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**HOTWIRE  
MODEL 7915  
E1 SDSL NEST CARD  
USER'S GUIDE**

**Document No. 7910-A2-GB20-00**

August 1997

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## Important Safety Instructions

1. Read and follow all warning notices and instructions marked on the product or included in the manual.
2. This product is intended to be used with a 3-wire grounding type plug – a plug which has a grounding pin. This is a safety feature. Equipment grounding is vital to ensure safe operation. Do not defeat the purpose of the grounding type plug by modifying the plug or using an adapter.  
Prior to installation, use an outlet tester or a voltmeter to check the ac receptacle for the presence of earth ground. If the receptacle is not properly grounded, the installation must not continue until a qualified electrician has corrected the problem.  
If a 3-wire grounding type power source is not available, consult a qualified electrician to determine another method of grounding the equipment.
3. Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these slots and openings must not be blocked or covered.
4. Do not allow anything to rest on the power cord and do not locate the product where persons will walk on the power cord.
5. Do not attempt to service this product yourself, as opening or removing covers may expose you to dangerous high voltage points or other risks. Refer all servicing to qualified service personnel.
6. General purpose cables are 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 un-insulated 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.

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# About This Guide

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## Document Purpose and Intended Audience

This guide describes the configuration, installation, and maintenance procedures for HotWire Model 7915 E1 SDSL Nest Card Termination Units.

It is expected that readers of this document are central-site or special-service installation technicians or network engineers who have an understanding of digital subscriber line systems and Symmetric Digital Subscriber Line (SDSL) transmission systems plus the deployment of such systems in a telephone company or private network environment.

## Document Summary

Section	Description
Chapter 1	<i>About HotWire 7915 Nest Card Termination Units.</i> Describes the features of HotWire Model 7915 termination units and provides typical configurations.
Chapter 2	<i>Installing HotWire Nest Card Termination Units.</i> Describes the procedures for installing the HotWire Model 7900 Nest Card Termination Units and Nest Filler Panels.
Chapter 3	<i>Customizing HotWire 7915 Nest Card Termination Units.</i> Provides procedures for modifying configuration options by using the switchpack located on the nest card.
Chapter 4	<i>Monitoring Nest Card Termination Units.</i> Describes how to monitor and interpret front panel LEDs and network status.
Appendix A	<i>HotWire Model 7915 Worksheets.</i> Contains configuration options and default settings.
Glossary	Defines the acronyms and terms used in this document.
Index	Lists the key terms, acronyms, and concepts, in alphabetical order.

## Product-Related Documents

<b>Document Number</b>	<b>Document Title</b>
7900-A2-GB20	<i>HotWire Model 7900 Basic Maintenance Processor User's Guide</i>
7900-A2-GB21	<i>HotWire Model 7900 SNMP Maintenance Processor User's Guide</i>
7900-A2-GN20	<i>HotWire Model 7900 Nest and Options Installation Guide</i>
7915-A2-GB20	<i>HotWire Model 7915 Standalone E1 SDSL Termination Unit User's Guide</i>

To order additional product documentation, refer to *Warranty, Sales, and Service Information* on page A at the beginning of this User's Guide.

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# About HotWire 7915 Nest Card Termination Units

# 1

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## HotWire 7915 Models and Features

HotWire Model 7915 SDSL termination units provide “last mile/last kilometer” transport of E1-compatible circuits between customer facilities and central-site equipment over 2-wire copper lines. The units can be used over distances substantially exceeding traditional E1 spans and European Telecommunications Standards Institute (ETSI) loop standards.

This chapter provides a general overview of HotWire Model 7915 termination units, including standalone units (7915-A1) and nest-mounted units (7915-B1).

