DEC FDDIcontroller/TURBOchannel
(Models DEFTA-AA, UA, and DA)

digital™   **Installation**

DEC FDDIcontroller/TURBOchannel (Models DEFTA-AA, DA, and UA)

Installation

Part Number: EK–DEFT2–IN. A01

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This manual describes how to install and verify the operation of the DEC FDDIcontroller/TURBOchannel controller (Models DEFTA-AA, DA, and UA).

Revision/Update Information: This is a new manual.

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Safety ⚠

Any warning or caution that appears in this manual is defined as follows:

Warning	Contains information to prevent personal injury.
Caution	Contains information to prevent damage to equipment.
Vorsicht	Enthält Informationen, die beachtet werden müssen, um den Benutzer vor Schaden zu bewahren.
Achtung	Enthält Informationen, die beachtet werden müssen, um die Geräte vor Schaden zu bewahren.
Danger	Signale les informations destinées à prévenir les accidents corporels.
Attention	Signale les informations destinées à prévenir la détérioration du matériel.
Aviso	Contiene información para evitar daños personales.
Precaución	Contiene información para evitar daños al equipo.

The cautions you must observe for the hardware described in this manual appear below in English, German, French, and Spanish, along with the pages on which these safety messages appear.

WARNING ⚠

Some fiber optic equipment can emit laser light that can injure your eyes. Never look into an optical fiber or connector port. Always assume the cable is connected to a light source.
[Pages 1–5, 2–6, B–1.]

VORSICHT

Schauen Sie niemals direkt in ein Glasfaserkabel oder einen Glasfaseranschluß. Die Laserstrahlen in faser-optischen Geräten können Augenverletzungen verursachen.

DANGER

Certains équipements utilisant les fibres optiques peuvent émettre des rayonne-ment laser dangereux pour les yeux. Ne vous avisez jamais de regarder par l'extrémité d'une fibre optique ou dans l'ouverture d'un connecteur. Considérez toujours que le câble est relié à une source lumineuse.

AVISO

Algunos equipos de fibra óptica pueden emitir luz láser que daña los ojos. No sedebe mirar en una puerta de conector o fibra óptica. Siempre se debe suponer que el cable está conectado a la luz.

CAUTION ⚠

Static electricity can damage modules and electronic components. Digital recommends using a grounded antistatic wrist strap and a grounded work surface when handling any modules. [Pages 2–2, 2–4, 4–5.]

ACHTUNG

Module und elektronische Komponenten können durch elektrostatische Entladungen beschädigt werden. Benutzen Sie immer eine antistatische Gelenkmanschette und eine geerdete Arbeitsunterlage, wenn Sie am offenen Gerät arbeiten.

ATTENTION

Les charges excessives d'électricité statique peuvent endommager les modules et les composants électroniques. Digital conseille l'utilisation d'un bracelet de masse et d'un plan de travail mis à la terre lors de la manipulation des modules.

PRECAUCIÓN

La electricidad estática puede dañar los componentes electrónicos y los módulos. Digital recomienda que se utilicen cintas de pasadores y superficies de trabajo conectadas a tierra al trabajar con cualquier módulo.

Preface

This manual explains how to install the DEC FDDIcontroller/TURBOchannel controller into a TURBOchannel-based platform and how to verify its installation and operation.

Intended Audience

This manual is for the user who has some technical background installing system hardware.

Structure of This Manual

This manual has four chapters and two appendixes, as follows:

Chapter 1	Describes the DEC FDDIcontroller/TURBOchannel controller.
Chapter 2	Explains how to unpack, install, and verify the installation of the DEC FDDIcontroller/TURBOchannel controller.
Chapter 3	Provides procedures for verifying your system configuration, booting your system, and verifying a valid communications link to the FDDI network.
Chapter 4	Explains how to isolate and diagnose controller-related problems indicated by the LED indicators and system error messages.
Appendix A	Describes how to obtain Requests For Comments (RFCs) and Digital's Private Management Information Base (MIB) using electronic mail and File Transfer Protocol (ftp).
Appendix B	Describes the connector pin assignments for modular jacks (MJs) used on the controllers.

Related Documents

Additional information relative to the DEC FDDIcontroller/TURBOchannel
and Fiber Distributed Data Interface (FDDI) networks can be found in the following
documents:

- Your workstation or system documentation kit

- *DECconcentrator 500 Installation*
  (Order No. EK-DEFCN-IN)

  Describes how to install and configure the DECconcentrator 500.

- *DECconcentrator 900MX Installation*
  (Order No. EK-DEF6X-IN)

  Describes how to install and configure the DECconcentrator 900MX.

- *Fiber Distributed Data Interface System Level Description*
  (Order No. EK-DFSLD-SD)

  Describes the FDDI system, how it works, and the role of the individual components.

- *Fiber Distributed Data Interface Network Configuration Guidelines*
  (Order No. EK-DFDDI-CG)

  Describes the guidelines for connecting devices to an FDDI network. It also
  includes network configuration examples.

- *A Primer on FDDI: Fiber Distributed Data Interface*
  (Order No. EC-H1580-42/92 07), Version 2.0

  Describes the features, topologies, and components of the FDDI local area
  network (LAN) standard.

Conventions Used in This Manual

This manual uses the following conventions:

`Special type`	Indicates a literal example of system output.
bold	Indicates a command format that you enter.
italic type	Indicates a variable for which you specify a value. Also used to emphasize complete titles of manuals.
$\boxed{\textit{Key}}$	Indicates that you press the specified key. For example, $\boxed{\text{Return}}$ means that you press the Return key.
$\boxed{\textit{Ctrl/x}}$	Indicates that you hold down the Control key and then press the key specified by *x*.

The postage-paid Reader's Comments form on the last page of this document requests your evaluation of this document to assist us in preparing future documentation.

1

Introduction

The DEC FDDIcontroller/TURBOchannel controller (hereafter called the controller) provides TURBOchannel-based computers with a direct link between the computer's TURBOchannel slot and a Fiber Distributed Data Interface (FDDI) network.

