For: L_HOLMES
Printed on: Thu, Apr 1, 1993 14:36:16
From book: defza_cov
Document: defza_cov_new
Last saved on: Thu, Jan 21, 1993 09:50:05
Document: classa_hardware
Last saved on: Fri, Jan 15, 1993 16:42:51
Document: title
Last saved on: Fri, Jan 29, 1993 10:21:52
Document: copyright
Last saved on: Mon, Feb 22, 1993 10:48:26
Document: toc
Last saved on: Thu, Feb 4, 1993 15:03:40
Document: safety
Last saved on: Thu, Jan 21, 1993 10:34:48
Document: preface
Last saved on: Mon, Feb 1, 1993 10:12:16
Document: ch1
Last saved on: Thu, Feb 4, 1993 11:34:05
Document: ch2
Last saved on: Tue, Feb 2, 1993 10:15:46
Document: ch3
Last saved on: Tue, Feb 2, 1993 10:33:27
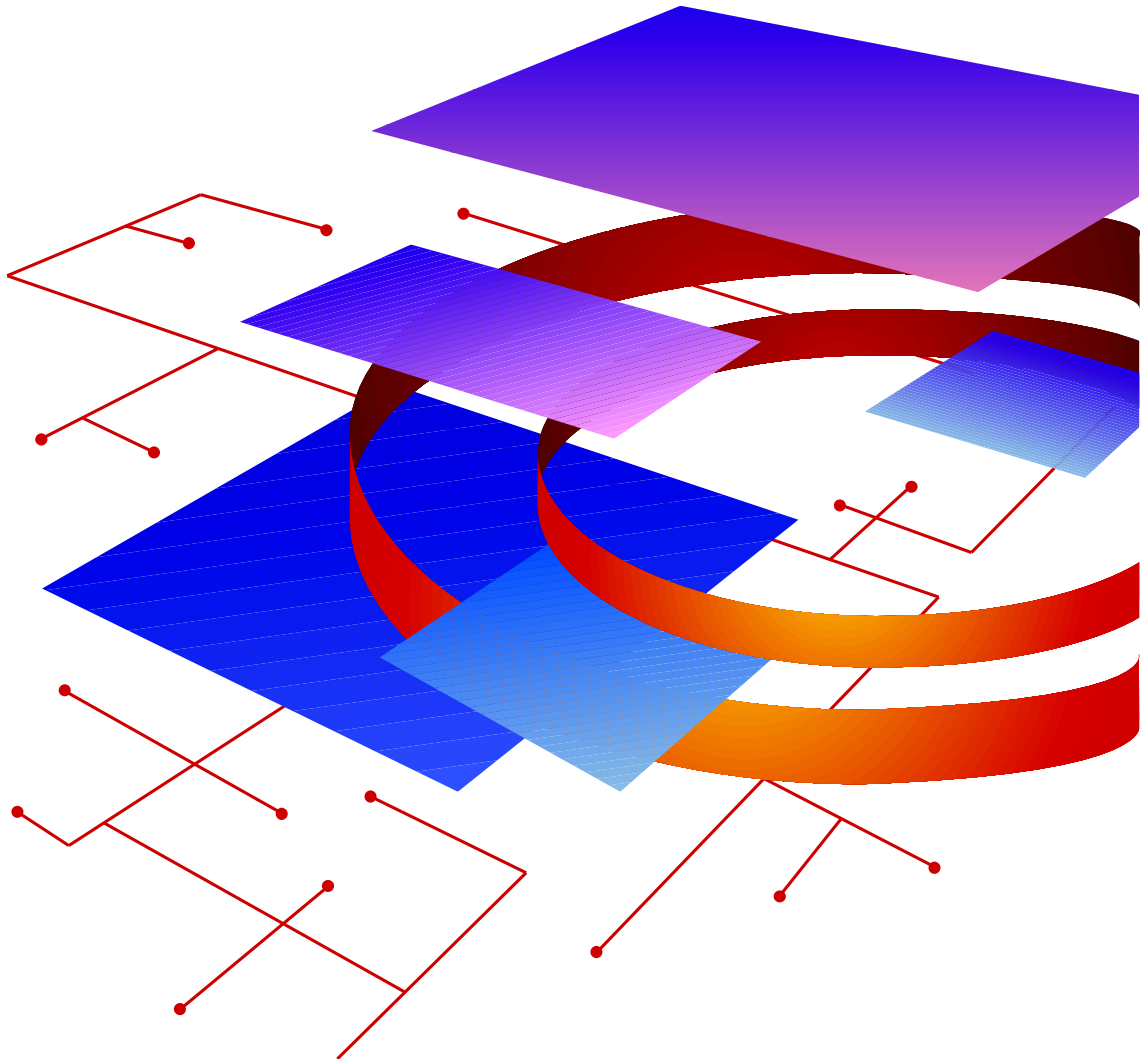Document: ch4
Last saved on: Tue, Feb 2, 1993 11:38:17
(...)

