



Hotwire™ 7985 M/HDSL Standalone Termination Unit with EIA-530-A Interface Installation Instructions

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Interface, User's Guide*

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Installation Overview

Installation and configuration of the Hotwire™ 7985 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 internal switchpacks or using the Configuration Edit menus.

Before you install the Hotwire 7985 Standalone Termination Unit, read the *Important Safety Instructions* on page 22.

Be sure to register your warranty at www.paradyne.com. Select *Service & Support* → *Warranty Registration*.

Connecting Power to the Unit

If your package includes a power pack: Plug the power pack into an ac outlet having a nominal voltage rating between 100–240 Vac. Connect the output cable of the power pack to the connector marked POWER on the rear panel.

If your package includes a direct-connection +24 Vdc power cable: Connect the unit to an external +24 Vdc SELV (Safety Extra Low Voltage) power source as described in *Connecting the Unit to an Optional External +24 Vdc Power Source*.

If you will use a –48 Vdc power supply: Connect the unit to an external –48 Vdc SELV power source as described in the documentation shipped with the power supply and power cable.

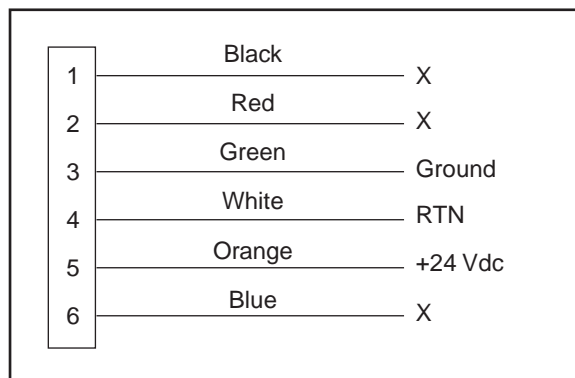
Connecting the Unit to an Optional External +24 Vdc Power Source

Using the dc power cable, the Hotwire 7985 Standalone Termination Unit is capable of operating on a +24 Vdc SELV power supply.

► Procedure

To use the dc power cable:

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 7985 Standalone Termination Unit.



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+24 Vdc Power Supply Pinouts

Connecting to the Network

► Procedure

To connect your unit to the network:

1. Connect one end of the supplied 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.

A crossover cable (Pins 1 and 2 to 4 and 5) is required to connect two 7985 Standalone Termination Units back-to-back.

Connecting to a DTE

The EIA-530-A interface of the 7985 Standalone Termination Unit is a DB25 connector. Adapter cables are available for X.21, RS449, and V.35 interfaces. See *Cables and Pin Assignments* in the User's Guide for specifications of the connector and the cables.

Connecting to a System Terminal

An optional system maintenance terminal may be attached to your Hotwire 7985 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 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.