Depending on the model and the topology that you have, the controller can serve as either a single attachment station (SAS) or a dual attachment station (DAS) and can connect to the FDDI network using fiber-optic or Category 5 UTP copper cable (see Table 1–1).

Table 1–1:   Controller Models

Part Number	Description
DEFTA-AA	One-card, single attachment station (SAS) controller with multimode optics and ST-type connectors
DEFTA-UA	One-card, single attachment station (SAS) controller with shielded RJ-45 modular connector. Accepts Category 5 unshielded twisted pair (UTP) or Category 5 sheath-shielded, 100-ohm twisted-pair (TP) cable with TP-MIC plug
DEFTA-DA	One-card, dual attachment station (DAS) controller with multimode optics and ST-type connectors

The SAS controllers connect to the FDDI network through an FDDI-compliant concentrator, such as the DECconcentrator 900MX, using fiber-optic cable (for model DEFTA-AA) or Category 5 UTP copper cable (for model DEFTA-UA).

The DAS controller (model DEFTA-DA) connects directly to the FDDI ring through fiber-optic cable.

Copper Category 5 UTP and Category 5 sheath-shielded, 100-ohm TP cable comply with FDDI standards and interoperate with products that implement the American National Standards Institute (ANSI) Twisted Pair-Physical Medium Dependent (TP-PMD) standard.

Figure 1–1 shows how a SAS or DAS configured TURBOchannel controller option interfaces to the FDDI network using fiber-optic or Category 5 TP cable.

Figure 1–1:   SAS/DAS Controllers Configured in an FDDI Network
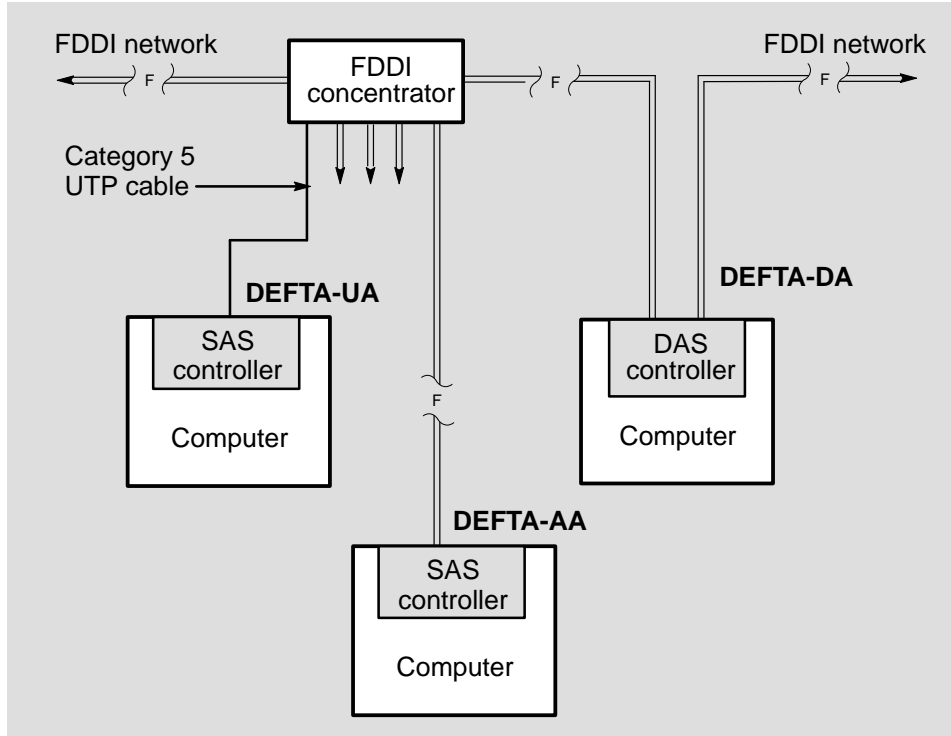
LKG-8765-93I

1.1 Fiber-Optic SAS Controller (DEFTA-AA)

The fiber-optic SAS controller (Figure 1–2) consists of one card that plugs into the computer's TURBOchannel I/O slot. A single set of ST-type connectors provides the fiber-optic interface to an active FDDI network (through a concentrator such as the DECconcentrator 900MX).

The controller contains onboard diagnostics that indicate the controller and port operating status via a single, dual-color (green or red), PHY light-emitting-diode (LED) that is located on the controller front panel. Refer to Chapter 4 for more information about the operation of the PHY LED.

Figure 1–2:   Fiber-Optic SAS Controller (DEFTA-AA)

ST-type connector

PHY LED

ST-type connector
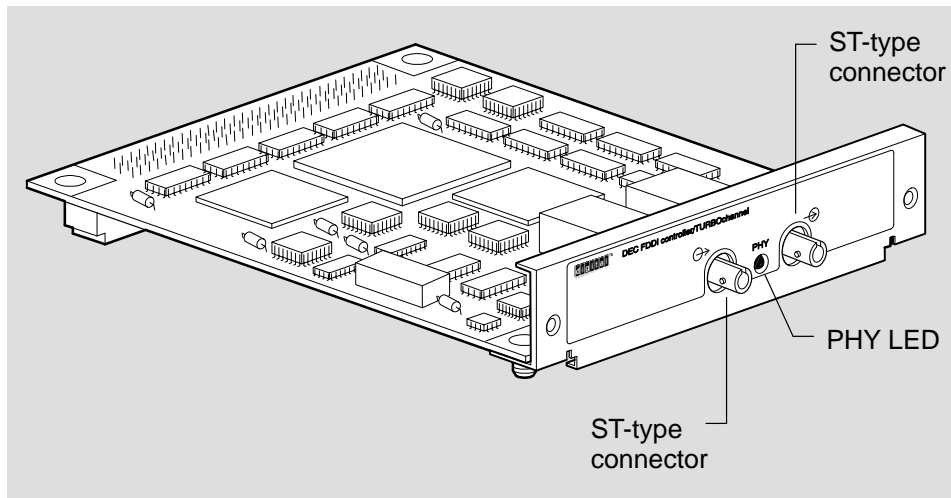
LKG-8766-93I

1.2 UTP SAS Controller (DEFTA-UA)

The UTP SAS controller (Figure 1–3) consists of a parent card and an attached daughter card that is connected by a 50-pin connector. The parent card plugs into a single TURBOchannel I/O bus slot. A single RJ-45 connector that accepts Category 5 UTP cable provides the interface to an active FDDI network (through a concentrator such as the DECconcentrator 900MX).

