BitStorm™ 4800

Installation Guide

Document No. 4821-A2-GN20-10

July 2002

PARADYNE®

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- **Telephone:** Call our automated system to receive current information by fax or to speak with a company representative.

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⚠ Important Safety Instructions

1. Read and follow all warning notices and instructions marked on the product or included in the manual.

2. This product is intended to be used with a 3-wire grounding type plug — a plug which has a grounding pin. This is a safety feature. Equipment grounding is vital to ensure safe operation. Do not defeat the purpose of the grounding type plug by modifying the plug or using an adapter.

   Prior to installation, use an outlet tester or a voltmeter to check the AC receptacle for the presence of earth ground. If the receptacle is not properly grounded, the installation must not continue until a qualified electrician has corrected the problem.

   If a 3-wire grounding type power source is not available, consult a qualified electrician to determine another method of grounding the equipment.

3. Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these slots and openings must not be blocked or covered.

4. Do not allow anything to rest on the power cord and do not locate the product where persons will walk on the power cord.

5. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous high voltage points or other risks. Refer all servicing to qualified service personnel.

6. General purpose cables are described for use with this product. Special cables, which may be required by the regulatory inspection authority for the installation site, are the responsibility of the customer. To reduce the risk of fire, use a UL Listed or CSA Certified, minimum 26 AWG (0.129 mm^2) telecommunication cable.

7. When installed in the final configuration, the product must comply with the applicable Safety Standards and regulatory requirements of the country in which it is installed. If necessary, consult with the appropriate regulatory agencies and inspection authorities to ensure compliance.

8. A rare phenomenon can create a voltage potential between the earth grounds of two or more buildings. If products installed in separate buildings are **interconnected**, the voltage potential may cause a hazardous condition. Consult a qualified electrical consultant to determine whether or not this phenomenon exists and, if necessary, implement corrective action prior to interconnecting the products.

9. In addition, if the equipment is to be used with telecommunications circuits, take the following precautions:
   — Never install telephone wiring during a lightning storm.
   — Never install telephone jacks in wet locations unless the jack is specifically designed for wet locations.
   — Never touch uninsulated telephone wires or terminals unless the telephone line has been disconnected at the network interface.
   — Use caution when installing or modifying telephone lines.
   — Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.
   — Do not use the telephone to report a gas leak in the vicinity of the leak.

10. This product has provisions for the customer to install Class 1 laser transponders which provide optical coupling to the telecommunication network. Once a Class 1 laser product is installed, the equipment is to be considered to be a Class 1 Laser Product (Appareil à Laser de Classe 1). The customer is responsible for selecting and installing the laser transponders and for insuring that the Class 1 AEL (Allowable Emission Limit) per EN/IEC 60825 is not exceeded after the laser transponders have been installed. Do not install laser products whose class rating is greater than 1. Refer to all important safety instructions that accompanied the transponder prior to installation. Only laser Class 1 devices, certified for use in the country of installation by the cognizant agency are to be utilized in this product.

11. Input power to the ALARM interface (located on the front panel of the enclosure) must not exceed 30V rms or 60V dc.

12. The equipment is intended for installation in a max. 50° C ambient temperature, in an environment that is free of dust and dirt.

13. The power supply cord for countries other than North America is to be a minimum H05 V V-F type, min. 0.75 mm^2, 2-conductor and earth ground terminated in an IEC 320 connector on one end, and a plug which is certified for use in the country of installation at the other end.

14. Do not physically stack the Model 4821 units more than eight (8) units high. Physical stability has not been evaluated for a stack higher than eight units, and a configuration higher than eight units might be unstable and prone to tipping over. Ensure that the four (4) rubber feet provided with the product have been installed on the bottom of each unit before stacking one atop another.

EMI Notices

⚠ UNITED STATES – EMI NOTICE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The authority to operate this equipment is conditioned by the requirements that no modifications will be made to the equipment unless the changes or modifications are expressly approved by Paradyne Corporation.

⚠ CANADA – EMI NOTICE:

This Class A digital apparatus meets all requirements of the Canadian interference-causing equipment regulations.

Cet appareil numérique de la classe A respecte toutes les exigences du réglement sur le matériel brouilleur du Canada.

Notices to Users of the Canadian Telephone Network

NOTICE: This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation IC before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

NOTICE: The Ringer Equivalence Number (REN) for this terminal equipment is labeled on the equipment and includes the effect of the POTS splitter. The REN assigned to each terminal equipment provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the Ringer Equivalence Numbers of all the devices does not exceed five.

Notice to Users of the United States Telephone Network

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the Administrative Council for Terminal Attachment (ACTA). On the bottom side of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

This equipment is intended to connect to the Public Switched Telephone Network through the Model 6051 POTS splitter using a Universal Service Order Code (USOC) type RJ21X jack. Refer to the Installation Instructions for details.

The Ringer Equivalence Number (or REN) is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. The REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point. For example, 03 represents a REN of 0.3.

If the BitStorm 4800 causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with the BitStorm 4800, refer to the repair and warranty information on Page A. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

The user may make no repairs to the equipment.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If the site has specially wired alarm equipment connected to the telephone line, ensure the installation of the BitStorm 4800 does not disable the alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

Supplier's Declaration of Conformity

Place of Issue: Paradyne Corporation
8545 126th Avenue North
Largo, FL 33773-1502
USA

Date of Issue: 3/28/2002

Paradyne Corporation, located at the above address, hereby certifies that the BitStorm 4800, Model Number 4821-AX-XXX, bearing labeling identification number US:AW2HN04B4821 complies with: the Federal Communications Commission's ("FCC") Rules and Regulations 47 CFR Part 68 and the Administrative Council on Terminal Attachments ("ACTA")-adopted technical criteria TIA/EIA/IS-968, "Telecommunications – Telephone Terminal Equipment – Technical Requirements for Connection of Terminal Equipment To the Telephone Network, July 2001."

Patrick Murphy
Senior Vice President, Chief Financial Officer

CE Marking

When the product is marked with the CE mark on the equipment label, a supporting Declaration of Conformity may be downloaded from the Paradyne World Wide Web site at **www.paradyne.com**. Select *Library → Technical Manuals → CE Declarations of Conformity*.

Japan

Class A ITE

この装置は、情報処理装置等電波障害自主規制協議会（ＶＣＣＩ）の基準
に基づくクラスＡ情報技術装置です。この装置を家庭環境で使用すると電波
妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ず
るよう要求されることがあります。

This is a Class A product based on the standard of the Voluntary Control Council for interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, the user may be required to take corrective actions.

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2   Cabling

3 LEDs

4 Configuration

A Connectors, Cables, and Pin Assignments

B Equipment List

C Technical Specifications

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About This Guide

Document Purpose and Intended Audience

This document is written for technicians who install the 24-port or 48-port BitStorm 4800 IP DSLAM, Model 4821.

Document Summary

Section	Description
Chapter 1, *Installation*	Describes the physical installation of the BitStorm 4800 into a rack.
Chapter 2, *Cabling*	Describes how to install all cables for the BitStorm 4800 and Management Module.
Chapter 3, *LEDs*	Explains the meaning and usage of the front panel LEDs.
Chapter 4, *Configuration*	Describes the minimal configuration steps required to prepare the BitStorm 4800 for remote access.
Appendix A, *Connectors, Cables, and Pin Assignments*	Provides pinouts for all connectors on the BitStorm 4800 and 4800 and 4804 Management Modules.
Appendix B, *Equipment List*	Provides part numbers for the BitStorm 4800 and related products.
Appendix C, *Technical Specifications*	Lists the technical characteristics of the BitStorm 4800.
Index	Lists key terms, acronyms, concepts, and sections in alphabetical order.

A master glossary of terms and acronyms used in Paradyne documents is available on the World Wide Web at **www.paradyne.com**. Select *Library* → *Technical Manuals* → *Technical Glossary.*

Related Product Documents

Documentation for the BitStorm 4800 IP DSLAM is available on the World Wide Web at **www.paradyne.com**. Select *Library → Technical Manuals→ BitStorm DSL Systems.*

Document Number	Document Title
4800-A2-GB20	*BitStorm 4800 User's Guide* Describes how to use the web interface, the command line interface (CLI), and Simple Network Management Protocol (SNMP) to configure the BitStorm 4800. Lists and explains all CLI commands.
4800-A2-GN10	*BitStorm 4800 Management Module, Models 4800-B1-000 and 4804-B1-000, Installation Instructions* Describes how to install the 4800 and 4804 Management Modules in the BitStorm 4800.
6051-A2-GZ40	*BitStorm 6051 POTS Splitter Installation Instructions* Describes how to install the POTS splitter card and chassis used with the BitStorm 4800 in North America.

To order a paper copy of a Paradyne document:

- Within the U.S.A., call 1-800-PARADYNE (1-800-727-2396)
- Outside the U.S.A., call 1-727-530-8623

Related Specifications

Document Number	Document Title
–	*Small Form-factor Pluggable (SFP) Transceiver MultiSource Agreement (MSA)*
ANSI T1.413-1998	*Network to Customer Installation Interfaces – Asymmetric Digital Subscriber Line (ADSL) Metallic Interface*
ANSI/EIA-310-D-1992	*Cabinets, Racks, Panels, and Associated Equipment*
G.992.1	*Asymmetrical digital subscriber line (ADSL) transceivers*
G.992.2	*Splitterless asymmetric digital subscriber line (ADSL) transceivers*
IEEE 802.1D	*Media Access Control (MAC) Bridges*
IEEE 802.1Q	*Virtual Bridged Local Area Networks*

Installation

1

Preparation

Consider the following before installing the BitStorm™ 4800 IP DSLAM:

■ **Installation Site**

Your installation site should be well ventilated, clean, and free of environmental extremes.

■ **Installation Options**

The BitStorm 4800 may be:

— Mounted with the included mounting brackets in a standard 19-inch (483 mm) or 23-inch (584 mm) rack, or, with separately purchased mounting brackets, in a 21-inch (535 mm) ETSI or 24-inch (610 mm) EIA rack. ETSI brackets are available from Paradyne. See Appendix B, Equipment List.

As many BitStorm 4800 units may be mounted in a standard rack as there are 1.75-inch (44.45 mm) spaces in the rack, so long as adequate cooling is provided.

— Mounted vertically against a wall.

The standard mounting brackets provided can be fastened to the base of the unit for wall mounting.

— Set on a shelf or desktop.

Up to eight BitStorm 4800 units may be stacked on a shelf or desktop.

■ **Management Module**

A 4800 or 4804 Management Module must be installed in each BitStorm 4800.

■ **Power**

The BitStorm 4800 operates from a standard AC power supply (90 to 264 VAC at 47 to 63 Hz).

■ **Fiber Optic Uplink and Downlink**

Use of either of the fiber optic ports requires use of a Small Form-factor Pluggable (SFP) transceiver, not included. It must be compliant with the SFP Transceiver MultiSource Agreement of September 14, 2000, and provide a 1000BaseX interface.

■ **Other Cabling**

With the exception of the power cord, no cables are provided with the BitStorm 4800. See Cables Required on page 1-2 to determine what cables you need to procure before installation.

Cables Required

Table 1-1 shows all the cables that may be required for your installation.