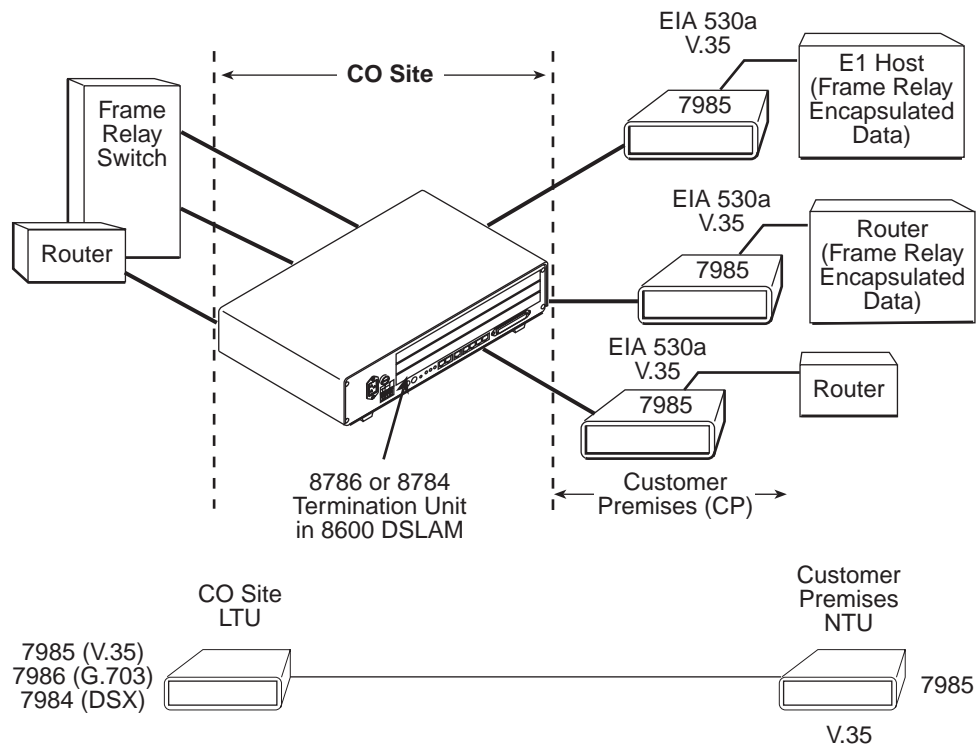
Entering Identity Information

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

Network Configuration

The following illustration shows a network application using a 2-port Hotwire 8786 or 8784 M/HDSL Termination Unit for access concentration in a central office (CO). A frame relay switch and a router are connected, through the termination unit, to partner units supporting a host or router, and frame relay encapsulated or unframed data.



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In a DSLAM-to-standalone configuration or a standalone-to-standalone configuration, one unit must be changed to run in NTU mode. Both the CO units and the 7985 Standalone Termination Unit default to LTU mode.

The clocking source may have to be altered depending on network requirements.

Choosing a Configuration Mode

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 comes configured to allow settings to be made through the Configuration menus.

Configuring the Unit Using the Configuration Menus

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

NOTE:

The 7985 Standalone Termination Unit is preconfigured as an LTU. If you are using this unit as an LTU, the configuration options may not need to be altered.

The 7985 Standalone Termination Unit has two sets of configuration option settings:

- The Current Configuration (the 7985 Standalone Termination Unit's active set of configuration options)
- The Default Factory Configuration (a read-only configuration area containing the factory default 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, customer, 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

```

main/config/edit                                     Hotwire
                                                    Model: 7985

                CONFIGURATION EDIT/DISPLAY

                Network
                SYNC Port
                System Options
                Communication Port
                Management and Communication

-----
Ctrl-a to access these functions, ESC for previous menu      MainMenu  Exit
Save
  
```

Select ...	To Access the ...	To Configure the ...
Network	Network Interface Options, Table 1	DSL network interfaces on the unit.
SYNC Port	Synchronous Data Port Options, Table 2	Synchronous DTE interface Ports.
System Options	System Options, Table 3	General system options of the unit.
Communication Port	Communication Port Options, Table 4	Unit's COM port options.
Management and Communication	<ul style="list-style-type: none"> ■ Telnet Session Options, Table 5 ■ Communication Protocol Options, Table 6 ■ General SNMP Management Options, Table 7 ■ SNMP NMS Security Options, Table 8 ■ SNMP Traps Options, Table 9 	Management support of the unit through SNMP and Telnet.

Table 1. Network Interface Options

Margin Threshold
Possible Settings: -5db, -4db, -3db, -2db, -1db, 0db, 1db, 2db, 3db, 4db, 5db, 6db, 7db, 8db, 9db, 10db Default Setting: 0db
Determines the level, expressed in decibels, at which a signal-to-noise margin condition is recognized.
Excessive Error Rate Threshold
Possible Settings: 1E-4, 1E-5, 1E-6, 1E-7, 1E-8, 1E-9 Default Setting: 1E-6
Determines the error rate at which an excessive error rate (EER) condition is recognized. The rate is the ratio of the number of CRC errors to the number of bits received in a certain period.
AutoRate
Possible Settings: Enable, Disable Default Setting: Enable
Specifies whether the DSL line will automatically train up to the best rate or be user selectable. This option is only available when the standalone unit is configured as an LTU.
DSL Line Rate
Possible Settings: 144, 272, 400, 528, 784, 1040, 1552, 2064 Default Setting: 144
Specifies the DSL line rate of the unit. This option is only available when the standalone unit is configured as an LTU and AutoRate is disabled (unit is in fixed rate).
Peer IP Address
Possible Settings: 000.000.000.000 – 223.255.255.255, Clear Default Setting: 000.000.000.000
Specifies the peer IP address for the remote management providing the remote management link on the DSL loop. This option is only available when the standalone unit is configured as an LTU.
Circuit Identifier
Possible Settings: [ASCII Text], Clear Default Setting: [blank]
Uniquely identifies the circuit number of the transmission vendor's DSL line for troubleshooting purposes.

