



MXK Terabit Access Platforms

Truly Scalable Solutions for High-Bandwidth Applications

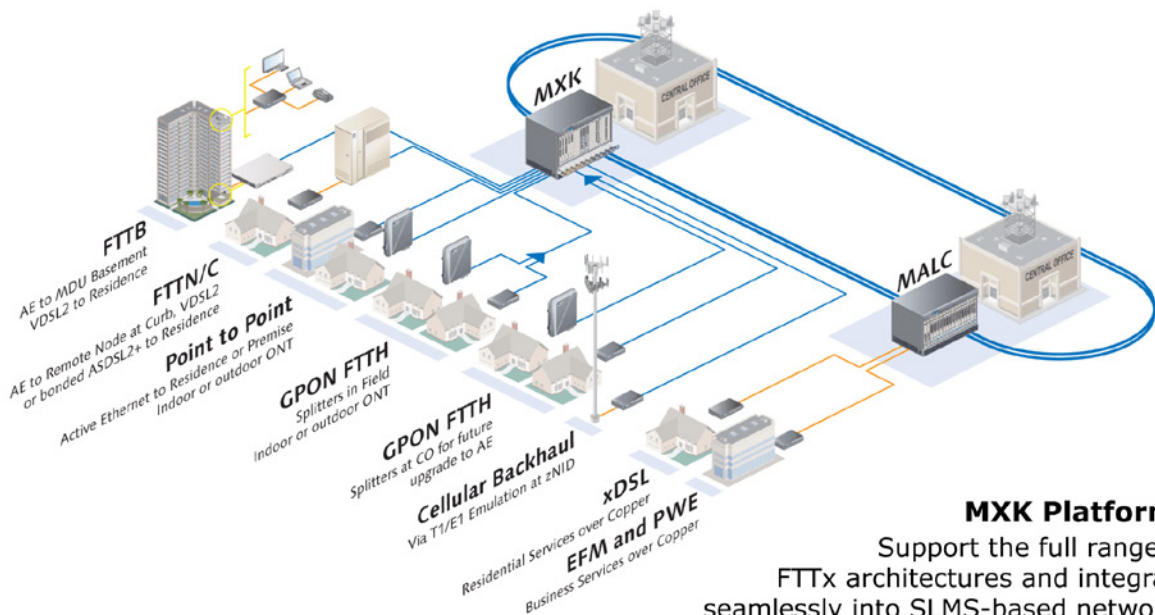
Demands on access networks are increasing at an accelerating rate, requiring a clean-sheet approach to a truly scalable multiservice architecture. Zhone's MXK™ intelligent terabit access concentrator reflects this new approach, with non-blocking capacity of up to 3,600 100 Mbps GPON subscribers or 360 1 G Active Ethernet subscribers per chassis. Beyond sheer bandwidth, MXK platforms leverage Zhone's well-proven SLMS access operating system for sophisticated service intelligence, to guarantee high quality of experience for subscribers, along with ease of management to address rising costs of network operation.

The MXK delivers these fundamental advances in access networking while meeting the full spectrum of baseline carrier-class requirements for multiservice hardware and software. For residential triple play and high-bandwidth business services over any FTTx architecture, the MXK solution sets a new performance benchmark for the industry.

The MXK family offers a wide range of options for FTTx solutions. It supports Active Ethernet and GPON line cards, and interoperates with indoor and outdoor ONTs. Supporting Active Ethernet and GPON on the same chassis allows service providers to configure their networks with maximum flexibility and efficiency, using a combination of GPON splitters and dedicated fibre connections.

