

# DEChub ONE-MX

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## Installation

Part Number: EK-DEF1H-IN. A01

**November 1994**

This document describes the DEChub ONE-MX single-slot hub and how to install DEChub full-height network modules for standalone use.

**Revision/Update Information:** This is a new manual.

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November 1994

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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 to radios and TV receivers.

Read the instructions for correct handling.

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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 appartient alors à l'utilisateur de prendre les mesures spécifiques appropriées.

# Contents

## Safety

<b>Introduction</b> .....	1
Features .....	1
Packaging .....	2
<b>Front Panel</b> .....	3
<b>Back Panel</b> .....	4
<b>Attaching a Module to the DEChub ONE-MX</b> .....	5
<b>Mounting a Desk Top Single-Slot Hub</b> .....	7
<b>Mounting a Rack Mount Single-Slot Hub</b> .....	9
<b>Removing the Attached Module</b> .....	11
<b>AUI Port Cabling</b> .....	12
AUI MAUs .....	12
<b>Setup Port Cabling and Pin Assignments</b> .....	13
Setup Port Pin Assignments .....	13
Setup Port Cables .....	13
<b>OBM Port Cabling and Pin Assignments</b> .....	14
OBM Port Pin Assignments .....	14
OBM Port Cables .....	15
<b>Optical Bypass Relay and Pin Assignments</b> .....	16
Optical Bypass Relay Connector .....	16

## Contents (Cont.)

<b>Installing ModPMDs</b> .....	17
<b>Redundant Power Supply</b> .....	24
Redundant Power Supply Kit Contents .....	24
Redundant Power Supply Kit Installation .....	24
LED Status .....	26
<b>Problem Solving Using LEDs</b> .....	27
<b>Accessing MIBs, RFCs and Release Notes</b> .....	29
MIB and RFC Information .....	29
Accessing Online Information .....	29
Using Anonymous ftp .....	29
Using ftpmail .....	32
Using Electronic Mail .....	32
<b>Product Specifications</b> .....	34
<b>Associated Documents</b> .....	36

### Tables

1 Setup Port Pin Assignments .....	13
2 Setup Port Cables .....	13
3 OBM Port Pin Assignments .....	14
4 OBM Port Cables and Adapters .....	15
5 Redundant Power LED Status .....	26
6 Problem Solving Using LEDs .....	27
7 Directory Names Available .....	30
8 Operating Specifications .....	34
9 Acoustical Specifications .....	36

## Safety

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

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<b>WARNING</b>	Contains information to prevent personal injury.
<b>CAUTION</b>	Contains information to prevent damage to equipment.

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<b>VORSICHT</b>	Enthält Informationen, die beachtet werden müssen, um den Benutzer vor Schaden zu bewahren.
<b>ACHTUNG</b>	Enthält Informationen, die beachtet werden müssen, um die Geräte vor Schaden zu bewahren.

---

<b>DANGER</b>	Signale les informations destinées à prévenir les accidents corporels.
<b>ATTENTION</b>	Signale les informations destinées à prévenir la détérioration du matériel.

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<b>AVISO</b>	Contiene información para evitar daños personales.
<b>PRECAUCIÓN</b>	Contiene información para evitar daños al equipo.

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## Safety (Cont.)

The cautions that must be observed for the hardware described in this manual are listed below in English, German, French, and Spanish. The pages on which these safety messages appear are also listed.

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### WARNING

To prevent personal injury or equipment damage, **do not** insert telecommunications cabling into the Optical Bypass Relay connector. [Pages 3 and 9.]

### VORSICHT

Um Personen oder Geräteschäden zu vermeiden, dürfen Sie das Telefonkabel **Auf Keinen Fall** am Anschluß des optischen Bypass-Relais anschließen.

### DANGER

Pour éviter tout risque d'accident corporel ou de dommage matériel, **Ne Branchez Pas** de câble de télécommunication sur le connecteur de relais sélectif optique.

### AVISO

Para evitar daños personales o al equipo, **No** se debe introducir cableado de telecomunicaciones en el conector óptico de relés de derivación.

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### WARNING

Some fiber optic equipment can emit laser or infrared 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.

### VORSICHT

Bestimmte Lichtleitergeräte können für die Augen gefährliches Laser- oder Infrarotlicht abstrahlen. Vermeiden Sie es daher unter allen Umständen, direkt in ein Lichtleiterkabel oder einen Lichtleiteranschluß zu schauen. Gehen Sie immer davon aus, daß Lichtleiterkabel mit einer Lichtquelle verbunden sind.

### DANGER

Certains équipements à fibre optique peuvent émettre un rayonnement laser ou infra-rouge pouvant provoquer des troubles oculaires. Ne regardez jamais à l'intérieur d'une fibre optique ou d'un port de connecteur. Considérez que le câble est connecté en permanence à une source lumineuse.

### AVISO

Ciertos equipos de fibras ópticas pueden emitir luz láserica o infrarroja con riesgos de lesiones en los ojos. No se debe nunca mirar en una fibra óptica o una puerta de conexión. Siempre hay que suponer que el cable está conectado a una fuente luminosa.

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## Safety (Cont.)

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### 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 5, 20, and 22.]

### 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.

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## Introduction

The DEChub ONE-MX docking station is a single-slot hub that provides 90 watts of standalone or redundant DC power for DEChub 900 full-height modules. The DEChub ONE-MX exceeds all functions of the previous DEChub ONE. An attachment unit interface (AUI) on the DEChub ONE-MX can connect an attached module to a standard Ethernet LAN. Using Digital's optional medium attachment units (MAUs), the DEChub ONE-MX can connect an attached module to a fiber optic, ThinWire, or twisted pair Ethernet LAN connection. Through use of Digital's optional Single Mode Fiber (SMF), Multi Mode Fiber (MMF) or Twisted Pair (TP) ModPMDs, the DEChub ONE-MX can connect to an FDDI network via its A and B ports.

The DEChub ONE-MX provides an out-of-band management (OBM) port with an associated LED for remote network management support. A setup port on the DEChub ONE-MX enables you to configure the attached network module using a terminal device, personal computer, or terminal server. In addition, the DEChub ONE-MX is designed to provide power failover capability, and can be configured into a redundant power system with a cable included in a separately orderable redundant power kit.

The DEChub ONE-MX supports tabletop and rack-mounting. By stacking DEChub ONE-MX single-slot hubs in 19-inch racks, users can configure the DEChub 900 modules to support their current needs in a small LAN and use the same products to upgrade to enterprise-wide networks as their LAN use grows.

## Features

- Flexible mounting configuration helps network managers cope with daily moves, additions, and changes in their networks.
- Suitable for tabletop or rack-mounting.
- Can connect to an Fiber Distributed Data Interface (FDDI) network via A and B ports located in the docking station.
- Supports FDDI optical bypass relay feature.
- Provides power failover capability, and can be configured as a redundant power system with a separate redundant power kit (optional).
- Supports Simple Network Management Protocol (SNMP) using the Serial Line Internet Protocol (SLIP).

## Introduction (Cont.)

- OBM port supports standard DEChub 900 remote network management for attached modules.
- Setup port for easy configuration of attached modules.

