

1431 SHDSL CPE



The 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.

1431 ROUTER SERIES

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 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 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 CES (Circuit Emulation Service). 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.

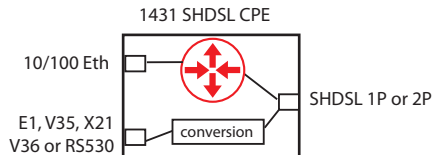
Fully supported by the TDRE (Total Dynamic Routing Engine), the unit supports also differentiated IP services including VPNs (Virtual Private Networks) and the delivery of application dependent QoS (Quality of Service) connections.

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 allows the simultaneous transport of clear channel and Ethernet based services. The equipment supports different management interfaces on different levels of the network.

FEATURES AND 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 SHDSL CPE SPECIFICATIONS

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)

1 p line speed (kbps)	2p line speed (kbps)	0.4 mm 26AWG (km)	0.5 mm 24AWG (km)	0.6 mm (km)	0.8 mm 20AWG (km)	1.0 mm 18AWG (km)	1.2 mm (km)
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 interface

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

LAN Interface

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

LAN port (2 pair version)

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

Test loops

- Internal Line Loopback (Analogue Loop)
- External Line Loopback
- Internal DTE Loopback
- External DTE Loopback (Digital Loop)

ATM Line Encapsulation

- Supports ATM Forum Traffic Management 4.0 service types CBR, UBR, VBR-rt and VBR-nrt
- Conform TDRE 11.5 (Total Dynamic Routing Engine)
- ATM Forum Traffic Management 4.0 service types CBR and UBR, VBR-rt, VBR-nrt
- Total number of ATM PVCs: 30

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: N x 64 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)
- Number of user Frame Relay DLCIs: up to 30"
- User speeds: N x 64 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)
- Synchronous clocking: internal preferred or alternative, slave on network preferred or alternative external
- Synchronous interface speeds in external clocking: all speeds up to 2 Mbps (1 pair version) or 4 Mbps (2 pair version)
- Synchronous interface speeds in internal and slave receive clocking: N x 64 kbps up to 2048 kbps (1 pair version) of 4096 kbps (2 pair version)

ATM Service

- ATM user network interface (UNI) on E1 according to ITU-T I 432.3
- Number of user ATM PVCs: up to 30"
- User interface: G.703 (framed)

IP routing and bridging

- Conform TDRE 11.5 (Total Dynamic Routing Engine)
- Full forwarding performance of 64 byte packets at maximum interface speed
- Routing performance: 60.000 pps
- Bridging performance: 60.000 pps
- Number of ATM PVCs for Ethernet traffic: 12
- Number of VPN tunnels: 10
- Number of VLANs: 200
- Number of bridge-groups: 13

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

- Flash memory: 8 Mbyte
- RAM memory: 16 Mbyte

Maintenance and management Support

- Conform TDRE 11.5 (Total Dynamic Routing Engine)

Front panel Indications

- 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: G.703 interface: G703/G704 status OK
Serial interface: DTE connected (RTS)
- SERIAL / ACT: layer 2 status (in case of Frame Relay)
- LAN / ACT: LAN status

Mechanical Data

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

Power Requirements

- Input voltage: 12 Vdc, max 1 A with external power adapter or -48 Vdc
- Power adapters for 115 Vac, 230 Vac, 24 Vdc and -48 Vdc
- Power consumption:
 - Through power adapter: max 6,3 / 7,5 W for respectively 1 pair / 2 pair versions
 - 130 mA @ -48 Vdc

Sales Code

- > 178722 1431 SHDSL CPE 230 Vac
- > 178717 1431 SHDSL 2P CPE 230 Vac
- Modular Interfaces
- > 188245 G.703 E1 Intf RJ45 + BNC

More sales codes are available for other local powering options. Sales codes for all data interface modules are found in the sales codes quick reference. Units without power module and separate power adapters can be found in the sales codes quick reference.