DIGITAL	FCO	CATEGORY	PAGE
		[O]	1 OF 8

FIELD CHANGE ORDER   NUMBER: FT810-O001

APPLICABILITY:
This "O" coded FCO should be installed on ALL VAXft 810 shipped thru March 1994, upgrading all Revision "D" and "E" ATM boards to Revision "F". This FCO incorporates the following ECO's: (1) 5421083-BXB02, (2) 5421083-TWO003, and (3) 5421083-TWO004.

PROBLEM & SYMPTOM:
Problems existed in version V1.0 of the VMB firmware and V1.3 of the CPU firmware. These releases of firmware correct those known deficiencies.
1.)   V1.0 VMB fix for dual session terminal/ELN problem
2.)   Zone "B" not correctly blocked from executing a boot command when other zone running operating system using V1.3
3.)   V1.3 diagnostics may fail if memory installed in increments of 64 Meg. (Failure is Group 2, test 6, subtest 1, of RBD's.)
4.)   V1.3 did not support examine or deposit commands in terminal duplex mode.

SOLUTION:
Install V1.1 of the VMB firmware if your ATM modules are currently rev. "D" to bring them to rev. "E". Install V1.4 of the CPU Flash ROM to bring them to rev. "F". This new firmware corrects the above listed deficiencies.

QUICK CHECK:
Visually inspect the I/O ATM, KD560-AA, for the following identifiers on the parts listed below, to help identify the "CORRECT NEW" parts:
      at location E150   -   E150, or 23-037Z4-00, or FBF0
      at location E151   -   E151, or 23-036Z4-00, or B06A
      at location E152   -   E152, or 23-006Z4-00, or 955A

PRE/CO-REQUISITE FCO:	MFIT HRS
N/A	1.0

TOOL/TEST EQUIPMENT: 1.)   Std FS tool kit and ESD kit
   2.)   Tool for removal of the socketed ROM is DEC part number 47-00141-01 (included in this kit)

FCO PARTS INFORMATION

FCO KIT NO.	DESCRIPTION OF CONTENTS
EQ-01701-01	Qty 2 each of 23-006Z4-00, 23-036Z4-00, and 23-037Z4-00 Roms
	Qty 1 of ROM removal tool (DEC part number) 47-00141-01
FA-05038-01	Qty 1 Field Application (FA) Document

FCO CHARGING INFORMATION (see last page)

APPROVALS

FIELD APPLICATION DOCUMENT (FA), Continuation Page

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======================================================================
This rework procedure gives step by step instructions on how to
replace the flash ROMS for the V1.3 and V1.4 firmware upgrade of the
I/O ATM module, (5421083, KD560-AA), for the VAXft 810 system.
++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++
```

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***********************************************************
* WARNING:        *
*         *
* o In order to do this firmware update the system MUST *
*      BE TAKEN DOWN AND PLACED OFFLINE COMPLETELY! *
* o This can NOT be done as a continuous service  *
*      upgrade.         *
* o SYSTEM must be STANDALONE and NOT in operating  *
*      system mode.        *
***********************************************************
```

