FIELD CHANGE ORDER

NUMBER: PB22H-0002

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-0001 (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-0002 FCO Field Application Document
INSTRUCTIONS FOR INSTALLING
FCO PB22H-0002 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

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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.

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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:

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Digital

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

- 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.

- 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.

- 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.

○ 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.

○ Removing the EPROM containing the microcode.

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

********************************************************************
*                                                                 *
* 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:

********************************************************************
*                                                                 *
* 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.

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.

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

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

********************************************************************

OR:

********************************************************************

OR:
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.

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 procedure.

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-0002.

--- LARS ---

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<th>USA</th>
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| 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-0002 | PB22H-0002 | PB22H-0002 |
| 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

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ORDER-ADMIN, HANDLING PKG, SHIPPING & EQ KIT