Features and Benefits

- Unmatched scalability, with initial 400G backplane and non-blocking 20 G to every slot
- Superior intelligence and security with proven SLMS access operating system software
- Intuitive, comprehensive management, with CLI, WebUI, ZMS, and new Smart OMCI
- Flawless delivery of multiplay services over any FTTx or MSAP architecture
- Industrial temperature hardened



MXK Platforms
Support the full range of FTTx architectures and integrate seamlessly into SLMS-based networks

MXK Terabit Access Platforms

MXK Chassis

The MXK family includes three fully-integrated form factors: 319 (19" rack x 3RU, with 7 slots for line cards), 819 (19" rack x 8RU, with 14 slots for line cards), and 823 (23" rack x 8RU, with 18 slots for line cards). The chassis support both front and rear power options and are equipped with a cable management tray, easy fan access, and redundant power feeds.

MXK Uplink Cards

MXK uplink cards offer a mix of multiple 10G and 1G interfaces to suit a variety of network designs. Several configurations are currently available, including 2 x 10 G + 8 x 1 G, 8 x 1 G, 6 x 1 G, 4 x 1 G, and a low cost copper 4 x 1 G-CU uplink. These cards support both copper and fibre SFPs, link aggregation, link redundancy, and the EAPS ring interface.

MXK Line Cards

The MXK platform supports GPON and Active Ethernet line cards for FTTX applications as well as seamless, same-chassis support of MSAN services including ADSL2+, VDSL2, G.SHDSL EFM, POTS and T1/E1 PWE.

The 8-port GPON OLT line cards provide standards-based support of 2.5 Gbps downstream and 1.25 Gbps upstream bandwidth. The largest DATASHEET MXK: Intelligent Terabit Access Concentrator MXK chassis can support up to 9,216 ONTs using Class B+ or C+ optics.

The Active Ethernet line cards provide up to 360 ports per chassis of 100/1000 BT copper or 100/1000 Mb fibre-based services. Operators can use a wide variety of SFPs on the same card.

SLMS

Zhone's SLMS (Single Line Multi-Service) access operating system provides intelligent functionality across all the company's hardware products. Driven by 8 years of experience in commercial operation and collaboration with 700+ service providers worldwide, Zhone's SLMS delivers functionality critical to today's access networks in advanced networking, quality of experience, voice, security and management.

Security

To maintain tight security in the last mile, the MXK platform mounts considerable defenses, powered by all of Zhone's SLMS security features, including multicast control lists, secure bridging, broadcast suppression, dynamic IP filtering, SSH and SFTP, and RADIUS authentication.

Management

The MXK product line integrates fully into the Zhone Management System (ZMS). Using ZMS, thousands of MXK nodes can be managed from remote locations. Customer provisioning, auto discovery, alarm aggregation, and maintenance can easily be performed without any service interruption.

MXK Terabit Access Platforms

Smart OMCI

Unlike vendors who have dodged the complexity of the ITU's G984.4 standard for GPON ONT management, Zhone provides a simple and clean interface to a fully standards-compliant OMCI implementation. Zhone's Smart OMCI™ approach allows the MXK OLT to interoperate with any vendor's ONT, yielding rapid ONT and service extension without OLT software upgrades. With Smart OMCI you can configure, obtain stats and support alarms on any ONT without hassle.

