

SHDSL Bonded Ethernet Access Device

ETHX-SHDSL-4, ETHX-SHDSL-8



802.3ah compliant extended-rate SHDSL EFM (2Base-TL) Ethernet Access Device, with 4 or 8 SHDSL WAN interfaces and 4 Ethernet LAN interfaces

Overview

The 4 and 8 port EtherXtend SHDSL Ethernet Access Devices (ETHX-SHDSL-4 and ETHX-SHDSL-8, respectively) have been designed to deliver bonded high-speed Ethernet First Mile (EFM) services over SHDSL. The ETHX-SHDSL-x provides 802.3ah compliant SHDSL bonding with advanced features such as Zhone's Multimedia Traffic Management (MTM). In addition, full compliance to 802.3ah industry standards provide extremely high reliability, low latency, and integrated OAM features for advanced management of Ethernet lines.

Zhone's line of EtherXtend access devices are built for reliability and resiliency: dynamic and proactive performance monitoring ensures the quality of bonded groups; seamless failure recovery and hitless adds and drops ensure maximum uptime; a hardware platform designed for a carrier environment. With application-aware traffic control services and built-in OAM, EtherXtend is able to provide more intelligence to a larger portion of the network than any other CPE, making EtherXtend the leading choice for delivering business-class SLAs over Ethernet.

Supporting both 802.3ah EFM standards as well as Zhone's proprietary lightweight Ethernet bonding technologies, Zhone's EtherXtend is also the most flexible Ethernet Access Device product available; the dual-mode operation allows the EtherXtend device to aggregate into standards-based products such as the EtherXtend chassis, the MALC broadband loop carrier, and other EtherXtend-SHDSL-x units, or they may also connect into pre-standard Ethernet Loop Bonding products such as Zhone's 12000E, SIM2000, SpD2000, SMD2000, and SNE2000 series Ethernet access products.

The EtherXtend-SHDSL provides 4 or 8 individual single copper pair SHDSL lines, each allowing for data rates up to 5.7 Mbps symmetrical bandwidth per port at distances up to 24,000 feet/7,315 meters. The EtherXtend-SHDSL supports loop bonding (either EFM bonding or Ethernet Loop Bonding), which allows the service provider to bond multiple copper pairs together for bandwidths of over 22Mbps (4 ports) or 45Mbps (8 ports) to a single customer.

Benefits

Seamless migration from pre-standard Ethernet based SHDSL to full 802.3ah compliance using 2Base-TL and Ethernet OAM. Works with MALC or IPD 12000E platforms, or in "bookend" configurations.

Compatible with all SHDSL network extender products as well as new EFM compliant CPE. Industry-leading MTM traffic management provides IP QoS, traffic shaping and dynamic bandwidth allocation.

Supports Loop Bonding using EFM or pre-standard bonding for maximum deployment flexibility. Hitless adds and drops allow new lines to be added to (or removed from) a bonded group without loss of service.

Proactive Performance Monitoring detects problem lines and removes them from a bonded group before they can impact the network.

Seamless failure recovery allows dropped lines to retrain and then re-enter a bonded group automatically.

Full range of management options including 802.3ah OAM, SNMP, CLI, and integration into Zhone's ZMS Enterprise Management System.

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Specifications

Power

-48V DC and Universal AC power options available

Interfaces

4 or 8 extended-rate SHDSL (2Base-TL) Interfaces
4 10/100 Ethernet Interfaces

Standards Support

ITU G.994.1 G.handshake
IEEE 802.3 Ethernet
IEEE 802.3ah Ethernet in the First Mile (2Base-TL)
IEEE 802.3ah OAM
IEEE 802.1Q/p

Protocol Support

Host-based routing for per-interface single IP address assignments
Network-based routing for per-interface IP subnet address assignments
IP host and gateway support
RIP v1 (RFC 1058) RIP v2 (RFC 2453)
RFC 1483/2684 encapsulation
DHCP server (RFC 2131, 2132), DHCP Relay
Bridging 802.1D support
VLAN 802.1Q support

Management

ZMS (Zhone Management System) via SNMPv2c for GUI and CORBA IDL machine interface
Serial terminal and telnet for Command Line Interface (CLI)
In-band IP via 10/100 Ethernet or WAN port

Bandwidth/Distance

Data rates provisionable up to 5.7Mbps symmetrical
Distances up to 24,000ft/7,320m
Cross-talk cancellation within bonded groups

Regulatory Compliance

NEBS: GR-63-CORE, GR-1089-CORE
EMC: FCC Part 15, CSA/C108.8, EN55022, CE Marking
Safety: UL1950, CSA C22.2 No. 950, EN60950, IEC950
CE Marking

Operating Requirements

Temperature: -40 ° F to 149 ° F (-40 ° C to 65 ° C)
Non operating temperature: -40 ° F to 158 ° F (-40 ° C to 70 ° C)
Humidity: 5% to 95%, non-condensing
Altitude: -200ft to 16,500ft (-60m to 5,000m)

Ordering Information

Model	Description
ETHX-SHDSL-4-DC	4 port EFM SHDSL Ethernet Access Device, DC Power
ETHX-SHDSL-4-AC	4 port EFM SHDSL Ethernet Access Device, AC Power
ETHX-SHDSL-8-DC	8 port EFM SHDSL Ethernet Access Device, DC Power
ETHX-SHDSL-8-AC	8 port EFM SHDSL Ethernet Access Device, AC Power