Table 1-1.   Cable Descriptions

Connector Name	Connector and Cable	For Connecting . . .
DSL PORTS 1–24 DSL PORTS 25–48 (48-port models)	50-pin RJ21X Telco-type straight connector and 50-wire cable. Two cables required for 48 ports.	Up to 24 DSL ports to Main Distribution Frame, punchdown block, or splitters.
DOWNLINK GigE (RJ45)	8-position modular plug and 8-wire Category 5 or better twisted pair cable.	An upstream BitStorm 4800 to a downstream BitStorm 4800, or the BitStorm 4800 to an adjunct server.
DOWNLINK GigE (SFP)	Duplex modular plug and fiber optic cable. Socket requires a 1000BaseX SFP transceiver, not supplied.	An upstream BitStorm 4800 to a downstream BitStorm 4800, or the BitStorm 4800 to an adjunct server.
UPLINK GigE (RJ45)	8-position modular plug and 8-wire Category 5 or better twisted pair cable.	A downstream BitStorm 4800 to an upstream BitStorm 4800, or the subtending or only BitStorm 4800 to the Wide Area Network (WAN) via an Ethernet switch.
UPLINK GigE (SFP)	Duplex modular plug and fiber optic cable. Socket requires a 1000BaseX SFP transceiver, not supplied.	A downstream BitStorm 4800 to an upstream BitStorm 4800, or the subtending or only BitStorm 4800 to the WAN via an Ethernet switch.
MGMT	8-position modular plug and 8-wire Category 5 or better unshielded twisted pair (UTP) cable.	The BitStorm 4800 to a Network Management System over a Local Area Network (LAN) employing 10BaseT or 100BaseT.
CONSOLE (4800 and 4804 Management Modules)	DB9 plug connector and shielded cable. The other connector depends on the serial port on your terminal or PC, but normally is a DB9 socket.	The Management Module to a terminal or a PC with a terminal emulation program.
MODEM (4800 and 4804 Management Modules)	DB9 socket connector and shielded cable. The other connector depends on your modem, but normally is a DB25 plug.	The Management Module to an external modem. The connector can also be used to connect a terminal or PC.
ALARM (4800 and 4804 Management Modules)	8-position modular plug and 8-wire cable.	The Management Module to an alarm system.
V.35/X.21 (4804 Management Module)	DB25 socket with V.35, EIA-530-A, or X.21 adapter or adapter cable.	The subtending or only BitStorm 4800 to the WAN via a CSU or router.

Unpacking the Hardware

⚠ **HANDLING PRECAUTIONS FOR STATIC-SENSITIVE DEVICES**

This product is designed to protect sensitive components from damage due to electrostatic discharge (ESD) during normal operation. When performing installation procedures, however, take proper static control precautions to prevent damage to equipment. If you are not sure of the proper static control precautions, contact your nearest sales or service representative.

The BitStorm 4800 is shipped in a cardboard shipping container. Carefully remove the unit from its shipping container and check for physical damage. If the unit shows signs of shipping damage, notify your sales representative.

Package Contents

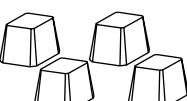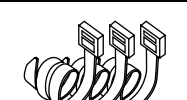In addition to this installation guide, the BitStorm 4800 shipping carton should contain:
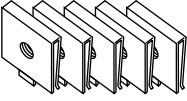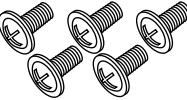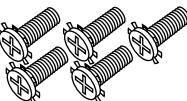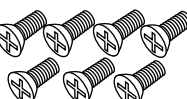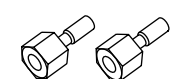
- BitStorm 4800

- Mounting brackets (one left and one right)

- Power cord

- Hardware kit (see Table 1-2, Contents of Hardware Kit Shipped with the BitStorm 4800)

- EIA-530-A to V.35 adapter (models with 4804 Management Module installed only)

If anything is missing, notify your sales representative.

Before installing the BitStorm 4800, read the *Important Safety Instructions* in the beginning of this document.

Be sure to register your warranty at **www.paradyne.com/warranty**.

Table 1-2.   Contents of Hardware Kit Shipped with the BitStorm 4800

Appearance	Description	Quantity
	Self-retaining nut for racks without threaded holes	5
	Dress screw (12-24 x 1/2 inch) for use with self-retaining nuts	5
	Machine screw with captive starwasher (10-32 x 1/2 inch) for use with racks with threaded holes	5
	Flat-head screw for attaching mounting brackets to unit	7
	Jackscrew for attaching Telco connectors with short mounting screws	2
	Rubber foot for desk-mount and stacking of units	4
	Cable tie (8-inch) for strain relief and cable management	3

Mounting Configurations

Three basic installation configurations are available:

- Rack mount

- Wall mount

- Shelf or desktop

Rack or Wall Mount Installation

The BitStorm 4800 is shipped with mounting brackets suitable for a 19-inch (483 mm) or 23-inch (584 mm) rack. The same brackets may be used to attach the unit to a wall.

Brackets suitable for a 21-inch (535 mm) ETSI rack are available from Paradyne (see Appendix B, *Equipment List*), and brackets suitable for a 24-inch (610 mm) rack can be obtained from other sources.

NOTE:

In this guide, the term *rack* refers to any rack, cabinet, frame, or bay suitable for mounting telecommunications equipment.

Shelf or Desktop Installation

The BitStorm 4800 may also be placed on a shelf or desktop. If you will not mount the BitStorm 4800 in a rack or on a wall, proceed to *Installing the BitStorm 4800 on a Shelf or Desktop* on page 1-12.

Mounting Brackets

The right-angle mounting brackets have a long side and a short side.

- For 19-inch (483 mm) racks, the long side of a supplied bracket is fastened to the side of the unit.

- For 23-inch (584 mm) racks, the short side of a supplied bracket is fastened to the side of the unit.

- For wall mounting, the long side of a supplied bracket is fastened to the bottom of the unit.

- The optional ETSI brackets are always installed with the short side fastened to the BitStorm 4800.

Both the supplied brackets and the optional ETSI brackets are marked LEFT SIDE and RIGHT SIDE, with reference to the left and right sides of the BitStorm 4800 when viewed from the front.

For wall mounting, proceed to *Installing the Mounting Brackets for Wall Mounting* on page 1-10.

For rack mounting, proceed to *Installing the BitStorm 4800 Into a Rack* on page 1-8.

Installing the Mounting Brackets for Rack Mounting

▶ **Procedure**

To install the mounting brackets for rack mounting:

1. Identify the flat-head screws provided in the hardware kit. Six screws are required for the 19-inch (483 mm) configuration, and four screws for the other configurations.

2. Attach the brackets appropriate to your rack size. Tighten all screws firmly.

19-inch (483 mm) Rack Mount
with Supplied Brackets

23-inch (584 mm) Rack Mount
with Supplied Brackets

21.1-inch (535 mm) Rack Mount
with Optional ETSI Brackets

02-17067
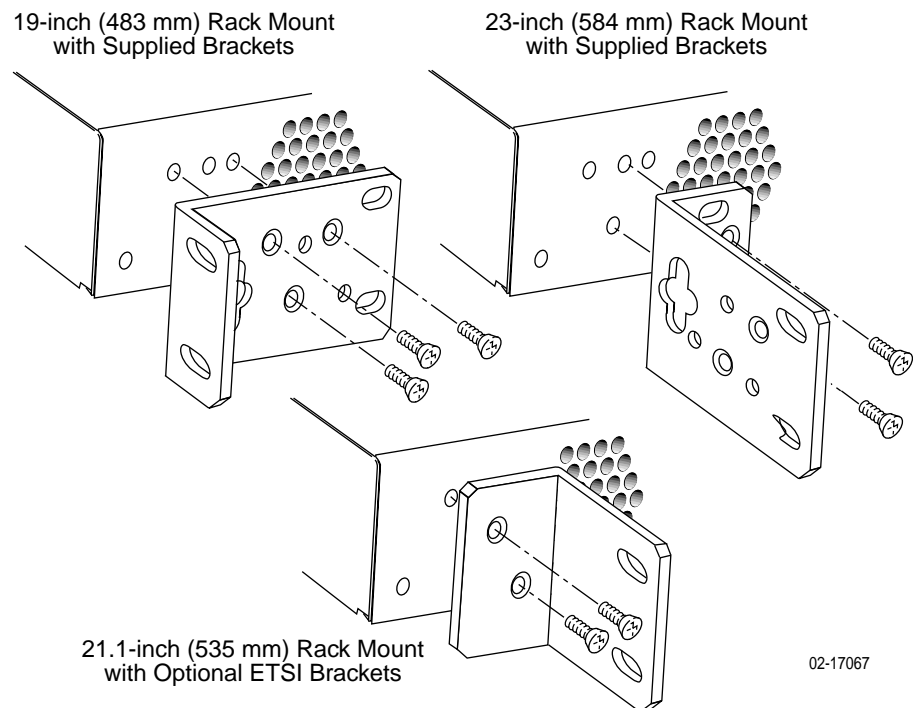
Installing the BitStorm 4800 Into a Rack

Two types of mounting screws are provided. Use:

- #10-32 mounting screws for rails with threaded screw holes

- #12-24 mounting screws and self-retaining nuts for rails with unthreaded screw holes

▶ **Procedure**

To install the BitStorm 4800 into a rack:

1. Determine where in the rack you will mount the BitStorm 4800. If your rack does not have threaded screw holes, slip self-retaining nuts onto the rails where the BitStorm 4800 will be fastened.
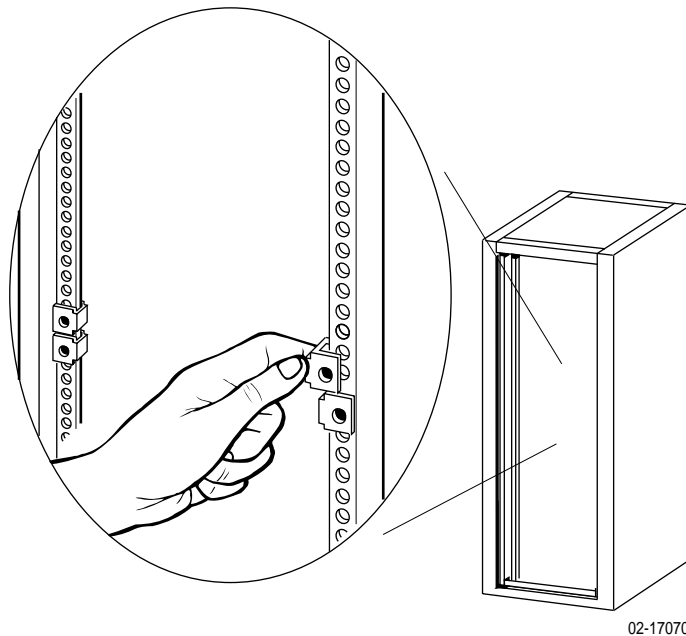
02-17070

2. Place the BitStorm 4800 so that the brackets rest against the front of the rails. Insert screws in the bottom screw positions and hand-tighten them.