### Packaging

A DEChub ONE-MX kit contains the following items:


- DEChub ONE-MX (Digital part number DEF1H-MB)
- Installation manual (this manual)
- Power cord
- Mounting hardware kit (70-31344-01)

Other separately orderable equipment that can be used with the DEChub ONE-MX include:

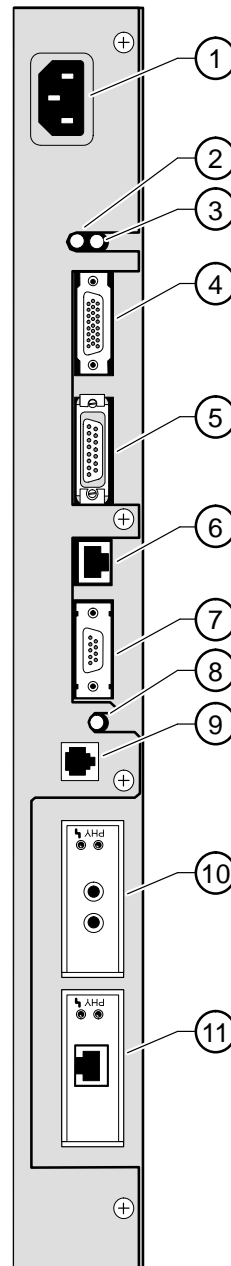
- Redundant Power Kit (Digital part number H9519-AA)
- ModPMDs
  - Multi Mode Optics (DEFXM-AA)
  - Single Mode Optics (DEFXS-AA)
  - Unshield Twisted Pair (DEFXU-AA)
- AUI MAUs
  - Thinwire (DECXM-AA)
  - Twisted Pair (DETPM-AA)
  - Fiber-optic (DEFLM-AA)

## Front Panel

- 1) **AC Power Connector** — Accepts the power cable.
- 2) **Redundant Power Present LED** — Indicates that redundant power is present.
- 3) **Main DC OK LED** — Lights when power is available for the attached network module.
- 4) **Redundant Power Connector** — Allows the connection of a redundant power cable from another DEChub ONE-MX.
- 5) **Ethernet AUI Port** — Allows the connection of a MAU transceiver or a cable for connecting directly to a MAU.
- 6) **Setup Port Connector** — Allows the connection of a terminal to access the setup menu of the attached module.
- 7) **9-pin OBM Port Connector** — Allows a serial line connection of a terminal to manage the attached module using SNMP and the SLIP protocol.
- 8) **OBM Port LED** — Indicates that the attached network module is active and the OBM port is ready for connection.
- 9) **Optical Bypass Relay (OBR) (6-pin MJ) Connector** — Allows the connection of an external FDDI OBR relay (not supplied) to maintain connectivity of the FDDI ring in the absence of power or during station fault conditions.

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

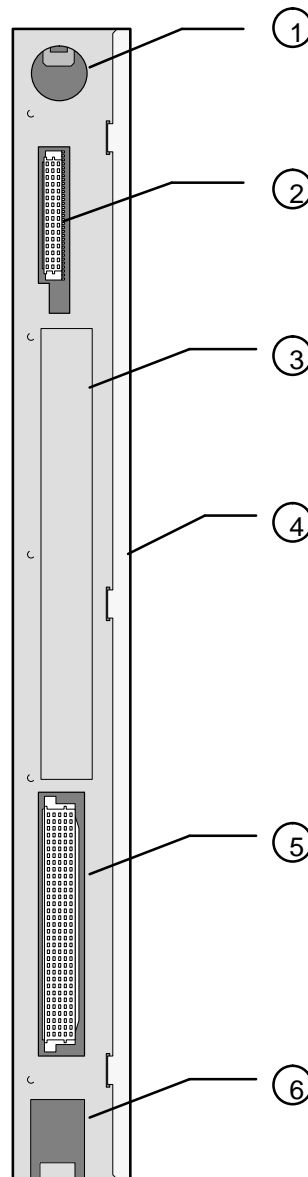
- 10) **FDDI A Port** — One of two ModPMD ports.
- 11) **FDDI B Port** — One of two ModPMD ports.



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## Back Panel


- 1) **Locking tab** — Locks the module to a DEChub 900.
- 2) **48-pin backplane connector** — Provides network and power connections to the DEChub 900 module.
- 3) **Manufacturing label** — Lists the module part number, serial number, revision level, and power requirements.
- 4) **Grounding strip** — Provides additional grounding between the DEChub ONE-MX and the attached module.
- 5) **160-pin backplane connector** — Provides network and power connections to the attached module.
- 6) **Mounting slot** — Accepts the mounting tab from a DEChub module.



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## Attaching a Module to the DEChub ONE-MX

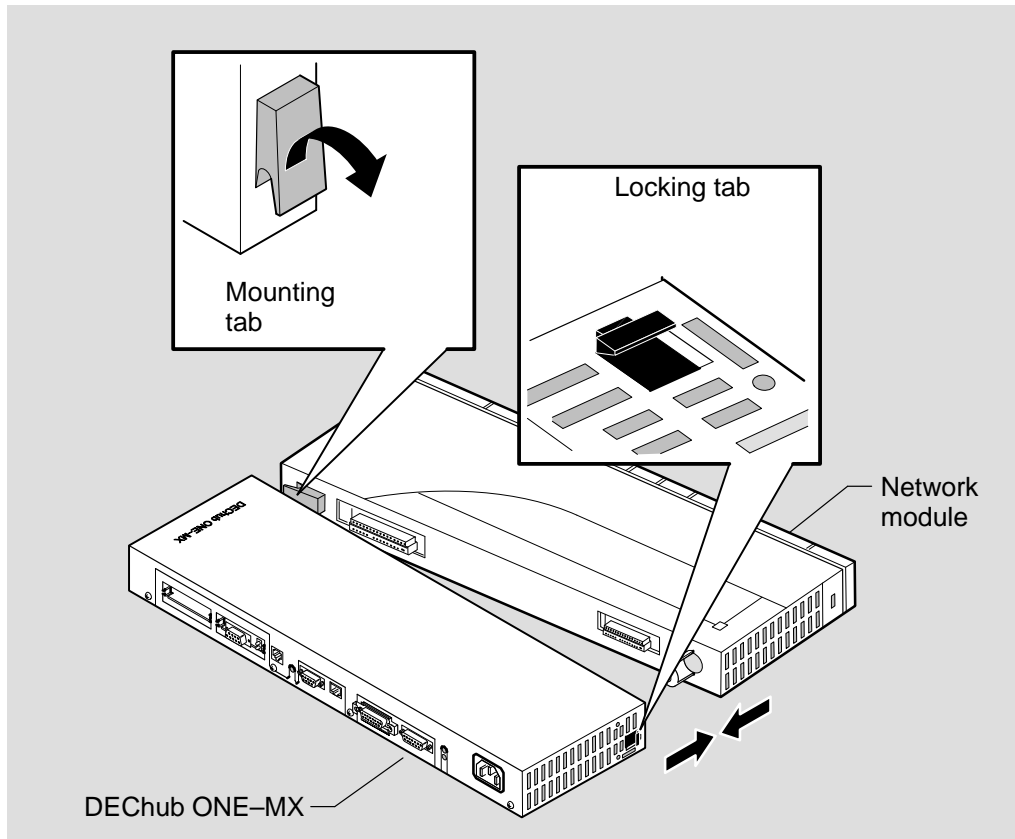
The DEChub ONE-MX can accommodate any DEChub 900 full height module and can be used anywhere that an Ethernet LAN connection is available. To install a network module into a DEChub ONE-MX, perform the following six steps.

**CAUTION**  Do not connect the power cord until the network module is secured to the DEChub ONE-MX, mounted (tabletop or rack-mounted), and ready for self-test.

- 1** Be sure that all ModPMDs are installed prior to connecting the DEChub ONE-MX to a network module. Refer to the section titled **Installing ModPMDs** for further information.
- 2** Place the mounting tab located on the bottom of the module into the mounting slot on the bottom of the DEChub ONE-MX, as shown in the figure on the following page.
- 3** Pivot the module into place to engage both the 160- and the 48-pin connectors.
- 4** Raise the locking tab to clear the plastic protruding interlocking feature of the network module.
- 5** Gently push the module and the DEChub ONE-MX together until the two are joined together, taking care to align the connectors properly on each device. The module locks into the DEChub ONE-MX just below the locking tab shown in the figure on the following page.
- 6** After the connectors are fully seated, depress the locking tab to fully lock the units together.