The controller contains onboard diagnostics that indicate the controller and port operating status via two, dual-colored (green or yellow) light-emitting-diodes (LEDs) located on the controller front panel. The LEDs (FRU LED (⊦) and PHY LED) are shown in Figure 1–3. Refer to Chapter 4 for more information about the operation of the FRU LED (⊦) and PHY LED.

Figure 1–3:   UTP SAS Controller (DEFTA–UA)
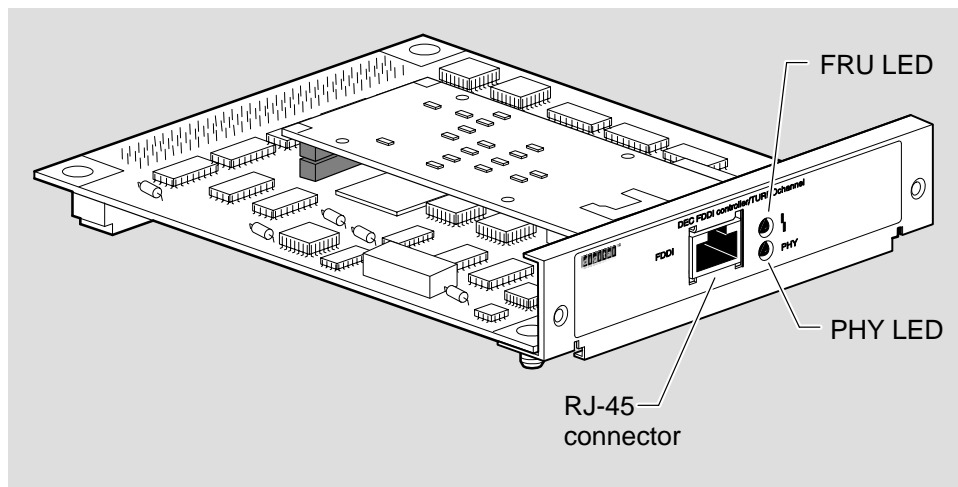
LKG-8767-93I

1.3 Fiber-Optic DAS Controller (DEFTA-DA)

The fiber-optic DAS controller (Figure 1–4) consists of one card that plugs into the computer's TURBOchannel I/O slot. Two sets of ST-type connectors provide the fiber-optic interface directly to an active FDDI network.

The controller contains onboard diagnostics that indicate the controller and port operating status via two, dual-colored (green or red) PHY light-emitting-diodes (LEDs) located on the controller front panel. Refer to Chapter 4 for more information about the operation of the PHY LEDs.

Figure 1–4:   Fiber-Optic DAS Controller (DEFTA-DA)
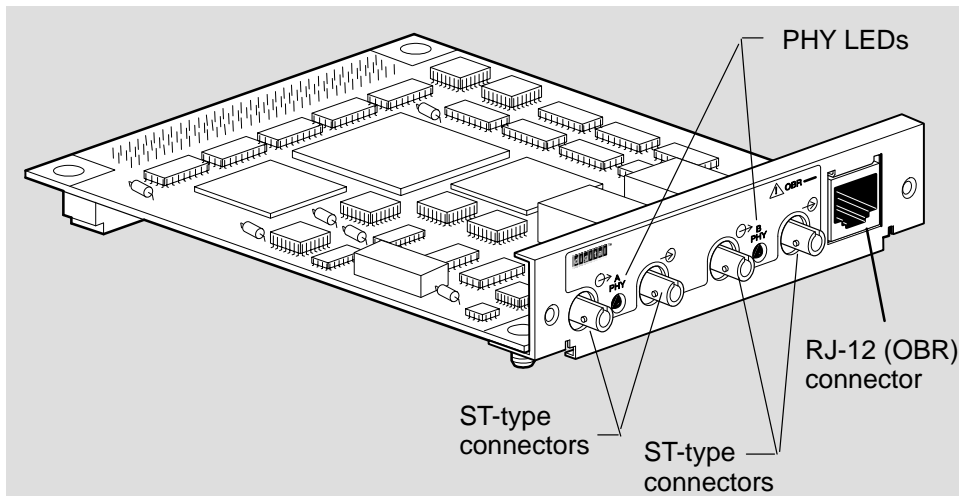
LKG-8768-93I

The fiber-optic DAS controller also contains an RJ-12 connector for connecting an optional optical bypass relay (OBR). The OBR maintains connectivity of the FDDI ring in the absence of power or during fault conditions in the node.

WARNING ⚠

To prevent personal injury or equipment damage, **do not** insert telecommunications cabling into the optical bypass relay connector.

Refer to Appendix B for more information on the OBR.

2

Installing the Controller

This chapter explains how to install and verify the installation of the
DEC FDDIcontroller/TURBOchannel controller. Chapter 3 describes how to verify
your system configuration and boot your operating system after you install and
verify the controller.

Installing your controller includes:

1. Checking the contents of your shipment

2. Preparing the computer for installation

3. Installing the controller

4. Connecting to the network

5. Verifying the installation

2.1 Checking the Contents of Your Shipment

Check the contents of your shipment as follows:

CAUTION ⚠

Static electricity can damage modules and electronic components. Digital recommends using a grounded antistatic wrist strap and a grounded work surface when handling any modules.

1. Attach one end of the antistatic wrist strap to your wrist and the other end to an earth ground (⏚).

2. Remove the contents from the box and place them nearby until you are ready to install the controller.

3. Check the shipment for damage and missing parts (see Figure 2–1 for contents of shipment). In case of damage, contact your delivery agent and your Digital sales representative. If parts are missing, contact your Digital sales representative.

