FibroLAN

MetroStar™ modules PCM110-8T1

PDH Multiplexer

10/100Base-TX to 8T1 channels Protocol Converter Module

This module transports Ethernet (10/100Base-TX) over 4 or 8T1 circuits.
This Inverse PDH Multiplexer module allows carriers and enterprises to utilize their existing PDH infrastructure for delivering modern Ethernet services.
The T1 channels form a Point-to-point Ethernet virtual connection. FibroLAN's advanced algorithms provide an unprecedented throughput of up to 13Mbps (small frames over 8T1 channels).
The Remote Loop back feature (enabled through management for each T1 port) is for enhanced diagnostics (verification of the T1 Links integrity).
The front panel diagnostic LEDs provide an easy way to monitor status and activity of each port.
The Fault Propagation feature is available from the T1 ports to the Ethernet port: failure of all T1 ports will cause the shut down of the adjacent Ethernet TP Link port.

The Ethernet RJ-45 port supports Auto-Negotiation, Autocross, Rate limiting, and Flow Control.
The Subscriber Link Emulation (**SLE**) has an End to End functionality: failure of the Ethernet TP link port will cause the disconnection of the remote PCM110-4/8T1 Ethernet TP port (and vice-versa).
The rate limiting mechanism provides the carrier with a tool to ensure SLAs of Ethernet services.
Like other *MetroStar* modules, the PCM110-4/8T1 is fully SNMP managed. Both PCM110-4T1 and PCM110-8T1 module occupy 2 out of 12 available *MetroStar* slots.The PCM110-4T1/8T1 modules are hot swappable and equipped with four self-clinching screws for easy and safe module insertion and removal. A special LED indicates that the module is well inserted in its slots and "alive" even before links are connected. The module supports remote firmware upgrade and Offline Configuration Facility .

General Specifications

Standard Compliance: Ethernet
IEEE802.3u, 10Base-T, 100Base-TX
Flow Control

RJ-45 Port - 10/100 Base-TX:
Shielded, Auto-Cross, 100m over STP Cat 5 cabling
Auto-Negotiation and Flow Control
The TP port is by default in Auto-Negotiation mode
Speed and Duplex modes can be forced via DIP switches or management

Diagnostic LEDs:
Per module
PWR -Power ON/OFF
TP port (100Base-TX)
Link/Act: steady green=Link blinking = Activity (Tx,Rx)
FDX (green) when lit, otherwise HDX
100M (orange LED) when ON =100Mbps, Off=10Mbps
Per T1 channel
Signal (green), **LOS**(red, loss of Signal)

T1 ports
RJ45 connectors 100Ω , ShortHaul/Long Haul
Cable length may be selected through DIP slide switches or via management
Channels ordering: when two PCM110-4T1 or two 8T1are interconnected via a PDH/SDH network, these modules automatically determine the T1 channels connectivity and data synchronization

Frame Size/Throughput
Up to 1916 bytes
Ethernet throughput: up to 13Mbps (8xT1 channels)

Management:
SNMP,CLI ,Telnet via *MetroStar* Management module
FibroLAN *MetroView* management system

Features : Fault Propagation, Flow Control, Subscriber Link Emulation, Loop-Back, Port configuration and Ingress Rate Limiting (in steps of 32kbit)

Standards Compliance- T1
AMI/B8ZS line encoding/decoding
Output Power Waveforms meet ANSI T1.102
Jitter attenuation as per AT&T Pub 62411
LOS per ANSI T1.231
Unframed T1 transmission

DIP Slide switches (on board):
Tx Clock source selection (internal or external)
T1 Cable Length selection (0-655 ft)
Ethernet port Auto-Negotiation
Ethernet port 10/100 selection
Ethernet port Half/Full Duplex selection
All T1 ports Remote Loop Back enable/disable
Fault Propagation : 4T1/8T1 >TP (On/Off)
Enable/disable SLE Functionality
Management functions override DIP switches

Management Functions

Ethernet configuration: Display module status, Set A/N mode, Set Duplex mode, Set Data Rate, Set Pause mode (Flow control), Set 4/8T1>Eth FP mode, Set SLE mode, Set Ingress bandwidth, Restore module defaults.
T1 ports configuration: View status and configuration, enable/disable remote loop back (per T1 port), enable/disable transmitter, Enable/disable receiver, enable/disable TAOS on LOS, select encoding, restore default setting and selectable cable length.