HotWire 7915 termination units include these standard features:

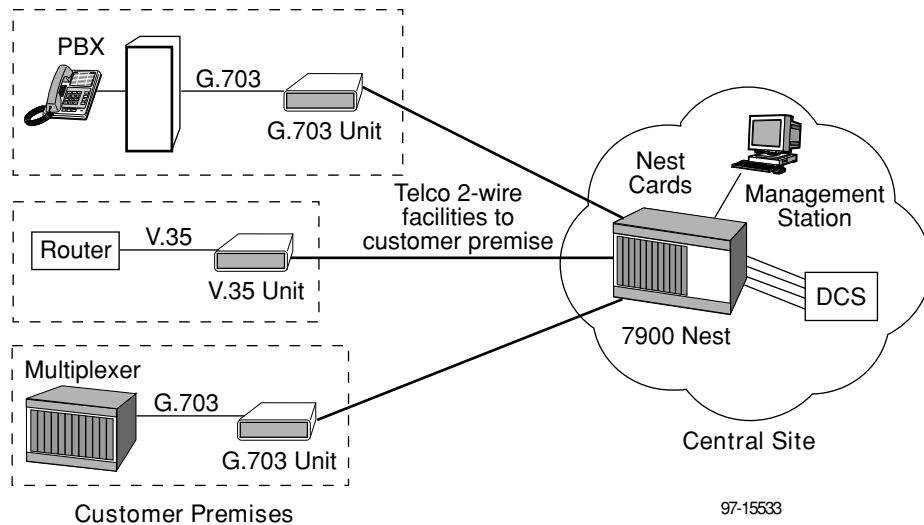
- G.703 and V.35 (standalone unit only) interface
- Meets the requirements of repeaterless E1 transmission on loops exceeding standard specifications (up to 10 km on a 0.9 mm wire)
- Local and remote alarm surveillance
- Local and remote E1 and SDSL performance monitoring

HotWire 7915 termination units can be ordered as standalone units (G.703 or V.35 interface) or as a nest-mounted circuit card assembly (G.703 only) that fit in the HotWire 7900 Nest. This guide describes the installation and maintenance procedures for the nest card termination unit, Model 7915-B1. See *Product-Related Documents* on page iv for information on standalone unit user manuals.

## HotWire Model 7915 Typical Configurations

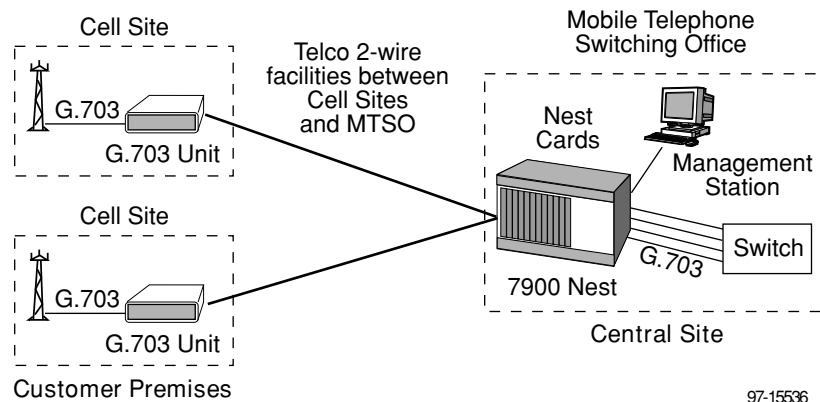
HotWire Model 7915 units are ideal for delivering E1 services from a central site to the customer premises over long loop distances without repeaters.

Figure 1-1 shows a central-site application with a HotWire 7900 Nest containing HotWire Model 7915 nest cards. Each nest card terminates a single subscriber line in the central site. The subscriber line is then converted to a G.703 interface for connection to other central-site equipment, such as a digital cross-connect system (DCS).



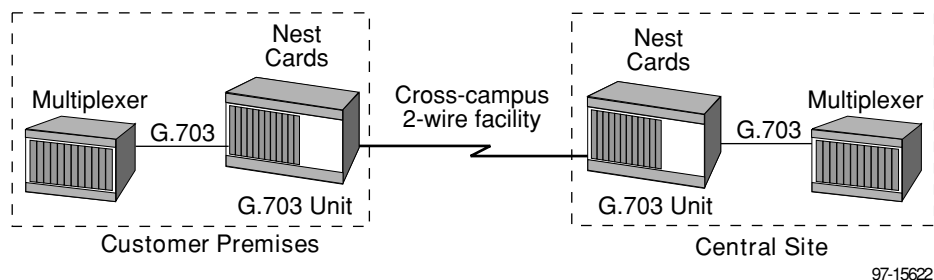
**Figure 1-1. E1 Extension to Customer Premises**

Cellular network providers must lease large numbers of E1 circuits in order to connect remote cell sites to mobile telephone switching offices (MTSOs). HotWire Model 7915 products provide an alternative to standard repeatered E1 services. Figure 1-2 depicts a typical G.703 cellular network access application.



