



Z H O N E

MALC-XP 1U MSAP

MALC-XP-150A

- ✓ *Triple-Play Services in a 1U Multi Service Access Platform (MSAP)*
- ✓ *48 Port ADSL2+ with POTS (VoIP)*
- ✓ *Integrated IP DSLAM, VoIP Line Access Gateway, and IP Video Delivery Platform*
- ✓ *Integrated Emergency Stand-Alone (ESA)*
- ✓ *Full-Featured VoIP: MGCP, SIP, SIP-PLAR, H.248*
- ✓ *Environmentally Hardened*
- ✓ *Optional Watertight OSP Enclosure for Pole, Pedestal, or Underground Deployment*

Compact, High-Performance 1U MSAP from eXpress Packet Family



The Zhone MALC-XP provides next generation MSAP features in a compact, hardened form-factor that makes it easy and cost-effective to deliver uncompromised triple play services throughout serving area.

Service providers are challenged by the need to deliver high-bandwidth IP-enabled services throughout their territories. The compact MALC-XP solves the challenge when deployed close to subscribers, reducing loop-lengths for increased bandwidth.

The MALC-XP combines industry-leading functionality with ease of deployment for a robust and complete access solution. The MALC-XP extends the benefits of next-generation BLCs throughout the service territory, ensuring universal coverage of advanced services. The MALC-XP works seamlessly with Zhone's residential gateways and high-density MSAPs, providing a complete Access solution from the Central Office to the Remote Control.

The Fast/Gigabit Ethernet interfaces on XP family products can be configured as linear, RPR ring, or aggregated links. An OSP (outside plant) enclosure version enables pole-mount, pedestal, or underground deployment for even greater range and flexibility.

Ease of Management

MALC-XP provides simple yet powerful management facility via embedded Web GUI along with complete NMS integration.

Universal Broadband & Advanced Voice Capabilities

MALC-XP enables delivery of guaranteed bandwidth and services to your full service territory. MALC-XP delivers standard lifeline POTS to subscribers, then encodes voice traffic as carrier-class VoIP for transport over a resilient Gigabit Ethernet network. Integrated Emergency Stand-Alone (ESA) capabilities allow the MALC-XP to continue to provide local voice service in the event of a network disruption.

Triple Play Services

MALC-XP includes high-performance packet processing with advanced IP capabilities to deliver secure, reliable, and efficient voice, data, and video services. Now service providers can offer compelling bundles of multi-line voice, high-speed Internet access, and multi-set IP video (including HDTV) over their existing copper infrastructure.

Optical or Copper Transport

MALC-XP provides dual 100/1000Mbps uplinks, supporting both copper and fiber, to provide simple cost-effective transport. The dual GigE ports allow daisy-chained linear or ring deployments, and on rings the MALC-XP provides standards-based RPR support to ensure < 50msec restoration in the event of a ring fault.

End-to-End Access Management

The easy-to-use Zhone Management System (ZMS) provides OSMINE-certified management and provisioning across the access network, from CPE to the Central Office. The MALC-XP is fully remote managed, allowing carriers to reduce service turn-up intervals, reduce truck rolls, and ultimately, improve customer service.

Technical Specifications

Dimensions

- 1.72in H x 17.31in W x 9.61in D
- 4.37cm H x 43.97 cm W x 24.41 cm D

Weight

- 20lbs (9kg)

Power

- DC: -43.75V to -62V
- Optional AC and Line Power Supplies

Interfaces

- Uplink Interfaces:
 - (2) 100/1000Mbps Ethernet (Copper or, Fiber) SFP slots
- Subscriber Line Interfaces:
 - 48 ADSL2+ (ITU G.992.5 A/B/M)
 - (2) 50-pin connectors for local loop DSL and POTS connections
- Serial craft interface
- Alarm Relay connections
- Narrowband Test Control and Access Ports

Standards Support

- ANSI T1.413 Issue 2
- G.994.1 (G.handshake)
- G.997.1 (physical layer management)
- G.992.1 (full-rate G.dmt)
- G.992.3 (ADSL2) Annex A
- G.992.5 (ADSL2+) Annex A, Annex M

Voice Support

- MGCP (RFC 3435) signaling
- SIP (RFC 3261) signaling
- G.711 encoding with G.168 echo cancellation
- G.729 with G.711 fallback
- T.38 Fax Relay (SIP/MGCP*)
- Hybrid signaling support
- Loopstart and groundstart

Protocol Support

- IP host and gateway support
- RIP v1 (RFC 1058) RIP v2 (RFC 2453)
- RFC 1483/2684 encapsulation
- DHCP server (RFC 2131, 2132), DHCP Relay with Option 82
- Bridging 802.1D support
- VLAN 802.1p/q support
- Dense / sparse multicast support, IGMPv2
- Integrated access control and content protection
- PPPoA to PPPoE Interworking, PPPoE Intermediate Agent
- RADIUS Authentication
- IEEE 802.3ad Link Aggregation*

Management

- In-band IP
- Out-band IP over 10/100BT Ethernet or V.24 RS-232 serial for async terminal
- ZMS (Zhone Management System) via SNMP v2c for GUI and CORBA IDL machine interface
- Embedded Web Graphical Interface
- Command Line Interface (CLI)

Bandwidth/Distance

- Data rates provisionable up to 24Mbps
- Distances up to 24,000ft/7,320m

Regulatory Compliance

- Safety: UL 60950-1, CSA C22.2 No. 60950-1, AS / NZS 3260, TS 001
- Emissions: FCC Part 15 Class A, ICES-003 Class A, EN 55022A
- Immunity: NEBS GR-1089-Core level 3, EN 55024, EN 55082-1, T1.601-1992
- Environmental: NEBS GR-63-Core level 3, ETS 300 019-2-x, ISTA
- Network Certification: FCC Part 68, CTR-12, CTR-13, DOC CS-03, TSO 16, GR-57

Operating Requirements

- Operating Temperature: -40°F to 149°F (-40°C to 65°C)
- Storage temperature: -40°F to 158°F (-40°C to 70°C)
- Humidity: Up to 85%, non-condensing
- Altitude: -200ft to 16,500ft (-60m to 5,000m)

Ordering Information

Models

MALC-XP-150A	48 port 1U MSAP with ADSL2+, Annex-A and VoIP POTS
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Accessories

XP-AC-SUPPLY	Raptor/MALC XP AC Power Supply, 90-264 VAC, 48 VDC, 150W
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XP-CO-LP-SHELF	Raptor/MALC XP Line Power CO Shelf 40-60VDC IN, +/- 190VDC OUT, w/ 24 channels
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XP-RT-LP-UNIT	Raptor/MALC XP Line Power RT Unit +/- 190VDC IN, 40-60VDC OUT, w/ 5 channels
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Z H O N E

Zhone Technologies, Inc.
@ Zhone Way
7001 Oakport Street
Oakland, CA 94621
510.777.7000 phone
www.zhone.com

For more information about Zhone and its products, please visit the Zhone Web site at www.zhone.com or e-mail info@zhone.com

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