DEC FDDIcontroller 700

digital™

Installation

NOTICE – Class A Laser Device:

The lasers in this equipment are Class 1 devices, compliant with CDRH Rules 21, CFR Subchapter J, Part 1040.10, at date of manufacture. Class 1 laser devices are not considered to be hazardous.

NOTICE – Class A Computing Device:

This equipment 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 computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such radio frequency interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference; in which case, measures taken to correct the interference are at the user's expense.

CAUTION

This equipment is in the 1st Class category (information equipment to be used in commercial and/or industrial areas) and conforms to the standards set by the Voluntary Control Council for Interference by Data Processing Equipment and Electronic Office Machines aimed at preventing radio interference in commercial and/or industrial areas. Consequently, when used in a residential area or in an adjacent area thereto, radio interference may be caused in radios and TV receivers, etc. Read the instructions for correct handling.

DEC FDDIcontroller 700

Installation

February 1993

This manual describes how to install and verify the operation of the DEC FDDIcontroller 700 controller.

Supersession/Update Information: This is a revised manual.

d|i|g|i|t|a|l ™

Order Number: EK–DEFZA–IN. D01

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DECnet	**digital**™	VMS

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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. [2–5]

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. [1–3, 4–3]

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 700 and the DEC FDDIcontroller 700-C in 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 an appendix, as follows:

Chapter 1	Provides an overview and description of the DEC FDDIcontroller 700 and DEC FDDIcontroller 700-C.
Chapter 2	Contains installation procedures.
Chapter 3	Contains controller verification and testing procedures.
Chapter 4	Contains troubleshooting procedures.
Appendix A	Lists related documents.

Conventions Used in This Manual

The following conventions are used in this manual.

`Special type`	Indicates a literal example of system output.
bold	Indicates a command format that you enter.
lowercase	When a command appears in lowercase, type in a command format. In an example, enter the characters in lowercase.
Key	Indicates that you press the specified key. For example, Return means that you press the Return key.
Ctrl/x	Indicates that you hold down the CONTROL key and simultaneously 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.

x

1

Unpacking the Controller

This chapter describes the DEC FDDIcontroller 700 and the DEC FDDIcontroller 700-C for TURBOchannel-based computers. The controller is an option that provides a direct connection between a TURBOchannel slot and the network. From this point on in the manual, the DEC FDDIcontroller 700 controller is called the DEC FDDIcontroller 700 or controller.

1.1 Overview

The DEC FDDIcontroller 700 and the DEC FDDIcontroller 700-C both consist of two circuit cards in a piggyback configuration with a 96-pin connector providing the connection between the circuit cards (see Figure 1–1).

The DEC FDDIcontroller 700 is a single attachment station (SAS) that connects to an FDDI network through ST-type connectors. The DEC FDDIcontroller 700-C connects to an FDDI network through a ThinWire or STP connector (see Figure 1–2).