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+------------------+
| PRE-INSTALLATION |
+------------------+
```

1. Components

1.1   Parts may be marked with one or more of the following
        identifiers.

 1.1.1 23-006Z4-00 replaces 23-007Z4-00 (part of the V1.3 upgrade)
 VMB FLASH
 23-006Z4-00
 E152 (location on the I/O ATM module)
 955A (last 4 digits of the ROMs checksum)

 1.1.2 23-037Z4-00 replaces 23-009Z4-00 (part of the V1.4 upgrade)
 CPU_1 FLASH
 23-037Z4-00
 E150 (location on the I/O ATM module)
 FBF0 (last 4 digits of the ROMs checksum)

1.1.3 23-036Z4-00 replaces 23-008Z4-00 (part of the V1.4 upgrade)
 CPU_2 FLASH
 23-036Z4-00
 E151 (location on the I/O ATM module)
 B06A (last 4 digits of the ROMs checksum)

1.2   For each system you will need a total of 6 flash ROMs,
 (2 of each type)
 Zone A - 23-037Z4-00 (CPU_1), 23-036Z4-00 (CPU_2), and
    230006Z4-00 (VMB)
 Zone B - 23-037Z4-00 (CPU_1), 23-036Z4-00 (CPU_2), and
    230006Z4-00 (VMB)

1.3 Refer to the sketch for the location of ROMs.
 (Attachment #1)

       FIELD APPLICATION DOCUMENT (FA), Continuation Page

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   |   |   |   |   |   |   |   |    |            PAGE 3 of 8
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2. Tools

2.1 Use Standard Field Service tool kit with ESD kit.

2.2 Use AMP ROM removal tool which is identified by one of the
     following part numbers:

   number 821980-1,   (as printed on tool) or
   number 821980-01,   (as ordered from vendor AMP) or
   number 47-00141-01, (as DEC std. part number listing)

3. System

3.1 Schedule COMPLETE system downtime with your customer.
     (Estimate that 1 hour of system downtime should be more than
     adequate to insure physical change and verification of
 replacement ROMs.)

3.2 Shutdown the operating system in the normal manner which
 the customer normally uses.

3.3 After FULL system shutdown, power down BOTH zones.

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+-------------------+
| ROMS INSTALLATION |
+-------------------+
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4. ROMs Installation

4.1   Set up VELOSTAT KIT

4.1.1 Unfold the VELOSTAT mat to full size (24" x 24").

4.1.2 Attach the 15-foot ground cord to the VELOSTAT snap fastener on the mat.

4.1.3 Attach the alligator clip end of the ground cord to a good ground on the cabinet.

4.1.4 Attach the wrist strap to either wrist.

FIELD APPLICATION DOCUMENT (FA), Continuation Page

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|   |   |   |   |   |   |   |    |          FCO   FT810-0001
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4.2 Open the zone A door and remove the I/O ATM module (KD560-AA), and place the component side, (side 1), up on an ESD safe worksurface.

4.3 Using AMP ROM removal tool, carefully remove E152 from its socket. This is part 23-006Z4-00, the V1.0 VMB flash ROM.

4.4 Place new part number 23-0006Z4-00 (V1.1 VMB) gently "on" the socket orienting the pin 1 designator, (single dot depression on slanted upper surface, see Attachment#1), facing toward the module handle. Verify that the beveled corner is oriented toward the corner of the module where the battery pack is mounted.

Gently and firmly with even pressure, (using the tip of your thumb is recommended), insert the component into the socket.

4.5 Using UA's, or the sketch provided, locate E150 on the module. (sketch is Attachment #1).

4.6 Using AMP ROM removal tool, carefully remove E150 from its socket. This is part 23-009Z4-00, the V1.3 CPU_1 flash ROM.

4.7 Place new part number 23-0037Z4-00 (V1.4 CPU_1) gently "on"
 the socket orienting the pin 1 designator, (single dot
 depression on slanted upper surface, see Attachment#1),
 facing toward the module handle. Verify that the beveled
 corner is oriented toward the corner of the module where
 the battery pack is mounted.

     Gently and firmly with even pressure, (using the tip of your
 thumb is recommended), insert the component into the socket.

      4.8 Using UA's, or the sketch provided, locate E151 on the
  module. (sketch is Attachment #1).

4.9 Using AMP ROM removal tool carefully remove E151 from its
 socket. This is part 23-008Z4-00, the V1.3 CPU_2 flash ROM.

4.10 Place new part number 23-0036Z4-00 (V1.4 CPU_2) gently "on"
 the socket orienting the pin 1 designator, (single dot
 depression on slanted upper surface, see Attachment#1),
 facing toward the module handle. Verify that the beveled