3. Insert and tighten the screws in the top screw positions, then tighten the bottom screws.
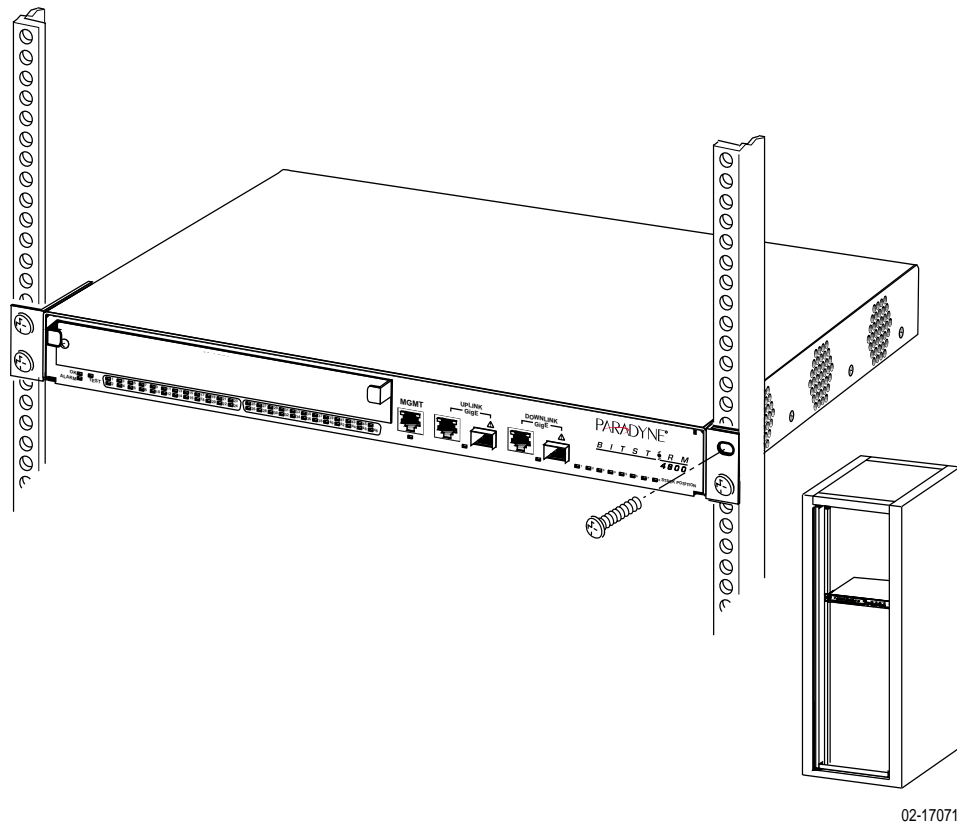
02-17071

4. Do not plug in the unit. Proceed to *Installing the Management Module* on page 1-13.

Installing the Mounting Brackets for Wall Mounting

Wall mounting requires two wood screws suitable for the weight of the fully cabled unit. These are not included. Use at a minimum 0.25-inch (6 mm) diameter screws in 0.75-inch (19 mm) plywood.

▶ **Procedure**

To install the mounting brackets for wall mounting:

1. Identify the flat-head screws provided in the hardware kit. Two screws are required for each bracket.

2. Orient the unit so that the bottom is facing you and the faceplate is at the top.

3. Locate the supplied Right Side mounting bracket and fasten it to the right side of the unit.

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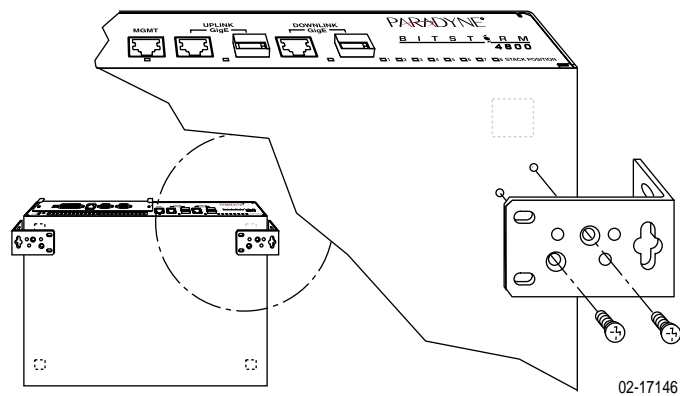
4. Locate the supplied Left Side mounting bracket and fasten it to the left side of the unit.

5. Tighten all screws firmly.

6. Install two wood screws (not provided) at the same height at least 30 inches (760 mm) above the floor and 17.85 inches (453 mm) apart. Do not completely tighten the screws. Leave them so their heads are about 0.25 inch (6 mm) from the wall.

02-17147
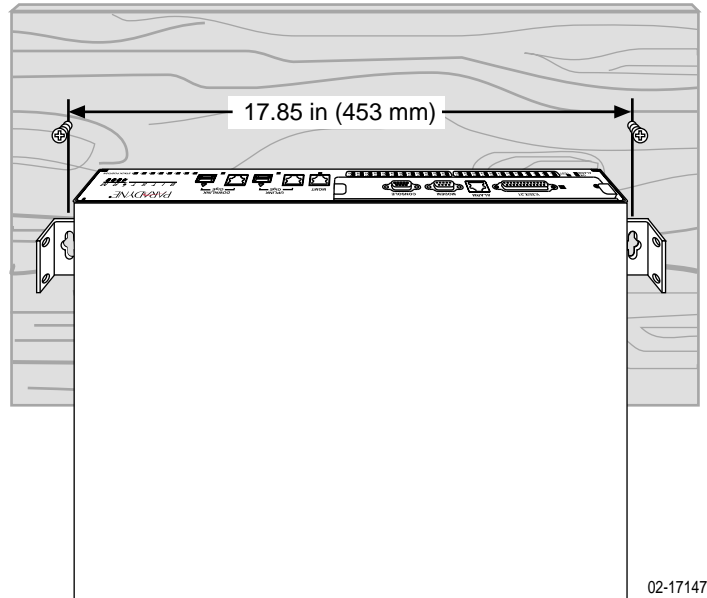
7. Hang the unit from the wood screws to verify that the screws are properly placed. The screws should freely slide into the top of the key slots in the brackets.

8. Do not fasten the unit to the wall until it is completely cabled and tested. Proceed to *Installing the Management Module* on page 1-13.

Installing the BitStorm 4800 on a Shelf or Desktop

If the BitStorm 4800 will be placed on a shelf or desktop, install the provided rubber feet before putting the BitStorm 4800 in position.

▶ **Procedure**

To install the BitStorm 4800 on a shelf or desktop, as a standalone unit or in a stack:

1. Locate the rubber feet in the hardware kit provided with the BitStorm 4800.

2. Turn the BitStorm 4800 upside down on a work surface. Squares stamped into the bottom of the BitStorm 4800 show the proper positions for the feet.

3. Remove the protective sheet from the bottom of each foot, then press the foot onto a corner of the bottom of the BitStorm 4800.
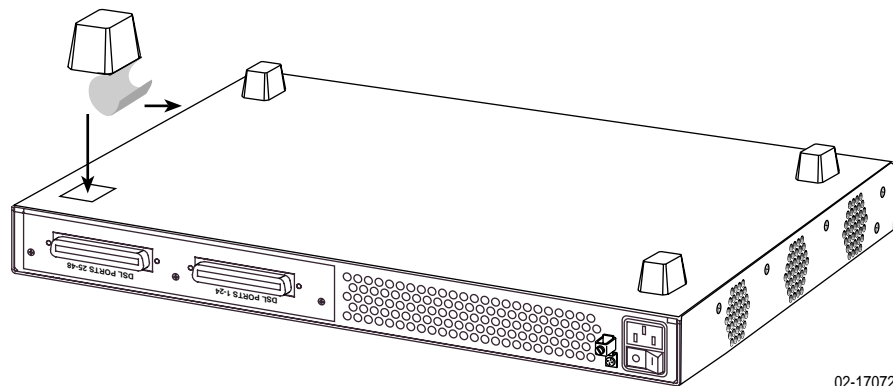
02-17072

4. Turn the BitStorm 4800 right side up and place it in position on a shelf or desktop.

   If the installation includes more than one unit, one can be stacked atop another. Up to eight units can be stacked together.

5. Do not plug in the unit. Proceed to *Installing the Management Module* on page 1-13.

Installing the Management Module

Each BitStorm 4800 requires a Model 4800 Management Module or a Model 4804 Management Module with V.35/X.21 uplink. If your Management Module was shipped separately from the BitStorm 4800, install the Management Module before you connect the BitStorm 4800 to a power source.

### ⚠ HANDLING PRECAUTIONS FOR STATIC-SENSITIVE DEVICES

This product is designed to protect sensitive components from damage due to electrostatic discharge (ESD) during normal operation. When performing installation procedures, however, take proper static control precautions to prevent damage to equipment. If you are not sure of the proper static control precautions, contact your nearest sales or service representative.

▶ **Procedure**

To install a Management Module:

1. Remove the two screws holding the slot cover on the BitStorm 4800.

02-17068
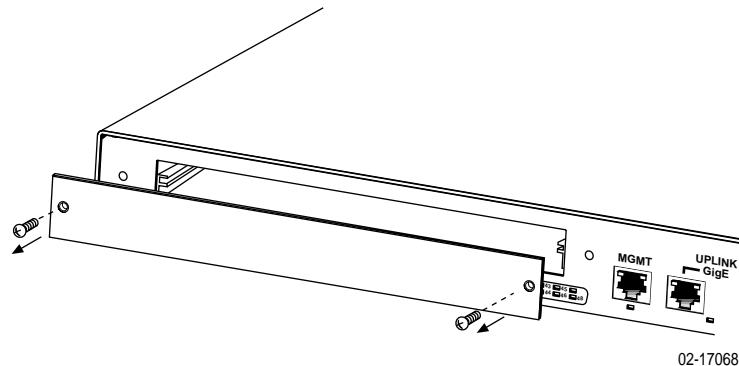
2. Store the slot cover; retain the screws.

3. Slide the Management Module into the guide rails just inside the opening. Press the Management Module firmly into place until it is fully seated and the faceplate of the Management Module is flush against the faceplate of the BitStorm 4800.
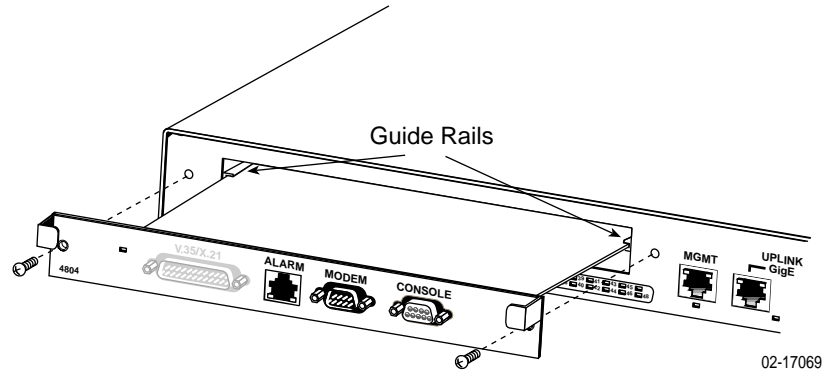
4. Replace and fasten the two screws.

Do not plug in the unit. Proceed to Chapter 2, *Cabling*.

Cabling

2

Cabling Overview

The BitStorm 4800 has a large variety of possible cabling configurations. This chapter describes all possible connections, not all of which are required:

■ *DSL Ports* on page 2-2

■ *Downlink GigE Connectors* on page 2-4

■ Uplink ports:

— *Uplink GigE Connectors* on page 2-6

— *V.35/X.21 Connector (4804 Management Module)* on page 2-7

■ *Chaining Units Together* on page 2-8

■ *Console Port* on page 2-10

■ *Modem Port* on page 2-11

■ *Alarm Port* on page 2-12

■ *Grounding Lug* on page 2-13

■ *Power Cord* on page 2-14

DSL Ports

The 24-port BitStorm 4800 has one DSL connector and the 48-port BitStorm 4800 has two DSL connectors. Each connector supports the tip and ring connections of up to 24 DSL ports over a 50-position cable. These must be connected to a POTS (plain old telephone service) splitter.

In North America, the BitStorm 6051 POTS Splitter must be used. (See the *BitStorm 6051 POTS Splitter Installation Instructions* for information.) Elsewhere the splitter must conform to all regional regulatory requirements.

