



KFE72 Installation Guide

Order Number: EK-KFE72-IN. C01

Use this manual to install the KFE72 adapter in an *AlphaServer* GS60, GS60E, GS140, 8200, or 8400 system. The KFE72 provides graphics support needed to run an operating system or applications with a graphics user interface. For operating systems that support partitions, the KFE72 provides a serial port for the additional console monitors needed for such systems.

Third Printing, August 1999

The information in this publication is subject to change without notice.

COMPAQ COMPUTER CORPORATION SHALL NOT BE LIABLE FOR TECHNICAL OR EDITORIAL ERRORS OR OMISSIONS CONTAINED HEREIN, NOR FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE FURNISHING, PERFORMANCE, OR USE OF THIS MATERIAL.

This publication contains information protected by copyright. No part of this publication may be photocopied or reproduced in any form without prior written consent from Compaq Computer Corporation.

The software described in this guide is furnished under a license agreement or nondisclosure agreement. The software may be used or copied only in accordance with the terms of the agreement.

© 1999 Compaq Computer Corporation.

All rights reserved. Printed in the U.S.A.

COMPAQ, the Compaq logo, and Tru64 are copyrighted and are trademarks of Compaq Computer Corporation. Alpha, AlphaServer, OpenVMS, and StorageWorks are registered in the U.S. Patent and Trademark Office. Microsoft, Windows, and Windows NT are registered trademarks of Microsoft Corporation. UNIX is a registered trademark in the U.S. and other countries, licensed exclusively through X/Open Company Ltd. Other product names mentioned herein may be the trademarks of their respective companies.

FCC Notice: The equipment described in this manual generates, uses, and may emit radio frequency energy. The equipment has been type tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC rules, which are designed to provide reasonable protection against such radio frequency interference. Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference. Any modifications to this device—unless expressly approved by the manufacturer—can void the user's authority to operate this equipment under part 15 of the FCC rules.

Shielded Cables: If shielded cables have been supplied or specified, they must be used on the system in order to maintain international regulatory compliance.

Warning! This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Achtung! Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in welchen Fällen der Benutzer für entsprechende Gegenmaßnahmen verantwortlich ist.

Attention! Ceci est un produit de Classe A. Dans un environnement domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilisateur de prendre les mesures spécifiques appropriées.

Contents

Preface	ix
---------------	----

Chapter 1 Introduction

1.1 Installation Overview.....	1-2
--------------------------------	-----

Chapter 2 Procedure for the KFE72-BA/FA

2.1 KFE72-BA/FA Kit Contents	2-2
2.2 Install KFE72 Modules.....	2-4
2.2.1 Slide the PCI Card Cage Out.....	2-4
2.2.2 Insert Modules in Slots 0 and 1	2-6
2.2.3 Insert Module in Slot 2	2-8
2.2.4 Finish Ribbon Cabling, Install Parallel Port Assembly and Graphics Monitor	2-10
2.3 Remove the Control Panel and Cover Plate	2-12
2.4 Install the Floppy Drive	2-14
2.5 Change the Control Panel Bezel.....	2-16
2.6 Install Cables and Control Panel	2-18
2.7 Attach Graphics Monitor and Related Assemblies	2-20

Chapter 3 Procedure for the KFE72-AA/EA

3.1 KFE72-AA/EA Kit Contents.....	3-2
3.2 Install KFE72 Modules.....	3-4
3.2.1 Slide the PCI Card Cage Out.....	3-4
3.2.2 Insert Modules in Slots 0 and 1	3-6
3.2.3 Insert Module in Slot 2	3-8
3.2.4 Finish Ribbon Cabling, Install Parallel Port Assembly and Graphics Monitor	3-10
3.3 Remove the CD-ROM Box	3-12
3.4 Install the Floppy Drive	3-14
3.5 Prepare the CD-ROM Box for Installation	3-16
3.6 Replace the CD-ROM Box	3-18

3.7	Install Cables from the PCI to the CD-ROM Box	3-20
3.8	Attach Graphics Monitor and Related Assemblies	3-22

Chapter 4 Procedure for the KFE72-LA

4.1	Front and Rear View of the GS60E System Cabinet	4-2
4.2	KFE72-LA Kit Contents	4-4
4.3	Install KFE72 Modules	4-6
4.3.1	Slide the PCI Card Cage Out	4-6
4.3.2	Insert Modules in Slots 0 and 1	4-8
4.3.3	Insert Module in Slot 2	4-10
4.3.4	Finish Ribbon Cabling, Install Parallel Port Assembly and Graphics Module	4-12
4.4	Install the Floppy Drive	4-14
4.4.1	Remove the CD-ROM Tray	4-14
4.4.2	Remove Floppy Tray from CD-ROM Tray	4-16
4.4.3	Install Floppy Drive on Floppy Tray	4-18
4.4.4	Install the Floppy Bezel and Replace Floppy Tray	4-20
4.4.5	Install Internal Cabling to Floppy Drive	4-22
4.4.6	Install External Cables to Floppy Drive	4-24
4.5	Attach Graphics Monitor and Related Assemblies	4-26

Chapter 5 Procedure for the KFE72-UG

5.1	KFE72-UG Kit Contents	5-2
5.2	Install KFE72-UG Modules	5-4
5.2.1	Slide the PCI Cage Out	5-4
5.2.2	Insert Module in Slot 2	5-6
5.2.3	Insert Module in Slot 1	5-8
5.2.4	Finish Ribbon Cabling, Install Parallel Port Assembly and Graphics Module	5-10
5.3	Attach Graphics Monitor and Related Assemblies	5-12

Chapter 6 Procedure for the KFE72-DA

6.1	KFE72-DA Kit Contents	6-2
6.2	Install KFE72-DA Modules	6-4
6.2.1	Slide the PCI Card Cage Out	6-4
6.2.2	Insert Modules	6-8
6.2.3	Attaching the Console Serial Line	6-8

Chapter 7 Verification

7.1	Run System Self-Test	7-2
7.2	Show Configuration Command	7-4

Chapter 8 Running ECU from AlphaBIOS for Windows NT Systems

8.1	Starting AlphaBIOS.....	8-2
8.2	First and Second Error Screens	8-4
8.3	Updating the Configuration Using ECU.....	8-6

Chapter 9 Running ECU from the SRM Console for *Tru64 UNIX* Systems

9.1	SRM Commands	9-2
9.2	Updating the Configuration Using ECU.....	9-4

Appendix A PCI Device Restrictions on the Primary PCI Subsystem

A.1	PCI VGA Graphics.....	A-1
A.2	PCI Devices Hardwired to EISA I/O Address Space.....	A-1
A.3	Lower 64K I/O Address Space Allocation and Restriction.....	A-1
A.3.1	PCI Graphics Mode	A-2
A.3.2	ISA Graphics Mode	A-3

Index

Examples

6-1	Self-Test Display.....	6-2
6-2	Show Configuration	6-4
7-1	Verify Proper Console Settings.....	7-2
7-2	Changing to Proper Console Settings	7-2
7-3	Set OS Type and Issue AlphaBIOS Command	7-2
8-1	SRM Commands for <i>Compaq Tru64 UNIX</i>	8-2
8-2	Running the EISA Configuration Utility	8-3

Figures

1-1	KFE72 Ports and Their Front Panel Slot Positions.....	1-1
1-2	Full Installation Flowchart	1-2
1-3	Hose Position on KFTHA and KFTIA	1-3
2-1	Hardware Installation Flowchart	2-2
2-2	Sliding the PCI Card Cage Out	2-4
2-3	Inserting the Modules	2-6
2-4	Jumper Settings on the Connector Module	2-8
2-5	Ribbon Cabling and Parallel Port Assembly Installation.....	2-10

2-6	Jumper and Switch Settings on PBXGB-AA Module	2-11
2-7	Control Panel Removal.....	2-12
2-8	Floppy Drive Installation	2-14
2-9	Control Panel Preparation.....	2-16
2-10	Cable Installation	2-18
2-11	Ferrite Sleeve Installation	2-20
3-1	Installation Flowchart.....	3-2
3-2	Sliding the PCI Card Cage Out	3-4
3-3	Inserting the Modules	3-6
3-4	Jumper Settings on the Connector Module	3-8
3-5	Ribbon Cabling, Parallel Port Assembly and Graphics Module Installation	3-10
3-6	Jumper and Switch Settings on PBXGB-AA Module	3-11
3-7	CD-ROM Box Removal	3-12
3-8	Floppy Drive Installation	3-14
3-9	CD-ROM Box (Rear)	3-16
3-10	CD-ROM Box Replacement	3-18
3-11	Cable Installation	3-20
3-12	Ferrite Sleeve Installation	3-22
4-1	Front and Rear View of the GS60E System Cabinet.....	4-2
4-2	Hardware in a Partitioned GS60E System	3-3
4-3	Hardware Installation Flowchart	4-4
4-4	Sliding the PCI Card Cage Out	4-6
4-5	Inserting the Modules	4-8
4-6	Jumper Settings on the Connector Module	4-10
4-7	Ribbon Cabling and Parallel Port Assembly	4-12
4-8	Jumper and Switch Settings on PBXGB-AA Module	4-13
4-9	Disconnect CD-ROM Power and Signal Cables	4-14
4-10	Removing the CD-ROM Tray.....	4-15
4-11	Unscrewing the Top of the CD-ROM Tray.....	4-16
4-12	Remove the Floppy Tray	4-17
4-13	Remove the Blank Bezel from the Floppy Tray.....	4-18
4-14	Screw the Floppy Drive to the Floppy Tray.....	4-19
4-15	Snap in Floppy Bezel and Slide in Floppy Tray.....	4-20
4-16	Replace Screws Holding Floppy Tray in Place	4-21
4-17	Installing Internal Cabling to Floppy Drive	4-22
4-18	External Cable Installation.....	4-24
4-19	Ferrite Sleeve Installation	4-26
5-1	Installation Procedure	5-2
5-2	Sliding the PCI Card Cage Out of the GS60/8200	5-4
5-3	Inserting Module in Slot 2	5-6
5-4	Jumper Settings on the Connector Module	5-7
5-5	Inserting Module in Slot 1	5-8
5-6	Ribbon Cabling, Parallel Port Assembly, and Graphics Module Installation	5-10

5-7	Jumper and Switch Settings on PBXGB-AA Module	5-11
5-8	Ferrite Sleeve Installation	5-12
6-1	Hardware Installation Flowchart	6-2
6-2	Sliding the PCI Card Cage Out of the GS60E.....	6-4
6-3	Sliding the PCI Card Cage Out of the GS60/8200	6-6
6-4	Sliding the PCI Card Cage Out of the GS140/8400	6-7
6-5	Inserting the Modules	6-8
6-6	Jumper Settings on the Connector Module (If Any)	6-9
8-1	First Error Screen	8-4
8-2	Second Error Screen	8-5
8-3	ECU Configuration Screen	8-6
A-1	Jumper Settings on the Connector Module	A-3

Tables

1	AlphaServer GS60/GS140/8200/8400 Documentation	xi
2	AlphaServer GS60E Documentation	xii
3	Documentation Relating to the KFE72-DA Kit	xiii
2-1	KFE72-BA/FA Kit Contents	2-3
3-1	KFE72-AA/FA Kit Contents	3-3
4-1	KFE72-LA Kit Contents	4-3
5-1	KFE72-UG Kit Contents	5-3
6-1	KFE72-DA Kit Contents	6-3

Preface

Intended Audience

This manual is written for customer service engineers and self-maintenance customers installing the KFE72 adapter into a DWLPB shelf or PIU in *AlphaServer* GS60, GS60E, GS140, 8200, and 8400 systems.

Document Structure

This manual uses a structured documentation design. Topics are organized into small sections for efficient online and printed reference. Each topic begins with an abstract. You can quickly gain a comprehensive overview by reading only the abstracts. Next is an illustration or example, which also provides quick reference. Last in the structure are descriptive text and syntax definitions.

This manual has nine chapters and one appendix, as follows:

- **Chapter 1, Introduction**, gives an overview of the KFE72 and the installation process.
- **Chapter 2, Procedure for the KFE72-BA/FA**, gives instructions on how to install the KFE72-BA (for Windows NT) or KFE72-FA (for *Tru64 UNIX*) kit in the AlphaServer GS60 or 8200 system cabinet.
- **Chapter 3, Procedure for the KFE72-AA/EA**, gives instructions on how to install the KFE72-AA (for Windows NT) or KFE72-EA (for *Tru64 UNIX*) kit in the AlphaServer GS140 or 8400 system cabinet.
- **Chapter 4, Procedure for the KFE72-LA**, gives instructions on how to install the KFE72-LA (for *Tru64 UNIX*) kit in the GS60E cabinet.
- **Chapter 5, Procedure for the KFE72-UG**, describes the procedure to upgrade a system already having a KFE70 to a system with a KFE72 (for Windows NT).
- **Chapter 6, Procedure for the KFE72-DA**, describes how to install the KFE72-DA kit (for operating systems supporting logical partitions such as *Compaq OpenVMS* or *Compaq Tru64 UNIX*) in *AlphaServer* GS60, GS60E, GS140, 8200, or 8400 systems.
- **Chapter 7, Verification**, tells how to verify that the KFE72 has been installed properly.

- **Chapter 8, Running ECU from AlphaBIOS for Windows NT Systems**, tells how to use the EISA Configuration Utility from the graphics monitor installed and running AlphaBIOS. This procedure is necessary to configure the KFE72 in a Windows NT system.
- **Chapter 9, Running ECU from the SRM Console for Tru64 UNIX Systems**, tells how to use the EISA Configuration Utility from the SRM console to configure the KFE72 in a *Compaq Tru64 UNIX* system.
- **Appendix A, PCI Device Restrictions on the Primary PCI Subsystem**, describes restrictions that are of interest to those who may wish to use PCI or EISA devices in an *AlphaServer* GS60/8200 or GS140/8400 that are not currently supported by Compaq.

System Options

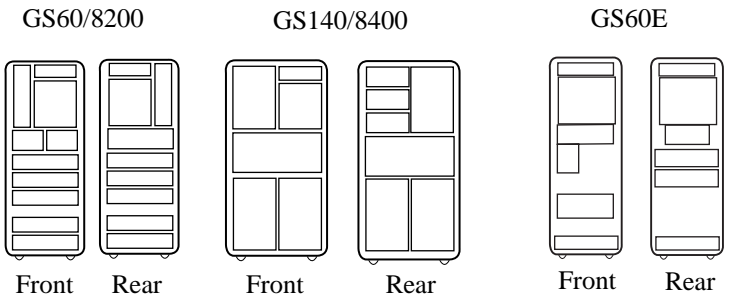
The *Systems and Options Catalog* describes all options for *AlphaServer* GS60, GS60E, GS140, 8200, and 8400 systems. In addition, *Compaq* maintains a list of the latest supported options on the Internet, which you can access as follows:

Using a Web browser, follow links from the URL:

<http://www.compaq.com/alphaserver/>

Conventions Used in This Document

Icons. Icons similar to those shown below are used in illustrations for designating part placement in the system described. A shaded area in the icon shows the location of the component or part being discussed.



BX-0099C-99

Documentation Titles

Table 1 lists the books in the *AlphaServer* GS60, GS140, 8200, and 8400 documentation sets that you may find useful. Table 2 lists the books in the *AlphaServer* GS60E documentation set that you may find useful. Table 3 lists documentation that may be of interest to those installing the KFE72-DA kit.

Table 1 AlphaServer GS60, GS140, 8200, and 8400 Documentation

Title	Order Number
Hardware User Information and Installation	
<i>Operations Manual</i>	EK-T8030-OP
<i>Site Preparation Guide</i>	EK-T8030-SP
<i>AlphaServer GS60/8200 Installation Guide</i>	EK-T8230-IN
<i>AlphaServer GS140/8400 Installation Guide</i>	EK-T8430-IN
<i>Windows NT Administrator's Guide and Release Notes</i>	EK-T8WNT-RN
Service Information Kit	QZ-00RAC-GC
<i>Service Manual</i> (hard copy)	EK-T8030-SV
<i>Service Manual</i> (diskette)	AK-QKNFA-CA AK-QUW7A-CA AK-QUW6A-CA
Reference Manuals	
<i>System Technical Manual</i>	EK-T8030-TM
<i>System Technical Manual Supplement: CPU</i>	EK-T8030-TS
<i>System Technical Manual Supplement: Memory</i>	EK-MS7CC-TS
<i>DWLPA/DWLPB PCI Adapter Technical Manual</i>	EK-DWLPA-TM
Upgrade Manuals for Both Systems	
<i>KN7CC CPU Installation Card</i>	EK-KN7CC-IN
<i>KN7CD CPU Installation Card</i>	EK-KN7CD-IN
<i>KN7CE CPU Installation Card</i>	EK-KN7CE-IN
<i>KN7CF CPU Installation Card</i>	EK-KN7CF-IN
<i>KN7CG CPU Installation Card</i>	EK-KN7CG-IN
<i>KN7CH CPU Installation Card</i>	EK-KN7CH-IN
<i>MS7CC Memory Installation Card</i>	EK-MS7CC-IN
<i>KFTHA System I/O Module Installation Card</i>	EK-KFTHA-IN
<i>KFTIA Integrated I/O Module Installation Card</i>	EK-KFTIA-IN

Table 1 AlphaServer GS60, GS140, 8200, and 8400 Documentation (Continued)

Title	Order Number
Upgrade Manuals: GS140/8400 System Only	
<i>AlphaServer 8400 Upgrade Manual</i>	EK-T8430-UI
<i>BA654 DSSI Disk PIU Installation Guide</i>	EK-BA654-IN
<i>BA655 SCSI Disk and Tape PIU Installation Guide</i>	EK-BA655-IN
<i>DWLMA XMI PIU Installation Guide</i>	EK-DWLMA-IN
<i>DWLPA/DWLPB PCI PIU Installation Guide</i>	EK-DWL84-IN
<i>H7237 Battery PIU Installation Guide</i>	EK-H7237-IN
<i>H7263 Power Regulator Installation Card</i>	EK-H7263-IN
<i>KZMSA Adapter Installation Guide</i>	EK-KXMSX-IN
<i>RRDCD Installation Guide</i>	EK-RRDRX-IN
Upgrade Manuals: GS60/8200 System Only	
<i>DWLPA/DWLPB PCI Shelf Installation Guide</i>	EK-DWL82-IN
<i>H7266 Power Regulator Installation Card</i>	EK-H7266-IN
<i>H7267 Battery Backup Installation Card</i>	EK-H7264-IN

Table 2 AlphaServer GS60E Documentation

Title	Order Number
<i>AlphaServer GS60E Installation Guide</i>	EK-GS60E-IN
<i>AlphaServer GS60E Operations Manual</i>	EK-GS60E-OP
<i>AlphaServer GS60E Service Manual</i>	EK-GS60E-SV
<i>H7506 Power Supply Installation</i>	EK-H7506-IN
<i>RRDCD Installation Card</i>	EK-RRDXX-IN
<i>GS60/8200 to GS60E Upgrade Manual</i>	EK-GS60E-UP

Table 3 Documentation Relating to the KFE72-DA Kit

Title	Order Number
<i>OpenVMS Alpha Galaxy Guide</i>	AA-REZQB-TE
<i>Getting Started with Logical Partitions</i>	EK-TUNLP-SF
<i>Tru64 UNIX System Administrator's Guide</i>	

Chapter 1

Introduction

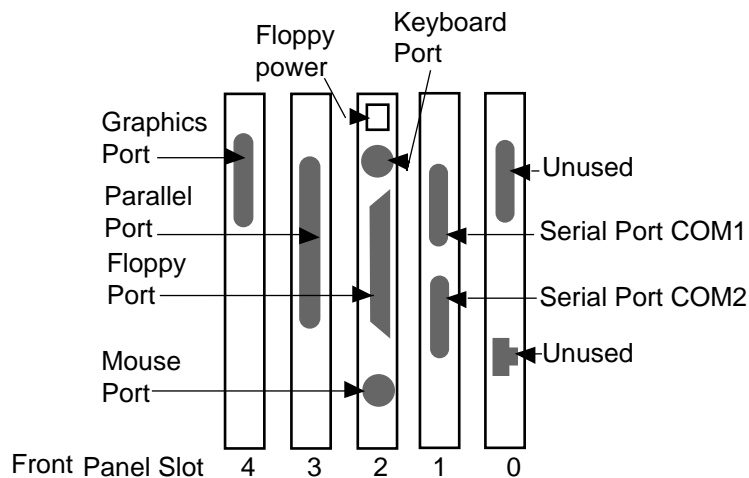
The KFE72 provides I/O ports needed to support system console operation underlying various operating systems.

The KFE72-AA/BA/UG kits (for Windows NT systems) provide a graphics port, a keyboard port, a mouse port, a floppy disk drive port, two serial ports, and a parallel port. There are four modules that provide these ports, occupying front panel slot positions 0, 1, 2, and 4 of a DWLPB card cage. The parallel port is routed from the module in slot 1 by cable to front panel slot 3. See Figure 1-1.

The KFE72-EA/FA/LA kits (for *Tru64 UNIX* systems) provide the same ports as above, except that the graphics module is ordered separately (see the Systems and Options Catalog, hardcopy or at <http://www.compaq.com/alphaserver/>). These kits provide the three modules and parallel port assembly shown in front panel positions 0, 1, 2, and 3 in Figure 1-1.

The KFE72-DA kit provides serial ports for operating systems allowing execution of multiple instances of an operating system providing this support, such as *Tru64 UNIX* or *OpenVMS Galaxy*. This kit includes three modules in front panel slots 0, 1, and 2 as shown in Figure 1-1.

Figure 1-1 KFE72 Ports and Their Front Panel Slot Positions

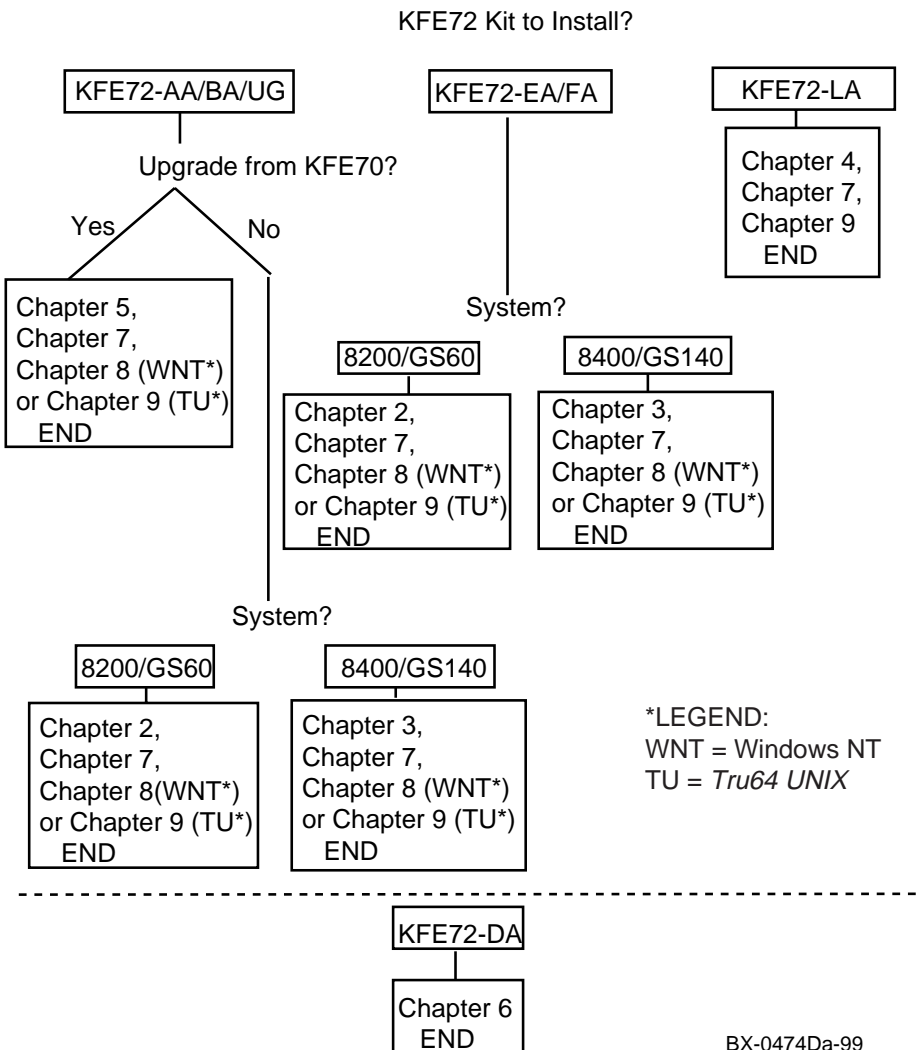


BX-0198B-97

1.1 Installation Overview

The KFE72 kit you have is one of several options. Follow the flowchart to see how to proceed for the option you have.

Figure 1-2 Full Installation Flowchart



BX-0474Da-99

Before You Begin

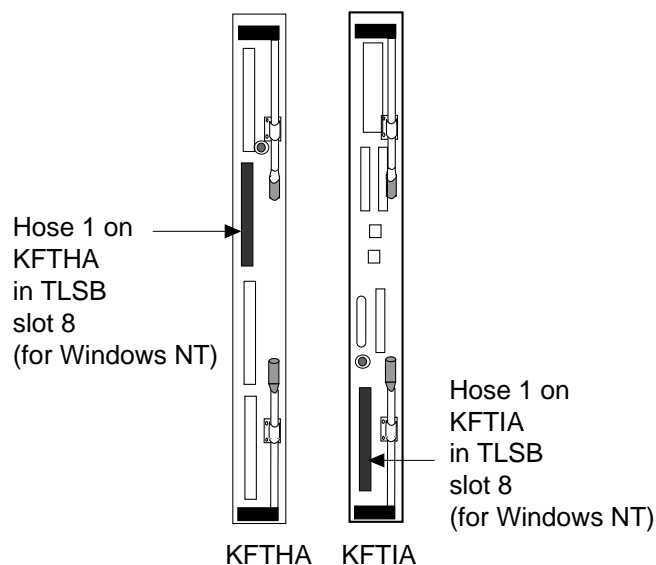
A serial terminal must be connected to the console port on the control panel of a *Compaq AlphaServer* GS60, GS140, 8200 or 8400 system for both Windows NT and *Tru64 UNIX* operating systems. On the *AlphaServer* GS60E system, the console port is located at the rear of the machine, at the left, above the AC power input box.

Other equipment is needed to connect a graphics monitor for your system. For Windows NT systems, you will need a graphics monitor and a keyboard. For *Tru64 UNIX* systems, you will need a *Compaq* graphics adapter, a graphics monitor, and a keyboard.