 corner is oriented toward the corner of the module where
 the battery pack is mounted.

     Gently and firmly with even pressure, (using the tip of your
 thumb is recommended), insert the component into the socket.

4.11 Replace the IO/ATM module into the zone from which it was
 removed.

4.12 Open the zone B door and remove the I/O ATM module (KD560-AA),
     and place component side (side 1) up on an ESD safe
 worksurface. Then repeat steps 4.2 to 4.11.

     FIELD APPLICATION DOCUMENT (FA), Continuation Page

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+--------------+
| VERIFICATION |
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 5. Verification

 5.1 Re-apply power to Zone A.

 5.2 Insure that all modules successfully pass diagnostic test
  groups 0, and 1 by watching the console for that zone. All
  modules should be shown as "good" when the zone configuration

is displayed.

5.3   When Zone A has successfully completed diagnostics type the
      command "SHOW VERSION <cr>" at the ">>>" prompt. It should
      respond and show that the firmware ROM version is now 1.4.
   for CPU firmware.

5.4   Re-apply power to zone B.

5.5   Insure that the modules successfully pass diagnostic test
   groups 0, and 1 by watching the console for this zone.
   Diagnostic group 2 should also run at this time. Group 2
   diagnostics synchronize and run on both zones. You should
   note that this will take approximately 4 to 5 minutes longer
   than the diagnostic runs for just group 0 and 1. You should
   also note that for periods of up to 1% minute there will
   be NO activity on the terminal and it may appear to be hung.
   Please wait for the return to the ">>>" prompt before you type
   anything on the console terminals. All modules should have
   shown status as "good" when the configuration was displayed
   during the diagnostic execution.

5.6 Type "INIT<cr>" on both console terminals at approximately
   the same time. This will take the consoles out of duplex
   mode to allow you to do the next step.

5.6   After the "INIT" has successfully completed type the
      command "show version<cr>" at the ">>>" prompt on both
   console terminals. They should both respond and show that
   the firmware ROM version is now 1.4. for CPU firmware and
   they should both show 1.1 for the VMB version.

        FIELD APPLICATION DOCUMENT (FA), Continuation Page

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+-----------------+
| BOOT THE SYSTEM |
+-----------------+
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6. Boot the system

   Boot the system in the normal manner the customer typically
   uses. Verify functionality and insure that once the full
   operating system is up and running that the response to
   a "SHOW ZONE" command at the DCL level indicates that both
   zones are "active".

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+----------+
| PROBLEMS |
+----------+
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7. When problems occur

   If any problems arise during the execution of this procedure,
   either during the diagnostic test phase or the duplex boot
   of VMS, please verify the following;

    a.) All ROMs installed correctly in regards to
      location and orientation
    b.) No damage occurred to backplane or module
      card edge connector during module removal
      or re-insertion
    c.) All modules show status of "good" at
      configuration display during diagnostic
      testing and NO red LED fault lights are
      present when diagnostics have completed

   If any module shows status as "MARKED BAD" either by diags
   or operating system, execute appropriate "CLEAR BROKE"
   command at the ">>>" prompt for that zone.

      Should problems still exist, re-install the original rom
   sets (V1.3 CPU FLASH and V1.1 VMB FLASH) and verify
   functionality.

      Please keep accurate records of each step taken and
   any observations made at each step of the procedure for
   further support should it be required.

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| AFTER SUCCESSFUL COMPLETION  |
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        8. Report this FCO activity on the LARS form.

        FIELD APPLICATION DOCUMENT (FA), Continuation Page

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                              LARS

      CATEGORY F   USA   GIA   EUROPE

        Activity -

