MetroStar™ modules   MCM1000X

Managed SFP 1000Base-T/SX/LX Module Converter

The MCM1000X module provides conversion from a 1000Base-T, Multi-Mode 1000Base-SX, Single Mode 1000Base-LX GBE link, or CWDM/DWDM link to 1000Base-T/1000Base-SX/LX GBE link or CWDM/DWDM link, allowing extension of up to 120km.

The MCM1000X is based on the 3R technology: optical signals from one port are converted to digital electrical signals, fully retimed, repeated, reshaped and then converted again to the second SFP port. The module is designed for use with SFP (Small Factor-factor Pluggable) optical modular transceivers.

The MCM1000X provides reliable and robust conversion, advanced control /diagnostic features and management.

Selective Fault Propagation from port 1 to port 2 and vice-versa allows link status forwarding.

Each port provides separate and various LED indications for monitoring and enhanced diagnostics. The device supports SLE (Subscriber Link Emulation) to enhance network resilience.

When the link remote partner is a GSM1000X (enabled MA device), the SLE feature allows real time notification of the remote user failure while maintaining the fiber link and the MA management is maintained active and operational.

The MA™ (Micro Agent) is an on chip management system enabling the management of remote access devices eliminating the need of an SNMP agent and IP address.

When the MCM1000X is connected through a F/O link to a remote device that is MA™ enabled, a comprehensive set of monitoring and controlling functions are implemented on the remote device. The module has MA management capability for each port separately, thus each port may be connected to a remote CPE. Like other MetroStar modules, the MCM1000X is fully SNMP managed and MA enabled: it manages remote enabled devices. All MetroStar modules are hot swappable and equipped with two self-clinching screws for easy and safe module insertion and removal. A special LED indicates that the module is well inserted in its slot and "alive" even before links are connected.

Key Features

- Versatility- different interfaces (1000Base-T/SX/LX) on both ports
- SFP (Small Form-factor Pluggable) optical interfaces
- MA™ management for each SFP port
- Feasible installation – desktop, shelf or wall-mount
- 1000X –Auto-Negotiation is supported for each F/O port
- Fault Propagation-total network resilience
- Local and Remote Loop-Back Test –enhanced diagnostics
- SLE for enhancing network resilience
- Rate Limiting (0-1000Mbps- 10Mbps step increment)
- RMON statistics and utilization
- Jumbo frames (10K Fiber link, 9.2K Copper port)
- RFU (Remote Firmware Upgrade) and OFC (Offline Configuration Facility)

Management Functions

Module status: Port type, Link and Signal Detect (SD) status, Port's enable/disable, A/N On/Off, Pause (Flow Control) On/Off, Loop back On/Off (P1, P2), SLE (Up/Down) On/Off, BW (Up/Downstream), End to End SLE modes, FP modes (P1>P2 and P2>P1) and Remote device status

SFP modules status: (Port #, Part #, Type (TP, MM, SM, SM-SFS), Range, Tx/Rx Wavelength, S/N)

SFP module digital diagnostics status: (Rx/Tx optical power, temperature, Tx bias current, supply voltage)

Module control: Display Module status, Port1/port2 control, Enable/Disable End to End SLE, Enable/Disable Fault Propagation, Restore module defaults

Link management: Loop-back test, invoke Remote device menu

Port control: display port status, SFP status, enable/disable port, Set Pause/LB (loop-back) mode, Set SLE upstream/downstream), set bandwidth and restore port defaults,

Port statistics: display port's Tx or Rx counters, reset port's counters

Gigabit Ethernet

General Specifications

Standard Compliance
IEEE802.3 2000 edition, 1000Base-T,1000Base-SX,
1000Base-LX, IEEE802.3z, IEEEE802.3ab,
1000base-ZX, Flow control

Management
RS232/CLI or Telnet connection
MA™ management
HPOV plug-in and Alcatel Lucent 5620SAM GNE

Diagnostic LEDs
System LEDs: PWR-Power On (green)
　　　　　　MA1(green) MA port 1
　　　　　　FP (yellow) (P1>p2, P1>P2)
　　　　　　MA2 (green) MA port 2
SFP port 1 and 2 LEDs:
Link/Act (green) – Link and Activity
TX_LO(red)-lit = low power TX in SFP, blinking
when not authenticated
LB (red)- loop-back for designated port

