



ENX-F

Synchronous Ethernet Network Device

- X ENX-F brings synchronicity to the edge of provider's network
- X ITU-T G.8261 etc., G.8271 etc., G.823
- X IEEE 1588v2 (PTP)
- X BITS (T3) input
- X 1pps and BITS (T4) output for sync of slave devices
- X Jumbo Frames (>10k) supported
- X Functions cover current and future access network requirements



The ENX-F is a smart and versatile access network device for Ethernet access links and expanded services, such reducing operating expenses and improving margins. It offers SyncE and Precision Time Protocol (PTP; IEEE1588) support to expand provider's clock-domain till the end-customer. Its functions cover current and future access network requirements and it enables efficient solutions through easy configuration, test and monitoring interfaces.

Introduction

ENX-F implements a fully managed demarcation function between customer network and service provider network. It monitors end-to-end connectivity and SLAs via its integrated test functionality.

ENX-F can derive SyncE from all ports and fulfils ITU requirements for jitter, wander and hold-over. For IEEE1588 it can operate as Boundary Clock (BC) and Ordinary Clock (OC). It provides accurate distribution of the PTP protocol across multi-port networks. As boundary clock it may be slaved to a master on one port and act as master on all other ports.

ENX-F offers independent interface and service control.

It incorporates Ethernet operations management according to Y.1731 (OAM functions), 802.1ag and 802.3ah (EFM), configuration management via HTML browser, via SNMP and SSH.

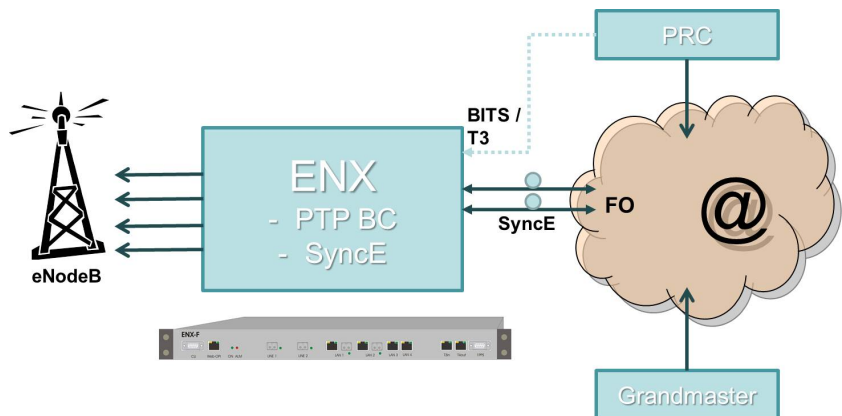
Features

- Implements a fully managed demarcation function between customer network and service provider network
- Fibre and copper Ethernet ports
- Offers built-in independent interface and service supervision
- Connectivity Fault Management
- Network management to monitor and manage
 - ⤿ HTML based WEB-OPI,
 - ⤿ Built-in SNMP-agent and
 - ⤿ SSH (CLI)
- In-band management capability
- Fan less solution at Rack-mountage and Desktop Units
- Redundant AC (110/230V) and DC power supply
- Compact design: 19"/1RU ("Pizza Box")



Application Example

Realisation of mobile back-hauling for next generation of eNodeB (LTE). The synchronous feature supports the extending demand for clock accuracy and phase alignment.



Technical Specifications

Network I/F (WAN)

- 1-2 x GigE Combo-Ports
 - ⤿ 1000BaseSX/LX/ZX/BX (SFP types)
 - ⤿ 10/100/1000 BaseT (RJ45)
 - ⤿ Auto Negotiation, Auto MDIX
 - ⤿ SyncE-Slave
 - ⤿ PTP Hardware Time-stamps

Service I/F (LAN/Customer)

- 4-5 x GigE Combo-Ports
 - ⤿ 1000BaseSX/LX/ZX/BX (SFP types)
 - ⤿ 10/100/1000 BaseT (RJ45)
 - ⤿ Auto Negotiation, Auto MDIX
 - ⤿ SyncE-Master
 - ⤿ PTP Hardware Time-stamps

Timing Interfaces

- T3-input (BITS) acc. ITU-T G.703 (T12)
- T4-output acc. ITU-T G.703

(E12 or T12)

- T4-output in E12-mode: Multiframe acc. ITU-T G.704
- 1pps (1 pulse-per-second)

Features

- ITU-T G.8261 – G.8264
- IEEE 1588v2 (PTP)
- QoS IEEE 802.1 p, Q
- Provider Tagging, IEEE 802.1ad
- RMON
- Jumbo frames supported (>10.000 Bytes)
- IPv6 supported

Management

- Network Management port (front access):
 - ⤿ 10/100BaseTx (RJ45)
 - ⤿ HTMLv2 based WEB-OPI
- SNMPv2e, SNMPv3
- SSH & CLI
- CFM Management
 - ⤿ IEEE 802.1 ag
 - ⤿ ITU-T Y.1731
- Link Layer Management
 - ⤿ IEEE 802.3 ah

Environmental

- Operating: -40 to +70°C
- Storage: -35 to +55°C
- Humidity: < 100% (30°C), non-condensing

Power

- Consumption: < 20 VA
- Input AC
 - ⤿ Voltage: 110-230 VAC (+/- 10%)
 - ⤿ Connector: IEC 60320-C14
- Input DC
 - ⤿ Voltage: -48V / -60 VDC (+/- 20%)
 - ⤿ Connector: RIA (3 pin)

Physical

- Pizza-Box
 - ⤿ Standalone: 44mm H x 448mm W x 306mm D
 - ⤿ 19" version: 44mm H x 483mm W x 306mm D
 - ⤿ Weight: 2,3 kg