Figure 2–1:   Contents of Shipping Package

☐ DEC FDDIcontroller/TURBOchannel

☐ *DEC FDDIcontroller/TURBOchannel Installation* manual (this manual)

☐ Screws

LKG-7347-93I

2.2 Preparing the Computer for Installation

To prepare the computer for installation, you need a Phillips-head screwdriver and an antistatic wrist strap kit.

Perform the following steps:

1. Set the computer power switch to the OFF (○) position.

2. Remove the cover from the computer unit. Refer to your computer documentation for instructions on how to do this.

3. Refer to your computer documentation to determine which slot you can use.

> **NOTE**
>
> Some systems are not equipped for the DEC FDDIcontroller/TURBOchannel network controller. You may need to install a TURBOchannel system adapter into your system before installing the controller. Refer to your system documentation for specific requirements.

4. Remove the option slot cover from one of the TURBOchannel option slots (see Figure 2–2). Use a Phillips-head screwdriver to remove the two screws that hold the slot cover in place. Save the option slot cover and screws.

Figure 2–2: Removing the Option Slot Cover

Slot cover

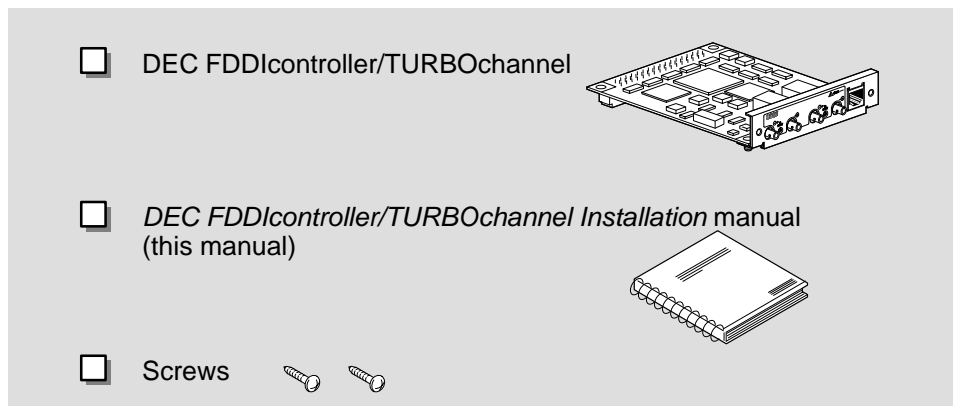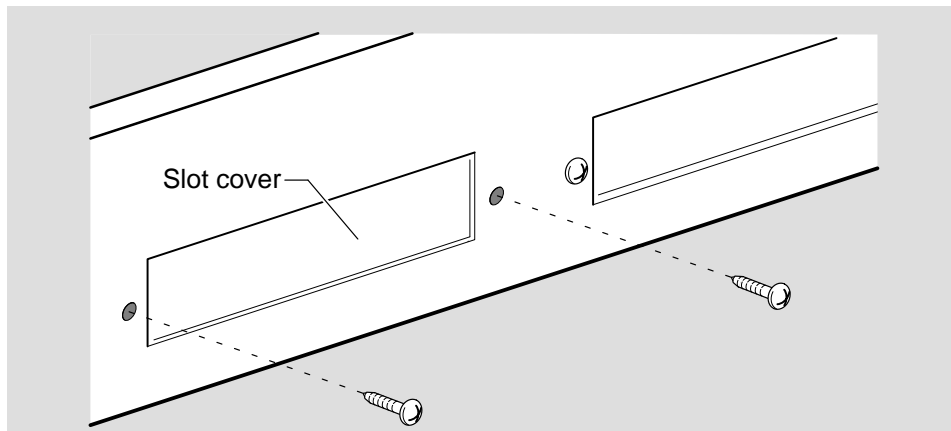LKG-7348-92I

2.3 Installing the Controller

Install the controller into the computer as follows:

CAUTION ⚠

> Static electricity can damage modules and electronic components. Digital recommends using a grounded antistatic wrist strap and a grounded work surface when handling any modules.

1. Attach one end of the antistatic wrist strap to your wrist and the other end to the grounded metal chassis of the computer.

2. Hold the controller by the edges and position it so that it is parallel with the bottom of the computer (see Figure 2–3), its TURBOchannel 96-pin connector is facing down, and its network interface connectors are facing the option slot opening in the back of the computer.

Figure 2–3: Installing the Controller
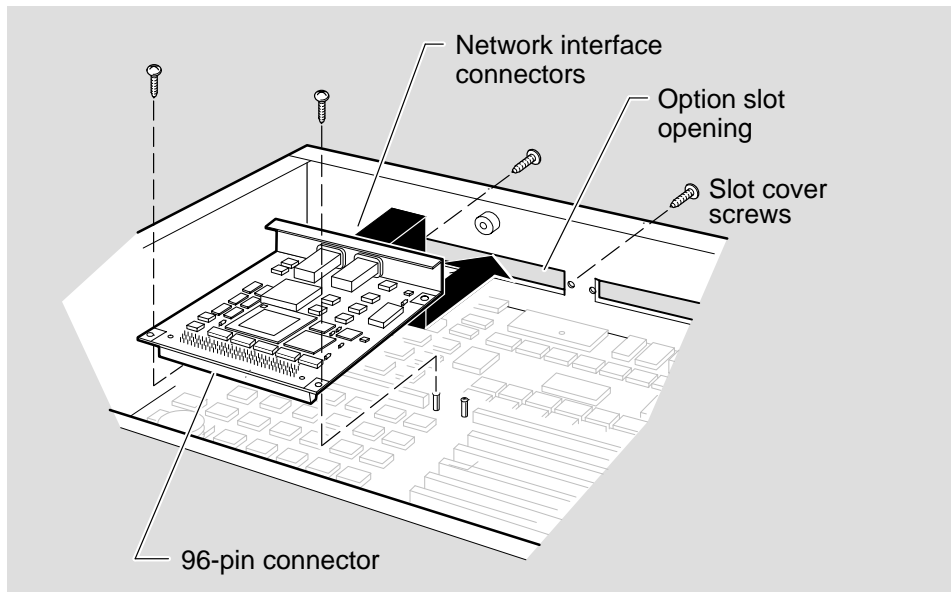
LKG-8769-93

3. Insert the controller network interface connectors through the option slot opening in the back of the computer unit.

4. Align the controller's 96-pin connector with the TURBOchannel slot on the computer's circuit card, then firmly seat the controller into the TURBOchannel slot.

