HDSL2 for Total Access 3000

H2TU-C for Total Access 3000 Form Factor

Product Features

- Advantageous in areas where unused copper pairs are in short supply
- Will handle the worst case installation scenario - long copper loop afflicted with:
  - Bridged taps
  - Cables running other interfering DSL services
  - 99% degree of electromagnetic coupling between possible "crosstalker" cables and the HDSL2 circuit itself
- Industry-leading, 10-year warranty

Carriers are deploying a variety of access platforms that deliver multiple services. Many T1 line deployments have been converted to HDSLx technology. In situations where pairs are in short supply, lines have been converted to HDSL2 to save copper pairs. ADTRAN® offers end-to-end HDSL2 card solutions with the Total Access® 3000 Multiservice Platform.

Total Access 3000 is an intelligent, open-architecture, carrier class multiservice access platform for deploying Hi-Cap and DSL services. Total Access 3000 offers unprecedented flexibility, along with multiple service options and management capabilities. Its real value in a TDM configuration is its ability to deliver T1 lines out to various applications. This compact, modular device is a single platform for delivering manageable, profitable services now and into the future. It supports HDSL, HDSL2, HDSL4, DSX-1, and POTS applications in conjunction with IADs and other network components.

HDSL2 became the next generation of DSL technology for the local loop. Standardization and interoperability were recognized as necessities for any future transmission mode. ADTRAN led the industry development of HDSL2 as a response to carrier needs and the physical demands being placed on copper networks.

The goal of HDSL2 was to transport T1 traffic on a single-pair of copper using CSA design guidelines. By basing deployment on CSA guidelines, the embedded base of copper facilities and the deployment guidelines used for yesterday's 4-wire HDSL can be used for HDSL2 circuits.

To be a fit for today's copper plant, HDSL2 is compatible with other technologies in the network. Using spectral-shaping techniques, HDSL2 is designed to be compatible with other loop technologies such as ISDN, T1, HDSL and ADSL.

Interoperability between HDSL2 vendors and products accelerated the acceptance of HDSL2 by the service providers. Interoperability also allows for ubiquitous service for T1 transport.

In HDSL2, the entire DS1 payload is carried over a single copper pair. The DS1 payload plus HDSL2 overhead results in 1.552 Mbps transported over the pair.

ADTRAN's HDSL2 central office and remote units are equipped with troubleshooting-at-a-glance LEDs that provide customers with a simple means of identifying the location of certain faults. Several new screens have been added to the craft interface to simplify the trouble isolation process.

These units are equipped to support the ADTRAN TScan™ feature. TScan allows the remote retrieval of circuit diagnostics and performs advanced fault location. For implementation of TScan, please contact your local ADTRAN sales representative.

HDSL2 for Total Access 3000

Total Access® System

H2TU-C for Total Access 3000 Form Factor

Product Specifications

Technical Specifications

- **Modulation type:** 16 TC PAM
- **Mode:** Full duplex, partially overlapped echo canceling
- **Number of pairs:** 1
- **Line rate:** 1.552 Mbps
- **Baud rate:** 517.333 kbaud
- **Loop loss:** 35 dB maximum at 196 kHz
- **Bridged taps:** Single taps less than 2000 ft, total taps less than 2500 ft
- **Performance:** Compliant with T1.418-2000 (HDSL2 Standard, Issue 2)
- **H2TU-C transmit power (data) level:** 16.8 ±0.5 dBm (0 to 450 kHz)
- **H2TU-C transmit power (activation) level:** 16.6 ±0.5 dBm (0 to 450 kHz)
- **Input impedance:** 135 ohms
- **Maximum loop resistance:** 900 ohms (nonrepeatered circuit)
- **Return loss:** 12 dB (50 kHz to 200 kHz)

Interfaces

- **Network:** DS3, OC-3
- **Subscriber:** HDSL2

Electrical

- **H2TU-C total power:** –48 VDC at 160 mA with H2TU-R,
- **Span power:** –190 VDC (internally generated) Class A2 compliant, GFI current at less than 5 mA, loop current limited at 150 mA
- **Fusing:** 1.00 A (not field replaceable)

Regulatory Standards

- NEBS Level 3
- GR-1089-CORE, Issue 3
- GR-63-CORE, Issue 2
- NRTL Safety Listed

Clock

- **Clock sources:** Internal, DSX-1 derived (with HDSL2 frame bit stuffing)
- **Internal clock accuracy:** ±25 ppm (exceeds Stratum 4), meets T1.101 timing requirements

Environmental

- **Operating temperature:** –40°C to +70°C
- **Storage temperature:** –40°C to +85°C

Ordering Information

Equipment	Part #
Central Office Form Factors	
Total Access 3000 H2TU-C	1181113L2
Repeaters	
H2R 239	1221045L1
H2R 239 PSD	1221045L2
Remote Units	
T200 Local Power H2TU-R	1223024L2
T200 Span Power H2TU-R	1223026L2

ADTRAN, Inc.
901 Explorer Boulevard
Huntsville, AL 35806

P.O. Box 140000
Huntsville, AL 35814-4000

256 963 8000 voice
256 963 8030 fax
877 457 5007 fax back

General Information
800 9ADTRAN
info@adtran.com
www.adtran.com

Pre-Sales Technical Support
888 5ADTRAN
support@adtran.com
www.adtran.com/support

Where to Buy
800 827 0807
www.adtran.com/where2buy

Post-Sales Technical Support
800 726 8663
support@adtran.com
www.adtran.com/support

Regional Offices
Dallas, TX
972 830 9070
Denver, CO
303 471 9150
Irvine, CA
949 260 3500
Kansas City, KS
800 471 8649
Newark, NJ
800 471 8656
Ontario, Canada
416 290 0585
Quebec, Canada
877 923 8726
San Antonio, TX
888 223 7671

International Inquiries
+1 256 963 8716 voice
+1 256 963 6300 fax
international@adtran.com
www.adtran.com/international

ADTRAN is an ISO 9001:2000 registered company.

ADTRAN is a TL 9000 registered company.

61181113L2-8A March 2004