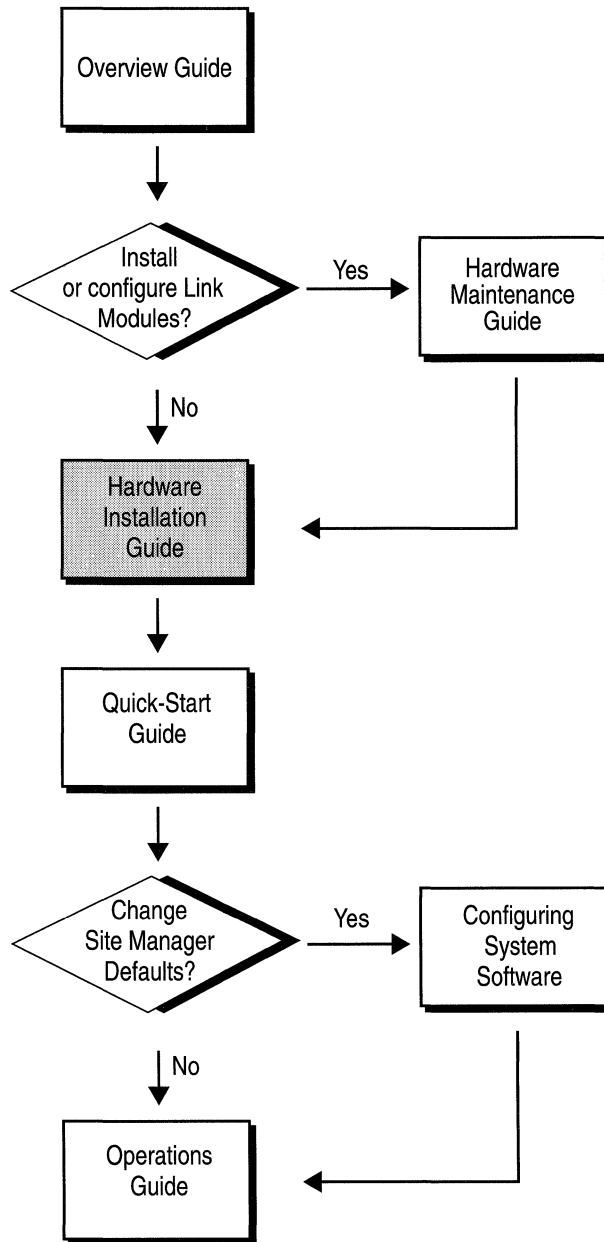


Hardware Installation Guide

Software Version 7.50, Site Manager Version 1.50



Reading Path



Part Number: 105540, Revision A

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This equipment generates, uses, and can radiate radio-frequency energy. If you do not install and use this equipment according to the instruction manual, this product may interfere with radio communications. This product has been tested and found to comply with the limits for a Class A computing device, pursuant to Subpart J of Part 15 of FCC Rules; compliance with these limits provides reasonable protection against radio interference when such equipment is operated in a commercial environment. Operating this equipment in a residential area is likely to interfere with radio communications; in which case, the user, as his/her own expense, must correct the interference.

Wellfleet shielded cables must be used with this unit to ensure compliance with the Class A limits.

Canadian Department of Communications Radio Interference Regulations

This digital apparatus (the Backbone Node) does not exceed the Class A limits for radio-noise emissions from digital apparatus as set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique (le Feeder Node, le Link Node, et le Concentrator Node) n'émet pas de bruits radioélectriques dépassant les limites applicables au appareils numériques de Classe A prescrites dans Le Règlement sur Le Brouillage Radioélectrique Édité par Le Ministère des Communications du Canada.

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SITE MANAGER SOFTWARE IS AVAILABLE FOR INSTALLATION ON EITHER SUN SPARCSTATIONS OR DOS-BASED PERSONAL COMPUTERS (PCs). SITE MANAGER MAY BE INSTALLED ON AN UNLIMITED NUMBER OF CUSTOMER SUN SPARCSTATIONS. HOWEVER, SITE MANAGER FOR DOS PCs INCLUDES DISTINCT CORPORATION'S IP RUNTIME SOFTWARE WHICH CAN BE COPIED AND INSTALLED ON UP TO 15 PCs PER NETWORK IN CONJUNCTION WITH WELLFLEET SITE MANAGER FOR DOS PCs.

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About this Guide

Audience and Scope

This guide is written for Wellfleet customers who are installing Wellfleet Backbone Nodes (BNs). This guide assumes that the reader has a technical understanding of electronic apparatus and data communications.

This guide specifically describes how to install the Backbone Node hardware. It provides detailed site preparation and installation procedures. It is intended for use during initial BN installation.

How to Use this Guide

Refer to the following table for instructions on how to use this guide:

For Instructions on How to:	Refer to:
Check your shipment contents, your installation equipment and your installation site	<i>Before You Begin</i>
Install the BN in an electronic enclosure rack	<i>Installing the BN in a Rack</i>
Cable the BN to an ANSI system console	<i>Cabling the BN to a Console</i>
Start-up the BN	<i>Powering on the BN</i>
Check cables that connect the BN to external devices	<i>External Cables</i>
Cable the BN to a modem	<i>Cabling the BN to a Modem</i>

Document Set

The following guides complete this documentation set:

Overview Guide

Describes the user interface, called the Site Manager application, the system software, and the router hardware.

Quick-Start Guide

Describes how to configure the router's initial IP network interface, install the Site Manager application software, and remotely create a pilot configuration for the router using the Site Manager.

Configuring System Software

Describes how to use the Site Manager's Configuration Manager application to set the router's parameters in one of three modes: local, remote, or dynamic.

Operations Guide

Describes how to use the Site Manager to perform day-to-day operations and how to use the Technician Interface to perform software maintenance.

Hardware Maintenance Guide

Describes how to access the interior of the router, replace the hardware, and how to read the LEDs.

If you are missing any guides, contact Wellfleet Customer Support at 1-800-2LANWAN.

Conventions

This document set uses the following conventions:

Convention:	Denotes:
<i>filename</i>	Italics denote file and directory names.
command	Bold text denotes text the user needs to enter.
Protocols/DECnet	The slash character (/) separates menu and option names in instructions; this example, identifies the DECnet option in the Protocols menu.

Chapter 1

Before You Begin

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Before You Begin

About this Chapter

This chapter first describes the BN shipment contents. The second section describes the equipment you need to install your BN. The third section describes the BN's site requirements. Read this chapter before you install the BN (see Figure 1-1).

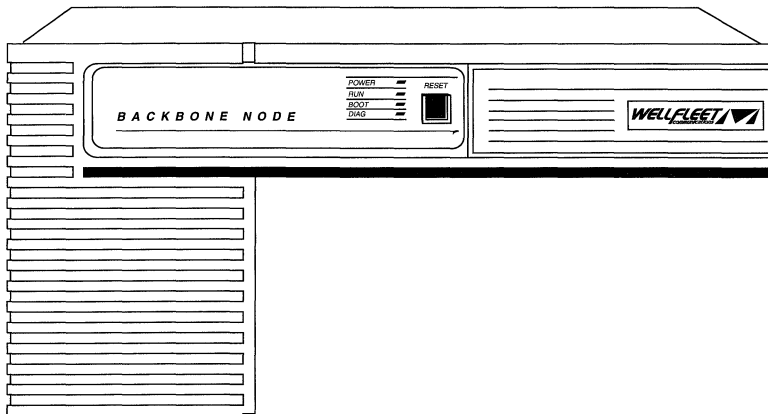


Figure 1-1. Backbone Node

Precautions

Note the following precautions before you begin:



Danger

Due to high-energy hazards, only trained and authorized personnel with written authorization from Wellfleet Communications are permitted to repair a Backbone Node. This restriction does *not* include the following routine services: hot swapping hardware or configuring hardware modules as described in the *Hardware Maintenance Guide*.

The BN is *not* designed for use with an I.T. power system (a power distribution system that has no direct connection to earth); the exposed conductive parts of the BN are grounded.

Caution: Inspect all items for any damage that may have occurred during shipment. In particular, ensure that the ports on the rear panel are not damaged. Do not attempt to install the BN if you detect any damage. If items are missing or damaged, contact Wellfleet Customer Support at 1-800-2LANWAN.