▶ **Procedure**

To cable the DSL Ports:

1. Insert a cable tie (provided) through the top of the anchor mount next to the DSL PORTS 1–24 connector.

2. If the connector for your cable has a long captive screw, attach it to the DSL PORTS 1–24 connector and fasten it with the captive screw.
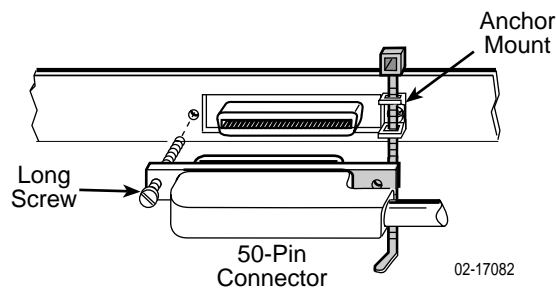
3. If the connector for your cable has a short captive screw, install the provided jack screw in the threaded hole next to the DSL PORTS 1–24 connector. Attach the cable to the DSL PORTS 1–24 connector and fasten it to the jack screw with its short captive screw.
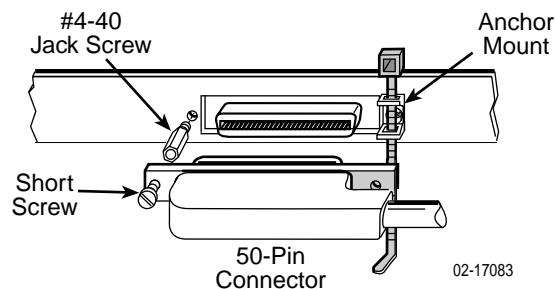
4. Tighten the cable tie around the connector and trim the excess.

02-17084
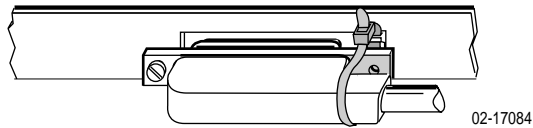
5. If ports 25–48 are present and used, repeat Step 1 through Step 4, substituting DSL PORTS 25–48 for DSL PORTS 1–24.

6. Connect the tip and ring connections to a POTS splitter. See the documentation that came with your POTS splitter for more information.

7. Secure the cables as required for strain relief.

The following illustration shows a 48-port BitStorm 4800. The 24-port model has only one DSL PORTS connector and requires only one BitStorm 6051 POTS Splitter.

POTS Splitter
Card in 1-Slot
Chassis

BitStorm 4800

Rear

Front

02-17158
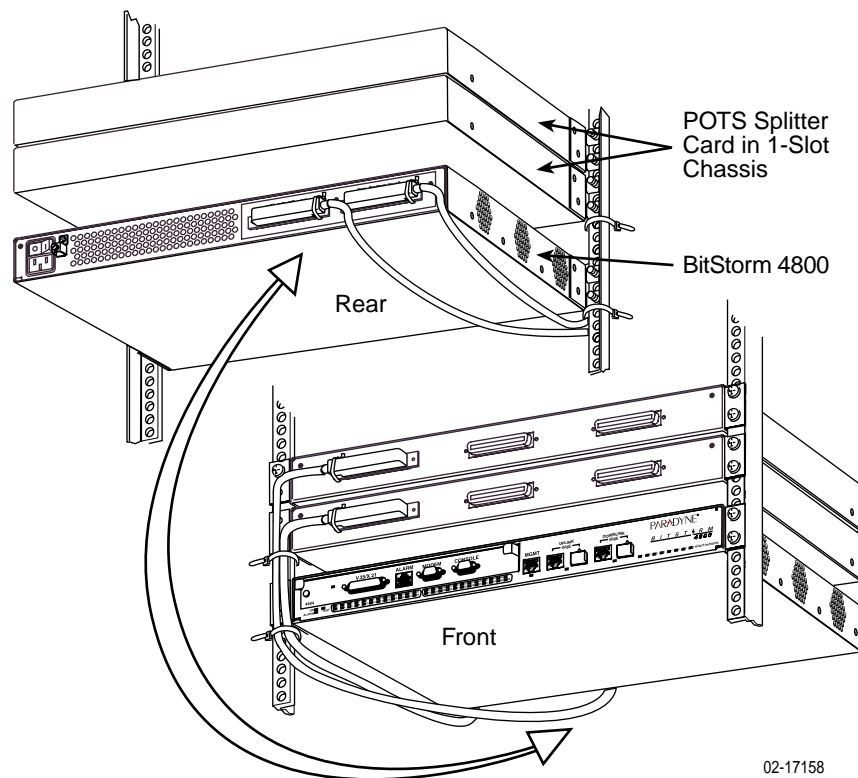
Downlink GigE Connectors

There are two DOWNLINK GigE connectors on the unit. Only one can be active. For the wire connection, either a straight-through or a crossover cable can be used. The wiring is automatically detected and, if necessary, compensated for.

A DOWNLINK GigE connector can be used to connect to:

- An adjunct server to provide caching, video on demand, or gateway services

- The UPLINK GigE connector of a downstream BitStorm 4800 (see *Chaining Units Together* on page 2-8)

▶ **Procedure**

To attach an adjunct server:

1. Determine the interface type to be used (wire or fiber), and procure the appropriate copper cable, or fiber optic cable and SFP transceiver.

2. **For a wire connection**, plug the 8-position modular plug into the DOWNLINK GigE modular jack.
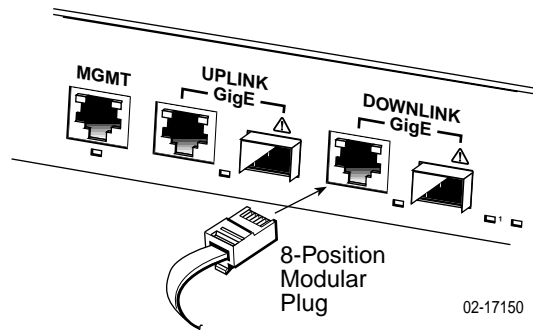
3. **For a fiber connection**, plug your transceiver into the DOWNLINK GigE SFP socket. Plug your fiber optic cable into the cable socket of the transceiver.
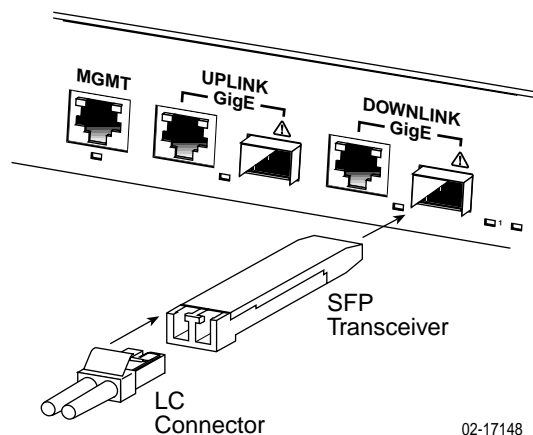
4. Connect the other end of the cable to your adjunct server.

Uplink Options

The Wide Area Network (WAN) uplink can be:

- Provided by an upstream BitStorm 4800 (see *Chaining Units Together* on page 2-8)

- An Ethernet switch, connected to the UPLINK GigE modular jack on the BitStorm 4800, or to a Small Form-factor Pluggable (SFP) transceiver plugged into the UPLINK GigE SFP socket, providing the appropriate interface:
    — 100BaseFX
    — 100BaseTX
    — 1000BaseT
    — 1000BaseSX
    — 1000BaseLX

- A CSU or router with an integral CSU connected to the V.35/X21 connector of the 4804 Management Module with an adapter or adapter cable, if necessary, providing the appropriate interface:
   — V.35
    — EIA-530-A
    — X.21

Uplink GigE Connectors

There are two UPLINK GigE connectors on the unit. Only one can be active. For the wire connection, either a straight-through or a crossover cable can be used. The wiring is automatically detected and, if necessary, compensated for.
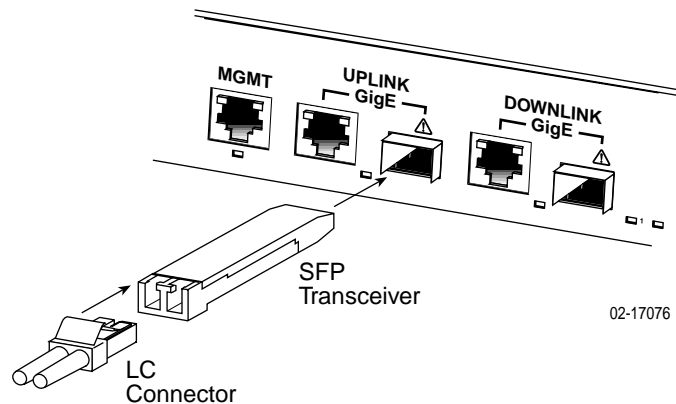
▶ **Procedure**

To connect to an Ethernet switch:

1. Determine the interface type, and procure the appropriate copper cable, or fiber optic cable and SFP transceiver.

2. **For a wire connection**, plug the 8-position modular plug into the UPLINK GigE modular jack.
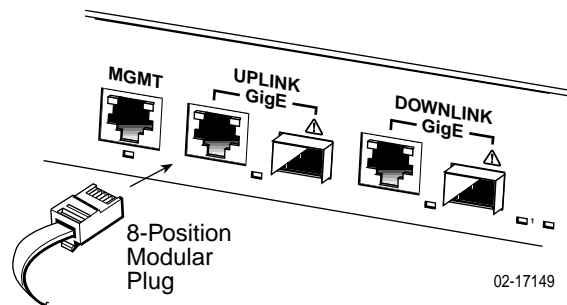
3. **For a fiber connection**, plug your transceiver into the UPLINK GigE SFP socket. Plug your fiber optic cable into the cable socket of the transceiver.


4. Connect the other end of the cable to the Ethernet switch.

V.35/X.21 Connector (4804 Management Module)

▶ **Procedure**

To connect to a CSU or router:

1. Determine the electrical interface required: V.35, EIA-530-A, or X.21.

2. Connect the appropriate adapter or adapter cable to the V.35/X.21 connector of the 4804 Management Module.

3. Fasten the connector to the Management Module with its captive screws.

4. If you are using a short adapter and a separate cable, connect a cable to the adapter and fasten the two together with screws or cable ties.

5. If the BitStorm 4800 is in a rack, dress the cable to the left side of the rack, and fasten it to the rail with cable ties.

6. Connect the other end of the cable to the CSU or router. Fasten the connector to the CSU or router with its captive screws or a cable tie.
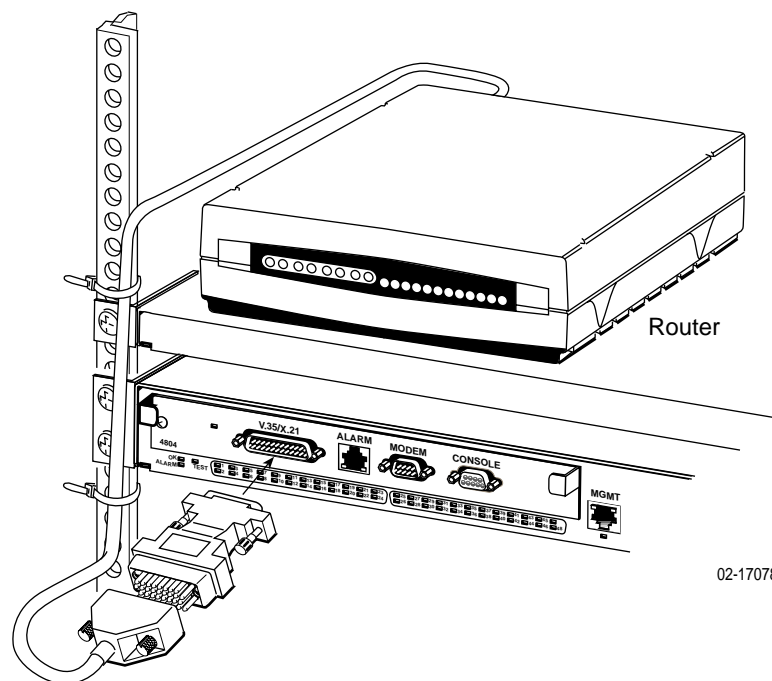
02-17078

The default interface for the BitStorm 4800 software is V.35. If you use a V.35 interface you do not need to configure the software to accommodate it. For an EIA-530-A or X.21 interface, see Chapter 4, *Configuration*.

