Typical Applications and Topologies

Managed GBE NTUs

Metro Core Network — SONET/SDH

Access and Aggregation

1000T/SX/LX

CWDM

UNI /Demarcation

GSM1000 — 1000T/SX/LX to 1000SX/LX C/E
U-CON 2500 — Universal Converter
MDX41-SFB/SA — CWDM Devices
FADM2/SA
GSM1010 — GBE C/E
ATARA1000 — Any to ANY GBE Redundancy Managed Devices
Falcon1+ — Multi Service Network Termination Unit
ATARA1000M

Customer Premises
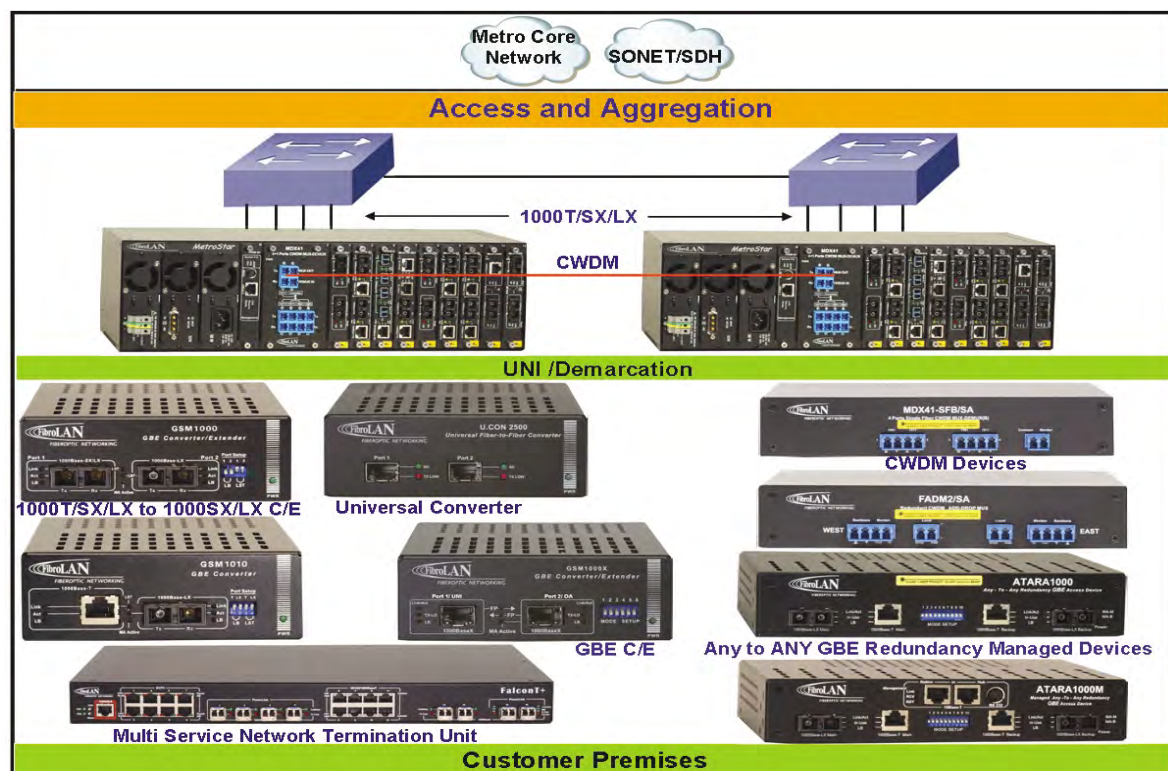
Carrier Miscellaneous Solutions

Business
Residential
SONET/SDH
Metro Core Network

Multi Service NTU
GbE
Eth.

CPE — H.CON/MA
FE
GbE
LTA41/MA
FE
FE+4E1/4T1
E1/T1 over Ethernet
nE1/T1 — LTA41-4E1
Backhaul wireless base stations