5. Fasten the controller to the computer's circuit card (near the 96-pin connector) with the two screws supplied in the controller shipping package.

NOTE

If your unit has two nylon clips on the 96-pin connector, push the controller onto the nylon pins and make sure the clips snap in place. You do not need to use screws.

6. Insert the two screws, which held the metal slot cover on, into the back of the computer to hold the controller in place (see Figure 2–3).

7. Remove the antistatic wrist strap from your wrist and from the computer. Close the computer.

8. Go to Section 2.4 to connect the controller to the network.

2.4 Connecting to the Network

This section describes how to connect the FDDI cables (fiber-optic ST-type and Category 5 UTP) to the controller.

If the other end of the FDDI cable is not already connected to the appropriate FDDI network or network device (typically a concentrator), contact the network manager to connect the cable.

Valid FDDI configurations can be implemented as described in the *Fiber Distributed Data Interface Network Configuration Guidelines* manual.

To install the FDDI cables and verify a network connection, complete the following steps:

WARNING ⚠

Some fiber-optic equipment can emit laser light that can injure your eyes. Never look into an optical fiber or connector port. Always assume the cable is connected to a light source.

NOTE

Make sure that the bend radius of any fiber-optic cable is 2.5 cm (1 in) or greater. To avoid optical power loss, do not touch the fiber ends.

1. Connect the FDDI cable to the controller:

   a. To connect the FDDI cables to the fiber-optic SAS or DAS controllers, go to Section 2.4.1.

   b. To connect the FDDI cables to the UTP SAS controller, go to Section 2.4.2.

2.4.1 Connecting the Fiber-Optic SAS or DAS Controllers to the Network

To connect the fiber-optic SAS or DAS controllers to the network, perform the following steps:

1. Remove the dust caps from the ST-type connectors (see Figure 2–4).

2. Align the tab on the transmit cable connector plug with the slot on the transmit port connector (labeled ⊖→). Insert and turn the connector plug clockwise to lock it into place.

3. Align the tab on the receive cable connector plug with the slot on the receive port connector (labeled ⊖→). Insert and turn the connector plug clockwise to lock it into place.

4. Go to Section 2.5 to verify the installation.

Figure 2–4: Connecting ST-Type Cables to Fiber-Optic SAS or DAS Controllers
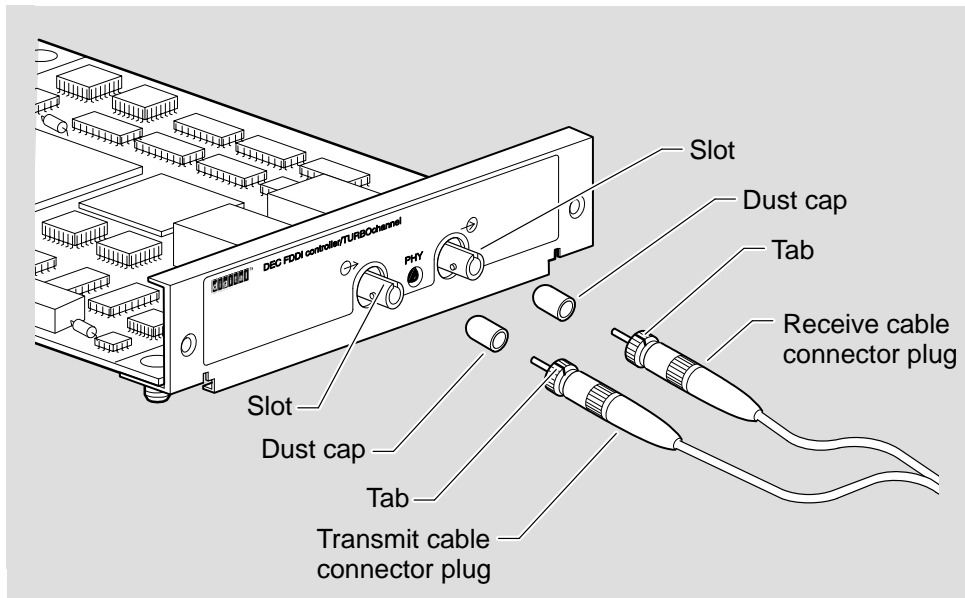
LKG-8770-93I

2.4.2 Connecting the UTP SAS Controller to the Network

To connect the UTP SAS controller to the network, perform the following steps:

1. Align the release tab on the Category 5 UTP cable plug with the keyway on the controller's connector (see Figure 2–5).

2. Insert the plug into the connector, ensuring that the release tab snaps into the locked position.

3. Go to Section 2.5 to verify the installation.

Figure 2–5:   Connecting Category 5 UTP Cable to the UTP SAS Controller
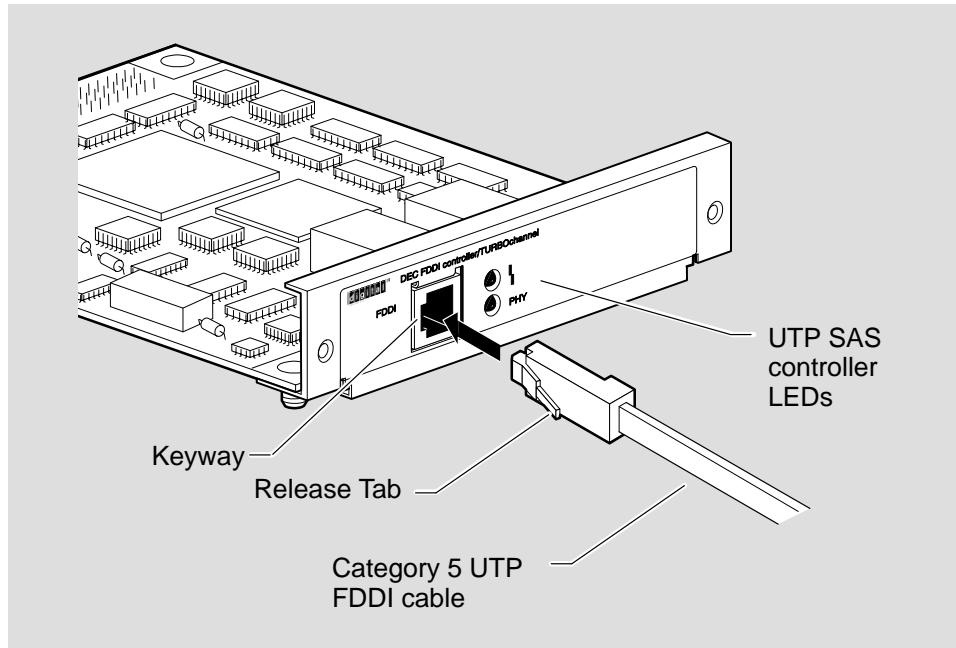
LKG-8771-93I