Chaining Units Together

Up to eight BitStorm 4800 units may be chained together by their UPLINK and DOWNLINK ports. One unit provides the uplink for the stack.

▶ **Procedure**

To chain together a group of BitStorm 4800 units:

1. Plug an 8-pin modular cable into the DOWNLINK GigE jack of the BitStorm 4800 that will provide the uplink.

2. Plug the other end of the cable into the UPLINK GigE jack of the next BitStorm 4800 in the stack.

3. If there is another BitStorm 4800 below this one in the logical stack, plug an 8-pin modular cable into the DOWNLINK GigE jack of this BitStorm 4800.

4. Repeat Step 2 and Step 3 until all units in the stack are cabled together.
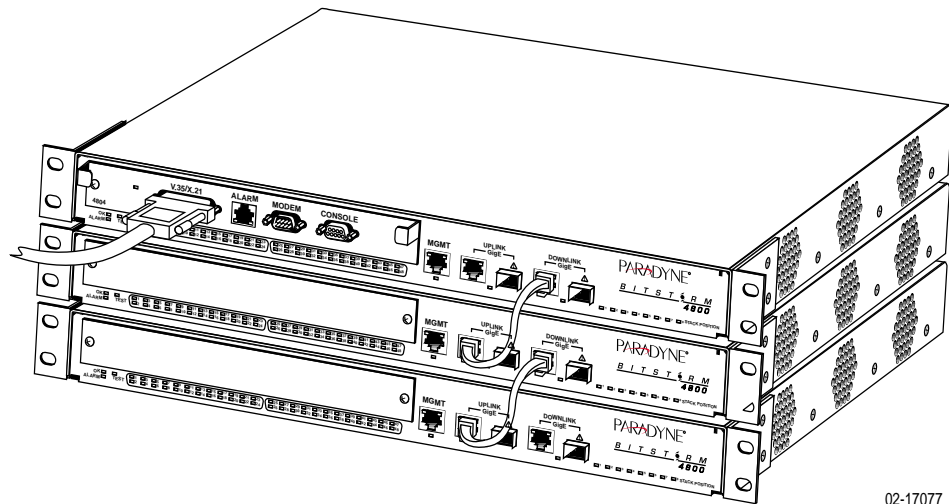
02-17077

In Release 1, all units must have a Management Module installed.
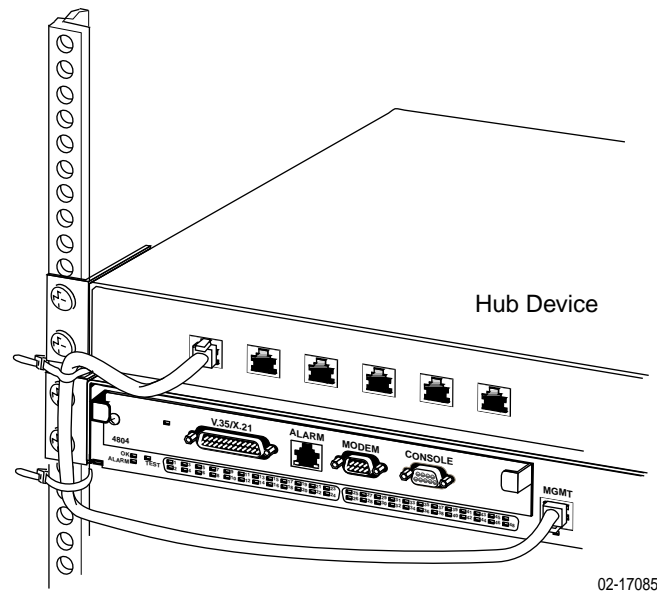
Management Port

The MGMT (management) port can be used to connect the BitStorm 4800 to a network management system using a 10BaseT or 100BaseT LAN. The MGMT port is isolated and no user data is accessible over it.

Either a straight-through or a crossover cable can be used. The wiring is automatically detected and, if necessary, compensated for.

▶ **Procedure**

To use the MGMT port:

1. Connect a modular 8-pin cable to the MGMT port.

2. If the BitStorm 4800 is in a rack, fasten the cable to a rail with a cable tie.

3. Connect the other end of the cable to your Ethernet hub or to a network interface card in a PC.

Hub Device

02-17085

Console Port

The CONSOLE port on the Management Module normally serves as the primary user interface with the BitStorm 4800 during installation.

▶ **Procedure**

To connect a terminal or PC to the CONSOLE port:

1. Configure the terminal or terminal emulation program to use the following parameters:

   — Maximum speed: 9600 bps

   — Data bits: 8

   — Parity: None

   — Stop bits: 1

2. Determine and procure the proper Data Terminal Equipment (DTE) cable type. The CONSOLE port requires a DB9 plug connector. The other connector depends on the serial port on your terminal or PC.

3. Connect the DB9 plug connector to the CONSOLE port socket. The CONSOLE port is ordinarily used only during installation, so do not fasten the connector.

4. Connect the other end of the cable to the serial port of your terminal or PC.
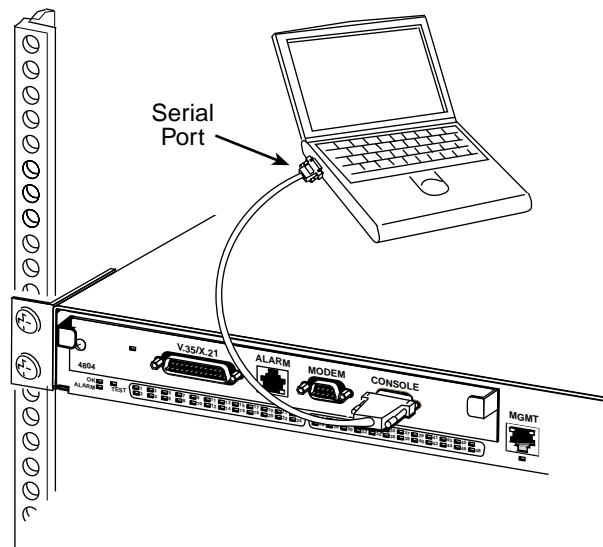

02-17075

Modem Port

The MODEM port on the Management Module can be used to attach a modem for remote dial-in management of the BitStorm 4800. The MODEM port can also be used to attach a terminal or PC to the Management Module using a Data Communications Equipment (DCE) cable.

▶ **Procedure**

To connect a modem to the MODEM port:

1. Determine and procure the proper DCE cable type. The MODEM port requires a DB9 socket connector. The other connector depends on the serial port on your modem, but normally a DB25 plug is required.

2. Connect the DB9 socket connector to the MODEM port socket.

3. If the modem will be permanently connected, fasten the connector to the Management Module with its captive screws. If the BitStorm 4800 is in a rack, dress the cable to the left and attach it to the rail with a cable tie.

4. Connect the other end of the cable to the serial port of your modem.
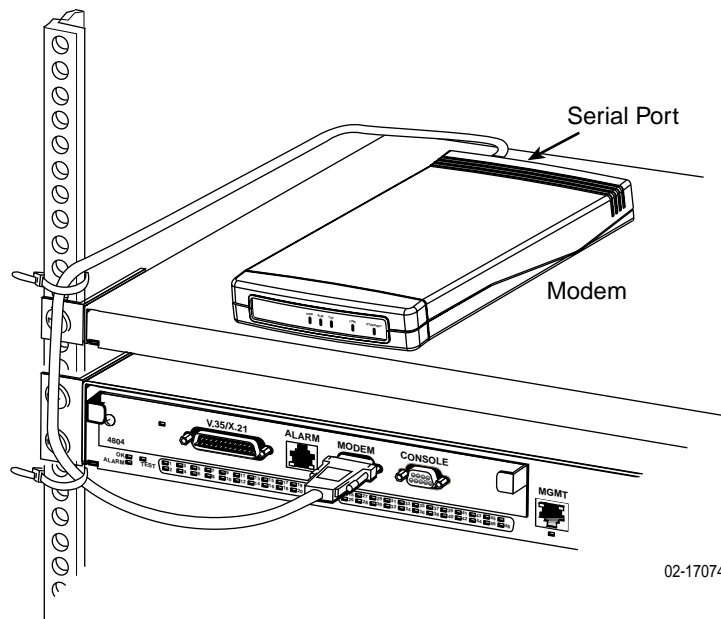
Alarm Port

The ALARM port provides a normally-on circuit and a normally-off circuit that reverse their states in response to an alarm. This interface can be used to set off a physical alarm.

▶ **Procedure**

To use the ALARM port:

1. Connect a modular 8-pin cable to the ALARM port.

2. If the BitStorm 4800 is in a rack, dress the cable to the left and secure it to the rail with a cable tie.

3. Connect the other end of the cable to your alarm monitoring system.

CO Alarm
Monitoring System

02-17079
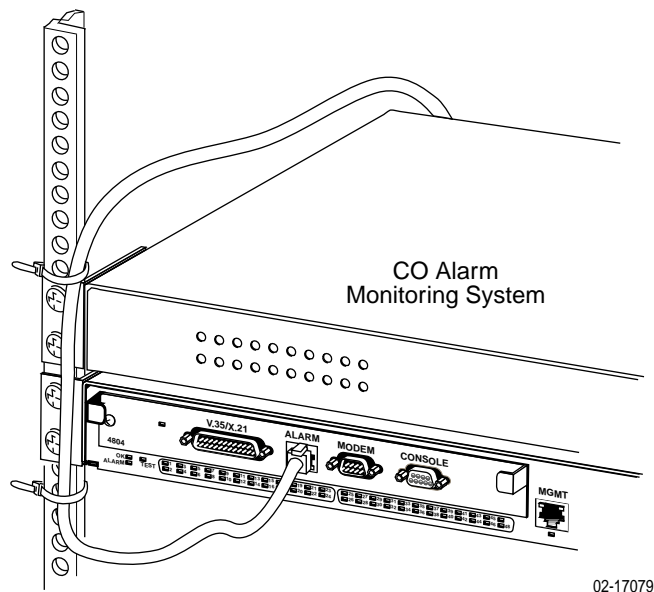
Grounding Lug

▶ **Procedure**

To connect the unit to a ground:

1. Strip back the insulation approximately 5/16 in (8 mm) on 14 AWG (2.08 mm^2) copper ground wire.

2. Loosen the screw on the grounding lug located on the back panel next to the power switch.

3. Insert the stripped end of the wire through the bottom of the grounding lug and tighten the screw. Ensure that the screw makes contact with the stripped portion of the wire.