Figure 1–1: Controller Components

DEC FDDIcontroller 700

LED

ST-type connector

DEC FDDIcontroller 700-C

Media
selection switch

STP connector

STP LED

ThinWire connector

ThinWire LED

LKG-7455-93I

DEC FDDIcontroller 700 Installation
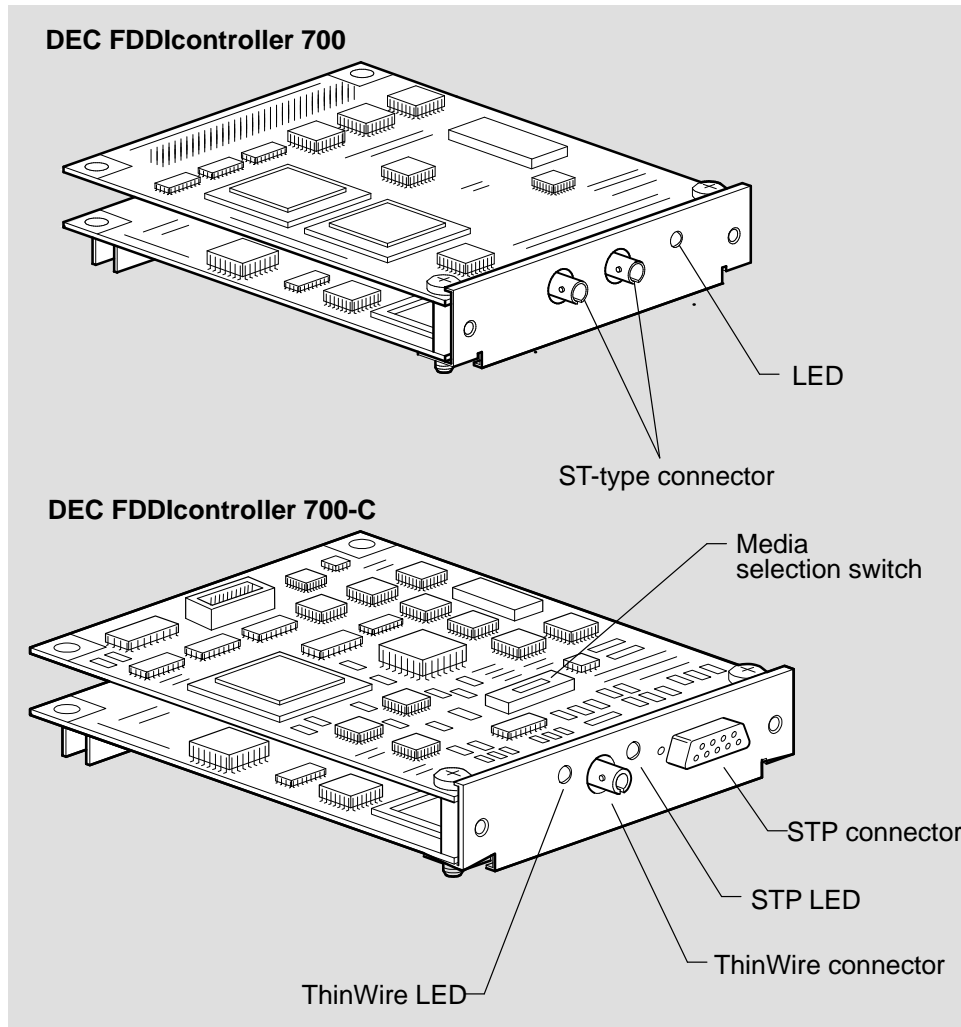
Figure 1–2: Connecting the Controller to the FDDI Network
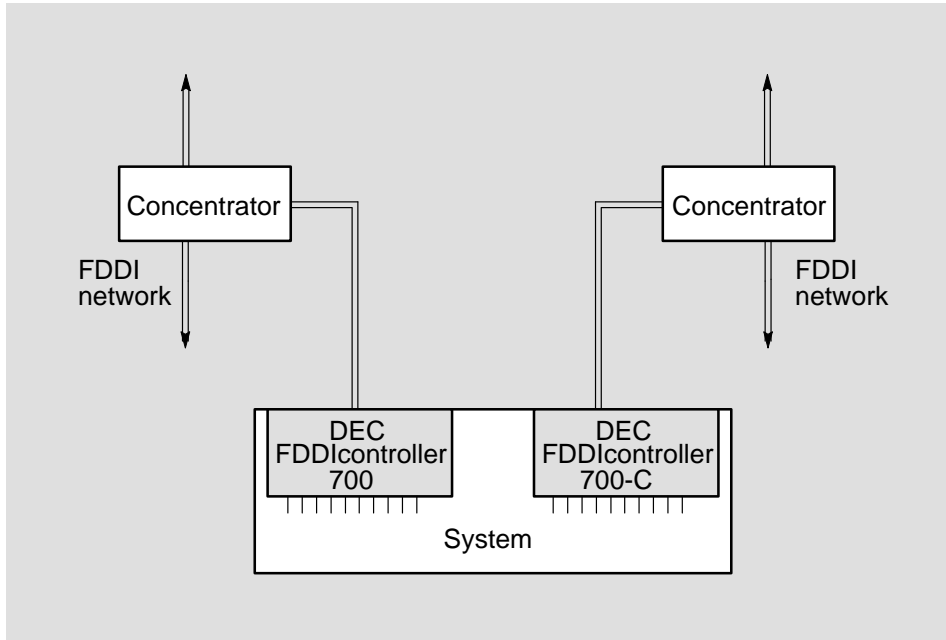
LKG-7456-93I

1.2 Unpacking and Checking the Contents

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.

The controller is shipped in one box (see Figure 1–3 for contents). Remove the contents from the box and place them nearby until you are ready to install the controller.

Check the shipment for damage and missing parts. In case of damage, contact your delivery agent and your Digital sales representative. If parts are missing, contact your Digital sales representative.