Table 2. Synchronous Data Port Options (1 of 2)

Port Type
Possible Settings: E530A, V.35, RS449, X.21 Default Setting: E530A
Determines the port type for the data port.
Payload Rate
Possible Settings: 64, 128, 192, 256, 320, 384, 448, 512, 576, 640, 704, 768, 832, 896, 960, 1024, 1088, 1152, 1216, 1280, 1344, 1408, 1472, 1536, 1600, 1664, 1728, 1792, 1856, 1920, 1984, 2048 Default Setting: 128
Specifies the payload rate of the port. This option is not displayed on the unit when AutoRate is enabled or the unit is configured as an NTU. The LTU configures the payload rate for the NTU when AutoRate is disabled.
Transmit Clock Source
Possible Settings: Internal, External Default Setting: Internal
Specifies whether the transmitted data for the synchronous data port is clocked using an internal clock provided by the LTU (synchronized to the clock source specified by the clock source configuration option) or an external clock provided by the DTE connected to the synchronous data port. If an external clock is used, it must be synchronized to the same clock source as the LTU.
Invert Transmit Clock
Possible Settings: Disable, Enable Default Setting: Disable
Specifies whether the clock supplied by the 7985 Termination Unit on the TXC interchange circuit DB (CCITT 114) is phase inverted with respect to the Transmitted Data interchange circuit BA (CCITT 103). This configuration option is useful when long cable lengths between the 7985 Termination Unit and the DTE are causing data errors.
Send All Ones on Data Port Not Ready
Possible Settings: Both, Disable, DTR, RTS Default Setting: Both
Specifies the conditions on the data port that determine when valid data is not being sent from the DTE. When this condition is detected, all ones are sent to the network.
Action on Network LOS Alarm
Possible Settings: Halt, None Default Setting: Halt
Specifies the action taken on the synchronous data port when an LOS (Loss Of Signal) alarm is received on the network interface.
Network Initiated Data Channel Loopback
Possible Settings: Disable, Enable Default Setting: Disable
Allows the initiation and termination of a Data Channel Loopback (DCLB) by the receipt of a DCLB-actuate sequence or DCLB-release sequence from the network or far-end device.

Table 2. Synchronous Data Port Options (2 of 2)

Port (DTE) Initiated Loopbacks
Possible Settings: Disable, DTLB, DCLB, Both Default Setting: Disable
Allows the initiation and termination of a local Data Terminal Loopback (DTLB) or remote Data Channel Loopback (DCLB) by the DTE connected to this port. (DTLB is equivalent to a V.54 loop 3, and DCLB is equivalent to a V.54 loop 2.) Control of these loopbacks is through the DTE interchange circuits as specified by the V.54 standard.
ElasticStore
Possible Settings: Disable, Enable Default Setting: Enable
Used to enable or disable the a first in first out (FIFO) buffer circuit for the incoming external clock. This circuit is used to compensate for the differences between the frequencies of the data clocks for the two units in the circuit. This option only applies if the unit is set for external timing.

Table 3. System Options

DSL Mode
Possible Settings: LTU, NTU Default Setting: NTU
Controls whether the unit is configured as a control unit or tributary unit. NOTE: Changing this option will reset the unit.
Test Timeout
Possible Settings: Enable, Disable Default Setting: Enable
Allows user-initiated tests to end automatically. The feature should be enabled when the unit is remotely managed, so that control can be regained after a test is accidentally executed. NOTE: Tests commanded by the DTE or network-initiated tests are not affected by this test timeout.
Test Duration (min)
Possible Settings: 1–120 Default Setting: 10
Number of minutes for a test to be active before automatically ending. ■ The Test Duration (min) option appears when Test Timeout is enabled.