Also, the KFE72 is installed in a DWLPB card cage. For Windows NT systems, the DWLPB must be connected to hose 1 on a KFTIA or KFTHA I/O module in slot 8. See Figure 1-3 for the location of hose 1 in a KFTHA or a KFTIA I/O module. See the *Compaq OpenVMS Alpha Galaxy Guide* for information on hose connections for *OpenVMS* systems.

There are other checks you need to make before installing a KFE72. For example, you must ensure that your system has been upgraded to the minimum SRM console revision. Also, if you have upgraded to an *AlphaServer* 8400 or GS140 from a VAX 7000 or DEC 7000, you need to upgrade the CD-ROM to an RRDCD-CA. Other preliminary checks for Windows NT systems are specified in the *Windows NT Administrator's Guide and Release Notes*.

Figure 1-3 Hose Position on KFTHA and KFTIA



BX-0132C-99

Chapter 2

Procedure for the KFE72-BA/FA

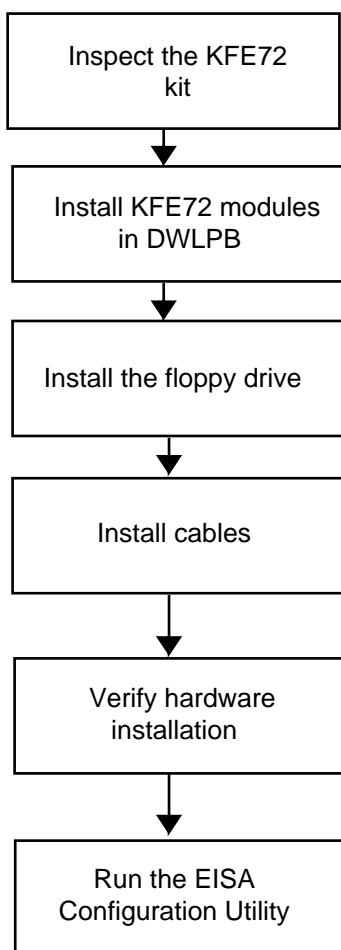
This chapter describes installation of KFE72 hardware in a GS60 or 8200 system for Windows NT and *Tru64 UNIX* systems. Sections include:

- KFE72-BA and KFE72-FA Kit Contents
- Install KFE72 Modules
- Remove the Control Panel and Cover Plate
- Install the Floppy Drive
- Change the Control Panel Bezel
- Install Cables and Control Panel
- Attach Graphics Monitor and Related Assemblies

2.1 KFE72-BA/FA Kit Contents

The KFE72 is an adapter installed in a PCI I/O subsystem to provide I/O options necessary for operating systems with a graphical user interface.

Figure 2-1 Hardware Installation Flowchart



BX0474B-98

Table 2-1 KFE72-BA/FA Kit Contents

Part Number	Quantity	Description
RX26-AA	1	2.8 Mbyte, 3.5-inch diskette drive
B2110-AA	1	Standard I/O module
54-25133-01	1	Connector module
54-25082-01	1	Serial port module
70-33322-01	1	Parallel port panel assembly
PBXGB-AA	1	PowerStorm 3D30 graphics module ¹ (module no. 54-23481-01)
17-04100-01	1	Cable assembly, flat, 34 cond (from floppy to drive panel plate)
17-04115-01	1	Cable assembly, flat, 34 cond (standard I/O to connector)
17-04116-01	2	Cable assembly, flat, 60 cond (standard I/O to serial port, serial port to connector)
BN21H-1E	1	Signal cable, RX26, connector module to drive panel plate
17-04101-01	1	Power cable, floppy to drive panel plate
17-04670-01	1	Power cable, connector module to floppy
17-04016-01	2	Extension cables for keyboard and mouse
BC13L-10	1	Extension cable for video ¹
30-46117-02	1	Three-button mouse
74-48833-01	1	Drive panel plate
74-48125-02	1	Control panel
74-49792-02	1	New logo bar
36-44927-06	1	Sticker for new logo bar
36-42868-01	1	Label, USA
36-42868-02	1	Label, Europe
16-25105-14	1	Ferrite sleeve
90-10556-04	2	Screw, machine panel M3 pan 6 mm (floppy to drive panel plate)
12-41427-01	2	Screw, machine 4-40 pan 0.25 (signal cable to drive panel plate)
EK-KFE72-IN	1	<i>KFE72 Installation Guide</i>
QC-01YAA-HC	1	EISA system configuration kit

¹ These parts are not included in the KFE72-FA kit.

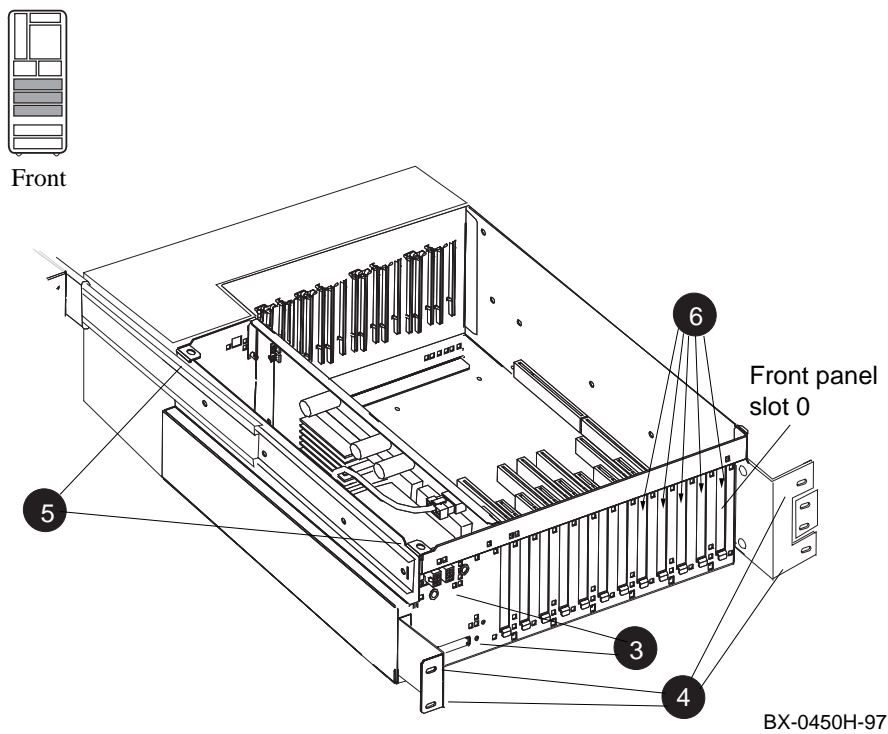
2.2 Install KFE72 Modules

Four modules need to be installed in the PCI I/O subsystem: the standard I/O module, the connector module, the serial port module, and the graphics module.

2.2.1 Slide the PCI Card Cage Out

Slide the PCI card cage out of the GS60/8200.

Figure 2-2 Sliding the PCI Card Cage Out

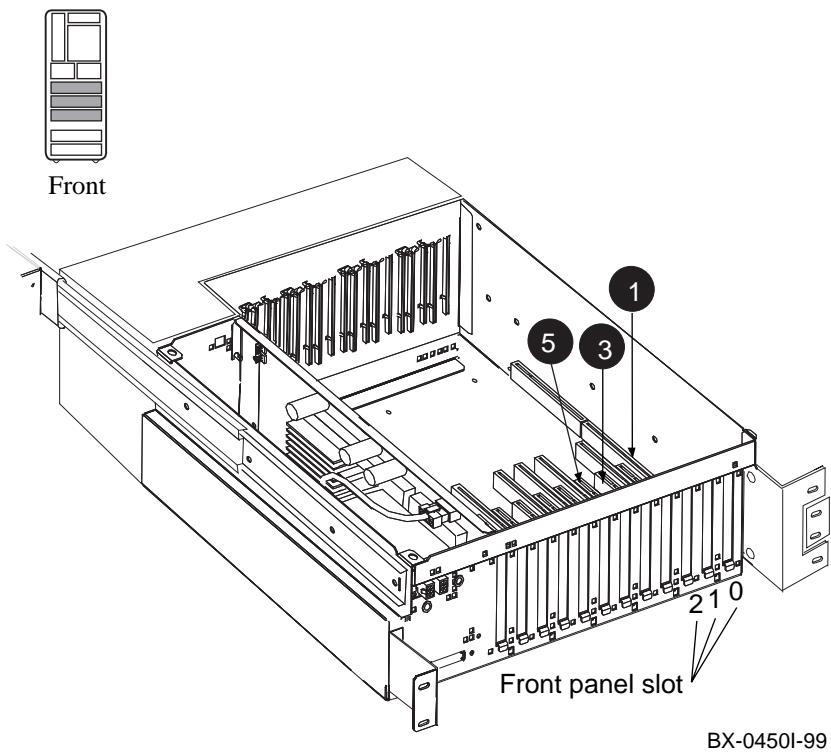


1. Perform an orderly shutdown of the system and turn the system off by pushing the On/Off button on the control panel to Off.
2. Open the circuit breakers on the power supplies.
3. Disconnect the power cables, ❸ in Figure 2-2, the I/O hose, and any other cables that prevent the PCI shelf from being pulled out.
4. Remove the four Phillips head screws that hold the card cage and the cable management rack to the frame (see ❹), and pull the shelf out fully.
5. Remove the top cover by loosening the two quarter-turn screws, lifting the top of the cover away from the card cage, and then pulling the cover to the right and off (see ❺).
6. Remove the face plates from slots 0, 1, 2, 3, and 4 (see ❻). The face plates are held in place by a Phillips head screw on the inside top edge of the card cage. Save the screws for use in following steps.

2.2.2 Insert Modules in Slots 0 and 1

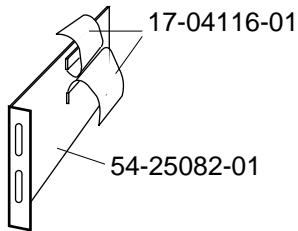
Insert the standard I/O module (B2110-AA) in slot 0. Then insert the serial port module (54-25082-01) in front panel slot 1.

Figure 2-3 Inserting the Modules



NOTE: When installing PCI modules, be sure the option bulkheads mate with the EMI gasket on the PCI card cage.

1. Install the standard I/O module (part no. B2110-AA), component side to the left, in slot 0 (see ❶). Secure the module to the card cage with a screw removed in step 6 in Section 2.2.1.
2. Connect the 60-pin cables (part no. 17-04116-01) on the serial port module (54-25082-01) at connectors J1 and J2. See the figure below.



BX-0561-97

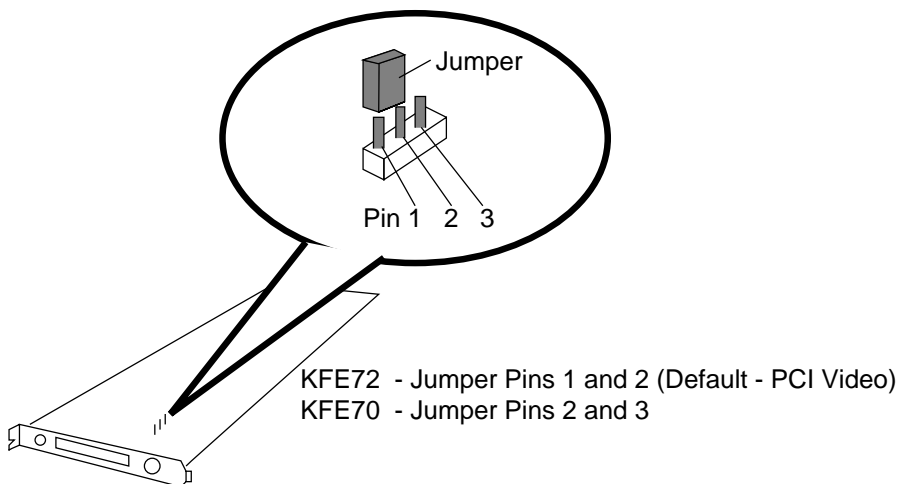
3. Install the serial port module (54-25082-01), component side to the right, in front panel slot 1 (see ❸ in Figure 2-3). Secure the module to the card cage with a screw removed in step 6 in Section 2.2.1.

NOTE: Although Compaq Tru64 UNIX does not support the serial ports in module 54-25082-01, this module must be installed and cabled as directed to provide the connection between the standard I/O module in front panel slot 0 and the connector module in front panel slot 1.

2.2.3 Insert Module in Slot 2

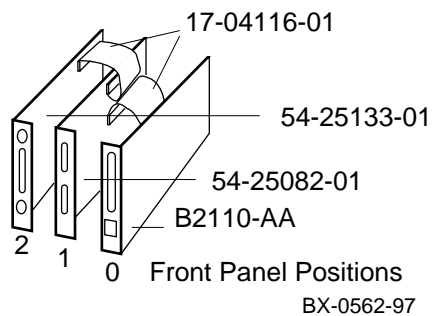
Check the connector module (54-25133-01) for proper jumper setting. Insert the connector module (54-25133-01) in slot 2 and attach ribbon cables (17-04116-01).

Figure 2-4 Jumper Settings on the Connector Module



BX-0598-98

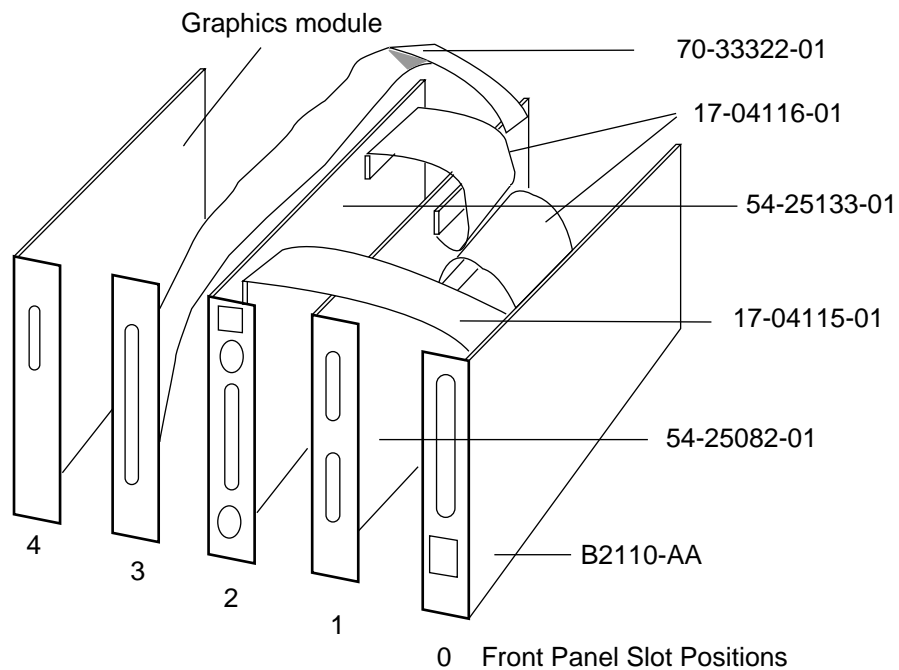
1. Attach the lower ribbon cable on the serial port module (54-25082-01) to the 60-pin connector on the standard I/O module (B2110-AA) at connector J8. See the figure below.
2. Check the connector module (54-25133-01) to verify that the jumper is installed in the KFE72 (default) position, over pins 1 and 2, as shown in Figure 2-4. (Appendix A discusses this jumper in more detail.)
3. Install the connector module (54-25133-01) in slot 2 (see ⑤ in Figure 2-3), component side to the right. Secure the module to the card cage with a screw removed in step 7 in Section 2.2.1.
4. Attach the upper ribbon cable on the serial port module (54-25082-01) to the connector module (54-25133-01) at connector J6. See the figure below.



2.2.4 Finish Ribbon Cabling, Install Parallel Port Assembly and Graphics Module

Attach ribbon cable (17-04115-01) between the standard I/O module (B2110-AA) and connector module (54-25133-01). Install parallel port assembly (70-33322-01) to serial port module (54-25082-01) and install graphics module.

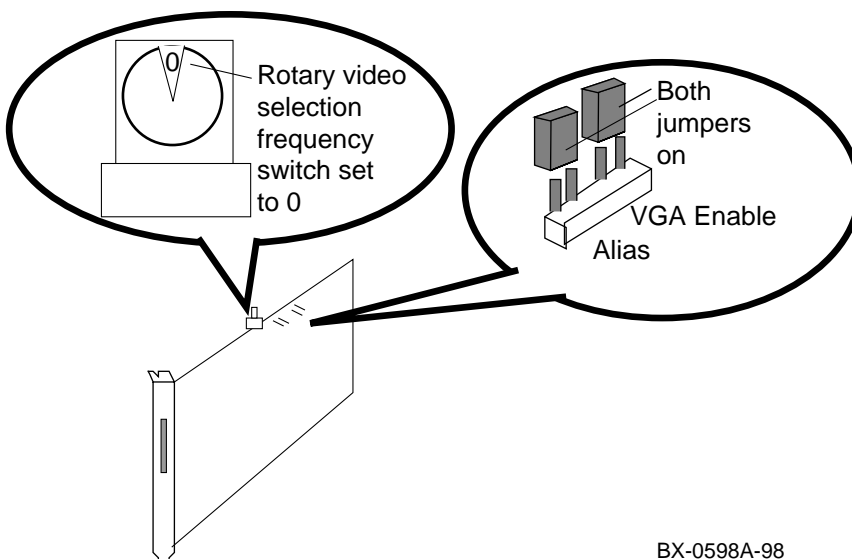
Figure 2-5 Ribbon Cabling and Parallel Port Assembly Installation



BX-0560B-98

1. Connect the 34-pin ribbon cable (part number 17-04115-01) between the standard I/O module (B2110-AA) at connector J9 and the connector module (54-25133-01) at connector J5. (See Figure 2-5.)
2. For Windows NT, connect the parallel port assembly (70-33322-01) to the connector at the rear of the serial port module (54-25082-01), bring the bulkhead plate to the opening for front panel slot position 3, and attach it to the card cage. (*Tru64 UNIX* does not support parallel port operations, so this step can be omitted. Slot position 3 cannot be used for other PCI options, however.)
3. Install the graphics module in front panel slot position 4. If this module is the PowerStorm 3D30 graphics module (PBXGB-AA), check that the VGA enable and alias pins are both jumpered on, and the rotary switch is set to 0 (see Figure 2-6).
4. If you have other options, install them in front panel slot positions 5–11.
5. Place the cover back on the card cage and tighten the two quarter-turn screws.
6. Push the shelf back into the cabinet.
7. Replace the cable management rack and secure the shelf and cable management rack to the frame.
8. Replace the power cables to the shelf.
9. Replace any other cables removed in Section 2.2.1.

Figure 2-6 Jumper and Switch Settings on PBXGB-AA Module

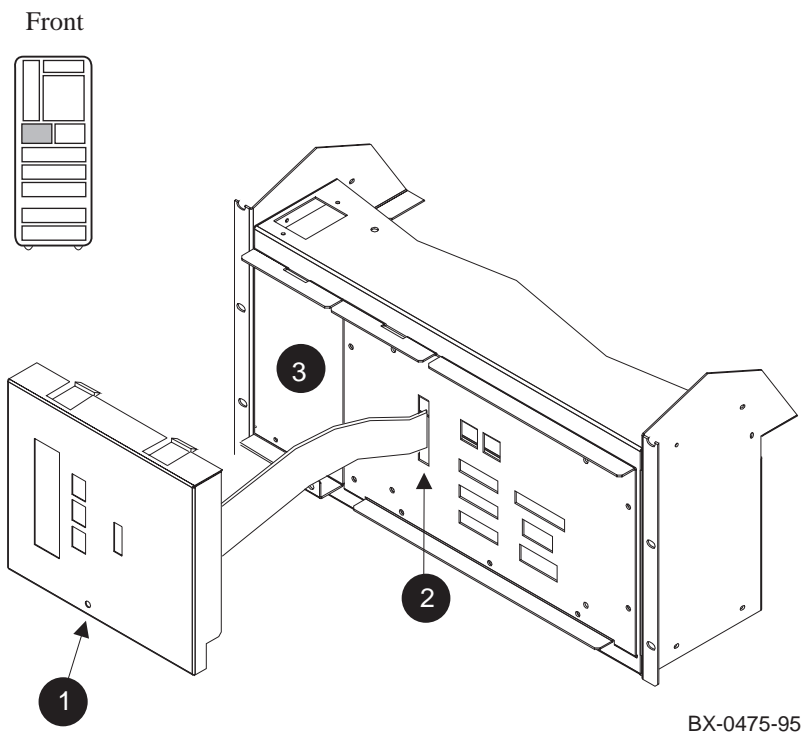


BX-0598A-98

2.3 Remove the Control Panel and Cover Plate

The floppy drive is installed behind the control panel.

Figure 2-7 Control Panel Removal



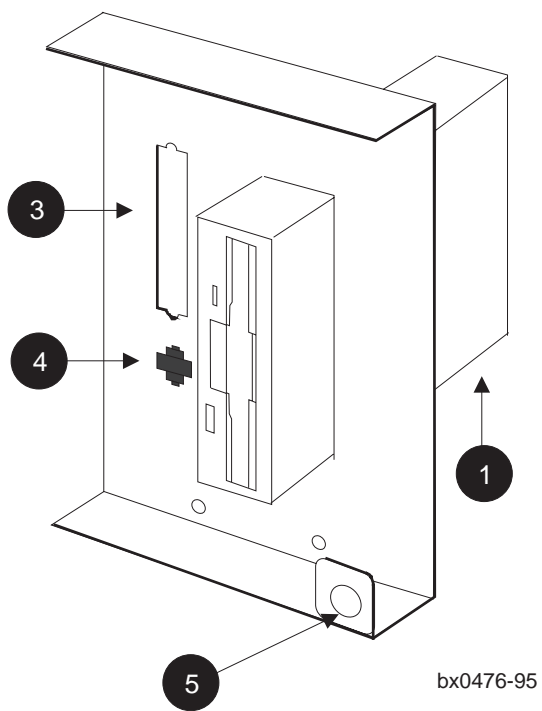
To remove the control panel:

1. Pull the black plunger on the control panel (see ❶ in Figure 2–7) and gently tilt the bottom of the bezel away from the cabinet, releasing the push tabs holding the top of the bezel in place.
2. Disconnect the 17-04046-01 cable from the CCL (see ❷). Put the control panel aside.
3. Remove the cover plate (❸) by removing the four Phillips head screws. Save the screws for installing the floppy.

2.4 Install the Floppy Drive

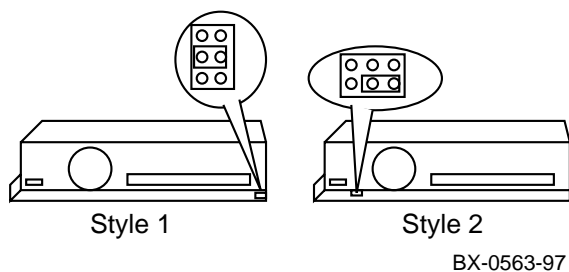
Install the floppy drive in the drive plate, install the cables, and place the assembly into the system.

Figure 2-8 Floppy Drive Installation



To install the floppy drive:

1. Set the mode on the floppy drive. The mode switch on the Sony drive is located on the lower edge of the drive at the back corner. See ❶ in Figure 2–8. Set it to 1. On the Mitsubishi drive the mode is set by a jumper at the back of the drive. There are two styles of Mitsubishi drives. One style has the jumper pins on the right. In this case, put the jumper on the middle pins. (See figure below). On the other style, the jumper pins are on the left. In this case, put the jumper on the bottom rightmost two pins (see figure).



NOTE: If your disk is an RX26 disk, make a note of the manufacturer of the floppy disk, Sony or Mitsubishi. The brand of disk makes a difference in the way the signal cable is attached, as described in the Warning in Section 2.6.

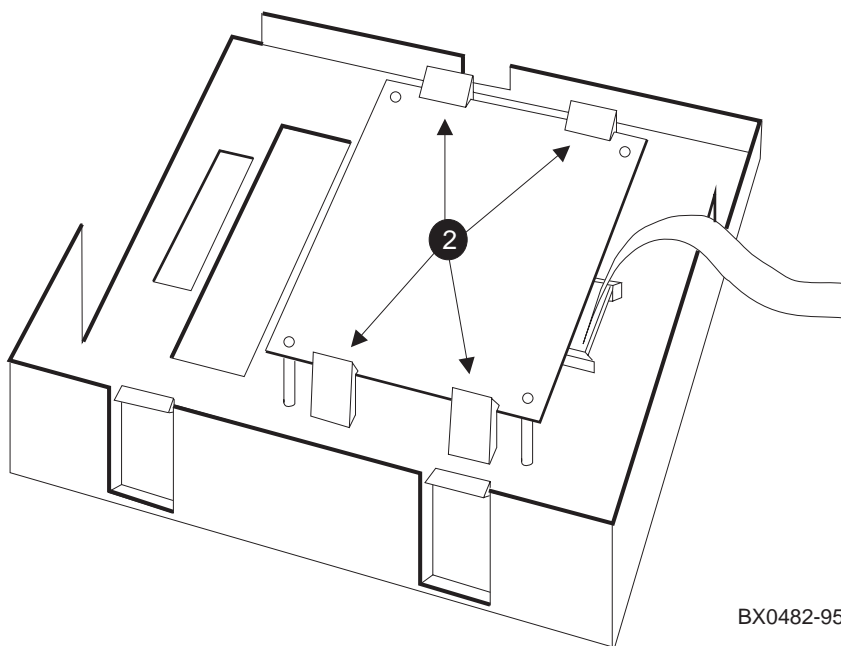
If your disk is an RX23L disk, see the note in Section 2.6 for information on attaching the signal cable.

2. Place the floppy drive in the drive plate (74-48833-01) as shown in Figure 2–8 and secure it to the plate with the two 6 mm screws (90-10556-04) provided in the kit. Be sure to orient the drive correctly to the bracket.
3. Insert the connector end of the signal cable (17-04100-01) into the back of the floppy drive. Mount the other end of the signal cable to the drive plate using the two mounting screws (12-41427-01) (see ❸).
4. Insert the connector end of the twisted-pair power cable (17-04101-01) into the back of the floppy drive. Snap the other end into the drive plate (see ❹).
5. Place the floppy drive and drive plate into the system in place of the cover plate you removed and secure using the four Phillips head screws you removed. Orient the drive and plate so that the hole used to secure the control panel (❺) is down and to the right.

2.5 Change the Control Panel Bezel

A new control panel bezel is needed when a floppy is installed. Remove the circuit board from the old bezel and put it on the new one.