4. Attach the ground wire to an earth ground.
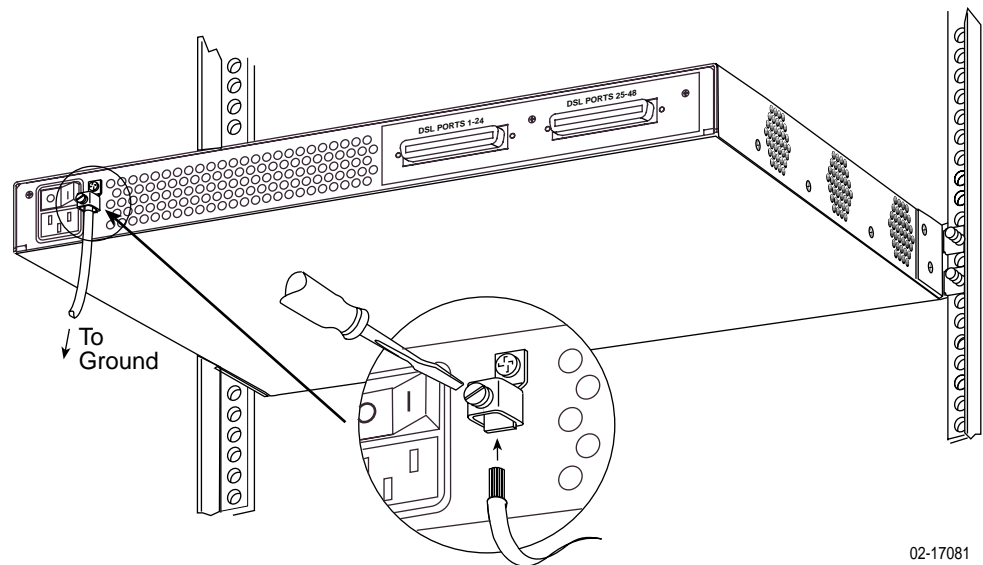
02-17081

Power Cord

The BitStorm 4800 can be powered by any AC source providing 90 to 264 VAC at 47 to 63 Hz.

▶ **Procedure**

To connect the BitStorm 4800 to a power source:

1. Verify that the switch on the rear panel is in the Off (0) position.

2. Insert the power cord into the socket under the switch.

3. If the BitStorm 4800 is in a rack, dress the power cord to the left and fasten it to the rail with a cable tie.

4. Connect the other end of the power cord to a grounded AC power source.

5. Press the On (1) position of the switch to turn on the BitStorm 4800.
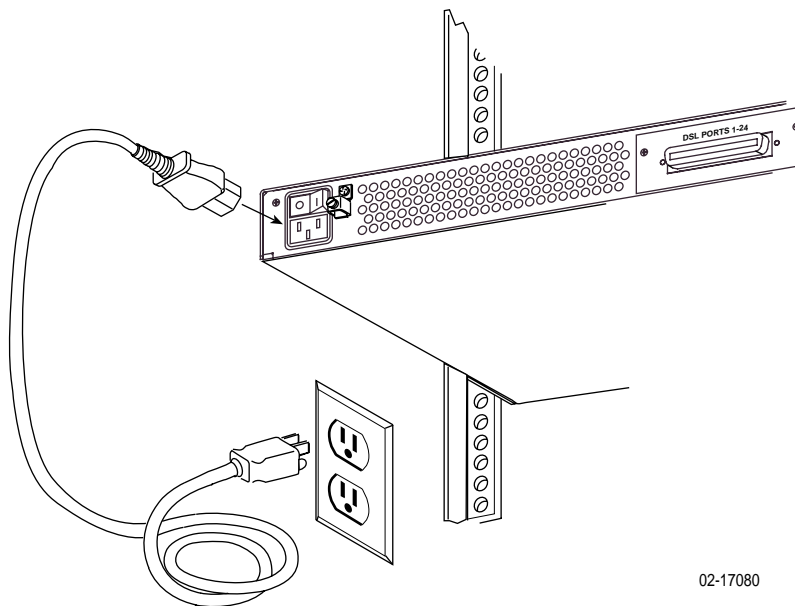
02-17080

When power is applied to the BitStorm 4800, the front panel Light-Emitting Diodes (LEDs) convey the state of the unit and its interfaces. See Chapter 3, *LEDs*.

LEDs

3

LED Locations

The small black rectangles in the following illustrations denote the locations of the front panel LEDs, including the LED on the 4804 Management Module. The 48-port BitStorm 4800 is pictured.
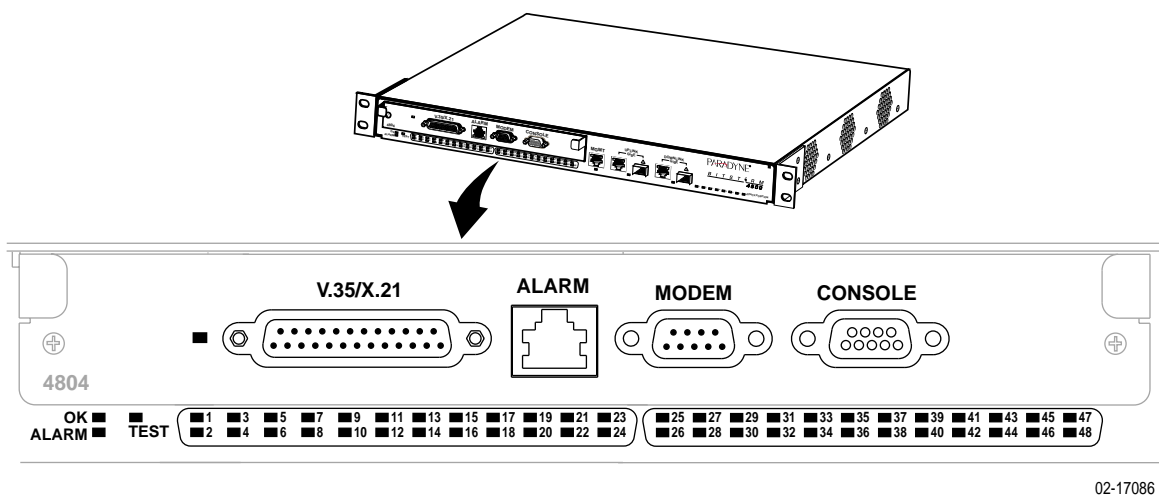

02-17086

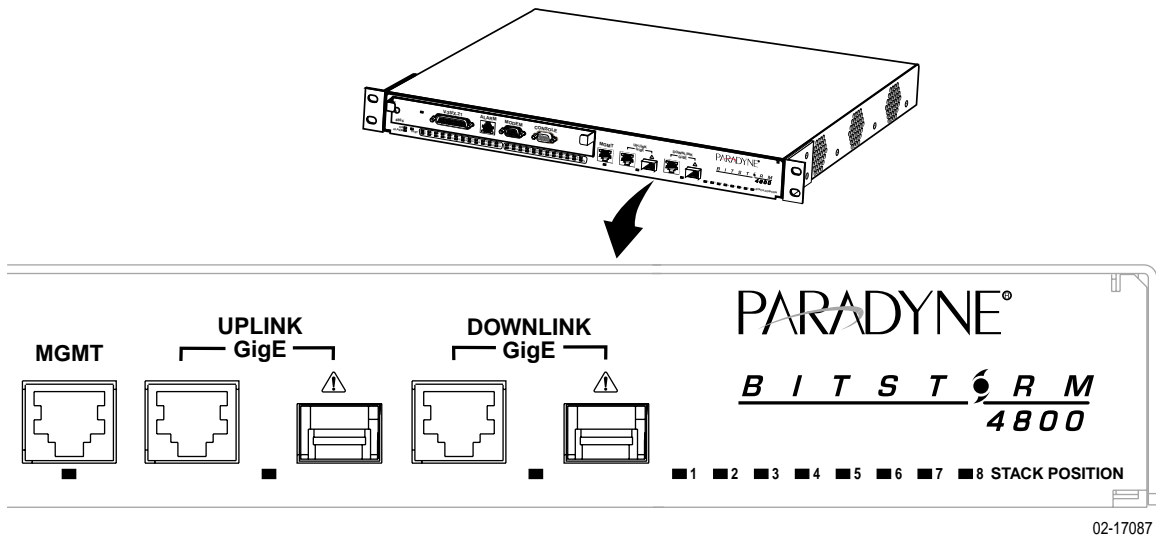**Figure 3-1.   V.35/X.21, System, and DSL Port LEDs**

02-17087

Figure 3-2.   MGMT, UPLINK, DOWNLINK, and Stack Position LEDs

Front Panel LEDs

When power is first applied to the BitStorm 4800 it performs a self-test. When this test is successfully completed, the OK LED lights. The meaning of all the LEDs is as shown in Table 3-1, Front Panel LEDs.

Table 3-1.   Front Panel LEDs

LED	Color	State	Meaning
ALARM	Amber	Off	No Alarms.
		On	Unit failed self-test, or the unit has exceeded a safe temperature, or a fan has failed.
DOWNLINK	Green	Off	The port is disabled, or no physical connection exists.
		On	A physical connection is detected.
DSL Port (1–24 for 24-port models, 1–48 for 48-port models)	Green	Off	The port is disabled or no signal is detected on the line.
		On	Port has successfully trained with the remote and is active.
		Blinking	Port is attempting to train.
MGMT	Green	Off	The port is disabled, or no physical connection exists.
		On	A physical connection is detected.
OK	Green	Off	No power, or the unit has not completed initialization.
		On	Unit has power and has completed initialization.
STACK POSITION	Green	On	Indicates the logical position in a stack of up to eight units. (Future use.)
TEST	Amber	Off	Normal operating mode.
		On	At least one port is in test mode.
UPLINK	Green	Off	The port is disabled, or no physical connection exists.
		On	A physical connection is detected.
V.35 (on 4804 Management Module only)	Green	Off	The port is disabled, or no physical connection exists.
		On	A physical connection is detected.
		Blinking	The port is in test mode.

System LEDs

The three system LEDs, OK, TEST, and ALARM, have meaning at all times, as shown in Table 3-2, System LEDs.

Table 3-2.   System LEDs

OK	ALARM	TEST	Description
Off	Off	Off	Unit is powered Off.
Off	Off	ON	**Unit Failed** – LEDs should never be in this state. Notify your service representative.
Off	ON	Off	**Unit Failed** – The unit has power, but never completed its initialization process. Notify your service representative.
Off	ON	ON	**Self-Test** – The LEDs should be in this state only during self-test, immediately after the unit is turned on.
ON	Off	Off	**Normal Operation** – Unit has successfully passed self-test, there are no alarms in the system, and none of the ports is in test mode.
ON	Off	ON	**Test Mode** – At least one port is in test mode.
ON	ON	Off	**Alarm** – Unit has failed self-test, or a major alarm condition exists. Notify your service representative.
ON	ON	ON	**Alarm** – At least one port is in test mode, and a major alarm condition exists. Notify your service representative.

Configuration

4

Overview

The BitStorm 4800 is designed to require minimal configuration before it can be accessed by a Network Operations Center (NOC). You may need to configure:

- The IP address for the Management Module if the default address (10.10.10.10) is not usable

- The default gateway address

- The data rate for the V.35/X.21 port, if used

- The serial interface type for the V.35/X.21 port if you use an EIA-530-A or X.21 uplink

Initial configuration can be performed using the Command Line Interface (CLI). The CLI is available from a terminal or PC connected to the CONSOLE port of the Management Module.

See the *BitStorm 4800 User's Guide* for detailed information about the CLI.

Conventions Used

In this book, the Enter key means whatever key you use to submit data to your terminal or PC. It may be called the Return key on older devices.

Characters displayed on your screen, including those you type, are shown in the **Courier** font in this book.

Using the CLI

The CLI provides automatic command completion. You need to type only enough of a command to make it unique. The CLI then completes each word in the command.

For example, if you enter:

    sh man i

the CLI expands it to:

    show management ip

You can obtain help with CLI commands by typing a **?** (question mark). A question mark alone lists all commands. A command followed by a question mark lists all usages of the command.

For example, if you enter:

    sh ?

the CLI lists all the possible **show** commands.

Logging In to the BitStorm 4800

When the BitStorm 4800 is turned on, the following prompt is displayed on the terminal:

Login>

▶ **Procedure**

To log in to the BitStorm 4800:

1. Type **admin** at the login prompt and press Enter. The following prompt is displayed:

   Password>

2. The default user password is null, so simply press Enter. The following prompt is displayed:

   IAC>

   IAC stands for IP Access Concentrator.