Table 4. Communication Port Options (1 of 2)

Port Use
Possible Settings: Terminal, Net Link Default Setting: Terminal
Specifies how the communications port is to be used.
Port Type
Possible Settings: Asynchronous, Synchronous Default Setting: Asynchronous
When Port Use is set to Net Link, Port Type controls whether the communication port will be asynchronous or synchronous. NOTE: Peer IP Address and Circuit Identifier are <i>not</i> copied.
Data Rate
Possible Settings: 9.6, 14.4, 19.2, 28.8, 38.4 Default Setting: 9.6
Specifies the communication port baud rate.
Parity
Possible Settings: None, Odd, Even Default Setting: None
Specifies the parity of the communication port.
Stop Bits
Possible Settings: 1, 1.5, 2 Default Setting: 1
Specifies the number of stop bits for the communication port.
Ignore Control Leads
Possible Settings: Disable, DTR Default Setting: Disable
Specifies whether DTR is used.
Login Required
Possible Settings: Enable, Disable Default Setting: Disable
Specifies if an ID and password are required to access the asynchronous terminal interface on the communication port. Login IDs are created with a password and access level.
Port Access Level
Possible Settings: Administrator, Operator Default Setting: Administrator
Specifies the highest level of access allowed when accessing an ATI session through a Telnet session.
Inactivity Timeout
Possible Settings: Enable, Disable Default Setting: Disable
Provides automatic logoff of a Telnet session.

Table 4. Communication Port Options (2 of 2)

Disconnect Time (Minutes)
Possible Settings: 1 – 60 Default Setting: 5
Number of minutes of inactivity before the session terminates automatically. Timeout is based on no keyboard activity. <ul style="list-style-type: none">■ Disconnect Time (minutes) option appears when Inactivity Timeout is enabled.

Table 5. Telnet Session Options

Telnet Session
Possible Settings: Enable, Disable Default Setting: Enable
Specifies if the 7985 Termination Unit will respond to a Telnet session request from a Telnet client on an interconnected IP network.
Telnet Login Required
Possible Settings: Enable, Disable Default Setting: Disable
Used to secure access to the ATI through a Telnet session. Login IDs are created with a password and access level.
Session Access Level
Possible Settings: Administrator, Operator Default Setting: Administrator
The Telnet session access level is interrelated with the access level of the Login ID.
Inactivity Timeout
Possible Settings: Enable, Disable Default Setting: Disable
Provides automatic logoff of a Telnet session.
Disconnect Time (Minutes)
Possible Settings: 1 – 60 Default Setting: 5
Number of minutes of inactivity before a Telnet session terminates automatically. Time out is based on no keyboard activity. <ul style="list-style-type: none">■ Disconnect Time (minutes) option appears when Inactivity Timeout is enabled.

Table 6. Communication Protocol Options

Node IP Address
Possible Settings: 000.000.000.000 – 223.255.255.255 Default Setting: 000.000.000.000
Specifies the Node IP address. This option is only available when the standalone unit is configured as an LTU.
Node Subnet Mask
Possible Settings: 000.000.000.000 – 255.255.255.255 Default Setting: 000.000.000.000
Specifies the Node Subnet Mask. This option is only available when the standalone unit is configured as an LTU.
Default Network Destination
Possible Settings: None, COM, DSL Default Setting: None
Specifies where the default management network is connected, for example, if your default network is connected to the COM port, select COM as the default management network destination.
Communication Port IP Address
Possible Settings: 000.000.000.000 – 223.255.255.255 Default Setting: 000.000.000.000
Specifies the unit's Communication Port IP Address when the unit is configured as a network communication link. This option is only used when the Port Use option on the Communication Port Options menu is set to Net Link. If the COM Port IP address is not set (000.000.000.000) the node IP address specified by the Node IP Port will be used.
Communication Port Subnet Mask
Possible Settings: 000.000.000.000 – 255.255.255.255 Default Setting: 000.000.000.000
Specifies the unit's Communication Port Subnet Mask when the unit is configured as a network communication link. This option is only used when the Port Use option on the Communication Port Options menu is set to Net Link. If the COM Port IP address is not set (000.000.000.000), the node IP Address will be used.
Communication Port Link Protocol
Possible Settings: PPP, SLIP Default Setting: PPP
Specifies the unit's Communication Port link protocol when the unit is configured as a network communication link. This option is only used when the Port Use option on the Communication Port Options menu is set to Net Link.

