



Datasheet

IP-50FX

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Disaggregated Wireless Backhaul Router

The IP-50FX wireless backhaul router combines a cell site router with radio-aware features that support the IP-50C and IP-50E radios, as well as any Ethernet-connected radio or fiber. Its high switching capacity and wide port density make it an excellent fit for any cell site or aggregation site that requires ultra-high capacity, multi-directional functionality, and switching/routing capabilities.

The IP 50FX utilizes radio-aware networking capabilities, such as layer 1 carrier bonding over Ethernet, SyncE, 1588v2-TC/BC, and Ethernet Bandwidth Notification (ETH-BN). This enables the router to serve as a revolutionary solution for any multi-carrier requirement – you can create a high-capacity trunk with any outdoor radio connected via Ethernet. The IP-50FX leverages software and hardware disaggregation to create an ultra-scalable platform. You can increase capacity and interfaces by simply choosing another hardware variant while keeping all software functionality and product look and feel intact.

When multi-carrier configuration calls for more than four carriers, with layer 1 carrier bonding for best utilization of the spectral resources, the IP-50FX is your answer. The wireless backhaul router can connect to any combination of Ethernet-connected radio 16+0 constellations and act as an indoor unit, performing layer-1 carrier bonding.

Technical Specifications

Mechanical Specifications

Size: 1 RU up to 250mm depth with integrated fans

Weight: 4 kg

Environmental Specifications

Operation: ETSI EN 300 019-1-3, Class 3.2

-5°C (23°F) to +55°C (131°F)

-25°C (-13°F) to +65°C (149°F) (exceptional temperatures with limited margins)

Humidity: 5%RH to 95%RH

Storage: ETSI EN 300 019-1-1 class 1.2 (Weather protected, not temperature-controlled Storage)

Transportation: ETSI EN 300 019-1-2 class 2.3 (Public transportation)

EMC: Canada/USA Radiated and conducted emissions tests according to ICES-003, class B and FCC 47 CFR part 15, subpart B, class B

Europe according to EN 301 489-1/4 + EN 300 386

India according to TEC/SD/DD/EMC-221/05/OCT-16 + IEC 61000-4-29

Power Input Specifications

IDU Standard Input: -48 VDC

IDU DC Input range: -40.5 to -60 VDC

Dual-feed power support

SDN

NETCONF/YANG management

Applications

Edge/tail

First and second Aggregation

Networking

Networking capacity: 32 / 64 / 120 Gbps

Layer-1 carrier bonding: Up to 16+0

Quality of Service: 3 levels of H-QoS

OAM functionality: ETH-BN according to ITUT G.8013/Y.1731

QoS classification based on TOS/DSCP, VLAN ID, VLAN P-bits, MAC DA and SA, SA and DA IP Addresses (IPv4 and IPv6)

LAG support with BFD on LAG interfaces according to RFC7130

Open SW standards: complies with ONL/ONIE

Layer-1 carrier bonding supports multiband with any additional layer-1 connection

Layer 3 Software

IP/MPLS as the infrastructure

LDP for label distribution / Segment Routing with Topology Independent LFA

IGP – OSPFv2/v3, IS-IS for path of the MPLS tunnels with LFA L3VPN as the service.

MP-BGP as the protocol to establish the end to end L3 services (L3VPN).

BFD to monitor health of connection to aggregation router.

Complies with TWAMP according to RFC 5357

Synchronization

1588 Boundary and Transparent Clock for full timing support from the network – G.8275.1 profile

1588 Boundary and Transparent Clock for partial timing support from the network with GNSS as a main timing source – G.8275.2 profile

Support for native GNSS input signals

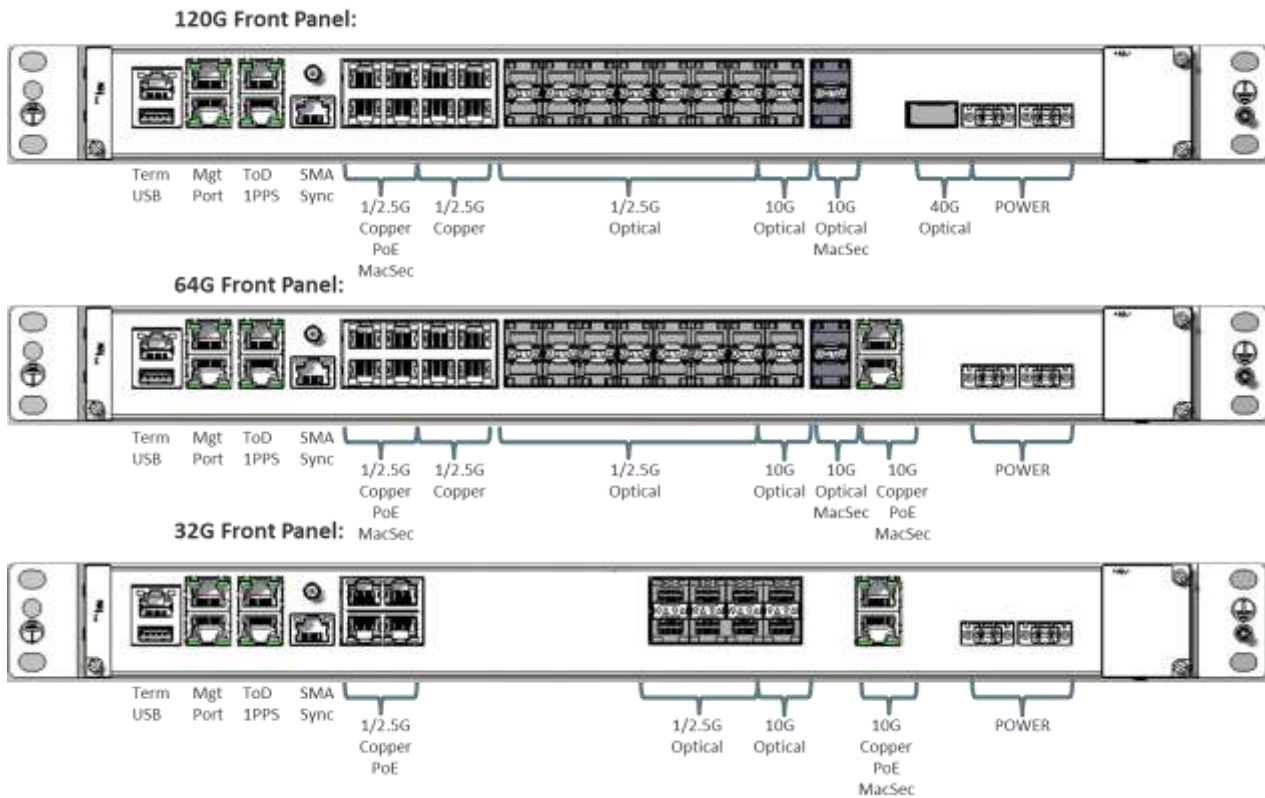
10MHz / ToD / 1PPS

Support 5G synchronization requirements

Product Images



IP-50FX Assembly Options:



IP-50FX External Interfaces per Variant

Switching Capacity	1G Copper	1G/2.5G Copper, PoE	1G/2.5G Copper, PoE, MacSec	10G Copper, PoE, MacSec	1G/2.5G Optical	10G Optical	10G Optical, MacSec	40G (4x10G) Optical	1G Copper Mng.	Timing 1PPS, ToD, LIU	USB & COM
120Gbps	4		4		14	2	2	1	2	4	1
64Gbps	4		4	2	14	2	2		2	4	1
32Gbps		4		2	6	2			2	4	1