/C000,A5
       137A  C000
01906  137C  1502            ADK     A5,2
01907  137E  ED20            CWK     A5,/3FFE
       1380  3FFE
01908  1382  5C0C            RB(4)   *-10
01909  1384  8120            LDKL    A1,/2804    CODE LKM
       1386  2804
01910  1388  8141            ST      A1,/FFFE
       138A  FFFE
01911  138C  8120            LDKL    A1,PAF11    INITIALIZATION-PAF
       138E  0000  F
01912  1390  8161            ST*     A1,PPAF
       1392  0000  F
01913  1394  8120            LDKL    A1,LKM11A                 -LKM
       1396  0000  F
01914  1398  8141            ST      A1,2
       139A  0002
01915  139C  8120            LDKL    A1,/780C    CODE MVB (A3)
       139E  780C
01916  13A0  8141            ST      A1,/7FFE
       13A2  7FFE
01917  13A4  8120            LDKL    A1,/1602    PAF11 INITIALIZATIONS
       13A6  1602
01918  13A8  8141            ST      A1,PAF11+12
       13AA  0000  F
01919  13AC  060A            LDK     A6,/A
01920  13AE  8120            LDKL    A1,TBRE
       13B0  0000  F
01921  13B2  8220            LDKL    A2,TB11
       13B4  0000  F
01922  13B6  0320            LDK     A3,32
01923  13B8  780C            MVB     A3          SEGMENT TABLE FORMATION"MVB P,E, READ"
01924  13BA  8840      TST11 TL      TB11
       13BC  0000  F
01925  13BE  8120            LDKL    A1,/FFFF    INITIALIZATION RECEIVER BUFFER
       13C0  FFFF
01926  13C2  0500            LDK     A5,0
01927  13C4  8155            ST      A1,/8000,A5
       13C6  8000
01928  13C8  1502            ADK     A5,2
01929  13CA  ED20            CWK     A5,/4000
       13CC  4000
01930  13CE  5C0C            RB(4)   *-10
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01931  13D0  8520            LDKL    A5,/200     INITIALIZATION FOR PAF11
       13D2  0200
01932  13D4  8720            LDKL    A7,/0FFE
       13D6  0FFE
01933  13D8  F6A1            CF      A14,GNSTCK
       13DA  0000  F
01934  13DC  0400            LDK     A4,0        INITIALIZATION FOR ROUTINE LKM
01935  13DE  8120            LDKL    A1,/5000    INITIALIZATIONS FOR MOVE ,
       13E0  5000
01936  13E2  8220            LDKL    A2,/1000
       13E4  1000
01937  13E6  8320            LDKL    A3,/4000
       13E8  4000
01938  13EA  F03E            RTN     A15         GO TO USER PROGRAM ,
01939  13EC  20FB      LKM11A RIT     /1D
01940  13EE  8720            LDKL    A7,ITHALT
       13F0  00F6  R
01941  13F2  8741            ST      A7,2
       13F4  0002
01942  13F6  E920            CWK     A1,/9000
       13F8  9000
01943  13FA  500C            RF(0)   *+14
01944  13FC  8504            LDR     A5,A1
01945  13FE  8120            LDKL    A1,/7095    ER95:(A1) IS NOT /9000
       1400  7095
01946  1402  F7A1            CF      A15,EDITER
       1404  0528  R
01947  1406  0400            DATA    /0400
01948  1408  EA20            CWK     A2,/5000
       140A  5000
01949  140C  5008            RF(0)   *+10
01950  140E  8120            LDKL    A1,/1096    ER96:(A2) IS NOT /5000
       1410  1096
01951  1412  F7A1            CF      A15,EDITER
       1414  0528  R
01952  1416  EB20            CWK     A3,0
       1418  0000
01953  141A  500A            RF(0)   *+12
01954  141C  8120            LDKL    A1,/7097    ER97:AFTER THE MOVE THE LENGTH IS NOT 0
       141E  7097
01955  1420  F7A1            CF      A15,EDITER
       1422  0528  R
01956  1424  1000            DATA    /1000
01957  1426  EC20            CWK     A4,/1FFF
       1428  1FFF
01958  142A  500A            RF(0)   *+12
01959  142C  8120            LDKL    A1,/7098    ER98:THE RESULT OF THE USER PROGRAM
       142E  7098
01960  1430  F7A1            CF      A15,EDITER    IS NOT /1FFF
       1432  0528  R
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01961  1434  0800                    DATA    /0800
01962  1436  8120                    LDKL    A1,LKM11B   INITIALIZATIONS FOR THE "MVB PE WRITE"
       1438  0000  F
01963  143A  8141                    ST      A1,2
       143C  0002
01964  143E  8120                    LDKL    A1,TBWE
       1440  0000  F
01965  1442  8220                    LDKL    A2,TB11
       1444  0000  F
01966  1446  0320                    LDK     A3,32
01967  1448  780C                    MVB     A3
01968  144A  8720                    LDKL    A7,TST11
       144C  13BA  R
01969  144E  F6A1                    CF      A14,RSTLKM
       1450  0000  F
01970  1452  0602                    LDK     A6,2
01971  1454  F03E                    RTN     A15
