Edge-core AS7946-30XB Ethernet Switch User Guide

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Edge-core AS7946-30XB Ethernet Switch

Product Information

The AS7946-30XB Ethernet Switch is a high-performance switch with 4x400G QSFP-DD ports, 18x100G QSFP28 ports, 4x100G QSFP-DD ports, and 4x10G/25G SFP28 ports. The switch also features timing ports, console ports, USB port, RJ-45 management port, air filters, DC terminal or AC power socket, grounding point, and 5x fans. The switch comes with a rack mounting kit, console cable, documentation, and safety and regulatory

information.

Package Contents:

- AS7946-30XB Ethernet Switch
- Rack mounting kit – 2 rack-rail assemblies and 20 screws
- Console cable – RJ-45 to D-Sub
- Documentation – Quick Start Guide (this document) and Safety and Regulatory Information

Product Information

Installation

1. **Mount the Device:**
    1. Separate the rack-rail assembly into two sections.
    2. Use the included ten screws to attach the bracket to each side of the device.
    3. Slide the device into the rack.
    4. Hold it in place and secure the rack assembly to the front post using four screws.
    5. While holding the device in place, slide the inner section of rack-rail assembly from the back until it fits the rear post.
    6. Secure the rack-rail assembly to the rear using four screws.
2. **Ground the Device:**
    1. Verify Rack Ground – Ensure the rack on which the device is to be mounted is properly grounded and in compliance with ETSI ETS 300 253. Verify that there is a good electrical connection to the grounding point on the rack (no paint or isolating surface treatment).
    2. Attach Grounding Wire – Attach a lug (not provided) to a #8 AWG minimum grounding wire (not provided), and connect it to the grounding point on the device rear panel. Then connect the other end of the wire to rack ground.
3. **Connect Power:**
    1. DC Power – Install two DC PSUs and then connect them to a DC power source.
    2. AC Power – Install two AC PSUs and then connect them to an AC power source.
4. **Make Network Connections:**
    1. Connect network cables to the appropriate ports.
    2. Configure the switch according to your network requirements.

FRU Replacement:
To replace the Power Supply Unit (PSU), remove the power cord, press the release latch, and remove the PSU. Install the replacement PSU with matching airflow direction.

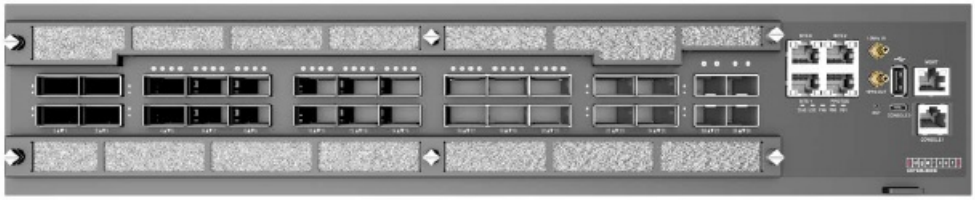
- To replace the fan tray, press the release latch in the fan tray handle, pull out to remove the fan, and install the replacement fan with matching airflow direction.
- To replace the air filter, unscrew the filter cover captive screws, remove the old filter, install a replacement filter, replace the filter cover, and tighten the captive screws.

Front LEDs:

The front LEDs indicate the status of the switch ports and system. Refer to the user manual for detailed information on the LED indicators.

Package Contents

1. AS7946-30XB
2. Rack mounting kit — 2 rack-rail assemblies and 20 screws
3. Console cable — RJ-45 to D-Sub
4. Documentation — Quick Start Guide (this document) and Safety and Regulatory Information



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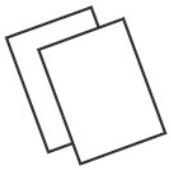

