

COMMUNICATION NETWORKS

FOX615, FOX612 and FOX611**Subracks of the FOX hybrid multi-service platform**

The subracks of the FOX system provide comprehensive multi-service features in compact and scalable housings for harsh environment.

01 FOX615 Hybrid
Multi-Service platform

With its robust design for harsh environment, the FOX hybrid multi service platform is the ideal choice for utilities to support mission-critical and real-time applications. Designed to address every aspects of the modern utility network operations, the FOX portfolio offers a wide range of communication solutions for transmission and distribution system operators. With the full hybrid system architecture, FOX provides advanced MPLS-TP capabilities, Ethernet and traditional services in one single network element. The integrated teleprotection, the extended support of IEC61850, and superior IP/Ethernet functionalities are just some of the great highlights of the FOX family.

FOX provides extreme reliability, compact designs with a unique flexibility and scalability. The subracks are the basic elements of the FOX platform, design to optimize the use of physical space and minimize energy while still providing ample networking capability. They provide 4, 8 or 21 slots for core units, line cards and gateways, thus making possible to adapt the network node to local requirements, perfectly. The FOX subracks support redundancy for critical modules like central unit, power and cooling, eliminating the risk of network down time. This makes the FOX Multiservice Platform the ideal choice for mission-critical core network deployments.

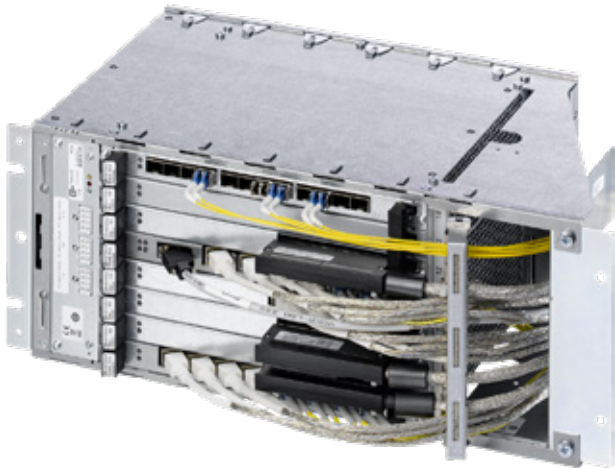
Key Features

Available in three form factors for different installation needs

- 21, 8 and 4 slot subracks
- Designed for harsh environment and outdoor operation in cabinets
- Fanless operation possible
- Vertically or horizontally installation possible, depending on the subrack model
- Extended operating temperature from -25°C up to 65°C.
- Strain-relief cable solution
- Redundancy of critical modules like core unit, power and cooling
- Hot standby of the core unit with fast switch-over times
- High-speed backplane for concurrent operation of Ethernet and TDM
- Provisioning, configuration and monitoring with an intuitive network management system

Benefits of FOX Platform subracks

Redundancy, scalability and reliability



02 FOX612



03 FOX611

Fanless operation

The subracks and the installed cards can be operated without active cooling. This maximizes availability because mechanically stressed components like fans may fail and hence strongly reduce the availability.

Flexibility and scalability

FOX Platform allows flexible configuration of the subrack bays thus responding to the specific requirements of the communication network environment. It is designed for growth from a single chassis to many. Increasing networking capability is as simple as adding additional subracks or units.

Safety/redundancy

To guarantee maximum availability of services, the subracks FOX615 and FOX612 can be equipped with redundant core units.

Configuration data of the services are kept identical among the active and stand-by core units so that in case of failure, the stand-by unit can fast take over the active core unit role.

Additionally, cooling units provide multiple fans thus avoiding a single fan failure could result in an immediate node malfunction.

Supervision

All FOX subracks can be supervised and alarms reported in the network management systems. In particular, FOX615 provides twelve alarm inputs and two alarm outputs that are supported also in network management.

Reliable power supply

FOX Platform uses a distributed power supply concept with decentralized power supplies on each unit. A single or dual power connection is possible on selected subracks.

Network management system

All subracks and modules of the FOX Platform, including a variety of services and applications, are managed centrally by FOXMAN management system, the network management system for the complete communications portfolio. Easy and intuitive configuration of user dialogues and equipment views is ensured by FOXCST, the graphical configuration tool. With FOXMAN and FOXCST utilities can enhance the overall performance of their operation.

Technical specifications

General	FOX615	FOX612	FOX611
Slots for service units (line cards)	up to 20	up to 7	up to 3
Slots for core units with redundancy	2	2	1 (no redundancy)
Supported central unit	CESM1/2/3	CESM 1/2/3	CESM 1/2
Supported fan and alarm unit	FAMO1	FAMO2	FAMO3
Supported alarm unit	FAMO1-F	FAMO2-F	FAMO3-F
Power supply unit	DUPF1 (Dual power)	DUPF2 (Dual power)	DUPF2 (Dual power) POAC1 (AC/DC power unit)

Dimensions (W x D x H) and weights	FOX615	FOX612	FOX611
Required height units	8 HE (with cabling)	4 HE	2,2 HE
With front cover and cable stacking	482,6 x 306 x 309,5 mm, 7.690 g	482,6 x 306 x 176,1 mm, 5.340 g	482,6 x 306 x 95 mm, 3.600 g
Cable stacking	482,6 x 240 x 87,1 mm, 870 g	contained in 19" adapter	contained in 19" adapter
Heat sink	482,6 x 237 x 87,8 mm, 1.580 g	Not required	Not required
Construction type and design	19"- und ETSI assembly		

Standards

Electromagnetic tolerance	EN 55032, Klasse B EN 50121-4
Safety	IEC/EN 60950-1

Management

FOX CST	For local management
FOX MAN	For central network management

Power supply

Input voltage nominal (min/max)	-48/-60 V DC (-39,5 V DC ... -72 V DC)
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Operational environment

Operation temperature range	-25 °C ... +65 °C
Operation temperature range (Fanless)	-25°C ... +55°C
Humidity	95% max, non-condensing
Storage temperature range	-25°C +70°C
Transport temperature range	-25°C ... + 70°C