Ethernizer E-313SA, E-313SA-I
TDM to IP Protocol Converter

Technical Data Sheet

Microtel innovation

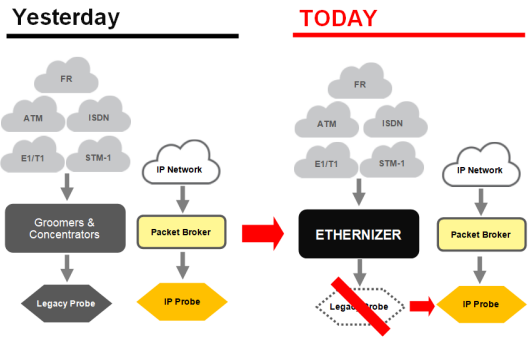
Product Description

E1/T1 to SIGTRAN Protocol Converter

Telecom Operators are migrating from Legacy network infrastructures to more scalable, flexible and efficient Internet protocol (IP) networks, to support the new IP services.

As this migration is not so fast and easy, due to technical and budget constraints, operators are currently handling a mixed architecture TDM & IP, both for links and monitoring probes.

Microtel's Ethernizer enables to monitor the whole infrastructure using IP probes, saving money in future investment and optimizing the whole monitoring system.

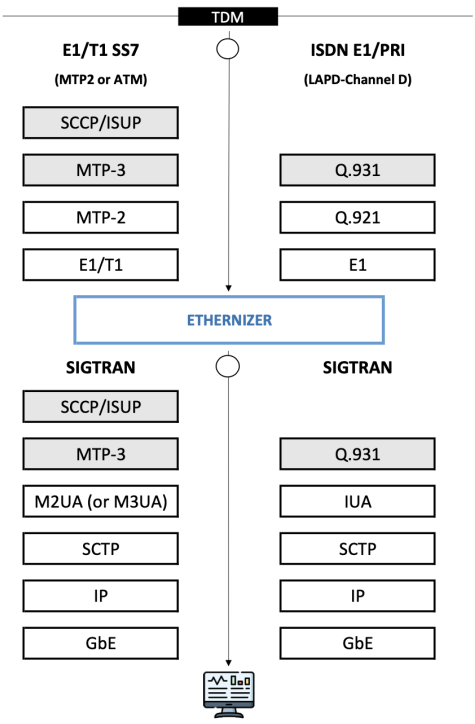


Key features

- **Convert SS7 Signalling to SIGTRAN (MTP2 to M2UA, MTP2 to M3UA or ATM to M2UA). Product: E-313SA**
- **Convert ISDN E1/PRI (LAPD-Channel D) to SIGTRAN (IUA) Product: E-313SA-I**
- **Interface with TDM E1/T1 links (HSL&LSL) at physical level**
- **Perform signalling translation to IP protocol, forwarding the converted IP packets to local and/or remote IP monitoring tools, through 1 Gb/s output interfaces**
- **Different source/destination IP addresses can be assigned to each SIGTRAN stream (1024 streams for each input module), providing aid to IP probes for SS7 link-sets identification**
- **L2GRE/NVGRE tunnel encapsulation, to backhaul converted IP packets to remote tools**
- **Support Layer 1 and Layer 2 alarms through SNMP traps: E1/T1 LOS (Loss of Signal), LOF (Loss of Frame), AIS (Alarm Indication Signal) & RAI (Remote Alarm Indication), SS7 Link Activity Alarm.**
- **CLI and GUI available for system configuration, management and alarms status monitoring. Import/export of "csv files" is supported for easy mapping and configuration**

Highlights

- **No need for legacy probes: IP probes can interface TDM links thanks to Ethernizer, which converts SS7 Signaling to SIGTRAN or ISDN E1/PRI to SIGTRAN**
- **No additional remote IP probes are required: SIGTRAN traffic can be delivered to centralized IP tools, using L2GRE tunnel encapsulation**
- **Fully compliant with SIGTRAN standard, no need to customize the IP probe**
- **All information are captured from the TDM links, layer 1 and layer 2 alarms are available through SNMP traps**