Customer Premises | **Access and Aggregation** | **Core**
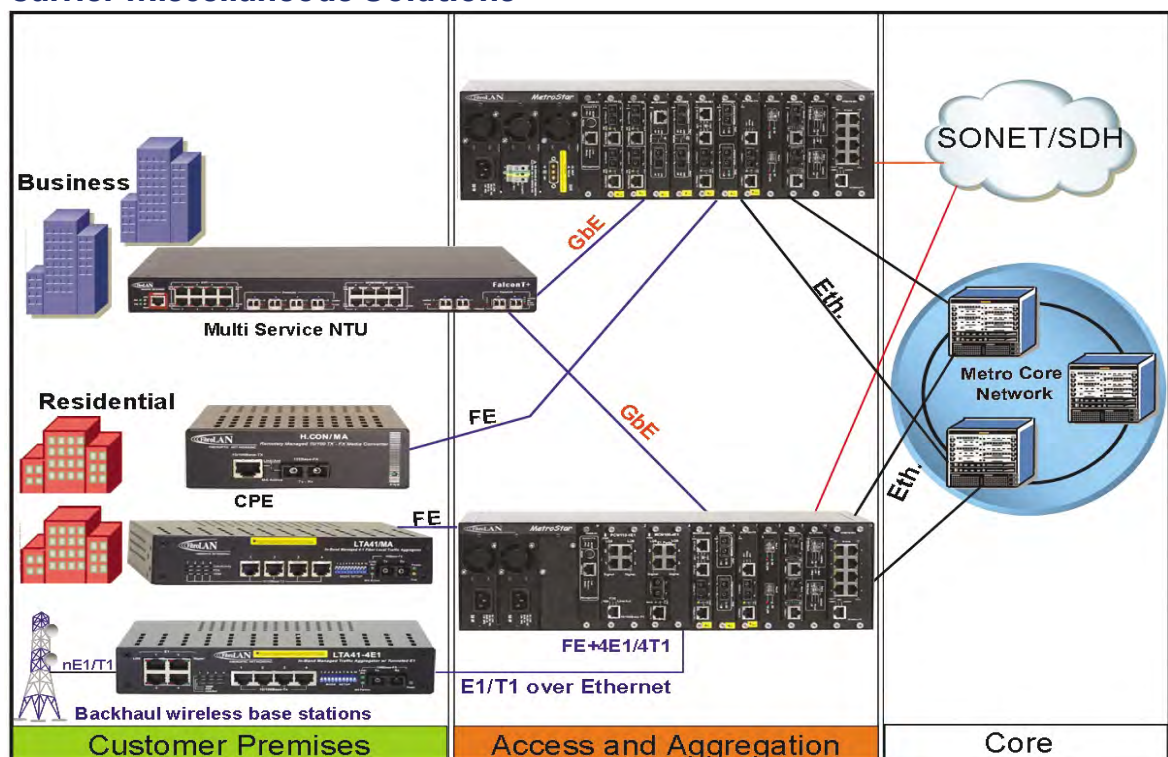
MetroStar™ equipped with a management module can be monitored and managed from any SNMP management station running popular management platforms (e.g. FibroLAN's *MetroView*, HP OpenView, SNMPc, etc)

10/100/155/622/1000/2500/10000 Mbps

Carrier Class Access Platform

The **MetroStar** System is a compact Multi Service Media Access Concentrator.
This Carrier Class 19" Rack-Mountable platform is a modular multi-slot and multi-channel Access Concentrator providing up to 48 access channels, housed in a 3RU chassis, yielding an unprecedented density factor of 16/1RU. It provides altogether 16 slots: 3 for power supplies, 1 (2) for the management modules and 12 for line interface modules (up to 4 user interfaces per module). All modules, connectors and indicators are located on the front panel for easy and space saving installation (including double back-to-back installation in cabinets). Its light weight allows installation by a single technician.
The **MetroStar** is normally equipped with dual load sharing power supplies while an additional slot allows the insertion of a third redundant power supply, thus increasing MTBF. All modules are hot swappable.

Even the cooling fans- integrated in the modular PS rather than fixed in the chassis, are hot swappable. All these result in record high MTBF and virtually zero MTTR.
Most of the modules are equipped with FibroLAN's MA™ technology, which allows comprehensive OAM of the link partners.
The management module provides full management of hundreds of users by a single SNMP agent. The optional cable organizer facilitates neat and safe deployment even in the densest configurations.
The **MetroStar** provides a comprehensive range of services for access, aggregation, transmission and extension of IP traffic (10/100/1000/2500/10000Mbps), with integrated TDM, SONET/SDH, and WDM support.
All these features make **MetroStar** the industry's most efficient Access Platform for FTTx applications, as well as for miscellaneous transmission scenarios.