Shipment Contents

First, check to see that the items in the BN shipment match the items listed in the packing list affixed to the shipping container. Table 1-1 describes the shipment contents. Then, ensure that you received the correct cables with your shipment. Appendix A lists the cables available from Wellfleet.

Table 1-1. Shipment Contents

Item	Quantity
Backbone Node (see Figure 1-1)	1
<i>Quick-Start Guide</i>	1
Site Manager Application Software (Floppy disks or 1/4 in. cartridge tape)	1
Hardware package for mounting the BN in an electronic enclosure rack. It contains the following: 10-32 x .5-in. panel-mount screws 10-32 cage nuts.	4 or 8 4 or 8
Power cord	1
Anti-static wrist strap (located inside the BN's front bezel)	1
Shielded console cable (optional)	1
Hardware package for attaching brackets to the electronic enclosure rack, containing (optional): rack-mount brackets 10-32 x .5-in. panel-mount screws 10-32 cage nuts	2 4 4

In a separate shipping container, you should also receive the BN documentation set which includes: *Getting Started*, *Configuring System Software Volume I*, *Configuring System Software Volume II*, and *Operating Routers / Bridges*.

Additional Equipment

You need to supply the additional equipment listed in Table 1-2.

Table 1-2. Equipment You Supply

Item	Quantity
ANSI terminal	1
SPARC workstation or PC (on which to install the BN's Site Manager interface application)	1
A shielded console cable (only if you did not order one from Wellfleet Communications)	1
An electronic enclosure rack in which to mount your BN. The rack must meet the following requirements: Heavy duty steel construction Electronic Industries Association (EIA) standard hole spacing Width: 19 in. (48.26 cm) Depth: 24 in. (60.96 cm) If the electronic enclosure rack is equipped with panels, doors, or a top panel, they must be louvered or screened to prevent over-heating.	1
Tape measure	1
Phillips screwdriver	1

Site Requirements

Your installation site must meet certain electrical, air plenum, and environmental requirements to support the BN's operation. These are described in the following sections.

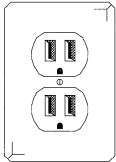
Electrical Requirements

Your installation site must meet the following electrical requirements. Table 1-3 lists the BN's power requirements. Table 1-4 lists the type of wall receptacle the BN uses in each country.

Table 1-3. Power Requirements

Power Requirements	Proximity to Wall Receptacle
100 - 120 VAC at a minimum of 10A <i>or</i> 200 - 240 VAC at a minimum of 5A	Within 1.8 m (6 ft) of the BN

Table 1-4. Wall Receptacle Requirements

Country	Receptacle	Voltage
United States or Canada	National Electrical Manufacturers Association (NEMA) 5-15 standard receptacle 	100-120 volts
Any Other Country	Your BN distributor supplies the proper cord. It is shipped with the unit from the factory.	200-240 volts

Air Plenum Requirements

Your installation site must be large enough to accommodate the BN and provide a certain volume of free space surrounding it for heat exhaust (called air plenum). To determine the total space needed to install the BN, add the dimensions of the BN (Table 1-5) to the air plenum measurements (Table 1-6).

Table 1-5. BN Dimensions

Height	Depth	Width
8.7 in. (22.1cm)	19.7 in. (50 cm)	19 in. (48.3 cm)

Table 1-6. Air Plenum Requirements

Location	Required Air Plenum	Recommended Air Plenum
Right of BN	2 in. (5 cm)	3 in. (7.6 cm)
Left of BN	2 in. (5 cm)	3 in. (7.6 cm)

Environmental Requirements

Your installation site must meet the environmental requirements listed in Table 1-7.

Table 1-7. Environmental Requirements

Altitude	Humidity	Temperature
0 - 2400 m (0 - 8000 ft)	10% - 90% Non-condensing	0 - 40°C (32 - 104°F) stable

Chapter 2

Setting Up the BN

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Setting Up the BN

About this Chapter

This chapter describes how to set up your BN. First, it tells you how to mount your BN in an electronic enclosure rack. Then, it tells you how to cable your BN to a system console.

To begin, locate the hardware package that contains the brackets, panel-mount screws and cage nuts. In addition, you need a tape measure and a Phillips screwdriver to install the BN in a rack.

Warning: Refer to the section of this guide entitled *Air Plenum Requirements* to verify that you have adequate space for heat exhaust before setting up your BN.

Installing the BN in a Rack

This section describes how to attach angle brackets to the rack to support the BN, and how to mount the BN in a rack.

Wellfleet strongly recommends mounting the BN on angle brackets that are attached to an electronic enclosure rack. However, you can also mount the BN directly to the rack. (If you choose this method, go directly to *Mounting the BN to the Rack*.)

Attaching Angle Brackets to the Rack

You attach angle brackets to the rack as follows (see Figure 2-1):

1. Measure at least 8.7 in. (22.1 cm) of free, vertical space inside the rack.

If the holes in the rails are not threaded, insert four cage nuts over the holes before you attach the angle brackets.

2. Insert each angle bracket inside the rack and attach it to the sides, below the space you measured in step 1, as follows:
 - a. Align the edge of the bracket to the rack:
 - If the interior of the rack is equipped with horizontal bracket supports, align the angle bracket with the horizontal bracket support.
 - If the interior of the rack is not equipped with horizontal bracket supports, brace the angle bracket between the side rails.

The edge of the bracket that will support the BN should be above the edge aligned with the rack. Ensure that the bracket can be adjusted vertically along its slots before securing it.

- b. Insert two 10-32 screws through the bracket's slotted holes and into the holes in the supports of the rack.

Do not tighten the screws.

- c. Adjust each bracket vertically along the bracket slots until the bracket is 1.2 in. (3.1 cm) below the center of one hole in the front vertical support of the rack.
- d. Tighten the screws with a Phillips screwdriver until secure.

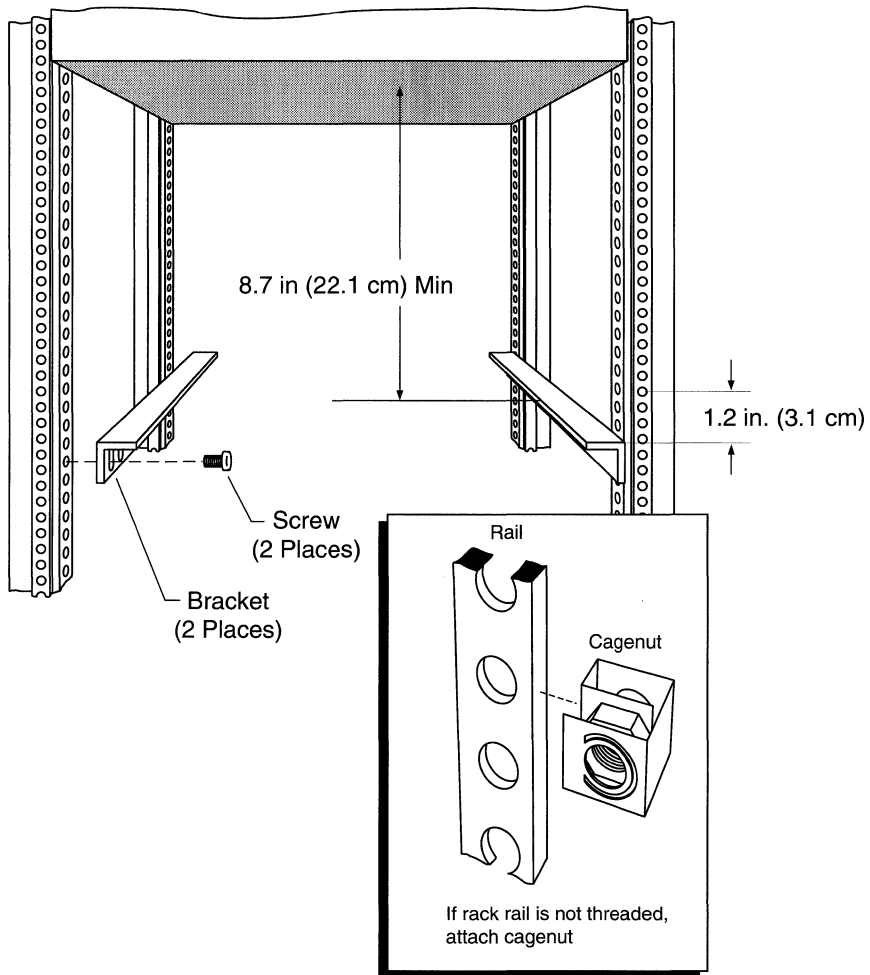


Figure 2-1. Attaching Brackets to the Rack

Mounting the BN to the Rack

You mount the BN to the rack as follows:

1. Remove the front bezel of the BN (see Figure 2-2):
 - a. Hold the upper right side of the front bezel in place and pull the lower left side.
 - b. Hold the lower left side and pull the upper right side.
 - c. Pull the bezel from the chassis.