Figure 1–3: Contents of Shipping Package

DEC FDDIcontroller

DEC FDDIcontroller 700   OR   DEC FDDIcontroller 700-C

DEC FDDIcontroller 700 Installation manual
(this manual)

Screws

LKG-7457-93I

2
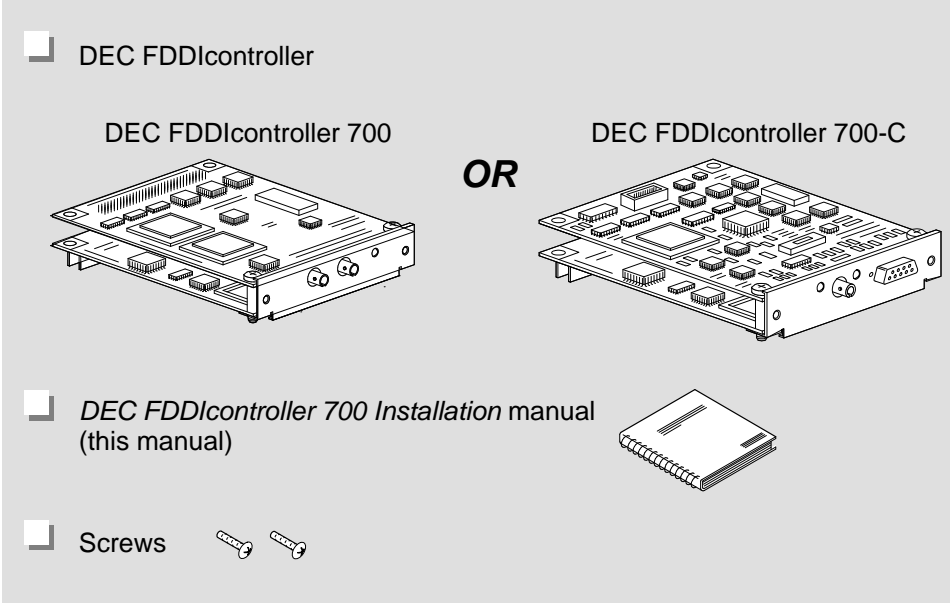
Installing the Controller

This chapter explains how to install the DEC FDDIcontroller 700 and the DEC FDDIcontroller 700-C. Installing your controller includes:

1. Setting the media selection switch (DEC FDDIcontroller 700-C only)

2. Preparing the computer for installation

3. Installing the controller

4. Connecting the communications cable

NOTE

If you are installing the controller in a VAX 4000, Model 60 or Model 90 unit, you first need to install an adapter for your DEC FDDIcontroller 700. If you do not have the adapter, contact your Digital Services representative and order the adapter kit (P/N DWCTX-BX).

2.1 Setting the Media Selection Switch

NOTE

This procedure applies only to the DEC FDDIcontroller 700-C. If you have a DEC FDDIcontroller 700, go to Section 2.2.

The DEC FDDIcontroller 700-C has a media selection switch that must be set according to the type of network connection (see Figure 2–1). The LED next to the ThinWire and the STP connectors indicates the selected media. The factory setting is for STP.

Figure 2–1: Media Selection Switch

LKG-7458-93I
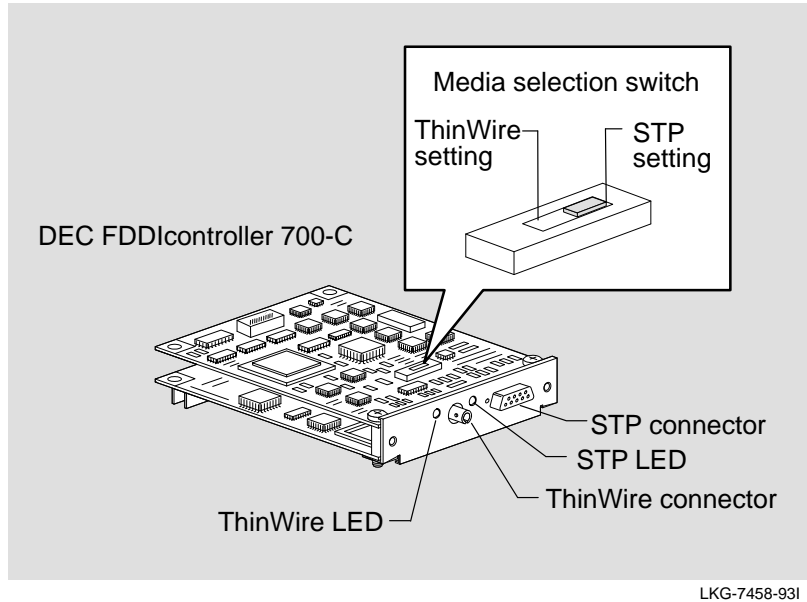
2.2 Preparing the Computer for Installation

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

1. Power off the system.

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

3. Refer to your computer documentation to determine which slot(s) can be used.

4. Remove the option slot cover from one of the TURBOchannel option slots (see Figure 2–2). Remove the two screws that hold the option slot cover in place. Save the option slot cover and the two screws.