Figure 2-9 Control Panel Preparation



BX0482-95

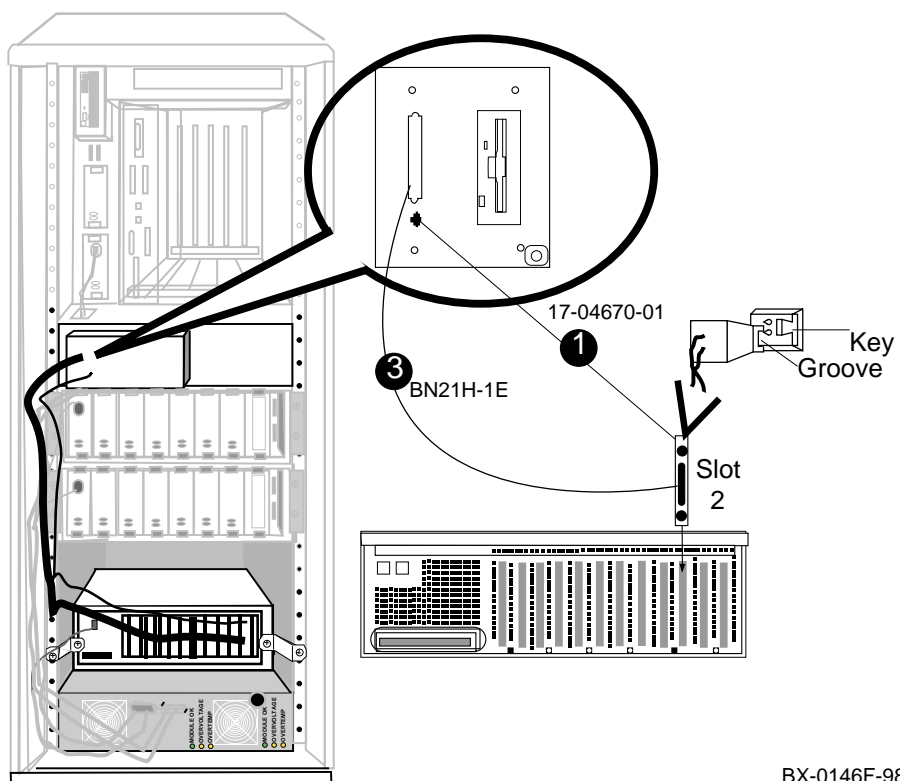
To prepare the control panel:

1. Remove the circuit board from the control panel you removed in Section 2.3.
2. Place the circuit board on the new control panel (74-48125-02) as shown in Figure 2-9 (see ❷). The plastic tabs hold the board in place.
3. Place either the U.S. label or the International label on the front of the control panel bezel.

2.6 Install Cables and Control Panel

Install cables between the floppy and the connector module in the PCI shelf.
Install the control panel.

Figure 2-10 Cable Installation



To complete the installation:

1. Install the power cable (17-04670-01) from the connector module (54-25133-01) to the drive plate. See ❶ in Figure 2–10. **Make sure the black ground wire is up at the connector module end.**

CAUTION: The power cable is a red and black twisted-pair cable. If you attach it to the connector module with the red wire up instead of the black wire, the fuse will blow on the connector module (54-25133-01).

Route the twisted-pair cable along the left side frame to the drive plate.

2. Install the new control panel. Connect the signal cable from the circuit board on the control panel bezel to the connector on the CCL and then place the panel onto the cabinet.
3. Install the signal cable (BN21H-1E) from the connector module to the connector on the drive plate (see ❸). The connector passes through the hole to the left of the floppy drive in the control panel bezel.

WARNING: RX26 disks: For systems with Sony disks, the signal cable must be inserted according to the key shown on the drive. For systems with Mitsubishi disks, the signal cable must be inserted opposite to the way shown by the key on the drive. Failure to make the proper connection results in a solid light on the activity LED and operational failure of the disk. If this occurs, reversing the cable will fix the problem.

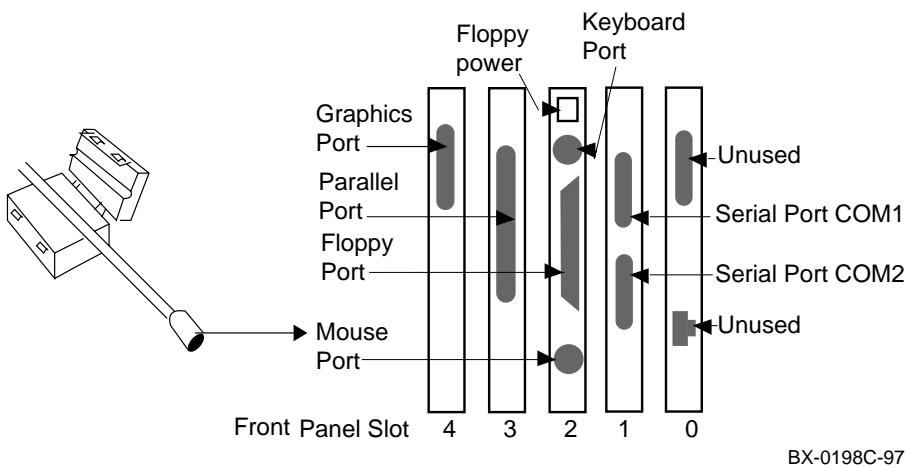
NOTE: For systems with RX23L disks, make sure the key is facing forward on the top of the drive so that the signal cable can be connected.

4. Close the circuit breaker and power up the system.

2.7 Attach Graphics Monitor and Related Assemblies

Attach the graphics monitor, keyboard, and mouse and their associated cables. Attach the ferrite sleeve to the mouse extension cable.

Figure 2-11 Ferrite Sleeve Installation



1. Connect the graphics monitor (ordered separately) to the graphics module installed in front panel slot 4. For Windows NT systems, use the BC13L-10 extension cable so that you can place the monitor at a more comfortable distance from the GS60/8200 than would otherwise be possible. For *Tru64 UNIX* systems, an extension cable comes with the supported graphics monitors.
2. Install the mouse and keyboard extension cables (17-04016-01) to the connector module as shown in Figure 2-11.
3. Connect the mouse (30-46117-02) to the mouse extension cable (17-04016-01).
4. Place the ferrite sleeve (16-25105-14) on the mouse extension cable 10 to 15 cm (4 to 6 in.) from the connector module and snap the sleeve shut over the cable. The ferrite sleeve is required to prevent radio interference when a mouse is used with the graphics module.
5. Connect the keyboard to the keyboard extension cable (17-04016-01).
6. Connect serial and parallel devices to the appropriate connectors, as shown in Figure 2-11.
7. Attach Windows NT sticker (36-44927-06), if appropriate, to new logo bar (74-49792-02) and replace the old logo bar on the cabinet door with the new one.
8. See Chapter 7 for hardware verification procedures and either Chapter 8 (for Windows NT systems) or Chapter 9 (for *Tru64 UNIX* systems) for how to run ECU to initialize the NVRAM on the standard I/O module.

Chapter 3

Procedure for the KFE72-AA/EA

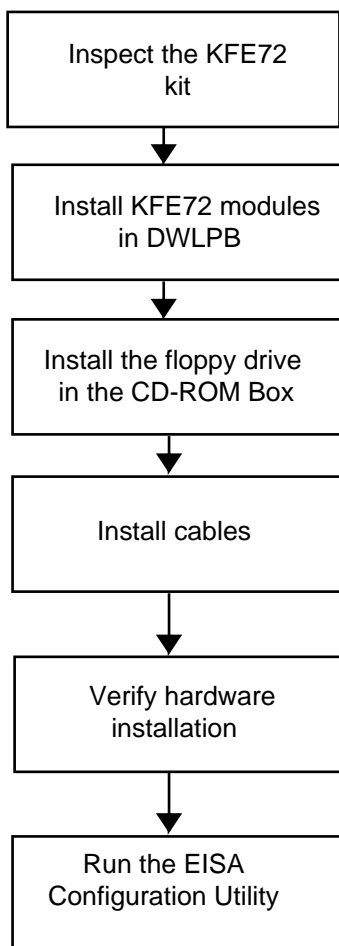
This chapter describes the installation of the KFE72 hardware in the *AlphaServer* GS140/8400 system cabinet for Windows NT and *Tru64 UNIX* systems. Sections include:

- KFE72-AA and KFE72-EA Kit Contents
- Install KFE72 Modules
- Remove the CD-ROM Box
- Install the Floppy Drive
- Prepare the CD-ROM Box for Installation
- Replace the CD-ROM Box
- Install Cables from the PCI to the CD-ROM Box
- Attach Graphics Monitor and Related Assemblies

3.1 KFE72-AA/EA Kit Contents

The KFE72 is an adapter installed in a PCI I/O subsystem to provide I/O options necessary for running operating systems with a graphical user interface.

Figure 3-1 Installation Flowchart



BX0474C-98

Table 3-1 KFE72-AA/EA Kit Contents

Part Number	Quantity	Description
RX26-AA	1	2.8 Mbyte, 3.5" diskette drive
B2110-AA	1	Standard I/O module
54-25133-01	1	Connector module
54-25082-01	1	Serial port module
70-33322-01	1	Parallel port panel assembly
PBXGB-AA	1	PowerStorm 3D30 graphics module ¹ (module no. 54-23481-01)
17-04115-01	1	Cable assembly, flat, 60 cond (standard I/O to connector)
17-04116-01	2	Cable assembly, flat, 60 cond (standard I/O to serial port, serial port to connector)
17-04100-02	1	Signal cable, RX26, internal to the CD-ROM box
17-03566-15	1	Signal cable, RX26, connector module to CD-ROM box
74-48827-01	1	Floppy bezel
74-50090-05	1	System identification sheet for cabinet door
17-04101-02	1	Power cable internal to the CD-ROM box
17-04670-02	1	Power cable, connector module to CD-ROM box
17-04016-01	2	Extension cables for keyboard and mouse
BC13L-10	1	Extension cable for video ¹
30-46117-02	1	Three-button mouse
16-25105-14	1	Ferrite sleeve
90-10556-04	4	Screw, machine M3 pan 6 mm (floppy to floppy holder)
12-41427-01	2	Screw, machine 4-40 pan 0.25 (signal cable to CD-ROM box)
QC-01YAA-HC	1	EISA System Configuration Kit
EK-KFE72-IN	1	<i>KFE72 Installation Guide</i>

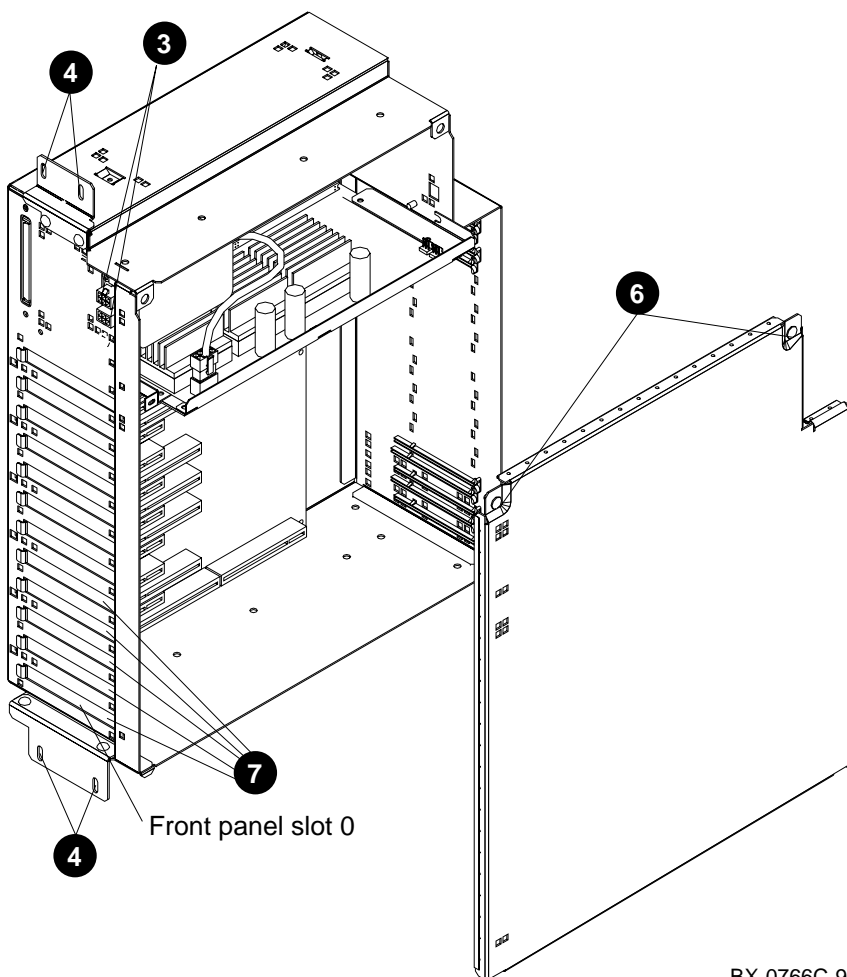
¹ These parts are not included in the KFE72-EA kit.

3.2 Install KFE72 Modules

Four modules need to be installed in the PCI I/O subsystem: the standard I/O module, the connector module, the serial port module, and the graphics module.

3.2.1 Slide the PCI Card Cage Out

Figure 3-2 Sliding the PCI Card Cage Out



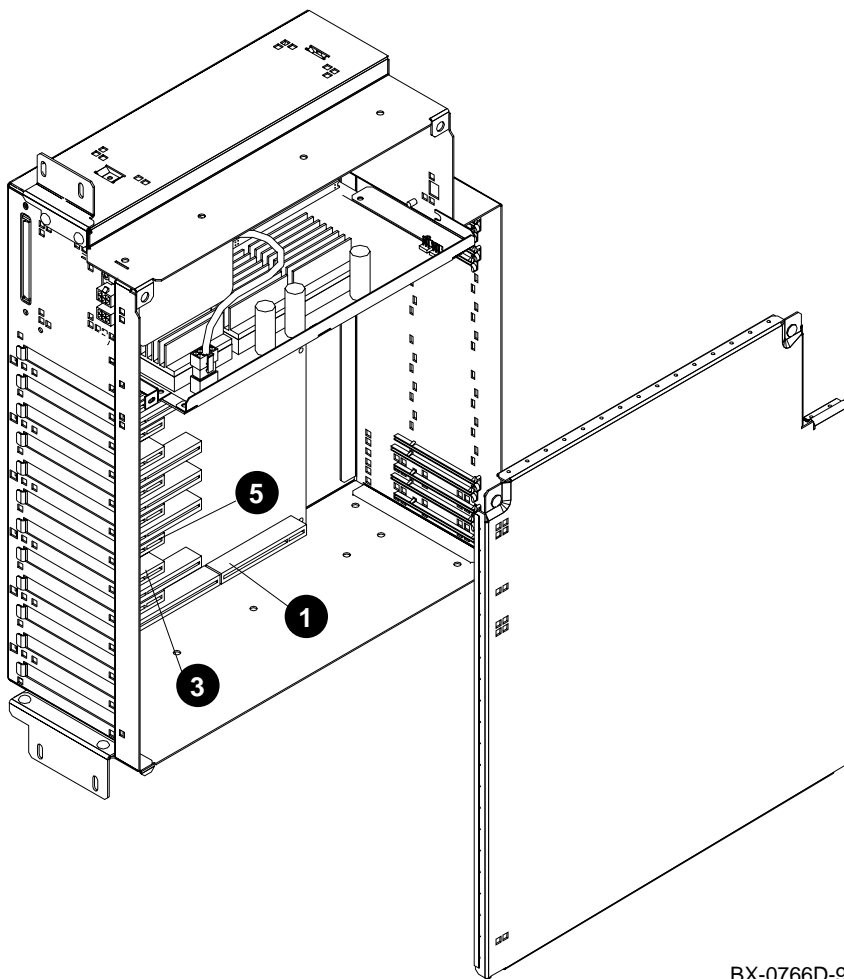
BX-0766C-97

1. Perform an orderly shutdown of the system and turn the system off using the keyswitch on the control panel.
2. Open the rear door and open the circuit breaker(s).
3. Disconnect the power cables, ❸ in Figure 3-2, the I/O hose if necessary, and any other cables that will prevent the PCI shelf from being pulled out.
4. Remove the four Phillips head screws that hold the shelf in the PIU. See ❹.
5. Pull the shelf out fully.
6. Remove the side cover by loosening the two quarter-turn screws (see ❻), tilting the top of the cover away from the shelf and then lifting the cover off the shelf.
7. Remove the face plates from slots 0, 1, 2, 3, and 4 (see ❼). The face plates are held in place by a Phillips head screw on the inside right front edge of the card cage. Save the screws for use in a later step.

3.2.2 Insert Modules in Slots 0 and 1

Insert the standard I/O module in front panel slot 0. Then connect cables to the serial port module. Insert the serial port module in front panel slot 1.

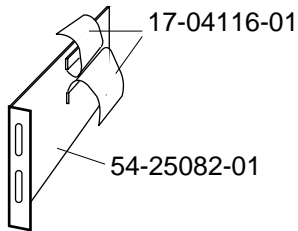
Figure 3-3 Inserting the Modules



BX-0766D-97

NOTE: When installing PCI modules, be sure the option bulkheads mate with the EMI gasket on the PCI card cage.

1. Install the standard I/O module (part no. B2110-AA), component side up, in slot 0 (see ❶). Secure the module to the card cage with a screw removed in step 7 in Section 3.2.1.
2. Connect the 60-pin cables (part no. 17-04116-01) on the serial port module (54-25082-01) at connectors J1 and J2. See the figure below.



BX-0561-97

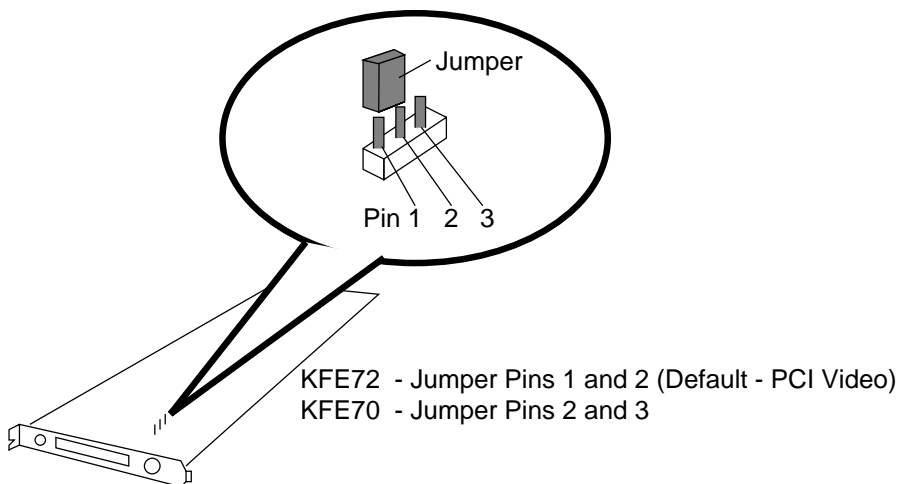
3. Install the serial port module (54-25082-01), component side down, in front panel slot 1 (see ❸ in Figure 3-3). Secure the module to the card cage with a screw removed in step 7 in Section 3.2.1.

NOTE: Although Tru64 UNIX does not support the serial ports in module 54-25082-01, this module must be installed and cabled as directed to provide the connection between the standard I/O module in front panel slot 0 and the connector module in front panel slot 1.

3.2.3 Insert Module in Slot 2

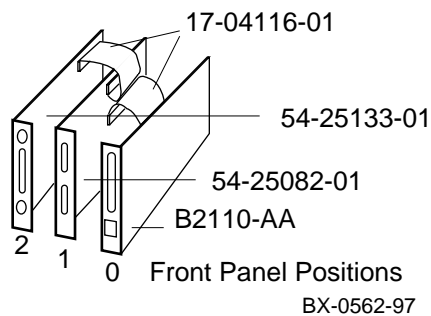
Check the connector module (54-25133-01) for proper jumper setting. Insert the connector module (54-25133-01) in slot 2 and attach ribbon cables (17-04116-01).

Figure 3-4 Jumper Settings on the Connector Module



BX-0598-98

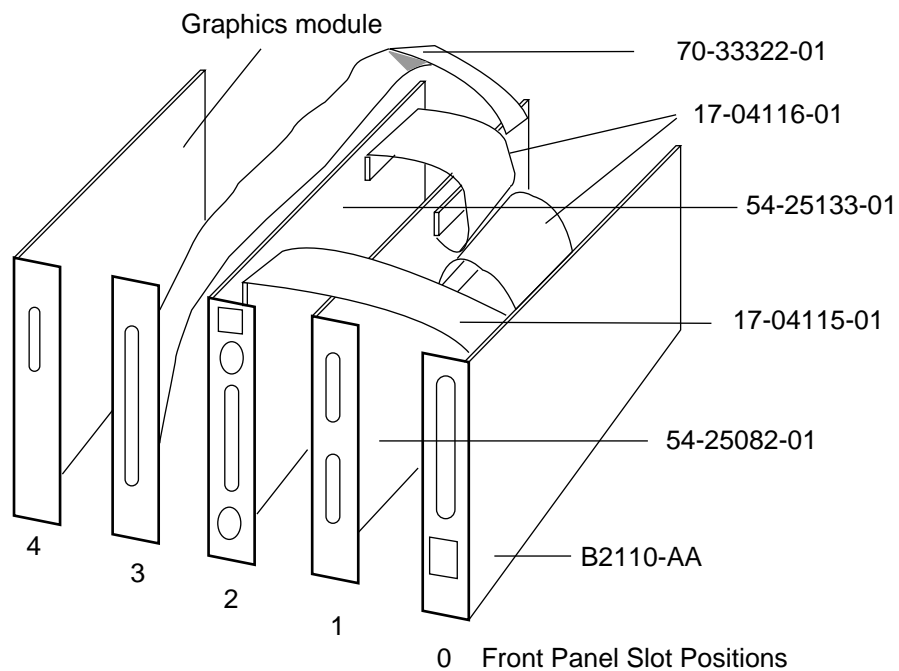
1. Attach the lower ribbon cable on the serial port module (54-25082-01) to the 60-pin connector on the standard I/O module (B2110-AA) at connector J8. See the figure below.
2. Check the connector module (54-25133-01) to verify that the jumper is installed in the KFE72 (default) position, over pins 1 and 2, as shown in Figure 3-4. (Appendix A discusses this jumper in more detail.)
3. Install the connector module (54-25133-01) in slot 2 (see ❸ in Figure 3-3), component side down. Secure the module to the card cage with a screw removed in step 7 in Section 3.2.1.
4. Attach the upper ribbon cable on the serial port module (54-25082-01) to the connector module (54-25133-01) at connector J6. See the figure below.



3.2.4 Finish Ribbon Cabling, Install Parallel Port Assembly and Graphics Module

Attach ribbon cable (17-04115-01) between the standard I/O module (B2110-AA) and connector module (54-25133-01). Install parallel port assembly (70-33322-01) to serial port module (54-25082-01) and install graphics module.

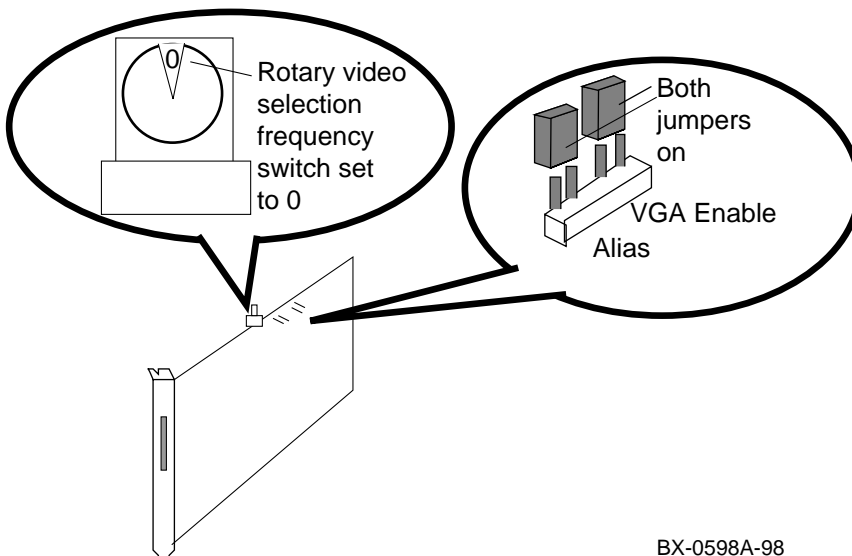
Figure 3-5 Ribbon Cabling, Parallel Port Assembly and Graphics Module Installation



BX-0560B-98

1. Connect the 34-pin ribbon cable (part number 17-04115-01) between the standard I/O module (B2110-AA) at connector J9 and the connector module (54-25133-01) at connector J5. (See Figure 3-5).
2. For Windows NT, connect the parallel port cable assembly (70-33322-01) to the connector at the rear of the serial port module (54-25082-01), bring the bulkhead plate to the opening for front panel slot position 3, and attach it to the card cage. (*Tru64 UNIX* systems do not support parallel port operations, so this step can be omitted. Slot position 3 cannot be used for other PCI options, however.)
3. Install the graphics module in front panel slot position 4. If this module is the PowerStorm 3D30 graphics module (PBXGB-AA), check that the VGA enable and alias pins are both jumpered on, and the rotary switch is set to 0 (see Figure 3-6).
4. If you have other options, install them in front panel slots 5-11.
5. Place the cover back on the DWLPB shelf and tighten the two quarter-turn screws.
6. Push the shelf back into the PIU by depressing the locks on the top and bottom slides and sliding the shelf back into the system. The lock on the top is visible; you can locate the one on the bottom by touch.
7. Replace the four Phillips head screws that hold the shelf in place.
8. Replace the power cables to the shelf.
9. Replace any other cables removed in Section 3.2.1.