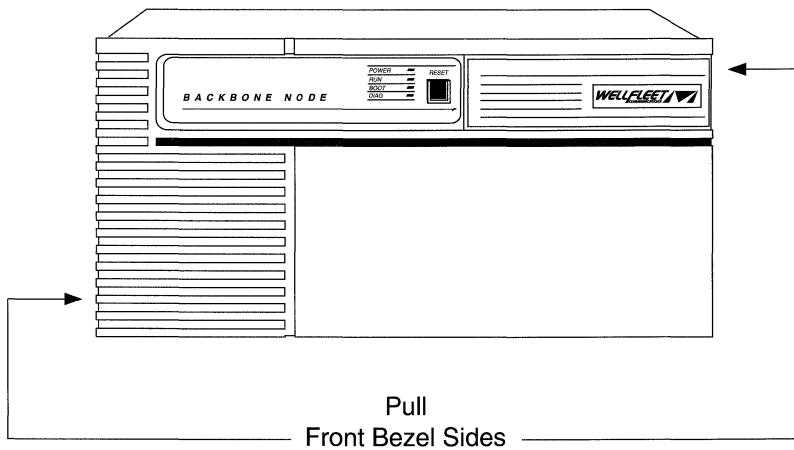


Figure 2-2. Removing the Front Bezel from the BN

2. Insert the BN in the rack.

If you attached angle brackets to support the BN, place the BN squarely on the angle brackets.
3. Align the slots in the left-and right-front flanges of the BN with the holes in the front vertical supports of the rack.

If the holes in the rack are *not threaded*, attach four cage nuts to the holes behind the slots in the two front vertical supports.

4. Insert four screws through the slots in the flanges of the BN and into the corresponding holes in the two front vertical supports (see Figure 2-3).
5. Tighten the screws with a Phillips screwdriver until secure.
6. Replace the front bezel by aligning the ball and socket receptacle and pushing the cover gently.

After the BN is securely mounted, proceed to *Cabling the BN to a Console*.

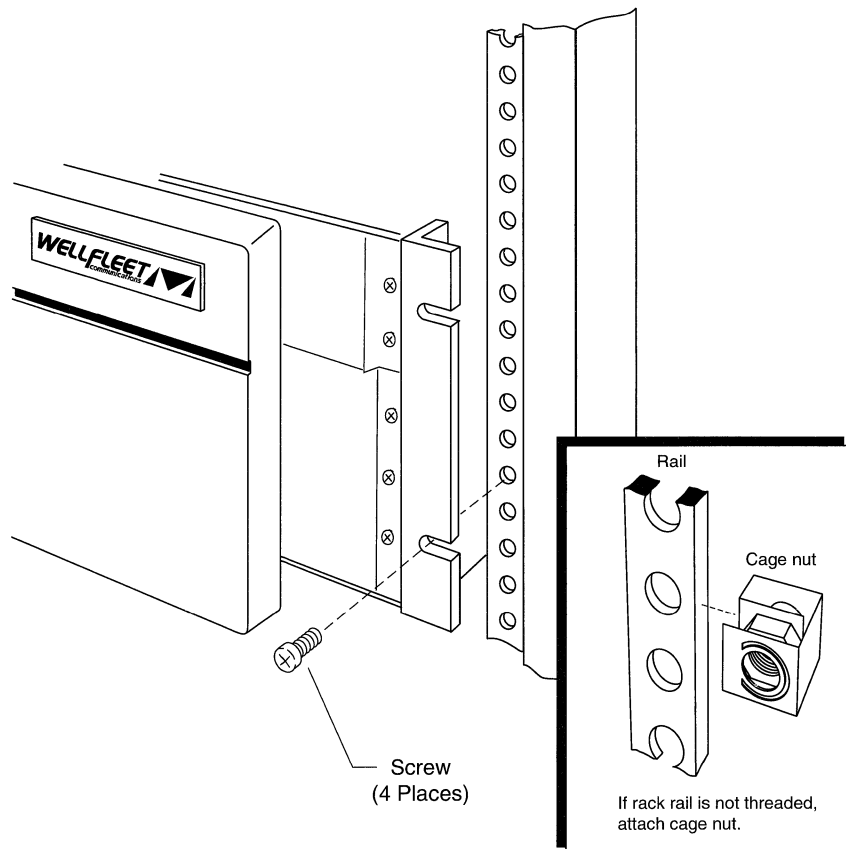


Figure 2-3. Mounting the BN to the Rack

Cabling the BN to a Console

After you mount your BN in a rack, you cable it to a system console. Wellfleet offers a cable (Model Number 7525) for this application. Refer to Appendix A for cable information.

Cable the BN to a system console as follows:

1. Power on the console and set its operating parameters as described in Table 2-1.

See your console user manual for instructions on how to set these operating parameters.

2. Insert the male end of the cable into the CONSOLE port of the System Resources Module-Link (SRML) board. This board is in the first slot of the BN's rear panel (see Figure 2-4).
3. Insert the female end of the cable into the communications port at the back of the console.

When you are finished, proceed to the next chapter, entitled *Starting Up the BN*.

Table 2-1. Default Console Operating Parameters

Parameter	Value
Baud Rate	9600
Start Bits	8
Stop Bits	1
Parity	none

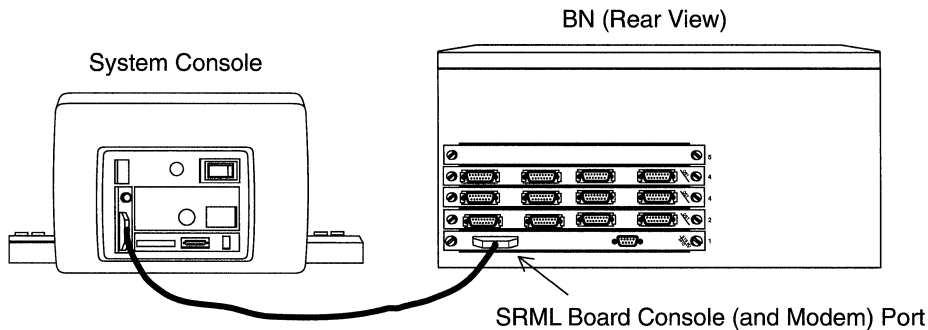


Figure 2-4. Cabling the BN to a System Console

Note: After you install your BN and configure the BN's initial IP interface (as described in the *Quick-Start Guide*), you can replace the local system console connection with a modem connection if you wish. Appendix B describes how to connect your BN to a modem to allow remote dial-in access.

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Starting Up the BN

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Where to Go From Here	3-3

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Starting Up the BN

About this Chapter

This chapter tells you how to start up the BN. It describes how to power on the BN and explains the meaning of the Light Emitting Diodes (LEDs) on the BN's front panel.

Powering on the BN

Power on the BN as follows:

1. Ensure that the power switch on the rear panel is in the “off” position.
2. Connect the power cable to the power switch assembly on the BN's rear panel.
3. Insert the power plug into the appropriate wall receptacle (described in the *Electrical Requirements* section of this guide).
4. Turn the power switch to the “on” position.

The fans in the BN will generate a constant humming sound as they spin.

5. Verify that air is flowing from the BN.

Pass your hand along the left side of the BN to feel the air movement.

Note: If your BN has AC power but will not power on, a fuse may need to be changed; contact Wellfleet Customer Support at 1-800-2LANWAN

Notice the Light Emitting Diodes (LEDs) on the front panel of the BN (see Figure 3-1). The LEDs activate while the BN initializes. The following section explains the meaning of each LED.

