

## Hotwire® M/SDSL and HDSL2 Termination Units Models 8747, 8777, and 8779 Installation Instructions

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*Hotwire M/SDSL and HDSL2 Termination Units, Models 8747, 8777, and 8779, User's Guide*

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### Hotwire® M/SDSL and HDSL2 Termination Units

The Hotwire 8747, 8777, and 8779 Termination Units are circuit card assemblies that contain eight Multirate Symmetric Digital Subscriber Line (M/SDSL) or High-bit-rate DSL second generation (HDSL2) interfaces and eight DSX-1 or G.703 interfaces. When the Hotwire 87xx Termination Unit is used in a Hotwire 8610 or 8810 Digital Subscriber Line Access Multiplexer (DSLAM) chassis or 8820 GrandSLAM chassis, it transports up to 2064 kbps signals over traditional twisted-pair telephone wiring.

Model . . .	Has eight . . .	And eight . . .
8747	HDSL2 ports	DSX-1 ports
8777	M/SDSL ports	DSX-1 ports
8779	M/SDSL ports	G.703 ports

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## Installation Overview

Installation and configuration of the Hotwire 87xx Termination Unit consists of:

- Installing the Termination Unit in the DSLAM.
- Connecting to the DTE.
- Connecting to a Main Distribution Frame (MDF).
- Providing initial unit identity information or changing existing identity information.
- Configuring your unit using the Configuration Edit menus.

Before you install the unit, read the *Important Safety Instructions* on page 11.

Be sure to register your warranty at [www.paradyne.com/warranty](http://www.paradyne.com/warranty).

## Planning the Installation

Review the following list to help plan for the installation.

- Obtain the applicable cables; refer to *Cables You Need*.
- Make sure the Hotwire DSLAM chassis is installed and power is supplied to the chassis.
- After the Hotwire 87xx Termination Unit is installed, there are configuration procedures that must be performed before you can begin to use the termination unit. Refer to the User's Guide for detailed configuration procedures.

## Cables You Need

The following standard cables are used with this product.

### For the network connection:

- Plug-ended Telco 50-pin cable for connection from the Hotwire DSLAM rear connector to the Main Distribution Frame (MDF) or other demarcation point. Refer to your DSLAM documentation for more information.

### For the DTE connection:

- 50-pin plug to
  - 16 BNC connectors (for G.703; Feature No. 8700-F1-508) or
  - 8 RJ48 connectors (for DSX-1 or G.703; Feature Number 8700-F1-509).

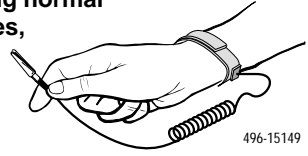
For more information refer to *Connector Pin Assignments* in the User's Guide.

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# Installing DSL Cards

## **⚠ 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.



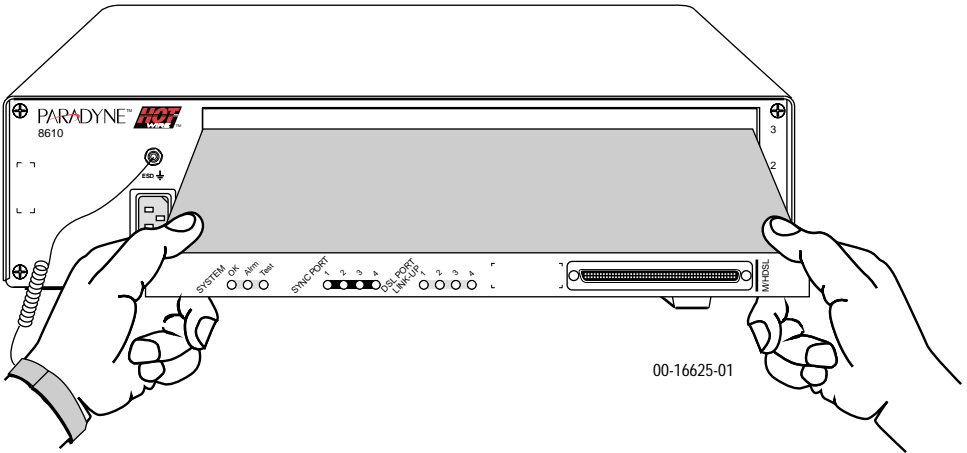
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A Hotwire 87xx Termination Unit can be installed, removed, and replaced from a DSLAM chassis without disrupting service to the other cards in the chassis.