## Attaching a Module to the DEChub ONE-MX (Cont.)

**NOTE:** This assembly is easier to complete if both modules are laid flat on a table or flat surface.



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## Mounting a Desk Top Single-Slot Hub

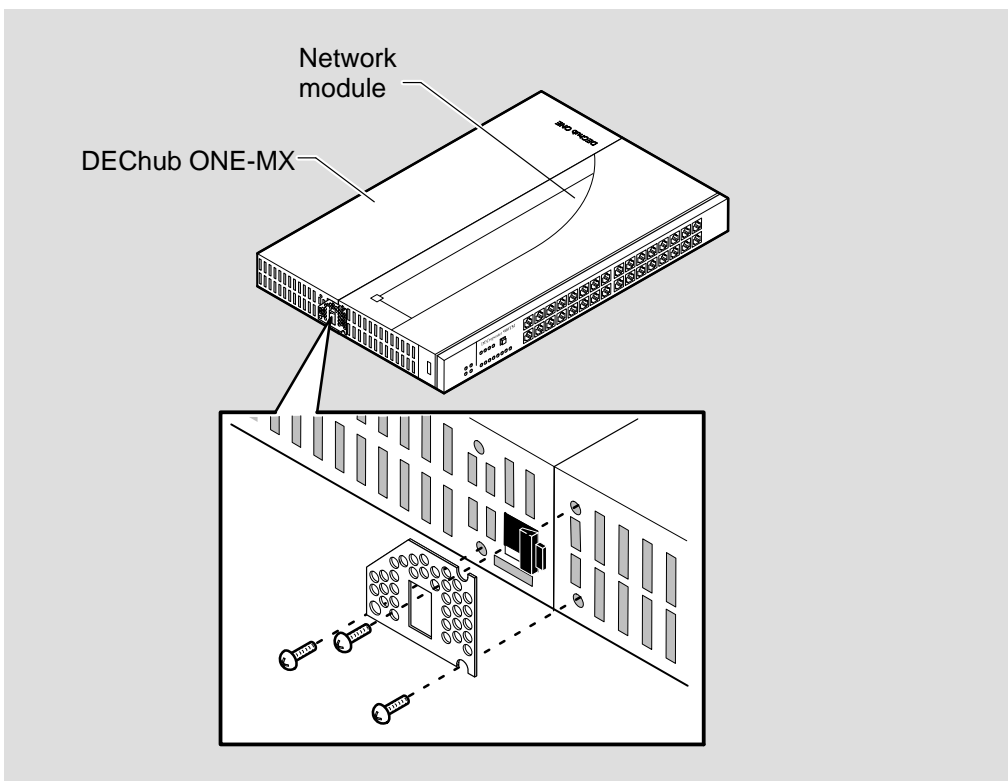
The DEChub ONE-MX may be placed on a table top or other flat surface. To mount the DEChub ONE-MX in a table top (single-slot hub) configuration, perform the following steps:

**1 Shut off the AC power to the DEChub ONE-MX.**

Either turn the wall receptacle switch to off or disconnect the AC power cord from the wall receptacle.

**1 Connect table top mount bracket to single-slot hub.**

- a. Align the screw holes on the table top mount bracket with the holes on the DEChub ONE-MX and on the network module, as shown in the figure below.
- b. Attach the bracket using three #6-32 pan-head screws.



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## Mounting a Desk Top Single-Slot Hub (Cont.)

### **2 Attach the foot pads.**

Attach four self-sticking rubber foot pads (provided) on the underside of the single-slot hub, placing two foot pads on the DEChub ONE-MX and two foot pads on the attached network module. Place the foot pads on the four outer corners of the single slot hub.

### **3 Connect the cables to the single-slot hub.**

Connect the AUI, OBM, and setup ports, as required. Refer to the cabling sections for information on connecting the AUI port, OBM port, and setup port.

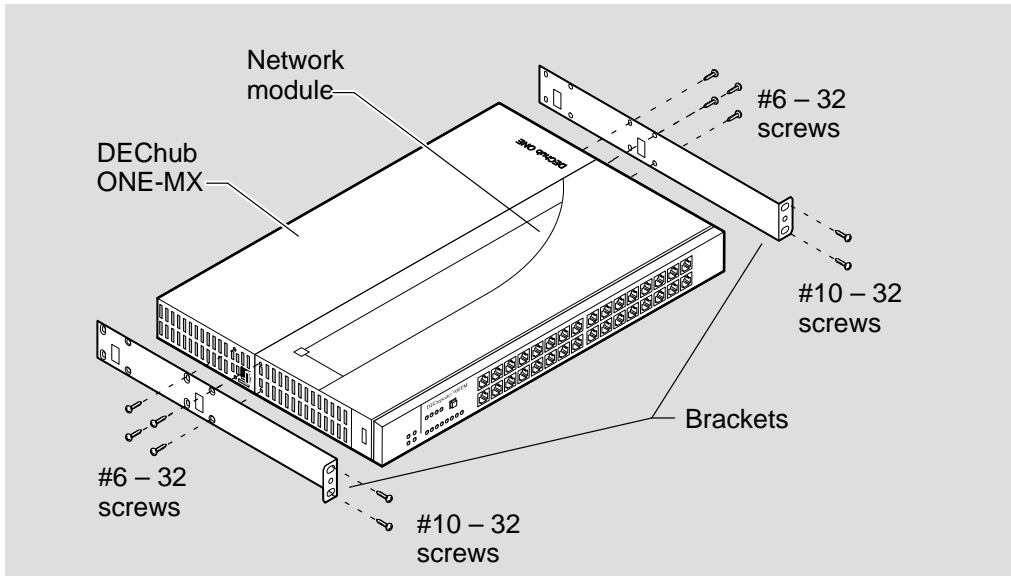


## Mounting a Rack Mount Single-Slot Hub

The DEChub ONE-MX may be rack mounted in a 19-inch equipment rack. To mount the DEChub ONE-MX in a rack-mount (single-slot hub) configuration, with the power off, perform the following steps:

### 1 Connect rack-mount brackets to single-slot hub.

- a. Align the screw holes on each end of the rack-mount brackets with the holes on the DEChub ONE-MX and on the network module.
- b. Attach the brackets using eight #6-32 flat-head screws.



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### 2 Position and secure the single-slot hub unit in the equipment rack.

- a. Align the screw holes on the rack-mount brackets with the equipment rack holes.
- b. Attach the rack-mount single-slot hub to the rack using four #10-32 screws and U-nuts.

## Mounting a Rack Mount Single-Slot Hub (Cont.)

### 3 Connect the cables to the single-slot hub.

Connect the AUI, OBM, and setup ports, as required. Refer to the cabling sections for information on connecting the AUI port, OBM port, and setup port.

**NOTE:** Use Tie-raps or other suitable means to secure the cables to the rack along the cableways. Avoid placing undue strain on the cable connectors — do not tighten the Tie-raps excessively or exceed the nominal bend radius of the cables.

### 4 Connect the power cord.

Connect the power cord to the single-slot hub power connector first and then connect the power cord to an outlet on the rack or on the wall.

