M1500

Mobile AnyHaul Switch/Gateway for 4G/5G Services

The M1500 is carrier Ethernet switch designed for mobile backhaul networks with 10 Gigabit capacity and rigid quality-of-service and security needs.

Features & Benefits

+ Six 10GGE optical Interfaces (SFP/SFP+)

+ Ethernet OAM 802.1ag and Y.1731

+ SNMPv1/v2/v3 with RMO, Alarms

+ Improved QoS and differentiated traffic service

+ RADIUS, TACACS+ Authentication•

+ TWAMP Reflection function

+ IEEE1588v2TC/BC, Synchronous Ethernet

+ IP65 with fan-less design

The M1500 is a Packet Transport Network (PTN) device which supports 6 100/1000Base-X (SFP) interfaces and 2 100/1000Base-T (RJ45) interfaces. The M1500 can be used for a variety of new, revenue-generating applications, such as a L2 Ethernet LAN switch in high rise buildings or as a datacenter application and aggregation switch. It can be used for various application scenarios as a mobile AnyHaul switch for the mobile, business, and residential markets (2G, 3G, 4G, LTE and/or IP/ MPLS). With low power consumption and high service scale, the M1500 is optimized for small aggregation and remote point-of-presence (POP) applications providing amazing deployment flexibility and efficiency.

The M1500 has forward facing interfaces with management and console ports located on the front panel. The M1500 provides fixed DC power which is fed to the M1500 via DC type of power connectors on the front panel

Extraordinary Capacity and Flexibility

The M1500 provides the capacity and flexibility needed to support the transport requirements of next generation mobile networks, as well as a wide range of network architectures. With 10Gigbit switching capacity and fixed 6-port 100/1000Base-X (SFP) interfaces and 2-port 100/1000Base-T (RJ45) interfaces, the M1500 provides Layer 2 switching, Ethernet switching and carrier-class functionalities. Applications include Virtual local area network (VLAN) and Link Aggregation Control Protocol (LACP) in compliance with IEEE 802.3ad.

Network Timing and QoS

Using the optional Clock Module interface the M1500 offers timing services allowing mobile clocking synchronization from the core of the network. For the M1500, QoS-based forwarding prioritizes traffic into a number of classes and marks the packets accordingly. Different quality of service settings can be provided to each class. The rich QoS capabilities enable network managers to protect mission-critical applications and support differentiated level of bandwidth for managing traffic.

Enhanced Security Features

The M1500 supports client authentication protocol, RADIUS (Remote Authentication Dial-In User Service) and TACACS+ (Terminal Access Controller Access Control System Plus). Not only is the user IP and password registered in switch but also authentication through RADIUS server and TACACS+ server enhancing the security of the system and network management. Other security features include storm control for broadcast, multicast and unknown unicast packets, out-of-band management, and Secure Shell (SSH) support.

Features, Protocols, Interfaces

Capacity

+ 512MByte Flash
+ 512MByte DDR3 SDRAM
+ Max. 120Gbps switching capacity base on full duplex
+ Main switching block in Base board with fixed I/O Interface

Interfaces

+ 6-port 10GBase-R optical Interfaces
+ 1-port of RS-232 Interface for Console Debug mode (RJ45)
+ 1-port of 10/100/000Base-TX Management (RJ45)

Multicast

+ IGMPv1/v2/v3
+ IGMP snooping

Layer 2 Capabilities

+ Standard Ethernet Bridging
+ 802.1Q VLAN
+ 802.1ad Q-in-Q over Ethernet OAM
+ VLAN stacking/translation
+ 16K MAC address entries
+ Spanning tree: STP, RSTP, MSTP
+ 802.3ad Link aggregation
+ Jumbo frame 9k
+ Port mirroring
+ IEEE 802.1ag (Except LM/DM)
+ ITU-T Y.1731

QoS

+ IP ACL, MAC ACL
+ Scheduling mode – SP, WRR, DWRR
+ DSCP and Cos marking
+ SrTCM / TrTCM

Clock Synchronization

+ IEEE 1588v2 Transparent Clock (TC) and Boundary Clock (BC)

Security

+ Storm control
+ DoS attack protection
+ RADIUS/TACACS+ authentication
+ CPU traffic protection
+ Out-of-band management
+ Secure Shell (SSH)

Traffic Management

+ Serial/Telnet (CLI)
+ SNMPv1/v2/v3
+ DHCP client, relay
+ Single IP management
+ RMON
+ Syslog