Figure 2–2: Example of Removing the Option Slot Cover

Slot cover
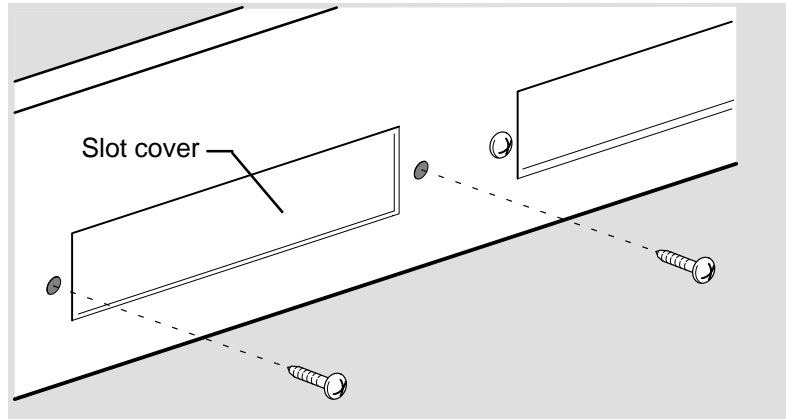
LKG-7348-92I

2.3 Installing the Controller

To install the controller into the computer, perform the following eight steps:

CAUTION ⚠

Static electricity can damage modules and electronic
components. Digital recommends using a grounded an-
tistatic 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 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 96-pin connector is facing
    down, and its network connectors are facing the option-slot opening in the
    back of the computer.

3. Insert the connectors through the option-slot opening in the back of the com-
    puter.

4. Push the 96-pin connector into the TURBOchannel connector on the comput-
    er's circuit card.

5. Fasten the controller to the computer's circuit card with the two screws supplied in the controller shipping package.

NOTE

If your unit has two nylon clips on both sides of the 96-pin connector, push the controller onto the nylon pins and make sure the clips snap in place.

6. Insert the two screws, which held the option 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.

8. Install the cover on the computer. Refer to your computer documentation for instructions on how to do this.

Figure 2–3:   Example of Installing the Controller
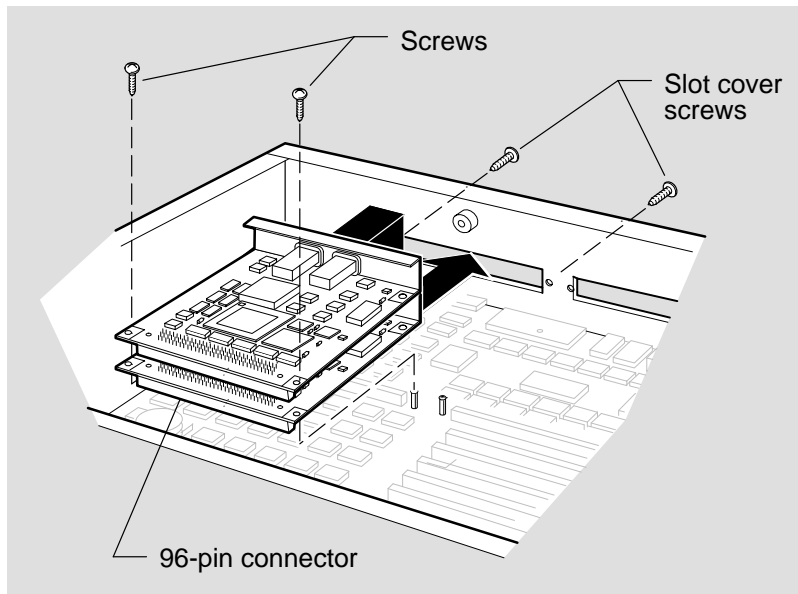
LKG-7349-92I

2.4 Connecting the Communications Cables

To connect a controller with ST-type connectors, go to Section 2.4.1. To connect a controller with a ThinWire or STP connector, go to Section 2.4.2.

2.4.1 Connecting ST-type Connectors

To attach the ST-type connectors to the controller, perform the following steps (see Figure 2–4):

1. Remove the dust caps from the ST-type connectors.

2. Line up the transmit cable connector with the transmit port (⊖→). Insert and turn the connector to lock it in place.

3. Line up the receive cable connector with the receive port (-⊖). Insert and turn the connector to lock it in place.

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.