Table 7. General SNMP Management Options

SNMP Management
Possible Settings: Enable, Disable Default Setting: Disable
Enables or disables the SNMP management features.
Community Name 1
Possible Settings: ASCII text field, Public Default Text: Public
Identifies the name of the community allowed to access the unit's MIB. The community name must be supplied by an external SNMP manager when that manager attempts to access an object in the MIB.
Name 1 Access
Possible Settings: Read, Read/Write Default Setting: Read
Determines the access level for Community Name 1.
Community Name 2
Possible Settings: ASCII text field, Public Default Text: Public
Identifies the name of the second community allowed to access the unit's MIB. The community name must be supplied by an external SNMP manager when that manager attempts to access an object in the MIB.
Name 2 Access
Possible Settings: Read, Read/Write Default Setting: Read
Determines the access level for Community Name 2.

Table 8. SNMP NMS Security Options

NMS IP Validation
Possible Settings: Enable, Disable Default Setting: Disable
Specifies whether security checking is performed on the IP address of SNMP management systems attempting to access the node.
Number of Managers
Possible Settings: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 Default Setting: 1
Specifies the number of SNMP management systems that can send SNMP messages.
NMS <i>n</i> IP Address
Possible Settings: 000.000.000.000 – 223.255.255.255, Clear Default Setting: 000.000.000.000
Specifies the Internet Protocol address used to identify each SNMP manager.
Access Level
Possible Settings: Read, Read/Write Default Setting: Read
Determines the access level allowed for an authorized NMS when IP address validation is being performed.

Table 9. SNMP Traps Options

SNMP Traps
Possible Settings: Enable, Disable Default Setting: Disable
Controls the generation of SNMP trap messages. The options for addresses and types of traps are located in this table.
Number of Trap Managers
Possible Settings: 1, 2, 3, 4, 5 Default Setting: 1
Sets the number of SNMP management systems that will receive SNMP traps.
NMS <i>n</i> IP Address
Possible Settings: 000.000.000.000 – 223.255.255.255, Clear Default Setting: 000.000.000.000
Specifies the Internet Protocol address used to identify each SNMP trap manager.
NMS <i>n</i> Destination
Possible Settings: DSL, COM Default Setting: DSL
Provides the network destination path of each trap manager.
General Traps
Possible Settings: Disable, Warm, AuthFail, Both Default Setting: Both
Determines which SNMP traps are sent to each trap manager.
Enterprise Specific Traps
Possible Settings: Enable, Disable Default Setting: Disable
Determines if SNMP traps are generated for enterprise-specific events.
Link Traps
Possible Settings: Disable, Up, Down, Both Default Setting: Both
Determines if SNMP traps are generated for link up and link down for one of the communication interfaces.
Link Trap Interfaces
Possible Settings: Network, SYNC, All Default Setting: All
Determines if the SNMP <i>linkUp</i> , SNMP <i>linkDown</i> , and interface-related <i>enterpriseSpecific</i> traps are generated for the network interface and synchronous data (DTE) port, or all.

Configuring AutoRate

The M/HDSL AutoRate function is controlled from the Network Interface Options screen and allows you to enable or disable AutoRate from a unit configured as an LTU. To access the Network Interface screen, follow this menu selection sequence:

Main Menu → Configuration → Network

► Procedure

The AutoRate option defaults to Enable. To disable AutoRate:

1. Position the cursor in the AutoRate field and press the spacebar.
The AutoRate field toggles to Disable and the DSL Line Rate field is displayed.
2. Enter a DSL Line Rate and press Enter.
Your payload rate is set to a default value determined by your LTU DSL Line Rate. Use Table 10, Selectable Payload Rates When AutoRate Is Disabled, if you wish to select a different Payload Rate.

Table 10. Selectable Payload Rates When AutoRate Is Disabled

DSL Line Rate	Selectable Payload Rates (default in boldface type)							
144	128	64						
272	256	192						
400	384	320						
528	512	448						
784	768	704	640	576				
1040	1024	960	896	832				
1552	1536	1472	1408	1344	1280	1216	1152	1088
2064	2048	1984	1920	1856	1792	1728	1664	1600

Configuring the Unit Using the Internal Switches

Use internal Switchpacks S1 and S2 to manually configure the unit.