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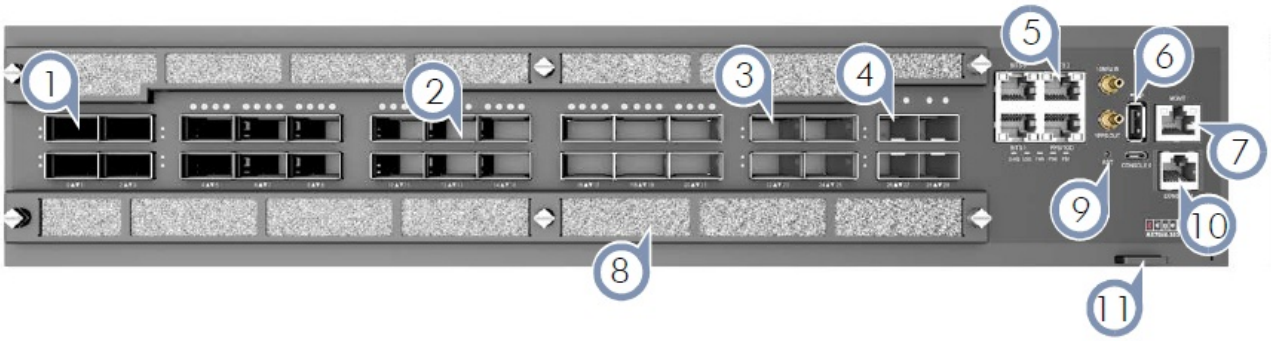
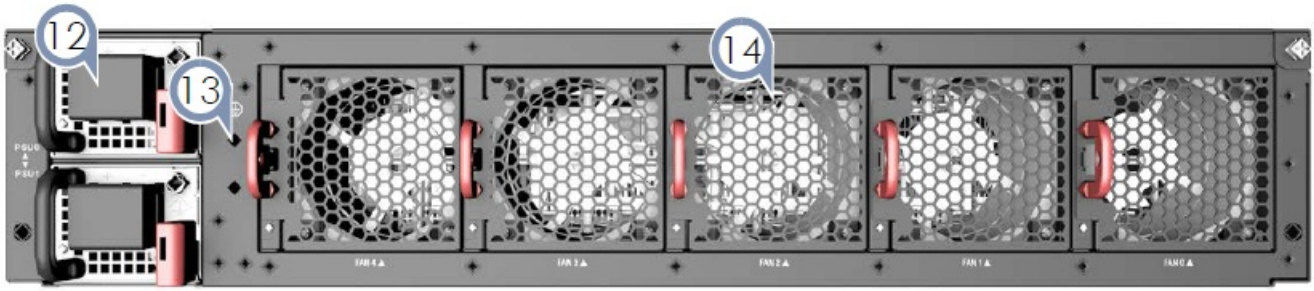
Overview

1. 4 x 400G QSFP-DD
2. 18 x 100G QSFP28
3. 4 x 100G QSFP-DD
4. 4 x 10G/25G SFP28
5. Timing ports: 3 x RJ-45 BITS ports,1 x RJ-45 1PPS/ToD port, 1 x 1PPS connector, 1 x 10MHz connector
6. USB port
7. RJ-45 Management port
8. Air filters
9. Reset button
10. Console ports: 1 x Micro-USB, 1 x RJ-45
11. Product tag
12. DC terminal or AC power socket
13. Grounding point
14. 5 x fans