01972  1456  20FB          LKM11B    RIT     /1D
01973  1458  8720                    LDKL    A7,ITHALT
       145A  00F6  R
01974  145C  8741                    ST      A7,2
       145E  0002
01975  1460  E920                    CWK     A1,/9000
       1462  9000
01976  1464  500C                    RF(0)   *+14
01977  1466  8504                    LDR     A5,A1
01978  1468  8120                    LDKL    A1,/7099    ER99:(A1)IS NOT /9000
       146A  7099
01979  146C  F7A1                    CF      A15,EDITER
       146E  0528  R
01980  1470  0400                    DATA    /0400
01981  1472  EA20                    CWK     A2,/5000
       1474  5000
01982  1476  5008                    RF(0)   *+10
01983  1478  8120                    LDKL    A1,/1100    ER100:(A2) IS NOT /5000
       147A  1100
01984  147C  F7A1                    CF      A15,EDITER
       147E  0528  R
01985  1480  EB20                    CWK     A3,0
       1482  0000
01986  1484  500A                    RF(0)   *+12
01987  1486  8120                    LDKL    A1,/7101    ER101:AFTER THE MOVE THE LENGTH IS NOT 0
       1488  7101
01988  148A  F7A1                    CF      A15,EDITER
       148C  0528  R
01989  148E  1000                    DATA    /1000
01990  1490  EC20                    CWK     A4,/1FFF
       1492  1FFF
01991  1494  500A                    RF(0)   *+12
01992  1496  8120                    LDKL    A1,/7102    ER102:THE RESULT OF THE USER PROGRAM
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                1498  7102
01993           149A  F7A1                CF      A15,EDITER    IS NOT /1FFF
                149C  0528  R
01994           149E  0800                DATA    /0800
01995           14A0  8120                LDKL    A1,LKM11C   INITIALIZATIONS FOR THE "MVF PE READ"
                14A2  0000  F
01996           14A4  8141                ST      A1,2
                14A6  0002
01997           14A8  8120                LDKL    A1,TBRE
                14AA  0000  F
01998           14AC  8220                LDKL    A2,TB11
                14AE  0000  F
01999           14B0  0320                LDK     A3,32
02000           14B2  780C                MVB     A3
02001           14B4  8120                LDKL    A1,/700C    CODE MVF (A3)
                14B6  700C
02002           14B8  8141                ST      A1,/7FFE
                14BA  7FFE
02003           14BC  8120                LDKL    A1,/1E02    CODE SUK A6,2
                14BE  1E02
02004           14C0  8141                ST      A1,PAF11+/C
                14C2  0000  F
02005           14C4  8720                LDKL    A7,TST11
                14C6  13BA  R
02006           14C8  F6A1                CF      A14,RSTLKM
                14CA  0000  F
02007           14CC  0610                LDK     A6,/10
02008           14CE  F03E                RTN     A15
02009           14D0  20FB      LKM11C    RIT     /1D
02010           14D2  8720                LDKL    A7,ITHALT
                14D4  00F6  R
02011           14D6  8741                ST      A7,2
                14D8  0002
02012           14DA  E920                CWK     A1,/5000
                14DC  5000
02013           14DE  500C                RF(0)   *+14
02014           14E0  8504                LDR     A5,A1
02015           14E2  8120                LDKL    A1,/7103    ER103:(A1) IS NOT /5000
                14E4  7103
02016           14E6  F7A1                CF      A15,EDITER
                14E8  0528  R
02017           14EA  0400                DATA    /0400
02018           14EC  EA20                CWK     A2,/1000
                14EE  1000
02019           14F0  5008                RF(0)   *+10
02020           14F2  8120                LDKL    A1,/1104    ER104:(A2) IS NOT /1000
                14F4  1104
02021           14F6  F7A1                CF      A15,EDITER
                14F8  0528  R
02022           14FA  EB20                CWK     A3,0
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                14FC  0000
02023           14FE  500A                    RF(0)     *+12
02024           1500  8120                    LDKL      A1,/7105    ER105:AFTER THE MOVE THE LENGTH IS NOT 0
                1502  7105
02025           1504  F7A1                    CF        A15,EDITER
                1506  0528  R
02026           1508  1000                    DATA      /1000
02027           150A  EC20                    CWK       A4,/1FFF
                150C  1FFF