Figure 3-6 Jumper and Switch Settings on PBXGB-AA Module

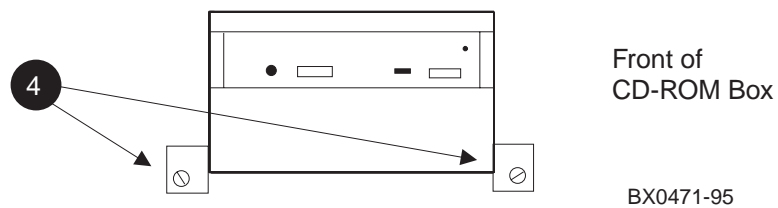
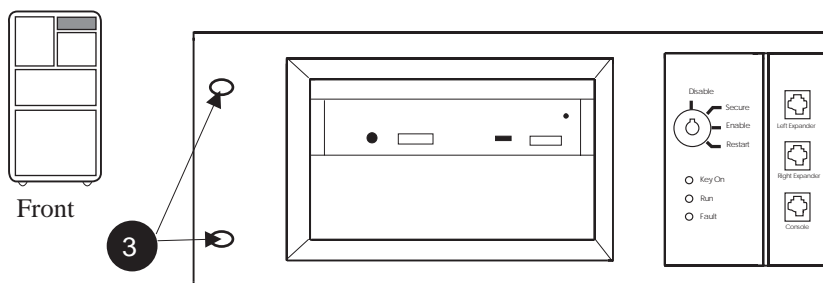
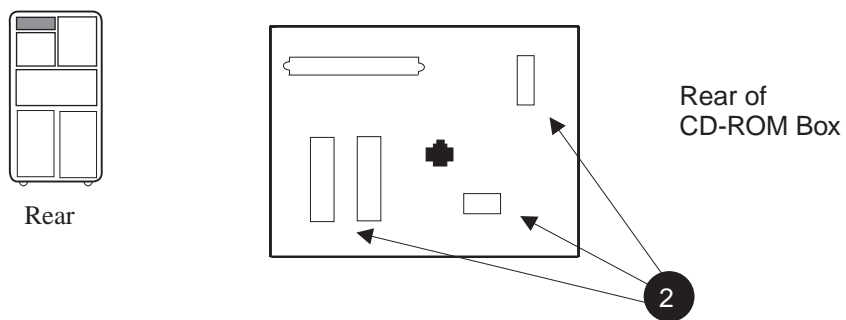


BX-0598A-98

3.3 Remove the CD-ROM Box

The CD-ROM box must be removed to install the floppy drive in it.

Figure 3-7 CD-ROM Box Removal



At the rear of the system

1. Remove the cover plate (74-42903-01) in the upper left hand corner of the system cabinet to expose the back of the CD-ROM box. Remove the three Phillips head screws holding the plate in place.
2. Disconnect the three cables from the back of the CD-ROM box. See ❷ in Figure 3-7.

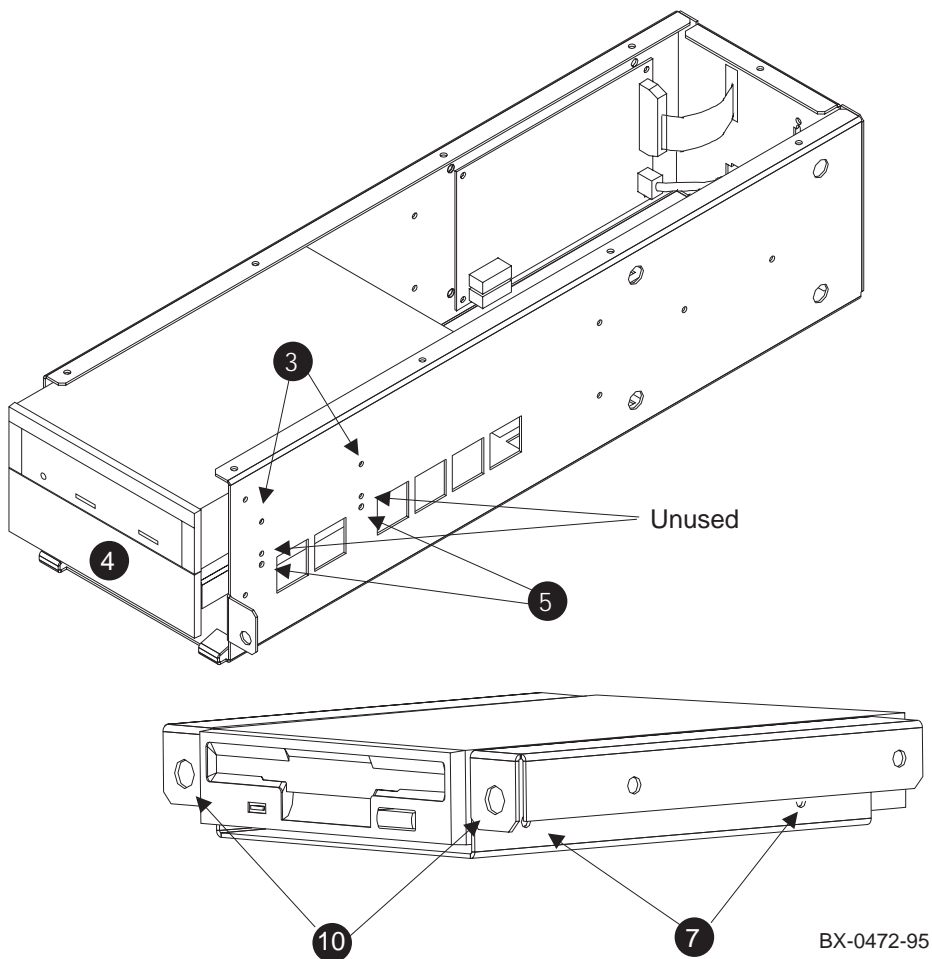
At the front of the system

1. Remove the two Phillips head screws holding the control panel to the system. See ❸ in Figure 3-7.
2. Pull the left side of the panel away from the system about 2 inches and then pull it gently to the left. The flange securing the right side of the panel will disengage. Disconnect the cable that goes from the panel to the CCL and put the panel aside.
3. Loosen the two slotted captive screws holding the CD-ROM box in the system. (See ❹.)
4. Slide the CD-ROM box forward and remove it from the system.

3.4 Install the Floppy Drive

To install the floppy drive, the CD-ROM and floppy mounting bracket must be removed from the CD-ROM box. The floppy drive is then placed in the bracket and both drives are placed in the CD-ROM box.

Figure 3–8 Floppy Drive Installation



To install the floppy drive in the CD-ROM box:

1. Remove the top of the CD-ROM box by removing the Phillips head screws holding it in place.
2. Disconnect the signal and power cables at the back of the CD drive.
3. Remove the CD drive by removing the four Phillips head screws holding it in place. See ❸ in Figure 3–8.
4. Pry off the plastic filler panel (❹) using a flathead screwdriver.
5. Remove the floppy mounting bracket from the CD-ROM box by removing the four Phillips head screws holding it in place. See ❺.
6. Set the mode switch on the floppy drive to 1. The mode switch is located on the right side of the drive at the back corner. **Be sure you do this before doing step 7**, since the mounting bracket covers the switch.
7. Place the floppy drive in the mounting bracket as shown in Figure 3–8 and secure it to the bracket with the four screws (90-10556-04) provided in the kit. Be sure to orient the drive correctly in the bracket. See ❽.

NOTE: For RX26 disks, make a note of the manufacturer of the floppy disk, Sony or Mitsubishi. The brand of disk makes a difference in the way the signal cable is attached, as described in Section 3.7.

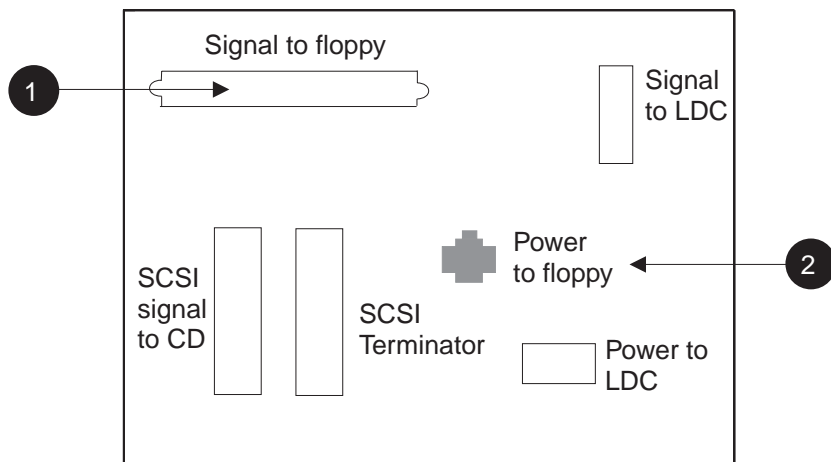
For RX23L disks, see the Note in Section 3.7 for information on attaching the signal cable.

8. Place the floppy drive and mounting bracket into the CD-ROM box and secure with the four screws you removed when you took out the bracket. Use the lowest mounting holes (❾).
9. Place the CD drive back in the CD-ROM box above the floppy drive and secure with the four screws you removed in step 3.
10. Snap the floppy bezel (74-48827-01) in place around the floppy drive in front of the CD-ROM box. The snaps go into the holes. See ❿.

3.5 Prepare the CD-ROM Box for Installation

Install the cables in the CD-ROM box that connect to the floppy drive and reconnect those disconnected from the CD drive. Replace the CD-ROM box cover.

Figure 3-9 CD-ROM Box (Rear)



BX-0473-95

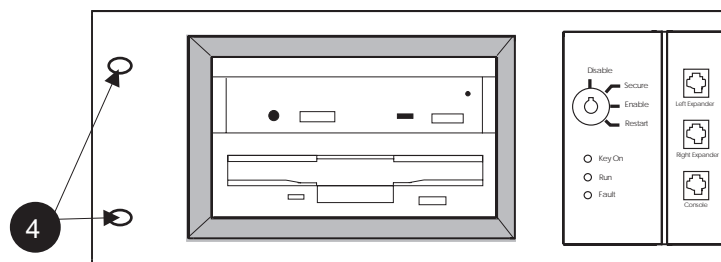
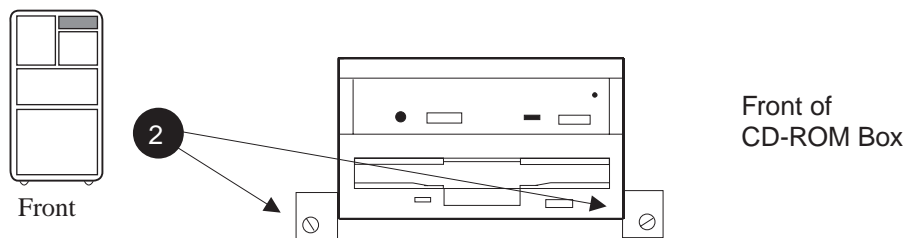
To prepare the CD-ROM box for installation:

1. Identify cable 17-04100-02. Insert the connector end into the right side of the back of the floppy drive; mount the other end using the two mounting screws (12-41427-01) to the back of the CD-ROM box. See ❶ in Figure 3-9.
2. Identify cable 17-04101-02. Insert the connector end into the left side of the back of the floppy drive; snap the other end onto the back of the CD-ROM box. See ❷.
3. Reconnect the two cables removed from the CD drive. The power cable comes from the LDC on the side of the CD-ROM box, and the signal cable comes from the back of the CD-ROM box.
4. Replace the cover on the CD-ROM box.

3.6 Replace the CD-ROM Box

Place the CD-ROM box back in the system and replace the control panel.

Figure 3-10 CD-ROM Box Replacement



BX0471B-95

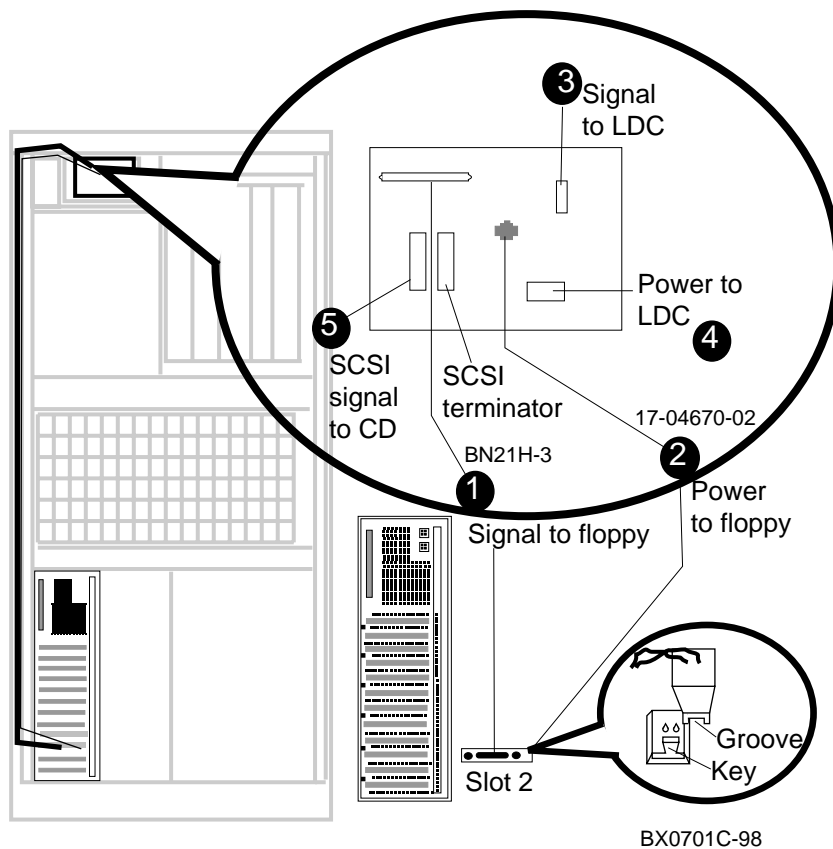
To replace the CD-ROM box:

1. Slide the CD-ROM box back into the system.
2. Secure the box with the two flathead screws you removed earlier. See ❷ in Figure 3-10.
3. Attach the signal cable from the CCL to the back of the control panel.
4. Replace the control panel and secure with the two screws removed earlier. See ❹.

3.7 Install Cables from the PCI to the CD-ROM Box

Install cables between the CD-ROM box and the connector module in the PCI.
Reconnect the cable controlling the CD-ROM drive and replace the cover plate.

Figure 3-11 Cable Installation



To complete the installation:

1. Install the floppy signal cable 17-03566-15 from the connector module to the back of the CD-ROM box. See ❶ in Figure 3-11.

WARNING: For RX26 disks: For systems with Sony disks, the signal cable must be inserted according to the key shown on the drive. For systems with Mitsubishi disks, the signal cable must be inserted opposite to the way shown by the key on the drive. Failure to make the proper connection results in a solid light on the activity LED and operational failure of the disk. If this occurs, reversing the cable will fix the problem.

NOTE: For systems with RX23L disks, make sure the key is facing forward on the top of the drive so that the signal cable can be connected.

2. Install the power cable (17-04670-02) from the connector module to the back of the CD-ROM box. See ❷. **Make sure the black ground wire is to the right at the connector module end.**

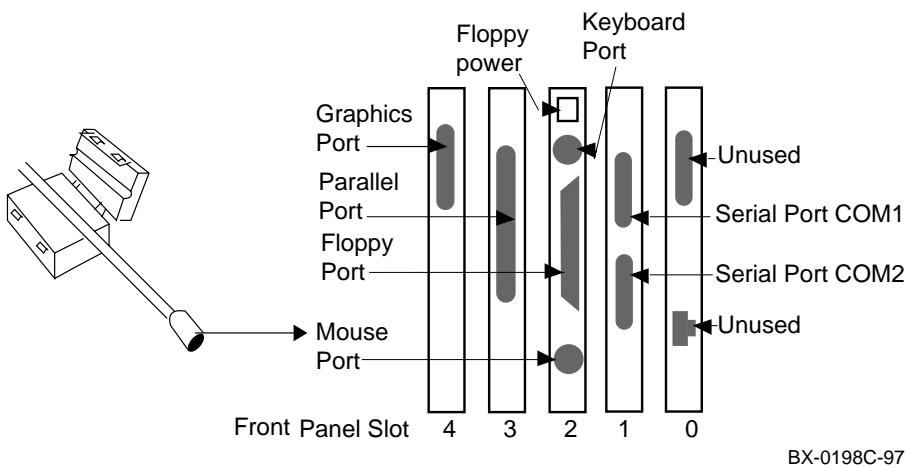
CAUTION: The power cable is a red and black twisted-pair cable. If you attach it to the connector module with the red wire to the right instead of the black wire, the fuse will blow on the connector module.

3. Reconnect the signal cable to the LDC. See ❸.
4. Reconnect the power cable to the LDC. See ❹.
5. Reconnect the SCSI signal cable for the CD drive. See ❺.
6. Replace the cover plate (74-42903-01).
7. Close the circuit breaker and power up the system.

3.8 Attach Graphics Monitor and Related Assemblies

Attach the graphics monitor, keyboard and mouse and their associated cables.
Attach ferrite sleeve to mouse extension cable.

Figure 3-12 Ferrite Sleeve Installation



1. Connect the graphics monitor (ordered separately) to the PowerStorm 3D30 graphics card installed in front panel slot 4. For Windows NT systems, use the BC13L-10 extension cable so that you can place the monitor at a more comfortable distance from the GS140/8400 than would otherwise be possible. (The graphics monitors supported by *Tru64 UNIX* come with their own extension cable.)
2. Install the mouse and keyboard extension cables (17-04016-01) to the connector module as shown in Figure 3–12.
3. Place the ferrite sleeve on the mouse extension cable 10 to 15 cm (4 to 6 in.) from the connector module and snap the sleeve shut over the cable. The ferrite sleeve is required to prevent radio interference when a mouse is used with the graphics module.
4. Connect the mouse to the mouse extension cable.
5. Connect keyboard to the keyboard extension cable.
6. For Windows NT, connect serial and parallel devices to the appropriate connectors, as shown in Figure 3–12. (*Tru64 UNIX* does not support serial and parallel port devices.)
7. Remove the old system identification sheet from the front door of the cabinet and replace it with the new one (74-50090-05).
8. See Chapter 7 for hardware verification procedures and Chapter 8 (for Windows NT) or Chapter 9 (for *Tru64 UNIX*) for how to run ECU to initialize NVRAM on the standard I/O module.

Chapter 4

Procedure for the KFE72-LA

This chapter tells how to install a KFE72-LA adapter in a GS60E system for *Tru64 UNIX* systems. Sections include:

- Front and Rear View of the GS60E System Cabinet
- KFE72-LA Kit Contents
- Install KFE72 Modules
- Install the Floppy Drive
- Attach Graphics Monitor and Related Assemblies

4.1 Front and Rear View of the GS60E System Cabinet

This section provides an overview of the front and rear of the GS60E system cabinet.

Figure 4-1 Front and Rear View of the GS60E System Cabinet

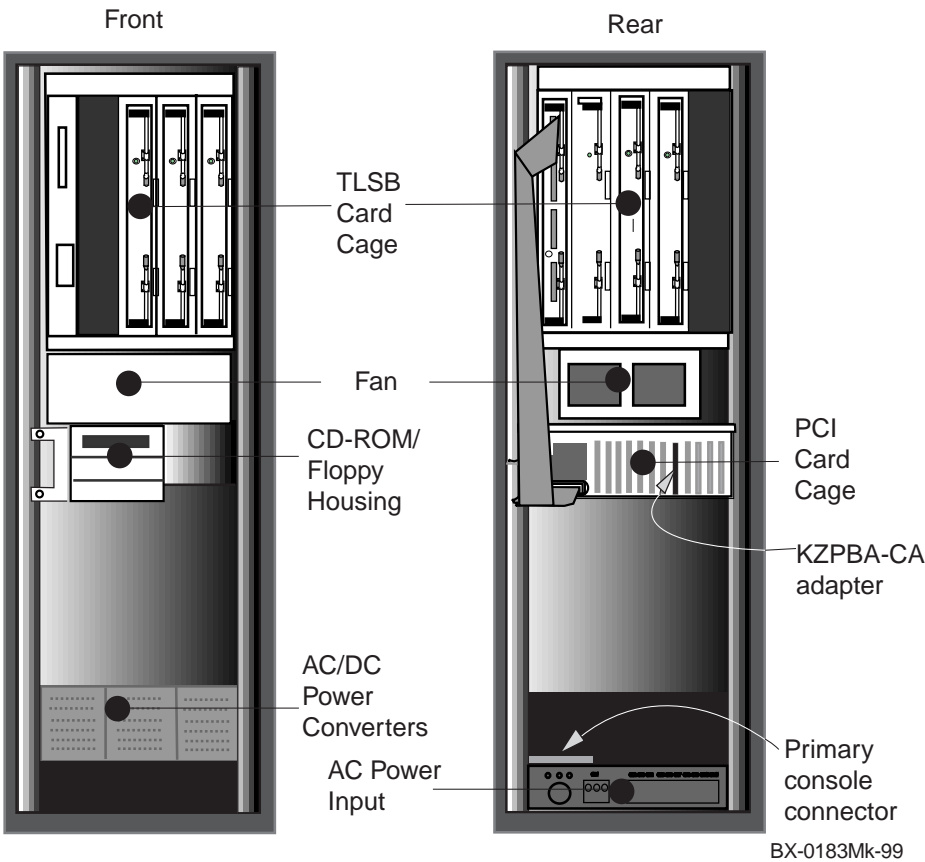
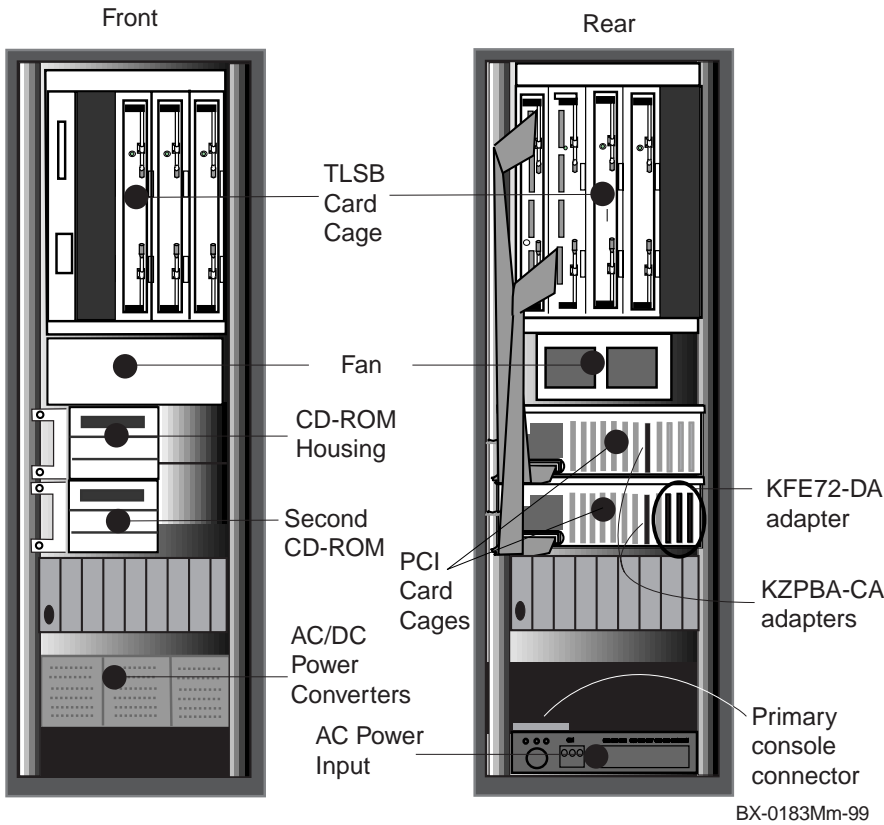


Figure 4-1 shows the major components of the GS60E system, with one PCI card cage, KZPBA-CA adapter, and CD-ROM unit. You may install the KFE72-LA in such a system to provide graphics support. You may also be installing the KFE72-LA to provide graphics and floppy support for a second partition. In this case, the system you are working with would have the equipment shown in Figure 4-2.

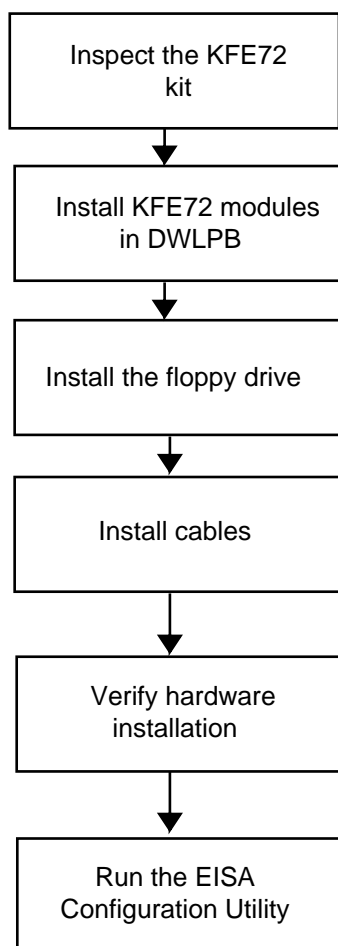
Figure 4-2 Hardware in a Partitioned GS60E System



4.2 KFE72-LA Kit Contents

The KFE72 is an adapter installed in a PCI I/O subsystem to provide I/O options necessary for operating systems with a graphical user interface.

Figure 4-3 Hardware Installation Flowchart



BX0474B-98

Table 4-1 KFE72-LA Kit Contents

Part Number	Quantity	Description
RX23L-AC	1	1.4 Mbyte, 3.5-inch diskette drive
B2110-AA	1	Standard I/O module
54-25133-01	1	Connector module
54-25082-01	1	Serial port module
70-33322-01	1	Parallel port panel assembly
17-04115-01	1	Cable assembly, flat, 34 cond (standard I/O to connector)
17-04116-01	2	Cable assembly, flat, 60 cond (standard I/O to serial port, serial port to connector)
17-04101-01	1	Power cable, from inside CD tray to floppy
17-04670-02	1	Power cable, from connector module to outside CD tray (for floppy)
17-04100-01	1	Cable assembly, flat, 34 cond (from inside CD tray to floppy)
17-03566-15 (BN21H-02)	1	Signal cable, from connector module to outside CD tray (for floppy)
17-04016-01	2	Extension cables for keyboard and mouse
30-46117-03	1	Three-button mouse
74-48827-03		Bezel with cutout for floppy
16-25105-14	1	Ferrite sleeve
90-10556-04	4	Screw, machine panel M3 pan 6 mm (floppy to drive panel plate)
12-41427-01	2	Screw, machine 4-40 pan 0.25 (signal cable to drive panel plate)
EK-KFE72-IN	1	<i>KFE72 Installation Guide</i>
QC-01YAA-HC	1	EISA system configuration kit

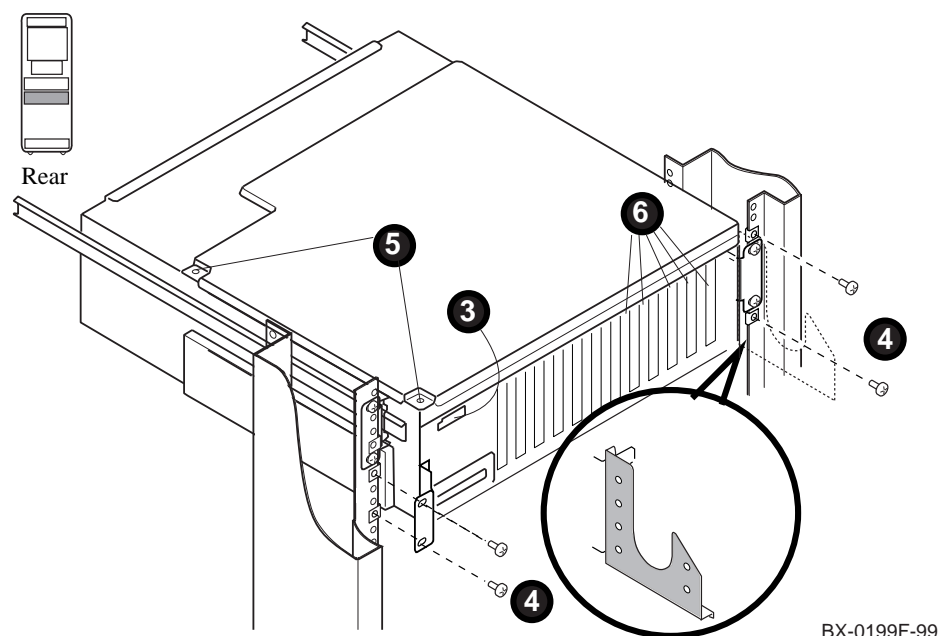
4.3 Install KFE72 Modules

Four modules need to be installed in the PCI I/O subsystem: the standard I/O module, the connector module, the serial port module, and the graphics module.

