

AS21x1

Enterprise-Class SHDSL Broadband router



Advanced Layer 3 and 2 features
Extensive IP routing and Ethernet/ATM
functionalities with advanced QoS mechanisms

Secure
Data protection with IPSEC encryption and
firewall security

Innovative
Cutting edge devices with
state-of-the-art Technology



AS21x1 is a ShDSL router family for high performance connections. The family includes two different models, AS2111 and AS2141, that differ for the ethernet port number only. AS21x1 has a wide range of configurations that allow SME and SoHo customers to use any type of professional application, including ISP, LAN to LAN, VPN and videoconferencing.

Traffic management capabilities

AS21x1 supports Traffic Shaping and Quality of Service at both Layer 3 and Layer 2. It also provides interworking mechanisms between the two layers, which allow Telecom Operators the maximum flexibility in defining Traffic Management policies for transit switches/routers in their Access&Core Networks.

VPN and security features

AS21x1 offers firewall functionalities to prevent unauthorized external hosts access to the internal LAN: Access Lists, Stateful Packet Inspection for hacker patterns and DoS attacks. AS21x1 supports VPN data protection on transmission between two sites. The supported protocols are: IPinIP, GREinIP, PPTP client/server, IPSec SW and HW encryption.

Powerfull Configuration & Management

AS21x1 offers a web-based interface for easy configuration and monitoring. It includes remote management via an internal web server or Telnet server using the Command Line Interface; locally it can be managed quickly and easily by StarManager.

Leds indicators

- Power
- LAN
- ShDSL Line

Physical interfaces

- 1 (AS2111) or 4 (AS2141) switched 10/100 baseT Ethernet ports (LAN 0) with RJ-45 connectors
- 1 console port with MiniDIN 8P connector

ShDSL network interfaces

- ShDSL interface
- Line rate up to 4.608 Mbps using 2 ShDSL lines in physical bonding
- Full rate ShDSL: ITU G.991.2 (G.ShDSL), ITU G.994.1 (G.hs), ETSI TS 101 524

IP functions

- IP Routing
 - RIP v1/v1c/ v2, BGP, OSPF
 - Enhanced Network Address and Port Translation (NAPT) engine, with multiple ALGs (including SIP, TFTP and H.323)
 - DHCP Server/Client/Relay, DHCP Learning
 - Multicast IGMP v1/v2/v3, PIM
- Routing Filtering Redistribution
- Firewalling
 - Extended Access Lists
 - Stateful Packet Inspection including Denial of Service attacks
- IP Services
 - DNS proxy
 - VPN (GRE, IP, PPTP server/client)
 - IPSec with DES, 3DES and AES
 - ICMP, IGMP snooping, Telnet, TFTP
 - Layer 3 QoS according to DiffServ model (RFC2474, RFC2475)
 - Priority based queuing (Absolute Priority, WFQ, RED)
 - Extensive monitoring, tracing and troubleshooting facilities

Ethernet services

- Self Learning Bridge with up to 1k MAC addresses and automatic ageing
- Full-Duplex IEEE 802.3x
- Half-Duplex back pressure flow control
- Automatic MDI/MDI-X crossover
- Broadcast/Multicast storm protection
- VLANs (802.1Q and 802.1p) port based management
 - Tag/Re-Tag/Untag
 - Trunking (VLAN multiplexing)
 - Priority based queuing

Access protocols

- IP over AAL-5, Ethernet over AAL-5 (RFC2684)
- PPP over AAL-5 (RFC2364)
- PPP over Ethernet (RFC2516)
- LLC/SNAP and VC encapsulation

ATM services

- Up to 16 VCCs
- Class of Services
 - CBR
 - VBR-rt, VBR-nrt
 - UBR+
 - UBR
- Voice and Data packets over different VCCs (VC bundling)
- Selective CLP marking
- F4/F5 OAM cells, AIS and RDI
- ATM: ITU T-I.361, ITU T-I363.5, ITU T-I432, ITU T-I610, ITU T-I731

Authentication

- Client side PAP/CHAP/MS-CHAPv1 and v2 authentication

Service resiliency

- VRRP (RFC2338)
- Dial on Demand Routing

Management and configuration

- Password Protected Access
 - 2 login levels
 - AAA and local authentication
- Local Management
 - Console port
 - Extensive CLI
 - Windows® based wizard for configuration and firmware download
- Remote Management
 - CLI (internal Telnet Server)
 - HTTP (embedded WEB Server)
 - SNMP Agent (v1, v2c)
 - Syslog
 - Network Performance Monitor
 - Ping MIB
- Firmware upgrades: Local and Remote (TFTP client embedded)

Environmental range

- Temperature
 - Operating: 0° to 40°C (32° to 104°F)
 - Non-Operating: -35° to 70°C (-31° to 158°F)
- Humidity
 - Operating: 0 to 95% non-condensing
- Protections
 - ITU - K21
- Safety
 - EN 60950
- EMC
 - ETSI EN 300 386 V1.2.1
- Operating environmental conditions
 - ETS 300 019-1-3, class 3.2
- Transport environmental conditions
 - ETS 300 019-1-2, class 2.2

Power requirements

- External AC adapter
- Input 100 to 240 Vac, 50 to 60 Hz

¹ Supplementary Services management is not yet fully standardised by international bodies and their implementation could be subject to revisions

² Depending on the specific service, a common implementation between the IAD and the Softswitch needs to be agreed

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