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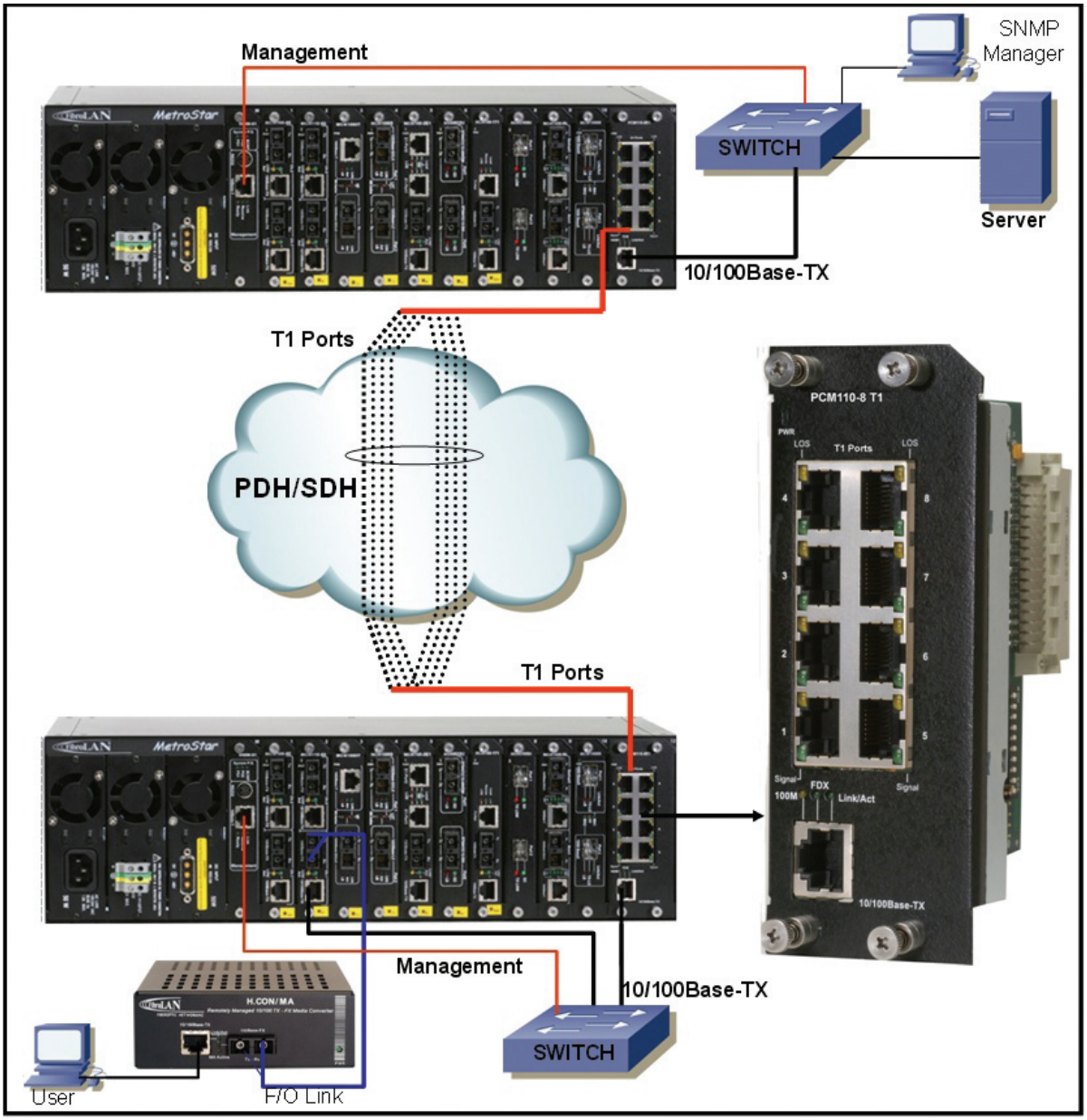
Typical Topology



A *MetroStar*™ system, loaded with 6x PCM110-4T1 or PCM110- 8xT1 conversion modules can connect 24 or 48 T1 channels.
The MMM-01 Management module installed in the MetroStar System will monitor, control and manage the modules installed in the MetroStar chassis and the remote devices. It will report alerts and traps to the SNMP Manager located in the Central Node.

MetroStar™ equipped with a management module can be monitored and managed from any SNMP management station running popular management platforms (e.g., HP OpenView, SNMPc, etc as well as FibroLAN's MetroView Device Manager)
In the above network, the SNMP Manager station is able to monitor and control both MetroStar ***chassis***

Ordering Information

2732	PCM110-4T1	Inverse PDH Multiplexer, transporting 10/100 TX over 4 T1 channels; 1+8 RJ-45 ports, dual slot module
2733	PCM110-8T1	Inverse PDH Multiplexer, transporting 10/100 TX over 8 T1 channels; 1+8 RJ-45 ports, dual slot module

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