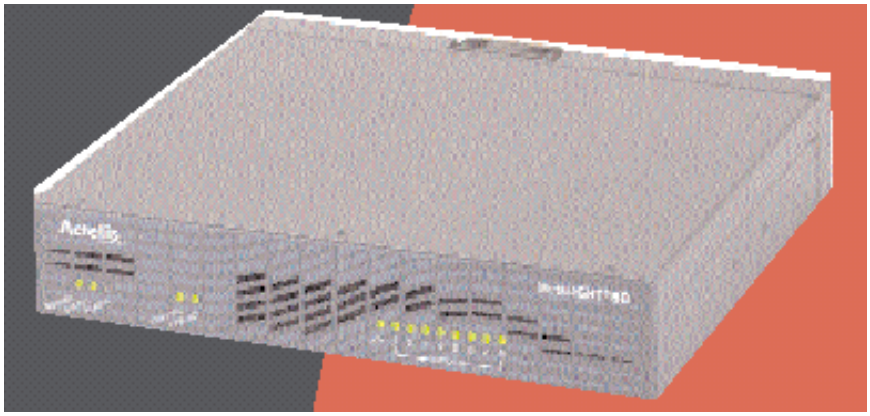
BLACK BOX®
NETWORK SERVICES

SpeedXtender 1000



Key Features

- Low-Cost Ethernet in the First Mile (EFM) Solution
- Rapid Service Deployment
- Superior Rate and Reach Beyond 18,000 ft/ 5.5 km
- Low Delay, Jitter and Packet Loss for Voice and Video Transmission
- Compliant with worldwide spectral Standards
- NEbS level III, FCC, UL and CE Compliant
- Environmentally Hardened

The SpeedXtender 1000 is a compact, cost effective Ethernet in the First Mile (EFM)platform that delivers high-performance, symmetrical Ethernet services over any type of existing copper plant. Available in two, four or eight copper pair configurations, the SpeedXtender 1000's unparalleled flexibility allows it to be operated in a point-to-point configuration, or as the CPE in a point-to-multipoint configuration with the SpeedXtender 1000 or SpeedXtender 1100. The SpeedXtender 1000's superior performance provides the best value to the user.

The SpeedXtender 1000 allows service providers and enterprises to use their existing copper infrastructure to deliver 1 to 40 Mbps Ethernet services to all users within their service area or enterprise. It achieves unprecedented rate, reach and reliability on any grade of copper, enabling immediate deployment of broadband services.

The SpeedXtender 1000 is interoperable with any standard backbone Ethernet switch/router or hub. It offers unparalleled ease and flexibility for broadband transport deployment. The SpeedXtender 1000 provides a 10/100 Mbps Ethernet interface as the demarcation point for the service to the customer or location.

With a compact design, the SpeedXtender 1000 optimizes an existing copper network and reduces the cost and deployment time 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, the SpeedXtender 1000 aggregates 1 to 8 copper pairs together to create a high speed link which carries the traffic. The transmission layer is additionally powered by Cross Talk Cancellation and Cross Talk Management which boost rate and reach far beyond comparable systems, while retaining the standards compliance of G.SHDSL modems. The SpeedXtender 1000 is fully compliant with all global safety and emission standards.

The SpeedXtender 1000 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") for end-user VLAN transparency, including four 802.1p priorities and wire-speed non-blocking Layer 2 bridging. Support for 802.3 is included for traffic flow control.

The SpeedXtender 1000 is graphically managed via the EMS (Enterprise Management System), and by the SpeedXtender GUI craft application. Management interfaces include SNMP V2c standard MIBs for seamless integration with standard network management applications (e.g., HP OpenView) and a command line interface (TL1). Both local and remote management via an IP network are supported, in either in-band or out-of-band modes.

Specifications

System
Bandwidth: 1 to 67 Mbps symmetrical
Low Delay: 2-4 ms (typical)

Interfaces
Ethernet
- Number of Connections: 1
- Interface: 10/100BaseT, 802.3, Auto-negotiating, Auto MDIX Full or half duplex
- Connector Type: RJ45

High Speed Link (HSL - Copper Pairs)
- Number of Copper Pairs: 1- 8
- Connector Type: RJ45
- Spectral Compatibility: IITU-T G.991.2, G.SHDSL.bis, ETSI TS 101 524, ANSI T1.417, Enhanced G.SHDSL
- Sealing Current: G.991.2

LAN Protocols
- Ethernet: 802.3
- VLAN Tagging: 802.1q
- Double Tagging: Q-in-Q
- Priorities (4 Queues): 802.1p
- Dynamic Bridging: 802.1, up to 2K MAC addresses
- Flow Control: 802.3

Management
Protocols
- SNMP V2c and V1
- Command Line Interface
- HTTP
- In-Band or Out-of-Band
- Optional Secured Access through SSH2 Encrypted Sessions

Configuration and Monitoring
- GUI & EMS
- Command Line Interface
- SNMP
- Performance Statistics
- System Logs

Management Interfaces
Ethernet Interface
- Electrical Interface: 10/100BaseT
- Connector Type: RJ45

Craft Interface
- Electrical Interface EIA RS-232
- Connector Type DB9

Front Panel
System LEDs
- Power
- Status
- Alarm

WAN Interface LEDs
- HSL
- Modem (LED per modem)

LAN Interface LEDs
- Active (ETH-ACT)
- Link (ETH-LNK)

Alarm Contacts
- Terminal Block

Physical
- Rack Mount: 2 units in 19", 23" or ETSI racks
- Desktop Mount
- Wall Mount
- Dimensions: Height: 1.6" (40mm)
  Depth: 11.0" (280mm)
  Width: 8.4" (213mm)
- Weight: 3.75 lbs (1.7 Kg)
- Power: AC: 90-264 V, 47-63 Hz, 25 Watts
  DC: -48/-60 V nominal, 20 Watts

Regulatory Approval
Safety
- UL 60950, CSA C22.2 60950
- EN 60950, IEC 60950

EMC
- FCC Part 15 Class B
- ICES-003 Class B
- FCC Part 68
- CS-03 Issue 8
- ETSI EN 300 386 Class B
- ETSI ETS 300 132

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
G.SHDSL Modem, 1 copper pair, DC/AC	MDS1000
G.SHDSL Modem, 1..2 copper pairs, DC/AC	MDS1001
G.SHDSL Modem, 1..4 copper pairs, DC/AC	MDS1002
G.SHDSL Modem, 1..8 copper pairs, DC/AC	MDS1003