Figure 2–4: Example of Connecting the ST-type Connectors

Transmit cable connector

Receive cable connector

LKG-7459-93I
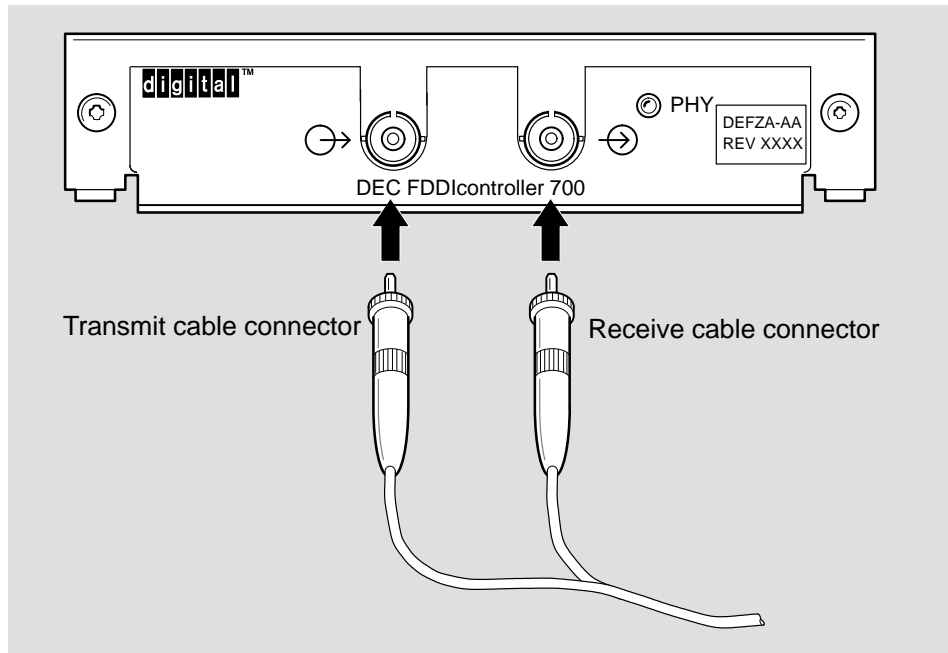
2.4.2   Connecting ThinWire and STP Connectors
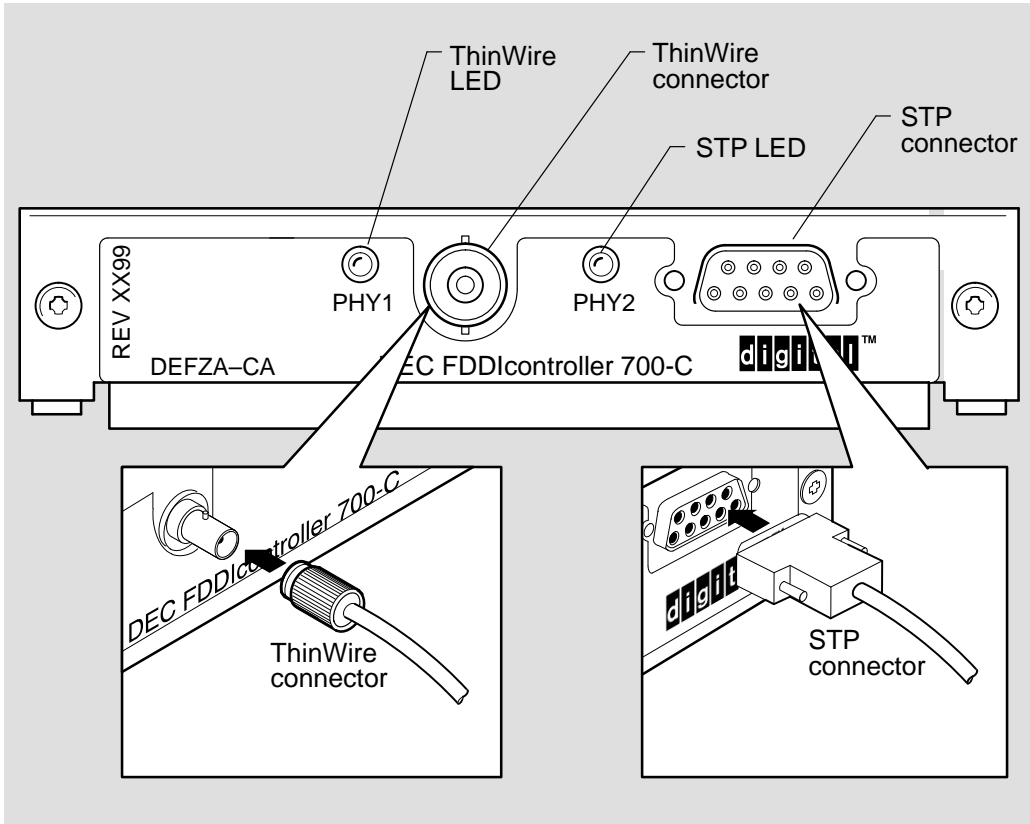
To attach ThinWire or STP connectors to the controller, perform one of the following (see Figure 2–5):

* To attach a ThinWire connector, insert and turn the connector a quarter turn to lock it in place.

* To attach an STP connector, insert and push the connector firmly to lock in place.