2.5 Verifying the Installation

Turning on the system initiates the controller self-test. When the self-test is completed, but before the system boots, the PHY LED(s) (and the FRU LED for model DEFTA-UA) on the controller will be OFF, indicating the controller is working properly.

For information about your system's self-test, refer to your system documentation.

Complete the following steps to verify that the controller is installed and operating properly in your computer:

1. Set the the computer's power switch to the ON (|) position and observe the controller LED(s).

2. Note the following events (within 10 seconds after turning on the computer):

    a. The controller LEDs flash green for approximately 1 second.

    b. When the controller passes the power-up self-test all LEDs turn off.

3. If you observe any indication other than a successful self-test, turn off the computer, reseat the installed controller card(s), then repeat step 1.

4. If the self-test fails repeatedly, refer to the problem-solving procedures in Chapter 4.

After you have verified that the controller successfully passed the power-up self-test, go to Chapter 3 to verify your system configuration.

3

System Verification

This chapter describes how to verify your system configuration, boot your system, and verify that you have a valid communications link to the FDDI network.

3.1 Verifying the System Configuration

Once the computer successfully completes self-test, verify your system configuration as follows:

1. Display your controller information by typing the following at the system prompt:

   >>> **t tc***n* **cnfg** `Return`

   where *n* represents the slot number that you specify for the controller.

   The system displays a message similar to the following example:

   ```
   DEC PMAF – FA  V5.3a   (fddi :08–00–2b–a0–1f–04)
   >>>
   ```

   a. If your controller information is displayed, go to Section 3.2.

   b. If your controller information is not displayed, go to step 2.

2. If your controller information does not appear in the configuration display, perform the following steps:

   a. Check the controller LEDs for the following conditions:

      i.   Models DEFTA-AA, DEFTA-DA — Red PHY LED is on.

      ii. Model DEFTA-UA — Yellow FRU LED is on.

      Either of the above conditions indicates that the controller failed self-test.

      The failure may be caused by improper installation (for information on solving hardware problems, refer to Section 4.3).

   b. Set the computer power switch to the OFF (○) position.

   c. Check the connections on the controller and the computer.

   d. Perform the controller self-test (refer to Section 2.5) and then repeat this system configuration procedure.

3. If the problem persists, contact your Digital Services representative. Otherwise, go to Section 3.2.

3.2 Booting the System

Once you verify the configuration, complete the following:

1. Boot the operating system (refer to your operating system documentation for instructions on how to boot the system).

2. After booting the operating system, verify that the controller's PHY LED is on green (and model DEFTA-UA FRU LED is off).

   This indicates a Link Available state if connected to the network.

If any other condition exists, refer to Chapter 4 for problem-solving information.

The controller is working properly and the installation is now complete.

4

Problem Solving

This chapter explains how to isolate and diagnose controller- or port-related problems indicated by the controller LEDs and the system error messages.

This chapter includes the following sections:

- LED indicators

- Error messages

- Identifying the problem

- Isolating the problem

4.1 LED Indicators

LEDs are used to indicate the status of the controller and the FDDI port. Diagnosing controller problems involves observing the state of the LEDs, both before and after the system is booted. Self-test is initiated automatically after the system is turned on. When the self-test is completed (within 10 seconds after you turn on the system), the LEDs display the status of the controller and, if a fault condition exists, error messages are displayed on the system console.

The LEDs are visible on the controller's front panel (at the back of your computer). Refer to Chapter 1 for a description of the various controller models and for the location of the LEDs.

Table 4–1 lists and describes possible LED states for all controller models.

Section 4.2 lists and describes the format of error messages.

Table 4–1: LED States

LED	Symbol	Color	Normal	Description
PHY	PHY/PHYA	Green	On	On — PHY connection complete
		Green	Flashing	Flashing — PHY connection in progress (or no cable attached)
		Red (yellow for DEFTA-UA)		On — If on after system boots, indicates broken port or Link Confidence Test (LCT) failure; retry loop
				If on before system boots, indicates self-test failure
		Red (yellow for DEFTA-UA)		Flashing — Illegal topology
				Off — Port disabled via management or LED or controller broken
PHY B (DAS only)	PHY B	Green	On	On — PHY connection complete
		Green	Flashing	Flashing — PHY connection in progress (or no cable attached)
		Red (yellow for DEFTA-UA)		On — If on after system boots, indicates broken port or Link Confidence Test (LCT) failure; retry loop
				If on before system boots, indicates self-test failure
		Red (yellow for DEFTA-UA)		Flashing — Illegal topology
				Off — Port disabled via management or LED or controller broken
FRU (DEFTA-UA only)	˥		Off	Off — Self-test (most recent) passed
		Yellow		On — Self-test failed. Problem with controller

4.2 Error Messages

In addition to the LEDs indicating a controller failure, one or more of the following error messages can appear on the system console display:

```
t#/  boot_crc
?TFL: # main_crc test failed [PMAF]
?TFL: # core_ram test failed [PMAF]
?TFL: # pdq test failed [PMAF]
?TFL: # pkt_mem test failed [PMAF]
?TFL: # melmac test failed [PMAF]
?TFL: # ieeerom test failed [PMAF]
?TFL: # intlpbk test failed [PMAF]
?TFL: # extlpbk test failed [PMAF]
?TFL: # dmatst test failed [PMAF]
?TFL: # extmemtest test failed [PMAF]
```

NOTE

> The line beginning with the characters `t#/` is not an error message. It indicates that the test (*testname)* was successful.