02028           150E  500A                    RF(0)     *+12
02029           1510  8120                    LDKL      A1,/7106    ER106:THE RESULT OF THE USER PROGRAM
                1512  7106
02030           1514  F7A1                    CF        A15,EDITER    IS NOT /1FFF
                1516  0528  R
02031           1518  0800                    DATA      /0800
02032           151A  8120                    LDKL      A1,LKM11D   INITIALIZATIONS FOR THE "MVF PE WRITE"
                151C  0000  F
02033           151E  8141                    ST        A1,2
                1520  0002
02034           1522  8120                    LDKL      A1,TBWE
                1524  0000  F
02035           1526  8220                    LDKL      A2,TB11
                1528  0000  F
02036           152A  8320                    LDKL      A3,32
                152C  0020
02037           152E  780C                    MVB       A3
02038           1530  8720                    LDKL      A7,TST11
                1532  13BA  R
02039           1534  F6A1                    CF        A14,RSTLKM
                1536  0000  F
02040           1538  0608                    LDK       A6,8
02041           153A  F03E                    RTN       A15
02042           153C  20FB          LKM11D    RIT       /1D
02043           153E  8720                    LDKL      A7,ITHALT
                1540  00F6  R
02044           1542  8741                    ST        A7,2
                1544  0002
02045           1546  E920                    CWK       A1,/5000
                1548  5000
02046           154A  500C                    RF(0)     *+14
02047           154C  8504                    LDR       A5,A1
02048           154E  8120                    LDKL      A1,/7107    ER107:(A1) IS NOT /5000
                1550  7107
02049           1552  F7A1                    CF        A15,EDITER
                1554  0528  R
02050           1556  0400                    DATA      /0400
02051           1558  EA20                    CWK       A2,/1000
                155A  1000
02052           155C  5008                    RF(0)     *+10
02053           155E  8120                    LDKL      A1,/1108    ER108:(A2) IS NOT /1000
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         1560  1108
02054    1562  F7A1                CF        A15,EDITER
         1564  0528  R
02055    1566  EC20                CWK       A4,/1FFF
         1568  1FFF
02056    156A  500A                RF(0)     *+12
02057    156C  8120                LDKL      A1,/7109     ER109:USER PROGRAM ERROR
         156E  7109
02058    1570  F7A1                CF        A15,EDITER
         1572  0528  R
02059    1574  0800                DATA      /0800
02060    1576  EB20                CWK       A3,0
         1578  0000
02061    157A  500A                RF(0)     *+12
02062    157C  8120                LDKL      A1,/7118     ER118:AFTER THE MOVE, THE LENGTH IS NOT 0
         157E  7118
02063    1580  F7A1                CF        A15,EDITER   ZERO
         1582  0528  R
02064    1584  1000                DATA      /1000
02065    1586  8720                LDKL      A7,C11END
         1588  0000  F
02066    158A  F6A1                CF        A14,RSTLKM
         158C  0000  F
02067    158E  8120                LDKL      A1,ITHALT
         1590  00F6  R
02068    1592  8161                ST*       A1,PPAF
         1594  0000  F
02069    1596  F03E                RTN       A15
02070    1598  F03A      C11END    RTN       A14
02071                    *   PAGE FAULT ROUTINE
02072    159A  873E      PAF11     LDR*      A7,A15       (A15+2)
02073    159C  8758                LD        A7,TB11,A6
         159E  0000  F
02074    15A0  9F14                SUR       A7,A5        MODIFICATION OF THE SEGMENT TABLE
02075    15A2  8759                ST        A7,TB11,A6
         15A4  0000  F
02076    15A6  1602                ADK       A6,2
02077    15A8  8840                TL        TB11
         15AA  0000  F
02078    15AC  F03E                RTN       A15          GO TO USER PROGRAM
02079    15AE            TBRE      RES       16           SEGMENT TABLE :PAGE ERROR -READ MODE
02080    15CE            TBWE      RES       16           SEGMENT TABLE :PAGE ERROR -WRITE MODE
02081    15EE            TB11      RES       16           SCRATCH TABLE
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02082                                   EJECT
02083                           *
02084                           *
