

Hotwire® M/SDSL Standalone Termination Units Models 7974-A2, 7975-A2, and 7976-A2 Installation Instructions

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Select the following document:

7900-A2-GB21

Hotwire M/SDSL Standalone Termination Units, Models 7974-A2, 7975-A2, and 7976-A2, User's Guide

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

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

Package Checklist

Verify that your package contains:

- Hotwire® Standalone Termination Unit
- 24 VDC power transformer with separate power cable
- or -
6-conductor direct connection DC power cable
- 8-position-modular-to-8-position-modular network cable
- DB9-to-8-position modular terminal cable

Notify your sales representative if anything is missing.

Installation Overview

Installation and configuration of the Hotwire 797x Standalone Termination Unit consists of:

- Connecting power to the unit.
- Connecting to the network.
- Connecting to a DTE.
- Connecting a system terminal.
- Providing initial unit identity information or changing existing identity information.
- Configuring your unit using the Configuration Edit menus.

Before you install the Hotwire 797x Standalone Termination Unit, read the *Important Safety Instructions* on page 11.

See the User's Guide for additional information about:

- Configuration options
- Messages and troubleshooting
- Technical specifications
- Cables, connectors, and pin assignments

Connecting Power to the Unit

If your package includes a power transformer:

1. Plug the power cable into an AC outlet having a nominal voltage rating between 100–240 VAC.
2. Connect the power cable to the transformer.
3. Connect the output cable of the transformer to the connector marked POWER on the rear panel.

If your package includes a direct-connection DC power cable:

Connect the unit to an external +24 or –48 VDC SELV (Safety Extra Low Voltage) power source as described in the following section.

Connecting the Unit to an Optional External +24 or –48 VDC Power Source

Using the DC power cable, the Hotwire 797x Standalone Termination Unit is capable of operating on a +24 VDC or –48 VDC SELV power supply.

► Procedure

To use the DC power cable for +24 VDC:

1. Connect the green wire to a suitable ground.
2. Connect the orange wire to the +24 VDC source.
3. Connect the white wire to the return.
4. Cut the black, red, and blue wires off at the outer insulation.
5. Plug the power connector into the 797x Standalone Termination Unit.

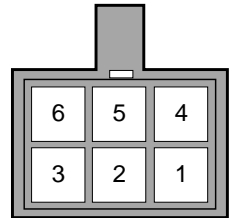
► Procedure

To use the DC power cable for –48 VDC:

1. Connect the green wire to a suitable ground.
2. Connect the orange wire to the –48 VDC source.
3. Connect the black wire to the return.
4. Cut the red, white, and blue wires off at the outer insulation.
5. Plug the power connector into the 797x Standalone Termination Unit.

Power Cable Pinouts

Pin Number	Wire Color	Signal
1	Black	–48 VDC Return
2	Red	–48 VDC Return
3	Green	Ground
4	White	+24 VDC Return
5	Orange	–48 VDC +24 VDC
6	Blue	No Connection



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Connecting to the Network

► Procedure

To connect your unit to the network:

1. Connect one end of the supplied 8-position-modular-to-8-position-modular network cable into the rear panel DSL jack.
2. Connect the other end to your DSL network interface.

NOTE:

Do *not* use a flat VF network cable as this may severely degrade the performance of the termination unit. Use only Cat 5 twisted-pair network cable.

Connecting to a DTE

Model	DTE Connection
7974	The DSX-1 interface is an RJ48C, 8-position, unkeyed modular connector. An RJ48C-to-DB15 T1 network interface adapter cable is available from Paradyne.
7975	The synchronous interface is a 25-pin EIA-530-A interface. Depending on the cable used, the interface can be adapted to an X.21, RS-449, or V.35 interface.
7976	The G.703 interface is either two BNC connectors (Transmit and Receive) for a 75-ohm unbalanced interface or an RJ48C, 8-position, unkeyed modular connector for a 120-ohm balanced interface.

See *Cables and Pin Assignments* in the User's Guide for specifications of the connectors and cables.

Hotwire 797x Standalone Termination Unit LEDs

The following table contains a description of the LEDs on the Hotwire 797x Standalone Termination Unit front panel.

