DIGITAL	FCO	CATEGORY PAGE 1 OF 8
		[O]

FIELD CHANGE ORDER   NUMBER: PB22H-O002

APPLICABILITY:

This "O" coded FCO affects all revenue PB22H-CX/KB systems, of product family DECpc-150 AXP with serial number within the range AY325XXXXX and AY312XXXXX, containing ADAPTEC 1742A SCSI controller module part number 30-40383-01 at Rev. "A03".
This FCO should only be ordered or implemented only upon customer request.
This FCO incorporates ECO 3040383-DSG001.

PROBLEM & SYMPTOM:

The current firmware of the ADAPTEC 1742A SCSI controller is not compatible with OSF/1 operating system. Customers with revenue systems within the above serial number range, currently running NT or OpenVMS Operating Systems and want to run OSF/1 on their system will experience disk access problems and/or erratic system behavior if OSF/1 is loaded into the system.

SOLUTION:

On customer request only, replace EPROM on ADAPTEC 1742 SCSI controller with new EPROM chip containing the latest microcode Rev. "G.2" (part of EQ kit)

QUICK CHECK:

   Check that the ADAPTEC 1742 SCSI controller module is at Rev. "A04
   Locate component location U10, (socketed EPROM located near red LED "DS1")
   has the inscription "BCE3" which denotes the checksum for microcode
   Rev. "G.2".

ALTERNATE QUICK CHECK : Use the VMS/OSF console and use SHOW DEVICE and
   note under the Rev. column what the host device 1742A lists as the Rev.
   In this manner the revision of the ADAPTEC 1742 SCSI controller module can
   be determined without opening the system enclosure.

PRE/CO-REQUISITE FCO: FCO# PB22H-O001 (NMI Parity error)	MFIT HRS
	1.5 hrs.

TOOL/TEST EQUIPMENT: Field Service Maintenance Tool Kit

FCO PARTS INFORMATION

FCO KIT NO.	DESCRIPTION OF CONTENTS
EQ-01697-01	1 23-681E6-00 EPROM chip containing G.2 firmware
	1 QC-008AA-HC.1.5 Firmware upgrade and ECU Diskette Kit
	(Kit Includes:
	1 - NT ECU diskette, Part# AK-PYCJC-CA
	1 - Firmware Upgrade Diskette Part# AK-Q19XB-CA
	1 - OVMS/OSF-1 ECU Diskette V 1.2 Part# AK-Q2CRB-CA
	1 - User License Part# AV-PRRRA-TH)
FA-05034-01	1 PB22H-O002 FCO Field Application Document

```
|                    FCO CHARGING INFORMATION (See Last Page)              |
|_____|
|                              APPROVALS                                  |
|_____|
|TECH. ENGINEER    |ENG. BUSINESS MGR.  |MCS LOGISTICS PM  |DS PRODUCT SAFETY |
|Rudy Latortue     |George Wright       |George Simko      |Robert Brister    |
|_____|_____|_____|_____|
|MICROMEDIA        |PARTS AVAILABILITY  |FCO REVISION      |FCO RELEASE DATE  |
|Brenda Rogers     |   MARCH 1994       |       B          |   22-APR-94      |
|_____|_____|_____|_____|
```

```
    +---------------------------+   |
    |   |   |   |   |   |   |   |   |            FCO   PB22H-O002
    | d | i | g | i | t | a | l |   |
    |   |   |   |   |   |   |   |   |            PAGE 2 OF 8
    +---------------------------+   |
                                    |
_____|_____
```

INSTRUCTIONS FOR INSTALLING
        FCO PB22H-O002 on ADAPTEC 1742A SCSI CONTROLLER

    Product Family PB22H-CX and PB22H-KB

  ************************** REFERENCE ************************

 For more detailed information and illustrations, please refer
        to the DECpc AXP 150 and DEC 2000 Model 300 AXP Hardware
        Service Information Manual, Order Number: EK-A0637-SV. This
        document is also available on TIMA, in the "Tools" section.

    Chapters of interest include:

    Chapter 4, Section 4.11, Updating the Firmware
    Chapter 6, Using The EISA Configuration Utility
    Chapter 9, Removal and Replacement

****

GUIDELINES

The upgrade consists of four major steps as follows:

1 - Record NT and or VMS/OSF Bootstrap settings.

2 - Replace the PROM on the ADAPTEC 1742A SCSI controller.

3 - Perform the console firmware update for OpenVMS/OSF1.

4 - Run the ECU program.

PROCEDURE

o - Before turning off power to the system, make sure to record the NT
    and /or VMS/OSF bootstrap settings.
    For the NT console, it is most important to record the NT bootstrap
    settings, as it could very difficult to determine these settings

once they have been lost. To record the bootstrap settings, from
the 'setup menu' select the 'manage boot selection menu' then
select 'dump boot selections'. This displays all the bootstrap
selections on one screen. Record this display.