**Figure 1-2. Cellular Network Access**

HotWire Model 7915 units can be used in campus applications where long loop distances normally require the campus to contract with the local telephone exchange carrier to deliver private line services across the campus. **Figure 1-3** shows a typical campus application where a multiplexer is interconnected across a campus using two HotWire Model 7915 units. In each pair, one unit is configured as a central site (CO) and the other is the remote customer premises (CP).



**Figure 1-3. Campus Network Application**

HotWire Model 7915 nest cards are configured at the factory to operate at the central site (CO) of an E1 HDSL connection. However, you may reconfigure the unit for customer premises (CP) operation if required.

## User Interfaces

There are two types of user interfaces to the nest card termination units:

- Switches (refer to [Chapter 3](#))
- Front panel LEDs (refer to [Chapter 4](#))

In addition, an optional HTU-M or HTU-S maintenance processor can be used to monitor the performance and status of HotWire Model 7900 Nest Card Termination Units. If you have an HTU-M or HTU-S maintenance processor, you can monitor nest card and network status using:

- HTU-M or HTU-S front panel LEDs
- A VT100-compatible terminal connected to the HTU-M or HTU-S maintenance processor
- Your network management system through an SNMP connection (HTU-S maintenance processor)

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# Installing HotWire Nest Card Termination Units

# 2

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## Package Checklist

Verify that your package contains the following:

- The correct number of HotWire Model 7915 nest cards (verify this with your packing list)
- Warranty card

## Inspect the Shipping Container

Inspect the shipping container for signs of damage. Specific signs to check for are:

- Major tears or puncture holes on the sides of the container
- Splits in the seams
- Corner damage or any additional signs of the container having been dropped

If the shipping container shows signs of damage, report this immediately to your shipping or service representative.

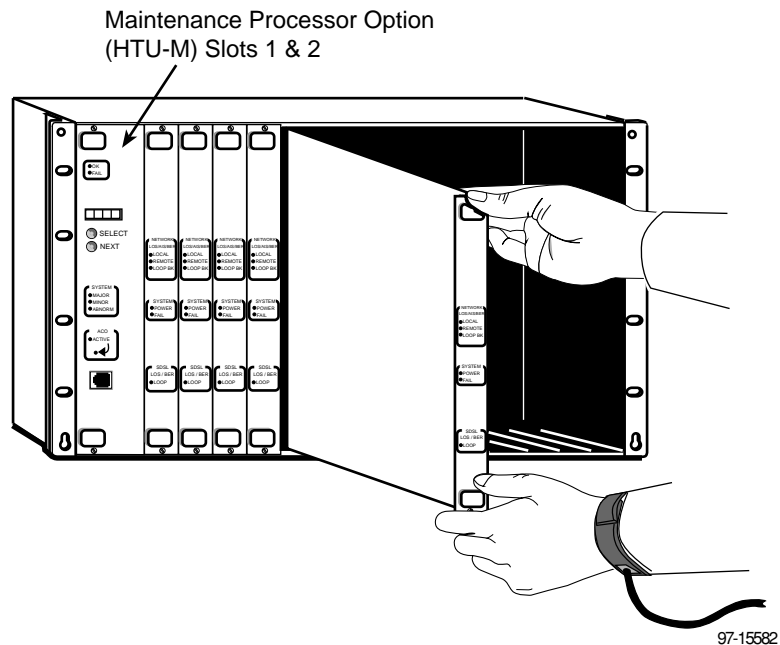
## Installing Nest Card Termination Units

It is assumed that you have already installed the HotWire 7900 nest and associated power supply (if applicable) in a standard equipment rack and all network connections have been made. Installation of the optional HotWire 7900 Maintenance Processor (HTU-M or HTU-S) is described in a separate user's guide. Refer to *Product-Related Documents* on page iv.

### ► Procedure

To install a nest card:

1. Use electrostatic discharge (ESD) protection when handling electronic components. Remove the card from any protective packaging.
2. Align the circuit board with the top and bottom card guides of the next available card slot:
  - Slot 1 if no maintenance processor option is installed
  - Slot 2 if an HTU-S is installed in Slot 1
  - Slot 3 if an HTU-M is installed in Slots 1 and 2
3. Slide the nest card into the slot until the backplane connector plug is seated firmly into the backplane.
4. Tighten the retaining screws at the top and bottom of the nest card front panel.



