

TROUBLESHOOTING HDSL4

The ADTRAN HDSL4 unit is equipped with troubleshooting at a glance LEDs (identified on the reverse side of this document) that provide customers with a simple means of identifying the location of certain faults. Additionally, screens available via the craft interface simplify the trouble isolation process. These screens and their associated benefits are described below.

Troubleshooting Screens

Available via the Main Menu provides ADTRAN contact information and access to the Troubleshooting Guidance and General Information screens.

Troubleshooting Guidance Screens

Available via the Troubleshooting screen, detects and displays errors and/or alarms at any of the monitored inputs (DS0, T1 and HDSL4). Guidance on the faults/detected includes possible causes and suggested actions, including those shown below:

Facility	
LOS	Loss of signal (Red Alarm) at the DSX-1/DS1 receiver
CLC	T1 receive clock is out of range
RAL	Remote Alarm Indication (Yellow Alarm) detected at DSX-1/DS1 receiver
ALS	Alarm Indication Signal (Blue Alarm) detected at DSX-1/DS1 receiver
ERI	Errors detected at DSX-1/DS1 receiver
DSX-1/DS1	
LOS	LOS/DSX Ground Fault on span (Facility pair grounded)
SHORT	Short circuit (or low impedance) between pairs
OPEN	Open circuit between Facility pairs
DSX-1/DS1	
LOS	Loss of HDSL - eye
MARG	Margins has exceeded the alarm threshold
ATTEN	Attenuation has exceeded the alarm threshold
ESR	Errors recorded at the HDSL receiver
HST	Performance History of the DSL units

General Information Screen

Available via the Troubleshooting screen, a reference page which displays the minimum acceptable signal margin, maximum attenuation, and other deployment parameters for this HDSL4 circuit.

NOTE: Along with the Troubleshooting screen, the *Detailed Status* screen and *Performance History* screens, available via the craft access terminal, provide both real-time and historical view of this circuit.

For complete deployment guidelines on the HDSL4 circuit, refer to the *Installation and Maintenance Practice* referenced on the front page.

ATTENUTATION LIMITS

Segment	Recommended Maximum	
	Upstream	Downstream
1 st segment	30 dB	32 dB
2 nd and 3 rd segment	28 dB	26 dB

RANGE LIMITS, PVC Cable, T1/T

Gauge/Segment	Recommended Maximum	
	10-Gauge, 1 st segment	10-Gauge, 2 nd and 3 rd segments
24-Gauge, 1 st segment	10,470 ft.	9,865 ft. L/T
24-Gauge, 2 nd and 3 rd segment	14,770 ft.	14,050 ft. L/T

¹ In three segment circuits (two HDSLs), individual segment resistance values must be verified. Refer to the Installation and Maintenance Practice for details and calculations.

² When designing a dual HDSL loop (three segments), the first segment should have lower DC resistance than the second segment.

LOOPBACK CONTROL CODES

Pattern	Description	Response Affecting?
1x0	Loop down all units and disable.	No
2x0	Assing Pattern, HDSL4 will loop up if loopback L/R is enabled.	No
3x0	Disable and loop down all units. Resumes L/R TMO after 100ms.	No
2x01	HDSL4 L/R to Network.	No
3x01	HDSL4 L/R to Network.	No
4x01	HDSL4 L/R to Customer.	No
5x01	HDSL4 L/R to Customer.	No
6x01	HDSL4 L/R to Network.	No
4x02	HDSL4 L/R to Network.	No
5x02	HDSL4 L/R to Customer.	No
6x02	HDSL4 L/R to Customer.	No
4x03	HDSL4 L/R to Customer.	No
5x03	HDSL4 L/R to Customer.	No
6x03	HDSL4 L/R to Customer.	No
4x04	HDSL4 L/R to Customer.	No
5x04	HDSL4 L/R to Customer.	No
6x04	HDSL4 L/R to Customer.	No
4x05	HDSL4 L/R to Customer.	No
5x05	HDSL4 L/R to Customer.	No
6x05	HDSL4 L/R to Customer.	No
4x06	HDSL4 L/R to Customer.	No
5x06	HDSL4 L/R to Customer.	No
6x06	HDSL4 L/R to Customer.	No
4x07	HDSL4 L/R to Customer.	No
5x07	HDSL4 L/R to Customer.	No
6x07	HDSL4 L/R to Customer.	No
4x08	HDSL4 L/R to Customer.	No
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4x100	HDSL4 L/R to Customer.	No
5x100	HDSL4 L/R to Customer.	No
6x100	HDSL4 L/R to Customer.	No

Warranty: ADTRAN will replace or repair this product within the warranty period if it does not meet its published specifications or fails while in service.

