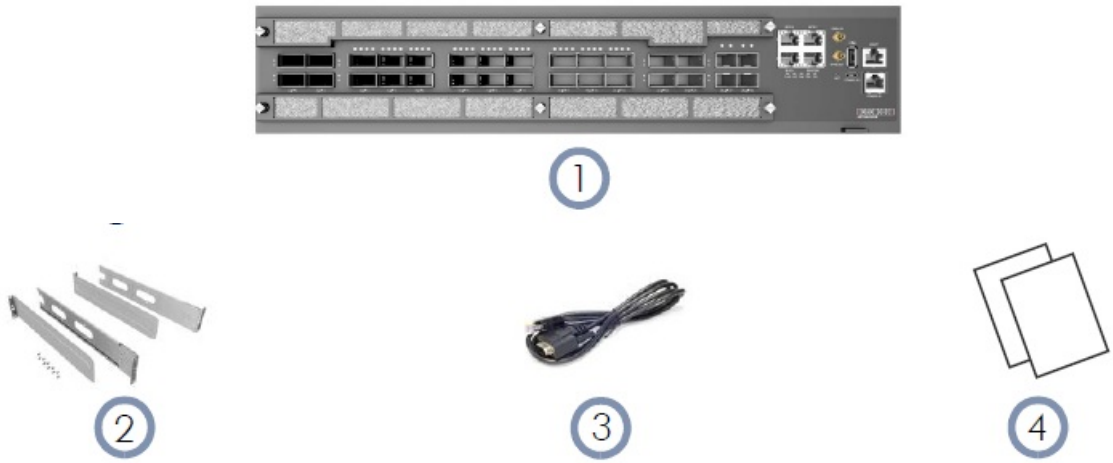
Edge-core AS7946-30XB Aggregation Router User Guide

Contents

Edge-core AS7946-30XB Aggregation Router

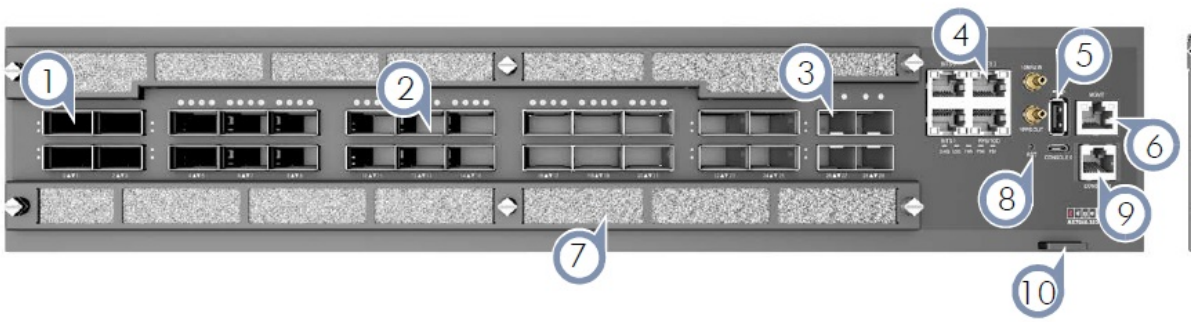
Package Contents

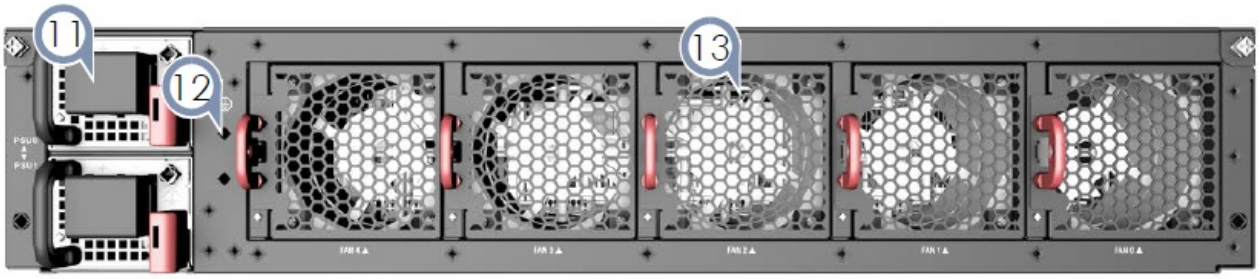
1. AS7946-30XB
2. Rack mounting kit — 2 rack-rail assemblies and 20 screws
3. Console cable — RJ-45 to D-Sub
4. Documentation — Quick Start Guide (this document) and Safety and Regulatory Information