## Installing Nest Filler Panels

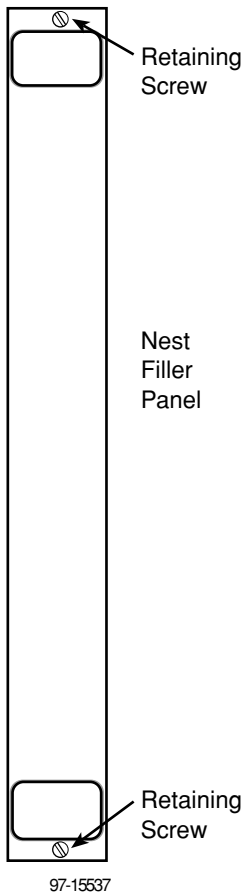
### **▲ WARNING:**

**Front Panel Fillers are required for EMI safety purposes. Install nest filler panels to cover all nest card slots that do not contain nest cards termination units.**

### **► Procedure**

To install a nest filler panel:

1. Align the filler panel with the retaining screw holes located at the top and bottom of the nest.
2. Tighten the filler panel retaining screws.
3. Repeat until all empty nest-card slots are covered.



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# Customizing HotWire 7915 Nest Card Termination Units

# 3

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## Changing Your Configuration Options

This chapter provides instructions on how to change or verify configuration options for HotWire 7915 E1 Nest Card Termination Units.

Configuration option settings determine how the unit operates. You can change the unit's configuration options by changing switchpack settings on the nest card.

### ► Procedure

To change or verify configuration options:

1. Loosen the retaining screws at the top and bottom of the nest card.
2. Use electrostatic discharge (ESD) protection when handling the electronic components. Remove the card from the nest.
3. Use Figure 3-1 to locate switchpack S1.
4. Place each switch on the switchpack in the ON or OFF position for the desired configuration option. For example, to change a unit's card type from CO to CP, move DIP switch 1 on switchpack S1 to the OFF position.

