



BLACK BOX[®]

NETWORK SERVICES

SpeedXtender 1100



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

The SpeedXtender1100 is a high-density, point-to-multipoint Ethernet in the First Mile (EFM) platform that delivers multiple high performance, symmetrical Ethernet services, aggregating the traffic and services into a highspeed uplink to a backbone transport network. With its superior performance and low-cost, the SpeedXtender1100 provides the best value to its users.

The SpeedXtender1100 allows service providers and enterprises to use their existing copper infrastructure to deliver 1 to 40 Mbps Ethernet services per customer 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 SpeedXtender1100 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 SpeedXtender1100 forms an EFM link with a peer SpeedXtender1000 on 1 to 8 copper pairs.

The SpeedXtender1100 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 customer 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 SpeedXtender1100 bonds 1 to 8 copper pairs together to create a high speed link. Multiple high speed links can be supported per shelf. The transmission layer is additionally powered by technology that comprises of Cross Talk Cancellation (CTC) and Cross Talk Management (CTM), which boost transmission

rate, reach and reliability far beyond comparable systems, while retaining the standards compliance of G.SHDSL modems.

The SpeedXtender1100 can support present or future 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 enduser 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 SpeedXtender1100 is graphically managed via the Management System, and by the Management software 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.

Specifications

System Specifications—

- Maximum Bandwidths per 8-Pair Link: 40 Mbps symmetrical
- Low Delay: 2-4 ms (typical)
- Cascading Capability: 5 shelves; 320pairs
- Non-blocking Switching Fabric: 3.4 Gbps

System 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): 1SFP Port
- Connector Type: LC MMF 850nm, LC SMF 1310 nm

High-Speed Link (Bonded Copper Pairs)

- Number of Modem Line cards: 1-4
- Max. Nmb of Copper pairs par HSL: 1-8
- Bonding protocol: IEEE 802.3ah, 2Base-TL
- Spectral Compatibility: ITU-T G.991.2, Annex A, B and F, ETSI TS 101 524, SNSI 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 (4Queues): IEEE 802.1p
- Dynamic Bridging: IEEE 802.1, 4K MAC addresses
- Flow Control: IEEE 802.3x

Management

- Protocols*
- SNMP v2c and v1
- Command Line Interface
- HTTP
- Connectivity: In-band and Out-of-band
- Optional Secured Access Through SSHv2 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" and ETSI
- Dimensions: Hight:(4U) 7"/176mm
Depth: 11"/280mm
With: 21.32"/538mm
or 17.2"/436mm
- Weight: 19lbs (8.6kg)(chassis only)
- Plug-in cards: 6 horizontal, front loading
- Power DC: -48/-60 VAC nominal, dual A + B 100 Watts for minimal system 220 Watts for fully loaded system.

Regulatory Approval

Safety

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

EMC

- FCC Part 15 Class A
- ICES-003 Class A
- ETSI EN 300 386
- ETSI EN 300 132-2

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-cond.
- GR-63-CORE
- ETSI ETS 300 019

Ordering information

ITEM

CODE

Product

Chassis, 2-Slot, DC/AC	.MDS1100
Cassis, 6-Slot, DC/AC, 19"	.MDS1101
Chassis, 6-Slot, DC/AC, 23"	.MDS1102
Controller Card, 10/100 Mbps	.MDS1100-S
Controller Card, 100/1000 Mbps	.MDS1100-SG
1000Mbps Multimode Module	.MDS1100-GM
1000Mbps Singlemode Module	.MDS1100-GS
Modem Card, 8 pairs	.MDS1111
Modem Card, 16 pairs	.MDS1112

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On-line — receive technical knowledge on-line, including technology overviews, Black Box Explains and the Knowledge Box.

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