Regulation and Compliance

+ IEC/EN 62368-1
+ UL 62368-1
+ CE Mark
+ CISPR 32
+ FCC Part 15B / + ICES-003
+ MEF Certification (Ready)
  >E-Line/EV-Line
  >E-LAN/EV-LAN

Physical & Environmental Specifications

Dimensions ((W x H x D)	280 x 44 x 190 (mm)	DC power	-37 to - 57 VDC, Nominal -48 VDC
Weight	1.9 kg	Maximum power consumption	Max 31W (with 10GBase-ZR)
Operating temperature	-20°C ~ 65°C	Service i/f	6 x 1/10GBase-R (SFP/SFP+)
Storage temperature	-40~158°F (-40~70°C)	Serial i/f, CLI	RS232 (RJ45)
Operating humidity	0 to 90 % (non-condensing)	Ethernet i/f for MGMT	10/100/1000Base-T (RJ45)

Ordering Information

Base Unit	
M1500	6-port 10GBase-R
	Flash 512MB & 1GB DDR4 SDRAM
	1-port 10/100/1000Base-T Management interface
	-48VDC Input Power - 2-pin Molex Connector

SFP/SFP+ Modules	
1GE Optical Module	
SFP-GE-SX	Wavelength: 850 nm / Distance: 550 m / Mode: Multimode
SFP-GE-LX	Wavelength: 1310 nm / Distance: 20 km / Mode: single-mode - Connector: LC / Data rate: 1.25 Gbit/s / Core type: Dual Core
SFP-GE-ZX	Wavelength: 1550 nm / Distance: 80 km / Mode: single-mode - Connector: LC / Data rate: 1.25 Gbit/s / Core type: Dual Core
SFP-GE-BX1A	Wavelength: 1310 nm FP Tx / 1550 nm Rx - Distance: 10km SMF - Connector: LC / Data rate: 1.25 Gbit/s / Core type: Single Core
SFP-GE-BX1B	Wavelength: 1550 nm DFB Tx / 1310 nm Rx - Distance: 10km SMF - Connector: LC / Data rate: 1.25 Gbit/s / Core type: Single Core
SFP-GE-BX4A	Wavelength: 1310 nm DFB Tx / 1550 nm Rx - Distance: 40km SMF - Connector: LC / Data rate: 1.25 Gbit/s / Core type: Single Core
SFP-GE-BX4B	Wavelength: 1550 nm DFB Tx / 1310 nm Rx - Distance: 40km SMF - Connector: LC / Data rate: 1.25 Gbit/s / Core type: Single Core
SFP-GE-BX8A	Wavelength: 1490 nm DFB Tx / 1550 nm Rx - Distance: 80km SMF - Connector: LC / Data rate: 1.25 Gbit/s / Core type: Single Core
SFP-GE-BX8B	Wavelength: 1550 nm DFB Tx / 1490 nm Rx - Distance: 80km SMF - Connector: LC / Data rate: 1.25 Gbit/s / Core type: Single Core
10GE Optical Module	
SFPP-10GE-SR	Wavelength : 850nm / Distance : 300m / Mode : Multimode Connector : LC / Data rate : 10.3125 Gbit/s / Core type : Dual Core
SFPP-10GE-LR	Wavelength : 1310nm / Distance : 10Km / Mode :Single-mode Connector : LC / Data rate : 10.3125 Gbit/s / Core type : Dual Core
SFPP-10GE-ER	Wavelength : 1550nm / Distance : 40Km / Mode :Single-mode Connector : LC / Data rate : 10.3125 Gbit/s / Core type : Dual Core
SFPP-10GE-ZR	Wavelength : 1550nm / Distance : 80Km / Mode :Single-mode Connector : LC / Data rate : 10.3125 Gbit/s / Core type : Dual Core
SFPP-10GE-BR1A	Wavelength: 1270 nm DFB Tx / 1330 nm Rx - Distance: 10km / LC
SFPP-10GE-BR1B	Wavelength: 1330 nm DFB Tx / 1270 nm Rx - Distance: 10km / LC
SFPP-10GE-BR4A	Wavelength: 1270 nm DFB Tx / 1330 nm Rx - Distance: 40km / LC
SFPP-10GE-BR4B	Wavelength: 1330 nm DFB Tx / 1270 nm Rx - Distance: 40km / LC
SFPP-10GE-BR8A	Wavelength: 1490 nm DFB Tx / 1550 nm Rx - Distance: 80km / LC
SFPP-10GE-BR8B	Wavelength: 1550 nm DFB Tx / 1490 nm Rx - Distance: 80km / LC
Copper SFP	
Copper SFP	1.25 Gigabit Ethernet over Cat 5 Cable Distance : 100m / Connector : RJ-45