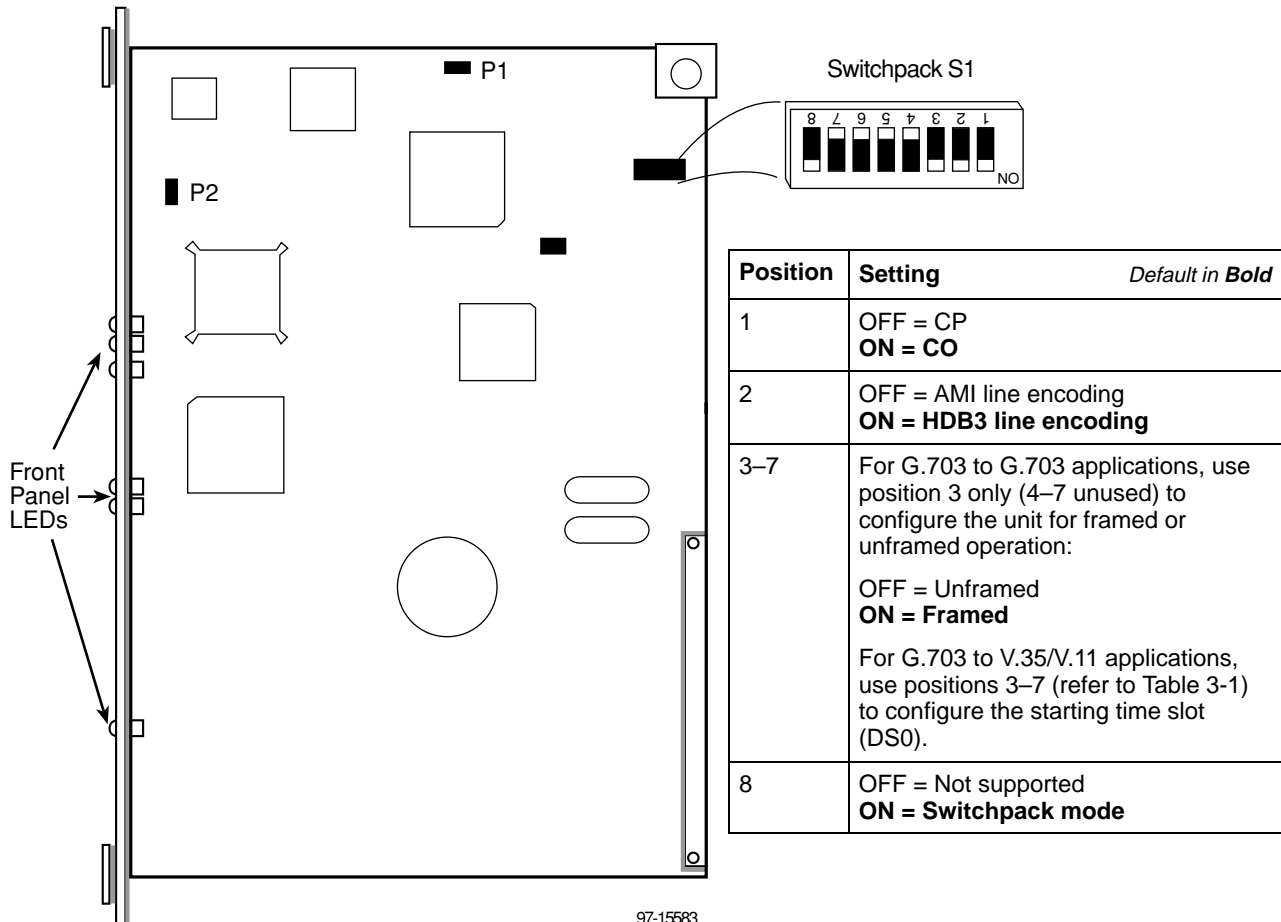
#### **NOTE:**

Switchpack S1 switch 8 must be ON to enable switchpack S1.

5. Return the card to the nest.
6. Tighten the retaining screws at the top and bottom of the nest card.

## Switchpack and Jumper Locations

Use the following figure to locate switchpack S1 on a HotWire 7915 nest card.



**Figure 3-1. HotWire 7915 Nest Card Switchpack and Jumper Locations**

- P1 is jumpered 1-2
- There is no jumper on P2
- The ON position is labeled on switchpack S1

### Configuring a Starting Time Slot (G.703-to-V.35/V.11 Configuration)

When operating G.703 to V.35/V.11 at a payload rate less than 2048 Kbps, switches 3–7 on switchpack S1 determine the starting time slot, as shown in Table 3-1.

A starting time slot of zero (0) should only be selected when operating G.703 to V.35/V.11 at the full E1 rate of 2048 Kbps.

If the payload rate is *less than* 2048 Kbps, use switches 3–7 to select a starting time slot (DS0). Make sure that there are enough subsequent time slots to accommodate the V.35/V.11 payload rate (refer to column two in Table 3-1). Contact your network administrator to verify your starting time slot selection, as some time slots may already be in use.

**Table 3-1. Starting Time Slot Switches 3–7 on Switchpack S1 (1 of 2)**

Starting Time Slot	Maximum Payload Rate	Switch Position				
		3	4	5	6	7
<b>0</b>	<b>2048 Kbps (unframed)</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>	<b>OFF</b>
1	1984 Kbps (31 x 64)	ON	OFF	OFF	OFF	OFF
2	1920 Kbps (30 x 64)	OFF	ON	OFF	OFF	OFF
3	1856 Kbps (29 x 64)	ON	ON	OFF	OFF	OFF
4	1792 Kbps (28 x 64)	OFF	OFF	ON	OFF	OFF
5	1728 Kbps (27 x 64)	ON	OFF	ON	OFF	OFF
6	1664 Kbps (26 x 64)	OFF	ON	ON	OFF	OFF
7	1600 Kbps (25 x 64)	ON	ON	ON	OFF	OFF
8	1536 Kbps (24 x 64)	OFF	OFF	OFF	ON	OFF
9	1472 Kbps (23 x 64)	ON	OFF	OFF	ON	OFF
10	1408 Kbps (22 x 64)	OFF	ON	OFF	ON	OFF
11	1344 Kbps (21 x 64)	ON	ON	OFF	ON	OFF
12	1280 Kbps (20 x 64)	OFF	OFF	ON	ON	OFF
13	1216 Kbps (19 x 64)	ON	OFF	ON	ON	OFF
14	1152 Kbps (18 x 64)	OFF	ON	ON	ON	OFF
15	1088 Kbps (17 x 64)	ON	ON	ON	ON	OFF
16	1024 Kbps (16 x 64)	OFF	OFF	OFF	OFF	ON
17	960 Kbps (15 x 64)	ON	OFF	OFF	OFF	ON
18	896 Kbps (14 x 64)	OFF	ON	OFF	OFF	ON
19	832 Kbps (13 x 64)	ON	ON	OFF	OFF	ON
20	768 Kbps (12 x 64)	OFF	OFF	ON	OFF	ON
21	704 Kbps (11 x 64)	ON	OFF	ON	OFF	ON