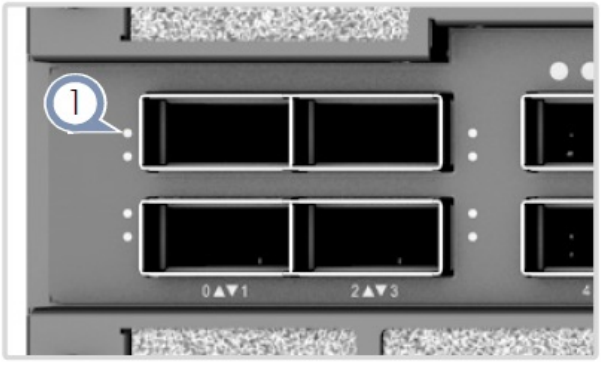


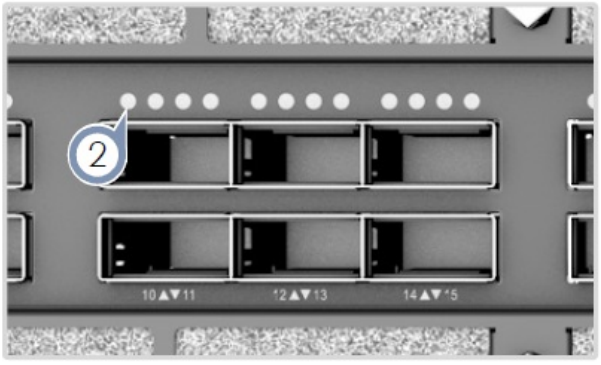


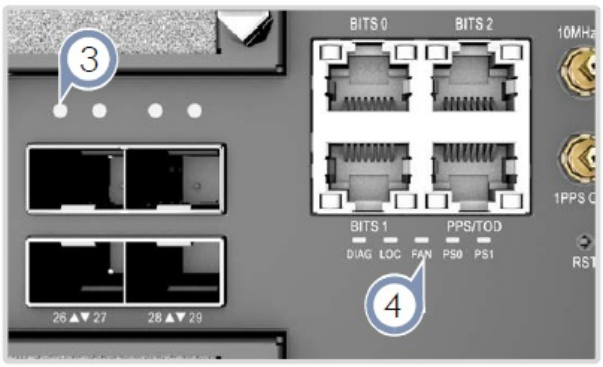
LEDs Indicator

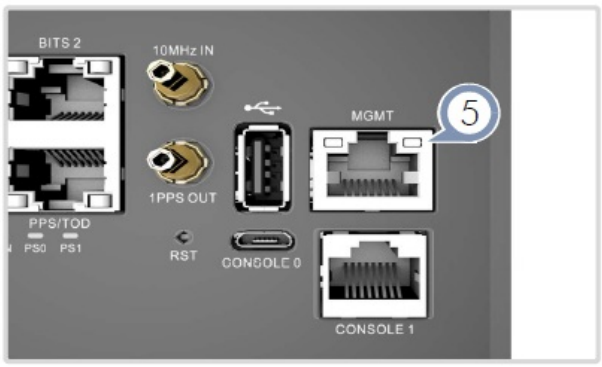
Front LEDs

1. **QSFP-DD Port LEDs:**
    - LED1 (top) — Cyan (400G), Blue (100G)
    - LED2 (bottom) — Blue (all lanes linked), Red (not all lanes linked), Blinking (activity)
2. **QSFP28 Port LEDs:**
    - LED1 (left) — Blue (100G), Green (40G)
    - LED2 (right) — Blue (all lanes linked), Red (not all lanes linked), Blinking (activity)
3. **SFP28 Port LEDs:**
    - Blue (25G), Green (10G), Blinking (activity)
4. **System LEDs:**
    - DIAG — Green (OK), Amber (fault detected)
    - LOC — Flashes Amber when the command is activated
    - FAN — Green (OK), Amber (fault)
    - PS0 and PS1 — Green (OK), Amber (fault)
5. **Management Port LEDs:**
    - RJ-45 OOB Port — Left (link), Right (activity)





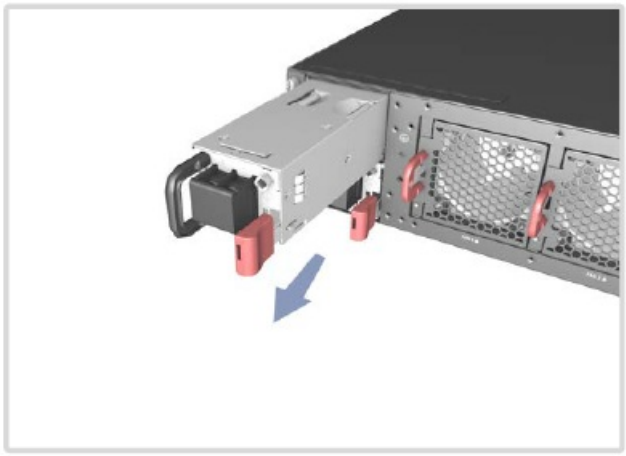




FRU Replacement

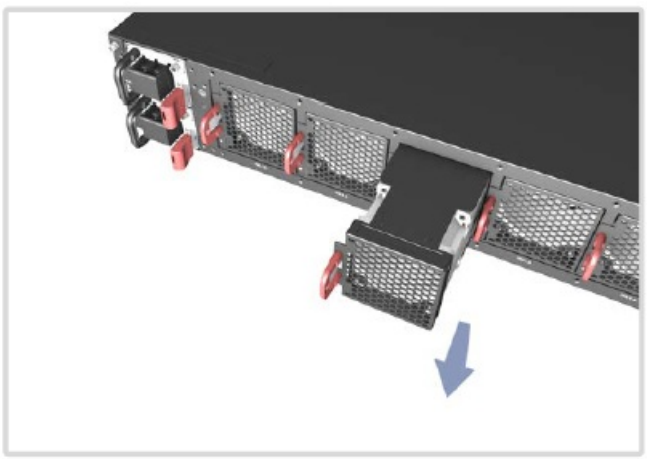
PSU Replacement

1. Remove the power cord.
2. Press the release latch and remove the PSU.
3. Install replacement PSU with matching airflow direction.



