

# 2300 SHDSL Series



The 2300 SHDSL series provides enterprises or operators with a very high-density SHDSL transmission solution at the central office or in concentrator sites. It integrates in a 1 unit enclosure up to 24 SHDSL transmission pairs with up to 24 G.703 E1 backhaul connections.

## 2300 SHDSL SERIES

This unit targets mainly operators without own copper infrastructure. Its compact size with all connections at the frontside implies a minimal space. This may strongly reduce the cost for renting space in the Central Office. It is possible to use variable bit rates to extend the reach of the transmission over longer distances.

Data is delivered to the backbone network on G.703/G.704 interfaces on which both transparent and fractional operation is supported. In case of service delivery at speeds lower than 2 Mbps, grooming (concentration) of different users on a single E1 circuit can be provided. The specific 2300 concentrator model incorporating remote powering can be used to power network termination equipment, like specific versions of the Crocus SHDSL family. The 2300 Router Series is part of the family of TDRE compliant products (Total Dynamic Routing Engine).

For management purposes the concentrator features a 10/100 Base-T connection, a local console interface, and a G.703/G.704 interface. The 2300 SHDSL Series includes a management concentration and proxy function. This allows complete management (including over an IP network) of all connected remote modems.

At the local level it is possible to manage the equipment over a management console interface by means of a PC maintenance tool (TMA), a command line interface or a menu driven interface. 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.

Alternatively the unit and its remote modems can be managed by the TMA Element Management application.

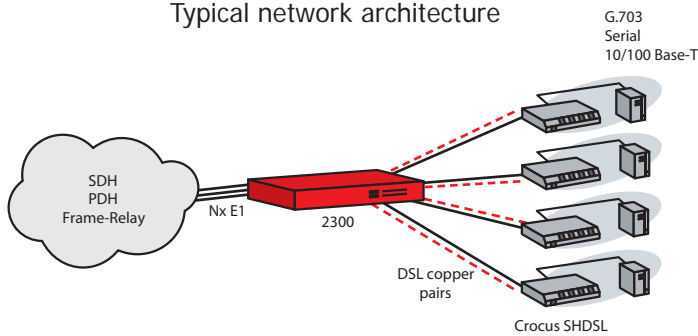
Typical applications in a carrier environment include the provisioning of high-quality data services like leased lines or Frame Relay and the concentration of multiple circuits interconnecting base-stations of a mobile operator. Enterprises or organisations with own copper infrastructure can use this type of equipment to meet their own communication requirements without having to invest in a new transmission infrastructure.

### FEATURES AND BENEFITS

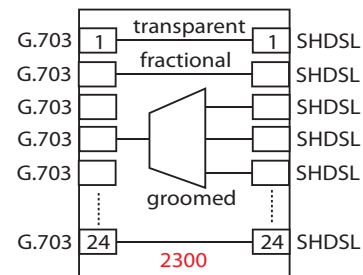
- Compact high-density SHDSL concentrator
- Up to 24 SHDSL pairs in 1 unit-high enclosure
- Up to 24 G.703 up-links with possibility for grooming
- Variable bit rate operation for extended reach
- Remote power feeding can be provided as an option



Typical network architecture



2300 schematic representation



### 2300 SHDSL SHDSL SERIES

#### Line Interface

- Single pair or two pair line access
- Two pair line access on successive odd and even line pair numbers
- Remote power feeding\* under management control
- Connector: 50 pin telco connector with 8 or 24 line pairs
- Impedance: 135 Ohm
- Coding: TC PAM, compliant to ITU-T G.991.2 (G.SHDSL) and ETSI TS 101524
- Line speeds: N x 64 kbps (N = 3 ... 32)
- 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)

1p pair 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	8.2	11.3	16.0	20.3	28.5	31.6
512	7.2	9.9	14.0	17.8	25.0	27.7
1024	5.5	7.6	10.7	13.6	19.1	21.2
1536	4.0	5.5	7.8	9.9	13.9	15.4
2048	4.2	5.8	8.2	10.4	14.6	16.2

#### Remote power feeding\*

- According to ITU-T K.15
- Controlled by network management
- Maximum standard remote power voltage: 120 Vdc
- Maximum standard remote power current: 60 mA
- Conform IEC60950-21 Edition 2002-12

#### G.703 Data Interfaces

- 8 or 24 balanced 120 Ohm interfaces concentrated on DB25 female (ISO 2110)
- Applicable standards: ITU-T G.703, G.704, G.823, G.826
- CRC4 insertion & monitoring
- Unframed or framed operation (G.704)
- User speed: (F)E1 N x 64 kbps (N = 1 ... 32)
- Grooming possibility for channelised operation
- Extended grooming up to 24 SHDSL lines through external cabling

#### Sales Code

- >199558 2301 ( 8 SHDSL modems)
- >199562 2303 (24 SHDSL modems)
- >199564 2321 RP (8 SHDSL modems with remote power feeding)
- >199568 2323 RP (24 SHDSL modems with remote power feeding)

#### Sales codes: cables

- >182955 50 pin telco - copper wires, 1 meter
- >182590 50 pin telco - copper wires, 3 meter
- >182956 50 pin telco - copper wires, 5 meter

#### Clocking

- Internal
- External (from G.703)
- Station clock (with possibility for fallback)

#### G.703 Management Interface

- Connector: RJ45, balanced 120 Ohm
- Electrical: G.703
- Unframed or framed operation (G.704)

#### LAN Interface (for management only)

- 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)

#### Control Interface

- Applicable standards: ITU-T V.24, V.28, EIA/TIA 574
- DCE signals: RXD, TXD, SGND
- Connector: female DB9

#### Front panel indications

- PWR: Power indication for each power inlet
- LAN: Lan status
- STCLK: Station clock status
- DCD: Data Carrier Detect for each SHDSL line
- G.703: LOS/AIS/Data for each G.703 interface

#### Maintenance and management support

- Conform TDRE (Total Dynamic Routing Engine)
- 2 alarm contact outputs (normally open and closed contacts)
- 7 alarm input contacts with common return (normally closed contacts)

#### Mechanical data (H x W x D)

- 44 x 440 x 240 mm (desktop)
- Weight: 3.5 kg
- Rack-mount kit included

#### Environmental Conditions

- Non remote powering versions: -10°C.. +50°C
- Remote powering versions: -10°C .. +35°C

\*Only on specific models

