



BLACK BOX[®]

NETWORK SERVICES

SpeedXtender 1010



Key Features

- ▶ Ethernet in the First Mile (EFM) Copper Solution
- ▶ Rapid Service Deployment
- ▶ Superior Rate and Reach
- ▶ Low Delay for Voice and Video
- ▶ Compliant with worldwide Spectral Standards
- ▶ NEBS Level III, FCC, UL and CE Compliant
- ▶ Environmentally Hardened SNMP Management

Overview

The SpeedXtender 1010 is a high-density, cost-effective point-to-multipoint Ethernet in the First Mile (EFM) platform that delivers multiple highperformance, symmetrical Ethernet services, aggregating the traffic and services into a high-speed uplink to a backbone transport network. With its superior performance and low-cost, the SpeedXtender 1010 provides the best value to its users.

The SpeedXtender 1010 allows service providers and enterprises to deliver multiple services utilizing their existing copper infrastructure to deliver Ethernet services to customers within the service area. It achieves unprecedented rate, reach and reliability on any grade of available copper, and installs within minutes, enabling immediate deployment of broadband services.

The SpeedXtender 1010 is interoperable with any standard backbone Ethernet switch or router complementing Metro Ethernet access nodes by expanding a single high-capacity port (e.g., Gig-e and/or 100Base-T) to multiple lower-

rate, copper-fed customers. The SpeedXtender 1010 forms an EFM link with a peer SpeedXtender 1000 on 1 to 8 copper pairs

The SpeedXtender 1010 optimizes the existing copper access network and reduces the cost and deployment time required to deliver high-performance broadband services. It enables a low-risk approach and dramatically improves ROI and user satisfaction. Because fiber trenching is not required with SpeedXtender systems, capital expenditures to deliver broadband services are greatly reduced.

Based on standard EFM technology (IEEE 802.3ah), the SpeedXtender 1010 bonds 1 to 8 copper pairs together to create a High Speed Link. Multiple HSLs can be supported per shelf. The transmission layer uses Crosstalk Cancellation (CTC) and Cross Talk Management (CTM), in order to boost transition rate, reach and reliability far beyond comparable systems, while retaining the standards compliance of G.SHDSL modems. It is fully compliant

to the strictest global safety and emission standards.

The SpeedXtender 1010 supports current and evolving Ethernet Quality of Service (QoS) and Type of Service (ToS) requirements, and has the highest available packet throughput efficiency. It supports 802.1q VLAN-aware bridge functionality, double tagging ("Q-in-Q", VMAN) for end-user VLAN transparency, including four 802.1p priorities and wire-speed non-blocking Layer 2 bridging. Support for 802.3x is included for traffic management.

The SpeedXtender 1010 is graphically managed via the SpeedXtender Enterprise Management, and by the GUI craft application. The system is managed by standard SNMP V2c or command line interface (TL1) protocols. SNMP support includes standard MIBs for seamless integration with widespread network management applications (e.g. HP OpenView).

Specifications

- Maximum Bandwidth Per 8-Pair Link: 40Mbps symmetrical
- Low Delay: 2-4 ms (typical)
- Cascading Capability: 5 shelves, 8 Pairs
- Non-blocking Switching Fabrik: 3.4 Gbps

Product Specifications

Interfaces

Network Interfaces

- Ethernet 10/100 Base T: 4 ports, Auto-negotiation, Auto-MDIX, Full/half duplex,
- Connector Type: RJ45 (front)
- Gig-E Optical Interface (optional): 1 SFP Port
- Connector Type: LC MMF 850nm, LC SMF 1310nm

High-Speed Link

(Bonded Copper Pairs)

- Number of Modem Line Cards: 1
- Max. Number of Copper Pairs: 16
- Nmb. of Copper Pairs per HSL:1-8
- Bonding protocol: IEEE 802.2ah, 2Base-T1
- Spectral Compability: ITU-T G.991.2, Annex A, B and F, ETSI TS 101 524, ANSI T1.417, ANSI Enhanced SHDSL

- Sealing Current: ITU-T G.991.2
- Connector Type: 50-pin telco (rear)

LAN Protocols

- Ethernet: IEEE 802.3
- VLAN Tagging: IEEE 802.1q
- Double Tagging (opt.): Q-in-Q, VMAN
- Priorities (4 Queues): IEEE 802.1p
- Dynamic Bridging: IEEE 802.1, 4K MAC addresses
- Flow Control: IEEE 802.3x

Management

Protocols

- SNMP V2c and V1
- Command Line Interfac
- HTTP
- Connectivity: In-band and Out-of-band
- Optional Secured Acces Through SSH2 Encrypted Sessions

Configuration and Monitoring

- Enterprise Management
- Management Software
- SNMP
- Command Line Interface
- Performance Statistics
- System Logs

Front Panel Indicators

System

- Power
- Critical/major/minor
- Alarm Cutoff Button (ACO)/Lamp test (LMT)

Card

- Active/Status

Ethernet Interface

- Active (ACT)/Link (LNK)

Alarm Contacts

- DB15 and Wire-wrap (rear)

Physical

- Rack Mounting: 19", 23" or ETSI racks
- Dimensions: Height: 2U (3.50"/88mm) Depth: 11.0"/280mm DC 12.0"/305mm AC Width: 17.4"/442mm
- Wight: 14.8 lb (6.7kg)
- Plug-in Cards: 2 horizontal, front loading
- Power DC: -48/60 VAC nominal, dual A + B 85 Watts for fully loaded system Optional AC power 110/240 VAC

Regulatory Approval

Safety

- UL60950, CSA C22.2 60950
- EN60950, IEC 60950

EMS

- FCC Part 15 Class A
- ICES-003 Class A
- ETSI EN300 386
- ETSI EN300 132 -1/2

NEBS

- Level III (GR-1089-Core, GR-63-core)

CE

- EMC and Safety

Environmental

- Operating Temp.: -40° to +65°C
- Storage Temp.: -40° to +70°C
- Relative Humidity: Up to 95%, non-condensing
- GR-63-CORE
- ETSI ETS 300 019

Ordering information

ITEM

CODE

G.SHDSL Modem, 8 copper pairs, DC/ACMDS1011
 G.SHDSL Modem, 16 copper pairs, DC/ACMDS1012

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