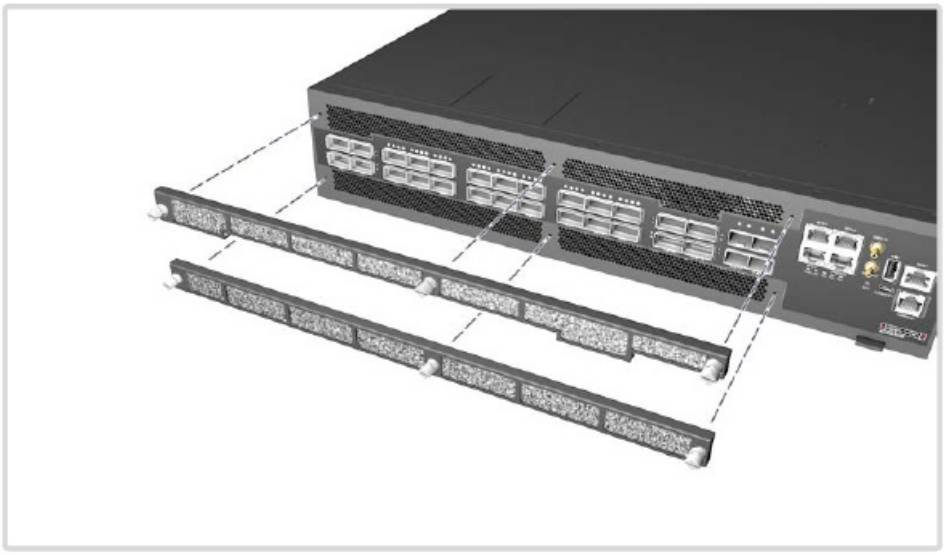
Fan Tray Replacement

1. Press the release latch in the fan tray handle.
2. Pull out to remove the fan.
3. Install replacement fan with matching airflow direction.



Air Filter Replacement

1. Unscrew the filter cover captive screws.
2. Remove the old filter and install a replacement filter.
3. Replace the filter cover and tighten the captive screws.



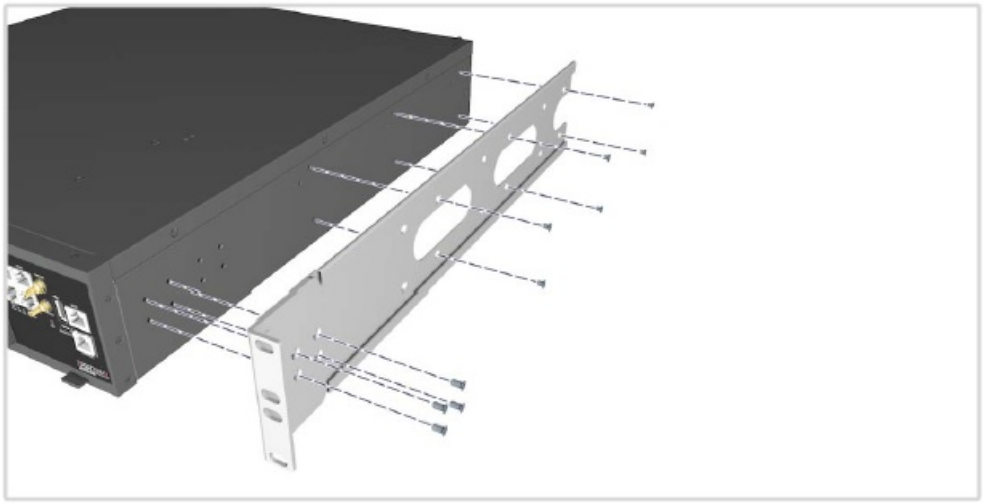
Installation

Warning:
For a safe and reliable installation, use only the accessories and screws provided with the device. Use of other accessories and screws could result in damage to the unit. Any damages incurred by using unapproved accessories are not covered by the warranty.

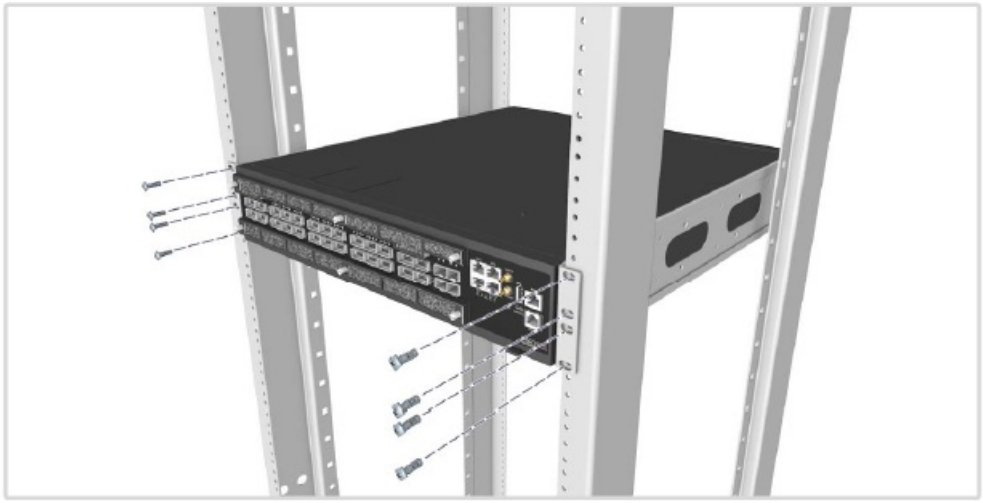
Caution:
The device must be installed in a restricted-access location.