3. Type **privilege** and press Enter to enter administrator mode. The following prompt is displayed:

   Password>

4. The default administrator password is null, so simply press Enter. The following prompt is displayed:

   IAC#

   This shows that you are in administrator mode.

Setting the IP Address

The IP address of the Management Module must be set before the BitStorm 4800 can be remotely managed.

▶ **Procedure**

To set the IP address of the Management Module:

1. At the **IAC#** prompt, type:

   configure management address *address mask gateway*

   Where:

   — *address* is the IP address to be assigned to the Management Module

   — *mask* is the IP subnet mask for the specified address

   — *gateway* is the default gateway IP address

   For example:

   conf man addr 135.26.10.37 255.255.255.0 135.26.10.254

2. Press Enter. The prompt changes to **IAC#!** to show that the configuration change has yet to be saved.

3. Type **save** and press Enter.

4. To verify that the address has been set, type:

   show management ip

   The CLI displays the IP address, subnet mask, and default gateway address.

Setting the Serial Interface Type and Rate

The 4804 Management Module has a DB25 interface (labeled V.35/X.21) that can be defined as V.35 (the default), EIA-530-A, or X.21. If you intend to use the connector for a V.35 or X.21 uplink, you must change the software setting.

The V.35/X.21 port has a default rate of 2048 Kbps. You must change the setting if the interface is configured for internal clocking and you require a different rate.

▶ **Procedure**

To set the serial interface type and rate for the V.35/X.21 uplink port:

1. At the **IAC#** prompt, type:

   configure interface v35 type *interface_type*

   Where:

   — *interface_type* is the type of interface required by the device connected to the V.35/X.21 uplink port. It must be one of:

      — eia530a

      — v35

      — x21

   For example:

   conf int v35 typ x

2. Press Enter. The prompt changes to **IAC#!** to show that the configuration change has yet to be saved.

3. At the **IAC#!** prompt, type:

   configure interface v35 rate *data_rate*

   Where:

   — *data_rate* is the rate in Kbps. It must be a multiple of 8 between 64 and 8192.

   For example:

   conf int v35 ra 1536

4. Type **save** and press Enter.

5. To verify that the type and rate have been set, type:

   show int v35 conf

   The CLI displays all configuration options for the V.35/X.21 uplink port, including the type and rate.

Connectors, Cables, and Pin Assignments

A

Overview

The following sections provide pin assignments for:

- *Management Port Connector* on page A-2

- *Ethernet Uplink and Downlink Connectors* on page A-3

- *DSL Network Interface Cable* on page A-4

- *V.35/X.21 (EIA-530-A) Port* on page A-5

- *EIA-530-A to X.21 Interface* on page A-6

- *EIA-530-A to V.35 Interface* on page A-8

- *Alarm Port* on page A-10

- *Modem Port Connector* on page A-11

- *Console Port Connector* on page A-11

02-17065-01
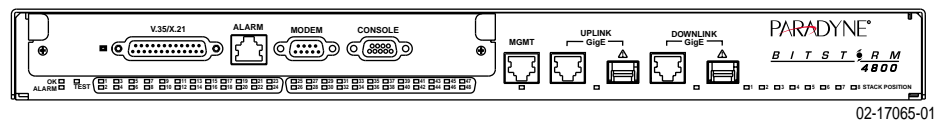
Figure A-1.   BitStorm 4800 Front Panel (48-Port Model, with 4804 Management Module Installed)

02-17066-01
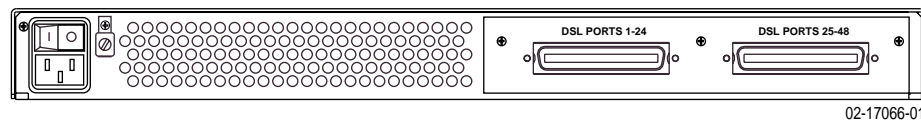
Figure A-2.   BitStorm 4800 Rear Panel (48-Port Model)

Management Port Connector

The Management (MGMT) connector is an 8-pin unkeyed modular jack for a 10/100BaseT management interface. Either a straight-through or a crossover cable can be used. The wiring is automatically detected and, if necessary, compensated for.

Table A-1. Management Port Pinouts

Signal	Pin
Transmitted Data +	1
Transmitted Data –	2
Received Data +	3
Unused	4
Unused	5
Received Data –	6
Unused	7
Unused	8

Pin 1   Pin 8

97-15449
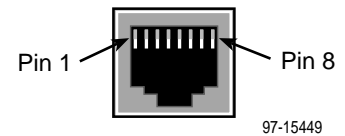
Ethernet Uplink and Downlink Connectors

Ethernet UPLINK and DOWNLINK ports are provided in two forms: 8-pin modular jacks, and sockets for Small Form-factor Pluggable (SFP) transceivers. For the wire connection, either a straight-through or a crossover cable can be used. The wiring is automatically detected and, if necessary, compensated for.

Uplink and Downlink – 8-Pin Modular Jacks

The UPLINK and DOWNLINK wire connectors are 8-pin unkeyed modular jacks for 1000BaseT.

Table A-2.   Uplink and Downlink Pinouts

Pair	Tip/Ring Designation	Pin
1	Tip (+)	1
1	Ring (−)	2
2	Tip (+)	3
3	Tip (+)	4
3	Ring (−)	5
2	Ring (−)	6
4	Tip (+)	7
4	Ring (−)	8

Pin 1   Pin 8

97-15449
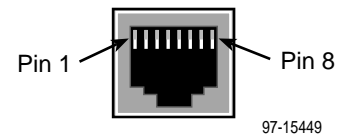
Uplink and Downlink – Fiber Connectors

The UPLINK and DOWNLINK SFP sockets accept SFP transceivers compliant with the SFP Transceiver MultiSource Agreement of September 14, 2000. The SFP transceivers provide cable jacks for 1000BaseLX or 1000BaseSX connections. See the specifications of your transceiver for more information.

DSL Network Interface Cable

The 24-port model has one 50-pin RJ21X (designated CA21A in Canada) Telco connector on its rear panel and the 48-port model has two. The connectors provide the 2-wire loop interface from each DSL port to the demarcation point.

Table A-3, DSL Connector Pinouts, lists the pin assignments for each of these interfaces. Note that Pins 25 and 50 are not used.

Table A-3.   DSL Connector Pinouts

DSL Port	Connector Pins (Tip, Ring)
1	1, 26
2	2, 27
3	3, 28
4	4, 29
5	5, 30
6	6, 31
7	7, 32
8	8, 33
9	9, 34
10	10, 35
11	11, 36
12	12, 37
13	13, 38
14	14, 39
15	15, 40
16	16, 41
17	17, 42
18	18, 43
19	19, 44
20	20, 45
21	21, 46
22	22, 47
23	23, 48
24	24, 49

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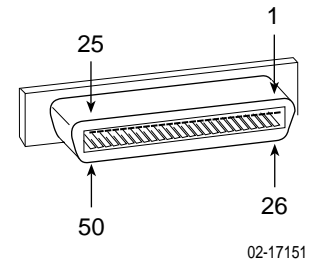
V.35/X.21 (EIA-530-A) Port

The V.35/X.21 port is on the faceplate of the 4804 Management Module. It provides the EIA-530-A interface shown in Table A-4, V.35/X.21 (EIA-530-A) Port Interface Connector.

Table A-4.   V.35/X.21 (EIA-530-A) Port Interface Connector

Signal	Circuit Mnemonic	ITU-T Number	Direction	Pin
Shield	—	—	—	1
Signal Common	AB	102A	—	7
Signal Common	AC	102B	—	23
Transmitted Data	BA	103	To DSU/CSU	2 (A) 14 (B)
Received Data	BB	104	From DSU/CSU	3 (A) 16 (B)
Request to Send	CA	105	To DSU/CSU	4 (A) 19 (B)
Clear to Send	CB	106	From DSU/CSU	5 (A) 13 (B)
Received Line Signal Detector	CF	109	From DSU/CSU	8 (A) 10 (B)
DCE Ready	CC	107	From DSU/CSU	6
DTE Ready	CD	108/1, /2	To DSU/CSU	20
Transmit Signal Element Timing (DTE Source)	DA	113	To DSU/CSU	11 (B) 24 (A)
Transmit Signal Element Timing (DCE Source)	DB	114	From DSU/CSU	12 (B) 15 (A)
Receiver Signal Element Timing (DCE Source)	DD	115	From DSU/CSU	17 (A) 9 (B)
Local Loopback	LL	141	To DSU/CSU	18
Remote Loopback	RL	140	To DSU/CSU	21
Test Mode	TM	142	From DSU/CSU	25

EIA-530-A to X.21 Interface

The EIA-530-A to X.21 adapter (4800-F1-502) or adapter cable (4800-F1-503) are DB25-to-DB15 connectors that, connected to the V.35/X.21 port of the 4804 Management Module, provide the X.21 interface shown in Table A-5, X.21 Cable Interface.

530 SIGNAL	DB25 SOCKET		DB15 PLUG	X.21 SIGNAL
TD-A	2		2	TD-A
TD-B	14		9	TD-B
RD-A	3		4	RD-A
RD-B	16		11	RD-B
RXC-A	17		6	RXC-A
RXC-B	9		13	RXC-B
RTS-A	4		3	RTS-A
RTS-B	19		10	RTS-B
RLSD-A	8		5	RLSD-A
RLSD-B	10		12	RLSD-B
SIG. COMMON	7		8	SIG. COMMON
TT-A	24		7	TT-A
TT-B	11		14	TT-B

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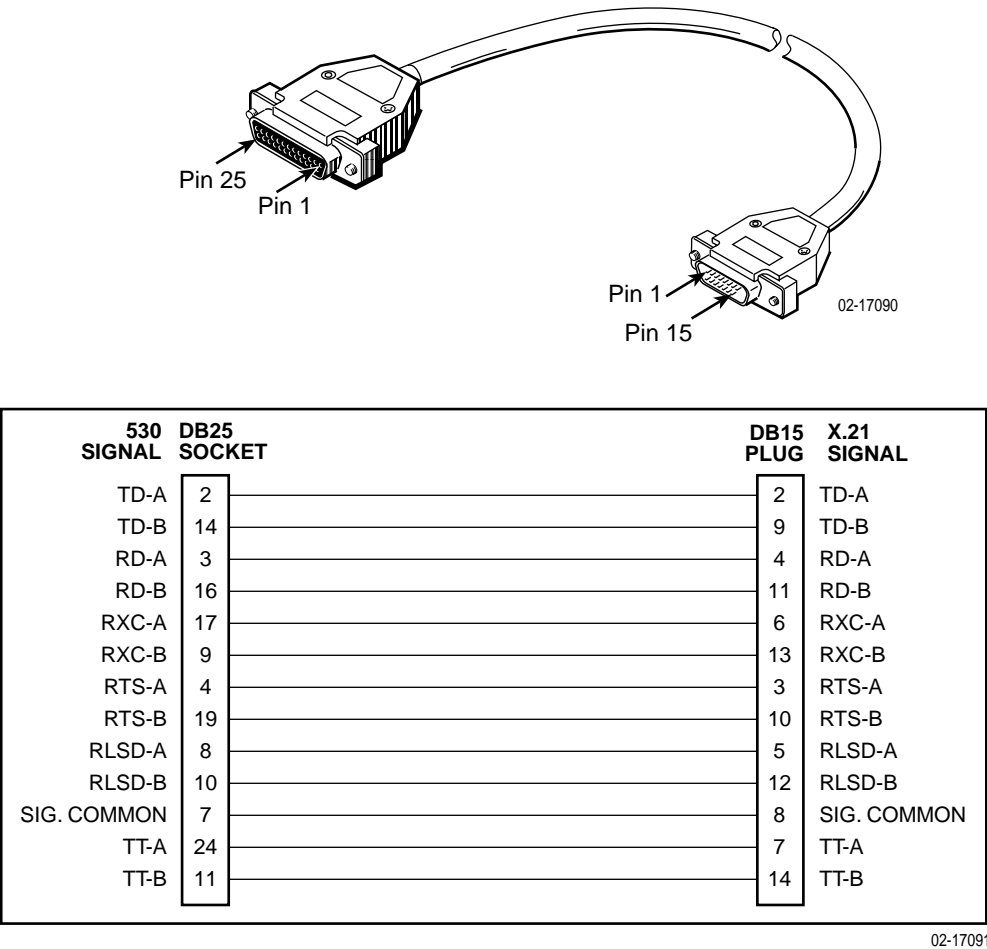
Figure A-3.   EIA-530-A to X.21 Adapter and Adapter Cable Pinouts