02085                           *   CHECK12;ML, PAGE FAULT RESUMING
02086                           *
02087                           *
02088                           CHK12   EQU     *
02089  160E  0112                       LDK     A1,/12
02090  1610  F7A1                       CF      A15,EDITIF
       1612  0552  R
02091  1614  8120                       LDKL    A1,/2000    SEGMENT TABLE CREATION
       1616  2000
02092  1618  8141                       ST      A1,WORD0
       161A  0000  F
02093  161C  8141                       ST      A1,WORD1
       161E  0000  F
02094  1620  8120                       LDKL    A1,/2600
       1622  2600
02095  1624  8141                       ST      A1,WORD2
       1626  0000  F
02096  1628  8120                       LDKL    A1,/2400
       162A  2400
02097  162C  8141                       ST      A1,WORD3
       162E  0000  F
02098  1630  8120                       LDKL    A1,/2A00
       1632  2A00
02099  1634  8141                       ST      A1,WORD4
       1636  0000  F
02100  1638  8120                       LDKL    A1,/2800
       163A  2800
02101  163C  8141                       ST      A1,WORD5
       163E  0000  F
02102  1640  8120                       LDKL    A1,/2E00
       1642  2E00
02103  1644  8141                       ST      A1,WORD6
       1646  0000  F
02104  1648  8120                       LDKL    A1,/2C00
       164A  2C00
02105  164C  8141                       ST      A1,WORD7
       164E  0000  F
02106  1650  8120                       LDKL    A1,/3200
       1652  3200
02107  1654  8141                       ST      A1,WORD8
       1656  0000  F
02108  1658  8120                       LDKL    A1,/3000
       165A  3000
02109  165C  8141                       ST      A1,WORD9
       165E  0000  F
02110  1660  8120                       LDKL    A1,/3600
       1662  3600
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02111  1664  8141          ST      A1,WORD10
       1666  0000  F
02112  1668  8120          LDKL    A1,/3400
       166A  3400
02113  166C  8141          ST      A1,WORD11
       166E  0000  F
02114  1670  8120          LDKL    A1,/3A00
       1672  3A00
02115  1674  8141          ST      A1,WORD12
       1676  0000  F
02116  1678  8141          ST      A1,WORD13
       167A  0000  F
02117  167C  8120          LDKL    A1,/3E00
       167E  3E00
02118  1680  8141          ST      A1,WORD14
       1682  0000  F
02119  1684  8141          ST      A1,WORD15
       1686  0000  F
02120  1688  8840          TL      WORD0
       168A  0000  F
02121  168C  8220          LDKL    A2,/8FFE    CREATION OF THE BUFFERS
       168E  8FFE
02122  1690  8120          LDKL    A1,BFEM12
       1692  0000  F
02123  1694  030E          LDK     A3,14
02124  1696  700C          MVF     A3
02125  1698  9220          ADKL    A2,/FFE
       169A  0FFE
02126  169C  EA20          CWK     A2,/EFF2
       169E  EFF2
02127  16A0  5C0E          RB(4)   *-12
02128  16A2  8120          LDKL    A1,USER12
       16A4  0000  F
02129  16A6  8220          LDKL    A2,/8000
       16A8  8000
02130  16AA  8320          LDKL    A3,62
       16AC  003E
02131  16AE  780C          MVB     A3          USER PROGRAM LOADING
02132  16B0  0700          LDK     A7,0
02133  16B2  F6A1          CF      A14,GNSTCK
       16B4  0000  F
02134  16B6  8120          LDKL    A1,PAF12    INITIALIZATIONS:=ROUTINE PAF
       16B8  0000  F
02135  16BA  8161          ST*     A1,PPAF
       16BC  0000  F
02136  16BE  8120          LDKL    A1,LKM12                  =ROUTINE LKM
       16C0  0000  F
02137  16C2  8141          ST      A1,2
       16C4  0002
02138  16C6  0200          LDK     A2,0        INITIALIZATIONS OF THE REGISTERS BEFORE
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02139  16C8  0300                LDK     A3,0          THE ML EXECUTION
02140  16CA  0400                LDK     A4,0
02141  16CC  0500                LDK     A5,0
02142  16CE  0600                LDK     A6,0
02143  16D0  0700                LDK     A7,0
02144  16D2  85A0                LDKL    A13,4         A13 INITIALIZED FOR PAF12
       16D4  0004
02145  16D6  F03E                RTN     A15
02146  16D8  8120       USER12   LDKL    A1,/1FFE      T3 ADDRESSING MODE
       16DA  1FFE
02147  16DC  BBA4                MLR     7,A1
02148  16DE  2804                LKM
02149  16E0  8220                LDKL    A2,/3FFC
       16E2  3FFC
02150  16E4  BBA8                MLR     7,A2
02151  16E6  2804                LKM