Ethernizer E-313SA, E-313SA-I — Technical Specification

Input/Output Capabilities	
Input module (micro-ribbon)	**1 input module supporting up to 32 E1 (E-313SA / E-313SA-I)** **or** **1 input module supporting up to 32 T1 (E-313SA)**
Output ports	**2x1Gb/s Ethernet ports**
Management	
Management port	**1 x 10/100/1000 Mb/s with RJ45 connector**
Protocols	**IPV4, SNMPv1, HTTPS**
Statistics and Alarms	**Real time statistics and counters available for each input/output port** **SNMP alarms**
Transceiver type	
Copper (SFP)	**1000 BASE-T**
Singlemode (SFP/SFP+)	**1000 BASE LX (1310nm)**
Multimode (SFP/SFP+)	**1000 BASE SX (850nm)**
Connection to the TDM network	
Connection types	**Connector panel** **Resistor panel (which inserts 20 db attenuation)** **Wire-wrap**
Models of connector/ resistor panels	

BNC 32 circuits

RJ45 64 circuits

IDC 64 circuits

1.0/2.3 coax 64 circuits

Operating	Power	Dimensions
• **Operating temperature: 0°C to 45°C** • **Storage temperature: -20°C to 70 °C** • **Relative humidity: up to 90% not condensing**	• **220-110 Vac 50-60 Hz redundant hot swap power modules** • **48 Vdc redundant hot swap power modules** • **Max consumption: (fully equipped) 150 W (E-313SA/SA-I)**	• **Chassis 1U surface or 19" rack mount 482,6 mm W, 437 mm D, 44 mm H** • **Weight: (fully equipped) 6 Kg(13.3 lbs)**

Ethernizer E-313SA, E-313SA-I — Ordering Information

E-313SA-16E-2G*	Ethernizer 1U, 19" rack mount including: 1 input module with 16 E1 MTP2 (32 Rx), with 2 Micro Ribbon front connectors . Output: 2x1G Ethernet rear ports with SFP cages, SFP not included. Requires 1 CP/RP (KM/NM/BM/JM type)
E-313SA-32E-xHyA*	Ethernizer 1U, 19" rack mount including: 1 input module with 32 E1 (64 Rx), with 2 Micro Ribbon front connectors Input module may be MTP2 (x=1, y=0) or ATM (x=0, y=1) / Output: 2x1G rear ports with SFP cages, SFP not included
E-313SA-16T-2G*	Ethernizer 1U, 19" rack mount including: 1 input module with 16 T1 MTP2 (32 Rx), with 2 Micro Ribbon front connectors. Output: 2x1G Ethernet rear ports with SFP cages, SFP not included.
E-313SA-32T-xHyA*	Ethernizer 1U, 19" rack mount including: 1 input module with 32 T1 (64 Rx), with 2 Micro Ribbon front connectors Input module may be MTP2 (x=1, y=0) or ATM (x=0, y=1) / Output: 2x1G rear ports with SFP cages, SFP not included
E-313SA-I-32E-2G**	Ethernizer 1U, 19" rack mount including: 1 input module with 32 E1 ISDN PRI (64 Rx), with 2 Micro Ribbon front connectors. Output: 2x1G rear ports with SFP cages, SFP not included
PS1-3/160-AC	Redundant power supply AC
PS1-5/160-DC	Option: unit with redundant power supply DC
E-313SA-L16E	Ethernizer E313SA, capacity licence to enable additional 16 E1 input ports,
E-313SA-L16T	Ethernizer E313SA, capacity licence to enable additional 16 T1 input ports
E-313SA-L-ATM	Ethernizer E313SA, capacity licence to enable ATM protocol conversion.
SFP-GT/J	SFP-GT/J 1000 BASE-T Copper with RJ-45 connector
SFP-GS/L-24	SFP-GS/L-24 1000 BASE SX (850nm) Multimode with LC connector
SFP-GL/L-23	SFP-GL/L-23 1000 BASE LX (1310nm) Single Mode with LC connector