Key Features

- Demarcation point between Service Providers' and Users' Networks
- Ethernet Service OAM to guarantee SLAs
- Versatile Carrier Ethernet Services
- Supported protocols: TDM/PDH, Ethernet, Fast Ethernet, ATM, Gigabit Ethernet, SAN (Fibre Channel and Escon) , SONET/SDH and 10GE
- Carrier Class – redundant PS,-48VDC PS, all modules (including fans) are hot-swappable. All modules and indicators are -front loaded, no active components on the back-plane and comprehensive alarming
- Cost effective WDM solutions

- TDM (E1/T1) over Ethernet support for backhauling wireless base stations
- Top Density: up to 48 F/O interfaces
- Largest variety of modules (10/100/155/1000/2500/10000Mbps)
- Covered distances: up to 150Km (for 200Mbps rate), 120Km (GBE)
- Light Weight, Space Saving
- MA™ support for remote management (IEEE 802.3ah compliant)- only one agent and one IP address to control hundreds of remote users
- Managed by *MetroView* Element Manager and by any standard SNMP platform

General Specifications

Slots
16 - 3 for Power Supplies, 1 (2) for management and 12 for interface modules (1, 2 or 4 channels each)

Management
Stand Alone and redundant modules , SNMP V1 &V2, Telnet, RS232, TFTP, CLI/Menus, RADIUS, NTP, Syslog
MetroView Element Manager

Power-Supplies
(2, third optional)
VAC, 50÷60Hz or 100 ÷ 240
-48VDC (-36 ÷ -72VDC) PS
Load sharing

Temperature
Operating: 0˚÷ +45˚C
Storage: -20˚ ÷ +80˚C

Safety
ICE EN60950-1:2001

NEBS
compliant

Cooling
Forced air, fans integrated in Power Supplies, hot swappable

OAM
Remote devices are managed via MA™ or IEEE 802.3ah

Power Consumption
120 Watts maximum

Humidity
10% ÷ 90% non-condensing

EMC
EN 300 386 V1.3.3:05

Weight
7 kg max. (fully loaded)

