

2400 ADSL / SHDSL Series



The 2400 Multi-port DSL router Series enables enterprises and service providers to deploy business services over ADSL and SHDSL, while maintaining a maximum flexibility for the connection to the backbone.

2400 ADSL / SHDSL SERIES

Apart from a fixed 100 Base-T backbone connection, the 2400 Series can accept various modular interfaces with support for PPP, Frame Relay or ATM.

These interfaces include:

- Multiple E1 (up to 8) with support for IMA (Inverse Multiplexing over ATM), multi-link PPP or multi link Frame Relay. The number of E1 lines and the encapsulation scheme effectively used can be selected by configuration (e.g. 4x E1 IMA)
- E3 with support for ATM, PPP and Frame Relay
- STM1 with support for ATM
- 10/100 Base-T Ethernet interface with built-in 4 port switch

Fully supported by the TDRE (Total Dynamic Routing Engine), the 2400 Operating System supports ATM switching, full IP-routing, bridging and VLAN switching. The ports of the unit can be split into multiple bridge groups, enabling direct mappings between DSL lines and VLANs. In addition it has an extended support for IP CoS (Class of Service) and it can handle multi-cast applications. Therefore, the 2400 Series can be used for supporting services like VoIP (Voice over IP) and digital video multi-cast.

The integrated possibility to terminate PPPoA and PPPoE sessions, together with the built-in Radius client functionality allow for the Authentication, Authorisation, and Accounting (AAA) of end-users, without the need for installing a separate BRAS (Broadband Access Server) or router.

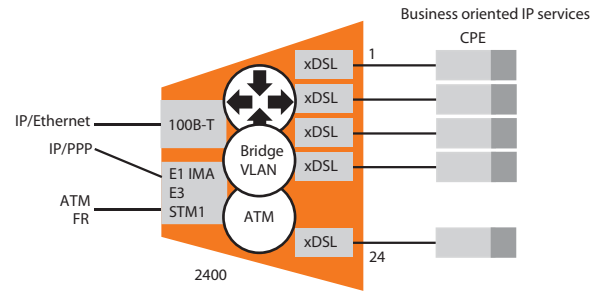
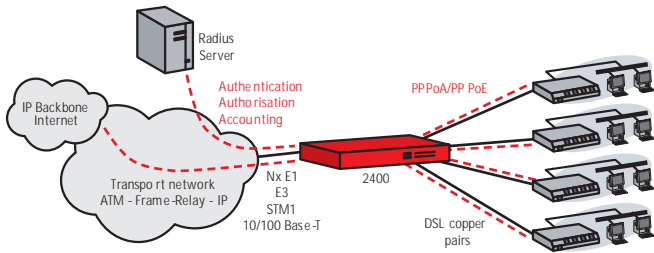
The unit comes with an advanced built-in management agent and is supported by the complete TMA management suite for local and remote control. The existing backbone infrastructure (IP, ATM or Frame relay) can be used to transport all management information to a central location without the need for a separate overlay network

The 2400 access concentrator houses 8 SHDSL or 24 ADSL or SHDSL modems. Two SHDSL circuits can also be combined to increase the distance or speed towards the end-users. The 2400 series comes in a very compact size (1 unit high) and can be used as desktop unit or can be rack-mounted through the optional rack-mount-kit. It fits in 30 cm deep ETSI racks with all connectors and indicators on the front. Combined with its low power consumption it is easily stackable.

Typical applications include low density roll-out of business-oriented series over DSL, especially when specific IP oriented features are required or a great flexibility is needed. Several units can be cascaded over the Ethernet ports to a single WAN uplink.

