E1/IP-Multiplexer
for Voice and Data Transmission over Packet Switched Networks

MICROSENS

Introduction

Ethernet, MPLS and IP are changing the economics of data services delivery, bringing simplicity with lower cost to both Carrier and Enterprise users. The E1/IP-Multiplexer takes advantage of this infrastrucutre to help carriers deliver high revenue leased line services such as E1/T1 as well as serial interfaces like V24, V35, X21 and RS530. The E1/IP-Multiplexer is also ideal for the enterprise looking to reduce network expenses without compromising features of their existing PBX and TDM equiqment. This evolutionary approach maximizes investment protection by running all TDM traffic – irrespective of protocols or signaling – transparently over Ethernet/MPLS/IP networks.

The original traffic is reconstructed and the clocking is regenerated at the destination. Transparent connectivity over the PSN maintains all features and functionality of the legacy network. The E1/IP-Multiplexer therefore provides seamless migration of a variety of legacy services to packetswitched networks, with full support for legacy equipment such as Class 4 and 5 switches, PBXs and TDM multiplexer.

Optical line transmission is available using the fiber optic option, which is ideal for laser link applications. This allows simultaneous transmission of up to 4x E1/T1 or serial data of up to 8Mbps and approx. 90Mbps of Ethernet data via freespace optic (FSO).

Configuration and maintenance of the E1/IP-Multiplexer are simplified via VT100, Telnet and SNMP management. QoS and VLAN tagging are supported. The single channel converter and 4-channel multiplexer are fully compatible. Various applications like single end point or multipoint connections are possible.

Highlights

- Multiplexing of up to 4 x E1/T1 (structured/ unstructured) or 4 x RS530 (X.21, V.24, V.35, V.36) over IP networks
- Data rate from 56/64 kbps up to 1544/2048 Mbps
- Additional Ethernet interface for cascading or for connecting a local network
- Optional Fiber Optic Interface
- Available as 4-channel multiplexer or single-channel endpoint unit/converter
- Fully transparent to all signaling and protocols
- Integrated Management via VT100, SNMP and Telnet
- Power Supply 100-240V AC or -48V DC

Applications

- Connecting E1/T1 PBXes over IP Networks
- Tunneling of classic synchronous data streams through IP
- Point-to-point Ethernet+PBX Connection over Fiber or FSO
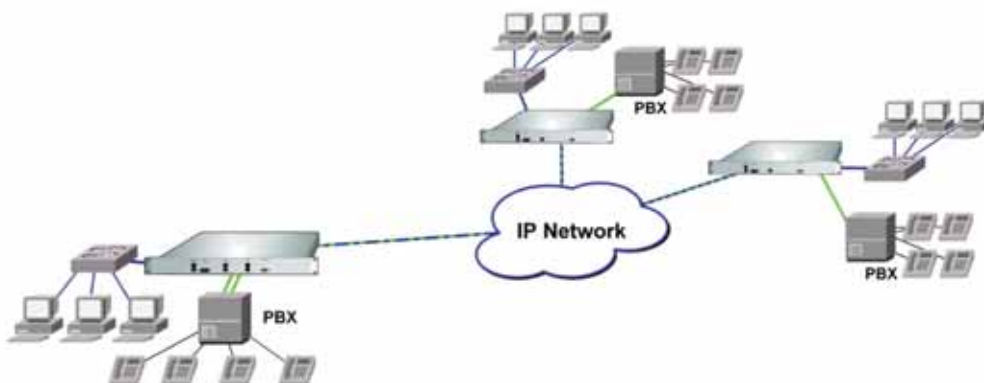- Last-Mile Service for Telcos or Carriers/Providers

Fig.1 : Multiplexer Application with one Multiplexer and two Converter connecting 3 PBXs on different Locations over an IP Network
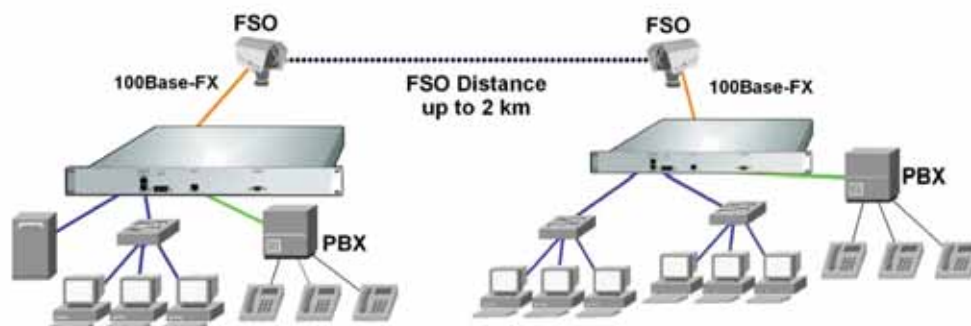
Fig. 2: Local Networks and PBXe connected over Freespace Optic (FSO)

Management

After the installation of the unit the management can be configured via the RS-232 interface by means of a PC or a terminal.

The connection with an Ethernet network can be realized via one of the local RJ-45 sockets, which supports 10/100Base-TX. The "inband management" of the Multiplexer. Allows that all interconnected multiplexers can be managed simoultaneously via the optical link. The Ethernet port allows a connection of an end device and with a 1:1 patchcable, which can be connected to a hub or switch. The automatic rate matching with the connected station is handled by the integrated Autonegotiation functionality.

SNMP (Simple Network Management Protocol)
Standardized protocol allows the integration of the equipment into standard management platforms e.g. HP open View or IBM Tivoli.

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

TFTP
The integrated software management of the agent is stored 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

G.703 E1/T1 Interfaces	T1 unstructured, D4, ESFwith 56 Kbps - 1.544 Mbps E1 unstructured, Framed, CRC with 64 Kbps - 2.048 Mbps, RJ45 Connector
RS530 Interfaces	RS530, X.21, V.24/RS232, V.35, V.36/RS449 with 56 Kbps 2.048 Mbps in multiples of 56 and 64 Kbps,DB-25 Connector
Ethernet Interfaces	2 x 10/100/Base-T, Auto Negotiation, MDI / MDI-X, RJ45 Connector
Optional Fiber Line	Various Types and Wavelengths, 100Base-FX, SC Connector
GHMoIP Transmission	Ethernet/IP Routable Data Stream with Jitter Integration and Timing Recovery, VLAN and QoS supported
Management	VT100 and Telnet Config,SNMP Config and Monitoring, Power and Status LEDs (E1/T1),Software Update via TFTP
Diagnostics	Local/Remote Loop, BERT, Generator/Test on each Interface

Clock Modes	Internal, External, Adaptive
Power Supply	100 - 240V AC or -48V DC
Mechanical	19" 1HE, Depth 260 mm
Environmental	Temperature 0-40°C, Humidity max. 90% non-condensing

Ordering information

Article no.	Description	Connectors
MS419761-x	E1/IP-Multiplexer 1xE1/T1 2x10/100Base-T	1xRJ45 2xRJ45 1xDB9
MS419766-x	E1/IP-Multiplexer 1xRS530 2x10/100Base-T	1xDB25 2xRJ45 1xDB9
MS419771-x	E1/IP-Multiplexer 4xE1/T1 2x10/100Base-T	4xRJ45 2xRJ45 1xDB9
MS419776-x	E1/IP-Multiplexer 4xRS530 2x10/100Base-T	4xDB25 2xRJ45 1xDB9
x – 1, 2, 3	Power supply option: 1 – 1x 100-240V, european plug 2 – 1x 100-240V, US plug 3 – 1x 48 V DC	