▲ HANDLING PRECAUTIONS FOR STATIC-SENSITIVE DEVICES



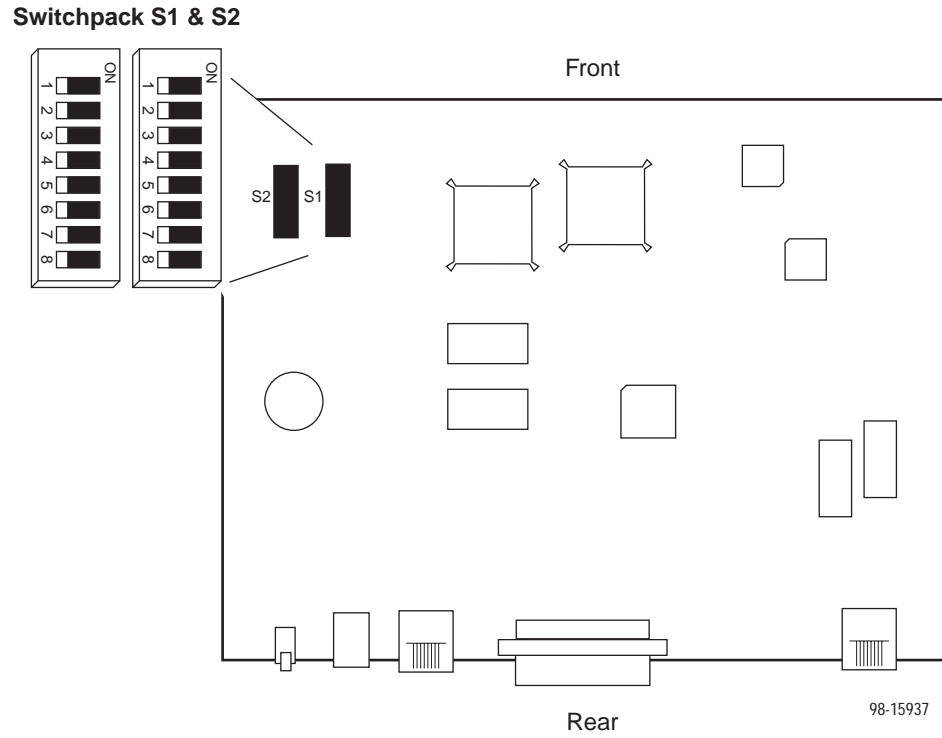
This product is designed to protect sensitive components from damage due to electrostatic discharge (ESD) during normal operation. When performing installation procedures, however, take proper static control precautions to prevent damage to equipment. If you are not sure of the proper static control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

► Procedure

To configure the unit using internal Switchpacks S1 and S2:

1. Power down the unit and disconnect the power supply.
2. Remove the enclosure cover:
 - Insert a small, flat screwdriver blade into the slots on one side of the cover and push to free the inner latches
 - Lift off the cover to expose the circuit board
3. Locate Switchpack S1.
4. Set Switch 1 on Switchpack S1 to ON to enable Switchpacks 1 and 2.
5. After you enable the switchpacks, set the switches to your desired configuration.
6. Replace and secure the cover.
7. Power up the board to reset and enable the new configuration.

Switchpack Locations



Hotwire 7985 Standalone Termination Unit Switchpack Locations

Switchpack Definitions

Manually change configuration options by moving Switchpack S1 DIP switches on the card. Table 11 lists Switchpack S1 definitions.

Table 11. Switchpack S1 Definitions

Switch # . . .	Allows you to . . .	<i>Default in Bold</i>
1	Enable or disable Switchpacks S1 and S2. OFF = Switchpacks Disabled ON = Switchpacks Enabled	
2	Control Sync Port Type. OFF = EIA-530-A, RS-449, or X.21 ON = V.35	
3	Select the unit's timing source. Only valid for LTU configured units. OFF = Internal Clock ON = External Clock	
4, 5, 6, 7, 8	Control Sync Port Data Rate (refer to Table 12, Selectable Payload Rates) NOTE: Switches 4 through 8 are only used when the unit is configured as an LTU and AutoRate is disabled. All OFF = 2048 kbps	

Use Table 12 to set the Sync Port Payload Rate. Defaults are shown in bold.