**Table 3-1. Starting Time Slot Switches 3–7 on Switchpack S1 (2 of 2)**

Starting Time Slot	Maximum Payload Rate	Switch Position				
		3	4	5	6	7
22	640 Kbps (10 x 64)	OFF	ON	ON	OFF	ON
23	576 Kbps (9 x 64)	ON	ON	ON	OFF	ON
24	512 Kbps (8 x 64)	OFF	OFF	OFF	ON	ON
25	448 Kbps (7 x 64)	ON	OFF	OFF	ON	ON
26	384 Kbps (6 x 64)	OFF	ON	OFF	ON	ON
27	320 Kbps (5 x 64)	ON	ON	OFF	ON	ON
28	256 Kbps (4 x 64)	OFF	OFF	ON	ON	ON
29	192 Kbps (3 x 64)	ON	OFF	ON	ON	ON
30	128 Kbps (2 x 64)	OFF	ON	ON	ON	ON
31	64 Kbps (1 x 64)	ON	ON	ON	ON	ON

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# Monitoring Nest Card Termination Units

# 4

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## What to Monitor

Front panel LEDs on each HotWire 7915 nest card termination unit provide status information about the nest card, SDSL local loop, and the E1 network interface. This chapter presents information on how to monitor and interpret the HotWire 7915 nest card front panel LEDs.

You can also monitor status and card performance or initiate loopback testing using an optional maintenance processor (HTU-M or HTU-S).

The HTU-M and HTU-S maintenance processors:

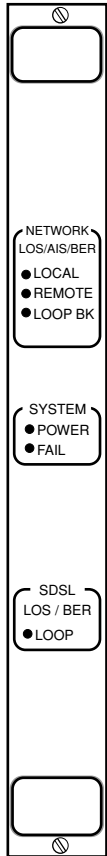
- Monitor the status of up to 62 (63 with the HTU-S maintenance processor) nest card termination units
- Monitor and store the performance history of individual circuits and network status
- Display individual circuit and loop status on the maintenance processor front panel
- Display individual circuit and loop status on a VT100-compatible terminal

In addition, the HTU-S maintenance processor communicates with and reports circuit status to your network management system using Simple Network Management Protocol (SNMP).

For more information on maintenance processor options, refer to the *HotWire Model 7900 Basic Maintenance Processor User's Guide* or *HotWire Model 7900 SNMP Maintenance Processor User's Guide*.

## Front Panel LEDs

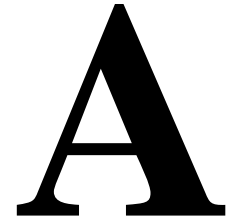
When power is applied to a nest card, the top three LEDs (LOCAL, REMOTE, and LOOP BK) blink once in sequence and then remain off, indicating a successful start configuration.



97-15581

LED	Meaning
LOCAL	The local E1 interface has a loss of signal.
REMOTE	The remote E1 interface has a loss of signal.
LOOP BK	A loopback has been initiated for testing the equipment connected to this unit.
POWER	Power is applied to the unit.
FAIL	The processor has halted and repairs are required.
LOOP	The SDSL loop has failed.