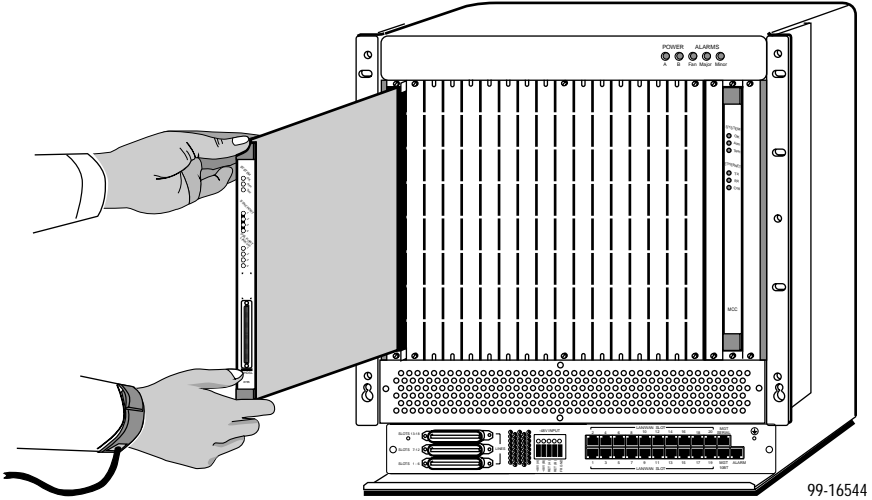
## **► Procedure**

To install the Hotwire 87xx Termination Unit:

1. Determine in which slot the unit will be installed. Verify that cards in adjacent slots have been fastened.
2. Remove the filler plate from the installation slot and store for possible later use.
3. Insert the unit:
  - For a **Hotwire 8610 DSLAM chassis** – hold the Hotwire Termination Unit horizontally with component side facing up and insert it into the left and right card guides.



- For a **Hotwire 8810 DSLAM or 8820 GranDSLAM chassis** – hold the Hotwire Termination Unit vertically with component side facing right and insert it into the top and bottom card guides.



4. Slide the unit into the slot until the power and network connectors seat firmly in the mating connectors on the backplane.

**CAUTION:**

**Do not force the unit into the slot. This could damage the backplane connectors. If the card does not seat properly, remove the card and reinstall it. If it still does not seat properly, call your service representative.**

The unit performs a power-on self-test. All of the LEDs turn ON and OFF briefly. When the self-test is completed successfully, the SYSTEM OK LED begins to pulse.

5. If the LED is not pulsing, refer to *Monitoring and Troubleshooting* in the User's Guide.
6. Secure the unit by fastening the screws at each end of the faceplate.

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## Connecting to the DTE

Connection to the eight DTE ports of the Hotwire 87xx Termination Unit is through the 50-pin interface connector on its faceplate. Refer to *Connector Pin Assignments* in the User's Guide.

### ► Procedure

To connect the Hotwire 87xx Termination Unit to your DTEs:

1. Insert and fasten the hex-head jackscrew included with the unit into the top nut (the nut nearest the LEDs) on the 50-position connector on the faceplate.
2. Connect the 50-position connector of the cable to the connector on the faceplate. Align one end of the cable connector with the card connector, then push on the cable connector until it seats.
3. Fasten the captive screw in the top of the cable connector to the hex-head jackscrew.
4. Secure the bottom of the cable connector to the unit using a cable tie.
5. Feed the cable through the Cable Guide if it is installed. When all cables are installed, anchor them with cable ties to the rack, DSLAM, or Cable Guide.
6. Connect the terminating connectors to your DTEs.