Table A-5. X.21 Cable Interface

Signal	ITU-T Number	Direction	Pin
Signal Common	102	—	8
Transmitted Data	103	To DSU/CSU	2 (A) 9 (B)
Received Data	104	From DSU/CSU	4 (A) 11 (B)
Request to Send	105	To DSU/CSU	3 (A) 10 (B)
Data Channel Received Line Signal Detector	109	From DSU/CSU	5 (A) 12 (B)
Transmit Signal Element Timing (DTE Source)	113	To DSU/CSU	7 (A) 14 (B)
Receiver Signal Element Timing (DCE Source)	115	From DSU/CSU	6 (A) 13 (B)

EIA-530-A to V.35 Interface

The EIA-530-A to V.35 adapters (Socket: 4800-F1-500; Plug: 4800-F1-510) and adapter cable (4800-F1-501) are DB25-to-MS34 connectors that, connected to the V.35/X.21 port of the 4804 Management Module, provide the V.35 interface shown in Table A-6, V.35 Cable Interface.
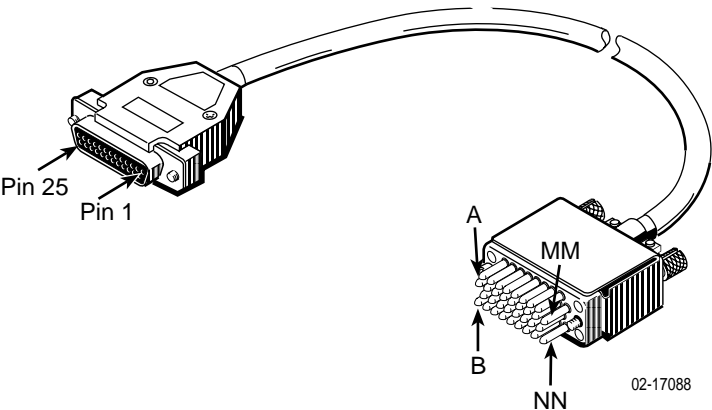
530 SIGNAL	DB25 SOCKET	MS34 PLUG	V.35 SIGNAL
SHIELD	1	A	SHIELD
TD-A	2	P	TD-A
TD-B	14	S	TD-B
RD-A	3	R	RD-A
RD-B	16	T	RD-B
TXC-A	15	Y	TXC-A
TXC-B	12	AA	TXC-B
RXC-A	17	V	RXC-A
RXC-B	9	X	RXC-B
RTS	4	C	RTS
CTS	5	D	CTS
RLSD	8	F	RLSD
DSR	6	E	DSR
SIG. COMMON	7	B	SIG. COMMON
TT-A	24	U	TT-A
TT-B	11	W	TT-B
DTR	20	H	DTR
RL	21	N	RL
LL	18	L	LL
TM	25	NN	TM
SIG. COMMON	23		

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Figure A-4. EIA-530-A to V.35 Adapter and Adapter Cable Pinouts

Table A-6.   V.35 Cable Interface

Signal	ITU-T Number	Direction	Pin
Shield	—	—	A
Signal Common	102	—	B
Transmitted Data	103	To DSU/CSU	P (A) S (B)
Received Data	104	From DSU/CSU	R (A) T (B)
Request to Send	105	To DSU/CSU	C
Clear to Send	106	From DSU/CSU	D
Data Channel Received Line Signal Detector	109	From DSU/CSU	F
Data Set Ready	107	From DSU/CSU	E
Data Terminal Ready	108/1, /2	To DSU/CSU	H
Transmit Signal Element Timing (DTE Source)	113	To DSU/CSU	U (A) W (B)
Transmit Signal Element Timing (DCE Source)	114	From DSU/CSU	Y (A) AA (B)
Receiver Signal Element Timing (DCE Source)	115	From DSU/CSU	V (A) X (B)
Local Loopback	141	To DSU/CSU	L
Loopback/Maintenance	140	To DSU/CSU	N
Test Indicator	142	From DSU/CSU	NN

Alarm Port

The alarm relay reports major alarms through the ALARM port on the faceplate of the 4800 or 4804 Management Module. The ALARM port is an 8-pin modular connector; only Pins 2, 3, and 4 may be used.

Maximum ratings for the ALARM connector are:

- 30 VAC

- 60 VDC

- 0.5 A

Table A-7.   Alarm Connector Pinouts

Signal	Pin
None	1
Closed on Alarm (Normally Open)	2
Common	3
Open on Alarm (Normally Closed)	4
None	5
Future Use	6
Future Use	7
None	8

Modem Port Connector

The MODEM port connector is a DB9 female connector on the faceplate of the 4800 or 4804 Management Module. It supports an EIA-232 circuit as shown in Table A-8, Modem Port Connector.

Table A-8.   Modem Port Connector

Signal	Direction	Pin
—	—	1
Receive Data	In	2
Transmit Data	Out	3
DCE Data Terminal Ready	Out	4
Ground	—	5
Data Set Ready	In	6
—	—	7
—	—	8
—	—	9

Console Port Connector

The CONSOLE port connector is a DB9 male connector on the faceplate of the 4800 or 4804 Management Module. It supports an EIA-232 circuit as shown in Table A-9, Console Port Connector.

Table A-9.   Console Port Connector

Signal	Direction	Pin
—	—	1
Transmit Data	Out	2
ReceiveData	In	3
—	—	4
Ground	—	5
—	—	6
—	—	7
—	—	8
—	—	9

Equipment List

B

Table B-1.   Equipment List (1 of 2)

Description	Model Number
Allied Data ADSL Modem – 10BaseT Ethernet and USB port	CJ810
BitStorm 4800 (48-Port) *Includes BitStorm 4800, mounting brackets and hardware, and Installation Guide.*	4821-A1-440
BitStorm 4800 (48-Port, with Management Module and V.35/X.21 Uplink) *Includes BitStorm 4800 with Model 4804-B1-000 Management Module installed, EIA-530-A to V.35 Adapter, mounting brackets and hardware, and Installation Guide.*	4821-A1-441
BitStorm 4800 (48-Port, with Management Module) *Includes BitStorm 4800 with Model 4800-B1-000 Management Module installed, mounting brackets and hardware, and Installation Guide.*	4821-A1-442
BitStorm 4800 (24-Port) *Includes BitStorm 4800, mounting brackets and hardware, and Installation Guide.*	4821-A1-420
BitStorm 4800 User's Guide (paper copy)	4800-A2-GB20
BitStorm 6051 POTS Splitter	6051-B1-001
EIA-530-A to V.35 (Plug) Adapter	4800-F1-510
EIA-530-A to V.35 (Plug) Adapter Cable	4800-F1-501
EIA-530-A to V.35 (Socket) Adapter	4800-F1-500
EIA-530-A to X.21 (Plug) Adapter	4800-F1-502
EIA-530-A to X.21 (Plug) Adapter Cable	4800-F1-503
Filter 66-Block	05-00021-01
Hospitality VBN Server	01-00159-01
In-Line Phone Filter for ADSL	05-00015-01

Table B-1.   Equipment List (2 of 2)

Description	Model Number
Management Module with V.35/X.21 Uplink *Includes EIA-530-A to V.35 Adapter, Installation Instructions.*	4804-B1-000
Management Module *Includes Installation Instructions.*	4800-B1-000
Mounting Brackets for ETSI 21-inch (535 mm) Rack	4800-F1-011

Technical Specifications

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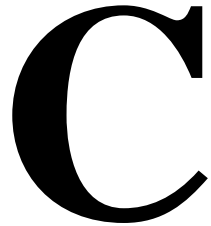
Technical specifications are subject to change without notice.

Table C-1.   Technical Specifications (1 of 2)

Specifications	Criteria
Cooling and Air Handling	Each BitStorm 4800 is independently cooled with integral fans and does not rely on vertical air flow.
Electrical Safety	All interfaces are Safety Extra-Low Voltage (SELV) circuits except: ■ DSL ports ■ Power supply These are designed in accordance with IEC 60950.
Electromagnetic Compatibility (EMC)	Meets the following standards: ■ CISPR 22, Class A ■ EN 50082-1 ■ EN 55022 ■ FCC Part 15, Class A ■ VCCI Class A
Network Approvals	■ FCC Part 68 ■ Industry Canada CS-03
DSL Compatibility	The BitStorm 4800 supports: ■ G.dmt (G.992.1) ■ G.lite (G.992.2) ■ ANSI T1.413-1998
Installation Options	The Bitstorm 4800 can be: ■ Installed on a desktop and stacked up to eight units high ■ Mounted with the included mounting brackets in a standard 19-inch (483 mm) or 23-inch (584 mm) rack, or, with separately purchased mounting brackets, in a 21-inch (535 mm) or 24-inch (610 mm) rack ■ Attached vertically to a wall

Table C-1. Technical Specifications (2 of 2)

Specifications	Criteria

Interfaces	*BitStorm 4800:*
	
	■ **DSL PORTS** (one for 24-port models, two for 48-port models): 50-pin RJ21X Telco-type connector
	■ **DOWNLINK GigE**:
	  – 8-pin modular jack (10/100/1000BaseT)
	  – Small Form-factor Pluggable (SFP) socket (1000BaseX)
	■ **UPLINK GigE**:
	  – 8-pin modular jack (10/100/1000BaseT)
	  – Small Form-factor Pluggable (SFP) socket (1000BaseX)
	■ **MGMT**: 8-pin modular jack (10/100BaseT)
	
	4800 and 4804 Management Modules:
	
	■ **CONSOLE**: DB9 socket, EIA-232
	■ **MODEM**: DB9 plug, EIA-232
	■ **ALARM**: 8-pin modular jack
	
	4804 Management Module:
	
	■ **V.35/X.21**: DB25 socket, EIA-530-A

Operating Environment	Ambient Temperature: 0° to 50° C (32° to 122° F) Relative Humidity: 5% to 95% noncondensing Storage Temperature: −40° to 70° C (−40° to 158° F) Shock and vibration tolerance sufficient to withstand normal shipping
Physical Dimensions	Height: 1.72 in (44.0 mm, or 1U as defined in EIA-310-C) without feet Width: 17.32 in (440.0 mm) without mounting brackets Depth: 16.13 in (409.7 mm) Weight: 8.5 lb (3.85 kg)
Power	90 to 264 VAC at 47 to 63 Hz
Power Consumption	*48-Port Model:* 100 VAC, 1.0A: 95W maximum 120 VAC, 0.8A: 95W maximum 240 VAC, 0.5A: 95W maximum *24-Port Model:* 100 VAC, 0.8A: 67W maximum 120 VAC, 0.6A: 67W maximum 240 VAC, 0.4A: 67W maximum

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