



Z H O N E

SHDSL Bonded Ethernet Access Device

ETHX-SHDSL-4, ETHX-SHDSL-8

- ✓ *Automatic load balancing and fail-over on bonded ports for optimum throughput and redundancy*
- ✓ *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: 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.*
- ✓ *Full range of management options including 802.3ah OAM, SNMP, CLI, and integration into Zhone's ZMS Enterprise Management System.*

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



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 combines 802.3ah compliant SHDSL bonding with advanced performance and management features to ensure high reliability, low latency, and maximum throughput.

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 own lightweight Ethernet bonding technologies, the EtherXtend is the most flexible Ethernet Access Device available; the dual-mode operation allows the EtherXtend device to aggregate into standards-based products such as the MALC broadband loop carrier, other EtherXtend-SHDSL units, or they may also connect into pre-standard Ethernet Loop Bonding products such as Zhone's 12000E, SIM2000, SuD2000, 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. The EtherXtend-SHDSL supports loop bonding, combining multiple copper pairs together for bandwidths of over 22Mbps (4 ports) or 45Mbps (8 ports) to a single customer.

Ordering Information

ETHX-SHDSL-4-DC	4 port EFM SHDSL Ethernet Access Device, DC Power
ETHX-SHDSL-4-US	4 port EFM SHDSL Ethernet Access Device, AC Power (US plug)
ETHX-SHDSL-4-UK	4 port EFM SHDSL Ethernet Access Device, AC Power (UK plug)
ETHX-SHDSL-4-EU	4 port EFM SHDSL Ethernet Access Device, AC Power (EU plug)
ETHX-SHDSL-8-DC	8 port EFM SHDSL Ethernet Access Device, DC Power
ETHX-SHDSL-8-US	8 port EFM SHDSL Ethernet Access Device, AC Power (US plug)
ETHX-SHDSL-8-UK	4 port EFM SHDSL Ethernet Access Device, AC Power (UK plug)
ETHX-SHDSL-8-EU	4 port EFM SHDSL Ethernet Access Device, AC Power (EU plug)

Technical Specifications

Dimensions

- 1.75" (4.45 cm) High x 10" (21.6 cm) Wide x 7.5" (19.1 cm) Deep

Weight

- 3.35 lbs (1.52 kg)

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 EFM (2Base-TL)
- IEEE 802.1Q/p

Protocol Support

- Host-based routing for per-interface IP address assignments
- Network-based routing for per-interface IP subnet 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)



Z H O N E

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