4.3.1 Slide the PCI Card Cage Out

Slide the PCI card cage out of the GS60E.

Figure 4-4 Sliding the PCI Card Cage Out

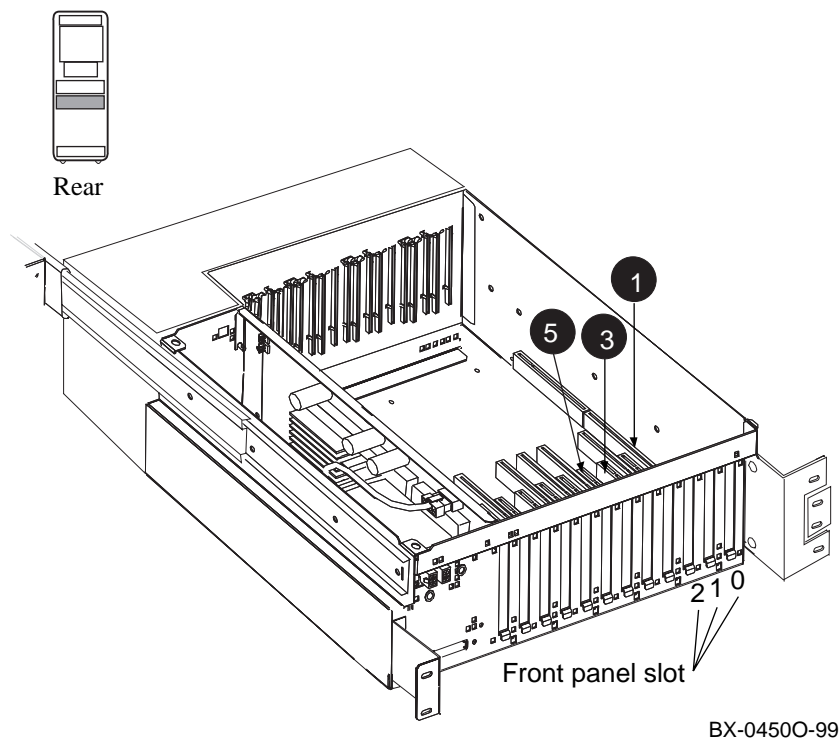


1. Perform an orderly shutdown of the operating system and turn the system off by turning the keyswitch at the front of the machine to Off.
2. Open the circuit breakers on the power supplies.
3. Disconnect the power cables, ❸ in Figure 4-4, and any other cables that prevent the PCI shelf from being pulled out. (The I/O hose should not need to be disconnected to allow the shelf to be pulled out.)
4. Remove the four Phillips head screws that hold the card cage and the cable management rack to the frame (see ❹), and pull the shelf out fully.
5. Pull the shelf out fully, loosening any tie-wrapped cables as necessary. (The cable management flange with the tie-wrap holder is shown in dashed lines so that you can see which screws to remove. The appearance of the flange itself is shown in the insert.)
6. Remove the top cover by loosening the two quarter-turn screws, lifting the top of the cover away from the card cage, and then pulling the cover to the right and off (see ❺).
7. Remove the face plates from slots 0, 1, 2, 3, and 4 (see ❻). The face plates are held in place by a Phillips head screw on the inside top edge of the card cage. Save the screws for use in following steps.

4.3.2 Insert Modules in Slots 0 and 1

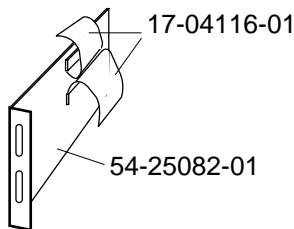
Insert the standard I/O module (B2110-AA) in slot 0. Then insert the serial port module (54-25082-01) in front panel slot 1.

Figure 4-5 Inserting the Modules



NOTE: When installing PCI modules, be sure the option bulkheads mate with the EMI gasket on the PCI card cage.

1. Install the standard I/O module (part no. B2110-AA), component side to the left, in slot 0 (see ❶). Secure the module to the card cage with a screw removed in step 6 in Section 2.2.1.
2. Connect the 60-pin cables (part no. 17-04116-01) on the serial port module (54-25082-01) at connectors J1 and J2. See the figure below.



BX-0561-97

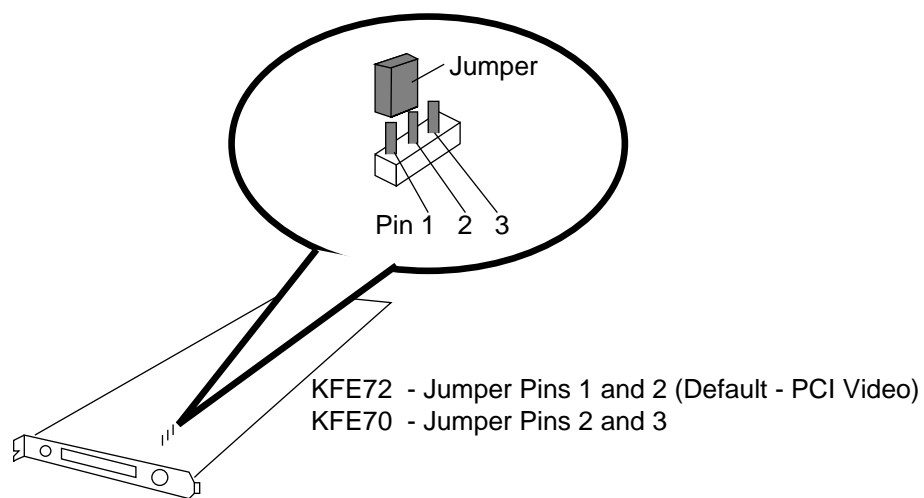
3. Install the serial port module (54-25082-01), component side to the right, in front panel slot 1 (see ❸ in Figure 4-5). Secure the module to the card cage with a screw removed earlier.

NOTE: Although Tru64 UNIX does not support the serial ports in module 54-25082-01, this module must be installed and cabled as directed to provide the connection between the standard I/O module in front panel slot 0 and the connector module in front panel slot 1.

4.3.3 Insert Module in Slot 2

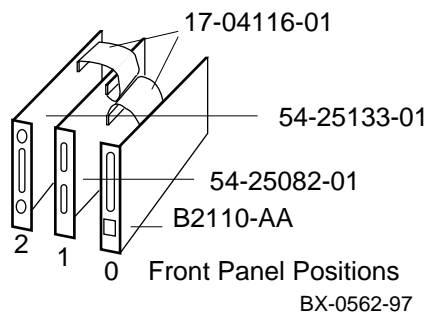
Check the connector module (54-25133-01) for proper jumper setting. Insert the connector module (54-25133-01) in slot 2 and attach ribbon cables (17-04116-01).

Figure 4-6 Jumper Settings on the Connector Module



BX-0598-98

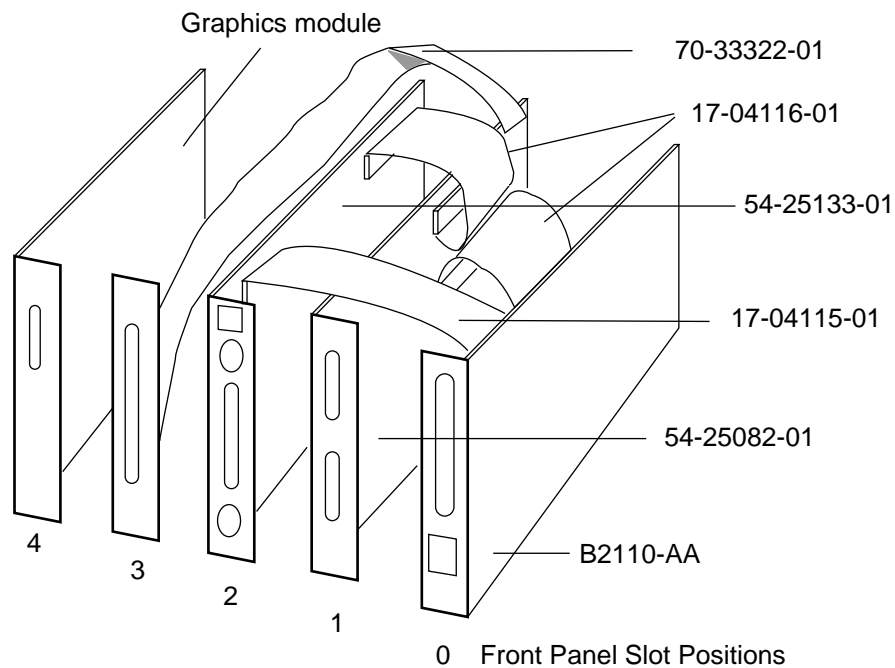
1. Attach the lower ribbon cable on the serial port module (54-25082-01) to the 60-pin connector on the standard I/O module (B2110-AA) at connector J8. See the figure below.
2. Check the connector module (54-25133-01) to verify that the jumper is installed in the KFE72 (default) position, over pins 1 and 2, as shown in Figure 4-6. (Appendix A discusses this jumper in more detail.)
3. Install the connector module (54-25133-01) in slot 2 (see ⑤ in Figure 4-5), component side to the right. Secure the module to the card cage with a screw removed earlier.
4. Attach the upper ribbon cable on the serial port module (54-25082-01) to the connector module (54-25133-01) at connector J6. See the figure below.



4.3.4 Finish Ribbon Cabling, Install Parallel Port Assembly and Graphics Module

Attach ribbon cable (17-04115-01) between the standard I/O module (B2110-AA) and connector module (54-25133-01). Install parallel port assembly (70-33322-01) to serial port module (54-25082-01) and install graphics module.

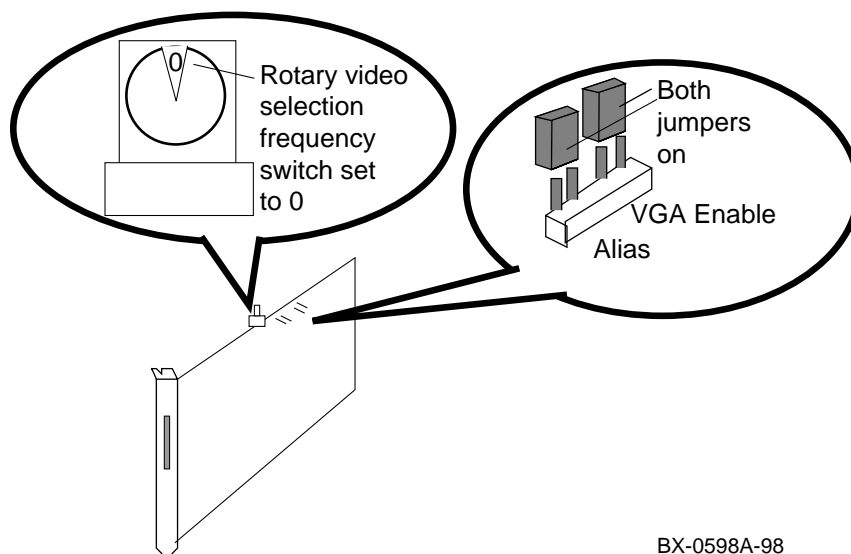
Figure 4-7 Ribbon Cabling and Parallel Port Assembly Installation



BX-0560B-98

1. Connect the 34-pin ribbon cable (part number 17-04115-01) between the standard I/O module (B2110-AA) at connector J9 and the connector module (54-25133-01) at connector J5. (See Figure 4-7.)
2. **Optional:** Connect the parallel port assembly (70-33322-01) to the connector at the rear of the serial port module (54-25082-01), bring the bulkhead plate to the opening for front panel slot position 3, and attach it to the card cage. (*Tru64 UNIX* does not support parallel port operations, so this step can be omitted. Slot position 3 cannot be used for other PCI options, however.)
3. Install the graphics module in front panel slot position 4. If this module is the PowerStorm 3D30 graphics module (PBXGB-AA), check that the VGA enable and alias pins are both jumpered on, and the rotary switch is set to 0 (see Figure 4-8).
4. If you have other options, install them in front panel slot positions 5–11.
5. Place the cover back on the card cage and tighten the two quarter-turn screws.
6. Push the shelf back into the cabinet.
7. Replace the cable management rack and secure the shelf and cable management rack to the frame.
8. Replace the power cables to the shelf.
9. Replace any other cables removed earlier.

Figure 4-8 Jumper and Switch Settings on PBXGB-AA Module



BX-0598A-98

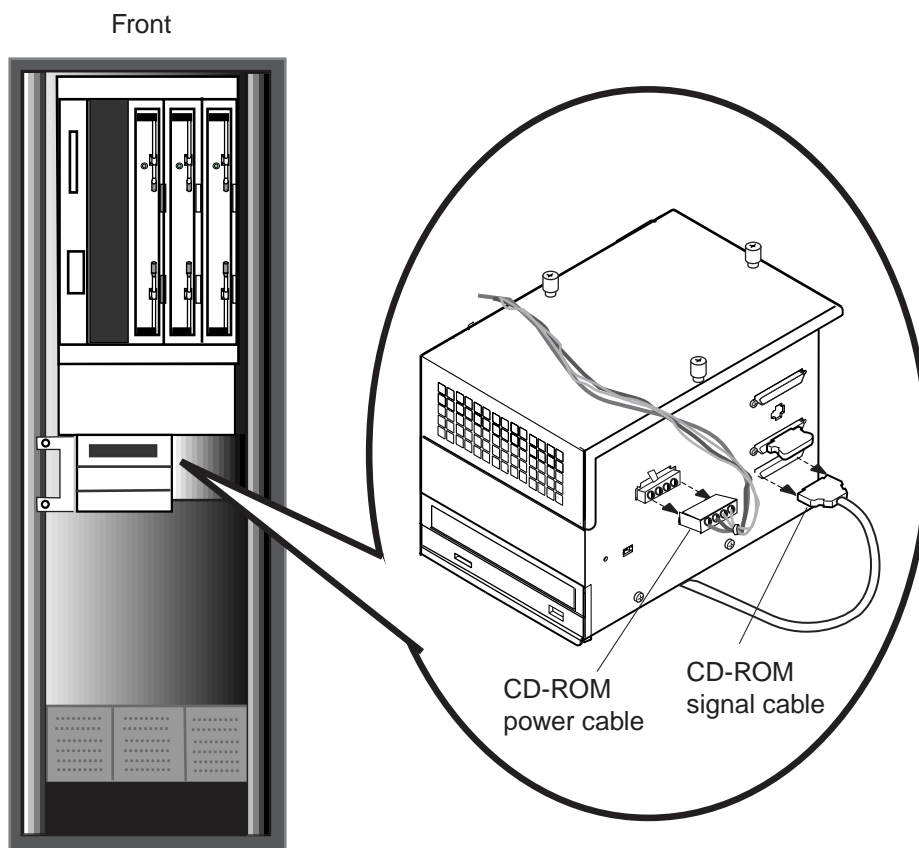
4.4 Install the Floppy Drive

Install the floppy drive in the CD-ROM tray.

4.4.1 Remove the CD-ROM Tray

Remove the CD-ROM tray from the system front of the system.

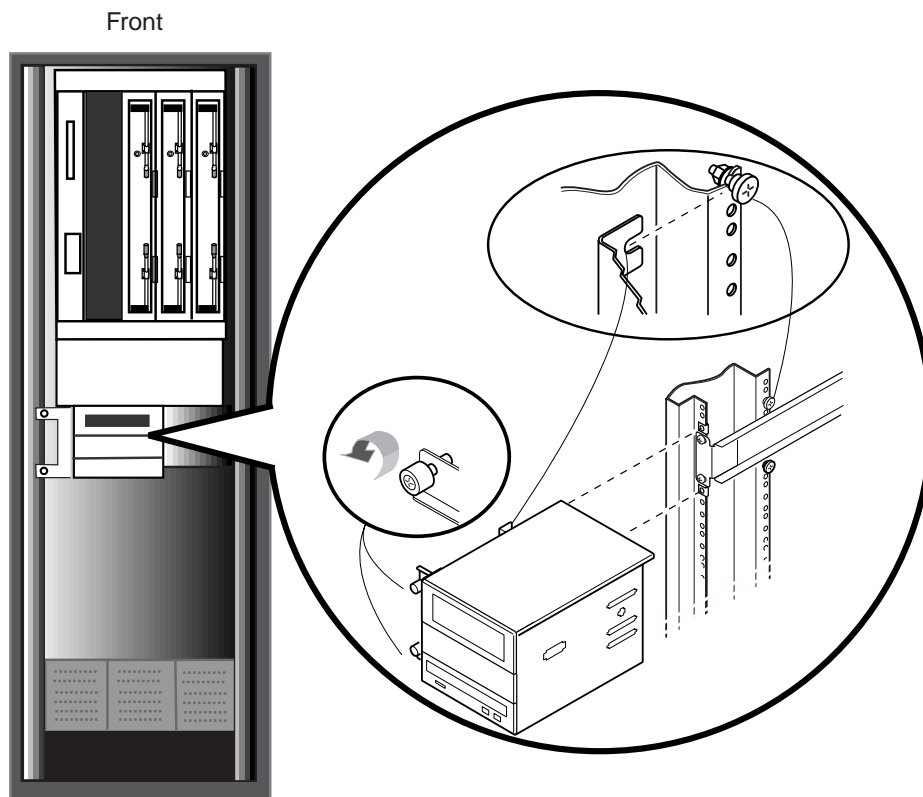
Figure 4-9 Disconnect CD-ROM Power and Signal Cables



BX-0183U-99

1. At the front of the machine, disconnect the CD-ROM power and signal cables, as shown in Figure 4-9.
2. Using a Phillips screwdriver, loosen the two captive screws holding the CD-ROM tray to the enclosure, as shown in Figure 4-10. Slide the tray forward and off the two buttons that support the CD-ROM tray from the back.
3. Move the CD-ROM tray to a workbench or table nearby to continue installation of the floppy drive.

Figure 4-10 Removing the CD-ROM Tray

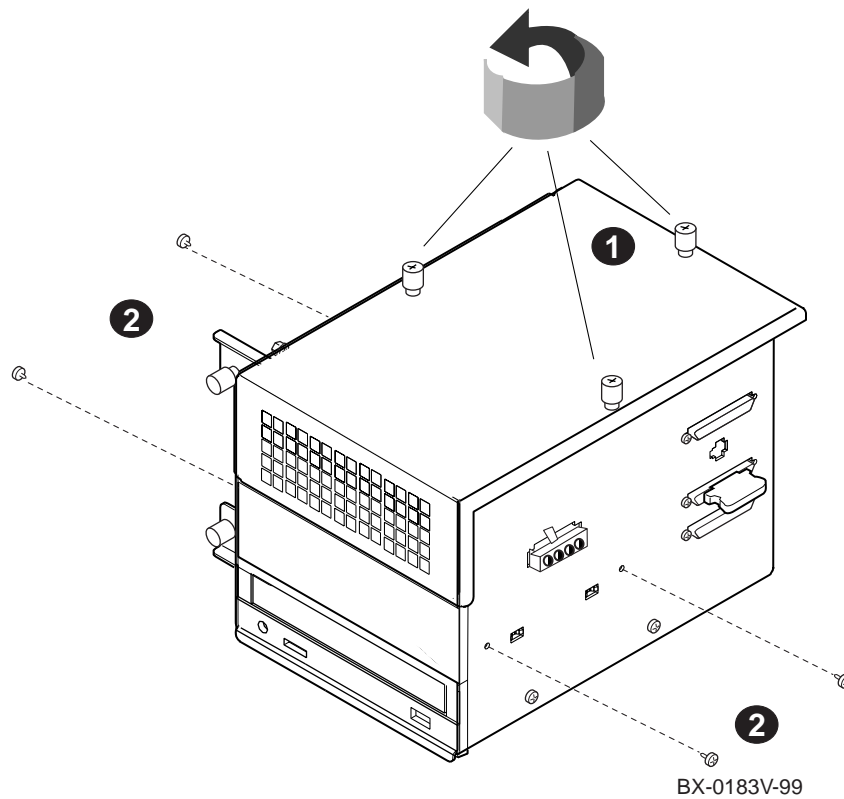


BX-0183W-99

4.4.2 Remove Floppy Tray from CD-ROM Tray

Unscrew and lift the top of the CD-ROM tray. Remove the floppy tray in the CD-ROM tray.

Figure 4-11 Unscrewing the top of the CD-ROM Tray

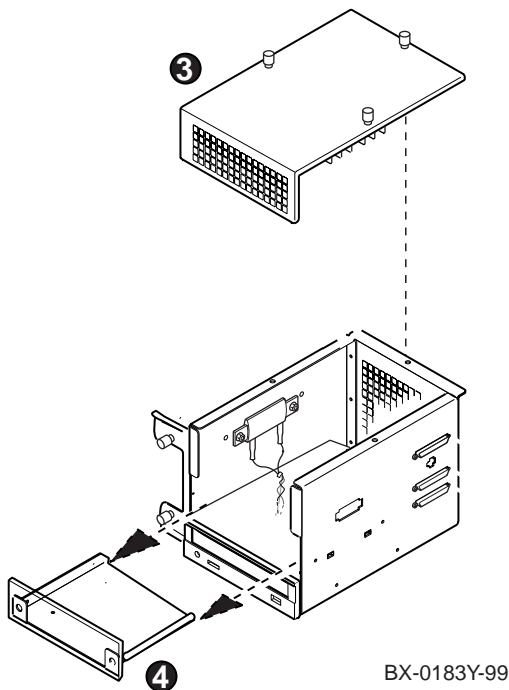


1. Using a Phillips screwdriver, loosen the three captive screws on the top of the CD-ROM tray (see ❶ in Figure 4-11).
2. Using a Phillips screwdriver, remove the two topmost screws on both sides of the CD-ROM tray (see ❷ in Figure 4-11).
3. Lift the top to reveal the inside of the tray (see ❸ in Figure 4-12).

NOTE: To clarify other parts of the illustration, Figure 4-12 shows the top being lifted further than it can actually go. The wiring to the CD-ROM drive that is internal to the CD-ROM tray limits the height to which you can lift the top of the tray. Lift it gently several inches and let it rest upside down on the left side of the CD-ROM tray.

4. Slide the floppy tray out of the CD-ROM tray (see ❹, below).

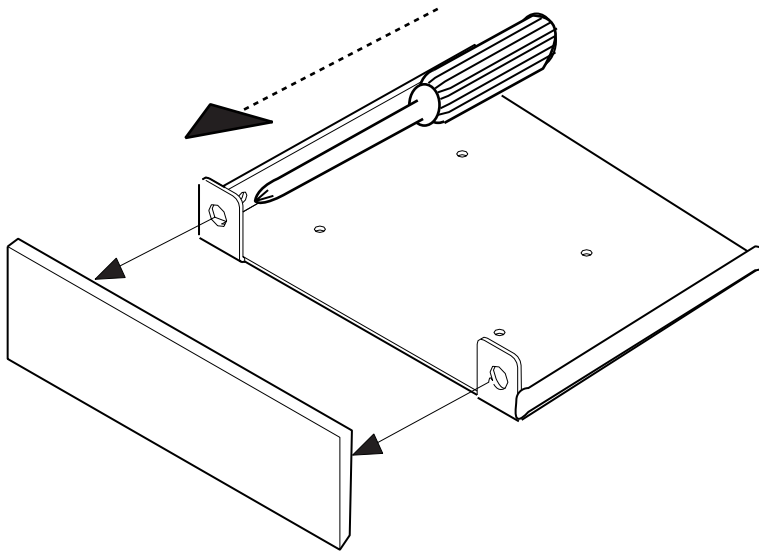
Figure 4-12 Remove the Floppy Tray



4.4.3 Install Floppy Drive on Floppy Tray

Remove the blank bezel from the front of the floppy tray. Attach the floppy drive (part number x) to the tray, using the four screws (part number y).

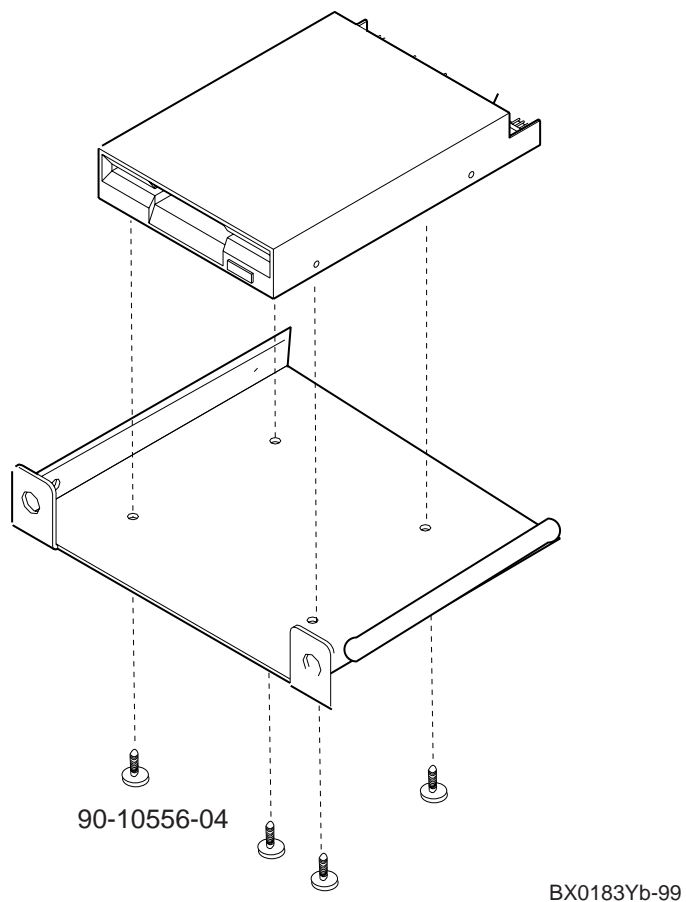
Figure 4-13 Remove the Blank Bezel from the Floppy Tray



BX0183Ya-99

1. Using a Phillips screwdriver, press both of the plastic rods of the blank bezel until they snap through the metal retainers in the floppy tray (see Figure 4-13).
2. Place the floppy drive on the floppy tray so that the holes in the drive match the holes in the tray. Screw the floppy drive onto the floppy tray with the four screws from the kit (part no. 90-10556-04). See Figure 4-14.

