

SHDSL EFM Access Device With Voice Support

- ✓ *Full VLAN support with priority and QoS*
- ✓ *Automatic load balancing on bonded EFM ports for optimum throughput*
- ✓ *Units operate in back to back mode (CO and CPE mode)*
- ✓ *Environmentally hardened for use in extreme conditions or remote cabinets (DC Models)*
- ✓ *Up to four SHDSL EFM ports*
- ✓ *Remote Management - Web GUI, SNMP and ZMS CPE Manager*



Zhone's EtherXtend SHDSL EFM Ethernet Access Devices (EADs) allow Carriers, CLECs, ISPs and PTTs to deliver Ethernet services to their customers simply, quickly and cost-effectively over the existing copper plant. Intended for deployment at end-users' locations, these devices allow delivery of IEEE 802.3ah Ethernet in the First Mile (EFM) services using the latest in SHDSL standards. By supporting up to 13.6 Mbps over a single copper pair, each pair can carry significantly more bandwidth than competing products that rely on traditional G.SHDSL standards.

The unit supports EFM loop bonding, thereby enabling up to 54 Mbps over four copper pairs. Because this is an EFM product, the loops can be at different rates, and still be part of the EFM bundle. This access device is equipped with an autorate capability that allows the unit to run at the maximum line rate supported by the copper loop. This autorate feature greatly simplifies installation and service provisioning.

Typically, the MXK at the Central Office is used with the EtherXtend EFM endpoints. However, the EtherXtend endpoints (without voice) can also work back to back without the MXK.

These EFM access devices also have models that include either 4 or 8 voice ports. The ETHX-3244 has four voice ports, and the ETHX-3248 has eight voice ports. Each of these models has four Ethernet ports that can be configured for bridging or routing. All Ethernet ports support full VLAN priority and QoS.

Voice Features

The EFM access device provides voice service with either 4 or 8 voice ports on the unit. The device supports SIP or MGCP. All the major voice features are supported. This includes features such as three-way-calling, caller ID, distinctive ringing, T.38 fax, and V.90 modem.

Gateway Features

The EFM access device is a full-featured gateway with integrated DHCP server, ALG's, NAT Router, PPPoE Client, scheduling, comprehensive logging, and more. The EFM product line implements a very flexible QoS allowing the service provider to guarantee that services are being prioritized correctly and the end-user is getting the Quality of Experience that is expected.

The EFM access device is designed for high performance applications. It features one Gigabit Ethernet port and three Fast Ethernet ports, in addition to the 4 or 8 voice ports.

The access device has full VLAN support with QoS. The packets in the VLANs are prioritized based on the IEEE 802.1p priority bits. In addition, each VLAN can be rate limited.

The EFM access device supports prioritization at the higher layers through the use of the Diffserv bits (RFC2474, RFC2475).

Management

The EFM access device has intuitive Web and command line interfaces. The zNID is also managed by the Zhone Network Management System (ZMS), using SNMP. Software upgrades and configuration backups can be handled automatically by the ZMS using the CPE Manager feature.

Technical Specifications

Dimensions

- 2.0 in H x 8.7 in W x 6.2 in D
- 5 cm H x 22 cm W x 16 cm D

Weight

- 1.0 lbs (0.45kg)

Power

- 12VDC (DC Models)
- 100- 240 VAC 50/60 Hz (AC Models)
- 12W max (3210, 3220, 3240)
- 36W max (3244, 3248)

Interfaces

- 4 SHDSL Interfaces 8-pin modular
- 4 Ethernet Interfaces 8-pin modular
- 4 or 8 FXS ports - RJ11
- 1 USB Craft Port

Standards Support

- IEEE 802.3 Ethernet
- IEEE 802.3ah EFM
- IEEE 802.1Q/p VLANs

Voice Support

- SIP
- SIP-PLAR
- MGCP
- Codec Support: G.711, G.726, G.729a
- Major CLASS features supported
- Three way calling, distinctive ringing
- 5 REN per port
- VoIP QoS Prioritization

Protocol Support

- DHCP Server, DHCP Client
- IP Routing and Bridging
- NAT
- PPPoE Client
- Virtual LAN bridging (VLAN)
- Firewall and Security
 - CoS 802.1P/Q prioritization
 - ToS IP Precedence

Management

- Web GUI
- ZMS (Zhone Management System) CPE Manager
- CLI
- SNMP

Bandwidth/Distance

- Up to 13.6 Mbps per SHDSL port
- Up to 54.4 Mbps over four, loop-bonded ports
- Distances up to 24,000 ft (7,320m)

Regulatory Compliance

- EMC: FCC Part 15 Class A, ICES-003 Class A, EN55022 Class A, EN55024, VCCI Class A (ETHX-3210, 3220, 3240)
- Safety: UL60950-1, CSA C22.2 No. 60950-1, EN 60950-1.
- CE Marking

Operating Requirements

- Operating Temperature:
 - All AC Models: 0° C to 40° C (32° F to 104° F)
 - ETHX-3244/3248 DC Models: -40° C to 40° C (-40° F to 104° F)
 - ETHX-3210/3220/3240 DC Models: -40° C to 60° C (-40° F to 140° F)
- Storage Temperature: -40°C to 65°C (-40° F to 149° F)
- Humidity: 5% to 95%, non-condensing
- MTBF: Greater than 100,000 hours

Ordering Information

ETHX-3210-xx	1 SHDSL EFM, 4 FE, AC Power (xx-NA, UK, EU)
ETHX-3220-xx	2 SHDSL EFM, 4 FE, AC Power (xx-NA, UK, EU)
ETHX-3240-xx	4 SHDSL EFM, 4 FE, AC Power (xx-NA, UK, EU)
ETHX-3244-xx	4 SHDSL EFM, 1 GE, 3 FE, 4 Voice (xx-NA, UK, EU, DC)
ETHX-3248-xx	4 SHDSL EFM, 1 GE, 3 FE, 8 Voice (xx-NA, UK, EU, DC)