

Gigabit TDM multiplexer

MICROSENS



Introduction

The MICROSENS Gigabit TDM is an optical time-division multiplexer that facilitates the transmission of voice and data at the same time. It connects one Gigabit Ethernet at full wirespeed and up to eight E1/T1 or one E3/DS3 connection over one 1.25Gbit/s fiber optical link. Additional formerly required leased lines for voice can be fully substituted.

Resulting from the power supply redundancy concept and the two mutually back-up fiber optic connectors to the line, a very high reliability is being achieved. Because of this, with MICROSENS Gigabit TDM devices, Carriers/Providers can offer highly available access solutions with low cost-to-performance ratio.

MICROSENS Gigabit TDM multiplexer can be used as an extension of MICROSENS CWDM system for further increasing bandwidth requirements resulted from rising amount of transferred data.

By implementing the cost-efficient CWDM technology MICROSENS sets in its modular WDM systems an optimal scalability together with lower initial costs. With this technology MICROSENS offers the possibility to cover data transmission rate of min. 20 Gbit/s on standard optical fibers.

Features

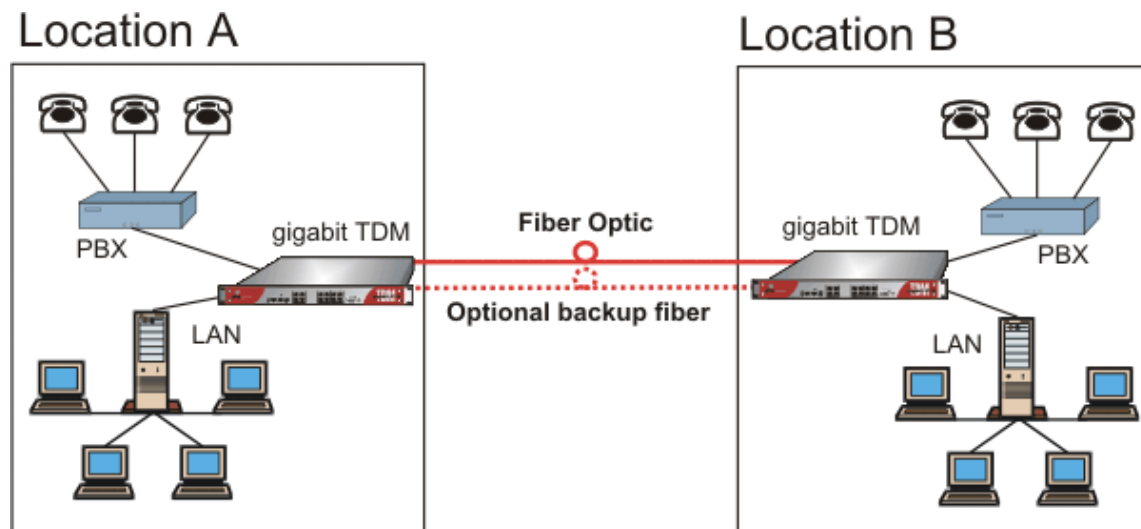
- TDM multiplexing of up to 8 x E1/T1 or 1 x E3/DS3 plus one Gigabit Ethernet transparent over fiber optics
- 4 x 10/100/1000Base-T integrated Ethernet switch VLAN and QoS support bandwidth limitation
- TDM traffic does not occupy Ethernet bandwidth on the link, wirespeed is still 1Gbit/s
- Redundant SFP module slot to the fiber for use with SM, MM oder WDM/CWDM transceivers
- Fully transparent to all signaling and protocols
- Onboard-Management via VT100-CLI, SNMP and Telnet
- Redundant Power Supply 100-240V AC or -48V DC
- Optimal expandability due to pluggable transceivers.
- Compact form, 19" chassis 1 RU

Applications

The main advantage of the multiplexer lies in the increasement of the capacity of existing fiber infrastructure, by bundling several services on a transmission fiber.

Application Examples:

- Point-to-point Ethernet-plus-TK connection over fiber
- Cross-Linking of two LANs with PBXs coupling
- Freespace optic connection of two buildings
- Last-Mile Ethernet access for Carriers/Providers



Management

The onboard-management in the multiplexer supports SNMP. After the installation the management can be configured over the RS-232 interface by means of a terminal.