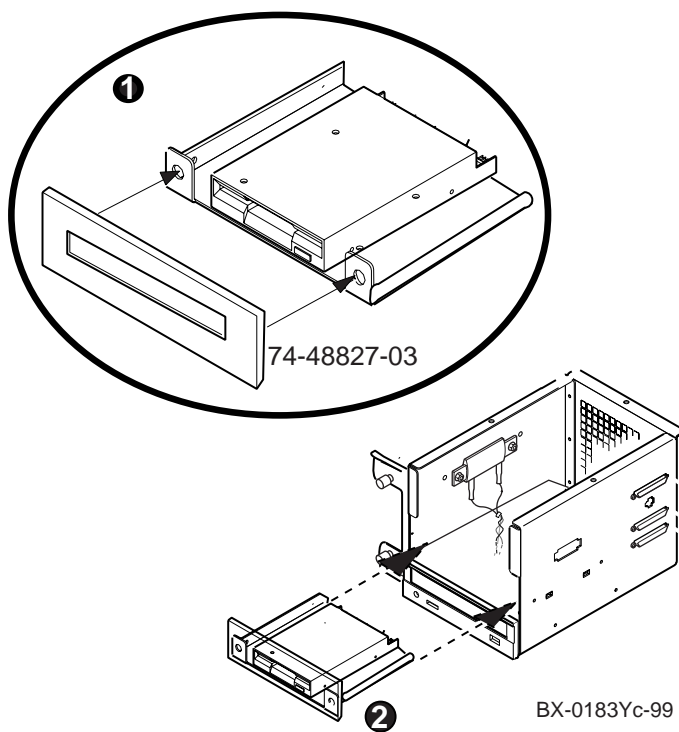
Figure 4-14 Screw the Floppy Drive to the Floppy Tray



4.4.4 Install the Floppy Bezel and Replace Floppy Tray

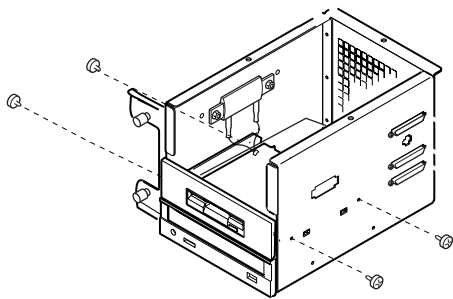
Snap the floppy bezel (part no. 74-48827-03) into the floppy tray, slide the floppy tray into the CD-ROM tray, and screw the floppy tray in place, using the screws removed in Section 4.4.2.

Figure 4-15 Snap in Floppy Bezel and Slide in Floppy Tray



1. Snap the bezel with the cutout (part number 74-48827-03) into the floppy tray (see ❶ in Figure 4-15).
2. Slide the floppy tray into the CD-ROM tray (see ❷ in Figure 4-15)
3. Replace the screws holding the floppy tray in place (see Figure 4-16), using the screws you removed in Section 4.4.2.

Figure 4-16 Replace Screws Holding Floppy Tray In Place

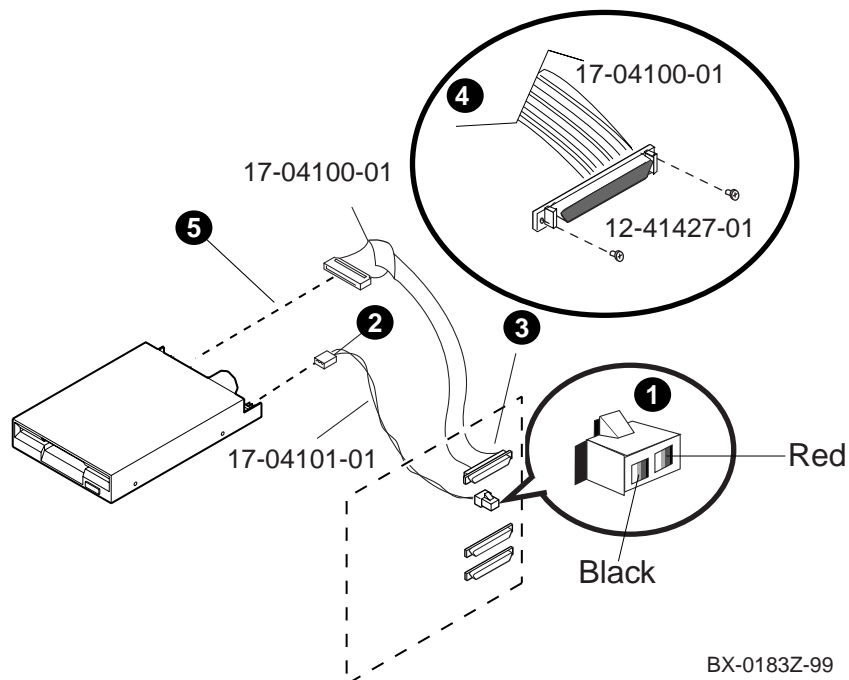


BX-0183Yd-99

4.4.5 Install Internal Cabling to Floppy Drive

Connect the internal power and signal cables from the inside of the CD-ROM tray to the floppy drive.

Figure 4-17 Installing Internal Cabling to Floppy Drive



1. Snap the two-holed end of the power cable (part number 17-04101-01) into the second opening from the top on the right side of the CD-ROM tray. See ❶ in Figure 4-17.

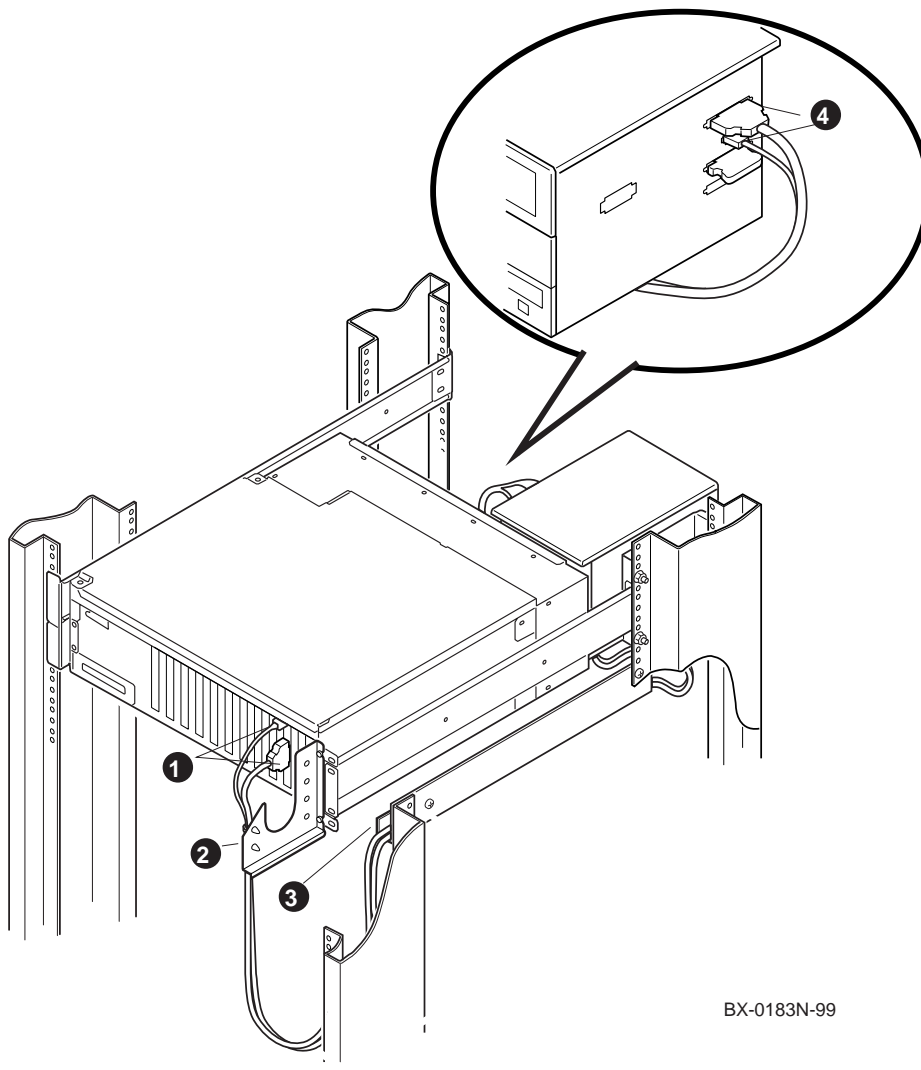
CAUTION: Make sure that the red wire is to the back of the CD-ROM tray. The power cable is a red and black twisted-pair cable. If you attach it with the red wire to the front instead of the black wire, the fuse will blow on the connector module.

2. Connect the other end of the power cable to the floppy drive, as shown at ❷.
3. From the inside of the CD-ROM tray, push the end of the signal cable (17-04100-01) through the topmost opening on the right side of the CD-ROM tray (see ❸).
4. Using a Phillips screwdriver, use the two small screws (part number 12-41427-01) to attach the end of the signal cable (part number 17-04100-01) to the outside of the CD-ROM tray, as shown at ❹.
5. Connect the other end of the signal cable to the floppy drive, as shown at ❺.
6. Replace the top of the CD-ROM tray and tighten the three captive screws with a Phillips screwdriver.
7. Replace the CD-ROM tray, reversing the steps described in Section 4.4.1, including reconnecting the power and signal cables to the CD-ROM drive on the outside of the CD-ROM tray.

4.4.6 Install External Cables to Floppy Drive

Install cables between the floppy and the connector module in the PCI shelf.

Figure 4-18 External Cable Installation



BX-0183N-99

To complete the installation:

1. Connect the power cable (17-04670-01) to the connector module (54-25133-01) as shown at ❶ in Figure 4–18. **Make sure the black ground wire is up at the connector module end.**

CAUTION: The power cable is a red and black twisted-pair cable. If you attach it to the connector module with the red wire up instead of the black wire, the fuse will blow on the connector module (54-25133-01).

2. Connect the signal cable (17-03566-15) to the connector module (54-25133-01) as shown in at ❶ in Figure 4–18.
3. Tie the cables using the plastic tiewrap on the cable organization flange , as shown at ❷.
4. Route the two cables from the rear of the system through to the front of the system, using the cable routing rail, as shown at ❸ in Figure 4–18.
5. Attach the two cables to the outside of the CD tray, as shown in the insert to Figure 4–18. **With the power cable, make sure the red power wire is to the back of the CD-ROM tray.**

CAUTION: Make sure that the red wire is to the back of the CD-ROM tray. The power cable is a red and black twisted-pair cable. If you attach it with the red wire to the front instead of the black wire, the fuse will blow on the connector module.

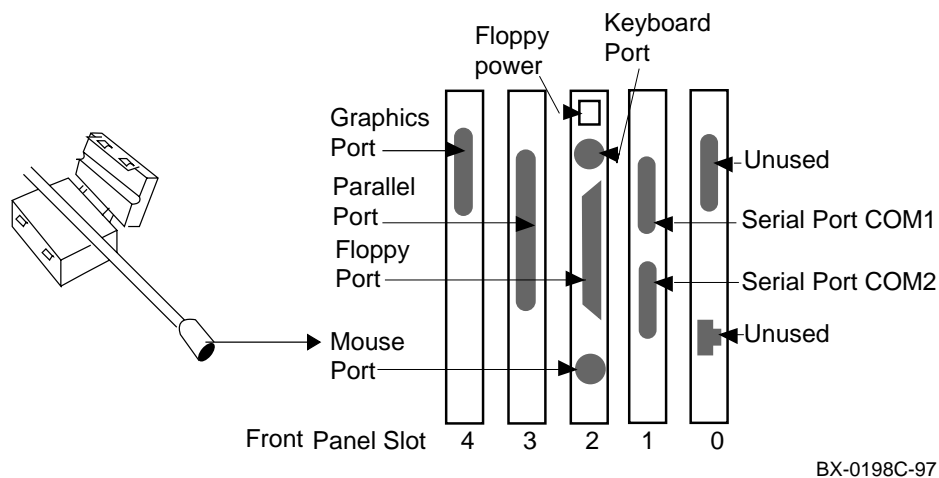
(Immediately below these connectors are a terminator and a connector from the KZPBA-CA SCSI adapter that controls the CD-ROM drive.)

6. Close the circuit breaker and power up the system.

4.5 Attach Graphics Monitor and Related Assemblies

Attach the graphics monitor, keyboard, and mouse and their associated cables. Attach the ferrite sleeve to the mouse extension cable.

Figure 4-19 Ferrite Sleeve Installation



1. Connect the graphics monitor (ordered separately) to the graphics module installed in front panel slot 4. (The BC13L-10 extension cable allows you to place the monitor at a more comfortable distance from the GS60E than would otherwise be possible.)
2. Install the mouse and keyboard extension cables (17-04016-01) to the connector module as shown in Figure 4-19.
3. Connect the mouse (30-46117-02) to the mouse extension cable (17-04016-01).
4. Place the ferrite sleeve (16-25105-14) on the mouse extension cable 10 to 15 cm (4 to 6 in.) from the connector module and snap the sleeve shut over the cable. The ferrite sleeve is required to prevent radio interference when a mouse is used with the graphics module.
5. Connect the keyboard to the keyboard extension cable (17-04016-01).
6. Connect serial and parallel devices to the appropriate connectors, as shown in Figure 4-19.
7. See Chapter 7 for hardware verification procedures and Chapter 9 (for *Tru64 UNIX* systems) for how to run ECU to initialize the NVRAM on the standard I/O module.

Chapter 5

Procedure for the KFE72-UG

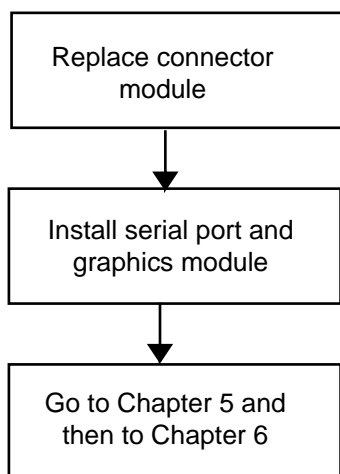
This chapter tells how to upgrade your system from a KFE70 standard I/O adapter, used for *Tru64 UNIX* and *OpenVMS* operating systems, to a KFE72 standard I/O adapter, used for Windows NT systems. Sections include:

- KFE72-UG Kit Contents
- Install KFE72-UG Modules
- Attach Graphics Monitor and Related Assemblies

5.1 KFE72-UG Kit Contents

The KFE72-UG kit is used when you are upgrading from a KFE70 adapter to a KFE72.

Figure 5-1 Installation Procedure



BX-0474E-98

Table 5–1 lists the contents of the KFE72-UG option kit.

Table 5–1 KFE72-UG Kit Contents

Part Number	Quantity	Description
54-25133-01	1	Connector module
54-25082-01	1	Serial port module
PBXGB-AA	1	PowerStorm 3D30 graphics module (module no. 54-23481-01)
17-04116-01	1	Cable assembly, flat, 60 cond, serial port module to connector module
70-33322-01	1	Parallel port panel assembly
17-04670-01	1	Power cable, connector module to floppy (GS60/8200)
17-04670-02	1	Power cable, connector module to CD-ROM box (GS140/8400)
17-04016-01	2	Extension cables for keyboard and mouse
BC13L-10	1	Extension cable for video
30-46117-02	1	Three-button mouse
16-25105-14	1	Ferrite sleeve
74-50090-05	1	System identification sheet for cabinet door (for GS140/8400 only)
36-49792-02	1	New logo bar (for GS60/8200 only)
36-44927-06	1	Sticker for new logo bar (for GS60/8200 only)
QC-01YAA-HC	1	EISA system configuration kit
EK-KFE72-IN	1	<i>KFE72 Installation Guide</i>

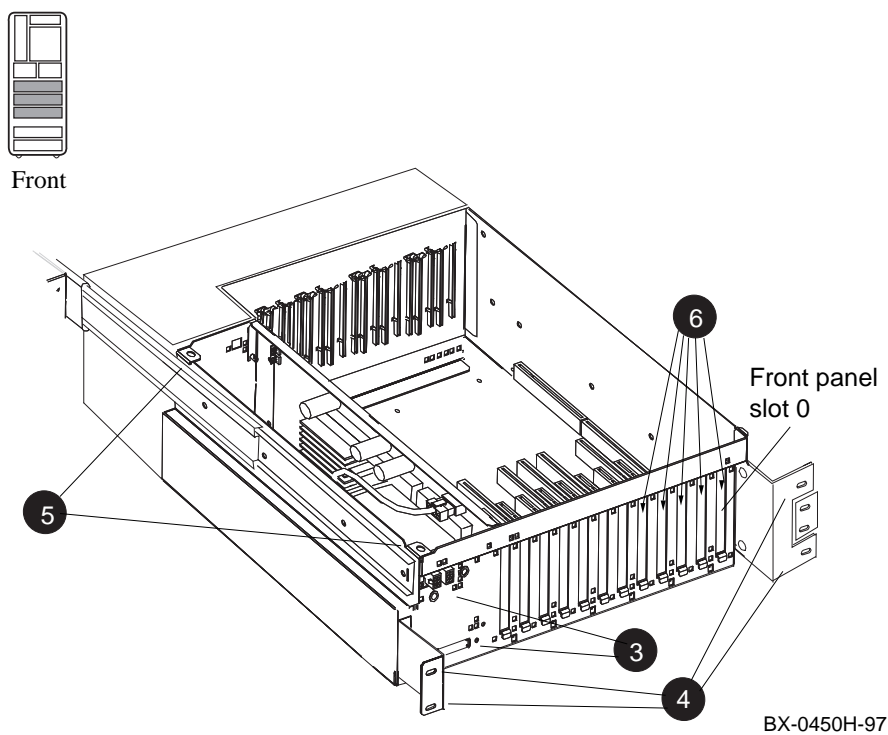
5.2 Install KFE72 Modules

The old connector module (54-23491-01) must be replaced with a new connector module (54-25133-01), and the new serial port module (54-25082-01) must be installed. (Note that the DWLPA adapter is not supported for Windows NT systems; you must have a DWLPB adapter installed.)

5.2.1 Slide the PCI Card Cage Out

Slide the PCI card cage out of the GS60/8200 or the GS140/8400. Figure 5–2 illustrates the process for the GS60/8200. See Section 3.2.1 for a description of this process for the GS140/8400.

Figure 5–2 Sliding the PCI Card Cage Out of the GS60/8200

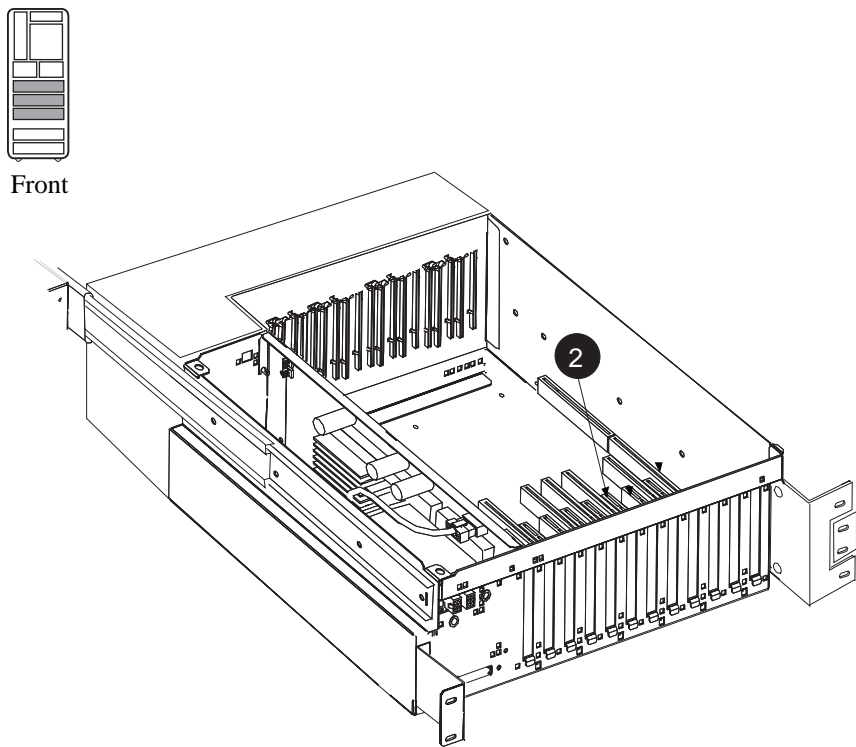


1. Perform an orderly shutdown of the system and turn the system off by pushing the On/Off button on the control panel to Off.
2. Open the circuit breakers on the power supplies.
3. Disconnect the power cables, ❸ in Figure 5–2, the I/O hose, and any other cables that prevent the PCI shelf from being pulled out.
4. Remove the five Phillips head screws that hold the card cage and the cable management rack to the frame (see ❹), and pull the shelf out fully.
5. Remove the top cover by loosening the two quarter-turn screws, lifting the top of the cover away from the card cage, and then pulling the cover to the right and off (see ❺).
6. Remove and reinstall any modules in front panel slots 0, 1, 2, 3, and 4. These slots are needed for the KFE72 modules.
7. Remove the face plates from any front panel slots 0, 1, 2, 3, and 4 that are unoccupied by modules (see ❻). Save the screws for later use.

5.2.2 Insert Module in Slot 2

Remove the old connector module (54-23491-01) and replace it with the new connector module (54-25133-01) in front panel slot 2.

Figure 5-3 Inserting the Module in Slot 2

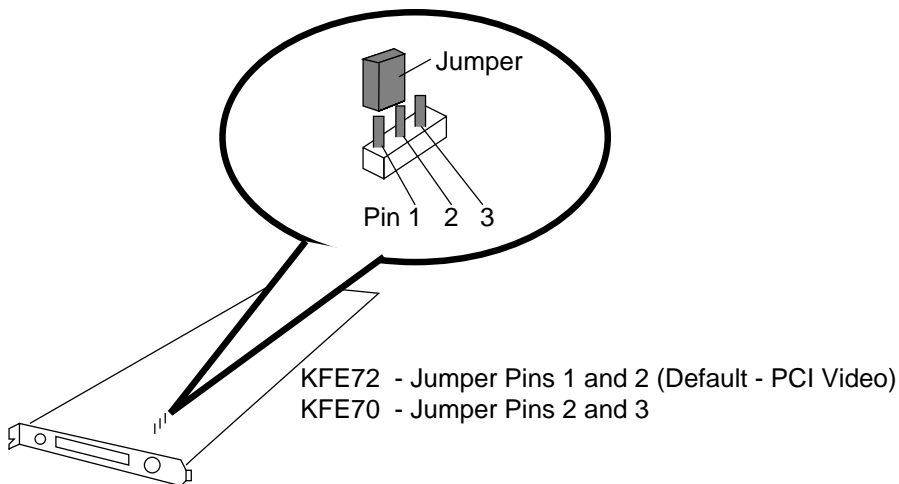


BX-0450K-98

NOTE: When installing PCI modules, be sure the option bulkheads mate with the EMI gasket on the PCI card cage.

1. Disconnect the standard-I/O to connector module cable (17-04116-01) from the old connector module (54-23491-01) and the standard I/O module (B2110-AA). Save the cable for use in Section 4.2.3.
2. If you have not already done so, disconnect any I/O cables from the old connector module (54-23491-01). Remove the module from its connector (see ❷ in Figure 5-3) and slide it out of the DWLPB shelf.
3. Check the new connector module (54-25133-01) to verify that the jumper is installed in the KFE72 (default) position, as shown in Figure 5-4.
4. Insert the new connector module (54-25133-01) into the same connector, front panel slot 2.

Figure 5-4 Jumper Settings on the Connector Module



BX-0598-98

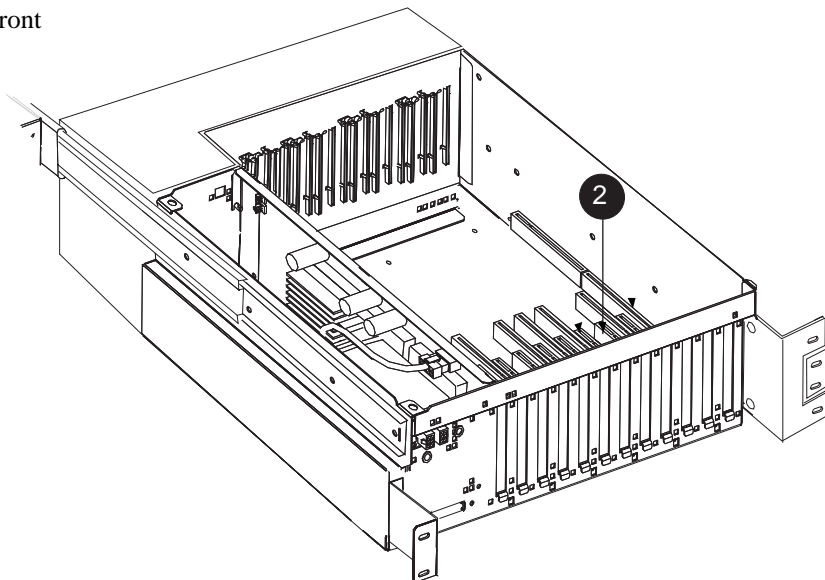
5.2.3 Insert Module in Slot 1

Attach ribbon cables (17-04116-01) to serial port module (54-25082-01). Insert the serial port module (54-25082-01) in front panel slot 1. Attach ribbon cables (17-04116-01) to new connector module and standard I/O module.