Technical Specifications

DIMENSIONS	ZHN- MXK 319	3U: 13.3 x 43.8 x 28.3 cm, Line Cards: 7; front card access	
	ZHN- MXK 819	8U: 35.5 x 43.8 x 28.3 cm, Line Cards: 14; front card access	
	ZHN- MXK 823	8U: 35.5 x 53.8 x 28.3 cm, Line Cards: 18; front card access	
POWER		DC: -43.75V to -62V Dual (A / B redundant) power feeds	
INTERFACES		MXK-UPL-2x10G-8x1G-C:Uplink with 2 x 10 G and 8 x 1 G Ethernet Ports MXK-UPL-8x1G:Uplink with 8 x 1 G Ethernet Ports MXK-UPL-8x1G:Uplink with 6 x 1 G Ethernet Ports MXK-UPL-4X1G:Uplink with 4 x 1 G Ethernet Ports	
STANDARDS SUPPORT		Bridging 802.1D VLAN 802.1Q with 802.1p Multicast IGMP v2 and v3 (Snooping, proxy) ITU G.984.1- 984.4 OMCI IEEE 802.3ah IEEE 802.3ad LACP DHCP Relay RSTP EAPS	
MANAGEMENT	Unit Level	Terminal for Command Line Interface (CLI) - Web GUI-based Management	
	Network Level	ZMS (Zhone Management System) via SNMP v2c for GUI, with CORBA IDL or XML OSS Gateway machine interface for OSS integration Fully ITU standards-compliant Smart OMCI implementation for ONT management	
REGULATORY COMPLIANCE	Safety	UL 60950-1; CSA 60950-1; EN 60950-1	
	Emissions	EN 55022A*; PART 15A (FCC)	
	Immunity	GR-1089-CORE, Issue 3*; SR-3580, Issue 1*; ATT-TP-76200, Issue 14*; VZ.TPR.9205, Issue 3*	
	Environmental	GR-63-CORE, Issue 3*	
OPERATING REQUIREMENTS	Ambient operating temperature	-40°C to +65°C	
	Relative operating humidity	up to 85% (non-condensing) GR-487 compliant Designed for outside plant deployment	
UPLINKS & LINE CARDS	Uplinks	2 x 10 G Ethernet + 8 x 1 G Ethernet 8 x 1 G Ethernet 6 x 1 G Ethernet 4 x 1 G Ethernet	
		Optical Based Line Cards	8 Port GPON OLT 20 Port Active Ethernet (High Performance/High Density options) OC3/STM1