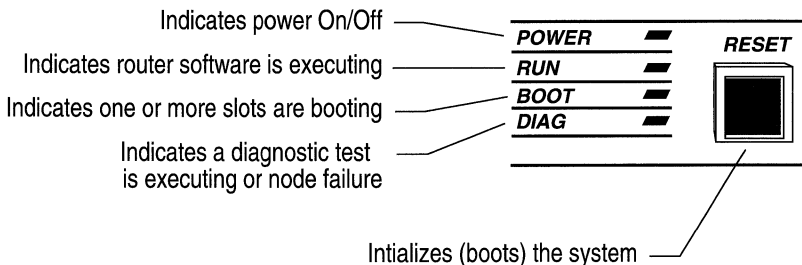


Figure 3-1. Front Panel LEDs

Monitoring the LEDs

After you power on the BN, it should automatically initiate a 1-to-2 minute diagnostic test to verify that the boards are functioning properly.

The LEDs indicate the status of the BN as it runs through its diagnostic tests. The LEDs typically activate in the following order, however, the sequence may vary slightly or overlap:

- First, the Power and Diag LEDs light.

The Power LED indicates that the power supply voltages are all within normal limits; the Diag LED indicates that the diagnostic test is in progress on one or more slots. After a successful test, the Diag LED turns off and the Power LED remains lit.

- Next, the Boot and Run LEDs light.

The Boot LED indicates that one or more slots are booting; the Run LED indicates that one or more slots are executing system software.

Once the Boot LED turns off, the system has successfully started up. The Power and Run LEDs remain lit.

Note: When you power on the BN, if you cannot feel air flow from the vents, and the Power and Diag LEDs do not light or the Diag LED does not turn off, turn the power switch at the rear of the BN to the “off” position. Wait one minute and then turn the power switch to the “on” position. If the problem persists, contact Wellfleet Customer Support at 1-800-2LANWAN.

Where to Go From Here

Once you power on the BN, proceed to the *Quick-Start Guide*.

Appendix A

External Cables

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External Cables

About this Appendix

This appendix describes the external cables that link Wellfleet BNs to local or wide-area network devices (see Table A-1).

Wellfleet also offers a cross-over cable for technicians and engineers to connect synchronous ports of two Wellfleet systems for network simulation and/or testing.

If you need to order additional cables, contact Wellfleet Customer Support at 1-800-2LANWAN.

Table A-1. External Connection Cables

Model	Length	Connection
7115	15 ft	Ethernet/802.3 Intelligent Link Interface (ILI) (labeled XCVR1 or XCVR2) to AUI connector for attachment to Ethernet transceiver.
7126	5 ft	Token Ring/802.5 ILI to Token Ring Media Access Unit (Shielded Twisted Pair cable) with Ferrite Bead.
7135	10 m	FDDI ILI to FDDI ring (Multimode fiber extension cable with Fixed Shroud Duplex [FSD-to-FSD] connectors). Two are required for dual attachment to the FDDI ring.
7136	10 m	FDDI ILI to FDDI ring (Multimode fiber extension cable with Fixed Shroud Duplex [FSD-to-ST] connectors). Two are required for dual attachment to the FDDI ring.
7215	15 ft	Synchronous ILI (labeled COM1, COM2, COM3, or COM4) to V.35 interface (for WAN connections).
7216	15 ft	Synchronous ILI (labeled COM1, COM2, COM3, or COM4) to V.35 interface (for connection to DCE).
7218	15 ft	Synchronous ILI (labeled COM1, COM2, COM3, or COM4) to male RS232 interface (for connection to DTE).
7219	15 ft	Synchronous ILI (labeled COM1, COM2, COM3, or COM4) to V.35 interface (for connection to DTE).
7221	15 ft	Synchronous ILI (labeled COM1, COM2, COM3, or COM4) to X.21 interface (for WAN connections).
7255	15 ft	Synchronous ILI (labeled COM1, COM2, COM3, or COM4) to RS-232 interface (for WAN connections).
7260	15 ft	Wellfleet-to-Wellfleet Synchronous cross-over (for back-to-back node operation).
7315	15 ft	Synchronous ILI (labeled COM1, COM2, COM3 or COM4) to RS-449/422 interface (for WAN connections).
7401	10 in	T1 Framer ILI (labeled DSX-1 or DSX-2) to the DTE port of the Channel Service Unit (CSU).

Model	Length	Connection
7415	15 ft	T1 Framer ILI (labeled DSX-1 or DSX-2) to external Customer Premise Equipment (CPE).
7525	25 ft	System Resource Module CONSOLE/Modem port to any ANSI terminal.
7650	50 ft	CSU network interface (labeled NI) to a T-carrier line by means of a standard RJ45 plug.
7750	50 ft	CSU network interface (labeled NI) to a T-carrier line by means of spade terminals.
7830	10 ft	High Speed Synchronous Interface (HSSI) DCE to DTE.
7831	50 ft	High Speed Synchronous Interface (HSSI) DCE to DTE.
77850	15 ft	System Resource Module CONSOLE/Modem port to a dial modem.

Cable Pin-outs

Tables A-2 through A-20 describe each of the external connection cables listed in Table A-1 as follows:

- Show the pin-out for each connector and all associated signals (except for the FDDI cables, which have no wire connections).
- Identify wire jumpers at either connector (when applicable).

For example, Table A-6 (Sync Port to V.35 cable) lists local wire connections “Pin 9 -> 7 -> 1” under the Wellfleet Termination column. This indicates that pin 9 is wired to pin 7 and pin 7 is wired to pin 1, all within the Wellfleet connector.

- Illustrate the Wellfleet connector on the left and the other connector on the right.
- Specify the cable length.

If you want to build longer cables, consult the appropriate standards to determine maximum cable lengths.

- Specify the grounding arrangements that isolate the chassis from the DC ground within the cable.

Table A-2. Ethernet (Model Number 7115)

Wellfleet Termination		Transceiver Termination	
Pin	Signal	Pin	Signal
2	Collision+	2	Collision+ (802.3 Circuit CI-A)
3	Transmit+	3	Transmit+ (802.3 Circuit DO-A)
5	Receive+	5	Receive+ (802.3 Circuit DI-A)
6	Voltage Common	6	Voltage Common (802.3 Circuit VC)
9	Collision-	9	Collision (802.3 Circuit CI-B)
10	Transmit-	10	Transmit- (802.3 Circuit DO-B)
12	Receive-	12	Receive- (802.3 Circuit DI-B)
13	+12V	13	+12V (802.3 Circuit VP)

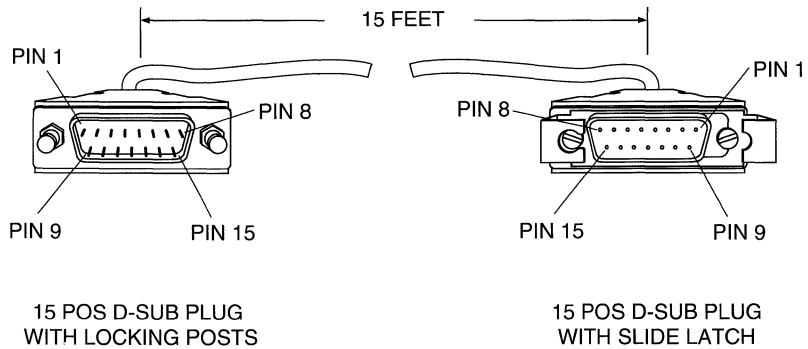
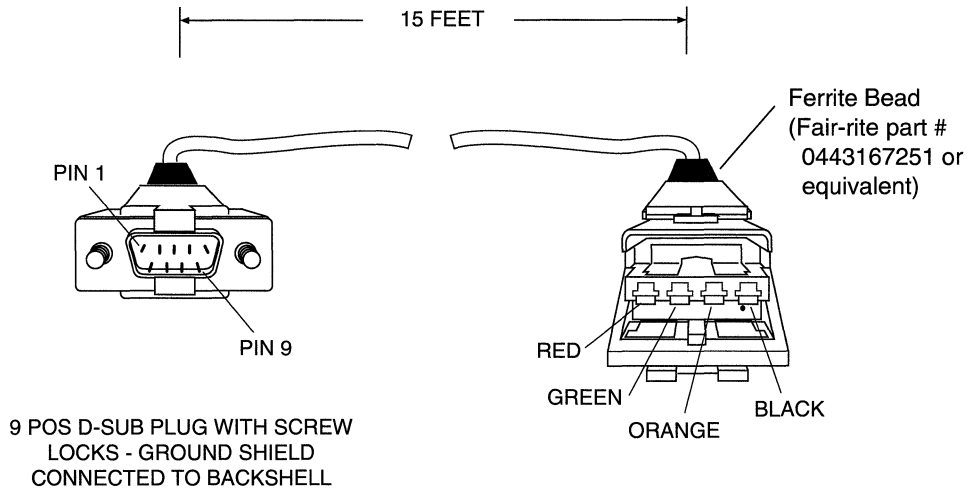