Note:
The drawings in this document are for illustration only and may not match your particular model.

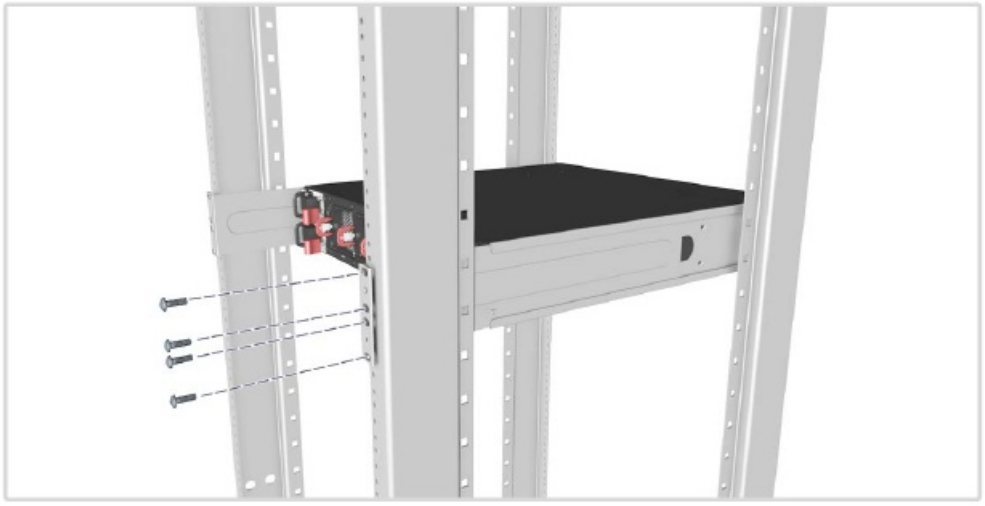
Mount the Device



1. Separate the rack-rail assembly into two sections.
2. Use the included ten screws to attach the bracket to each side of the device.

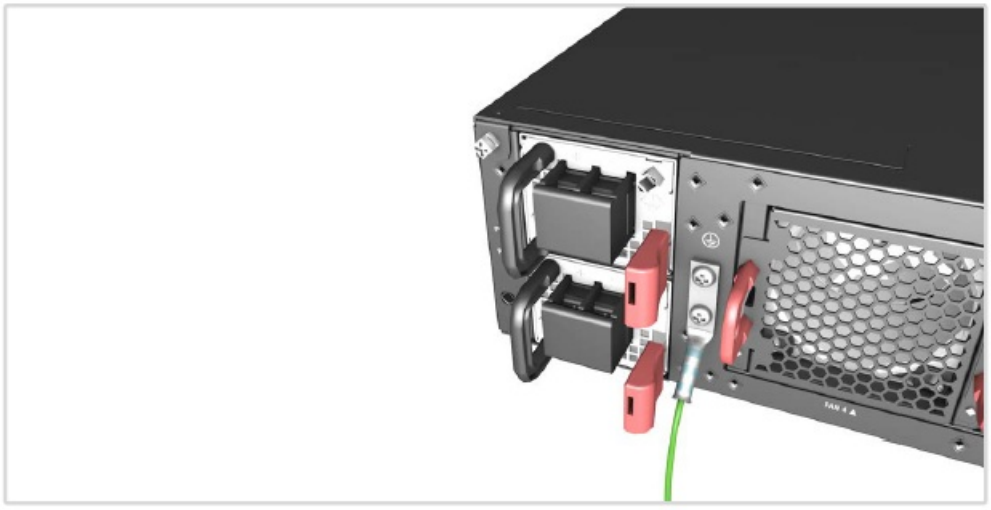


3. Slide the device into the rack.
4. Hold it in place and secure the rack-assembly to the front post using four screws.



5. While holding the device in place, slide the inner section of rack-rail assembly from the back until it fits the rear post.
6. Secure the rack-rail assembly to the rear using four screws.