* Includes software licence for protocol conversion from SS7 (MTP2 or ATM) to SIGTRAN (M2UA or M3UA)
** Includes software licence for protocol conversion from ISDN E1/PRI (LAPD-Channel D) to SIGTRAN (IUA)

Connector and Resistor Panel — Ordering Information

CP-32-BM-75-F	Connector Panel with 32 connectors (16E1), 75 ohm BNC coax connectors (DDF side) and Micro Ribbon connector (monitor side) + 1 multiwire cable (Micro Ribbon-Micro Ribbon, 2 meters); 1U, 19".Flat mounting Brackets.
CP-64-JM-120-F	Connector Panel with 64 connectors (32E1/E1), 100-120 ohm RJ45 (DDF side) and Micro Ribbon connector (monitor side) + 2 multiwire cables (Micro Ribbon-Micro Ribbon, 2 meters), 1U, 19".Flat mounting Brackets.
CP-64-KM-120-F	Connector Panel with 64 connectors (32T1/E1) ,100-120 ohm IDC termination (DDF side) and Micro Ribbon connector (monitor side) + 2 multiwire cables (Micro Ribbon-Micro Ribbon, 2 meters); 1U, 19".Flat mounting Brackets.
CP-64-NM-75-F	Connector Panel with 64 connectors (32E1), 75 ohm 1.0/2.3 coax (DDF side) and Micro Ribbon connector (monitor side) + 2 multiwire cables (Micro Ribbon-Micro Ribbon, 2 meters); 1U, 19".Flat mounting Brackets.
RP-32-BM-75-F	Resistor Panel with 32 connectors (16E1) Protected Monitoring points, 75 ohm BNC coax connectors (DDF side) and Micro Ribbon connector (monitor side) + 1 multiwire cable (Micro Ribbon-Micro Ribbon, 2 meters); 1U, 19".Flat mounting Brackets.
RP-64-JM-100-F	Resistor Panel with 64 connectors (32T1), 100 ohm RJ45 (DDF side) and Micro Ribbon connector (monitor side) + 2 multiwire cables (Micro Ribbon-Micro Ribbon, 2 meters), 1U, 19".Flat mounting Brackets.
RP-64-JM-120-F	Resistor Panel with 64 connectors (32E1), 120 ohm RJ45 (DDF side) and Micro Ribbon connector (monitor side) + 2 multiwire cables (Micro Ribbon-Micro Ribbon, 2 meters), 1U, 19".Flat mounting Brackets.
RP-64-KM-100-F	Resistor Panel with 64 connectors (32T1) Protected Monitoring points, 100 ohm IDC termination (DDF side) and Micro Ribbon connector (monitor side) + 2 multiwire cables (Micro Ribbon-Micro Ribbon, 2 meters); 1U, 19".Flat mounting Brackets.
RP-64-KM-120-F	Resistor Panel with 64 connectors (32E1) Protected Monitoring points, 120 ohm IDC termination (DDF side) and Micro Ribbon connector (monitor side) + 2 multiwire cables (Micro Ribbon-Micro Ribbon, 2 meters); 1U, 19".Flat mounting Brackets.
RP-64-NM-75-F	Resistor Panel with 64 connectors (32E1) Protected Monitoring points, 75 ohm 1.0/2.3 coax (DDF side) and Micro Ribbon connector (monitor side) + 2 multiwire cables (Micro Ribbon-Micro Ribbon, 2 meters); 1U, 19".Flat mounting Brackets.
CM-32-M-W/8	Multiwire cable, Micro Ribbon-Wire Wrap, 8 meters
M-CONN-Male	Micro Ribbon Male Connector