## Connecting to an MDF

You can connect the Hotwire DSLAM chassis containing the Hotwire 87xx Termination Unit to an MDF or other demarcation point. Do not connect it to a POTS splitter.

### ► Procedure

To connect the Hotwire DSLAM chassis containing the unit to an MDF:

1. Plug the Telco 50-pin cable into the appropriate line port on the chassis:
  - For a **Hotwire 8610 DSLAM chassis** – Line connectors are numbered 1–3 on the back of the chassis. After installing the connector, insert a cable tie through the tie mount to hold the cable in place.
  - For a **Hotwire 8810 DSLAM or 8820 GrandSLAM chassis** – Line connectors are numbered 1–18 on the back of the chassis.
2. Make sure the other end of the cable is connected to the appropriate MDF or demarcation point.

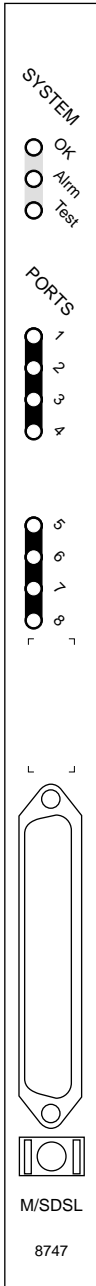
Refer to *Connector Pin Assignments* in the User's Guide for pinouts.

### NOTE:

If you are connecting the Telco 25-pair, 50-pin cable to an MDF, a converter may be necessary for terminating the other end of the cable on a punchdown block before cross-connecting to an MDF.

# Front Panel LEDs

The following table describes the meaning and states of the LEDs on the front panel. PORTS LEDs represent the DTE or DSL ports depending on the Port LEDs selection on the Control screen.



Type	LED	LED is . . . *	Indicating . . .
SYSTEM	OK (Green)	On	Normal operation; card functioning normally.
		Off	No power to card, or card failure.
		Slow cycling	Unit is in minimum mode and a download is required.
	Alrm (Amber)	Pulsing	Normal operation.
		On	Device failure, Power-On Self-Test (POST) is not complete, or an alarm was reported on a DSL, DSX-1, or G.703 port.
	Off	No alarms.	
Test (Amber)	On	Loopback test or 511 test pattern in progress.	
	Slow cycling	POST in progress.	
	Off	No tests.	
PORTS  (when DSX-1 or G.703 selected)	1–8 (Green)	On	Recoverable signal present on the DSX-1 or G.703 network.
		Slow cycling	Yellow Alarm Indication (DSX-1) or Remote Alarm Indication (G.703)
		Fast cycling	An OOF, LOF, EER, or AIS condition exists.
		Off	No signal on the port.
PORTS  (when DSL selected)	1–8 (Green)	On	DSL link is up.
		Slow cycling	DSL training in progress.
		Fast cycling	OOF condition.
		Off	DSL link is down.
<p>* Slow Cycling: LED turns off and on in equal duration once per second.</p> <p>Fast Cycling: LED turns off and on in equal duration 5 times per second.</p> <p>Pulsing: LED turns off momentarily once per second.</p>			

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# Logging In to the Hotwire DSLAM

You can log in to the Hotwire DSLAM system using either a local VT100-compatible terminal or a remote Telnet connection.

After you enter your user ID and password, the system displays the Hotwire Chassis Main Menu. See your DSLAM Management Communications Controller (MCC) card documentation for information about selecting the unit from the MCC card selection screen.