Ground the Device



Verify Rack Ground

Ensure the rack on which the device is to be mounted is properly grounded and in compliance with ETSI ETS 300 253. Verify that there is a good electrical connection to the grounding point on the rack (no paint or isolating

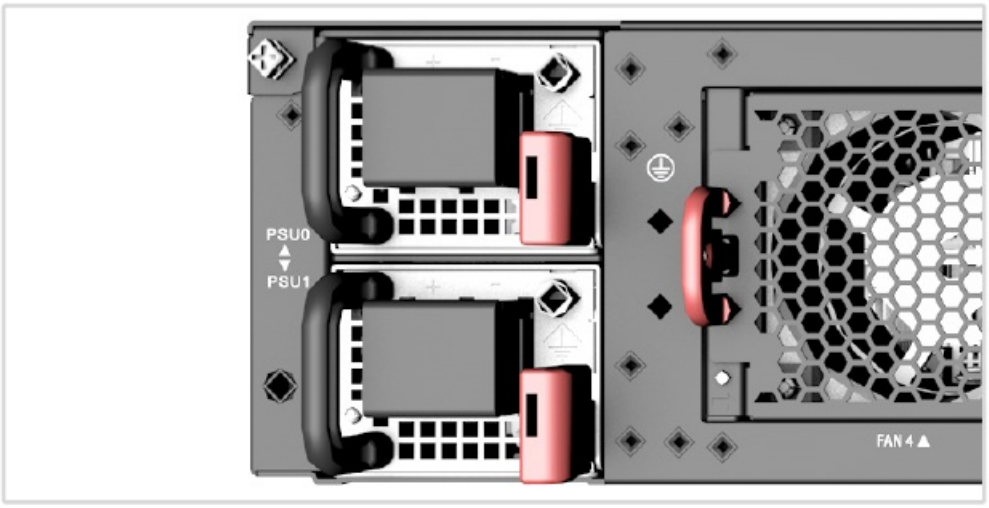
surface treatment).

Attach Grounding Wire
Attach a lug (not provided) to a #8 AWG minimum grounding wire (not provided), and connect it to the grounding point on the device rear panel. Then connect the other end of the wire to rack ground.

Caution:
The chassis ground connection must not be removed unless all supply connections have been disconnected.

Caution:
The device must be installed in a restricted-access location. It should have a separate protective ground terminal on the chassis that must be permanently connected to a well-grounded chassis or frame to adequately ground the device chassis and protect the operator from electrical hazards.

Connect Power

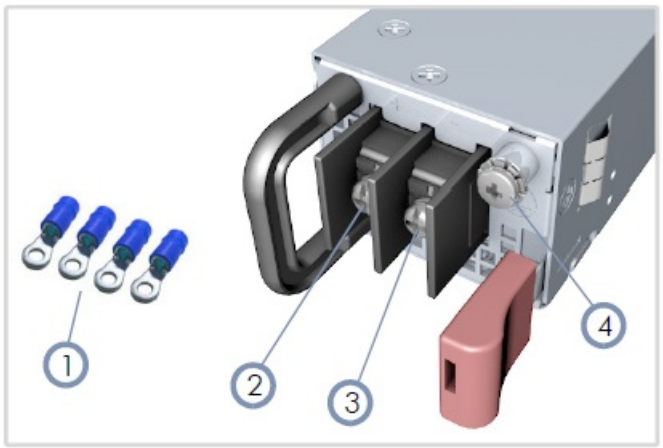


DC Power
Install two DC PSUs and then connect them to a DC power source.

Caution:
Use a IEC/UL/EN 60950-1 and/or 62368-1 certified power supply to connect to a DC converter.

Caution:
All DC power connections should be performed by a qualified professional.