Overview

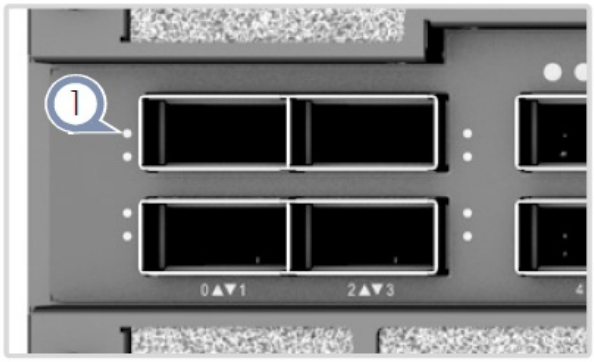
1. 4 x 400G QSFP-DD
2. 22 x 100G QSFP28
3. 4 x 10G/25G SFP28
4. Timing ports: 3 x RJ-45 BITS ports,1 x RJ-45 1PPS/ToD port, 1 x 1PPS connector, 1 x 10MHz connector
5. USB port
6. RJ-45 Management port
7. Air filters
8. Reset button
9. Console ports: 1 x Micro-USB, 1 x RJ-45
10. Product tag
11. DC terminal or AC power socket
12. Grounding point
13. 5 x fans

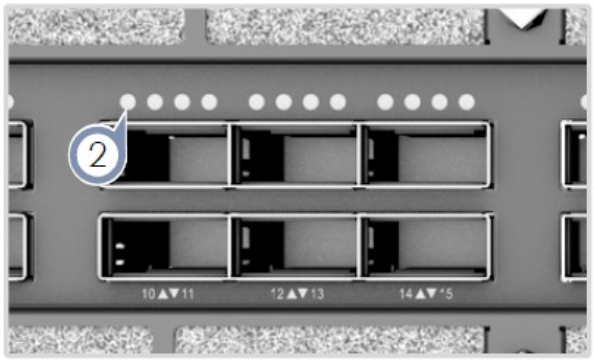




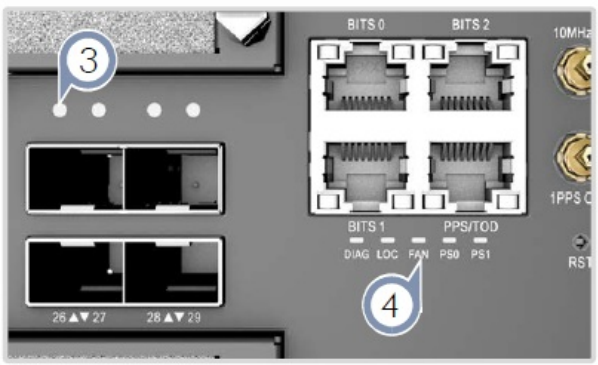
Front LEDs

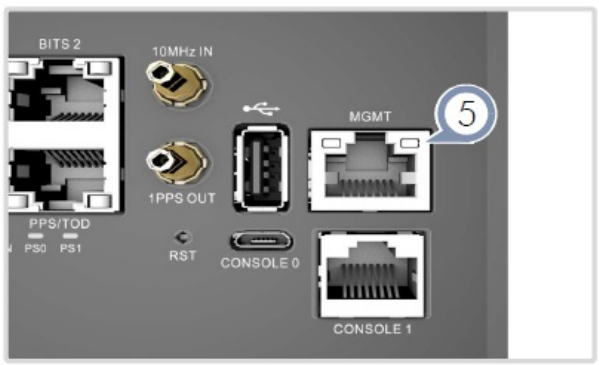
1. QSFP-DD Port LEDs:
    - LED1 (top) — Cyan (400G), Blue (100G)
    - LED2 (bottom) — Blue (all lanes linked), Red (not all lanes linked), Blinking (activity)
2. QSFP28 Port LEDs:
    - LED1 (left) — Blue (100G), Green (40G)
    - LED2 (right) — Blue (all lanes linked), Red (not all lanes linked), Blinking (activity)





3. SFP28 Port LEDs:
    - Blue — 25G
    - Green — 10G
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)



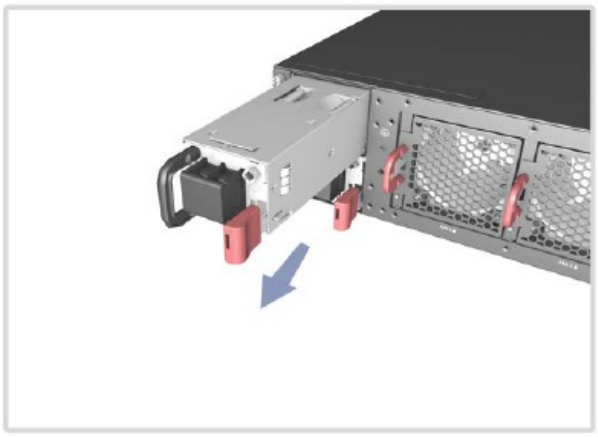


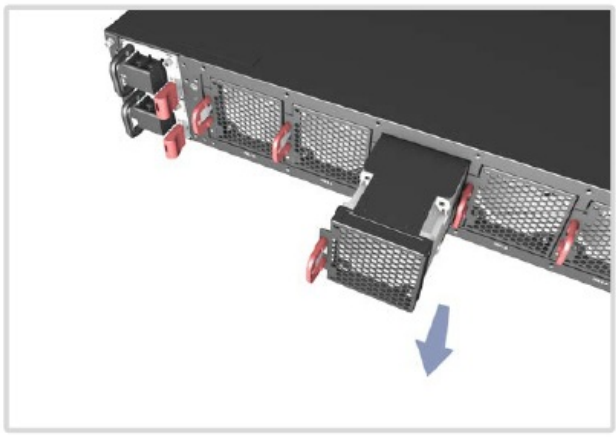
FRU Replacement

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.