Alternatively for the NT console, you can use the following to
record each boot selection individually. From the 'boot selections
menu' select 'change a boot selection', then on 'selection to
        edit', use the up arrow keys to scroll through the boot selections.
        Hit carriage return when you have the required boot selection, eg.,
"Windows NT Version 3.1", and it will then display all the boot
variables for that boot selection. Copy this screen down and then
use the "ESC" key to exit. Repeat for all the boot selections.
This is very tedious, but it may save you or the customer rebuilding
NT because you cannot determine what the bootstrap should be at the
end of the FCO.


```
+----------------------------+    |
|   |   |   |   |   |   |   | |    |              FCO   PB22H-O002
| d | i | g | i | t | a | l | |    |
|   |   |   |   |   |   |   | |    |              PAGE 3 OF 8
+----------------------------+    |
_____|_____
```

o - Preparing to remove the Adaptec 1742A FRU.

    Use ALL ESD safety precautions to prevent DOA's on material in kit.

    ************************* C A U T I O N *************************
    * The module, as with all modules, contain electrostatic discharge *
    * sensitive devices (ESDS). The use of the Velostat Kit or ESD   *
    * module box is essential to prevent damage which may not be   *
    * noticed immediately.   *
    ****

                      Setting up the Velostat Kit
                      _____

    1. Unfold the Velostat mat to full size (24" x 24").

    2. Attach the 15 foot ground cord to the Velostat snap fastener
       on the mat.

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

    4. Attach the wrist strap to either wrist and the alligator clip
       to a convenient portion of the mat.

    5. When working on a module, use part of the mat as a work area.
          OR:

    ************************* C A U T I O N *************************
    * If using a module in an ESD box, insure wrist strap is connected *
    * to the box and the box is connected to chassis of the device   *

```
* being upgraded.                                                    *
 ***********************************************************************
```

 To remove and replace FRUs, you must remove the covers from the
 system unit.

 o Preparing to Remove the Outer Cover

    The following describes the steps that must be followed prior to removing
    the outer cover.

    1. Shut down the operating system following the instructions listed in
 the operating system documentation.

    2. Set the on/off switches on all peripherals connected to the system to
 the OFF position.

    3. Set the on/off switch on the system unit to the OFF position.

    4. Note or record the position of all cables attached to the
 rear of the system.

    5. If applicable, disconnect cable from the external SCSI connector of
 the SCSI controller at the rear of the system.

```
   +----------------------------+   |
   |   |   |   |   |   |   |   | |   |              FCO   PB22H-O002
   | d | i | g | i | t | a | l | |   |
   |   |   |   |   |   |   |   | |   |              PAGE 4 OF 8
   +----------------------------+   |
                                    |
  _____|_____
```

 o Removing the Outer Cover

    To access the internal components, you must remove the left outer cover
    from the system unit. The following describes the steps that must be
    followed to remove the left outer cover.

    1. Unlock the left outer cover using the chassis key (located at the
       rear of the case).

    2. Loosen the two captive screws with a flat screwdriver.

    3. Slide the outer cover toward the rear of the system unit, swing the
 top of the cover away from the box and lift up to remove it.

 o Removing the Inner Covers

    To access the internal components, you must first remove both inside
    covers from the system unit. The following list describes the
    steps that must be followed to remove both inside covers.

    1. Remove the inside peripheral bay cover (top) by inserting your finger
       into the circular hole and lifting it out.

2. Loosen the two screws securing the large (lower) inside cover to the chassis, (toward the front of the box).

3. By inserting your finger into the large circular hole, slide the large inside cover toward the front of the system unit swing the top away from the box and lift up to remove it.

o Removing the ADAPTEC 1742A Option Board

   a) If applicable, disconnect cable from the external SCSI connector of the SCSI controller at the rear of the system.

   b) Note or record the position of the 1742A module on the motherboard.

   c) Disconnect the 50 pin SCSI cable from the 1742A module.

   d) Disconnect the 34 pin floppy cable from the 1742A module.

   e) Disconnect the hard disk activity LED cable from the 1742A module.

   f) Remove the screw securing the option board to the chassis.

   g) Carefully disconnect the option board from the connectors on the system module and remove it from the system.


```
+---------------------------+   |
|   |   |   |   |   |   |   |   |                FCO   PB22H-OOO2
| d | i | g | i | t | a | l |   |
|   |   |   |   |   |   |   |   |                PAGE 5 OF 8
+---------------------------+   |
                                |
_____|_____
```

o Removing the EPROM containing the microcode.

   Use ALL ESD safety precautions to prevent DOA's on material in kit.

```
*********************** C A U T I O N ****************************
*                                                               *
* The module, as with all modules, contain electrostatic discharge *
* sensitive devices (ESDS).  The use of the Velostat Kit or ESD    *
* module box is essential to prevent damage which may not be       *
* noticed immediately.                                             *
****************************************************************
```

         OR:

```
*********************** C A U T I O N ****************************
*                                                               *
* If using a module in an ESD box, insure wrist strap is connected *
* to the box and the box is connected to chassis of the device    *
* being upgraded.                                                 *
****************************************************************
```

1. Position the module on a clean and dry area with the connector fingers
pointing away from you. Locate the EPROM U10 at the right of the
module and adjacent to the red "drive activity" LED.