Figure 5-5 Inserting the Module in Slot 1

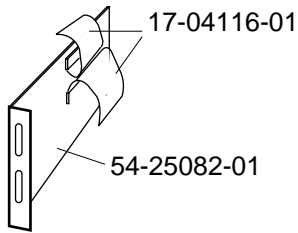


Front



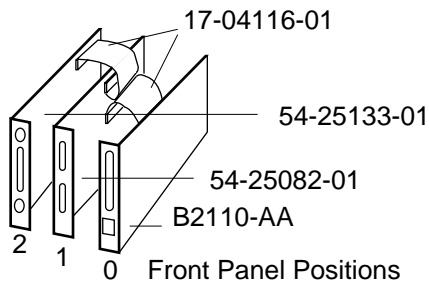
BX-0450L-99

1. Take the two 60-pin cables (part no. 17-04116-01), one from the kit and the one removed previously, and connect them to the serial port module (54-25082-01). See the figure below.



BX-0561-97

2. Install the serial port module (54-25082-01), component side to the right (GS60/8200) or down (GS140/8400), in front panel slot 1 (see ❷ in Figure 5-5). Secure the module to the shelf with one of the screws removed previously.
3. Attach the lower ribbon cable on the serial port module (54-25082-01) to the 60-pin connector in the standard I/O module (B2110-AA). See the figure below.
4. Attach the upper ribbon cable on the serial port module (54-25082-01) to the new connector module (54-25133-01). See the figure below.

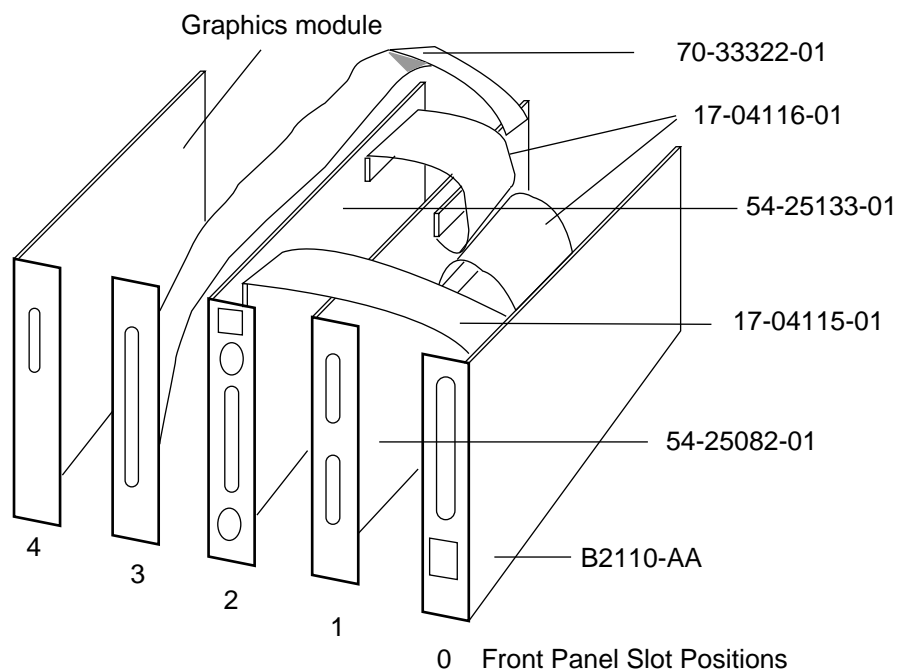


BX-0562-97

5.2.4 Finish Ribbon Cabling, Install Parallel Port Assembly and Graphics Module

Attach ribbon cable (17-04115-01) between the standard I/O module (B2110-AA) and connector module (54-25133-01). Install parallel port assembly (70-33322-01) to serial port module (54-25082-01) and install PowerStorm 3D30 graphics module (PBXGB-AA).

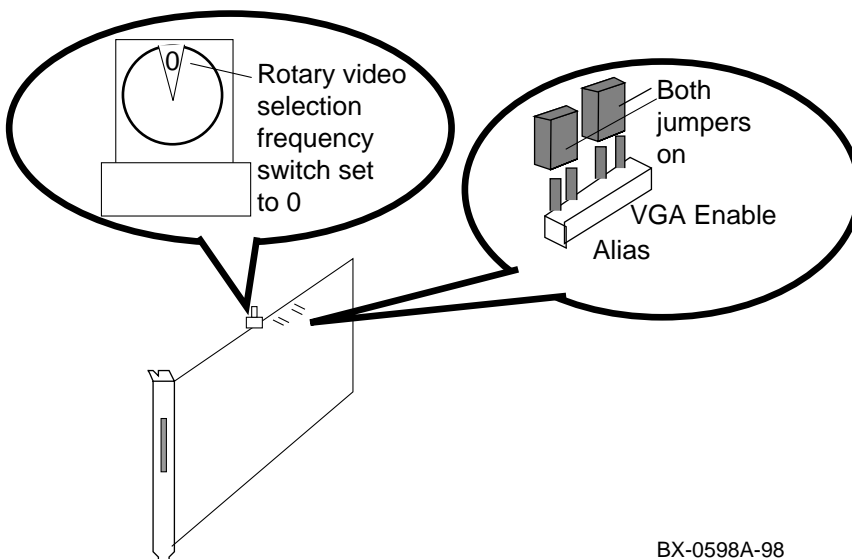
Figure 5-6 Ribbon Cabling and Parallel Port Assembly Installation



BX-0560B-98

1. Connect the 34-pin ribbon cable (part number 17-04115-01) between the standard I/O module (B2110-AA) and the connector module (54-25133-01). See Figure 5-6.
2. Connect the parallel port assembly (70-33322-01) to the connector at the rear of the serial port module (54-25082-01), bring the bulkhead plate to the opening for front panel slot position 3, and attach the bulkhead plate to the card cage.
3. On the PowerStorm 3D30 graphics module (PBXGB-AA), check that the VGA enable and alias pins are both jumpered on and the rotary switch is set to 0 (see Figure 5-7). Place the module in slot position 4 and attach it to the card cage.
4. If you have other options, install them in the shelf now.
5. Replace the cover on the DWLPB shelf and tighten the two quarter-turn screws.
6. Push the shelf back into the cabinet (GS60/8200) or PIU (GS140/8400). On the GS140/8400, depress the locks on the slides and slide the shelf back into the system. The lock on the top slide is visible; locate the bottom one by touch.
7. On the GS60/8200, replace the cable management rack and secure the shelf and cable management rack to the frame.
On the GS140/8400, replace the four Phillips head screws that hold the shelf in place.
8. Replace the power cables to the shelf.
9. Replace any other cables removed from the shelf.

Figure 5-7 Jumper and Switch Settings on PBXGB-AA Module

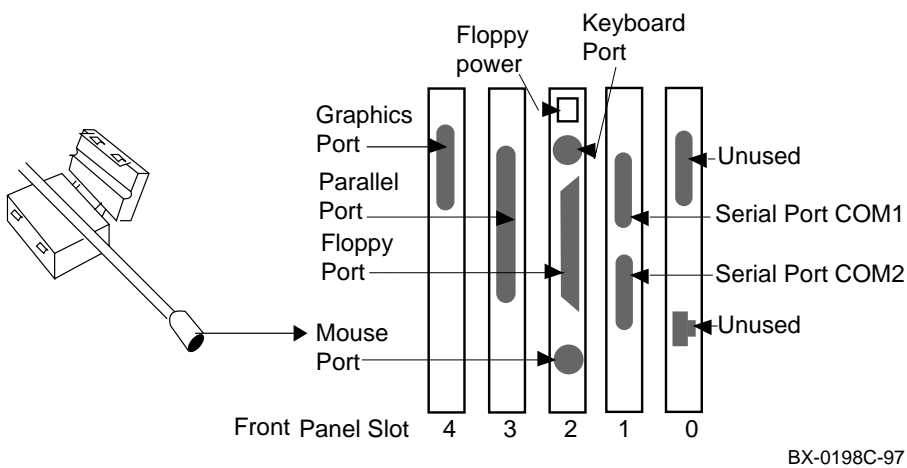


BX-0598A-98

5.3 Attach Graphics Monitor and Related Assemblies

Attach the graphics monitor, keyboard and mouse and their associated cables.
Attach ferrite sleeve to mouse extension cable.

Figure 5-8 Ferrite Sleeve Installation



1. Connect the graphics monitor (ordered separately) to the PowerStorm 3D30 graphics card installed in front panel slot 4. Use the BC13L-10 extension cable so that you can place the monitor at a more comfortable distance from the system than would otherwise be possible.
2. Install the mouse and keyboard extension cables (17-04016-01) to the connector module as shown in Figure 5–8.
3. Place the ferrite sleeve on the mouse extension cable 10 to 15 cm (4 to 6 in.) from the connector module and snap the sleeve shut over the cable. The ferrite sleeve is required to prevent radio interference when a mouse is used with the graphics module.
4. Connect the mouse to the mouse extension cable.
5. Connect keyboard to the keyboard extension cable.
6. Connect serial and parallel devices to the appropriate connectors, as shown in Figure 5–8.
7. **For GS60/8200:** Attach Windows NT sticker (36-44927-06) to new logo bar (74-49792-02) and replace the old logo bar on the cabinet door with the new one.
For GS140/8400: Remove the old system identification sheet from the front door of the cabinet and replace it with the new one (74-50090-05).
8. See Chapter 7 for hardware verification procedures, and Chapter 8 for how to run ECU to initialize the NVRAM on the standard I/O module.

Chapter 6

Procedure for the KFE72-DA

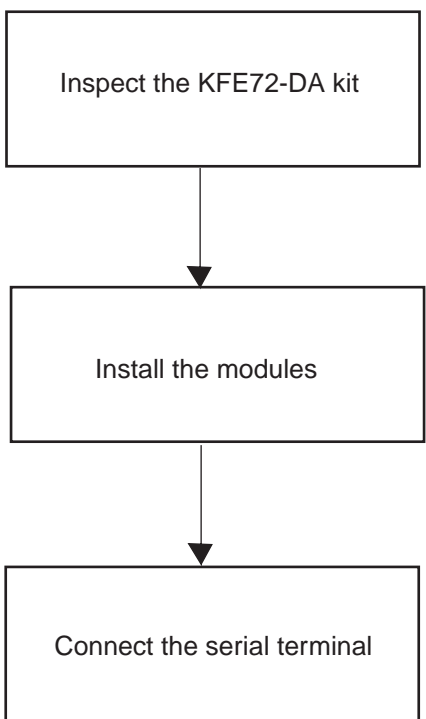
The KFE72-DA kit provides serial ports for serial console terminals needed for operating systems supporting logical partitions, such as *OpenVMS Galaxy* or *Tru64 UNIX*. This kit can be installed on GS60, GS60E, GS140, 8200, or 8400 systems. (See Table 3 for documentation on logical partitions). Sections in this chapter include:

- KFE72-DA Kit Contents
- Install KFE72-DA Modules

6.1 KFE72-DA Kit Contents

The KFE72-DA provides serial ports for additional serial console terminals needed for additional instances of operating systems.

Figure 6-1 Hardware Installation Flowchart



BX-0766F-99

Table 6-1 KFE72-DA Kit Contents

Part Number	Quantity	Description
B2110-AA	1	Standard I/O module
54-25133-01	1	Connector module
54-25082-01	1	Serial port module
70-04116-01	2	Cable assembly flat, 60 cond (standard I/O to serial port, serial port to connector)
70-04115-01	1	Cable assembly flat, 34 cond (standard I/O to connector)
H8571-J	2	Connector converter for serial port module
EK-KFE72-IN	1	<i>KFE72 Installation Guide</i>

*NOTE: Front panel slot position 3 of the DWLPB must not contain a PCI device.
An EISA device may be installed in slot 3 providing it is supported by the
operating system.*

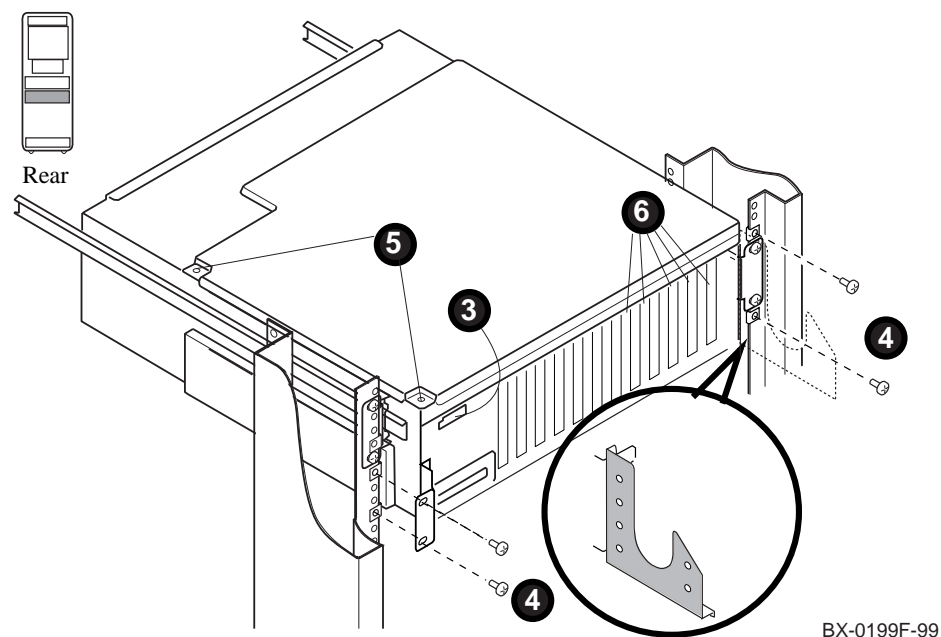
6.2 Install KFE72-DA Modules

For each instance of an operating system after instance 0, you must install three modules in a PCI I/O subsystem.

6.2.1 Slide the PCI Card Cage Out

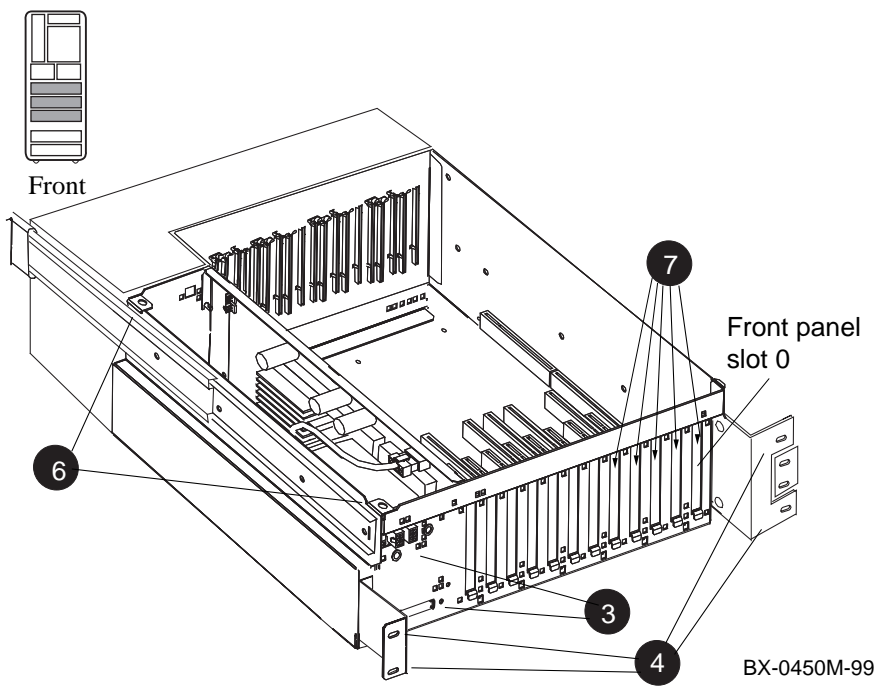
Slide the PCI shelf out of the system. Figure 6–2 shows the process for the GS60E; Figure 6–3, for the GS60 and 8200; Figure 6–4, for the GS140 and 8400.

Figure 6–2 Sliding the PCI Card Cage Out of the GS60E



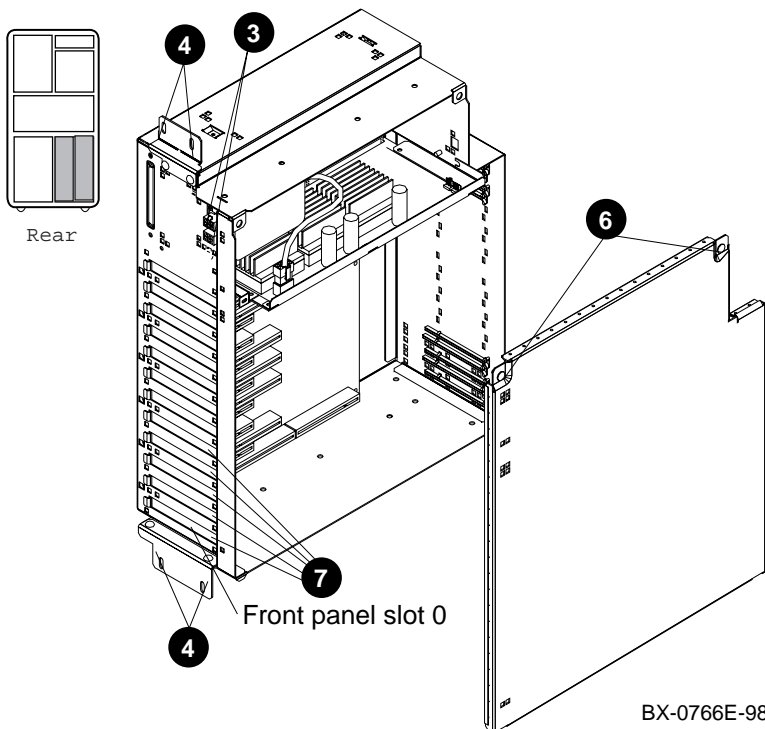
1. For the GS60E, perform an orderly shutdown of the operating system and turn the system off by turning the keyswitch on the control panel to Off.
2. Open the circuit breakers on the power supplies.
3. Disconnect the power cables, ❸ in Figure 6–2, and any other cables that prevent the PCI shelf from being pulled out. (The I/O hose should not need to be disconnected to allow the shelf to be pulled out.)
4. Remove the four Phillips head screws that hold the card cage in. On the left side, remove the two bottom screws (see). On the right side, remove the two outside screws (see ❹).
5. Pull the shelf out fully, loosening any tie-wrapped cables as necessary. (The cable management flange with the tie-wrap holder is shown in dashed lines so that you can see which screws to remove. The appearance of the flange itself is shown in the insert.)
6. Remove the top cover by loosening the two quarter-turn screws (see ❺), and tilt the cover away from the shelf at the side where the screws are. Lift or pull the cover away from the shelf.
7. Remove the face plates from slots 0, 1, and 2 (see ❻). The face plates are held in place by a Phillips head screw on the top edge of the card cage. Save the screws for later use.

Figure 6–3 Sliding the PCI Card Cage Out of the GS60/8200



1. For the GS60, GS140, 8200, or 8400, perform an orderly shutdown of the operating system. Turn the system off by pushing the On/Off button on the control panel to Off (GS60 or 8200), or by turning the keyswitch on the control panel to Disable (GS140 or 8400).
2. Open the circuit breakers on the power supplies.
3. Disconnect the power cables (❸ in Figure 6–3 and Figure 6–4), the I/O hose, and any other cables that prevent the PCI shelf from being pulled out.

Figure 6-4 Sliding the PCI Card Cage Out of the GS140/8400

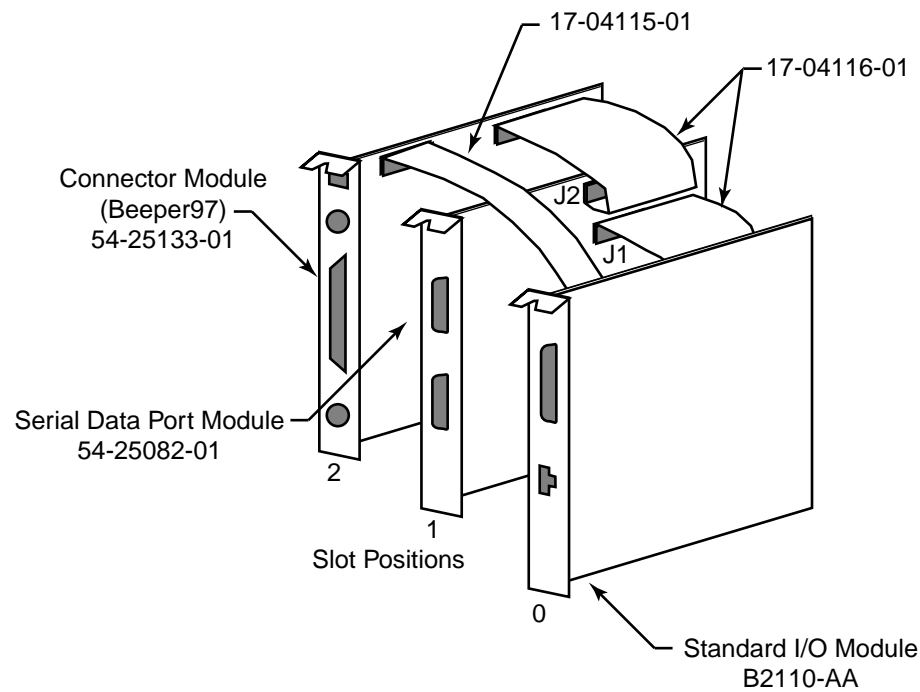


4. Remove the Phillips head screws that hold the card cage in (see 4).
5. Pull the shelf out fully.
6. Remove the top (GS60 or 8200) or side (GS140 or 8400) cover by loosening the two quarter-turn screws (see 6), and tilt the cover away from the shelf at the side where the screws are. Lift or pull the cover away from the shelf.
7. Remove the face plates from slots 0, 1, and 2 (see 7). The face plates are held in place by a Phillips head screw on the top (GS60 or 8200) or inside right (GS140 or 8400) edge of the card cage. Save the screws for later use.

6.2.2 Insert Modules

Insert the standard I/O module in front panel slot 0. Then connect cables to the serial port module. Insert the serial port module in front panel slot 1. Insert the connector module in front panel slot 2 and connect cables.

Figure 6-5 Inserting the Modules



VM-0301A-AI

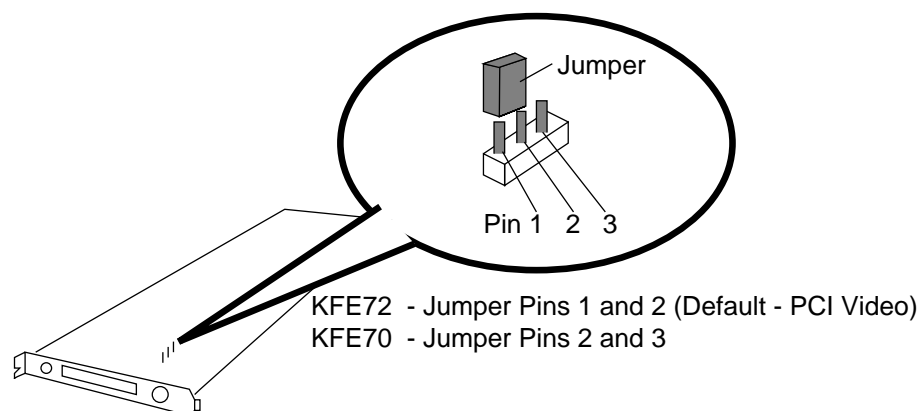
NOTE: When installing PCI modules, be sure the option bulkheads mate with the EMI gasket on the PCI card cage.

To insert the modules in the PCI card cage and connect the appropriate ribbon cables, refer to Figure 6–5 and perform the following steps.

1. Insert the standard I/O module (part no. B2110-AA), component side to the left (GS60E/GS60/8200) or up (GS140/8400), in slot 0. Screw module to card cage.
2. Attach the 60-pin ribbon cables (part no. 17-04116-01) on the serial port module (54-25082-01) at connectors J1 and J2.
3. Insert the serial port module (54-25082-01), component side to the right (GS60E/GS60/8200) or down (GS140/8400), in slot 1. Screw module to card cage.
4. Attach the 60-pin ribbon cable (17-04116-01) from the serial port module at connector J1 to connector J8 on the standard I/O module (B2110-AA).
5. Check the connector module (54-25133-01) to verify that the jumper is installed in the KFE72 (default) position as shown in Figure 6–6. (See Appendix A.)
6. Insert the connector module (54-25133-01) in slot 2, component side to the right (GS60E/GS60/8200) or down (GS140/8400). Screw module to card cage.
7. Attach the 30-pin ribbon cable (17-04115-01) between the standard I/O module in slot 0 at connector J9 and the connector module in slot 2 at connector J5.
8. Attach the 60-pin ribbon cable (17-04116-01) on the serial port module (54-25082-01) at connector J2 to the connector module (54-25133-01) at connector J6.

NOTE: Front panel slot 3 of the DWLPB must not contain a PCI device. An EISA device may be installed in slot 3 providing it is supported by the operating system.

Figure 6–6 Jumper Settings on the Connector Module (If Any)

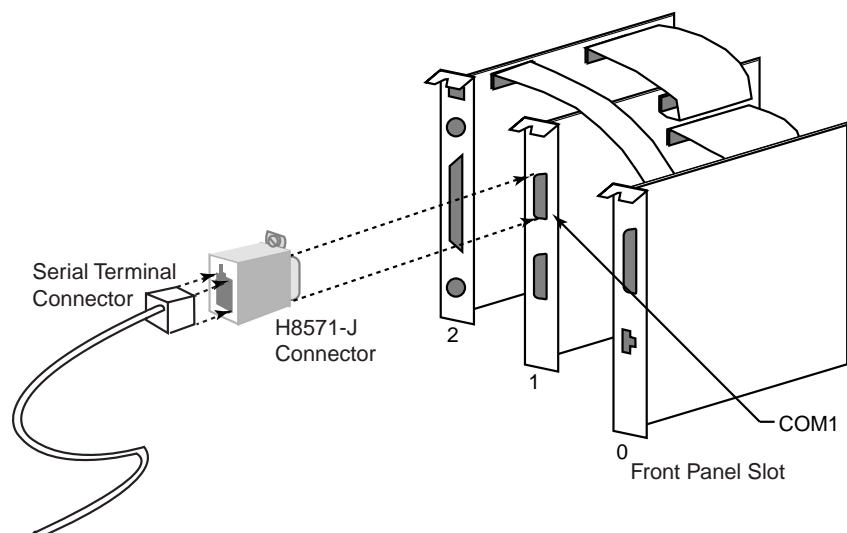


BX-0598B-99

6.2.3 Attaching the Console Serial Line

Connect the console serial line to the COM1 port.

Figure 6-7 Connect Console Serial Line to COM1 Port



UN-0302B-99

To connect the console terminal, refer to Figure 6–7 and perform the following steps.

1. Connect the H8571-J connector converter to the COM1 port.
2. Connect the console serial line to the H8571-J connector converter.

NOTE: The pair of arrows between the numbers 1 and 2 on the serial port module is an industry standard symbol for a serial port and does not indicate port numbers.