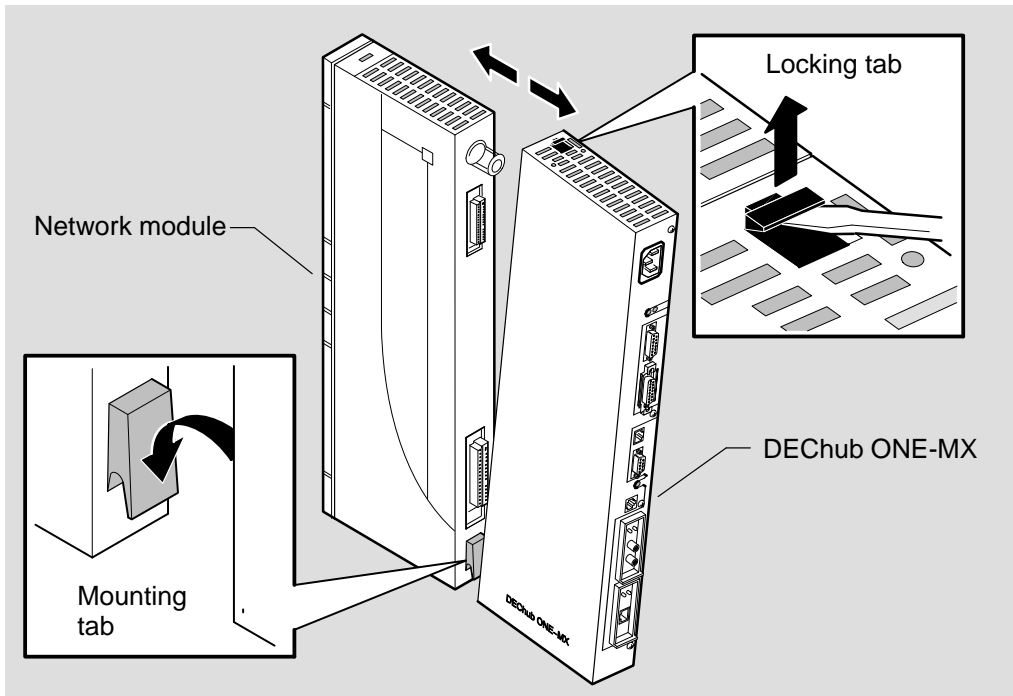
The network module begins self-testing as described in the network modules installation manual.

## Removing the Attached Module

You can easily swap modules or disconnect the DEChub ONE-MX by performing the following steps:

- 1 Shut off the AC power to the DEChub ONE-MX.**

Either turn the wall receptacle switch to off or disconnect the AC power cord from the wall receptacle.
- 2 Disconnect cables from the DEChub ONE-MX as required.**
- 3 Disconnect cables from the network module as required.**
- 4 Remove either the rack mount brackets or the desktop mounting bracket.**
- 5 Separate the DEChub ONE-MX from the network module.**
  - a. Using a flat-blade screwdriver, pry up the locking tab in the top of the DEChub ONE-MX.
  - b. When the locking tab snaps open, separate the network module from the DEChub ONE-MX.



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## AUI Port Cabling

The AUI port can be connected directly to a MAU, or the AUI port can be connected to an AUI cable that connects to a MAU located on the LAN. The MAU and the AUI cable are available separately from Digital.

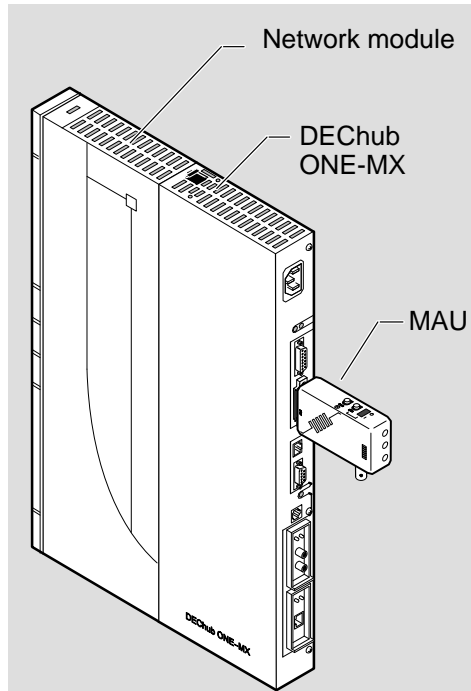
### 1 Connect a MAU to the AUI Port

- a. Insert a MAU transceiver into the AUI connector, as shown, and slide the latch mechanism to lock the MAU into place.
- b. Connect the cabling (twisted-pair, ThinWire, or fiber-optic) from the MAU to the LAN. See below for the individual MAU part numbers. The MAU documentation provides additional information.

### 2 Connect Directly to the AUI Port

You can connect a cable from the AUI port directly to a MAU on the LAN or backbone.

- a. Connect the AUI cable to the AUI connector and move the slide latch to lock the connection securely.



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- b. Connect the other end of the AUI cable to a MAU located on the LAN.

**NOTE:** Digital recommends using a PVC-insulated cable with a straight connector for use with the AUI port, part number BNE3H-xx where xx represents the length in meters.

## AUI MAUs

- Thinwire (DECXM-AA)
- Twisted Pair (DETPM-AA)
- Fiber-optic (DEFLM-AA)

## Setup Port Cabling and Pin Assignments

The setup port (8-pin MJ EIA-232 Standard EIA-TIA-574) provides access to the setup port menu for the attached network module. This menu and the setup parameters are described in the documentation for the attached network module. Not all network modules support the setup port. Refer to the installation and configuration manual for the attached module for additional information.

You can connect a setup port device (terminal device, personal computer, or terminal server) to the setup port connector on the DEChub ONE-MX using various cables and adapters. This allows you to use the setup port to configure the attached network module's parameters. The default speed for the setup port is 9600 baud.

### Setup Port (Shielded 8-pin MJ) Pin Assignments

The signals for the DEChub ONE-MX setup port connector are listed in the following table:

**Table 1 Setup Port Pin Assignments**

Pin	Signal Name	Pin	Signal Name
1	No connection	5	No connection
2	Receive (RX)	6	Transmit (TX)
3	Ground	7	Always high (+5 V)
4	No connection	8	Always low

### Setup Port Cables

The setup port cables and adapters are listed in the following table:

**Table 2 Setup Port Cables**

Cable/Adapter Type	Connecting Device
BN24H-xx <sup>1</sup>	Terminal with 6-pin MMJ connector
BN24H-xx/H8871-J	Terminal with 9-pin D-Sub connector
BN24H-xx/H8575-J	Terminal with 25-pin D-Sub connector
BN25G-xx	Terminal with 8-pin MJ connector

<sup>1</sup> The xx represents the length in meters.

## OBM Port Cabling and Pin Assignments

When you connect the DEChub ONE-MX OBM port to a data terminal equipment (DTE) device, the attached network module becomes manageable using the SNMP over the SLIP. Not all network modules support the OBM port. Refer to the installation and configuration manual for the attached module for additional information.

The signals on the OBM port conform to standard EIA-574, which is based on EIA-232D but uses a 9-pin (DB9) connector instead of a 25-pin connector. EIA-574 is the signaling standard used by the serial ports on most personal computers. The OBM port appears as a DTE device and can be connected to a modem by using a standard AT modem cable.

### OBM Port (9-pin DB) Pin Assignments

The signals for the OBM port 9-pin DB connector are listed in the following table:

**Table 3 OBM Pin Assignments**

Pin	Signal Name	Pin	Signal Name
1	Data carrier detect (DCD)	6	Data set ready (DSR)
2	Receive data (RXD)	7	Request to send (RTS)
3	Transmit data (TXD)	8	Clear to send (CTS)
4	Data terminal ready (DTR)	9	No connection
5	Ground		

## OBM Port Cabling and Pin Assignments (Cont.)

### OBM Port Cables

The OBM port cables and adapters are listed in the following table:


**Table 4 OBM Port Cables and Adapters**

<b>Cable/Adapter Type</b>	<b>Connecting Device</b>
BN24H-xx <sup>1</sup> /H8571-J1	DECserver 900TM with 8-pin MJ connector
BC29Q-10	PC with 9-pin D-Sub connector
BC29P-10	Modem with 25-pin D-Sub communications port

<sup>1</sup> The xx represents the length in meters.

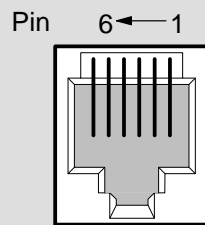
## Optical Bypass Relay and Pin Assignments

### Optical Bypass Relay (6-Pin MJ) Connector

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

The FDDI Optical Bypass Relay (OBR) device maintains FDDI dual-ring integrity if the module fails or if power to the module is turned off. Use of an OBR can prevent stations on a dual FDDI ring from becoming isolated in the event of multiple station failures. The following illustration shows the OBR 6-pin MJ connector and its pin assignments. Refer to this information when selecting and installing optical bypass devices.