## Entering Identity Information

After accessing your unit for the first time, use the Change Identity screen to determine SNMP administrative system information that will be displayed on the Identity screen of the Status branch. To access the Card Identity screen, follow this menu selection sequence:

*Main Menu → Control → Change Identity*

## Configuring the Unit

Configuration option settings determine how the unit operates. Use the Configuration branch of the Hotwire Termination Unit menu to display or change configuration option settings.

The unit is shipped with factory settings in the Default Factory Configuration area. If the factory default settings do not support your network's configuration, customize the configuration options for your application.

## Accessing and Displaying Configuration Options

To display the configuration options, you must first load a configuration option set into the edit area.

To load a configuration option set into the configuration edit area, follow this menu selection sequence:

*Main Menu → Configuration (Load Configuration From)*

Make a selection by placing the cursor at your choice and pressing Enter.

<b>If you select . . .</b>	<b>Then . . .</b>
Current Configuration	The selected configuration option set is loaded and the Configuration Edit/Display menu screen appears.
Configuration Loader	The Configuration Loader screen is displayed allowing you to upload or download configurations from a TFTP server.
Default Factory Configuration	The default factory configuration is loaded and the Configuration Edit/Display menu screen appears.

# Configuration Edit/Display

The Configuration Edit/Display screen is displayed when the current, customer, or default configuration is loaded and allows groups of configuration options to be displayed. To access the Configuration Edit/Display screen, follow this menu selection sequence:

*Main Menu → Configuration → Current Configuration*

– or –

*Main Menu → Configuration → Default Factory Configuration*

Select . . .	To Access the . . .	To Configure the . . .
Network	Network Interface Options	DSL interface ports.
DSX-1	DSX-1 Interface Options	DSX-1 interface ports (Models 8747 and 8777).
G.703	G.703 Interface Options	G.703 interface ports (Model 8779).
Copy Ports	Copy Ports Options	DSL network and DTE interface ports by copying options from port to port.
System Options	System Options	General system options of the unit.
System Clock	System Clock Options	LTU system clock options.
Cross Connect	Cross Connect Mode Options Assign Time Slots Options	DS1 and DS0 cross-connect ports.
Management and Communication	Telnet Session Options General SNMP Management Options SNMP NMS Security Options SNMP Traps Options	Management support of the unit through SNMP and Telnet.

**NOTE:**

The SNMP NMS Security Options screen is not available in IP Conservative mode.

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# Configuring Cross-Connections

The Hotwire cross-connect system allows you to connect the DSX-1 or G.703 ports to the DSL ports in a variety of ways:

- **DS1 Bypass mode** – The entire DSX-1 or G.703 interface is connected to the DSL interface.
- **DS1 Cross-Connect mode** – The entire DSX-1 or G.703 interface is connected to the DSL interface through cross-connect circuitry. Ports can be switched through software.
- **DS0 Cross-Connect mode** – Any time slot of any DSX-1 or G.703 interface can be connected to any time slot of any DSL interface. Time slots can be individually allocated for voice or data.

Configuration of the cross-connections consists of the following steps:

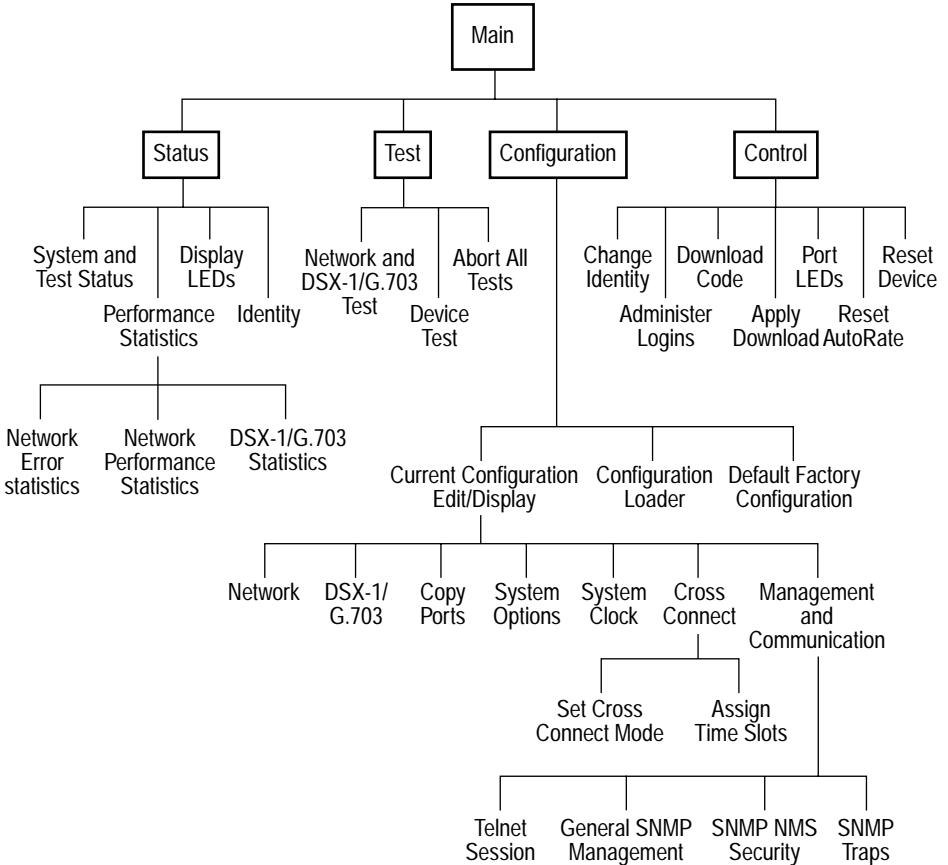
- Determine how the ports will be connected and configured.
- On the Network Interface Options screen, enable if necessary the DSL ports that will be in the cross-connection. The ports are enabled by default.
- On the DSX-1 or G.703 Interface Options screen, enable the DSX-1 or G.703 ports that will be in the cross-connection. For G.703, specify whether Time Slot 16 is used for signaling (voice mode).
- On the System Clock screen, configure the system clock.
- On the Cross-Connect Mode screen:
  - Define all DS1 Bypass ports
  - Define all DS1 Cross-Connect ports
  - Define all DS0 Cross-Connect ports
- On the Assign Time Slots screen, configure the DS0 cross-connections.

## **IMPORTANT:**

**All DSL time slots are available for cross-connect regardless of DSL line rate, but all time slots are available for data transport only if the DSL line rate is the full rate (1552 for DSX-1 or 2064 for G.703). Configure only the time slots intended for use.**

# Asynchronous Terminal Interface Menu

The following diagram shows the menu paths to the functions available through the asynchronous terminal interface.



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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. 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.
3. Do not allow anything to rest on the power cord and do not locate the product where persons will walk on the power cord.
4. Do not attempt to install or service this product yourself, as opening or removing covers may expose you to dangerous high voltage points or other risks. Refer all installation and servicing to qualified service personnel.
5. General purpose cables are provided with this product. Special cables, which may be required by the regulatory inspection authority for the installation site, are the responsibility of the customer.
6. 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.
7. 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.
8. 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.

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**⚠ 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.

## Warranty, Sales, Service, and Training Information

Contact your local sales representative, service representative, or distributor directly for any help needed. For additional information concerning warranty, sales, service, repair, installation, documentation, training, distributor locations, or Paradyne worldwide office locations, use one of the following methods:

- **Internet:** Visit the Paradyne World Wide Web site at [www.paradyne.com](http://www.paradyne.com). (Be sure to register your warranty at [www.paradyne.com/warranty](http://www.paradyne.com/warranty).)
- **Telephone:** Call our automated system to receive current information by fax or to speak with a company representative.
  - Within the U.S.A., call 1-800-870-2221
  - Outside the U.S.A., call 1-727-530-2340

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