

1431 SHDSL CPE



> THE TELINDUS 1431 SHDSL CPE USES THE STATE-OF-THE-ART SHDSL MODULATION TO DELIVER LEASED LINE, FRAME RELAY AND ATM SERVICES OVER AN ATM BASED DSLAM ACCESS NETWORK.

For this purpose the unit can accept an exchangeable serial or G.703 interface. The equipment additionally features a fixed Ethernet auto-sense 10/100 Base-T connection for the delivery of professional IP services.

The Telindus 1431 SHDSL uses symmetrical full-duplex transmission up to 2.3 or 4.6 Mbps over a single or dual two-wire unconditioned unshielded twisted-pair cable. The line speed can be adapted to optimise the throughput as a function of the characteristics of the local loop. The equipment is based on the ITU-T G.991.2 SHDSL recommendation, which guarantees spectral compatibility with legacy and ADSL transmission systems in the same cable bundle.

The Frame Relay service is encapsulated in ATM using the Frame Relay forum recommendations FRF 5 or FRF 8. The

leased line service is emulated using the ATM Circuit Emulation Service (CES). The ATM Service delivery on E1 (.703) is accomplished according to the ITU-T standard I 432.3. As a result, the equipment enables service providers to deliver professional Frame-Relay, Clear channel, and ATM services based on a standard ATM DSLAM based network.

Fully supported by the TDRE (Telindus Dynamic Routing Engine), the unit supports also differentiated IP services including VPNs (Virtual Private Networks) and the delivery of application dependent QoS (Quality of Service) connections.

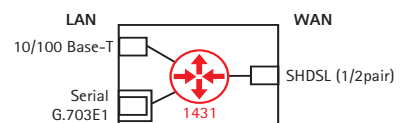
In addition to connections to DSLAMs, the Telindus 1431 SHDSL CPE can also be used in a point-to-point configuration. In this case, the CES functionality, combined with the built-in router allow the simultaneous transport of clear channel and Ethernet based services.

The equipment supports different management interfaces on different levels of the network. At the local level it is possible to manage the equipment over a management console interface by means of a PC maintenance tool, a command line interface or a menu driven interface.

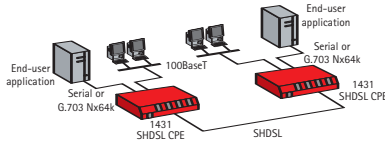
FEATURES & BENEFITS

- > PROFESSIONAL SHDSL CPE EQUIPMENT TO DELIVER LEASED LINE, FRAME-RELAY, ATM AND IP SERVICES OVER AN ATM BASED DSLAM ACCESS NETWORK
- > AVAILABLE IN 1 AND 2 LINE PAIR VERSIONS
- > EXCHANGEABLE SERIAL OR G703 INTERFACE
- > FIXED 10/100 AUTO-SENSE ETHERNET INTERFACE
- > LEASED LINE SERVICE BASED ON ATM CES ENCAPSULATION
- > FRAME RELAY SERVICE BASED ON ATM FRF.5 AND FRF.8 ENCAPSULATION
- > ATM E1 SERVICE BASED ON I 432.3 STANDARD
- > IP ROUTING AND BRIDGING WITH VPN AND COS SUPPORT
- > FULLY MANAGEABLE WITH A VARIETY OF TOOLS

 1431 CPE



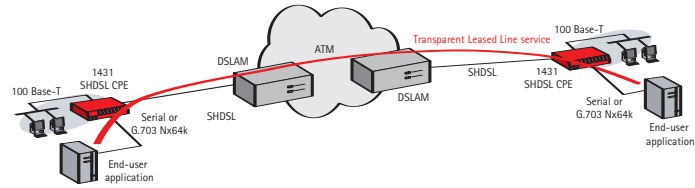
V POINT-TO-POINT CONNECTION



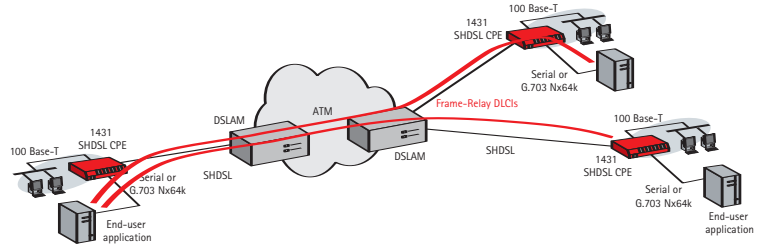
On IP level the equipment supports Telnet, SNMP, HTTP or TFTP/FTP. In this way it is possible to integrate the unit in any existing network management environment.

At the network level it is possible to manage the access network with a stand-alone element manager or with an element manager integrated into HP OpenView.