```
    (a)Contract                      W    U    K
       Warranty                      W    U    K

    (b)IN-DEC Contract               K    U    A
       Non Contract/Non Warranty     F    F    F
    (c)RTD/Off-site Agreement        F    U    F

       Hardware Segment Code         111     111     111
       Product Line                  031     031     031

    DEC Option                       VAXFT 810    VAXFT 810    VAXFT 810
    Option ID                        X         N/A    N/A
    Type of Call                     M         M      M
    Action Taken                     D         D      I/V
    Fail Area-Module-FCO-Comments    FT810-O001     FT810-O001     FT810-O001

    Material Used                    EQ-01701-01    EQ-01701-01    EQ-01701-01
```

(a) Warranty Optimum, Warranty Standard and Warranty Basic (on-site)
    Agreements; * Note material (only) free of charge for all customers.
(b) Applies to IN-DEC Area Only
(c) RTD=Return to Digital or Off-site Agreements; If Field Engineer
    On-site, use Activity Code "F".

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-----------------------------------------------------------------------------
|        WARRANTY/CONTRACT          ||           NONWARRANTY/NONCONTRACT          |
|_____||_____|
|    ON-SITE     |    OFF-SITE      ||    ON-SITE     |    OFF-SITE    |  MATERIAL ONLY   |
|_____|_____ ||_____|_____|_____|
|TRAVEL/|  EQ    |        |   EQ    ||TRAVEL/|  EQ    |        |   EQ   |ORDER-ADMIN,HANDLING |
|INSTALL|  KIT   |INSTALL |   KIT   ||INSTALL|  KIT   |INSTALL |   KIT  |PKG,SHIPPING & EQ KIT|
|_____|_____|_____|_____||_____|_____|_____|_____|_____|
|  DEC  |  DEC   |  DEC   |  DEC    ||  CUS  |  CUS   |  CUS   |  CUS   |       CUS           |
|_____|_____|_____|_____||_____|_____|_____|_____|_____|
```

```
        _
  Module                                                              /
  ======          +----+--------------------------------------+   Handle
                  |    |        +--------+        +----------+ |   Side
                  |    |        | S. ROM |        |          | |
                  |    |        +--------+        | Battery  | |
                  |    |            +---+         | Pack     | |
                  |    |            |   |         |          | |
                  |    |            +---+         |          | |
                  |    |            +---+         |          | |
                  |    |            |   |         |          | |
                  |    |            +---+         +----------+ |
```
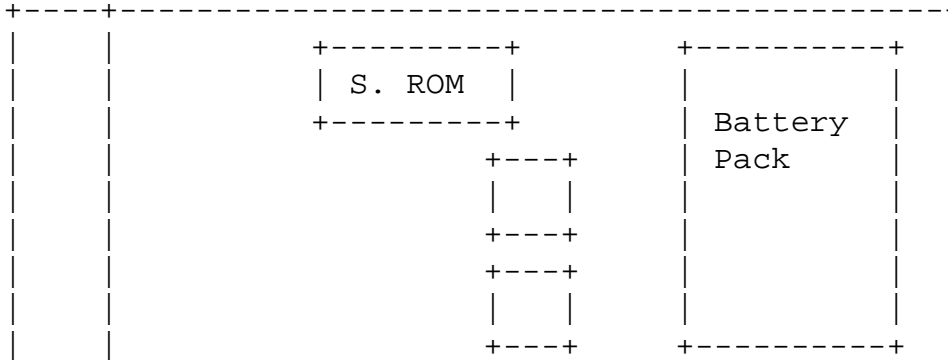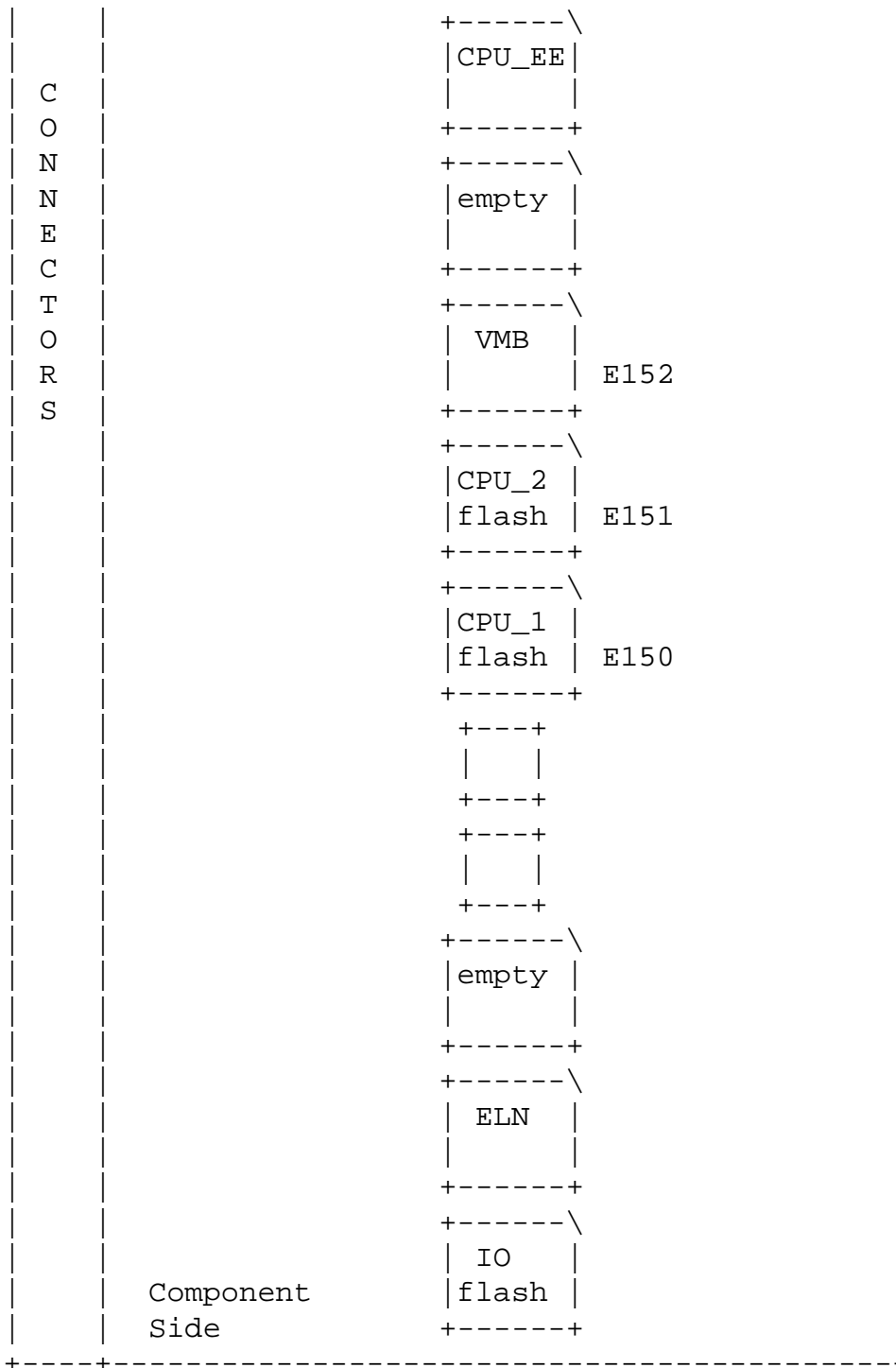
```
         |       |                   +------\              |