<u>Pin</u>	<u>Assignment</u>
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




6-pin MJ connector

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See the documentation included with your OBR switch for instruction on installing it with the DEChub ONE-MX.

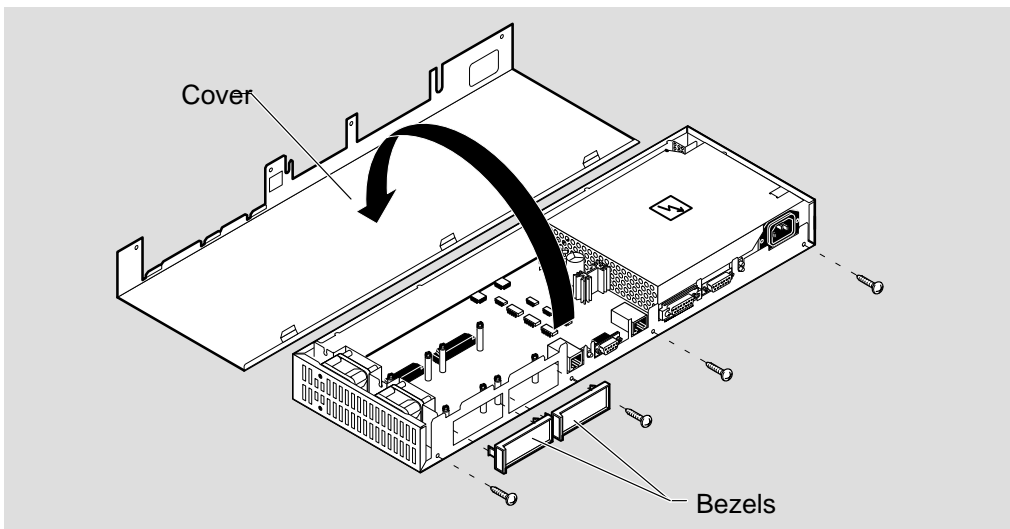


## Installing ModPMDs

**CAUTION**  These procedures are intended for qualified service personnel only. Failure to follow the procedures, or to abide by the cautionary notes given here, can result in injury or damage to the docking station or its attached devices.

Before installing ModPMDs you *must* detach the docking station from any attached DEChub 900 module, and you *must* disconnect the docking station from its AC power source.

- 1 Remove the cover.**
  - a. Using a Phillips screwdriver, remove the four screws that hold the module cover in place.
  - b. Lift the cover.
  - c. Remove the cover's metal tabs from the slots provided on the module, and set the cover aside.
  - d. Remove the blank bezels as necessary.




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## Installing ModPMDs (Cont.)

### 2 Verify the appropriate ModPMD to be Installed.

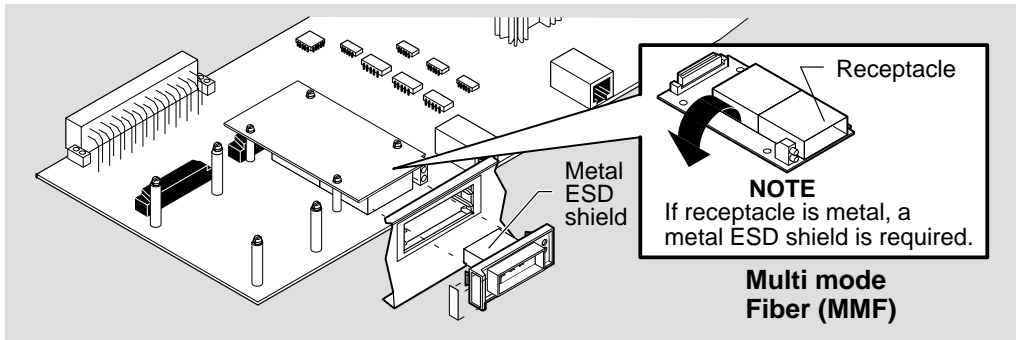
The DEChub ONE-MX accommodates three different types of ModPMDs:

- Multi Mode Fiber (MMF) (DEFXM-AA)
- Single Mode Fiber (SMF) (DEFXS-AA)
- Unshielded Twisted Pair (UTP) (DEFXU-AA)

**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 illustrations that follow show each type of ModPMD. Note that the ModPMDs are shown component-side up for identification purposes only.

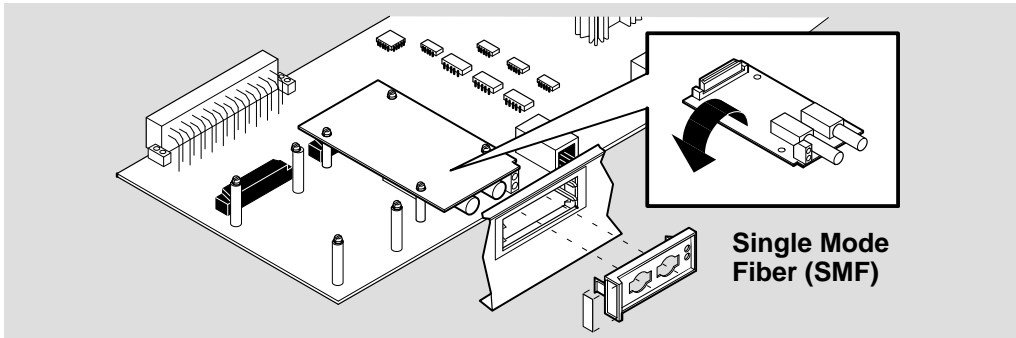
### Multi-Mode Fiber ModPMD



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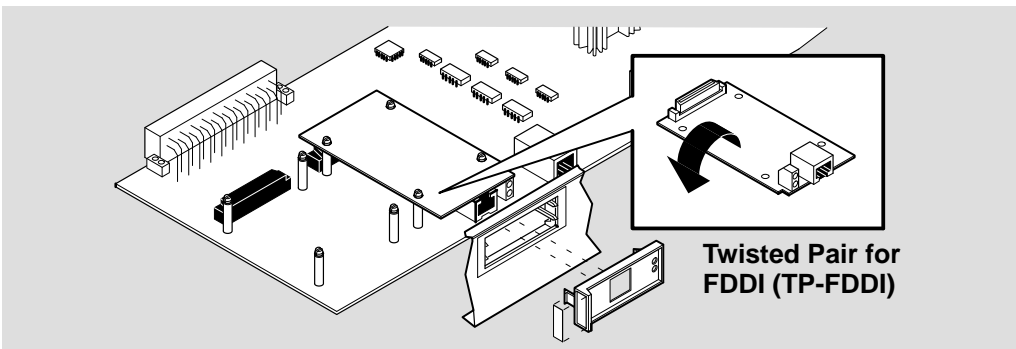
## Installing ModPMDs (Cont.)

### Single Mode Fiber ModPMD



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### Twisted Pair for FDDI ModPMD



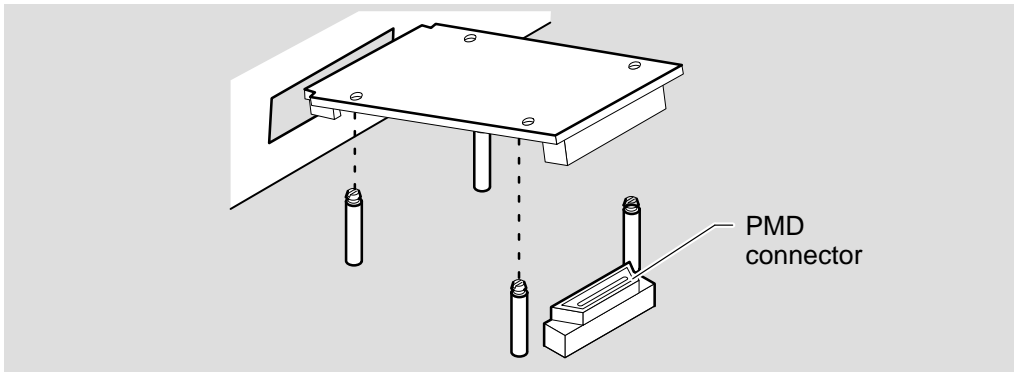
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## Installing ModPMDs (Cont.)