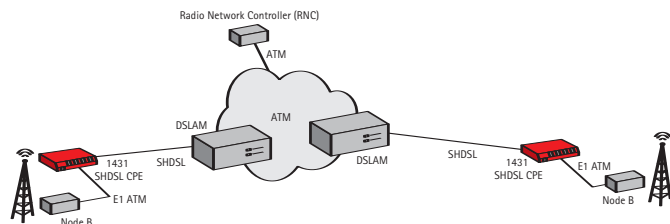
V COMBINED IP AND LEASED-LINE SERVICE ON ATM BROADBAND NETWORK



V COMBINED IP AND FRAME-RELAY SERVICE ON ATM BROADBAND NETWORK



V UMTS BASE-STATION CONNECTIVITY BASED ON ATM E1 CONNECTIONS



LINE INTERFACE

- > Applicable standards: ITU-T G.991.2, G.994
- > Single pair or two pair line access
- > Connector: RJ12/RJ45
- > Impedance: 135 ohm
- > Coding: TC PAM, compliant ITU-T G.991.2 Annex A&B (G.SHDSL), ETSI TS 101524
- > Line speeds: > Single pair: N x 64 kbps (N = 3 ... 36)
> Two pair: N x 128 kbps (N = 3 ... 36)
- > Handshaking: compliant G.994.1 (automatic speed negotiation) or fixed speed
- > Performance monitoring: compliant G.826 (errored seconds, severely errored seconds, unavailability seconds)

IDEAL MAXIMUM DISTANCE (NOISE-FREE) ON A SINGLE PAIR

1p line speed (kbps)	2p line speed (kbps)	0.4mm (km)	0.5mm (km)	0.6mm (km)	0.8mm (km)	1.0mm (km)	1.2mm (km)
		26AWG	24AWG	24AWG	20AWG	18AWG	
256	512	8.2	11.3	16.0	20.3	28.5	31.6
512	1024	7.2	9.9	14.0	17.8	25.0	27.7
1024	2048	5.5	7.6	10.7	13.6	19.1	21.2
1536	3072	4.0	5.5	7.8	9.9	13.9	15.4
2048	4096	4.2	5.8	8.2	10.4	14.6	16.2
2304	4608	4.0	5.5	7.8	9.9	13.9	15.4

AVAILABLE MODULAR INTERFACES

- > V.35, V.36/RS-449, X.21, RS-530/RS-530A, G.703/G.704

LAN INTERFACE

- > Compliant with IEEE 802.3 10Mbps HDX/FDX Ethernet
- > Compliant with IEEE 802.3u 100Mbps HDX/FDX Ethernet
- > 10/100Mbps auto-sense
- > RJ45 Unshielded Twisted Pair (UTP)

TEST LOOPS

- > Analogue Loop (Internal Line Loopback), Local Digital Loop (External DTE Loopback), External Line Loopback, Internal DTE Loopback

ATM LINE ENCAPSULATION

- > Supports ATM Forum Traffic Management 4.0 service types CBR and UBR

CLEAR CHANNEL SERVICE

- > ATM Forum af-vtoa-0078.000 Circuit Emulation Service (CES) version 2.0
- > Clocking:
 - > synchronised to network clock, internal generated
 - > synchronised to network clock, from G.703 interface
- > Supported number of user CES circuits: 5
- > User speeds: Nx64 kbps up to 2048 kbps/4096 kbps (1 pair/2-pair system)
- > User interface: V.35, V.36/RS-449, X.21, RS-530/RS-530A, G.703 (framed/unframed)

FRAME RELAY SERVICE

- > Frame Relay / ATM PVC Network Interworking Implementation Agreement (FRF 5)
- > Frame Relay / ATM PVC Service Interworking Implementation Agreement (FRF 8.1)
- > Supported number of user Frame-Relay DLCIs: 18
- > User speeds: Nx64 kbps up to 2304 kbps/4608 kbps (1 pair/2-pair system)
- > User interface: V.35, V.36/RS-449, X.21, RS-530/RS-530A, G.703 (framed/unframed)

ATM SERVICE

- > ATM user network interface (UNI) on E1 according to ITU-T I.432.3
- > Supported number of user ATM PVCs: 18
- > User interface: G.703 (framed)

IP ROUTING AND BRIDGING

- > Conform TDRE (Telindus Dynamic Routing Engine)

ROUTING AND BRIDGING PERFORMANCE

- > Routing performance: 45.000 pps
- > Bridging performance: 36.000 pps
- > Supported number of ATM PVCs for Ethernet traffic: 12
- > Supported number of VPN tunnels: 10
- > Supported number of VLANs: 200
- > Supported number of bridge-groups: 13

MEMORY

- > 8 MByte DRAM
- > 8 MByte Flash

MAINTENANCE AND MANAGEMENT SUPPORT

- > Conform TDRE (Telindus Dynamic Routing Engine)

FRONT PANEL INDICATORS

- > PWR: Power
- > LINE / LNK1: first line pair status
- > LINE / LNK2: second line pair status (on 2 pair versions only)
- > LINE / ACT: WAN encapsulation protocol status
- > SERIAL / LNK: G703 interface: G703/G704 status OK
Serial interface: DTE connected (RTS)
- > SERIAL / ACT: layer 2 status (in case of PPP, Frame Relay)
- > LAN / ACT: LAN status

MECHANICAL DATA (H X W X D)

- > 45 x 220 x 235 mm Weight: 800 g

POWER REQUIREMENTS

- > 9Vdc, 1A with external power adapter or -48Vdc / 130mA
- > External power adapters available for 24Vdc, 115Vac and 230 Vac

SALES CODES

- > 178722 Telindus 1431 SHDSL CPE 230Vac
- > 178717 Telindus 1431 SHDSL 2P CPE 230Vac

MODULAR INTERFACES

- > 188245 G.703 E1 Intf RJ45 + BNC

Sales codes for all data interface modules are found in the sales codes quick reference section
Units without power module and separate power adapters can be found in the sales codes quick reference section