         |       |                   |CPU_EE|              |
         | C     |                   |      |              |
         | O     |                   +------+              |
         | N     |                   +------\              |
         | N     |                   |empty |              |
         | E     |                   |      |              |
         | C     |                   +------+              |
         | T     |                   +------\              |
         | O     |                   | VMB  |              |
         | R     |                   |      | E152         |
         | S     |                   +------+              |
         |       |                   +------\              |
         |       |                   |CPU_2 |              |
         |       |                   |flash | E151         |
         |       |                   +------+              |
         |       |                   +------\              |
         |       |                   |CPU_1 |              |
         |       |                   |flash | E150         |
         |       |                   +------+              |
         |       |                    +---+                |
         |       |                    |   |                |
         |       |                    +---+                |
         |       |                    +---+                |
         |       |                    |   |                |
         |       |                    +---+                |
         |       |                   +------\              |
         |       |                   |empty |              |
         |       |                   |      |              |
         |       |                   +------+              |
         |       |                   +------\              |
         |       |                   | ELN  |              |
         |       |                   |      |              |
         |       |                   +------+              |
         |       |                   +------\              |
         |       |                   | IO   |              |
         |       |   Component       |flash |              |
         |       |   Side            +------+              |
         +----+-------------------------------------------+
                                                           \
                                                            -
    Flash ROM
    ========        Slanted surface
     |
     v
    +--------\ Beveled corner
    |        | |
    |        |o| pin 1 designator
                        |        | |
    +--------+

\\ DB=FCO_DOCS CAT=HARDWARE GRP=FCO_DOCS
```