**NOTE:** On some ModPMDs you may need to remove one standoff for proper installation.

### 3 Install the ModPMD.

- a. Position the ModPMD so that the bus on the front of the device protrudes through the opening in the front of the docking station.

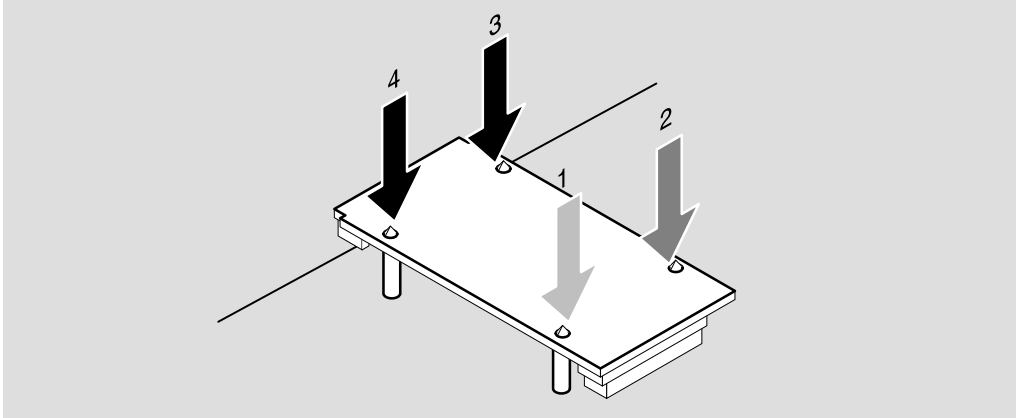


LKG-8992-941

- b. Align the 4 holes on the ModPMD with the 4 plastic standoffs.
- c. Ensure that the ModPMD's connector aligns properly with the PMD connector on the circuit board.

## Installing ModPMDs (Cont.)

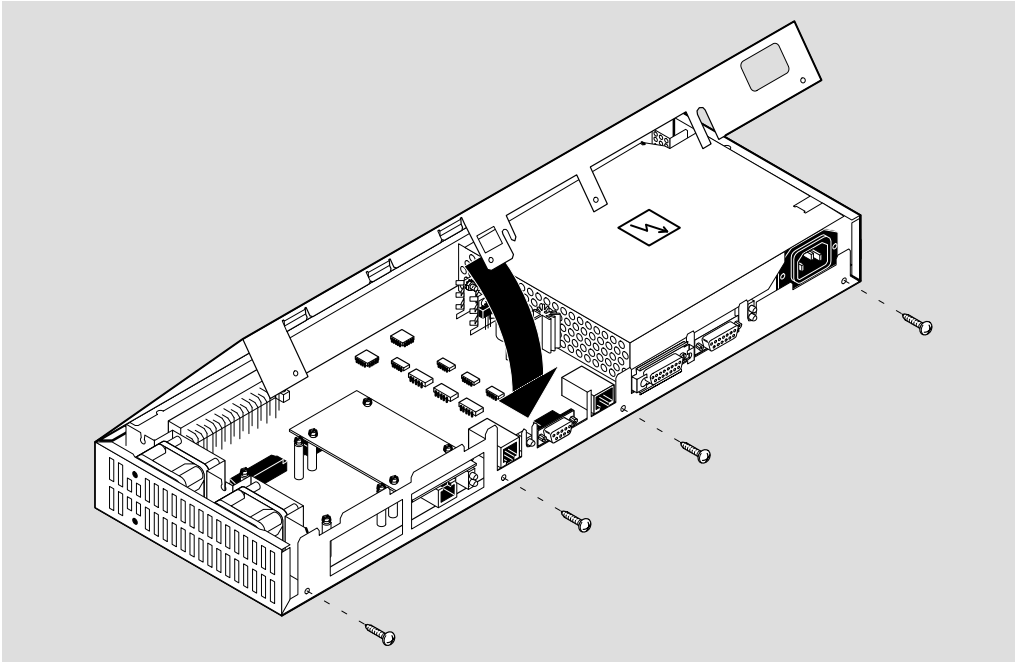
- d. Press down firmly on each corner of the ModPMD, seating one corner at a time as shown in the illustration below. This action seats the connector and secures the ModPMD to the circuit board.



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## Installing ModPMDs (Cont.)

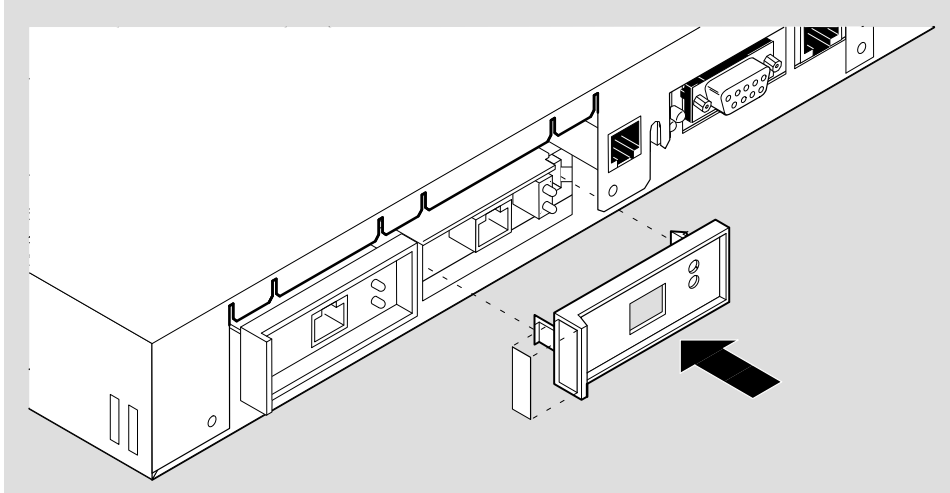
- 4** Replace the cover.
  - a. Insert the metal tabs on the back of the docking station's cover into the slots provided on the module.
  - b. Lower the cover into place.
  - c. Using a Phillips screwdriver, replace the four screws that hold the cover in place.



LKG-9532-94I

## Installing ModPMDs (Cont.)

- 5** Install the faceplates.
  - a. Position the faceplate so that the LED cutout aligns with the LEDs.
  - b. Press the faceplate's locking tabs into the slots on the module. Push gently to lock the faceplate into place.



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# Redundant Power Supply

## Redundant Power Supply Kit Contents

The DEChub ONE-MX redundant power kit supply provides failover capability for the DEChub ONE-MX. The kit (order number H9519-AA) consists of the following items:

- Documentation
- Hole plug (plastic)
- Redundant power cable
- Two mounting brackets
- Four mounting screws