NOTE:

Sync port and DSL Line Rates can only be selected from units configured as LTU (Switchpack S2 #1) with AutoRate disabled (Switchpack S2 #2).

Table 12. Selectable Payload Rates (Switches 4–8 on Switchpack S1)

Sync Port Payload Rate	Switch Number					Associated DSL Line Rate
	8	7	6	5	4	
2048 kbps (32 x 64)	OFF	OFF	OFF	OFF	OFF	2064 kbps
1984 kbps (31 x 64)	ON	ON	ON	ON	ON	2064 kbps
1920 kbps (30 x 64)	ON	ON	ON	ON	OFF	2064 kbps
1856 kbps (29 x 64)	ON	ON	ON	OFF	ON	2064 kbps
1792 kbps (28 x 64)	ON	ON	ON	OFF	OFF	2064 kbps
1728 kbps (27 x 64)	ON	ON	OFF	ON	ON	2064 kbps
1664 kbps (26 x 64)	ON	ON	OFF	ON	OFF	2064 kbps
1600 kbps (25 x 64)	ON	ON	OFF	OFF	ON	2064 kbps
1536 kbps (24 x 64)	ON	ON	OFF	OFF	OFF	1552 kbps
1472 kbps (23 x 64)	ON	OFF	ON	ON	ON	1552 kbps
1408 kbps (22 x 64)	ON	OFF	ON	ON	OFF	1552 kbps
1344 kbps (21 x 64)	ON	OFF	ON	OFF	ON	1552 kbps
1280 kbps (20 x 64)	ON	OFF	ON	OFF	OFF	1552 kbps
1216 kbps (19 x 64)	ON	OFF	OFF	ON	ON	1552 kbps
1152 kbps (18 x 64)	ON	OFF	OFF	ON	OFF	1552 kbps
1088 kbps (17 x 64)	ON	OFF	OFF	OFF	ON	1552 kbps
1024 kbps (16 x 64)	ON	OFF	OFF	OFF	OFF	1040 kbps
960 kbps (15 x 64)	OFF	ON	ON	ON	ON	1040 kbps
896 kbps (14 x 64)	OFF	ON	ON	ON	OFF	1040 kbps
832 kbps (13 x 64)	OFF	ON	ON	OFF	ON	1040 kbps
768 kbps (12 x 64)	OFF	ON	ON	OFF	OFF	784 kbps
704 kbps (11 x 64)	OFF	ON	OFF	ON	ON	784 kbps
640 kbps (10 x 64)	OFF	ON	OFF	ON	OFF	784 kbps
576 kbps (9 x 64)	OFF	ON	OFF	OFF	ON	784 kbps
512 kbps (8 x 64)	OFF	ON	OFF	OFF	OFF	528 kbps
448 kbps (7 x 64)	OFF	OFF	ON	ON	ON	528 kbps
384 kbps (6 x 64)	OFF	OFF	ON	ON	OFF	400 kbps
320 kbps (5 x 64)	OFF	OFF	ON	OFF	ON	400 kbps
256 kbps (4 x 64)	OFF	OFF	ON	OFF	OFF	272 kbps
192 kbps (3 x 64)	OFF	OFF	OFF	ON	ON	272 kbps
128 kbps (2 x 64)	OFF	OFF	OFF	ON	OFF	144 kbps
64 kbps (1 x 64)	OFF	OFF	OFF	OFF	ON	144 kbps

Table 13 lists Switchpack S2 definitions.

Table 13. Switchpack S2 Definitions

Switch # . . .	Allows you to . . . <i>Default in Bold</i>
1	Control whether the unit is an LTU or an NTU. OFF = NTU ON = LTU
2	Control enabling and disabling of the AutoRate capability. OFF = AutoRate Enabled ON = AutoRate Disabled
3, 4, 5	Select one of eight preset DSL line rates (refer to Table 14). All OFF = 2064
6, 7	Not used
8	Emergency Use Only – The 7985 has two banks of flash memory used to hold executable firmware. This switch allows you to switch between the two versions of firmware. This switch is independent from the position of Switch 1 on Switchpack S1 (switchpack enable/disable). OFF = Current Firmware ON = Previous Firmware

Use Table 14 to set the DSL Line Rate. Defaults are shown in bold.