# HotWire Model 7915 Worksheets

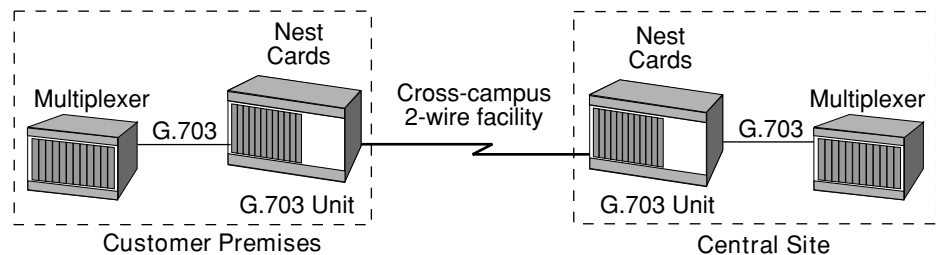


## Overview

This appendix provides the configuration settings based on the types of units (G.703 or V.35V/11) on either end of the SDSL connection. There are two possible combinations of termination units:

- G.703-compatible units on both ends
- G.703 CO termination unit connected to a V.35/V.11 CP unit

## G.703-to-G.703 Configuration



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To connect two G.703 termination units, configure the units as follows:

Configuration Option	G.703 Nest Card Unit (Customer Premises)	G.703 Nest Card Unit (Central Site) <sup>1</sup>
Card Type	CP	CO
E1 Line Encode	HDB3 or AMI	Must be same as CP side
Framing	Framed or Unframed	Framed or Unframed

<sup>1</sup> Refer to Chapter 3, *Customizing HotWire 7915 Nest Card Termination Units* for information on switchpack location and configuration options.

## G.703 Nest Card CO-to-V.35 Standalone CP Configuration

To connect a G.703 nest card termination unit on the CO side and a V.35-compatible standalone unit on the CP side, configure the units as follows:

Configuration Option	V.35 Standalone Unit (Customer Premises)	G.703 Nest Card Unit (Central Site) <sup>1</sup>
Card Type	CP	CO
Payload Rate	1 – 32 (64 – 2048 Kbps)	N/A
Framing, Starting Time Slot	N/A	If the payload rate is less than 2048 Kbps, select a starting time slot appropriate for the payload rate from Table 3-1  If the payload rate is 2048 Kbps, use Unframed.
E1 Line Code	N/A	HDB3 or AMI
<sup>1</sup> Refer to Chapter 3, <i>Customizing HotWire 7915 Nest Card Termination Units</i> for information on switchpack location and configuration options.		

## HotWire 7915 Nest Card Configuration Worksheet

Nest Card Configuration <sup>1</sup>	
Configuration Option	Settings <i>Default in Bold</i>
SDSL Card Type	CP, <b>CO</b>
E1 Line Encoding	<b>HDB3</b> , AMI
Framing	<b>Framed</b> , Unframed, or Select a starting time slot appropriate for the payload rate from Table 3-1.
<sup>1</sup> Refer to Chapter 3, <i>Customizing HotWire 7915 Nest Card Termination Units</i> for information on switchpack location and configuration options.	

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# Glossary

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<b>AMI</b>	Alternate Mark Inversion coding format.
<b>BPV</b>	Bipolar Violation. A type of error detected by using a modified bipolar signaling method in which a control code is inserted. Used with AMI coding format.
<b>Bridged tap</b>	A section of cable that was used to provide phone service to a home or business that is connected to a live copper wire but is not terminated.
<b>CD</b>	Carrier Detect. A signal indicating that energy exists on the transmission circuit. Associated with Pin 8 on an EIA-232 interface.
<b>Champ connector</b>	64-pin connector used to connect the E1/T1 network or local loop to the HotWire 7900 Nest connectors J5, J6, and J7.
<b>CO</b>	Central Office.
<b>COM port</b>	Communications port. A computer's serial communications port used to transmit to and receive data from a DCE. The DCE connects directly to this port.
<b>CP</b>	Customer Premises.
<b>CPE</b>	Customer Premises Equipment. Terminating equipment supplied by either the customer or some other supplier that is connected to the telecommunications network (e.g., DSUs, terminals, phones, routers, modems).
<b>CRC</b>	Cyclic Redundancy Check. A commonly used method of error detection.
<b>CTS</b>	Clear to Send. An EIA-lead standard for V.24 circuit CT 106; an output signal (DCE-to-DTE).
<b>CV</b>	Code Violation. This is equivalent to a BPV. Used with HDB3 coding format.
<b>DCE</b>	Data Communications Equipment. The equipment that provides the functions required to establish, maintain, and end a connection. It also provides the signal conversion required for communication between the DTE and the network.
<b>DSR</b>	Data Set Ready. An EIA-lead standard for V.24 circuit CT 107; an output signal (DCE-to-DTE).
<b>DSX-1</b>	Transmission standard at T1 speeds, 1.544 Mbps.
<b>DTE</b>	Data Terminal Equipment. The equipment, such as computers, printers, and routers, that provide or create data.
<b>DTR</b>	Data Terminal Ready. An EIA-lead standard for V.24 circuit CT 108; an input signal (DTE-to-DCE).
<b>E1</b>	A data signaling rate common outside the United States. A wideband interface operating at 2.048 Mbps defined by CCITT standards G.703 and G.704.
<b>ETSI</b>	European Telecommunications Standards Institute. A European standards body established in 1988 by a decision of the CEPT (Conference of European Postal and Telecommunications Administrations).
<b>factory defaults</b>	A predetermined set of configuration options for general operation.
<b>FAS</b>	Frame Alignment Signal. A loss of signal (LOS) error detection.