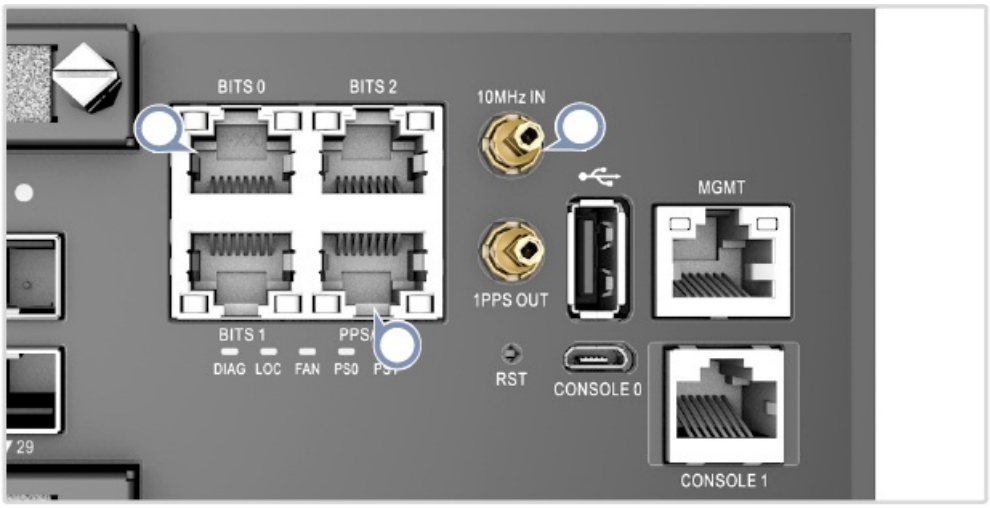
Note:
Use # 8 AWG/ 6 mm2 copper wire (for a -40 to -75 VDC PSU) to connect to a DC PSU.



1. Use the ring lugs included with the DC PSU.
2. DC return
3. -40 – -75 VDC
4. Use a 8 AWG green/yellow ground wire to ground the DC PSU.

AC Power
Install two AC PSUs and then connect them to an AC power source.

Connect Timing Ports

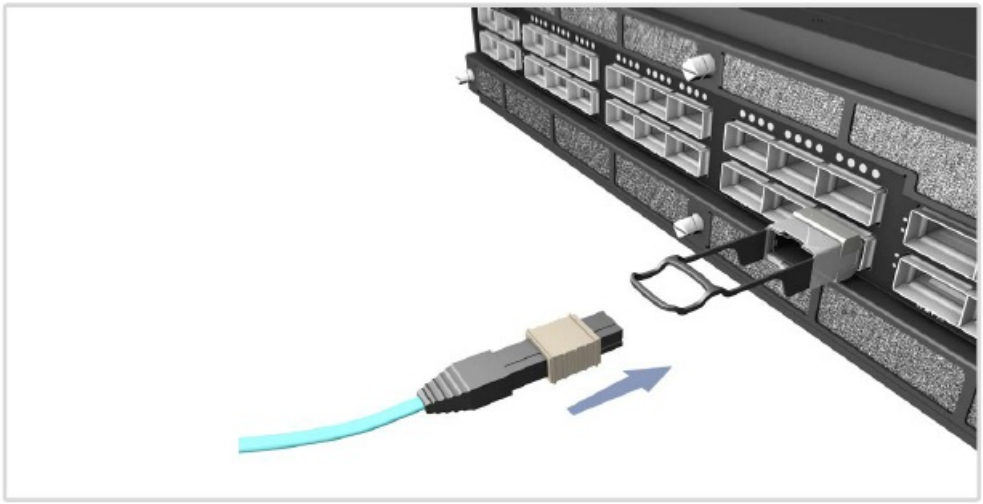


RJ-45 BITS
Use a Cat. 5e or better twisted-pair cable to synchronize the device.

RJ-45 1PPS/ToD
Use a Cat. 5e or better twisted-pair cable to connect the 1-pulse-per second (1PPS) and Time of Day to other synchronized devices.

10MHz IN/1PPS OUT
Use coax cables to connect the 10MHz IN and 1-pulse-per-second (1PPS) OUT ports to other synchronized devices.

Make Network Connections



400G QSFP-DD Ports
Install transceivers and then connect fiber optic cabling to the transceiver ports.

The following transceivers are supported in the QSFP-DD ports:

- 400GBASE-SR8, DR4, FR4

100G QSFP-DD Ports
Install transceivers and then connect fiber optic cabling to the transceiver ports.

The following transceivers are supported in the QSFP-DD ports:

- Power class 8 up to 16.5W

100G QSFP28 Ports
Install transceivers and then connect fiber optic cabling to the transceiver ports.

The following transceivers are supported in the QSFP28 ports:

- 100GBASE-SR4, LR4, CWDM4, DR1
- 40GBASE-SR4, LR4

Alternatively, connect DAC cables directly to the QSFP28 slots.

