

XMC20 ETO12

High density Ethernet unit for high availability Mission-Critical Network applications

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The Ethernet unit ETO12 provides 12 Ethernet interfaces for optical or electrical SFP modules. A wide range of SFP modules is supported to allow customization of the interfaces with 100 Mbps or 1,000 Mbps transmission capacity. The support of SFPs means that CAPEX investment is required only as you grow and not in a single lump sum initial investment.

- 12 x 100 Mbps/1,000 Mbps Ethernet interfaces
- For XMC25, XMC23 and XMC22 supporting 1 Gbps access to the backplane
- ERPS for protection switching in Ethernet rings
- Synchronous Ethernet readiness
- Supports XMC20 chassis switch architecture
- Designed for indoor and outdoor usage
- Fanless operation possible
- All functions from one network management system

Ethernet services

The ETO12 hardware has been prepared for Synchronous Ethernet (SyncE) applications such as master clock systems to achieve accurate transmission times and reduce jitter/wander as well as asymmetric delay.



01 Optical Ethernet units ETO12 (left) and variant for fanless operation ETO12-F

ETO12 delivers advanced Ethernet functionalities such as VLAN tagging/ stacking, jumbo frames, VLAN QoS, RSTP/ MSTP (MSTP supported only in System Release R4).

Up to 240 optical or electrical connections can be provided with a fully-equipped subrack. ETO12 is ideal for high availability mission-critical applications within the transport, authority, and utility networks which require performance in extreme environmental conditions.

Ethernet data aggregated on ETO12 can also take advantage of the different XMC20 multiservice capabilities and the variety of interfaces and transport technologies, e.g. optical and electrical MPLS-TP and the SDH uplink via Ethernet over SDH.

ERPS for protection switching

ETO12 supports Ethernet Ring Protection Switching (ERPS) for rapid restoration within Ethernet networks in ring topologies.

ERPS compliance with ITU-TG.8032v2 allows ring interconnections supporting major/subring configurations and multiple ERP instances (or multiple logical rings).

Chassis switch architecture

ETO12 is part of XMC20 chassis switch architecture. This means that XMC20 is one switch with one IP address and an expandable number of ports. Every inserted Ethernet unit will expand the switch. With it you can adapt your access point to the local demands.

Fanless operation

ETO12-F can be operated in subracks without a fan unit (passive cooling). Passive cooling reduces operational costs, because no maintenance-intensive mechanical components are in the access node

Safety concept

XMC20 offers highest reliability and quality. For this purpose all modules come with an onboard power supply and high MTBF values..

Management

All services are managed centrally via the management system UNEM or via local management access (ECST).

Technical Data

Data Transmission	
Ethernet ports	12 x 100 Mbps or 1,000 Mbps optical or electrical ports
Connector type	LC or SC depending on optical SFP
Optical transmission	Bidirectional or unidirectional depending on optical SFP
Electrical transmission	CAT5 or CAT5e
Synchronization	
SyncE	Synchronous Ethernet ready for upstream/downstream mode
Ethernet Functionality	
VLAN services	Customer bridging acc. to IEEE 802.1Q-2011, 4096 VLANs supported Port-based customer VLAN tunnelling (Q-in-Q) Port-/PCP-/DSCP-based classification (CoS) of ingress traffic with eight priority queues per port Maximum frame length of up to 9'216 bytes (Jumbo frames)
Port Mirroring	Up to 32 source ports (RX/TX traffic) to a single mirror port
Port Security	Ingress Storm Control (flood control, flood rate limiting)
Spanning Tree Protocols	RSTP (Rapid Spanning Tree Protocol), acc. to IEEE 802.1D-2004 MSTP (Multiple Spanning Tree Protocol), acc. IEEE 802.1Q-2011
ERPS	Ethernet Ring Protection Switching (ERPS), acc. to ITU-T G.8032v2, supporting up to 12 ERP instances
Further Hardware Information	
MTBF	50 years at 35° C
Ethernet backplane access	1 Gbps or 10 Gbps
Management	
ECST	For local management and offline configuration
UNEM	For central management
Power Supply	
Input voltage nominal (min/max)	-48/-60 V DC (-39.5 V DC ... -72 V DC)
Operation Environment	
Temperature range and humidity	According to XMC20 environmental specifications