The following list explains the format of an error message:

?	When preceding a line of text, indicates that the line is an error message.
TFL	Indicates that the test (*testname*) has failed. If any letters other than TFL appear in this location, call your system manager or your Digital Services representative.
#	Precedes the *testname* in the error message. A number appearing in place of the pound sign (#) indicates the slot location of the controller.

The remainder of the message indicates the test (*testname*) that failed and the controller part number.

4.3 Identifying the Problem

This section helps identify and correct problems that can occur during the installation of the controller.

To isolate and resolve hardware-related problems with your controller, complete the following steps:

1. Reboot the system (refer to your operating system documentation for instructions on how to boot your system).

2. Follow the recommended corrective actions listed in Table 4–2.

3. If the corrective actions listed in the table do not help, complete the steps of the procedure in Section 4.4.

Table 4–2: LED Indications (After System Boot)

Symptom	Corrective Action
FRU yellow LED On	Self-test failed. Problem with controller. Power-cycle the system. If the condition persists, follow recommended actions listed in Section 4.4.
PHY LED Off	Controller not enabled. Ensure that the controller is not management disabled. Check the console for error messages (refer to Section 4.2).
	LED or controller broken, follow recommended actions listed in Section 4.4.
PHY LED steady red (steady yellow for DEFTA-UA)	Link Confidence Test failure. Check cable connections.
PHY LED flashing red (flashing yellow for DEFTA-UA)	Unsupported configuration or ring topology. Notify your system manager. Reconfigure the cable connections or ring topology.
PHY LED flashing green	Unable to connect. No cable attached. Check cable connections. Interchange cable connections. Verify that the other end of the cable is connected.
	Operational fault detected. Check system error log.
PHY LED steady green	Controller enabled. Physical connection established.

4.4 Isolating the Problem

CAUTION ⚠

Static electricity can damage modules and electronic components. Digital recommends using a grounded antistatic wrist strap and a grounded work surface when handling any modules.

1. Attach one end of the antistatic wrist strap to your wrist and the other end to the grounded metal chassis of the computer.

2. Be sure that the controller is firmly inserted into the option slot and that anything connected to the controller is also correctly connected and secure.

3. If you have another (operational) controller, install it into that slot.

   a. If the test no longer fails, the problem is in the controller.

   b. If the test continues to fail, the problem is in the system.

4. If you do not have another (operational) controller, move the suspect controller to another slot.

   a. If the test no longer fails, the problem is in the system.

   b. If the test continues to fail, the problem is in either the controller or the system.

If the problem persists after trying these suggestions, contact your Digital Services representative.

A

Accessing MIBs and RFCs

This appendix describes how to access Digital's private Management Information Base (MIB) and Request For Comments (RFCs).

Public MIBs can be accessed over the Internet network using any of the following methods:

- Electronic mail

- `ftpmail`

- Anonymous `ftp`

- Diskette (for some Digital products)

You can use these methods to access up-to-date FDDI MIBs, as described in the following sections.

A.1 Using Electronic Mail

The DDN Network Information Center (NIC) of SRI International provides auto-mated access to NIC documents and information through electronic mail. This is especially useful for people who do not have access to the NIC from a direct Internet link, such as BITNET, CSNET, or UUCP sites.

To use the mail service, follow these instructions:

1. Send a mail message to `SERVICE@NIC.DDN.MIL`.

2. In the SUBJECT field, request the type of service that you want, followed by any needed arguments.

    Normally the message body is ignored, but if the SUBJECT field is empty, the first line of the message body is taken as the request. The example at the end of Section A.2 lists some of the services available.

Requests are processed automatically once a day. Large files are broken down into separate messages. However, a few files are too large to be mailed.

A.2 Using ftpmail

Digital offers Internet `ftpmail` access to private MIB information, in ASCII text form, at `GATEKEEPER.DEC.COM`, with up-to-date documents stored in the direc-tory `/pub/DEC/hub900/mibs`. Check the `INDEX` file and the `README` file for the current contents.

To use `ftpmail`, follow these instructions:

1. Send a mail message to `ftpmail@gatekeeper.dec.com`.

2. Ignore the subject line.

3. Include the word "connect" in the first line of the body.

4. Include `get` commands for each document required, for example:

    `get/pub/DEC/hub900/mibs/README`

Requests are acknowledged, then queued and processed every 30 minutes. Because of the number of requests, it may take a day or two before you receive a reply.

NOTE

For more timely access, consider using anonymous
`ftp` (refer to the next section).

The following are example SUBJECT lines to obtain DDN NIC documents:

```
HELP

RFC 822

RFC INDEX

RFC 1119.PS

FYI 1

IETF 1IETF-DESCRIPTION.TXT

INTERNET-DRAFTS 1ID-ABSTRACTS.TXT

NETINFO DOMAIN-TEMPLATE.TXT

SEND RFC: RFC-BY-AUTHOR.TXT

SEND IETF/1WG-SUMMARY.TXT

SEND INTERNET-DRAFTS/DRAFT-IETF-NETDATA-NETDATA-00.TXT

HOST DIIS
```

A.3 Using Anonymous ftp

You can obtain RFCs and up-to-date FDDI MIBs from Digital using anonymous
ftp.

Digital offers Internet anonymous ftp access to private MIB information, in ASCII
text form, at GATEKEEPER.DEC.COM, with up-to-date documents stored in the di-
rectory /pub/DEC/hub900/mibs. Check the INDEX file and the README file
for the current contents.

To use anonymous ftp to copy files, follow these instructions:

NOTE

User input is case sensitive; you must type it as
shown.