   2. Note or record the position of the "orientation notch" on the chip.

   3. Using the appropriate tool, remove the EPROM chip from its socket,
taking great care not to damage the chip, the socket and etch lines
on the surface of the board.

   4. Set the EPROM chip in a safe location. It may be of help later.

 o Installing the new EPROM chip.

   1. Remove the new EPROM chip Part No. 23-681E6-00 from its packaging,
      and verify that the label shows "BCE3".

*****CAUTION***** Avoid touching the EPROM pins with your fingers or
                  any other material.

   2. Carefully align the chip pins with the socket making sure that the
 chip orientation notch is aligned with the outline on the board.

   3. Insert the pins in the socket and push down on the chip so that it is
  secured in the socket.

   4. Verify that each pin is securely inserted in its appropriate location.

THIS COMPLETES THE ADAPTEC 1742 SCSI CONTROLLER BOARD SET-UP.


```
    +----------------------------+      |
    |   |   |   |   |   |   |   |  |      |              FCO   PB22H-0002
    | d | i | g | i | t | a | l |  |      |
    |   |   |   |   |   |   |   |  |      |              PAGE 6 OF 8
    +----------------------------+      |
 _____|_____
```

 o Installing the ADAPTEC 1742 SCSI controller option in the system unit.

    Use ALL ESD safety precautions to prevent DOA's on material in kit.

    ********************** C A U T I O N ***************************
    *   *
    * The module, as with all modules, contain electrostatic discharge *
    * sensitive devices (ESDS). The use of the Velostat Kit or ESD   *
    * module box is essential to prevent damage which may not be   *
    * noticed immediately.   *
    ****

    OR:

    ********************** C A U T I O N ***************************

```
  *                                                             *
  * If using a module in an ESD box, insure wrist strap is connected *
  * to the box and the box is connected to chassis of the device    *
  * being upgraded.                                                 *
  ********************************************************************
```

   The following list describes the steps that must be followed to install
   the ADAPTEC 1742 SCSI controller option board.

    1. Using the information recorded during the 1742A module removal,
determine the correct slot for the option board on the CPU module.

    2. Carefully insert the option board into the appropriate slot on the CPU
module and press it firmly into place.

    3. Secure the option board to the chassis using the appropriate screw.

    4. Re-connect the 50 pin SCSI cable to the module.

    5. Re-connect the 34 pin Floppy cable to the module.

    6. Re-connect the Hard disk activity LED cable to the module.

    7. Re-install the inner and outer covers.

    8. If applicable, re-connect cable from the external SCSI connector of
the SCSI controller at the rear of the system.

    9. Re-connect any other cables previously disconnected.

   10. Insure that all connections are to the original configuration.

   11. Turn on power to the system. If an NVR failure occurs during the
       first power-up, turn off the power and power-up again.

```
   +---------------------------+   |
   |   |   |   |   |   |   |   |   |        FCO   PB22H-0002
   | d | i | g | i | t | a | l |   |
   |   |   |   |   |   |   |   |   |        PAGE 7 OF 8
   +---------------------------+   |
 _____|_____
```

   12. Check that SHOW DEV under the VMS console displays the Rev. of the
   1742A controller as Rev. "G.2".

   13. Perform Console Firmware update according to the instructions in the
procedure outlined in the DECpc AXP 150 and DEC 2000 Model 300 AXP
       Hardware Service Information Manual, Order No. EK-A0637-SV. This
       manual is also on TIMA in the Tools section.

   14. Under the NT console, Reset system to factory default.

   15. Run the NT or VMS/OSF EISA Configuration Utility program (ECU)
according to the procedure outlined in the DECpc AXP 150 and DEC 2000

   16. Set the NT and or VMS/OSF console defaults, and the bootstrap settings
as recorded in the first part of this proceedure.

   17. Check that the POST diagnostics run error free and that the
customer's system boots and is operational.

FINAL STEP

   18. Report this FCO activity on the LARS form in the "Fail Area/Module
       /FCO/Comments" column as follows: FCO PB22H-O002.

```
+----------------------------+    |
|   |   |   |   |   |   |   | |    |            FCO   PB22H-O002
| d | i | g | i | t | a | l | |    |
|   |   |   |   |   |   |   | |    |            PAGE 8 OF 8
+----------------------------+    |
                                  |
_____|_____
```

                              - LARS -

   CATEGORY   O   USA   APA   EUROPE

   Activity -
   (a)Contract   W   U   K
      Warranty   W   U   W

   (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   007   007   007

   DEC Option   PB22H-CX/KB   PB22H-CX/KB   PB22H-CX/KB
   Option ID   X   N/A   N/A
   Type of Call   M   M   M
   Action Taken   D   D   I/V
   Fail Area-Module-FCO-Comments PB22H-O002   PB22H-O002   PB22H-O002
   Material Used   EQ-   EQ-   EQ-

   (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".

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