Label	Color	LED is . . .*	Indicating . . .
POWER	Green	On Off Slow Cycling Pulsing	Unit failure. No power to the unit. Unit is in minimum mode and a download is required. Normal Operation.
ALARM	Red	On Off	Device failure, or self-test has failed. Self-test passed.
TEST	Yellow	On Off Slow Cycling	Loopback test or 511 test pattern in progress. No tests in progress. Self-test in progress.
DSL	Green	On Off Slow Cycling Fast Cycling	DSL link is up. The DSL link is down. DSL training in progress. An OOF condition.
DSX-1 DTE G.703	Green	On Off Slow Cycling Fast Cycling	DTE port is operational. No signal on DTE port. DSX-1: Yellow Alarm Indication received. Sync DTE: Not applicable. G.703: Remote Alarm Indication received. DSX-1: OOF, LOF, EER, or AIS condition. Sync DTE: Not applicable. G.703: OOF, LOF, EER, or AIS condition.
* Slow Cycling:		LED turns off and on in equal duration once per second.	
Fast Cycling:		LED turns off and on in equal duration 5 times per second.	
Pulsing:		LED turns off momentarily once per second.	

Connecting to a System Terminal

An optional system maintenance terminal may be attached to your Hotwire 797x Standalone Termination Unit through the modular jack on the rear panel. The system maintenance terminal allows you to view the status of the unit and change configuration options. The terminal must be a VT100-compatible terminal or a PC running terminal emulation software.

► Procedure

To connect your unit to a system terminal:

1. Connect the 9-pin end of the supplied terminal cable into a COM port on your PC.
2. Plug the other end into the modular jack on the rear panel.
3. Set the communication parameters on your PC or terminal to:
 - 9600 baud
 - 8 bit characters
 - no parity
 - 1 stop bit
 - no flow control

Press Enter from your terminal or PC to activate the Main Menu for the attached unit. The system runs diagnostics and status checks. After a few moments, the Main Menu or Logon screen appears on your terminal.

```
main                                                    Hotwire
                                                         Model 797x

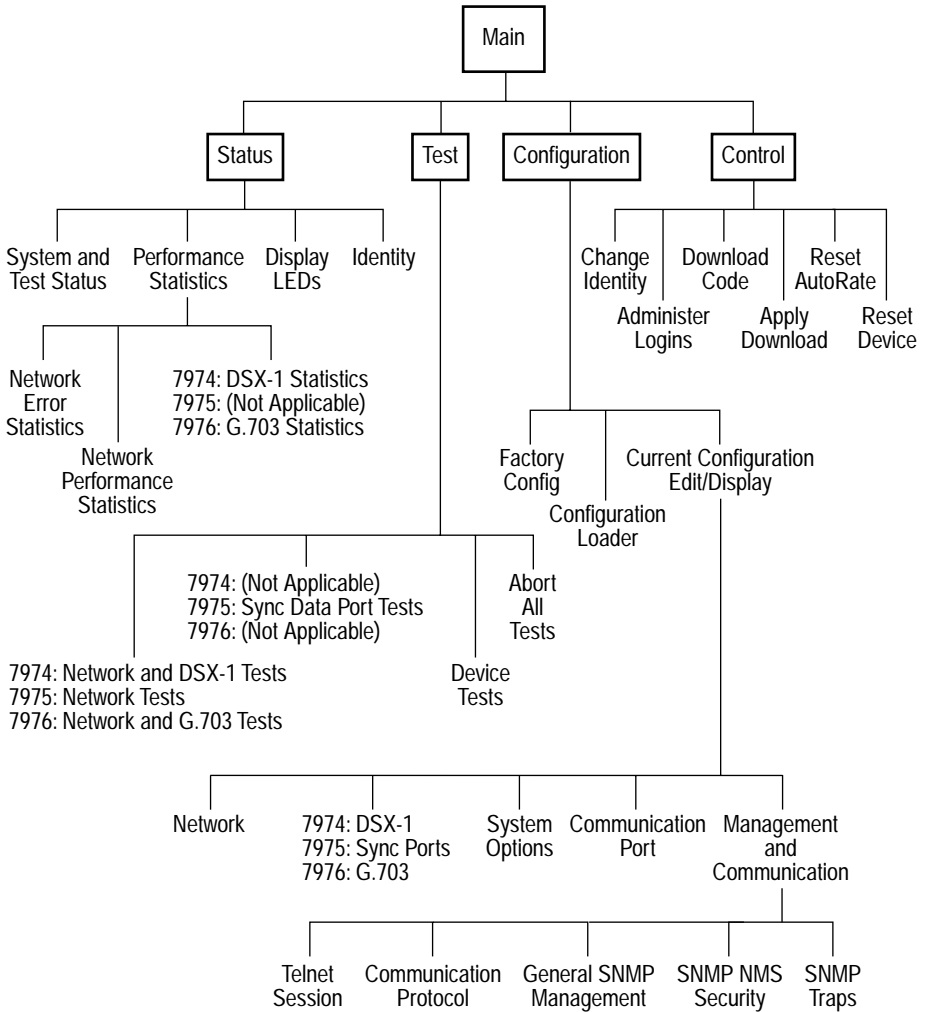
                MAIN MENU

                Status
                Test
                Configuration
                Control

-----
Ctrl-a to access these functions                               Exit
```