1. Use the Internet application ftp to connect to gatekeeper.dec.com.
   The Internet address is 16.1.0.2.

2. Log in as user anonymous.

3. Use your electronic mail address as the password.

4. Use the cd command to get to the directory /pub/DEC/hub900/mibs.

5. Use the ascii command to specify that you are retrieving ASCII text files.

6. Use the get command to get the file, or files, that you require.

7. Use the quit command to log out when you are finished.

The following example shows how to copy the README file from the repository:

NOTE

In the following example, user input is shown in **bold**
text.

```
% ftp gatekeeper.dec.com

Connected to gatekeeper.dec.com

220 GATEKEEPER.DEC.COM FTP Service Process

Name: anonymous

331 ANONYMOUS user ok, send real ident as password.

Password: milano@netman.stateu.edu

230 User ANONYMOUS logged in at Tue 10-Aug-1993 10:24-EST, job 54.

ftp> cd /pub/DEC/hub900/mibs.

331 Default name accepted. Send password to connect to it.

ftp> ascii

220 Type A ok.

ftp> get README

200 Port 19.54 at host nnn.nn.nn.nn accepted.

150 ASCII retrieve of /pub/DEC/hub900/mibs/README started.

226 Transfer completed. 40239 (8) bytes transferred.

40239 bytes received in 23.65 seconds (5.8 Kbytes/s)

ftp> quit

%
```

A.4 Obtaining a Diskette

You can obtain a free diskette containing the latest FDDI RFCs and Digital's private
MIBs. To obtain a diskette, please call 800–DIGITAL, press 2, and ask for presales
technical support. Request the FDDI RFC and Digital's private MIB diskette.

Connector Pin Assignments

This appendix describes the connector pin assignments for modular jacks (MJs) used with the controller. Refer to this information when you select an optical bypass device for your controller, or if you purchase new cables or upgrade existing cables.
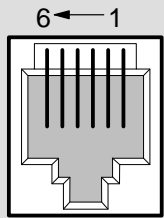
B.1 Optical Bypass Relay (OBR) RJ-12 Connector

The OBR connector (see Figure B–1) allows an OBR device to maintain FDDI dual ring integrity if the controller fails or is powered down. The OBR is available only on the DAS multimode version of the controller (DEFTA-DA).

WARNING ⚠

To prevent personal injury or equipment damage, **do not** insert telecommunications cabling into the optical bypass relay connector.

Figure B–1: RJ-12 (OBR) Pin Assignments

Pin   6 ← 1

| Pin	Assignment
1,2	Relay drive; +5V @ 200 mA (max.)
3,4,6	Return; grounded internally
5	Bypass present; must be externally grounded to pin 3,4, or 6

Modular Jack (Shielded RJ-12)

LKG-8720-93I

B.2 Unshielded Twisted Pair (UTP) RJ-45 Connector

Figure B–2 shows the (UTP) RJ-45 connector and its pin assignments.

Figure B–2: RJ-45 (UTP) Pin Assignments

Pin	Assignment
1	RX+
2	RX–
3	TX+
6	TX–
7	Unused
8	Unused

Pin   1 ⟶ 8

Modular Jack (RJ-45)
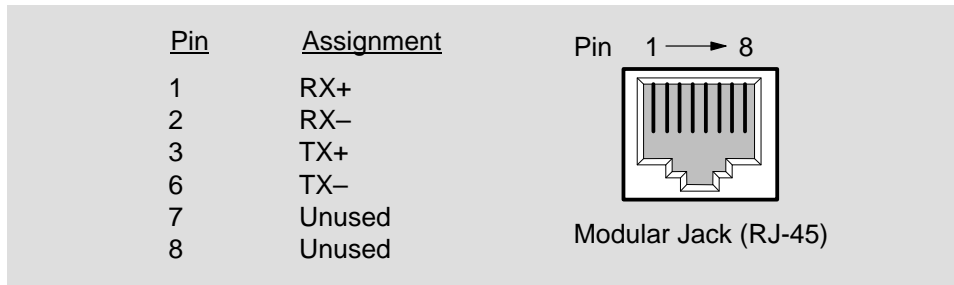
LKG-8719-93I

HOW TO ORDER ADDITIONAL DOCUMENTATION

DIRECT TELEPHONE ORDERS

In Continental USA
call 1-800-DIGITAL
(1-800–344-4825)

In Canada
call 800–267–6215

In New Hampshire,
Alaska or Hawaii
call 603–884–6660

ELECTRONIC ORDERS (U.S. ONLY)

Dial 800-dec-demo with any VT100 or VT200
compatible terminal and a 1200 baud modem.

If you need assistance, call 1-800-DIGITAL (1-800-344-4825)

DIRECT MAIL ORDERS (U.S. and Puerto Rico*)

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Ottawa, Ontario, Canada K1G 4C2
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INTERNATIONAL

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or approved distributor

Internal orders should be placed through Publishing and Circulation Services (P&CS),
Digital Equipment Corporation, 444 Whitney Street, NRO2, Northboro, Massachusetts 01532-2597

*Any prepaid order from Puerto Rico must be placed
with the Local Digital Subsidiary:
809–754–7575

Please return this card.

Your comments and suggestions will help us improve the quality and usefulness of our documentation.

Did you use the manual as a reference or as a step-by-step procedure to install the device?

_____

Were the instructions easy to follow?_____

Were the instructions complete?_____

Were they in the proper sequence?_____

Which chapters or sections were most helpful?_____

_____

Did you use the appendixes? Which ones?_____

_____

Were the illustrations helpful? _____ All?_____ Some?_____ Which ones?_____

_____

Were some illustrations unnecessary?_____ Which ones?_____

Do you think the manual needs more illustrations?_____ Please give an example. _____
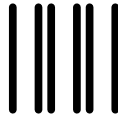
_____

Thank you.

Name _____ Date _____

Title _____ Department _____

Organization_____ Street _____

City_____ State/Country _____ Zip Code _____

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IF MAILED
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UNITED STATES
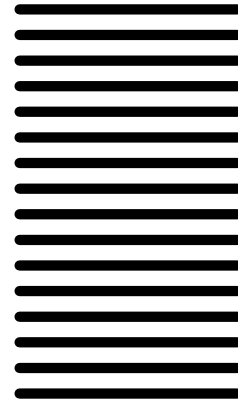
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