3. If you have other options, install them in the shelf now.
4. Replace the cover on the DWLPB shelf and tighten the two quarter-turn screws.
5. Push the shelf back into the cabinet (GS60E/GS60/8200) or PIU (GS140/8400). On the GS140/8400, depress the locks on the slides and slide the shelf back into the system. The lock on the top slide is visible; you can locate the one on the bottom by touch.
6. On the GS60/8200, replace the cable management rack and secure the shelf and cable management rack to the frame.
On the GS140/8400, replace the four Phillips head screws that hold the shelf in place.
7. Replace the power cables to the shelf.
8. Replace any other cables removed from the shelf.

This concludes the installation of the KFE72-DA kit. See the operating system documentation for more information on the use of the serial ports that this kit provides.

Chapter 7

Verification

This chapter describes general verification procedures for the KFE72. Sections include:

- Run System Self-Test
- Show Configuration Command

7.1 Run System Self-Test

Self-test runs at power-up and the display should show the KFE72. Example 7-1 shows a PCI shelf with a KFE72 connected to a KFTIA.

Example 7-1 Self-Test Display

```
F E D C B A 9 8 7 6 5 4 3 2 1 0 NODE #
A M . . . . . . P TYP
O + . . . . . . ++ ST1
. . . . . . EB BPD
O + . . . . . . ++ ST2
. . . . . . EB BPD
+ + . . . . . . ++ ST3
. . . . . . EB BPD
      + + + + + + + C0 PCI + ❶
      . . + + + . . + C1 PCI + ❶
      . . . . . . . EISA +
      . A1 . . . . . ILV
      . 512 . . . . . 512 MB
Compaq AlphaServer GS140 6-6/525/4, Console V5.4-18 30-APR-1999 16:24:17
SR0M V2.1, OpenVMS PALcode V1.53-5, Tru64 UNIX PALcode V1.48-4
System Serial = qv, OS = Tru64 UNIX, 21:20:07 March 15, 1999
Configuring Graphics
Configuring I/O adapters...
isp0, slot 0, bus 0, hose0
.
.
.
[configuration display continues]
```


- ❶ Check the C0 through Cx lines to determine which modules on the PCI I/O subsystem passed self-test. The example shows two PCIs, one internal to the KFTIA in slot 8 and the other connected to the KFTIA through a hose. The adapter in slot 0 of the second PCI shows a +, so the KFE72 passed self-test.

NOTE: If any module is badly broken on any bus, the console may not get a response or be able to read whether a device passed self-test. Under such conditions, self-test does not indicate a failure but instead indicates that the slot is empty.

7.2 Show Configuration Command

Use the show configuration command to verify installation of the KFE72 you put into the system.

Example 7-2 Show Configuration

P00>>> show configuration ❶

	Name	Type	Rev	Mnemonic
.	.			
.	.			
.	.			
C0	Internal PCI connected to kftia0			pci0
.	.			
.	.			
C1	PCI connected to kftia0			pci1
0+	SIO	4828086	0004	sio0
4+	VGA	D1011	0022	vga0
5+	KZPSA	81011	0000	kzpsa0
6+	DECchip 21041-AA	141011	0011	tulip1
A+	DAC960	11069	0000	dac0
B+	DEC PCI FDDI	F1011	0000	pfi0
Controllers on SIO				
0+	DECchip 21040-AA	21011	0023	tulip0
1+	FLOPPY	2	0000	floppy0
2+	KBD	3	0000	kbd0
3+	MOUSE	4	0000	mouse0
EISA connected to pci1 through sio0				eisa0

- ❶ Use the **show configuration** command to verify that the system sees the modules you just installed. This command shows the module slot number, module name, module type, revision, mnemonic, and if self-test passed.

In Example 7-2, the standard I/O module shows in slot 0 and the PowerStorm 3D30 graphics module shows in slot 4 of the PCI connected on hose 1 of the KFTIA. Other ports (keyboard, mouse, and so forth) show in the “Controllers on SIO” section of the listing.

Chapter 8

Running ECU from AlphaBIOS for Windows NT Systems

This chapter tells how to complete the installation of the KFE72 by running the EISA Configuration Utility from the graphics monitor running AlphaBIOS for Windows NT systems. Refer to the *AlphaBIOS User's Guide* for complete information on AlphaBIOS.

Sections in this chapter include:

- Starting AlphaBIOS
- First and Second Error Screens
- Updating the Configuration Using ECU

8.1 Starting AlphaBIOS

Start AlphaBIOS Setup from the SRM console after checking to make sure that both the serial console and the graphics console are enabled.

Example 8-1 Verify Proper Console Settings

```
P08>>> show console ❷  
console    both
```

Example 8-2 Changing to Proper Console Settings

```
P08>>> show console  
console    serial  
P08>>> set console both ❸  
P08>>> init
```

Example 8-3 Set OS Type and Issue AlphaBIOS Command

```
P08>>> set os_type nt ❹  
P08>>> set auto_action boot ❹  
P08>>> alphabios ❹  
.  
.  
.  
[several screens initializing devices]
```

To start AlphaBIOS to configure the KFE72:

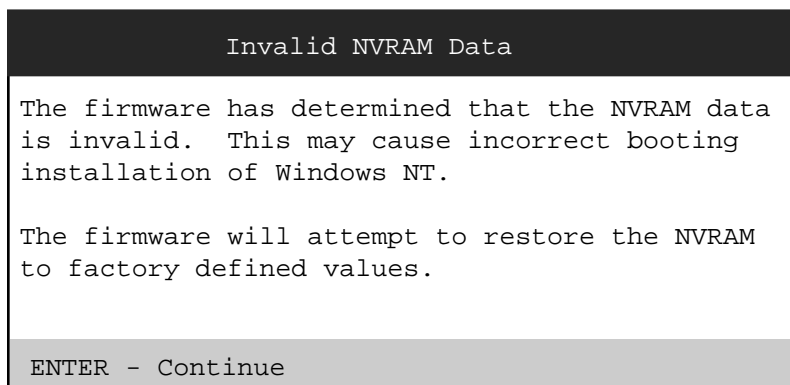
NOTE: Verify that your system has been upgraded to the minimum SRM console revision as specified in the Windows NT Administrator's Guide and Release Notes.

1. Plug in and turn on the graphics monitor, if it has not been turned on already.
2. Go to the SRM console and use the **show console** command to see if the graphics monitor has been set as a console. The console setting can be serial, graphics, or both. It should be set to both for Windows NT. (See ❷ in Example 8-1.)
3. If the console has been set to serial, use the **set console both** command to enable both terminals. (See ❸ in Example 8-2.)
4. When the console prompt appears, type the **set os_type nt , set auto_action boot**, and **alphabios** commands. (See ❹ in Example 8-3.)
5. The system begins to initialize devices, displaying messages. Eventually an error message screen appears (see next section).

8.2 First and Second Error Screens

The system displays initialization messages until an error screen appears. Press ENTER for remedial action.

Figure 8-1 First Error Screen



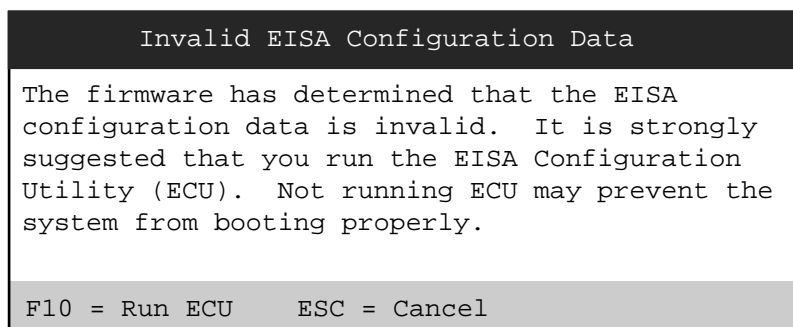
BX0566-97

The system displays an explanatory message (Figure 8–1) and defines the remedial procedure.

1. Press ENTER.

The system restarts the SRM console and AlphaBIOS and begins displaying the initialization information again. A second error screen appears (Figure 8–2).

Figure 8–2 Second Error Screen



BX0565-97

The system requests that you run the EISA Configuration Utility.

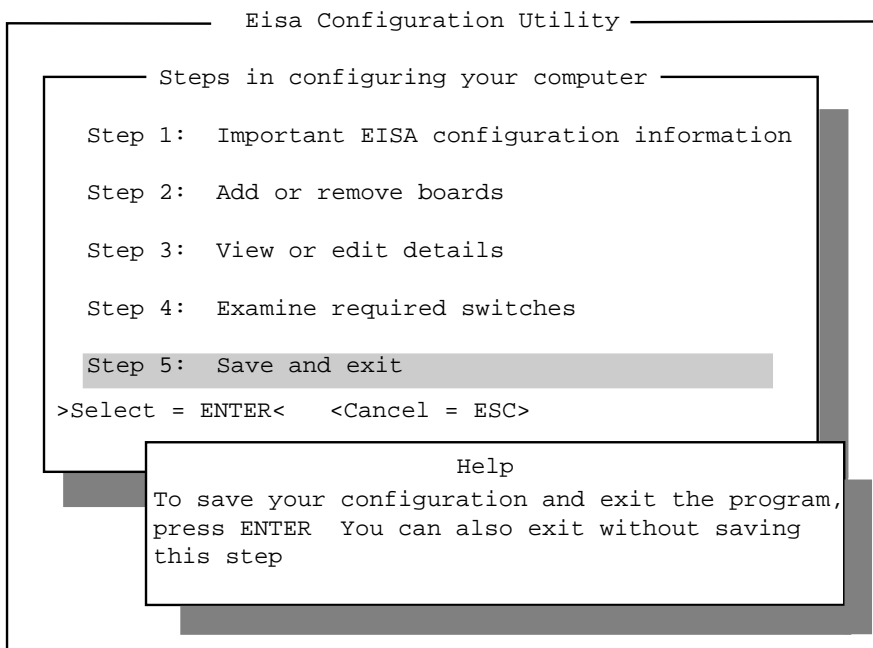
2. Load the ECU diskette for Windows NT (part number AK-QF1GF-CA from kit QC-01YAA-HC) into drive A (the floppy drive you installed when installing the KFE72 hardware).
3. Press F10.

The screen remains blank for some time (several minutes) and ECU is booted.

8.3 Updating the Configuration Using ECU

ECU displays a menu of configuration options. Select step 5. Press ENTER at following screens to confirm the configuration and to reboot.

Figure 8-3 ECU Configuration Screen



BX0564-97

CAUTION: Do not attempt to make configuration changes using ECU here. You are only running ECU to initialize the NVRAM on the standard I/O module (B2110-AA).

The EISA Configuration Utility presents several screens allowing you to save the new configuration:

1. At the third screen (see Figure 8–3), use the arrow keys to select Step 5, “Save and exit.”
2. ECU then asks you to confirm the action. Press ENTER.

ECU asks if you want to reboot. Press ENTER.

*NOTE: With the **auto_action** variable set to **boot**, AlphaBIOS is started and returns to the boot screen automatically. To return to the SRM console once Windows NT has started, select “Shut Down” from the Windows NT task bar, and then select Shut Down and Restart from the options displayed. Press the Secure button (GS60 or 8200), or turn the keyswitch to Secure (GS140 or 8400) or Off (GS60E) before AlphaBIOS starts. The system will halt after initialization with an SRM console prompt. Press the Secure button to out (GS60 or 8200), or turn the keyswitch to Enable (GS140 or 8400) or Off (GS60E) and you can enter SRM console commands. Type the **alphabios** command to return to AlphaBIOS Setup and/or Windows NT.*

Chapter 9

Running ECU from the SRM Console for *Tru64 UNIX* Systems

This chapter tells how to complete the installation of the KFE72 by running the EISA Configuration Utility from the SRM console for *Tru64 UNIX* systems.

Sections in this chapter include:

- SRM Commands
- Updating the Configuration Using ECU

9.1 SRM Commands

Before booting *Tru64 UNIX*, you need to ensure that certain environment variables are set, and run the EISA Configuration Utility. Issue the commands shown below and then initialize the system, as shown in Example 9-1.

Example 9-1 SRM Commands for *Tru64 UNIX*

```
P01>>> set mode advanced ❶
P01>>> set arc_enable on ❷
P01>>> set os_type unix ❸
P01>>> set console serial ❹
P01>>> init ❺
.
.
.
[system self-test and several lines initializing devices]
.
.
.
```

Before running the EISA Configuration Utility (ECU):

NOTE: Verify that your system has been upgraded to the minimum SRM console revision V5.1-30.

1. Plug in and turn on the graphics monitor, if it has not been turned on already.
2. Go to the SRM console and type the **set mode advanced** command (see ❶ in Example 9-1).
3. Use the **set arc_enable on** command (see ❷) to enable running ECU from the SRM console).
4. Use the **set console serial** command (see ❸) to define the console terminal as the serial terminal device.
5. Use the **set os_type unix** (see ❹).
6. Use **init** to initialize these variables (see ❺).

9.2 Updating the Configuration Using ECU

Load the ECU floppy diskette for *Tru64 UNIX* into the console load device (installed as part of the KFE72 installation process described earlier. Type the `runecu` command from the SRM console. Follow the instructions until you reach the “Steps in configuring your computer” menu. Select Step 5 by pressing the 5 key on the numeric keypad.

Example 9-2 Run the EISA Configuration Utility

```
P01>>> runecu ❶
.
.
.
[informational displays; press Enter to continue]
.
.
.
+-----EISA Configuration Utility-----+ ❷
|
|           Steps in configuring your computer
|
| Step 1:   Important EISA configuration information
| Step 2:   Add or remove boards
| Step 3:   View or edit details
| Step 4:   Examine required switches
| Step 5:   Save and exit
|
|           .
|           .
|           .
+-----+

```


1. Load the EISA Configuration Utility diskette for *Tru64 UNIX* (part number AK-Q2CRM-CA) into the system load device (the floppy drive you just installed as part of the KFE72).

2. Type **runecu** to start the EISA Configuration Utility (see ❶ in Example 9-2).

CAUTION: Do not attempt to make configuration changes using ECU here.

You are only running ECU to initialize the NVRAM on the standard I/O module (B2110-AA).

3. You may be asked to enter the date and time, as shown below. Type the correct date and time and press Enter.

```
Invalid date. The correct date must be entered before continuing
Please enter the date in the form [yyyymmddhhmm] 199805081530
Loading image...
Transferring control...
```

4. The EISA Configuration Utility presents several informational screens. Press Enter until you see the screen shown at ❷ in Example 9-2.

5. Type the 5 character on the numeric keypad to select “Save and exit.”

NOTE: The numeric keypad 5 key works for any serial console terminal; using the arrow keys may not function properly on some terminals.

6. ECU then asks for confirmation. With the screen highlighted on the following display, press Enter.

```
Save the configuration and restart the computer
```

7. ECU then presents you with a screen showing several options. Remember that you do not want to make configuration changes here. As directed, remove the diskette from the drive and press Enter.

Appendix A

PCI Device Restrictions on the Primary PCI Subsystem

The primary PCI adapter (DWLPB) contains the KFE72, the Windows NT console subsystem including the PCI graphics module (PBXGB). The primary PCI adapter is the one connected to Hose 1 (not Hose 0) of the KFTHA in TLSB slot 8 or the only hose of the KFTIA in TLSB slot 8, which is logical Hose 1.

A.1 PCI VGA Graphics

The PBXGB (TGA2) graphics adapter is the only PCI VGA graphics adapter supported for this system. Use of other PCI VGA devices in the primary PCI adapter may result in unpredictable system behavior resulting in a system crash.

NOTE: PCI devices using addresses in the lower 64K of I/O address space may be installed in any PCI adapter other than the primary PCI adapter.

A.2 PCI Devices Hardwired to EISA I/O Address Space

PCI devices other than the PBXGB that use or have addresses “hardwired” to the lower 64K of EISA or PCI I/O address space cannot be installed in the primary PCI adapter. Use of such devices in the primary PCI adapter may cause unpredictable system behavior resulting in a system crash. Installation of these devices in a PCI adapter other than the primary will not have this effect. Examples of such PCI devices may include a PCI IDE controller, which, for software backwards compatibility reasons, must contain addresses in the IDE address space which is within the lower 64K of I/O address space.

A.3 Lower 64K I/O Address Space Allocation and Restriction

The connector module (part number 54-25133-01) resides in PCIA slot 2. This module contains a mode jumper. The following describes the allocation of the lower 64K of PCI/EISA I/O address space relative to this jumper position. I/O addresses above 64K are allocated to all PCI slots, independent of jumper position.

A.3.1 PCI Graphics Mode — Pins 1 and 2 Connected (KFE72 Mode)

The jumper must be in this position to support the PBXGB PCI graphics adapter for Windows NT. With the jumper in this position, addresses within the VGA address space, required by the PBXGB, are deallocated from the EISA slots and made available to the PCI slots. In this mode, the following addresses are directed to PCI slots 4 through 11:

PCI memory

0x00000000 – 0x000C7FFF

0x00100000 – 0x007F7FFF

0x00800000 – 0xFFFFFFFF

PCI I/O

0x0094

0x0100 – 0x0103

0x03B0 – 0x03BB

0x03C0 – 0x03DF

0x46E8 – 0x46E8

These addresses are not available to the EISA slots. All other addresses in the lower 64K are available to the EISA slots. PCI devices using addresses in the lower 64K other than those indicated above cannot be installed in the primary PCI adapter, otherwise unpredictable system behavior will result.

A.3.2 ISA Graphics Mode — Pins 2 and 3 Connected (KFE70)

This mode is used to support EISA/ISA graphics adapters.

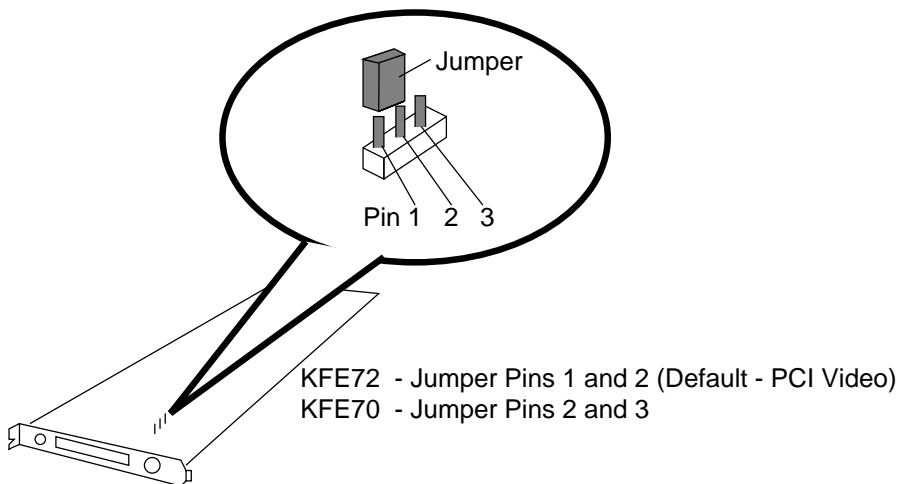
In this mode, the following addresses are directed to PCI slots 4 through 11.

PCI Memory

0x00800000 – 0xFFFFFFFF

All other EISA addresses are available to the EISA slots. PCI devices using addresses in the lower 64K of I/O space cannot be installed in the primary PCI adapter, otherwise unpredictable system behavior will result.

Figure A-1 Jumper Settings on the Connector Module



BX-0598-98

Index

A

Address space, PCI, A-2
AlphaBIOS, 8-1, 8-2
 Setup, 8-2
Alphabios command, 8-3

C

Cable

14-04101-02 (KFE72-AA/BA), 3-17
17-03566-15 (KFE72-AA/EA),
 3-21
17-03566-15 (KFE72-LA),
 4-25
17-04016-01 (KFE72-BA/FA), 2-21
17-04016-01 (KFE72-LA),
 4-27
17-04016-01 (KFE72-UG), 5-14
17-04016-01 (KFE72-AA/EA),
 3-23
17-04046-01 (KFE72-BA/FA), 2-13
17-04100-01 (KFE72-BA/FA), 2-15
17-04100-01 (KFE72-LA),
 4-23
17-04100-02 (KFE72-AA/EA),
 3-17
17-04101-01 (KFE72-BA/FA), 2-15
17-04101-01 (KFE72-LA),
 4-23
17-04115-01 (KFE72-AA/EA),
 3-11
17-04115-01 (KFE72-BA/FA), 2-11
17-04115-01 (KFE72-DA), 6-9
17-04115-01 (KFE72-LA),
 4-13
17-04115-01 (KFE72-UG), 5-11
17-04116-01 (KFE72-AA/EA), 3-7,
 3-9
17-04116-01 (KFE72-BA/FA), 2-7,
 2-9
17-04116-01 (KFE72-DA), 6-9
17-04116-01 (KFE72-LA), 4-9, 4-
 11
17-04116-01 (KFE72-UG), 5-7, 5-9
17-04670-01 (KFE72-BA/FA), 2-19
17-04670-01 (KFE72-LA),
 4-25
17-04670-02 (KFE72-AA/EA),
 3-21
between CD-ROM and connector
 module, 3-20
BN21H-1E (KFE72-BA/FA), 2-19
CD-ROM power, 3-21
CD-ROM signal, 3-21
installation (GS60/8200), 2-18
CD-ROM, 1-3
CD-ROM box
 preparing for installation, 3-16
 removal, 3-13
 replacing, 3-18
CD-ROM tray (GS60E), 4-14
Compaq Tru64 UNIX
 running ECU from the SRM, 9-1
 serial port module required, 2-7,
 3-7, 4-9
Configuration
 saving, 8-7, 9-5
 updating, 8-6
Connector module
 jumper, A-1, A-3
Control panel bezel (GS60/8200), 2-16
Control panel removal (GS60/8200), 2-12

D

DWLPA, 5-4
DWLPB, 1-3, 5-4
 front panel slots, 1-1
 sliding out (KFE72-AA/EA) 3-5
 sliding out (KFE72-BA/FA), 2-5

- sliding out (KFE72-DA), 6-4
- sliding out (KFE72-LA), 4-7
- sliding out (KFE72-UG), 5-4

E

ECU

- from AlphaBIOS, 8-1
- from SRM Console, 9-1

EISA address space, A-1

EISA Configuration Utility

- from AlphaBIOS, 8-1
- from SRM Console, 9-1

EISA/ISA graphics adapters, A-3

EMI gasket, 2-7, 3-7, 4-9

Environment variables

- Compaq Tru64 UNIX*, 9-2
- Windows NT, 8-2

F

Ferrite sleeve

- installation (KFE72-AA/EA), 3-22
- installation (KFE72-BA/FA), 2-20
- installation (KFE72-LA), 4-26

Floppy drive installation

- GS140/8400, 3-14
- GS60/8200, 2-14
- GS60E, 4-14

Front panel slots, 1-1

G

Graphics console

- enabling for *Compaq Tru64 UNIX*, 9-3
- enabling for Windows NT, 8-3

Graphics module, 3-11

Graphics monitor, 1-3

- attaching, 3-22

Graphics port, 1-1

H

Hose location, 1-3

I

Installation flowchart

- full, 1-3

- KFE72-AA/EA, 3-2

- KFE72-BA/FA, 2-2

- KFE72-DA, 6-2

- KFE72-LA, 4-4

- KFE72-UG, 5-2

Installing modules

- KFE72-AA/EA, 3-4

- KFE72-BA/FA, 2-4

- KFE72-DA, 6-4

- KFE72-LA, 4-6

- KFE72-UG, 5-5

Instances, 1-1

K

Keyboard, 1-3

Keyboard port, 1-1

KFE70-UG

- upgrading to a KFE72, 5-1

KFE72

- purpose, 1-1

- front panel slots, 1-1

KFE72-AA/EA

- installation in GS140/8400, 3-1

- kit contents, 3-3

KFE72-BA/FA

- installation in GS60/8200, 2-1

- kit contents, 2-2

KFE72-DA

- installation, 6-1, 6-2

- kit contents, 6-3

KFE72-LA

- installation in GS60E, 4-1

- kit contents, 4-4

KFE72-UG

- installation, 5-1

- kit contents, 5-3

KFTHA, 1-3

KFTIA, 1-3

Kit contents

- KFE72-AA/EA (GS140/8400), 3-3

- KFE72-BA/FA (GS60/8200), 2-2

- KFE72-DA, (GS60/8200 or

- GS140/8400 or GS60E), 6-3

- KFE72-LA (GS60E), 4-4

KFE72-UG (GS60/8200 or
GS140/8400), 5-3

M

Modules

- inserting (KFE72-AA/EA), 3-6
- inserting (KFE72-BA/FA), 2-6, 4-8
- inserting (KFE72-UG), 5-6

Mouse port, 1-1

N

NVRAM, 8-7, 9-5

P

Parallel port, 1-1, 3-11

Part numbers

- KFE72-AA/EA (GS140/8400), 3-3
- KFE72-BA/FA (GS60/8200), 2-3
- KFE72-DA, 6-3
- KFE72-LA (GS60E), 4-5

PBXGB, A-1, 5-11

- alias pins, 2-11, 3-11, 4-13, 5-11
- installing with KFE72-AA kit, 3-11
- installing with KFE72-BA kit, 2-11
- rotary switch setting, 2-11, 3-11,
4-13, 5-11
- VGA enable pins, 2-11, 3-11, 4-13,
5-11

PCI address space, A-2

PCI card cage

- sliding out (KFE72-BA/FA), 2-4
- sliding out (KFE72-LA), 4-6

Ports, 1-1

Primary PCI adapter, A-1

R

RRDCD-CA CD-ROM, 1-3

Runecu command, 9-5

S

Self-test, 7-2

Serial ports, 1-1

Set auto_action boot command
(Windows NT), 8-3

Set console command (*Tru64 UNIX*),
9-3

Set console command (Windows NT),
8-3

Set os_type command, 8-3

Set os_type command (*Tru64 UNIX*),
9-3

Show configuration command, 7-4

Show console comand, 8-3

SRM commands

- Compaq Tru64 UNIX*, 9-2
- Windows NT, 8-2

T

Tru64 UNIX

- kit installation for GS140/8400, 3-1
- kit installation for GS60/8200, 2-1
- kit installation for GS60E, 4-1
- kits for, 1-1
- needed supplements to kit, 1-3

V

Verification, 7-1

VGA graphics, A-1

W

Windows NT

- kit installation for GS140/8400, 3-1
- kit installation for GS60/8200, 2-1
- kit installation for GS60E, 4-1
- kit installation for KFE70 upgrade,
5-1
- kits for, 1-1
- needed supplements to kit, 1-3
- returning to the SRM console, 8-7
- running ECU from AlphaBIOS, 8-1
- SRM commands, 8-2