02152  16E8  8320                LDKL    A3,/5FFA
       16EA  5FFA
02153  16EC  BBAC                MLR     7,A3
02154  16EE  2804                LKM
02155  16F0  8420                LDKL    A4,/100       T5 ADDRESSING MODE
       16F2  0100
02156  16F4  BBD0                ML      7,/7FF8-/100,A4
       16F6  7EF8
02157  16F8  2804                LKM
02158  16FA  8520                LDKL    A5,/100
       16FC  0100
02159  16FE  BBD4                ML      7,/9FF6-/100,A5
       1700  9EF6
02160  1702  2804                LKM
02161  1704  83A0                LDKL    A11,/BFF4
       1706  BFF4
02162  1708  83C1                ST      A11,PMLIND
       170A  0000  F
02163  170C  8620                LDKL    A6,/100
       170E  0100
02164  1710  BBF8                ML*     7,PMLIND-/100,A6
       1712  0000  F
02165  1714  2804                LKM
02166  1716  84BE       PAF12    LDR*    A12,A15       (A15+2)
02167  1718  84D6                LD      A12,WORD0,A13
       171A  0000  F
02168  171C  9CA0                SUKL    A12,/200
       171E  0200
02169  1720  84D7                ST      A12,WORD0,A13
       1722  0000  F
02170  1724  95A0                ADKL    A13,4
       1726  0004
02171  1728  B840                TL      WORD0
       172A  0000  F
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02172  172C  F03E          RTN     A15
02173  172E  20FB    LKM12 RIT     /1D
02174  1730  510A          RF(1)   *+12          TEST CR=1
02175  1732  8120          LDKL    A1,/7110      ER110:CR IS NOT "1"
       1734  7110
02176  1736  F7A1          CF      A15,EDITER
       1738  0528  R
02177  173A  0004          DATA    4
02178  173C  E920          CWK     A1,/1111      NOT CORRECT IF ER110
       173E  1111
02179  1740  500C          RF(0)   *+14
02180  1742  8384          LDR     A11,A1
02181  1744  8120          LDKL    A1,/7111      ER111:(A1) NOT /1111
       1746  7111
02182  1748  F7A1          CF      A15,EDITER
       174A  0528  R
02183  174C  0014          DATA    /14
02184  174E  EA20          CWK     A2,/2222
       1750  2222
02185  1752  500A          RF(0)   *+12
02186  1754  8120          LDKL    A1,/7112      ER112:(A2) IS NOT /2222
       1756  7112
02187  1758  F7A1          CF      A15,EDITER
       175A  0528  R
02188  175C  2004          DATA    /2004
02189  175E  EB20          CWK     A3,/3333
       1760  3333
02190  1762  500A          RF(0)   *+12
02191  1764  8120          LDKL    A1,/7113      ER113:(A3) IS NOT /3333
       1766  7113
02192  1768  F7A1          CF      A15,EDITER
       176A  0528  R
02193  176C  1004          DATA    /1004
02194  176E  EC20          CWK     A4,/4444
       1770  4444
02195  1772  500A          RF(0)   *+12
02196  1774  8120          LDKL    A1,/7114      ER114:(A4)IS NOT /4444
       1776  7114
02197  1778  F7A1          CF      A15,EDITER
       177A  0528  R
02198  177C  0804          DATA    /804
02199  177E  ED20          CWK     A5,/5555
       1780  5555
02200  1782  500A          RF(0)   *+12
02201  1784  8120          LDKL    A1,/7115      ER115: (A5)IS NOT /5555
       1786  7115
02202  1788  F7A1          CF      A15,EDITER
       178A  0528  R
02203  178C  0404          DATA    /404
02204  178E  EE20          CWK     A6,/6666
```

```
        1790  6666
02205   1792  500A                RF(0)     *+12
02206   1794  8120                LDKL      A1,/7116    ER116: (A6) IS NOT /6666
        1796  7116
02207   1798  F7A1                CF        A15,EDITER
        179A  0528  R
02208   179C  0204                DATA      /204
02209   179E  EF20                CWK       A7,/7777
        17A0  7777
02210   17A2  500A                RF(0)     *+12
02211   17A4  8120                LDKL      A1,/7120    ER120:(A7) IS NOT /7777
        17A6  7120
02212   17A8  F7A1                CF        A15,EDITER
        17AA  0528  R
02213   17AC  0104                DATA      /104
02214   17AE  EDA0                CWK       A13,28
        17B0  001C
02215   17B2  5400  F             RF(4)     INIT12
02216   17B4  8720                LDKL      A7,C12END
        17B6  0000  F
02217   17B8  F6A1                CF        A14,RSTLKM
        17BA  0000  F
02218   17BC  8120                LDKL      A1,ITHALT
        17BE  00F6  R
02219   17C0  8141                ST        A1,2
        17C2  0002
02220   17C4  8161                ST*       A1,PPAF
        17C6  0000  F
02221   17C8  F03E                RTN       A15
02222   17CA  F03A      C12END    RTN       A14
