

Datasheet

IP-50EX IP-50EX-P



Radio

1

Supported Frequency Range

71-76 GHz, 81-86 GHz

Radio Configurations

1+0, 2+0 (XPIC), 1+1 HSB Protection with Unit Redundancy

Radio Features

- ATPC
- High spectral utilization: BPSK to 256 QAM w/ACMB
- Adaptive Bandwidth Notification (EOAM)
- XPIC
- Multiband (with IP-20 and IP-50 families)*
- Layer 1 Link Bonding (with IP-20N/IP-20A)

Ethernet

Ethernet Interfaces

Port 1:

- DC port

Port 2:

- RJ-45 – 1GbE (Management/Traffic/PoE†)

Port 3:

- SFP28 - 1/2.5/10/25GbE

Port 4:

- SFP28 - 1/2.5/10/25GbE

Port 5:

- QSFP (internal)
- Option for SFP+ (1x10GbE) with adaptor

Ethernet Features

MTU – 9612 Bytes

Quality of Service

- Multiple Classification criteria (VLAN ID, P-bits, IPv4 DSCP, IPv6 TC)
- 8 CoS queues per port
- WRED
- P-bit marking/remarking

4K VLANs

VLAN add/remove

MSTP, ERP (ITU-T G.8032)

Ethernet OAM (Y.1731)

Ethernet Bandwidth Notification (ETH-BN) (Y.1731)

* Planned for future release.

Management Protocols

SNMP

REST

SDN Support:

- NETCONF/YANG

Synchronization Protocols

Enhanced Ethernet Equipment Clock (eEEEC) Specification (G.8262.1)

PTP Telecom Class A Boundary Clock (T-BC) (G.8273.2)

PTP Telecom Class A Transparent Clock (T-TC) Specification (G.8273.3)

Enhanced SyncE Network Limits (G.8261, clause 9.2.1)

Enhanced PTP Network Limits (G.8271.1)

Ethernet Synchronization Messaging Channel (ESMC) (G.8264, clause 11)

PTP Telecom Profile for Time (Full Timing Support) (G.8275.1)

Precision Time Protocol (version 2, IEEE1588-2008)

Standards

MEF

Carrier Ethernet 2.0 (CE 2.0)

Supported Ethernet Standards

10/100/1000base-T/X (IEEE 802.3)

10GBase-LR (IEEE 802.3)

Virtual LAN (VLAN, IEEE 802.1Q)

MAC bridges (IEEE801.D)

Class of service (IEEE 802.1p)

Provider bridges (QinQ – IEEE 802.1ad)

Link aggregation (IEEE 802.1AX)

Auto MDI/MDIX for 1000baseT

RFC 2474: IPv4 DSCP

RFC 2460: IPv6 Traffic Classes

† PoE and traffic over the management port require IP-50EX-P. For other IP-50EX models, traffic over the management port is planned for future release.



Security

Radio Encryption – AES-GCM-256*

Secured protocols:

- HTTPS
- SNMPv3
- SSH
- SFTP

RADIUS authentication and authorization

TACACS+ Authentication, Authorization, and Accounting (session-based)

Standards Compliance

Radio Spectral Efficiency: FCC Part 101, EN 302 217-2

EMC: EN 301 489-1, EN 301 489-4, Class A (Europe)

FCC 47 CFR, part 15, subpart B, class A (US)

ICES-003, Class A (Canada)

TEC/SD/DD/EMC-221/05/OCT-16, Class A (India)

IEC 61000-4-29

Surge: EN61000-4-5, Class 4 (for PWR port)

Safety: EN 62368-1, IEC 62368-1, UL 62368-1, CAN/CSA C22.2 NO 62368-1

Storage: ETSI EN 300 019-1-1 Class 1.2

Transportation: ETSI EN 300 019-1-2 Class 2.3

Technical Specifications

Mechanical Specifications

Dimensions (Direct Mount HW) –

228mm(H), 233mm(W), 76mm(D), 2.77 kg.

9"(H), 9.2"(W), 3"(D), 6.1 lbs.

Dimensions (43dBi Integrated Antenna) –

313mm(H), 276mm(W), 97mm(D), 4.5 kg.

12.3"(H), 10.9"(W), 3.8"(D), 9.9 lbs.

Environmental Specifications

-40°C to +55°C

-40°F to +131°F

Power Input Specifications

Standard Input: -48 VDC; DC Input range: -40.5 to -60 VDC

Power Consumption Specifications

Standard IP-50EX:

- Typical Power – 50W
- Maximum Power – 55W

IP-50EX-P:

- Typical Power – 61W
- Maximum Power – 65W

IP-50EX/IP-50EX-P



* AES requires IP-50EX-P.