*In process

MXK Terabit Access Platforms

Ordering Information

PART NUMBER	DESCRIPTION
MXK Chassis	
ZHN-MXK-CHASSIS-819	8U, 19" Rack, 14 line-card slots, 2 uplink
ZHN-MXK-CHASSIS-823	8U, 23" Rack, 18 line-card slots, 2 uplink
ZHN-MXK-CHASSIS-319	3U, 19" Rack, 7 line-card slots, 2 uplink
Uplink Controllers	
ZHN-MXK-UPL-2x10G-8x1G-C	Uplink with 2 x 10 G and 8 x 1 G Ethernet Ports
ZHN-MXK-UPL-8x1G	Uplink with 8 x 1 G Ethernet Ports
ZHN-MXK-UPL-6X1GE-C	Uplink with 6 x 1 G Ethernet Ports wClock
ZHN-MXK-UPL-4X1G	Uplink with 4 x 1 G Ethernet Ports
Line Cards	
ZHN-MXK-GPONX8-IO3-5Y	GPON Line Card with 8 OLT Ports, SFP based
ZHN-MXK-AEX20-FE/GE-2S	Active-Ethernet Line Card with 20 SFP based Ports
ZHN-MXK-AEX20-FE/GE	Single Slot Active-Ethernet Line Card, SFP based, supporting 20 customers
ZHN-MXK-AEX20-FE/GE-CSFP	MXK Active Ethernet Line Card supporting 20 customers, 100/1000 MBPS, CSFP MSA compliant
Accessories	
ZHN-MXK-UPLINK-BLANK	Blank End Panel to cover unused Uplink Slot
ZHN-MXK-BLANK-ENDPANEL	Blank End Panel to cover unused Line Slot
ZHN-MXK-FANTRAY-823	REPLACEMENT FANTRAY ASSY for MXK 823 CHASSIS
ZHN-MXK-FANTRAY-819	REPLACEMENT FANTRAY ASSY for MXK 819 CHASSIS
GPON SFPs	
ZHN-MXK-GPON-SFP-B+-RSSI	MXK GPON SFP B+ OPTICS, Supports Digital RSSI; USES SC/UPC Connector
ZHN-MXK-GPON-SFP-C+-RSSI	MXK GPON SFP C+ OPTICS, Supports Digital RSSI; USES SC/UPC Connector (REQ. SW 2.1.2XX or higher)
SFPs & XFPs	
ZHN-MXK-10GE-SFP+-SR	SFP+, Short Reach Optics 300 m, 10 G Ethernet, 850 nm
ZHN-MXK-10GE-SFP+-20KM-1310	SFP+, Long Reach Optics 20 km, 10 G Ethernet, 1310 nm
ZHN-MXK-10GE-SFP+-40KM-1550	SFP+, Long Reach Optics 40 km, 10 G Ethernet, 1550 nm
ZHN-MXK-10GE-XFP-80KM-1550	XFP Long Reach (80 km), Singlemode, 1550 nm, DUPLEX LC/UPC, Supporting 10 GBPS ETHERNET; I-TEMP
ZHN-SFP-GE-SX-850-DLC	SFP GE SX (1000 MBPS) TX 850 nm RX 850 nm up to 500 m W/ DUPLEX LC Connector IND TEMP
ZHN-SFP-GE-LX-1310-DLC	SFP GE LX (1000 MBPS) TX 1310 nm RX 1310 nm up to 10 km W/ DUPLEX LC Connector IND TEMP
ZHN-SFP-GE-EX-1310-DLC	SFP GE EX (1000 MBPS) TX 1310 nm RX 1310 nm up to 40 km W/ DUPLEX LC Connector IND TEMP
ZHN-SFP-GE-ZX-1550-DLC	SFP GE ZX (1000 MBPS) TX 1550 nm RX 1550 nm up to 80 km W/ DUPLEX LC Connector IND TEMP
ZHN-SFP-GE-BX-1310-SLC	SFP GE BX (1000 MBPS) TX 1310 nm RX 1490 nm up to 10 km W/ SIMPLEX LC Connector IND TEMP
ZHN-SFP-GE-BX-1490-SLC	SFP GE BX (1000 MBPS) TX 1490 nm RX 1310 nm up to 10 km W/ SIMPLEX LC Connector IND TEMP
ZHN-SFP-GE-BEX-1310-SLC	SFP GE BEX (1000 MBPS) TX 1310 nm RX 1550 nm up to 40 km W/ SIMPLEX LC Connector IND TEMP
ZHN-SFP-GE-BEX-1550-SLC	SFP GE BEX (1000 MBPS) TX 1550 nm RX 1310 nm up to 40 km W/ SIMPLEX LC Connector IND TEMP 2012
ZMS	
ZHN-ZMS-NMS-TR1	ZMS TIER 1 LIC. (1-5K); client/server SW W/CONFIG, Fault, Real-Time Stats & Diag Funct & Oracle DB
ZHN-ZMS-NMS-TR1-STNDBY	ZMS Cold Standby Tier 1 LIC. (1-5K); ZMS and Oracle Database, requires purchase of ZMS-NMS-TR1
ZHN-ZMS-NMS-TR2 ZMS	TIER 2 LIC. (1-50K); client/server SW W/CONFIG, Fault, Real-Time Stats & Diag Funct & Oracle DB
ZHN-ZMS-NMS-TR2-STNDBY	ZMS Cold Standby Tier 2 LIC. (1-50K); ZMS and Oracle Database, requires purchase of ZMS-NMS-TR2
ZHN-ZMS-NMS-TR3	ZMS Tier 3 LIC. (50K+); client/server SW W/CONFIG, FAULT, REAL-TIME STATS & DIAG FUNCT & ORACLE DB
ZHN-ZMS-NMS-TR3-STNDBY	ZMS Cold Standby Tier 3 LIC. (50K+); ZMS Aand Oracle Database, requires purchase of ZMS-NMS-TR3
ZHN-ZMS-NMS-OSSGW	ZMS OSS Gateway CORBA IDL interface. Requires corresponding version of ZMS NMS
ZHN-ZMS-NMS-XML-OSSGW	ZMS OSS Gateway XML interface. Requires corresponding version of ZMS NMS