<b>FAW</b>	Frame Alignment Word. A loss of synchronization error detection.
<b>FCC</b>	Federal Communications Commission. Board of Commissioners that regulates all U.S. interstate, intrastate, and foreign electrical communication systems that originate from the United States.
<b>FEBE</b>	Far End Bit Error. Number of errors reported by the remote equipment.
<b>G.703</b>	ITU-TS standard for covering transmission facilities.
<b>HDB3</b>	High Density Bipolar 3 coding format.
<b>HDSL</b>	High-bit-rate Digital Subscriber Loop. Provides high bandwidth, bi-directional transmission over copper wire for both T1 and E1 services.
<b>HTU</b>	Host Termination Unit. A generic reference to either an HTU-C or HTU-R module.
<b>HTU-C</b>	Host Termination Unit – Central. The module at the CO (central office) or central site end of an HDSL connection. Also known as a Network Termination Unit (NTU).
<b>HTU-M</b>	Host Termination Unit – Maintenance. A carrier-mounted module used to perform maintenance operations on one or more HTU-R and HTU-C modules.
<b>HTU-R</b>	Host Termination Unit – Remote. The module at the CP (customer premises) end of an HDSL connection. Also known as a Line Termination Unit (LTU).
<b>HTU-S</b>	Host Termination Unit – SNMP. The SNMP-compatible version of the Maintenance Processor.
<b>LED</b>	Light Emitting Diode. A status indicator that responds to the presence of a certain conditions.
<b>loopback</b>	Used to test various portions of a data link in order to isolate an equipment or data line problem. A diagnostic procedure that sends a test message back to its origination point.
<b>MTSO</b>	Mobile Telephone Switching Office.
<b>OOF</b>	Out Of Frame. An error condition in which frame synchronization bits are in error. A network-reported condition.
<b>reset</b>	A reinitialization of the device that occurs at power-up or in response to a reset command.
<b>RTS</b>	Request to Send. An EIA-lead standard for V.24 circuit CT 105; an input signal (DTE-to-DCE).
<b>RXD</b>	Received Data. An EIA-lead standard for V.24 circuit CT 104; an output signal (DCE-to-DTE).
<b>SDSL</b>	Symmetric Digital Subscriber Line. Provides symmetrical bi-directional transmission over copper wire for both T1 and E1 services.
<b>SNMP</b>	Simple Network Management Protocol. Allows multi-vendor networking devices to be managed more easily with common management tools.
<b>STU</b>	SDSL Termination Unit. A generic reference to either an STU-C or STU-R module.
<b>STU-C</b>	SDSL Termination Unit – Central. The module at the CO (central office) or central site end of an HDSL connection. Also known as a Network Termination Unit (NTU).
<b>STU-R</b>	SDSL Termination Unit – Remote. The module at the CP (customer premises) end of an HDSL connection. Also known as a Line Termination Unit (LTU).
<b>STU-S</b>	SDSL Termination Unit – SNMP. The SNMP-compatible version of the Maintenance Processor.

- TXD** Transmit Data. An EIA-lead standard for V.24 circuit CT 103; an input signal (DTE-to-DCE).
- T1** A data signaling rate common in the United States. A term for a digital carrier facility used to transmit a DS1 formatted signal of 1.544 Mbps.
- V.11** ITU-T standard for a high-speed, 34-pin, DCE/DTE interface. Similar to V.35, but used for longer cable distances where V.35 is not appropriate.
- V.35** ITU-T standard for a high-speed, 34-pin, DCE/DTE interface.

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