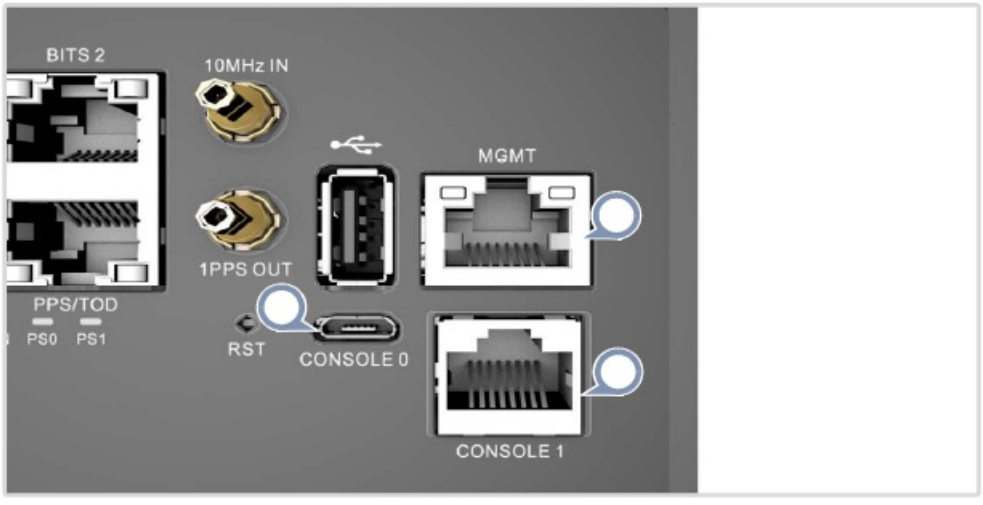
SFP28 Ports
Install transceivers and then connect fiber optic cabling to the transceiver ports.

The following transceivers are supported in the SFP28 ports:

- 25GBASE-SR, LR
- 10GBASE-SR, LR, ER, ZR

Alternatively, connect DAC/AOC cables directly to the SFP28 ports.

Make Management Connections



MGMT RJ-45 Port
Connect Cat. 5e or better twisted-pair cable.

RJ-45 Console Port
Connect the included console cable and then configure the serial connection: 115200 bps, 8 characters, no parity, one stop bit, 8 data bits, and no flow control.

Micro-USB Console Port
Connect using a standard USB to Micro-USB cable.

Hardware Specifications

Interfaces

Management

- 1 x RJ-45 Console port
- 1 x RJ-45 10/100/1000BASE-T Management port
- 1 x USB2.0 Port
- 1 x Micro USB Console port

Network

- 18 x 100G QSFP28
- 4 x 400G QSFP-DD
- 4 x 100G QSFP-DD
- 4 x 10G/25G SFP28

Chassis

- Size (WxDxH) 440 x 524 x 87 mm (17.3 x 20.6 x 3.4 in)
- Weight 14.5 kg (31.96 lb)
- Operating Temperature 0° C to 45° C (32° F to 113° F)
- Storage Temperature -40° C to 70° C (-40° F to 158° F)
- **Humidity**
  - **Operating:** 5% to 85% (non-condensing)
  - **Storage:** 5% to 95% (non-condensing)
- **Power Consumption**
  - 638 W at 25° C (77° F)
  - 695 W at 45° C (113° F)

48 VDC PSU

- DC Input -40 – -75 VDC, 40 A max

AC PSU

AC Input

- 100-120 V~, 50-60 Hz, 12 A Max.
- 200-240 V~, 50-60 Hz, 7.5 A Max.

Regulatory Compliances

Emissions

- EN 55032:2015+A1:2020
- EN 61000-3-2:2019+A1:2021
- EN 61000-3-3:2013+A1:2019
- FCC Part 15 subpart B Class A
- CCC (GB9254-2008)
- BSMI
- VCCI

Immunity

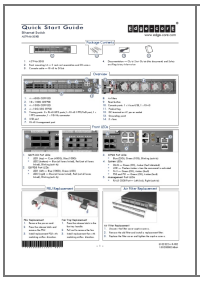
- EN 55024:2010+A1:2015
- EN 55035:2017+A11:2020
- IEC 61000-4-2/3/4/5/6/8/11

Safety

- UL/CUL (CAN/CSA22.2 No 62368-1 & UL 62368-1)
- CB (IEC/EN 60950-1 & IEC/EN 62368-1)
- CCC (GB4943.1-2011)
- BSMI
- VCCI
- Taiwan RoHS CNS 15663

www.edge-core.com.

Documents / Resources

	Edge-core AS7946-30XB Ethernet Switch [pdf] User Guide AS7946-30XB, AS7946-30XB Ethernet Switch, AS7946-30XB Switch, Ethernet Switch, Switch