02223   17CC  0100      INIT12    LDK       A1,0        INITIALIZATIONS BEFORE THE NEXT M,L,
02224   17CE  0200                LDK       A2,0
02225   17D0  0300                LDK       A3,0
02226   17D2  0400                LDK       A4,0
02227   17D4  0500                LDK       A5,0
02228   17D6  0600                LDK       A6,0
02229   17D8  0700                LDK       A7,0
02230   17DA  F03E                RTN       A15
02231   17DC          PMLIND      RES       1
02232   17DE  1111    BFEM12      DATA      /1111
02233   17E0  2222                DATA      /2222
02234   17E2  3333                DATA      /3333
02235   17E4  4444                DATA      /4444
02236   17E6  5555                DATA      /5555
02237   17E8  6666                DATA      /6666
02238   17EA  7777                DATA      /7777
```

```
                                EJECT
                        *
                        *
                        *       CHK13 TEST READ ONLY
                        *       FOR MEMORY SIZE 16K
                        *
                        *
                        CHK13   EQU     *
17EC  0113                      LDK     A1,/13
17EE  F7A1                      CF      A15,EDITIF
17F0  0552  R
17F2  8840                      TL      TL13
17F4  0000  F
17F6  8720                      LDKL    A7,C13
17F8  0000  F
17FA  F6A1                      CF      A14,GNSTCK
17FC  0000  F
17FE  0200                      LDK     A2,0        INITIALIZATIONS FOR PAF13
1800  8120                      LDKL    A1,PAF13
1802  0000  F
1804  8161                      ST*     A1,PPAF
1806  0000  F
1808  8120                      LDKL    A1,LKM13
180A  0000  F
180C  8141                      ST      A1,2
180E  0002
1810  F03E                      RTN     A15         GO TO USER MODE
                        LKM13   EQU     *
1812  20FB                      RIT     /1D
1814  EA20                      CWK     A2,32
1816  0020
1818  5008                      RF(0)   *+10
181A  8120                      LDKL    A1,/1123    ER123:CHECK08 INCORRECT
181C  1123
181E  F7A1                      CF      A15,EDITER
1820  0528  R
1822  8120                      LDKL    A1,ITHALT
1824  00F6  R
1826  8141                      ST      A1,2
1828  0002
182A  8161                      ST*     A1,PPAF
182C  0000  F
182E  8720                      LDKL    A7,C13END
1830  0000  F
1832  F6A1                      CF      A14,RSTLKM
1834  0000  F
1836  F03E                      RTN     A15
1838  F03A            C13END    RTN     A14
                        TL13    EQU     *
183A  0100                      DATA    /100,/500,/900,/D00,/1100,/1500,/1900,/1D00
```

```
                183C  0500
                183E  0900
                1840  0D00
                1842  1100
                1844  1500
                1846  1900
                1848  1D00
02273           184A  0100                DATA    /100,/500,/900,/D00,/1100,/1500,/1900,/1D00
                184C  0500
                184E  0900
                1850  0D00
                1852  1100
                1854  1500
                1856  1900
                1858  1D00
02274                       PAF13   EQU     *
02275           185A  833E          LDR*    A3,A15
02276           185C  A320          ANKL    A3,/0F00
                185E  0F00
02277           1860  3B27          SRA     A3,7
02278           1862  8108          LDR     A1,A2
02279           1864  EA20          CWK     A2,/E
                1866  000E
02280           1868  5100  F       RF(G)   PAF131
02281                       PAF132  EQU     *
02282           186A  EB04          CWR     A3,A1
02283           186C  5008          RF(0)   *+10
02284           186E  8120          LDKL    A1,/2078    ER78:S/ ERROR
                1870  2078
02285           1872  F7A1          CF      A15,EDITER
                1874  0528  R
02286           1876  871E          LDR     A7,A15
02287           1878  1704          ADK     A7,4
02288           187A  833C          LDR*    A3,A7
02289           187C  8108          LDR     A1,A2
02290           187E  3941          SLL     A1,1
02291           1880  9120          ADKL    A1,C13
                1882  0000  F
02292           1884  EB04          CWR     A3,A1
02293           1886  5008          RF(0)   *+10
02294           1888  8120          LDKL    A1,/2079    ER79:P/ ERROR
                188A  2079
02295           188C  F7A1          CF      A15,EDITER