Figure 2–5: Example of Connecting the ThinWire and STP Connectors

LKG-7460-93I

3

Verifying and Testing the Controller

Once you install the controller, verify that it is working and that you have a communication link. Verifying your controller operation involves the following:

1. Performing self-test

2. Verifying the system configuration

3. Booting your system and verifying the FDDI communications connection

3.1 Performing Self-test

Turning on the power for Alpha AXP and MIPs systems starts the controller self-test. When self-test completes, the PHY LED on the controller will be OFF indicating the controller is working properly. If the PHY LED is ON (RED), contact your Digital Services representative. For information about system self-test, refer to your system documentation.

NOTE

The VAX system does not test the controller at power-up. For information on testing the controller based on a VAX system, go to Section 3.2.3.

3.2 Verifying the System Configuration

Once the computer successfully completes self-test, verify that the system configu-
ration recognizes the controller by performing one of the following procedures:

- If your machine is based on a MIPs system, go to Section 3.2.1.

- If you machine is based on an Alpha AXP system, go to Section 3.2.2.

- If your machine is based on a VAX system, go to Section 3.2.3.

3.2.1 Verifying a Configuration Based on a MIPs System

Type **cnfg** at the system prompt and press Return . The following is an example of the
configuration display that appears on the screen:

```
        7: KN02-AA  DEC      V5.1a   TCF0  (24MB)
        6: PMAD-AA  DEC      V5.1A   TCF0  (enet 08-00-2b-15-C3-41)
        5: PMAZ-AA  DEC      V5.1a   TCF0  (SCSI=7)
>>> 2: PMAF-AA  DEC      T5.2P-  TCF0  (fddi: 08-00-2b-17-C5-FF)
        0: PMAG-BA  DEC      V5.1a   TCF0  (cfb - - d=8)
```

In this example, the controller (PMAF-AA) is in option slot 2 and has a physical ad-
dress of *08–00–2b–17–C5–FF.* If the controller is listed, go to Section 3.3. If the
controller does not appear in the configuration display, refer to Section 3.2.1.1 for
problem-solving information.

3.2.1.1 Correcting a Configuration Display Problem

If your controller does not appear in the display, perform the following:

1. Verify that the PHY LED on the controller is ON (RED). This
   indicates that the controller failed self-test. The failure may be
   due to improper installation. For information on solving hard-
   ware problems, refer to Section 4.1.2.

2. Turn the computer power off.

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

4. Perform the self-test and system configuration procedures (see
   Section 3.1 and Section 3.2). If the problem persists, contact
   your Digital Services representative. Otherwise, go to Section
   3.3.

3.2.2 Verifying a Configuration Based on an Alpha AXP System

Type **t tc*n* cnfg** (*n* representing the slot number for the controller) at the system prompt and press Return . The following is an example of the configuration display that appears on the screen:

```
DEC PMAF-AA  V5.3a   (fddi :08-00-2b-a0-1f-04)
```

If the controller is listed, go to Section 3.3. If the controller does not appear in the configuration display, refer to Section 3.2.1.1 for problem-solving information.

3.2.3 Verifying and Testing a Configuration Based on a VAX System

To verify and test configuration based on a VAX system perform the following steps:

1. Change the system prompt to the test utility prompt by entering **test/util tca** at the system prompt and pressing Return . The system displays the following message and the test utility prompt:

    ```
    >>>  test/util tca
            ...........TURBOCHANNEL REX EMULATOR...........
        >>
    ```

2. Verify the configuration by entering **t tc0 cnfg** at the text utility prompt and press Return . The system displays the following message:

    ```
    DEC  PMAF-AA  V5.3a  (fddi: 08-00-2b-20-a2-03)
        >>
    ```

3. Test the configuration by entering **t tc0 pst–q** at the test utility prompt and pressing Return . The system displays the following tests:

```
>> t tc0  pst-q

#E mul: t tc0 pst-q-


           t#/ flash

           t#/ eprom

           t#/ 68K

           t#/ sram

           t#/ rmap

           t#/ phycsr

           t#/ mac

           ?TFL: # elm test failed [PMAF-AA]*

           t#/ cam

           t#/ nirom

           t#/ intlpbk

           t#/ iplsaf

           t#/ pmccsr

           t#/ rmc

           t#/ pktmem

           t#/ botim

           t#/ rtostim

           t#/ extlpbk

           t#/ extmemtst

           t#/ dmatst
```

* **?TFL: # elm test failed [PMAF–AA]** is an error message and indicates the ELM chip test failed. Refer to Section 4.1.1 for a description of error messages.

When you successfully complete the system tests, enter Ctrl/D to return to the system prompt. For information on error messages, go to Section 4.1.1.