Dimensions
441x210x132mm

Ordering information

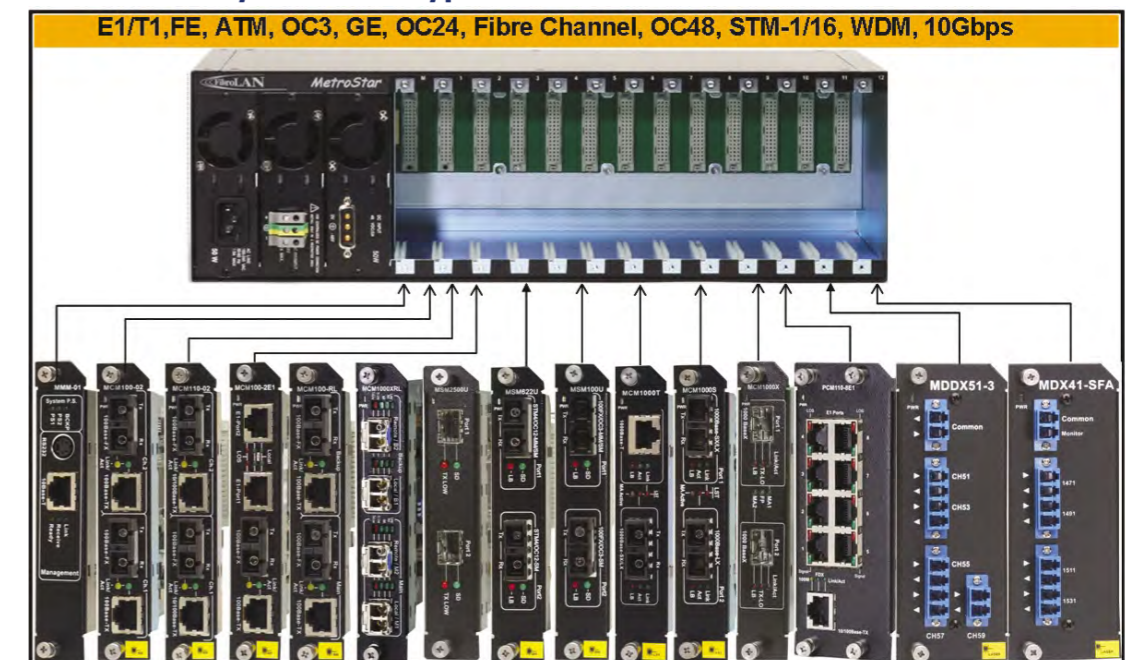|	
MS-CH/A	*MetroStar* Chassis, 3U, 16 slots, including 2 AC Power Supplies+6*BP-01, 1*BP-02, 19" Rack-mount bracket set
MS-CH/D	*MetroStar* Chassis, 3U, 16 slots, including 2 DC Power Supplies+6*BP-01, 1*BP-02, 19" Rack-mount bracket set
MS-CH/D/ST	*MetroStar* Chassis, 3U, 16 slots, including 2 DC Power Supplies (screw terminal connector), 6*BP-01, 1*BP-02, 19" Rack-mount bracket set
MS-CH/00	*MetroStar* Chassis, 3U, 16 slots,6*BP-01, 1*BP-02, 19" Rack-mount bracket set
BP-01/BP-02	Blank Panel for conversion module slots/ Power Supply slot
PMM	Power Monitor Module (installed in slot M in an unmanaged Metrostar chassis)
COT	Cable Organizer Tray
FPS5033A	Redundant power supply, 100 to 240VAC, 50 to 60Hz
FPS5033D	Redundant power supply, D-type connector, -36 to -72 VDC
FPS5033D/ST	Redundant power supply, screw terminal connector, -36 to -72 VDC
MMM-01	SNMP management module
MCM100-01x	100TX-FX converter module, SC, ST, MTRJ, MM, SM, SFS, 1310/1550nm, up to 150Km, MA
MCM100-02x	Dual Channel 100TX-FX converter module, SC, ST, MTRJ, MM, SM, SFS, 1310/1550nm, up to150Km, MA
MCM110-01x	10/100TX-FX converter module, SC, ST,MTRJ, MM, SM, SFS,1310/1550nm, up to150Km, MA
MCM110-02x	Dual Channel 10/100TX-FX converter module, SC, ST, MTRJ, MM, SM, SFS, 1310/1550nm,up to 150km, MA
ACM110-12xx	2:1 - 2 LC connectors to 1 100TX Aggregating converter module, SM 1310nm, 15/25km, MA
ACM110-14xx	4:1 4 LC connectors to 1 100TX Aggregating converter module, SM 1310nm, 7/15/25km, MA
MSM100U	MM to SM,SFS 100FX/ATM/OC3 Conversion module, 2*SC, up to150Km
MSM100U-SME	100FX/ATM/OC3 SM to SM Conversion module, 2*SC, 7/7, 7/25, 40/40, 100/100Km
MSM2500U	Universal Extender module, 100 Mbps to 2.5 Gbps,includes 2 SFP slots, use SFP transceivers (SFxG series)
MCM1000T-xx	1000BaseTX to 1000BaseSX/LX (10/20/40/80/120km) Conversion Module, SFS-20/40Km,MA
MCM1000S/L-yy	1000Base-SX/LX to 1000Base-LX (10/20/40/80/120km) Conversion/Extender Module, 2*SC, MA
MCM1000X	Flexible Gigabit Ethernet conversion module with 2 SFP modular ports, each may accept any FibroLAN copper or fiber SFP transceiver, MA or IEEE 802.3ah (E-OAM)
MCM100-xE1/T1	Single Channel 100Base-TX to FX converter and one/two or four tunneled E1/T1, RJ48, MM, SM, Dual SC connectors, 2/7/15/25/40/70/100Km, MA management
PCM110-xE1/T1	Inverse PDH Multiplexer, transporting 10/100 TX over 4/8 E1/T1 channels; 1+4/8 RJ-45 ports, Dual slot module
MCM100-RL	Redundant Link 100Base-TX to FX converter, MM,SM, 2 duplex SC+2 RJ45 connectors, 2/7/15/25/40/70/100km, MA
MCM1000X-RL	Any to Any link protection Gigabit Ethernet conversion module for MetroStar with 4 SFP modular ports, each may accept any FibroLAN copper or fiber SFP transceiver, MA
WDM modules	Refer to WDM Solutions Data Sheet
MCM100-01LF3-Cxx	CWDM single channel 100Base-TX to 100base-FX, 15xxnm, Access/Conversion module, 40Km, 2 duplex SC, MA (xx- 1470-1610nm)
MCM100-4E1SMC8xx	Single Channel 100Base-TX to FX converter and 4 tunneled E1, RJ45, SM, CWDM, WV=1xx1nm, 80Km, Duplex SC, MA
MCM1000xZXxCWW	CWDM 1000T/SX/LX to 1000ZX 1470-1590nm range, 40/80Km, 2*Duplex SC, MA

Specifications subject to change w/without prior notice

Typical Applications and Topologies

Basic Topology

MetroStar System and typical Modules

E1/T1,FE, ATM, OC3, GE, OC24, Fibre Channel, OC48, STM-1/16, WDM, 10Gbps

Managed FE NTUs