                188E  0528  R
02296           1890  B841          TS      SCRTCH
                1892  0000  F
02297           1894  8348          LD      A3,SCRTCH,A2
                1896  0000  F
02298           1898  2380          ANK     A3,/80
02299           189A  5008          RF(0)   *+10
```

```
02300  189C  8120          LDKL    A1,/1080    ER80:BIT MODIFY ERROR
       189E  1080
02301  18A0  F7A1          CF      A15,EDITER
       18A2  0528  R
02302  18A4  1202          ADK     A2,2
02303  18A6  0604          LDK     A6,4        NEXT P IS LOAD IN STACK
02304  18A8  963D          ADRS    A6,A7
02305  18AA  F03E          RTN     A15
02306                PAF131 EQU     *
02307  18AC  1910          SUK     A1,/10
02308  18AE  5F46          RB      PAF132
```

```
02309                                EJECT
02310  18B0  0500        TBUSER      LDK     A5,0          SEGMENT TABLE FORMATION: 16 TO 32KWORDS
02311  18B2  8655                    ST      A6,WORD0,A5
       18B4  0000  F
02312  18B6  8655                    ST      A6,WORD0+2,A5
       18B8  0000  F
02313  18BA  ED20                    CWK     A5,28
       18BC  001C
02314  18BE  5008                    RF(0)   *+10
02315  18C0  1504                    ADK     A5,4
02316  18C2  9620                    ADKL    A6,/400
       18C4  0400
02317  18C6  5F16                    RB(7)   *-20
02318  18C8  B840                    TL      WORD0
       18CA  0000  F
02319  18CC  F03A                    RTN     A14
02320  18CE  A041        C678        CM      /07F0         USER PROGRAM FOR CHECKS 06,07,08
       18D0  07F0
02321  18D2  A041                    CM      /1FF0
       18D4  1FF0
02322  18D6  A041                    CM      /27F0
       18D8  27F0
02323  18DA  A041                    CM      /3FF0
       18DC  3FF0
02324  18DE  A041                    CM      /47F0
       18E0  47F0
02325  18E2  A041                    CM      /5FF0
       18E4  5FF0
02326  18E6  A041                    CM      /67F0
       18E8  67F0
02327  18EA  A041                    CM      /7FF0
       18EC  7FF0
02328  18EE  A041                    CM      /87F0
       18F0  87F0
02329  18F2  A041                    CM      /9FF0
       18F4  9FF0
02330  18F6  A041                    CM      /A7F0
       18F8  A7F0
02331  18FA  A041                    CM      /BFF0
       18FC  BFF0
02332  18FE  A041                    CM      /C7F0
       1900  C7F0
02333  1902  A041                    CM      /DFF0
       1904  DFF0
02334  1906  A041                    CM      /E7F0
       1908  E7F0
02335  190A  A041                    CM      /FFF0
       190C  FFF0
02336  190E  2804                    LKM
02337                    C13         EQU     *
```

```
02338  1910  A041            CM      /07F0
       1912  07F0
02339  1914  A041            CM      /1FF0
       1916  1FF0
02340  1918  A041            CM      /27F0
       191A  27F0
02341  191C  A041            CM      /3FF0
       191E  3FF0
02342  1920  A041            CM      /47F0
       1922  47F0
02343  1924  A041            CM      /5FF0
       1926  5FF0
02344  1928  A041            CM      /67F0
       192A  67F0
02345  192C  A041            CM      /7FF0
       192E  7FF0
02346  1930  A041            CM      /07F0
       1932  07F0
02347  1934  A041            CM      /1FF0
       1936  1FF0
02348  1938  A041            CM      /27F0
       193A  27F0
02349  193C  A041            CM      /3FF0
       193E  3FF0
02350  1940  A041            CM      /47F0
       1942  47F0
02351  1944  A041            CM      /5FF0
       1946  5FF0
02352  1948  A041            CM      /67F0
       194A  67F0
02353  194C  A041            CM      /7FF0
       194E  7FF0
02354  1950  2804            LKM
02355  1952  873F    GNSTCK  STR     A7,A15      STACK FORMATION
02356  1954  8420            LDKL    A4,/FCC1
       1956  FCC1
02357  1958  843F            STR     A4,A15
02358  195A  F03A            RTN     A14
02359  195C  861E    RSTLKM  LDR     A6,A15
02360  195E  1602            ADK     A6,2
02361  1960  8420            LDKL    A4,/FCC0
       1962  FCC0
02362  1964  8439            STR     A4,A6
02363  1966  1602            ADK     A6,2
02364  1968  8739            STR     A7,A6
02365  196A  F03A            RTN     A14
02366  196C          PPAF    RES     1
02367  196E          CONST   RES     1
02368  1970          SCRTCH  RES     16
02369  1990  0000    WORD0   DATA    0
```

```
02370  1992  0000        WORD1   DATA    0
02371  1994  0000        WORD2   DATA    0