Warranty information can be found at www.adtran.com/warranty.

Adtran Hdsl User Guide

Jack W. Plunkett

Adtran Hdsl User Guide:

Plunkett's Infotech Industry Almanac 2006: The Only Complete Guide to the Technologies and Companies Changing the Way the World Thinks, Works and Shar Jack W. Plunkett,2006 Plunketts InfoTech Industry Almanac presents a complete analysis of the technology business including the convergence of hardware software entertainment and telecommunications This market research tool includes our analysis of the major trends affecting the industry from the rebound of the global PC and server market to consumer and enterprise software to super computers open systems such as Linux web services and network equipment In addition we provide major statistical tables covering the industry from computer sector revenues to broadband subscribers to semiconductor industry production No other source provides this books easy to understand comparisons of growth expenditures technologies imports exports corporations research and other vital subjects The corporate profile section provides in depth one page profiles on each of the top 500 InfoTech companies We have used our massive databases to provide you with unique objective analysis of the largest and most exciting companies in Computer Hardware Computer Software Internet Services E Commerce Networking Semiconductors Memory Storage Information Management and Data Processing We ve been working harder than ever to gather data on all the latest trends in information technology Our research effort includes an exhaustive study of new technologies and discussions with experts at dozens of innovative tech companies Purchasers of the printed book or PDF version may receive a free CD ROM database of the corporate profiles enabling export of vital corporate data for mail merge and other uses *Plunkett's E-Commerce & Internet Business Almanac* Jack W. Plunkett,2009-03 Market research guide to e commerce and internet business a tool for strategic planning competitive intelligence employment searches or financial research Contains trends statistical tables and an industry glossary Includes one page profiles of e commerce and internet business firms includes addresses phone numbers executive names *Plunkett's InfoTech Industry Almanac* Jack W. Plunkett,2008-02 Plunkett s InfoTech Industry Almanac presents a complete analysis of the technology business including the convergence of hardware software entertainment and telecommunications This market research tool includes our analysis of the major trends affecting the industry from the rebound of the global PC and server market to consumer and enterprise software to super computers open systems such as Linux web services and network equipment In addition we provide major statistical tables covering the industry from computer sector revenues to broadband subscribers to semiconductor industry production No other source provides this book s easy to understand comparisons of growth expenditures technologies imports exports corporations research and other vital subjects The corporate profile section provides in depth one page profiles on each of the top 500 InfoTech companies We have used our massive databases to provide you with unique objective analysis of the largest and most exciting companies in Computer Hardware Computer Software Internet Services E Commerce Networking Semiconductors Memory Storage Information Management and Data Processing We ve been working harder than ever to

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Building Cyberstores Martin A. W. Nemzow, 1997 A complete programmer's and technical manager's guide to integrating existing databases with WWW sites for catalog sales data inquiries transaction processing Intranet Internet payment schemes and delivery of pay per view documents books information and help services The CD includes order entry form templates samples of existing cyberstore sites and tools for collecting customer data Data Communications, 1996-05

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Commerce Business Daily, 1999-10 *Video Dialtone Technology* Daniel Minoli, 1995 An explanation of the technical considerations regulatory issues and market requirements of video delivery describing digital video architectures services protocols and distribution systems Discusses the long term viability of digital video innovations describes the activities of the major players among telephone carriers moving to video and cable tv providers moving to telephony and includes a primer on tv and cable technology For technology developers planners carriers students and end users Annotation copyright by Book News Inc Portland OR **Standard & Poor's Stock Reports**, 2002-07 **Byte**, 1998 **F&S Index United States**

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Electrical Design News ,1998 Plunkett's Infotech Industry Almanac, 2001-2002 Jack W. Plunkett,Plunkett,2001 InfoTech being any technology that moves or manages voice data or video whether that movement be via wireless methods fiber optics traditional copper wire telephony computer network or emerging methods Each industry segment the most outstanding corporations within those industries are featured It includes dozens of tables indexes by product services geography plus corporate rankings for sales profits research budgets Complete profiles on Plunkett's InfoTech 500 Firms include companies in telecommunications software hardware on line services information management systems integration outsourcing more

The Value Line Investment Survey ,2000 Hoover's Billion Dollar Directory Hoover's, Inc,1997 Contains essential information on 6 420 companies the publicly listed US companies that were traded on the New York Stock Exchange NYSE American Stock Exchange AMEX and Nasdaq National Market Nasdaq as of March 31 1997

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