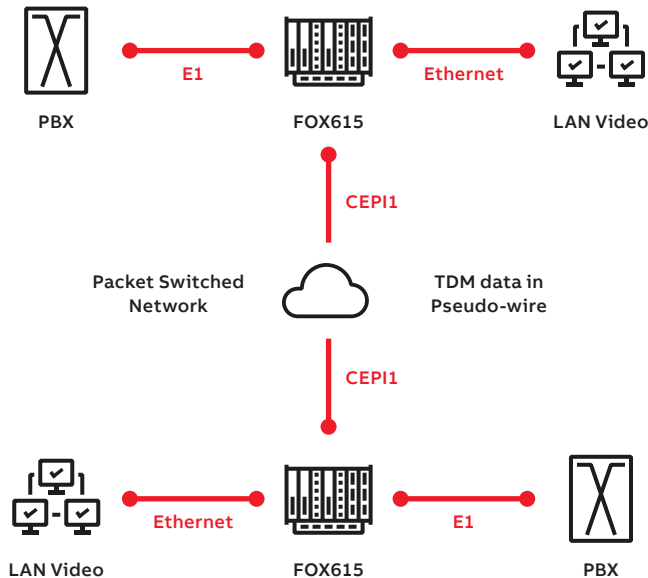


FOX615 CEPI1

TDM Circuit Emulation Services over Packet Networks



Despite the transition of many core networks to packet switched technologies, legacy data interfaces are not losing their importance. Many applications will still demand legacy TDM interfaces (e.g. E1 or V.24) in the future in order to continue to use the already installed equipment.

01 Applications with CEPI1.

Please note that for protection applications TEPI2 and OPIC2 needs to be used.

The migration to packet switched backbone networks can only happen if all applications requiring communication channels can be addressed. In order to offer traditional TDM services over packet switched networks circuit emulation is required.

The FOX615 offers this for standard applications with the CEPI1 interface card. The same provides:

- 8 x E1 interfaces
- CES with up to 8 x 2 Mbps Pseudo Wires
- Highly-accurate and stable clock recovery according to ITU-T G.823
- Precise and steady “hold-over” clock
- Full integration in the FOX615 platform and FOXMAN-UN network management system
- Compliant to SATop and CESoPSN

SATop and CESoPSN in FOX615

With its hybrid backplane FOX615 provides native TDM and Ethernet services. CEPI1 emulates TDM services via packet switched technology. CEPI1 transmits an arriving E1 data stream via Pseudo Wires together with data of other services over the packet switched core network. A CEPI1 or another device complying with the relevant standard (e.g. FOX605) can convert this data back to an

E1 data stream at any position in the network.

Clock recovery

With its highly-accurate algorithms the clock can be recovered from any arriving Pseudo Wire. Thanks to the exact “hold-over” function a high-precision clock signal can be delivered also during network failure.

Clock algorithms

The CEPI1 supports three base algorithms designed for different network types. One for high quality managed networks with low jitter (PDV) and packet loss, one for general networks with lower performance characteristics and one for applications, where the frequency stability is most important.

Additionally the circuit emulation functionality can be locked to synchronous Ethernet providing high accuracy clocking for TDM data streams.

Safety concept

FOX615 offers fail safety in carrier grade quality. For this purpose all modules come with decentral on board power supplies. In addition the central module can be made redundant to guarantee for optimum fail safety.

Management

All FOX615 functions are central managed via the management system FOXMAN-UN or via a local access using FOXCST.

Technical Data

CESoP	
Circuit Emulation Service	SAToP (Structure Agnostic TDM over Packet) acc. to IETF RFC 4553 and CESoPSN
Pseudo-Wires	8 x 2 Mbps 2 Mbps clear channel (unstructured) or n x 64 kbps structured
QoS	According to 802.1p VLAN priority IP DiffServ (DSCP)
VLAN	VLAN tagging in upstream direction and VLAN filtering in downstream direction (IEEE 802.1Q)
Timing and synchronization	According to ITU-T G.8261
Clock	
Adaptive	The network clock is recovered from the arriving data packets
Clock master (P12s, P0nc)	FOX615 system clock is distributed via data packets alternative synchronous Ethernet can be used as clock
Transparent (P12x)	Clock of one G.703 interface will be transmitted transparent
Stability	24 h hold-over stability of ± 0.280 ppm (ITU-T Stratum 3)
E1 Interface	
Number of ports	8 x G.703
Impedance	75 and 120 ohms
Transmission	2 Mbps transparent and n x 64 kbps
Jitter and wander	According to ITU-T G.823
Management	
FOXCST	For local management
FOXMAN-UN	For central management
Power Supply	
Input voltage nominal (min/max)	-48/-60 V DC (-40.5 V DC ... -72 V DC)
Operation Environment	
Temperature range and humidity	According to FOX615 environmental specifications