FEATURES AND BENEFITS

- ADSL/SHDSL multi-port router for professional broadband services
- 1 unit high housing for compact central-office solution
- 8 SHDSL or 24 ADSL or SHDSL line pairs per unit
- Combines ATM switching, IP routing, Ethernet bridging and VLAN switching in one device
- Suitable for flexible connectivity to Frame Relay, ATM and Ethernet networks
- Full IP QoS support
- Modular up-link interface for maximum flexibility for backbone connectivity



2400 ADSL / SHDSL SERIES SPECIFICATIONS

ADSL Line interface

- Number of line pairs: 24
- Single-pair ADSL/ADSL2/ADSL2+ line access
- Connector: 50 pin telco connector
- Coding: compliant to ANSI T1.413 issue 2, ITU-T G.992.1 (ADSL G.dmt), ITU-T G.992.2 (ADSL G.Lite), ETSI TS 101 388 v1.3.1, ITU-T G.992.3 (ADSL2 G.dmt), ITU-T G.992.4 (ADSL2 G.Lite), ITU-T G.992.5 (ADSL2+ DMT)
- Support for ITU-T annex A (POTS) or Annex B (ISDN and POTS)
- Optional integrated POTS or ISDN splitters (on 2401 versions)
- Line speeds: Downstream: 32 kbps up to 26 Mbps
Upstream: 32 kbps up to 1088 kbps
- Performance monitoring: compliant G.826 (errored seconds, severely errored seconds, unavailability seconds)

SHDSL Line interface

- Number of line pairs: 8 or 24
- Single or two-pair SHDSL line access (configurable)
- Coding: TC PAM, compliant to ITU-T G.991.2 (G.SHDSL) and ETSI TS 101524
- Connector: 50 pin telco connector
- 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)

Fixed Ethernet uplink

- 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)

Modular uplink interface:

- Number of slots: 1
- For use in combination with Interface Modules (TIMs)
 - Multiple E1 TIM
Support for Frame Relay & Multilink Frame Relay (up to 8 ports)
Support for PPP & Multilink PPP (up to 8 ports)
Support for ATM and IMA (up to 6 ports)
 - E3 /T3 TIM
Support for ATM, PPP and Frame Relay
 - STM1 TIM
Support for ATM
- 4 port Ethernet TIM

Sales Code

Sales codes standard versions

- > 199570 24 lines ADSL annex A, redundant 48VDC
- > 205206 24 lines ADSL annex B, redundant 48VDC
- > 205052 8 lines SHDSL, 48VDC and 230VAC
- > 199567 24 lines SHDSL, redundant 48VDC
- > 183021 Rack-mount kit

Sales codes: cables

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

Sales codes for Interface Modules (TIMs) can be found in the modular interface section and the sales code quick reference

Cascading

- Up to three 2400s can be linked through Ethernet ports for grooming ATM PVCs into a single ATM WAN uplink

Control Interface

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

Station clock interface

- G.703/G.704, 2048 kbps, RJ45 120 Ohm

Routing, bridging and switching

- IP routing and bridging conform TDRE (Total Dynamic Routing Engine)
- ATM PVC switching
- FRF.5 and FRF.8 Interworking Functions
- Protocol on DSL lines: ATM
- Uplink Protocols: Ethernet, ATM, PPP, Frame Relay

Routing and Bridging Performance

- Routing and bridging performance: 175 kpps
- Supported number of Frame Relay DLCIs: 200
- Supported number of ATM PVCs: 200
- Supported number of PPPoA terminations: 200
- Supported number of PPPoE terminations: 100
- Supported number of L2TP tunnels: 10
- Supported number of VLANs: 200
- Supported number of bridge-groups: 25

Front panel indications

- PWR: Power indication for each power inlet
- R: Reset condition
- LAN: Lan status
- CLK: Station clock status
- DCD: Data Carrier Detect for each DSL line

Clocking

- Slave on STM1, E3, T3 or E1 uplink
- Station clock (G.703 clock input)
- Internal

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)

Memory

- 32 MByte DRAM
- 16 MByte Flash

Mechanical data

- 44 x 440 x 240 mm (desktop)
- Weight: 3.5 kg

Power requirements

- Single or dual powered
- DC: -36 up to -72 V
- AC: 85 – 264 V, 47 – 63 Hz
- Power consumption: 8P versions: 25 W
24P versions: 45 W