**NOTE:** The redundant power supply kit does not contain a DEChub ONE-MX.

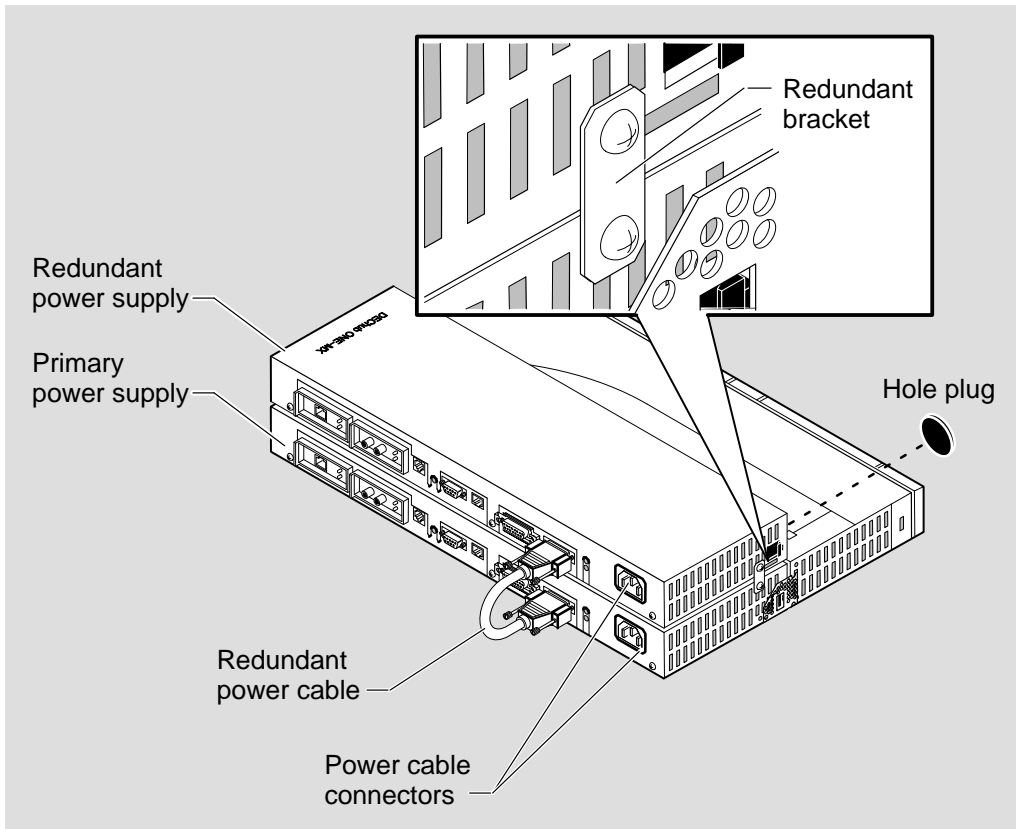
## Redundant Power Supply Kit Installation

To install the redundant power supply kit, perform the following steps:

- 1 Shut off the AC power to the DEChub ONE-MX.**  
Either turn the wall receptacle switch to off or disconnect the AC power cord from the wall receptacle.
- 2 Stack the modules.**  
Place the redundant DEChub ONE-MX power supply on top of the primary DEChub ONE-MX power supply.
- 3 Attach the supplied brackets to the power supplies.**
- 4 Attach the redundant power cable between the two power supplies.**



## Redundant Power Supply (Cont.)



LKG-9560-94I

- 5** Insert the hole plug into the redundant power supply.
- 6** Install the power cords.
  - a. Install a power cord into each power supply connector.
  - b. Plug each cord into a wall outlet.

## Redundant Power Supply (Cont.)

### LED Status

Table 5 describes the LED status when a redundant power kit is installed. Refer to the section titled Front Panel for the location of the LEDs.

**Table 5 Redundant Power LED Status**

<b>Main DC Power LED</b>	<b>Redundant Power Present LED</b>	<b>Indication</b>
On	On	Main DC power OK, redundant DC power OK
On	Off	Main DC power OK, no redundant DC power
Off	On	Main DC power fault, redundant DC power OK
Off	Off	Main DC power fault, no redundant DC power

## Problem Solving Using LEDs

Table 6 provides information to help isolate problems to the DEChub ONE-MX or the attached DEChub 900 module.

**Table 6 Problem Solving Using the LEDs**

Symptom	Probable Cause	Corrective Action
Power LED on the attached network module is off.	The DEChub ONE-MX single-slot hub has no AC power input.	Ensure that the AC power cord is properly connected to the DEChub ONE-MX and the wall outlet Check the wall outlet power. Ensure that the hot-swap switch is properly engaged Reseat the connectors.
And the DEChub ONE-MX fan runs continuously.		Reseat the connectors. If the fan still runs, replace the attached network module.
And the DEChub ONE-MX fan is not running.		Separate the network module from the DEChub ONE-MX. If the fan still does not run, replace the DEChub ONE-MX. If the fan begins running, replace the network module.
Power LED is flashing on the attached network module.	The DEChub ONE-MX fan runs intermittently.	Separate the module from the DEChub ONE-MX. If the fan continues to run intermittently, replace the DEChub ONE-MX.  If the fan begins to run continuously, replace the network module or troubleshoot using its problem-solving recommendations.
The MAU Power OK LED is off and the Power LED on the attached network module is on.	The MAU does not have power.	Ensure that the MAU is properly connected to the AUJ port and that the slide latch is secure. Refer to the MAU documentation for proper cabling.
	The MAU is defective	If the MAU is operating and properly connected, replace the DEChub ONE-MX.  Replace the MAU

(Continued on next page.)

## Problem Solving Using LEDs (Cont.)

**Table 6 (Cont.) Problem Solving Using the LEDs**

Symptom	Probable Cause	Corrective Action
The OBM port LED is off and the Power LED on the attached network module is on.	The OBM port is not in use.	Ensure that the network module supports OBM (has modem capability) and that the OBM port is in use.
	The OBM LED is faulty.	If the OBM port is operating and properly connected, replace the DEChub ONE-MX.
Power LED on attached module is not working.	The attached module needs a firmware upgrade.	Install the latest version of module firmware.

**NOTE:** Early revisions of the DECbridge 900MX (previous to revision B01) may not be able to utilize all of the DEChub ONE-MX features. The early revision DECbridge 900MX can use the power supplied by the DEChub ONE-MX, but the console port may be inoperable.

**NOTE:** The DECswitch 900EF (firmware version 1.4 only) is not able to utilize all of the DEChub ONE-MX features. The DECswitch 900EF can be configured into a DEChub ONE-MX docking station, and can use the power only. The FDDI ports on the DEChub ONE-MX will be inoperable.

## Accessing MIBs, RFCs, and Release Notes

### MIB and RFC Information

The DECrepeater 900FP module supports the following:

- MIB II, RFC 1213
- Ethernet-like Interface Type MIB, RFC 1398
- IETF Repeater MIB, RFC 1516
- DEChub 900 Repeater MIB extensions version 1.1
- DEChub 900 Common MIB version 1.1

The following MIB objects are not supported:

- pcomLigo group
- pcomHubld object

### Accessing Online Information

This section describes how to access this product's online release notes, public MIBs, Digital's private MIBs, firmware images, and requests for comments (RFCs). This information is available from Digital's Internet ftp access server at `ftp.digital.com` (16.1.0.2).

To Access...	Use...
MIBs, release notes, firmware update files, and the DECndu Plus Load utility	Anonymous ftp
MIBs and release notes	ftpmail
RFCs	Electronic mail

### Using Anonymous ftp

You can access any of Digital's DEChub MIBs, firmware update files, release notes, and DECndu Plus Utility over the Internet by using your FTP software.

When you use FTP, you must use include the following parameters:

- Connect to `ftp.digital.com`

## Accessing MIBs, RFCs, and Release Notes (Cont.)

- For a user name, enter `anonymous`
- For a password, enter your Internet mail address, for example:

`name@system.company.com`

- Change directory to:

`/pub/DEC/hub900/<directory_name>`

(See Table 9 for a list of directory names.)

**Table 9 Directory Names Available**

<b>Name</b>	<b>Contents<sup>1</sup></b>
mibs	DEChub MIBs
firmware	DEChub firmware images
firmware/ndu	DECndu Plus Load Utility
release	DEChub product release notes

<sup>1</sup> Digital suggests reading the README file in each directory to understand the contents of that directory.

You can also access these directories from the World-Wide Web using a browser, such as Mosaic. The Universal Resource Locator (URL) is:  
`file://ftp.digital.com/pub/DEC/hub900/`

The following example shows how to copy a README file. User input in the example is shown in **bold** text.

