

## Compact, High-Performance 1U MSAN/MDU ONU

- ✓ *Triple-Play Services in a 1U Multi Service Access Node (MSAN)*
- ✓ *48 Port VDSL2 17a (with ADSL2+ fallback) with VoIP POTS*
- ✓ *Vectoring support to increase data rates and distance (rate and reach) over the same copper facility*
- ✓ *SLMS family member supporting industry-leading multimedia traffic management*
- ✓ *First in family featuring of 8-port bonding capability*
- ✓ *Environmentally Hardened*
- ✓ *Full-Featured VoIP: MGCP, SIP, SIP-PLAR, H.248*

The DASAN Zhone MXP-1648 provides next generation MSAN and MDU ONU features in a compact, hardened form-factor that makes it easy and cost-effective to deliver uncompromised triple play services throughout serving area. Models are available with 48VDSL2 17a Ports with integrated, full featured VoIP POTS (MGCP, SIP, SIP-PLAR, H.248).

Offering double the port density in the same form factor as the MXP-160, this MXP family product is designed for easy configuration and management via built-in Web Graphical Interface. It's compact design allows easy deployment in remote cabinets and space constrained central offices.

Vectoring support is featured on the MXP-1648 family, providing best in class speeds and increases the loop length of the clients served by utilizing board-level noise mitigation and cancelling.

The MXP-1648 offers two Active Ethernet uplink interfaces. The Fast/Gigabit Ethernet interfaces on MXP family products can be configured as linear, ring, or aggregated links.

DASAN Zhone's MXP-1648 VDSL2 solution offers full-rate VDSL2 17a performance for packet-based service delivery. This low-power, fully programmable, high performance solution enables service providers to cost-effectively generate additional revenue through their triple-play offering, including the different iterations of video services emerging in the marketplace. As an end-to-end solution, DASAN Zhone offers VDSL2 CPE and CO products to offer high-speed, long reach and low cost solutions for multi-tenant and multi-dwelling unit (MxU), remote terminal and CO deployments.

### **Ease of Management**

MXP-1648 provides simple yet powerful management facility via embedded Web GUI along with complete NMS integration.

### **Triple Play Services**

MXP-1648 includes high-performance packet switching 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.

MXP-1648 is defined by its ease of use and packet processing/switching capability to support rich triple-play services on each subscriber port.

### **Optical or Copper Transport**

MXP-1648 provides two SFP + 10Gigabit Ethernet uplinks, supporting both copper and fiber, to provide simple cost-effective transport. The two 10GigE ports allow for daisy-chained linear or ring deployments, and on rings the MXP-1648 provides standards-based EAPS support.

### **End-to-End Access Management**

The easy-to-use DASAN Zhone Management System (ZMS) provides OSMINE-certified management and provisioning across the access network, from CPE to the Central Office. The MXP-1648 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 17.32in W x 9.06in D
- 4.37cm H x 43.99 cm W x 23.02 cm D

### Weight

- 10lbs (4.53kg)

### Power

- DC: -43.75V to -59.90V (Dual/Redundant Inputs)
- Optional AC and Line Power Supplies

### Interfaces

- Uplink Interfaces:
  - MXP-1648
  - (2) SFP+ 10G Ethernet
- Subscriber Line Interfaces:
  - 48 VDSL2 17a (ITU-T G.993.2) / POTS (VoIP)
  - (2) Telco RJ11 50-pin connector
- Serial craft management interface
- 10/100BT management interface
- Alarm Output & Input connections
- Port Status LEDs
- MELT Metallic Testing Capabilities

### Standards Support

- ITU-T G.993.2 (VDSL2)
- VDSL2 Bonding
- ITU-T G.992.5 (ADSL2+) Fallback
- ADSL2+ Bonding
- SELT/DELT
- ITU-T G.984 (GPON)
- IEEE 802.3 Ethernet
- IEEE 802.1p
- IEEE 802.1Q
- IEEE 802.w
- IEEE 802.3ad

### Voice Support

- MGCP (RFC 3435) signaling
- SIP (RFC 3261) signaling
- MEGACO/H.248 signaling
- G.711 encoding with G.168 echo cancellation
- G.729 with G.711 fallback
- T.38 Fax Relay
- Integrated Emergency Stand-Alone (ESA)
- Hybrid signaling support
- Loopstart and groundstart

### Protocol Support

- IP host and gateway support
- EAPs RFC3619 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
- RSTP 802.w support
- Link Aggregation and LACP 802.3ad support
- Dense / sparse multicast support, IGMPv2
- Integrated access control and content protection
- RADIUS Authentication

### Management

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

### Bandwidth/Distance

- Data rates provisionable up to 100Mbps symmetrical

### Regulatory Compliance

- Safety
  - CSA 22.2 No. 60950-1
  - EN 60950-1
  - IEC 60950-1
  - UL 60950-1
- EMC Emissions
  - FCC Part 15 Class A
  - EN 55022 Class A
  - ICES-003 Class A
  - VCCI Class A
- EMC Immunity
  - EN 300 386 v1.4.1
- Environmental
  - ETS 300 019-2-x
  - ISTA Transportation and Handling

### 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

MXP-1648	MXP 48-PORT VDSL2, VOIP/POTS, 2 SFP+ 10GigE, -48V DC (REQUIRES SFPS)
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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-AC-SUPPLY-ISO-EU	RAPTOR/MALC XP AC POWER SUPPLY, 90-264 VAC, 48 VDC, 3.12A, 150W, 0-50C, PROVIDES GROUND ISOLATION.
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**Zhone Technologies, Inc.**

7195 Oakport Street  
Oakland, CA 94621

1 510.777.7000

[www.zhone.com](http://www.zhone.com)

**For more information about Zhone and its products, please visit the Zhone Web site at [www.zhone.com](http://www.zhone.com) or e-mail [info@zhone.com](mailto:info@zhone.com)**

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