Table A-3. Token Ring MAU Cable (Model Number 7126)

Wellfleet Termination		Token Ring MAU
Pin	Signal	Wire Color
1	Ring Receive 1	Red
2	GND	
3	+5 Volts	
4	GND	
5	Ring Transmit 1	Black
6	Ring Receive 2	Green
7	GND	
8	GND	
9	Ring Transmit 2	Orange



Note: Cable model number 7126 must be used in Token Ring applications for the BN. The ferrite beads ensure compliance with FCC and VDE requirements for emissions.

Table A-4. FDDI FSD to FSD (Model 7135)

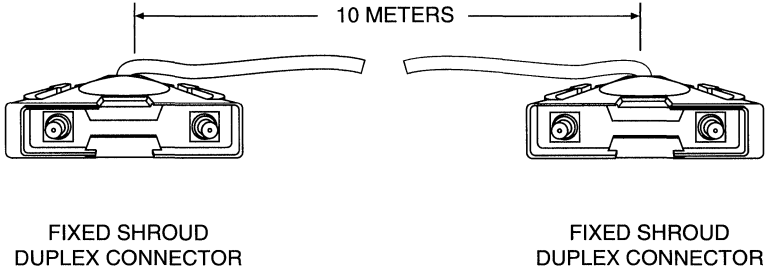


Table A-5. FDDI FSD to ST (Model 7136)

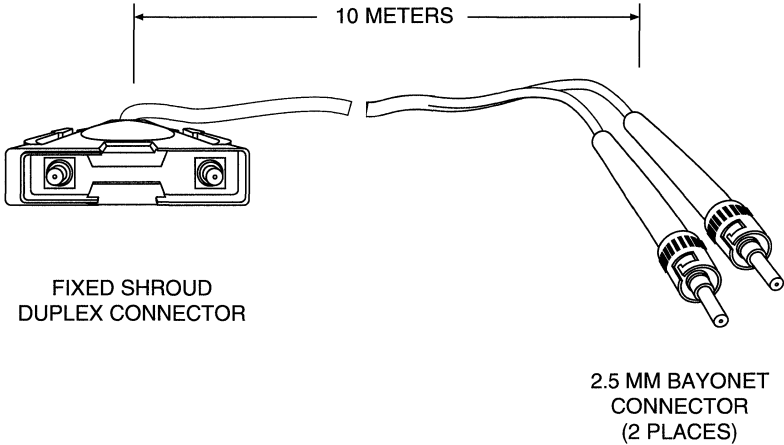


Table A-6. Sync Port to V.35 (Model Number 7215)

Wellfleet Termination		V.35 Termination	
Pin	Signal	Pin	Signal
1	Signal Ground	B	Signal Ground
2	Send Data+	P	Send Data (Signal A)
3	Send Data-	S	Send Data (Signal B)
4	Serial Clock Transmit+	Y	Serial Clock Transmit (Signal A)
5	Serial Clock Transmit-	AA	Serial Clock Transmit (Signal B)
6	Request to Send+	C	Request to Send
8	Clear to Send+	D	Clear to Send
10	Data Carrier Detect+	F	Data Carrier Detect
11	Serial Clock Receive-	X	Serial Clock Receive (Signal B)
12	Serial Clock Receive+	V	Serial Clock Receive (Signal A)
13	Receive Data-	T	Receive Data (Signal B)
14	Receive Data+	R	Receive Data (Signal A)
Local Wire Connections			
Pin 9 -> 7 -> 1			

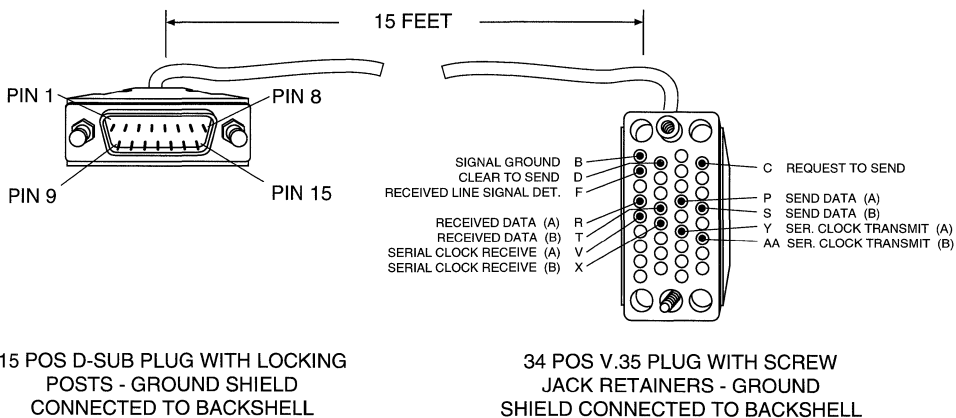
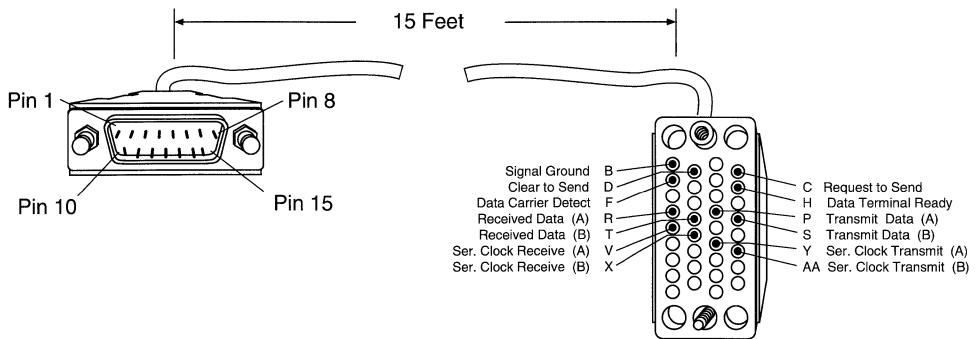


Table A-7. Sync Port to V.35 with Data Terminal Ready (Model Number 7216)

Wellfleet Termination		V.35 Termination	
Pin	Signal	Pin	Signal
1	Signal Ground	B	Signal Ground
2	Send Data+	P	Send Data (Signal A)
3	Send Data-	S	Send Data (Signal B)
4	Serial Clock Transmit+	Y	Serial Clock Transmit (Signal A)
5	Serial Clock Transmit-	AA	Serial Clock Transmit (Signal B)
6	Request to Send+	C	Request to Send
8	Clear to Send+	D	Clear to Send
10	Data Carrier Detect+	F	Data Carrier Detect
11	Serial Clock Receive-	X	Serial Clock Receive (Signal B)
12	Serial Clock Receive+	V	Serial Clock Receive (Signal A)
13	Receive Data-	T	Receive Data (Signal B)
14	Receive Data+	R	Receive Data (Signal A)
Local Wire Connections			
Pin 9 -> 7 -> 1		C -> H	



15 POS D-SUB PLUG WITH LOCKING POSTS- GROUND SHIELD CONNECTED TO BACKSHELL

34 POS V.35 PLUG WITH SCREW JACK RETAINERS - GROUND SHIELD CONNECTED TO BACKSHELL

Table A-8. RS-232 Sync Pass-Through (Model Number 7218)