Conversion Method
Digital 3R conversion
Features : Auto-Negotiation, Fault Propagation,
Loop-Back, and End to End SLE modes

Ports :
Simplex and Duplex LC connectors
SFP (Small Form -factor Pluggable)
MSA and SFF-8472 compliant

DIP switches (on board) :
Loop-Back (LB P1,LB P2) enable/disable
Fault Propagation ON/OFF (FO port 1>2 (FO port 2>1)
Auto-Negotiation for Port1and Port 2 (enable/disable)
Management commands override DIP switches setting

Ordering Information

Part #	Model	Description
2650	MCM1000X	Flexible Gigabit Ethernet conversion module for MetroStar with 2 SFP modular ports, each may accept any FibroLAN copper or fiber SFP transceiver, MA™ management

SFP optical modular interfaces

Part #	Model	Description
B248	SF1G-T	SFP (Small Form-factor Pluggable) GBE STP transceiver, 1000BaseT, shielded RJ-45, 100m over Cat.6 cable
B235	SF1G-S1	SFP GBE F/O transceiver, Duplex LC connectors, MM, 850nm, 220/550m
B236	SF1G-LX1	SFP GBE F/O transceiver, Duplex LC connectors, SM, 1310nm,10Km
B237	SF1G-LX2	SFP GBE F/O transceiver, Duplex LC connectors, SM, 1310nm, 20Km
B238	SF1G-LX3	SFP GBE F/O transceiver, Duplex LC connectors, SM, 1550nm/DFB, 40Km
B239	SF1G-LX4	SFP GBE F/O transceiver, Duplex LC connectors, SM, 1550nm/DFB, 80Km
B240	SF1G-LX5	SFP GBE F/O transceiver, Duplex LC connectors, SM, 1550nm/DFB/APD, 120Km
B241	SF1G-SF13	SFP, Single Fiber Strand　GBE F/O transceiver, Simplex LC connector, SM, 1310nmTx/1550nmRx, 20km
B242	SF1G-SF15	SFP Single Fiber Strand GBE F/O transceiver, Simplex LC connector, SM 1550nmDFB Tx/1310nmRx, 20km
B243	SF1G-LF13	SFP Single Fiber Strand GBE F/O transceiver, Simplex LC connector, SM 1310nmTx / 1550nmRx, 40km
B244	SF1G-LF15	SFP Single Fiber Strand GBE F/O transceiver, Simplex LC connector, SM, 1550nmDFB Tx/1310nm Rx, 40km
B308	SF1G-SF13C	SFP (Small Form Pluggable) Single Fiber Strand GBE F/O transceiver, LC connector, SM 1310nmTx / 1490nmRx, 20km, color code - Blue
B309	SF1G-SF14C	SFP (Small Form Pluggable) Single Fiber Strand GBE F/O transceiver, LC connector, SM 1490nm-DFB Tx / 1310nmRx, 20km, color Code - Violet
B269	SF1G-ZF49	SFP Single Fiber Strand GBE F/O transceiver, Simplex LC connector, SM, 1490nmDFB Tx/1570nm Rx, 80km
B270	SF1G-ZF57	SFP Single Fiber Strand GBE F/O transceiver, Simplex LC connector, SM, 1570nmDFB Tx/1490nm Rx, 80km
B271-to B278	SF2G-LX3-5C-XX	CWDM SFP, up to 2.5Gbps F/O transceiver, dual LC connector, SM, XX=1nm0, DFB, 40 km
B258-to B265	SF2G-LX4-5C-XX	CWDM SFP, up to 2.5Gbps F/O transceiver, dual LC connector, SM, XX=1nm0, DFB, 80 km
B281-XX	SF1G-LX5-5C-XX	CWDM SFP, 1.25Gbps F/O transceivers, dual LC connector, SM, Wavelength - 1xx0nm, DFB/APD, 100km
B311-XX	SF1G-LX6-5C-XX	CWDM SFP, 1.25Gbps F/O transceiver, dual LC connector, SM, XX=1nm0, DFB/APD,120Km
B299-XX	SF1G-LX4-5D-XX	DWDM SFP 1Gbps F/O transceiver, dual LC connector, ITU channel XX (29/31/33/35/37/51/53/55/57/59), DFB/APD, 80km

xx=(47=1470nm;49=1490nm;51=1510nm;53=1530nm;55=1550nm;57=1570;59=1590nm;61=1610nm)

Specifications are subject to change w/o prior notice