Table 14. DSL Line Rate, Switches 3–5 on Switchpack S2

Switch Position			DSL Line Rate
5	4	3	
OFF	OFF	ON	144 kbps
OFF	ON	OFF	272 kbps
OFF	ON	ON	400 kbps
ON	OFF	OFF	528 kbps
ON	OFF	ON	784 kbps
ON	ON	OFF	1040 kbps
ON	ON	ON	1552 kbps
OFF	OFF	OFF	2064 kbps

⚠ 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 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 Warnings

⚠ WARNING:

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.

⚠ WARNING:

To Users of Digital Apparatus in Canada:

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.

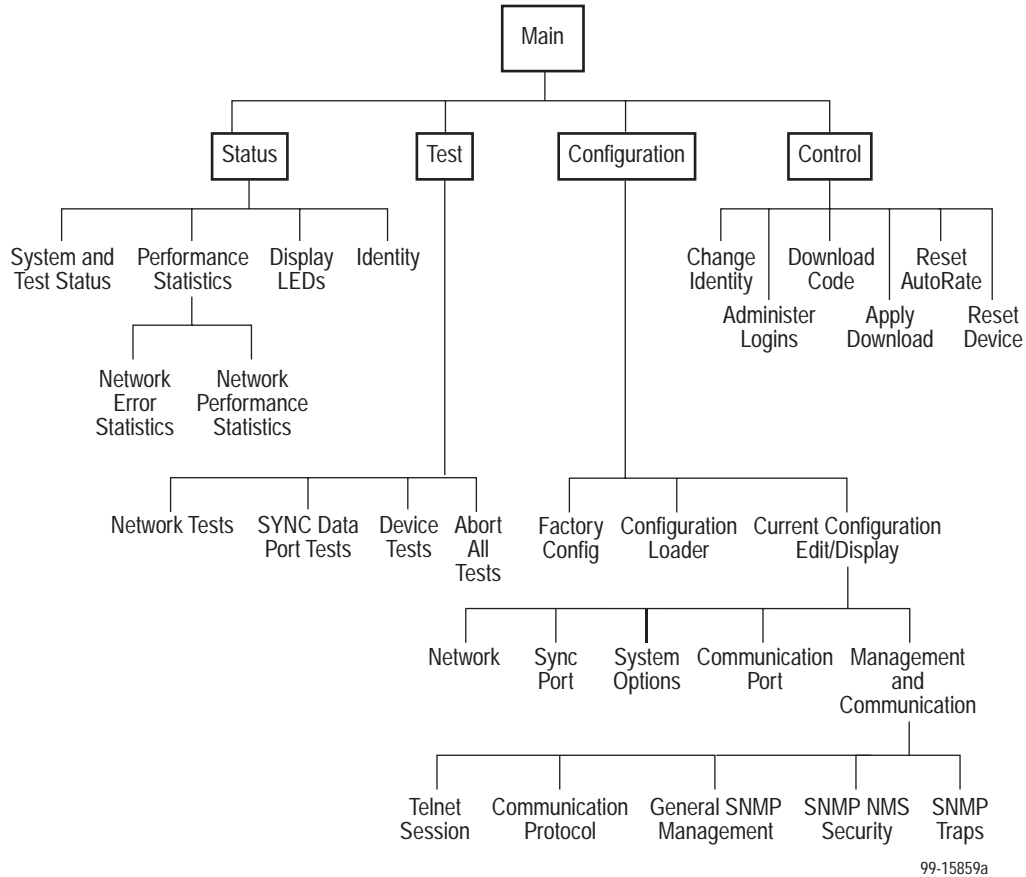
Warranty, Sales, Service, and Training Information

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 there. Select *Service & Support* → *Warranty Registration*.)
- **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

Asynchronous Terminal Interface Menu

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



Document Feedback

We welcome your comments and suggestions about this document. Please mail them to Technical Publications, Paradyne Corporation, 8545 126th Ave. N., Largo, FL 33773, or send e-mail to userdoc@paradyne.com. Include the number and title of this document in your correspondence. Please include your name and phone number if you are willing to provide additional clarification.



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