Wellfleet Termination		Remote Termination	
Pin	Signal	Pin	Signal
1	Signal Ground	7	Signal Ground
2	Transmitted Data	3	Received Data
4	Transmit Clock	15	Transmit Clock
6	Data Set Ready	8	Data Carrier Detect
10	Data Carrier Detect	4	Clear to Send
12	Receive Clock	17	Receive Clock
14	Received Data	2	Transmitted Data
Local Wire Connections			
1 -> 7 ->9		4 ->5	
6 -> 8		6 ->20	
4 -> 3 -> 12			

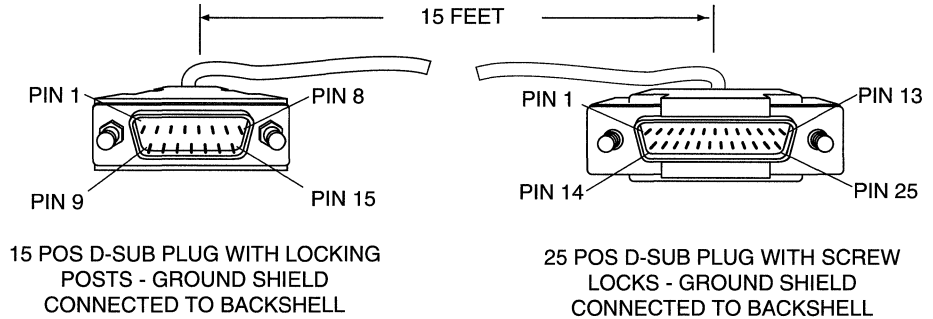
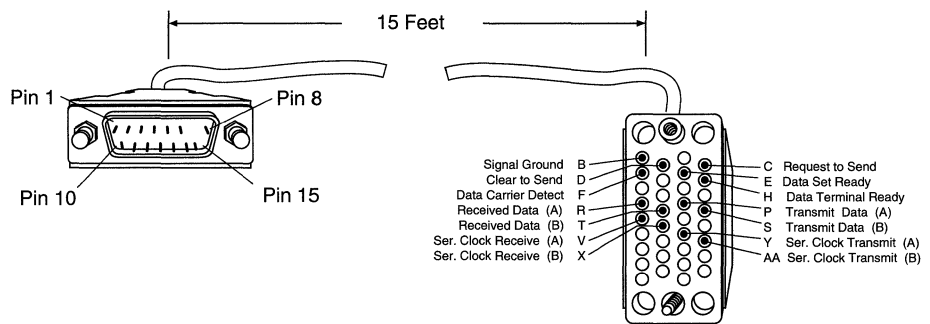


Table A-9. V.35 Sync Pass-Through (Model Number 7219)

Wellfleet Termination		V.35 Termination	
Pin	Signal	Pin	Signal
1	Signal Ground	B	Signal Ground
2	Transmit Data+	R	Receive Data (Signal A)
3	Transmit Data-	T	Receive Data (Signal B)
4	Serial Clock Transmit+	Y	Serial Clock Transmit (Signal A)
5	Serial Clock Transmit-	AA	Serial Clock Transmit (Signal B)
6	Request to Send	F	Data Carrier Detect
10	Data Carrier Detect	D	Clear to Send
11	Serial Clock Receive-	X	Serial Clock Receive (Signal B)
12	Serial Clock Receive+	V	Serial Clock Receive (Signal A)
13	Receive Data-	S	Transmit Data (Signal B)
14	Receive Data+	P	Transmit Data (Signal A)
Local Wire Connections			
6 -> 8		C -> D	
4 -> 12		E -> H	
5 -> 11			
1 -> 7 -> 9			



15 POS D SUB PLUG WITH LOCKING POSTS - GROUND SHIELD CONNECTED TO BACKSHELL

34 POS V.35 PLUG WITH SCREW JACK RETAINERS - GROUND SHIELD CONNECTED TO BACKSHELL

Table A-10. Sync Port to X.21 (Model Number 7221)

Wellfleet Termination		X.21 Termination	
Pin	Signal	Pin	Signal
1	Ground	1	Ground
2	TDAT+	2	TDAT+
3	TDAT-	9	TDAT-
6	RTS+	3	RTS+
15	RTS-	10	RTS-
14	RD+	4	RD+
13	RD-	11	RD-
10	DCD+	5	DCD+
9	DCD-	12	DCD-
4	TIM+	6	TIM+
5	TIM-	13	TIM-

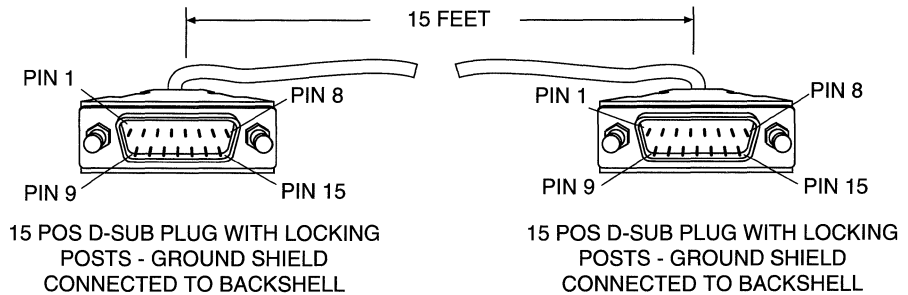


Table A-11. Sync Port to RS-232 (Model Number 7255)

Wellfleet Termination		RS-232 Termination	
Pin	Signal	Pin	Signal
1	Signal Ground	7	Signal Ground
2	Transmitted Data	2	Transmitted Data
3	Transmitter Timing (DTE Source)	24	Transmitter Signal Element Timing (DTE Source)
4	Transmitter Signal Element Timing (DCE Source)	15	Transmitter Signal Element (DCE Source)
6	Request to Send	4	Request to Send
8	Clear to Send	5	Clear to Send
10	Carrier Detect	8	Carrier Detect
12	Receiver Signal Element Timing (DCE Source)	17	Receiver Signal Element Timing (DCE Source)
14	Received Data	3	Received Data
15	Data Set Ready	6	Data Set Ready
Local Wire Connections			
Pin 7 -> 9 -> 1		4 -> 20	

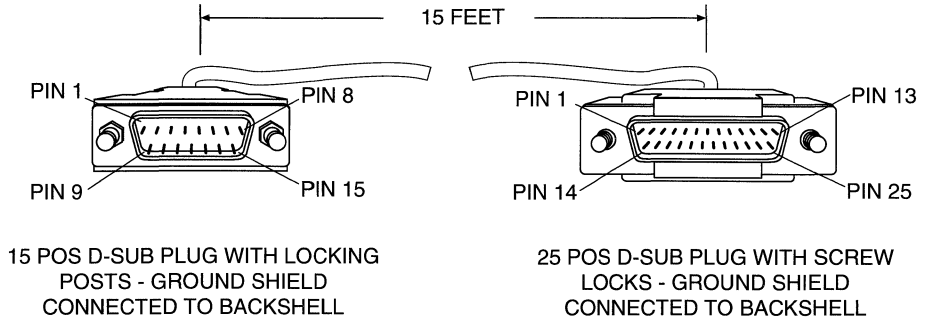


Table A-12. Wellfleet to Wellfleet Cross-Over (Model Number 7260)

Wellfleet Termination		Wellfleet Termination	
Pin	Signal	Pin	Signal
1	Signal Ground	15	Return Common
2	Send Data+	14	Receive Data+
3	Send Data-	13	Receive Data-
4	Serial Clock Transmit+	12	Serial Clock Receive+
5	Serial Clock Transmit-	11	Serial Clock Receive-
6	Request to Send+	10	Data Carrier Detect+
10	Data Carrier Detect+	6	Request to Send+
11	Serial Clock Receive-	5	Serial Clock Transmit-
12	Serial Clock Receive+	4	Serial Clock Transmit+
13	Receive Data-	3	Send Data-
14	Receive Data+	2	Send Data+
15	Return Common	1	Signal Ground
Local Wire Connections			
Pin 6 -> 8		Pin 6 -> 8	
Pin 7 -> 9 -> 15		Pin 7 -> 9 -> 15	