3.3 Booting the System

Once you verify the configuration, boot the operating system. Refer to your operating system documentation for instructions on how to perform this. After booting, check that the controller PHY LED is ON (STEADY GREEN) indicating a LINK AVAILABLE state if connected to network. If the LED is not STEADY GREEN, refer to Chapter 4 for information on troubleshooting.

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

4

Troubleshooting the Controller

This chapter explains how to check that the controller is working properly. It also describes the controller LED displays and error messages.

4.1 Running Self-test

If the controller fails self-test, the PHY LED on the controller turns on (RED) and error messages appear on the console screen. Table 4–1 describes LED displays for problems and possible corrective actions. Section 4.1.1. contains a list of error messages.

Table 4–1:   Controller LED Displays (After System Boot)

LED Display	Probable Cause	Corrective Action
LED OFF	Controller not enabled.	Check the console for error messages. Refer to the list of error messages in Section 4.1.1
	LED or controller broken.	Contact your Digital Services representative.
LED steady red	Unsupported configuration or ring topology.	Notify your system manager. Reconfigure the cable connections or ring topology.
LED blinking red	Unsupported configuration or ring topology.	Notify your system manager. Reconfigure the cable connections or ring topology.
	Link Confidence Test failure.	Check cable connections.
LED blinking green	Unable to connect. No cable attached.	Check cable connections. Interchange cable connections.
	Operational fault detected.	Check system error log.
LED steady green	Controller enabled. Physical connection established.	None.

4.1.1 Error Messages

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

```
t#/ flash
?TFL: # eprom test failed [PMAF-AA]
?TFL: # 68K test failed [PMAF-AA]
?TFL: # sram test failed [PMAF-AA]
?TFL: # rmap test failed [PMAF-AA]
?TFL: # phycsr test failed [PMAF-AA]
?TFL: # mac test failed [PMAF-AA]
?TFL: # elm test failed [PMAF-AA]
?TFL: # cam test failed [PMAF-AA]
?TFL: # nirom test failed [PMAF-AA]
?TFL: # intlpbk test failed [PMAF-AA]
?TFL: # iplsaf test failed [PMAF-AA]
?TFL: # pmccsr test failed [PMAF-AA]
?TFL: # rmc test failed [PMAF-AA]
?TFL: # pktmem test failed [PMAF-AA]
?TFL: # botim test failed [PMAF-AA]
?TFL: # rtostim test failed [PMAF-AA]
?TFL: # extlpbk test failed [PMAF-AA]
?TFL: # extmemtst test failed [PMAF-AA]
?TFL: # dmatst test failed [PMAF-AA]
```

The following is an explanation of an error message:

- `t#/` is not an error message. This indicates that the test passed.

- The question mark at the beginning of the line indicates that this is an error message.

- The three letters that follow the question mark indicate that a test has failed.

  If any letters other than TFL appear in this location, call your system manager or your Digital Services representative.

- A number appearing in place of the # character indicates the slot location of the controller.

- The remainder of the message indicates the test that failed and the controller part number.

4.1.2 Solving Hardware Problems

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.

The following list provides possible solutions to a number of hardware problems:

- Be sure that the controller is inserted tightly in its slot and that anything connected to it is connected correctly.

- If you have another controller that works, try it in that slot. If the test no longer fails, the problem is in the controller. If the test continues to fail, the problem is in the system.

- If you do not have another controller that works, move the controller to another slot. If the test no longer fails, the problem is in the system. 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

Related Documents

For additional information about the installation and testing of the DEC FDDIcontroller 700, refer to the following documents:

- Your workstation or system documentation kit

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

  This manual describes how to configure and install the DECconcentrator 500.

- *DECbridge 500/600 Series Installation and Upgrade*
  (Order No. EK–DEFEB–IN)

  This manual describes how to install and upgrade DECbridge 500 Series and DECbridge 600 Series units.

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

  This manual 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)

  This manual describes the guidelines for connecting devices to an FDDI network. It also includes network configuration examples.

- *A Primer on FDDI: Fiber Distributed Data Interface Version 2.0*
  (Order No. EC-HI580–42/92 07)

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

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HOW TO ORDER ADDITIONAL DOCUMENTATION

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In Canada
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In New Hampshire,
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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 appendices? 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. _____
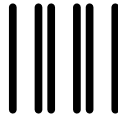
_____

Thank you.

Name _____ Date _____

Title _____ Department _____

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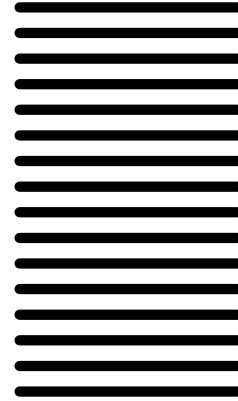**DO NOT CUT – FOLD HERE AND TAPE**

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