The connection with the Ethernet network is made by one of the local RJ-45 sockets, which supports 10/100/1000Base-TX connections. The multiplexer is in-band-management-able. Thus all interconnected multiplexers can be managed at the same time over the TDM distance likewise over this local RJ-45 socket. The Ethernet port allows a connection of an end device and with a 1:1 patchcable can be connected to a hub or switch. The automatic rate adjustment with the receiving station is made by the integrated Autonegotiation function.

SNMP (Simple Network Management Protocol)

Standardized protocol for the integration of the equipment management in standard management platforms e.g. HP open View or IBM Tivoli.

The access to the internal data structures of the equipment is made by the Management Information Base (MIB-II).

In order to make an access over SNMP to the components data possible, the integration of the data structure of the MIB into the network management is necessary. The structure of the MICROSENS MIB can be loaded by HTTP download from MICROSENS Web Manager. The MIB file is in the ASCII format.

TELNET

All equipment functions can be configured and queried also via a local serial terminal. This terminal is available over the network port management by means of Telnet protocol.

TFTP

The integrated software management of the agent is put down in a Flash ROM. It can be updated by TFTP download over the network at any time.

Further detailed information on the operation and configuration of the onboard-management can be found in the system 'Installation and Operation Manual'.

Technical data

Type	MICROSENS TDM multiplexer for transparent transmission of 8 x E1/T1 or 1xE3/DS3 plus Gigabit Ethernet channel over one fiber optic line	
Local line	<p><i>TDM Data Rates E1/T1</i></p> <p>Four/eight Interface Ports with 1,544 Mbit/s at T1 or 2,048 Mbit/s at E1</p> <p><i>TDM Data Rates E3/DS3</i></p> <p>One Interface Port with 34.368 Mbit/s at E3 or 44,736 Mbit/s at DS3</p> <p><i>Ethernet</i></p> <p>Integrated Ethernet Switch with 4 x 10/100/1000Base-T, Auto Negotiation, MDI / MDI-X, VLAN, QoS, Rate Limiting, RMON-MIB</p>	
Main line	<p><i>SFP connector</i></p> <p>Multimode 62.5/125 or 50/125 µm, Single Mode 9/125 µm duplex, LC connector</p> <p><i>WDM/CWDM/DWDM SFP connector,</i></p> <p>Single Mode 9/125 µm simplex/duplex, SC/LC-connector</p>	
Bandwidth	1,25 GBit/s	
LED displays	<p><i>Power1</i></p> <p><i>Power2</i></p> <p><i>Lnk</i></p> <p><i>Lnk1</i></p> <p><i>Lnk2</i></p> <p><i>TDM</i></p> <p><i>Sync</i></p>	<p>Multiplexer operational</p> <p>Redundant power supply active</p> <p>BNC Link (E3/T3)</p> <p>FO Link 1</p> <p>FO Link 2</p> <p>TDM active</p> <p>Synchronisation active</p>
	<p><i>TP-Ports integrated LED's:</i></p> <p><i>LED's green</i> Twisted Pair-Link</p> <p><i>LED's amber</i> Twisted Pair-Transmission</p>	
Management	VT100-CLI, SNMP Config and Monitoring, Telnet-CLI, Power and Status LEDs, Software Update via TFTP	
Diagnostics	Several loop modes, BERT Generator/Test	
Power supply	00..240 V AC, 50..60 Hz, max. 90 W or 48 VDC, max. 90 W	
Operating temperature	0°C to 40°C	
Storage temperature	0°C to 50°C	
Rel. humidity	5% to 90% non condensing	
Dimensions	19" 1HU, depth 260mm	

Ordering information

Article no.	Description	Connectors
MS419781-x	4 x E1/T1 switchable, 4 x 10/100/1000Base-T, 2x Gigabit Ethernet SFP Slot	4x RJ45 4x RJ45 2x SFP slot 1x DB9
MS419782-x	8 x E1/T1 switchable, 4 x 10/100/1000Base-T, 2x Gigabit Ethernet SFP Slot	8x RJ45 4x RJ45 2x SFP slot 1x DB9
MS419783-x	1 x E3/DS3 switchable, 4 x 10/100/1000Base-T 2x Gigabit Ethernet SFP Slot	2x BNC 4x RJ45 2x SFP slot 1x DB9
x – 1, 2, 3	Power supply option: 1 – 1x 100-240V, european plug 2 – 1x 100-240V, US plug 3 – 1x 48 V DC	

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