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

```
% ftp ftp.digital.com
Connected to ftp.digital.com
220 FTP.DIGITAL.COM FTP Service Process
Name: anonymous
331 ANONYMOUS user ok, send real ident as password.
```

## Accessing MIBs, RFCs, and Release Notes (Cont.)

Password: **milano@netman.stateu.edu**

230 User ANONYMOUS logged in at Tue 10-May-1994 10:24-EST,  
job 54.

ftp> **cd /pub/DEC/hub900/<directory\_name>** (See Table 7 for directory  
names.)

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

ftp> **ascii** (See note below.)

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**

%

**NOTE:** To transfer binary files, such as firmware updates,  
replace the `ascii` command shown in this example with  
`binary` or `image`.

## Accessing MIBs, RFCs, and Release Notes (Cont.)

### Using ftpmail

Digital offers Internet ftpmail access to private MIB and release note information, in ASCII text form, at ftp.digital.com, with up-to-date documents stored in:

```
/pub/DEC/hub900/<directory_name>
```

(See Table 7 for a list of directories.)

To use ftpmail, follow these instructions:

- 1) Send a mail message to `ftpmail@ftp.digital.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/<directory_name>/README
```

(See Table 7 for a list of directory names.)

- 5) `quit`

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 section titled Using Anonymous ftp).

### Using Electronic Mail

The DDN Network Information Center (NIC) of SRI International provides automated 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.



## Accessing MIBs, RFCs, and Release Notes (Cont.)

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 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`

Requests are processed automatically once a day. Large files are broken down into separate messages.

## Product Specifications

Table 7 lists the DEChub ONE-MX operating specifications.

Table 8 lists the DEChub ONE-MX acoustical specifications.

**Table 7 Operating Specifications**

Parameter	DEChub ONE - MX	With Attached Module
<b>Physical</b>		
Height	44.45 cm (17.5 in)	44.45 cm (17.5 in)
Width	4.45 cm (1.75 in)	4.45 cm (1.75 in)
Depth	10.16 cm (5.9 in)	25.40 cm (10.0 in)
Weight	1.59 kg (3.5 lb)	3.4 kg (7.5 lb)
Connectors	6-pin MJ, 9-pin DB, 8-pin MJ, 15-pin AUI, 26-pin D-SUB	8-pin MJ, 9-pin DB, 15-pin AUI, plus module connectors
<b>Operating Environment</b>		
Operating Temperature	5° C to 50° C (41° F to 122° F)	5° C to 50° C (41° F to 122° F)
Relative Humidity	10% to 95% noncondensing	10% to 95% noncondensing
Altitude <sup>1</sup>	Sea level to 4900 m (16,000 ft)	Sea level to 4900 m (16,000 ft)
Input Power	100 Vac to 120 Vac @ 2 A 220 Vac to 240 Vac @ 1 A	N/A N/A

## Product Specifications (Cont.)

**Table 7 (Cont.) Operating Specifications**

<b>Parameter</b>	<b>DEChub ONE - MX</b>	<b>With Attached Module</b>
<b>Output Power</b>	10 Amps maximum  1A @+5Vdc, .12A @ +12.0Vdc 2A @ +15.0 Vdc	81 watts available to power the module. 7 watts available to support the AUI port. Maximum power consumption (DEChub ONE-MX cooling fans, module, and AUI ) 90 watts.
<b>Certification</b>	CE, CSA, FCC,TÜV, UL, VCCI	CE, CSA, FCC,TÜV, UL, VCCI

<sup>1</sup> For sites above 4,900m (16,000 ft), decrease the operating temperature specification by 1.8° C (35.2°F) for each 1000 m (3200 ft).

## Product Specifications (Cont.)

**Table 8 Acoustical Specifications**

Acoustics — Declared values per ISO 9296 and ISO 7779<sup>1</sup>

Product	Sound Power Level $L_{WA,d}$ , B	Sound Pressure Level $L_{pAm}$ , dBA (bystander positions)
	<i>Idle/Operate</i>	<i>Idle/Operate</i>
DEF1H	5.1	36

Schallemissionswerte — Werteangaben nach ISO 9296 und ISO 7779/DIN EN27779<sup>2</sup>

Produkt	Schalleistungspegel $L_{WA,d}$ , B	Schalldruckpegel $L_{pAm}$ , dBA (Zuschauerpositionen)
	<i>Leerlauf/Betrieb</i>	<i>Leerlauf/Betrieb</i>
DEF1H	5,1	36

<sup>1</sup> Current values for specific configurations are available from Digital Equipment Corporation representatives. 1 B = 10 dBA. Values for network modules are in each modules installation documentation.

<sup>2</sup> Aktuelle Werte für spezielle Ausrüstungsstufen sind über die Digital Equipment Vertretungen erhältlich. 1 B = 10 dBA. Werte für netzwerkkarten sind in den Installationshinweisen der entsprechenden Karten zu finden.

## Associated Documents

The following documents provide related information about the DEChub ONE-MX module. Ordering information is provided at the back of this manual.

<b>Title and Order Number</b>	<b>Description</b>
<i>Using DECndu Plus (MS-DOS)</i> AV-PYVVA-TE	Provides the instructions to upgrade the firmware in an MS-DOS environment of selected network devices using Digital's Network Device Upgrade (DECndu) Plus utility.
<i>Using DECndu Plus (ULTRIX RISC)</i> AV-PYVTA-TE	Provides the instructions to upgrade the firmware in an ULTRIX RISC environment of selected network devices using Digital's Network Device Upgrade (DECndu) Plus utility.
<i>Using DECndu Plus (OpenVMS VAX)</i> AV-PYVRA-TE	Provides the instructions to upgrade the firmware in an OpenVMS VAX environment of selected network devices using Digital's Network Device Upgrade (DECndu) Plus utility.
<i>OPEN DECconnect Applications Guide</i> EC-G2570-42	Contains general descriptions to help plan and install networking systems based on Digital Equipment Corporation's OPEN DECconnect System and networking products.
<i>Bridge and Extended LAN, Reference</i> EK-DEBAM-HR	Describes how bridges are used to create extended local area networks (LANs). The descriptions include the use of bridges in extended LAN configurations, information on LAN interconnections, overall bridge operation, spanning tree, bridge management, and solving bridge-related problems in a network.

## HOW TO ORDER ADDITIONAL DOCUMENTATION

### DIRECT TELEPHONE ORDERS

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

In Canada  
call 1-800-267-6215

In New Hampshire,  
Alaska or Hawaii  
call 1-603-884-6660

### ELECTRONIC ORDERS (U.S. ONLY)

Dial 1-800-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\*)

DIGITAL EQUIPMENT CORPORATION  
P.O. Box CS2008  
Nashua, New Hampshire 03061

### DIRECT MAIL ORDERS (Canada)

DIGITAL EQUIPMENT OF CANADA LTD.  
940 Belfast Road  
Ottawa, Ontario, Canada K1G 4C2  
Attn: A&SG Business Manager

### INTERNATIONAL

DIGITAL EQUIPMENT CORPORATION  
A&SG Business Manager  
c/o Digital's local subsidiary  
or approved distributor

Internal orders should be placed through U.S. Software Supply Business (SSB),  
Digital Equipment Corporation, 10 Cotton Rd. Nashua, NH. 03063-1260

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

**DEChub ONE-MX Installation  
EK-DEF1H-IN. A01**

**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.

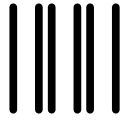
Name \_\_\_\_\_ Date \_\_\_\_\_

Title \_\_\_\_\_ Department \_\_\_\_\_

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City \_\_\_\_\_ State/Country \_\_\_\_\_ Zip Code \_\_\_\_\_

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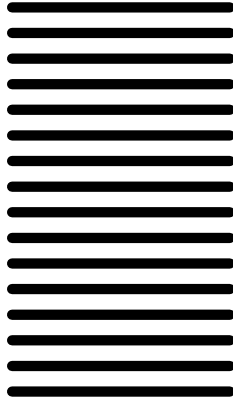
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