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**XMC20 SUP12**

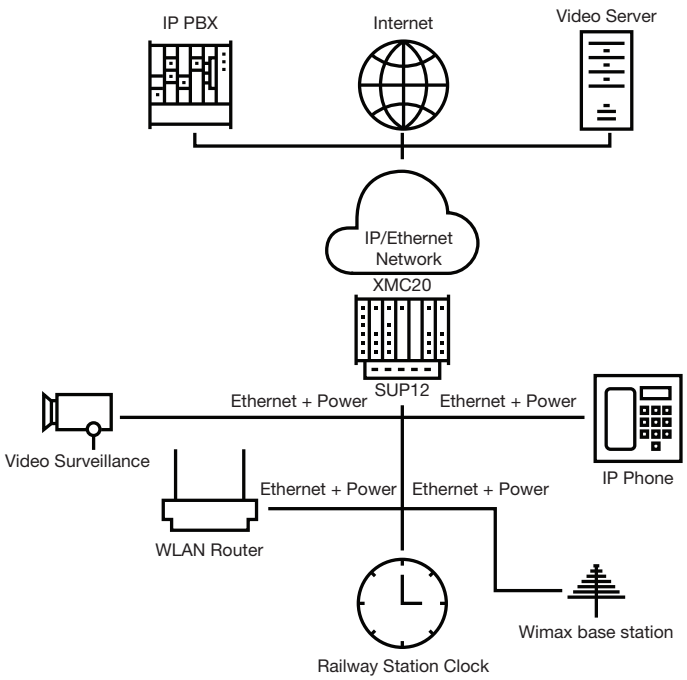
# High density Ethernet unit with Power over Ethernet support for extended IP applications in mission-critical networks

## XMC20 SUP12

The Ethernet unit XMC20 SUP12 offers 12 Ethernet ports with Power over Ethernet (PoE) capabilities, providing up to 30 W per port (PoE+).

The SUP12 capability to distribute PoE, together with its switching functions, makes it particularly suitable for addressing the need for Ethernet connectivity on locations where powering facilities are not easily accessible.

- 12 x 10/100/1000BASE-T ports with PoE support (PoE+)
- Synchronous Ethernet readiness
- ERPS for protection switching in Ethernet rings
- For XMC25 and 23 subracks
- Supports XMC20 chassis switch architecture
- Fanless operation supported
- All functions managed out of one management system




01 Example applications with XMC20 SUP12

**Power over Ethernet in XMC20**
On many locations, Ethernet connections must be provided to a variety of devices like video cameras, IP telephones, access systems, wireless access points. Sometimes, providing a power outlet to these devices would imply additional investment to get the infrastructure in place. In these cases, having the power delivered to the devices using the Ethernet cable is of great advantage. Additional to providing power without the need for additional infrastructure, PoE installations also allow having a single centralized backup system in the case of power failure. The backup for the telecommunication equipment also serves as the backup for all the devices powered by it. Some of the applications that can be served by PoE capabilities are video surveillance, security access control Voice over IP telephony, local wireless networks (WiFi Hotspots), and industrial automation.

SUP12 provides an embedded PoE capability in order to solve the issue of lack of powering infrastructure, plus the advantage to make installations of this type a lot faster.

**Ethernet services**
The SUP12 hardware has been prepared for Synchronous Ethernet (SyncE) to synchronize on NE clock and achieve accurate transmission times and reduce jitter/wander as well as asymmetric delay.

SUP12 delivers advanced Ethernet functionalities such as VLANtagging/stacking, jumbo frames, VLAN QoS, RSTP/MSTP, port security and ERPS.

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SUP12 provides high bandwidths of up to 1,000 Mbps via standard RJ45 connectors. Each of the electrical Ethernet interfaces can be configured individually. In addition to the 10 GbE backplane access, sufficient bandwidth can be delivered for each port.

Ethernet services aggregated on SUP12 can also take advantage of the different XMC20 multi-service capabilities and the variety of interfaces and transport technologies, e.g. optical and electrical Ethernet and the SDH uplink via Ethernet over SDH.

**ERPS for protection switching**
SUP12 supports Ethernet Ring Protection Switching (ERPS) for rapid restoration within Ethernet networks in ring topologies. ERPS compliance with ITU-T G.8032v2 allows ring interconnections supporting major/subring configurations and multiple ERP instances (or multiple logical rings).

**Chassis switch architecture**
SUP12 is part of XMC20 chassis switch architecture. This means, that XMC20 acts as one switch with one IP address and an expandable number of ports. Every inserted Ethernet card will expand the switch. With it you can adapt your access node to the local demands.

**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 | |
|---|---|
| Number of ports | 12 x 10/100/1000BASE-T, acc. to IEEE Std. 802.3-2008. |
| Connector | RJ45 |

| Power over Ethernet | |
|---|---|
| Standards supported | PoE acc. to IEEE802.3af-2003, PoE+ acc. to IEEE 802.3at-2009<br>Electrical Isolation (Environment A) acc. to IEEE Std. 802.3-2008 |
| Supported functionality (on each port) | PoE ports functioning as power sourcing equipment (PSE) supporting detection/classification of Powered Devices (PDs) |
| Total power feeding | Up to 84 W of accumulate power budget for all PoE ports (measured at the outputs) |

| Synchronization | |
|---|---|
| SyncE | Synchronous Ethernet ready for downstream mode |

| Ethernet Functionality | |
|---|---|
| Ethernet Functionality | Customer bridging acc. to IEEE 802.1Q-2011, 4096 VLANs supported<br>Port-based customer VLAN tunnelling (Q-in-Q)<br>Port-/PCP-/DSCP-based classification (CoS) of ingress traffic with eight priority queues per port<br>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<br>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 |
| MPLS-TP | Ethernet ports can be used as Pseudo Wire Attachment Circuit (PWAC) ports or Customer VLAN (CVP)ports in MPLS-TP networks (feature depending on installed software) |

| Further Hardware Informat | |
|---|---|
| MTBF | 50 years at 35 °C |

| 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 |

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