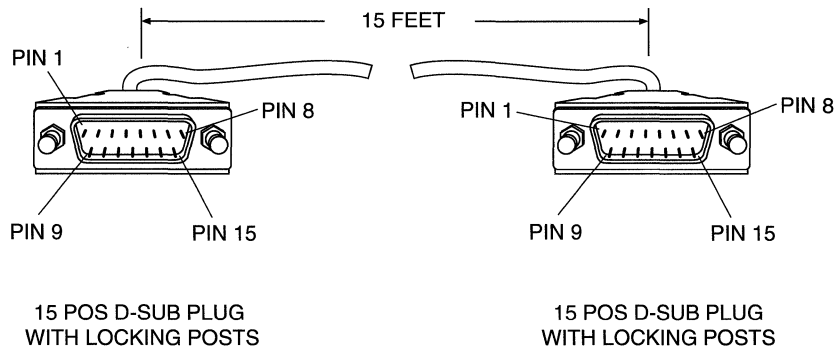


Table A-13. Sync Port to RS-449/422 (Model Number 7315)

Wellfleet Termination		Remote Termination	
Pin	Signal	Pin	Signal
1	Signal Ground	25	SC (Send Common)
2	Send Data+	4	SD (Send Data)
3	Send Data-	22	SD (Send Data)
4	Serial Clock Transmit+	5	ST (Send Timing)
5	Serial Clock Transmit-	23	ST (Send Timing)
6	Request to Send	12	TR (Terminal Ready)
7	Clear to Send-	27	CTS- (Clear to Send)
8	Clear to Send+	9	CTS+ (Clear to Send)
9	Data Carrier Detect-	31	DCD- (Data Carrier Detect)
10	Data Carrier Detect+	13	DCD+ (Data Carrier Detect)
11	Serial Clock Receive-	26	RT (Receive Timing)
12	Serial Clock Receive+	8	RT (Receive Timing)
13	Receive Data-	24	RD (Receive Data)
14	Receive Data+	6	Receive Data
Local Wire Connection			
		7 -> 12	
		37 -> 30 -> 25	

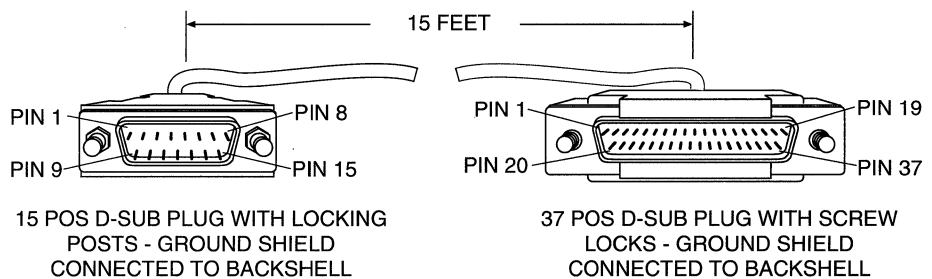
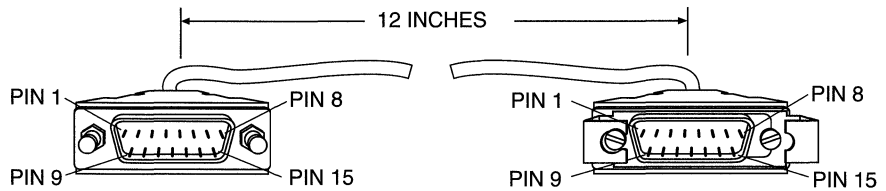


Table A-14. T1 Port to CSU DTE Port (Model Number 7401)

Wellfleet Termination		Remote Termination	
Pin	Signal	Pin	Signal
1	Send+	1	Send+
9	Send-	9	Send-
3	Receive+	3	Receive+
11	Receive-	11	Receive-

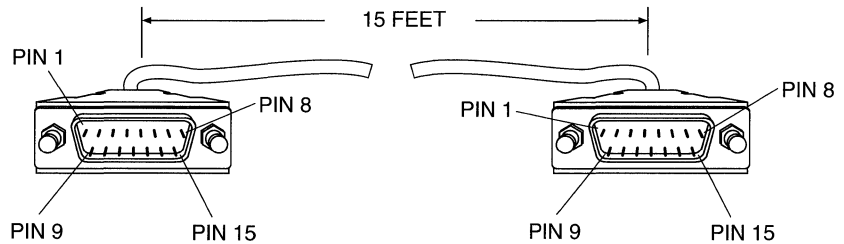


15 POS D-SUB PLUG WITH LOCKING
POSTS - GROUND SHIELD
CONNECTED TO BACKSHELL

15 POS D-SUB PLUG WITH SLIDE
LATCH - GROUND SHIELD
CONNECTED TO BACKSHELL

Table A-15. TI Port to Customer Premises Equipment (Model Number 7415)

Wellfleet Termination		Remote Termination	
Pin	Signal	Pin	Signal
1	Send+	1	Send+
9	Send-	9	Send-
3	Receive+	3	Receive+
11	Receive-	11	Receive-



15 POS D-SUB PLUG WITH LOCKING POSTS - GROUND SHIELD CONNECTED TO BACKSHELL

15 POS D-SUB PLUG WITH LOCKING POSTS - GROUND SHIELD CONNECTED TO BACKSHELL

Table A-16. System Resource Module to ANSI Terminal (Model Number 7525)

Wellfleet Termination		Remote Termination	
Pin	Signal	Pin	Signal
2	Transmitted Data	3	Received Data
3	Received Data	2	Transmitted Data
4	Request to Send	5	Clear to Send
5	Clear to Send	4	Request to Send
7	Signal Ground	7	Signal Ground
Local Wire Connections			
		6 -> 20	

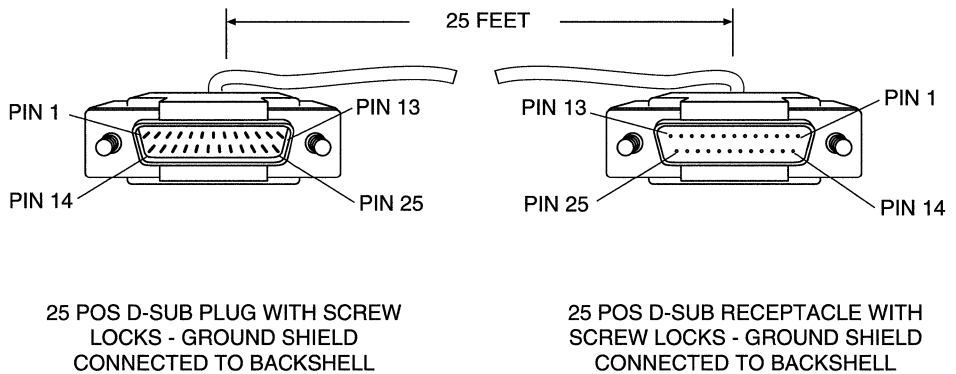


Table A-17. CSU Network Interface Port to RJ45 (Model Number 7650)

Wellfleet Termination		Remote Termination	
Pin	Signal	Pin	Signal
1	Send+	1	Send+
9	Send-	9	Send-
3	Receive+	3	Receive+
11	Receive-	11	Receive-

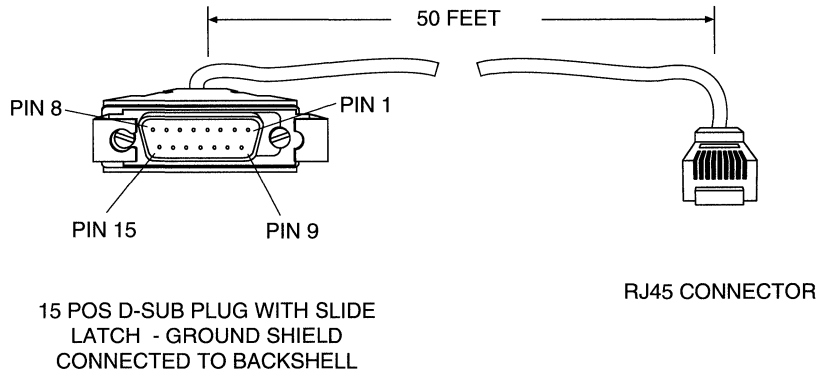


Table A-18. CSU Network Interface Port to Spade Terminals (Model Number 7750)