Asynchronous Terminal Interface Menu

The following illustration shows the menu paths to the different terminal screens.



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 Identity screen, follow this menu selection sequence:

Main Menu → Control → Change Identity

Selecting a Configuration Method

You can make configuration changes either through a VT100-compatible terminal and the unit's Configuration menus or by manually changing switches on the board. The unit is shipped with the switchpacks disabled to allow settings to be made through the Configuration menus. See the User's Guide for detailed information about the configuration options and switch settings.

Configuring the Unit Using the Configuration Menus

Use the Configuration menu to select, display, or change configuration option settings.

NOTE:

The Hotwire 797x Standalone Termination Unit is shipped configured as an NTU. If you are using this unit as an NTU, the configuration options may not need to be altered.

The Hotwire 797x Standalone Termination Unit has two sets of configuration option settings:

- **The Current Configuration:** The Hotwire 797x Standalone Termination Unit's active set of configuration options.
- **The Default Factory Configuration:** A read-only configuration area containing the factory default configuration options.

Displaying Configuration Options

To display configuration options, you must first load a configuration 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.

If you select ...	Then ...
Current Configuration	The selected configuration option set is loaded and the Configuration Edit/Display menu screen appears.
Default Factory 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.

Configuration Edit/Display

The Configuration Edit/Display screen is displayed when the current or default configuration is loaded. 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 network interface on the unit.
DSX-1	DSX-1 Interface Options	DSX-1 interface (Model 7974);
SYNC Port	Synchronous Data Port Options	Synchronous DTE interface (Model 7975);
G.703	G.703 Interface Options	G.703 interface (Model 7976)
System Options	System Options	General system options of the unit.
Communication Port	Communication Port Options	Unit's COM port options.
Management and Communication	<ul style="list-style-type: none">■ Telnet Session Options■ Communication Protocol Options■ General SNMP Management Options■ SNMP NMS Security Options■ SNMP Traps Options	Management support of the unit through SNMP and Telnet.

▲ Important Safety Instructions

1. Read and follow all warning notices and instructions marked on the product or included in the manual.
2. Input power to this product must be provided by one of the following: (1) a UL Listed/CSA Certified power source with a Class 2 or Limited Power Source (LPS) output for use in North America; or (2) a 24 or –48 VDC National Electric Code (NEC) ANSI/NFPA 70/Canadian Electric Code (CEC) Class 2 circuit installed in accordance with articles 110-16, 110-17, and 110-18 of the NEC, and articles 2-308, 2-310, 2-312, 2-314, 2-200, and 2-202 of the CEC, or (3) a Safety Extra Low Voltage (SELV) power source with a maximum available output of less than 240 VA, certified for use in the country of installation.
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 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.
6. 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.
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.

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.

CANADA – EMI NOTICE:

The following notice applies to models that have been certified by Industry Canada as indicated by the certification label on the bottom of the unit.

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 règlement sur le matériel brouilleur du Canada.

Canada

Notice to Users of the Canadian Telephone Network

The following notice applies to units that have been CS-03 certified and bear the Industry Canada certification label.

The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements document(s). The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION:

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The Ringer Equivalence Number (REN) assigned to each terminal device 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 5.

If your equipment is in need of repair, refer to *Warranty, Sales, Service, and Training Information* on page 15.

CE Marking

When the product is marked with the CE mark, this demonstrates full compliance with the following European Directives:

- **Directive 72/73/EEC** – Council Directive of 19 February 1973 on the harmonization of the laws of the member states relating to electrical equipment designed for use within certain voltage limits, as amended by Directive 93/68EEC.
- **Directive 89/336/EEC** – Council Directive of 3 May 1989 on the approximation of the laws of the member states relating to Electro-Magnetic Compatibility (EMC), as amended by Directive 93/68/EEC.

Japan

Class A ITE

<p>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。</p>
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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.

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. (Be sure to register your warranty at 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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