02372  1996  0000        WORD3   DATA    0
02373  1998  0000        WORD4   DATA    0
02374  199A  0000        WORD5   DATA    0
02375  199C  0000        WORD6   DATA    0
02376  199E  0000        WORD7   DATA    0
02377  19A0  0000        WORD8   DATA    0
02378  19A2  0000        WORD9   DATA    0
02379  19A4  0000        WORD10  DATA    0
02380  19A6  0000        WORD11  DATA    0
02381  19A8  0000        WORD12  DATA    0
02382  19AA  0000        WORD13  DATA    0
02383  19AC  0000        WORD14  DATA    0
02384  19AE  0000        WORD15  DATA    0
02385  19B0  1990  R     PTABLE  DATA    WORD0
02386  19B2  1970  R     PSCRCH  DATA    SCRTCH
02387  19B4  0D6C  R     PRTRPA  DATA    RTRPA
02388  19B6  0D84  R     PRTRPB  DATA    RTRPB
02389                    END     STAND
```

SYMBOL TABLE

DEB	0000	R	ITPWF	0306	R	ITHALT	00F6	R	ITRTC	029C	R			
START	0080	R	INITIT	0170	R	PARAM	0600	R	SAVR	023E	R			
STAR	0092	R	CCHECK	00A6	R	COUNTP	00F0	R	STOPI	06FE	R			
CCHEC4	00EA	R	CCHEC5	00EC	R	CCHEC0	0082	R	CCHEC2	00D6	R			
CCHEC1	00BA	R	PARAMC	0602	R	EDITIF	0552	R	CCHEC3	00E8	R			
ERRCT	00F2	R	TIMER	00F4	R	RSTR	0276	R	INITI1	0238	R			
ITRTC1	02A4	R	MICRO5	038E	R	INITI4	0236	R	INITI5	0230	R			
INITI6	0234	R	INITI2	0198	R	WAITIT	02CC	R	INITI7	021C	R			
DIMIN	01B4	R	ITABN	023C	R	INITI8	01CA	R	MICROT	021E	R			
INITI3	01D2	R	DIMIN1	01EA	R	DIMIN2	01F8	R	INITI9	020E	R			
MILLI5	03B6	R	SAV	0264	R	ITRTC6	02B4	R	ITRTC2	02B2	R			
ITRTC4	02BC	R	ITRTC7	02B6	R	ITRTC3	02BE	R	MICRO	036A	R			
ITRES	031E	R	ITRES1	034C	R	ITRES2	0350	R	ITRES0	034A	R			
MICRO4	038A	R	MICRO1	036E	R	MICRO2	0378	R	MICRO3	0388	R			
MILLI	0392	R	MILLI4	03B2	R	MILLI1	0396	R	MILLI2	03A0	R			
MILLI3	03B0	R	STARTI	03BA	R	HALTI	03BC	R	OUTI	03BE	R			
SSTI	03C0	R	TABLE	03C2	R	DIGIT	03D2	R	DIGIT9	0436	R			
DIGIT2	0432	R	DIGIT4	042E	R	DIGIT8	03EC	R	DIGIT7	0456	R			
DIGIT5	043C	R	DIGIT0	040C	R	DIGIT1	040E	R	DIGIT3	0434	R			
DIGIT6	044C	R	UREG	0468	R	UREG1	050A	R	UREG2	050C	R			
UREG3	050E	R	UREG4	0510	R	UREG5	0512	R	UREG6	0514	R			
UREG7	0516	R	UREG21	04D4	R	UREG16	0494	R	UREG17	049C	R			
UREG18	049E	R	UREG19	04AC	R	UREG0	0508	R	UREG20	0486	R			
UREG8	0518	R	UREG9	051A	R	UREG10	051C	R	UREG11	051E	R			
UREG12	0520	R	UREG13	0522	R	UREG14	0524	R	UREG15	0526	R			
EDITER	0528	R	SAV2	059C	R	EDIT	0580	R	EDITE1	054C	R			
SAVCOD	0590	R	EDITE2	0550	R	STOPER	05EE	R	EDITI1	0572	R			
STOPIF	05DE	R	ENAB	05E2	R	NOEDIT	05B0	R	DATAW	058A	R			
DATAW1	05D6	R	INITIA	0704	R	CHK00	071A	R	CHK01	0896	R			
CHK02	0B0C	R	CHK03	0C68	R	CHK04	0D9C	R	CHK05	0E1E	R			
CHK06	0FC2	R	CHK07	1024	R	CHK08	11FA	R	CHK09	129A	R			
CHK11	1316	R	CHK12	160E	R	CHK13	17EC	R	STAND	06EE	R			
PPAF	196C	R	STSCRA	0726	R	SCRTCH	1970	R	TEST0A	0732	R			
PTABLE	19B0	R	WORD0	1990	R	PSCRCH	19B2	R	CMP0	0766	R			
LOOP0A	0820	R	TEST0B	0794	R	SHFTAB	079E	R	CMPTAB	086C	R			
C0END	081E	R	CWSCRA	0854	R	TBUSER	18B0	R	TST01A	08A4	R			
PAT01	090A	R	TST01B	09C6	R	C1END	0B08	R	BUFEMS	0B1C	R			
BFRECU	0B2E	R	TST02A	0B3A	R	CMPBUF	0BA2	R	BFRECS	0BBC	R			
TST02C	0BC8	R	TST02D	0C18	R	COMPBF	0C4E	R	C2END	0C66	R			
TABSLF	0C76	R	PRTRPA	19B4	R	LKM3	0D52	R	TST03A	0C9C	R			
PRTRPB	19B6	R	TST03B	0CE6	R	TST03C	0D2E	R	C3END	0D6A	R			
RSTLKM	195C	R	RTRPA	0D6C	R	RTRPB	0D84	R	LKM4	0DF8	R			
GNSTCK	1952	R	C4END	0E0C	R	PC5ADS	0FBC	R	PC5CMP	0FBE	R			
LKM5	0F50	R	WORD13	19AA	R	WORD1	1992	R	WORD4	1998	R			
WORD2	1994	R	WORD15	19AE	R	WORD3	1996	R	WORD6	199C	R			
WORD5	199A	R	WORD8	19A0	R	WORD7	199E	R	WORD10	19A4	R			
WORD9	19A2	R	WORD12	19A8	R	WORD11	19A6	R	WORD14	19AC	R			
C5END	0F76	R	C05ADS	0F78	R	C05CMP	0F9A	R	DEB05	0FC0	R			

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C678    18CE  R   LKM6    0FEC  R   C6END   1000  R   C7USRA  1032  R
PAF07A  1070  R   LKM7A   1062  R   LKM7ND  10EE  R   NEWP    1144  R
TST07B  10B8  R   LKM7    10DE  R   PAF07B  10F8  R   TST07C  1164  R
LKM7C   11EA  R   PAF07C  11A2  R   C7ND    11CE  R   C7END   11F8  R
PAF08   1256  R   LKM8    122E  R   C8END   1254  R   PAF09   12F8  R
C9END   130C  R   TBRE    15AE  R   TBWE    15CE  R   PAF11   159A  R
LKM11A  13EC  R   TB11    15EE  R   TST11   13BA  R   LKM11B  1456  R
LKM11C  14D0  R   LKM11D  153C  R   C11END  1598  R   BFFM12  17DE  R
USER12  16D8  R   PAF12   1716  R   LKM12   172E  R   PMLIND  17DC  R
INIT12  17CC  R   C12END  17CA  R   TL13    183A  R   C13     1910  R
PAF13   185A  R   LKM13   1812  R   C13END  1838  R   PAF131  18AC  R
PAF132  186A  R   CONST   196E  R

          ASS.ERR,    00000
:EOF
PROG ELAPSED TIME:  00H-00M-00S-000MS-
```