Wellfleet Termination		Remote Termination	
Pin	Signal	Pin	Signal
1	Send+	(wire)	Send+
9	Send-	(wire)	Send-
3	Receive+	(wire)	Receive+
11	Receive-	(wire)	Receive-
Chassis	GND	(wire)	Shield
Chassis	GND	(wire)	Shield

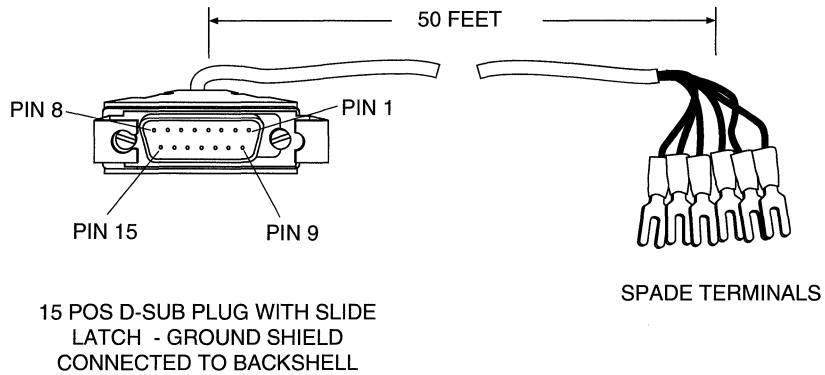
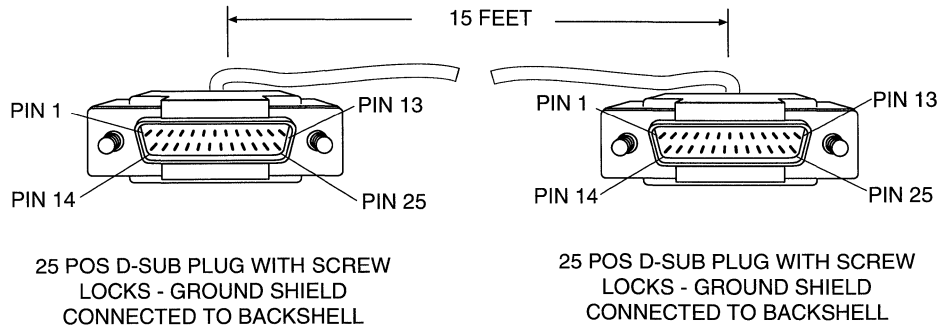


Table A-19. System Resource Module to Modem (Model Number 77850)

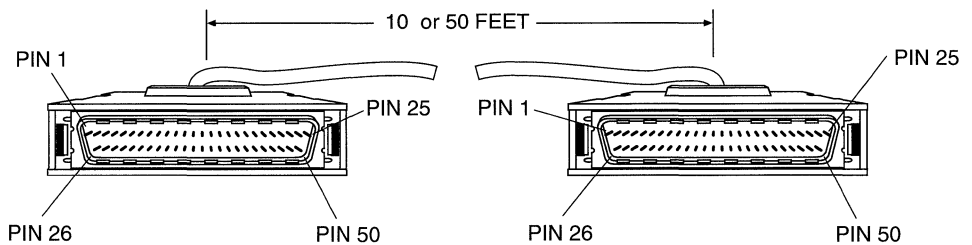
Wellfleet Termination		Modem Termination	
Pin	Signal	Pin	Signal
1	Chassis Ground	1	Chassis Ground
2	Transmitted Data	2	Transmitted Data
3	Received Data	3	Received Data
4	Request to Send	4	Request to Send
5	Clear to Send	5	Clear to Send
6	Data Set Ready	6	Data Set Ready
7	Signal Ground	7	Signal Ground
8	Data Carrier Detect	8	Data Carrier Detect
20	Data Terminal Ready	20	Data Terminal Ready



**Table A-20. HSSI DCE to DTE
(10 Feet: Model Number 7830, 50 Feet: Model Number 7831)**

Wellfleet Termination		Remote Termination	
Pin	Signal	Pin	Signal
1	Signal Ground	1	Signal Ground
26	Signal Ground	26	Signal Ground
2	Receive Timing+	2	Receive Timing+
27	Receive Timing-	27	Receive Timing-
3	DCE Available+	3	DCE Available+
28	DCE Available-	28	DCE Available-
4	Received Data+	4	Received Data+
29	Received Data-	29	Received Data-
5	Reserved	5	Reserved
30	Reserved	30	Reserved
6	Send Timing+	6	Send Timing+
31	Send Timing-	31	Send Timing-
7	Signal Ground	7	Signal Ground
32	Signal Ground	32	Signal Ground
8	DTE Available+	8	DTE Available+
33	DTE Available-	33	DTE Available-
9	Terminal Timing+	9	Terminal Timing+
34	Terminal Timing-	34	Terminal Timing-
10	Loopback CKT A+	10	Loopback CKT A+
35	Loopback CKT A -	35	Loopback CKT A -
11	Send Data+	11	Send Data+
36	Send Data-	36	Send Data-
12	Loopback CKT B+	12	Loopback CKT B+
37	Loopback CKT B-	37	Loopback CKT B-
13	Signal Ground	13	Signal Ground
38	Signal Ground	38	Signal Ground
14	Signal	14	Signal
39	Reserved	39	Reserved
15	Reserved	15	Reserved

Wellfleet Termination		Remote Termination	
40	Reserved	40	Reserved
16	Reserved	16	Reserved
41	Reserved	41	Reserved
17	Reserved	17	Reserved
42	Reserved	42	Reserved
18	Reserved	18	Reserved
43	Reserved	43	Reserved
19	Signal Ground	19	Signal Ground
44	Signal Ground	44	Signal Ground
20	Reserved	20	Reserved
45	Reserved	45	Reserved
21	Reserved	21	Reserved
46	Reserved	46	Reserved
22	Reserved	22	Reserved
47	Reserved	47	Reserved
23	Reserved	23	Reserved
48	Reserved	48	Reserved
24	Reserved	24	Reserved
49	Reserved	49	Reserved
25	Signal Ground	25	Signal Ground
50	Signal Ground		Signal Ground



Appendix B

Cabling the BN to a Modem

About this Appendix	B-1
Modem Cabling Instructions	B-2

List of Tables

Table B-1 Modem Operating Parameters B-3

Cabling the BN to a Modem

About this Appendix

This appendix describes how to cable the BN to a modem to enable dial-in access from a remote system console. This procedure is optional.

Because the System Resource Module-Link has only a single CONSOLE port, you can either cable the BN to a local system console, or to a modem, but not to both at the same time.

Note: Before you replace the local system console connection with a modem connection, you must use the TI to enable the BN with the initial IP network interface. See the *Quick-Start Guide* for instructions.

Wellfleet BNs work with any Hayes-compatible modem. Wellfleet offers a cable (Model Number 77850) for connecting the BN to a Hayes-compatible modem. Refer to Table A-1 for cable specifications.

Modem Cabling Instructions

After you use your local system console to enable the BN with the initial IP network interface, you can disconnect the system console connection and replace it with a modem connection.

Cable the BN to the modem as follows:

1. Power on and configure the modem described in Table B-1.
Refer to the modem user documentation for instructions on configuring your modem.
2. If you have not already done so, remove the local system console cable connector from the CONSOLE port of the System Resource Module-Link board. This board is in the first slot of the BN's rear panel.
3. Insert one end of the cable into the CONSOLE port of the System Resource Module-Link board.

The system console cable and the modem cable connect to the BN using the same CONSOLE port.

4. Insert the other end of the cable into the RS-232 communications port at the back of the modem.

Refer to the *Configuring System Software* guide for instructions on configuring the Site Manager for modem operation.

Table B-1. Modem Operating Parameters

Parameter	Setting
Baud Rate	9600 or less
Auto Answer	Set on n ring(s) with DTR active (n must be greater than 0)
Clear to Send (CTS) Signal	Always on
Data Terminal Ready (DTR) Signal	DTR Signal fail-disconnect enabled (return to command mode, auto-answer off)
Data Carrier Detect (DCD) Signal	DCD Signal on while carrier present (the node uses DCD to detect modem disconnect)
Local Character Echo	Off
Supervisory Functions	Off
Data Set Ready (DSR) Signal	On