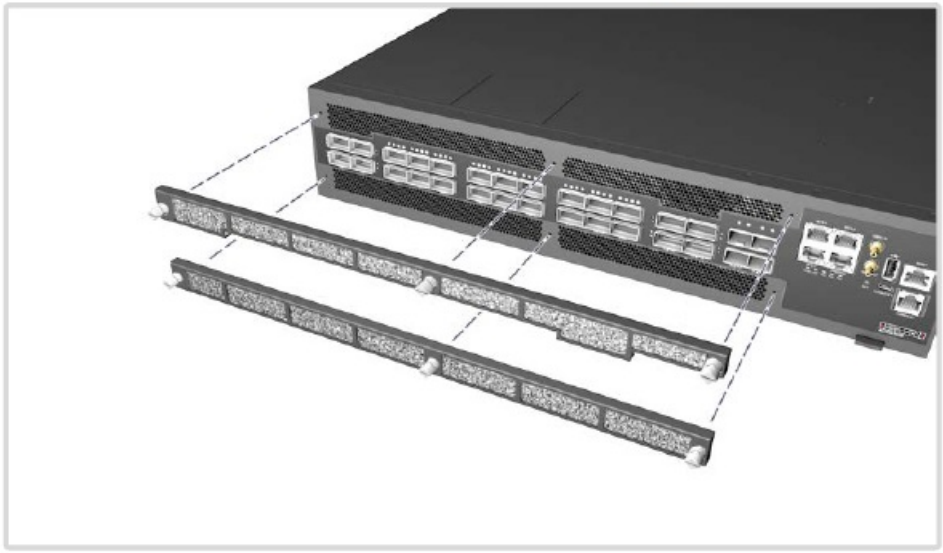




Air Filter Replacement

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.

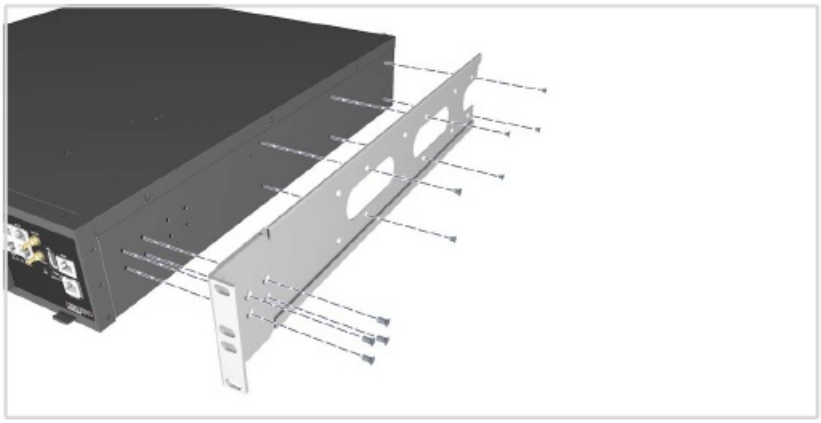


Warning: For a safe and reliable installation, use only the accessories and screws provided with the device. Use

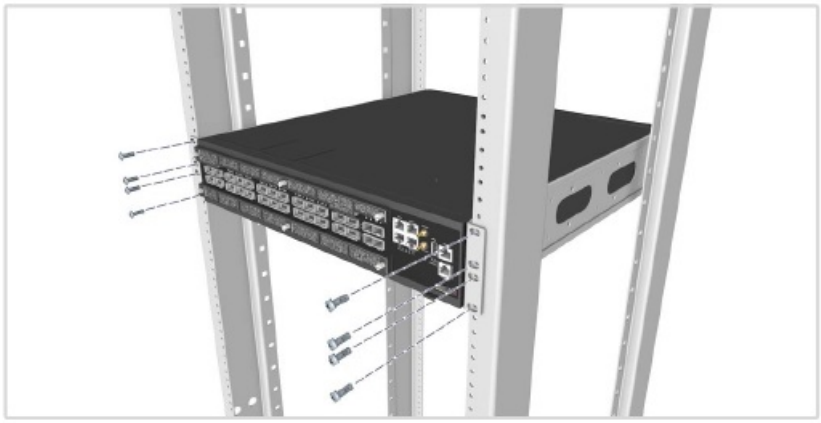
of other accessories and screws could result in damage to the unit. Any damages incurred by using unapproved accessories are not covered by the warranty.

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.

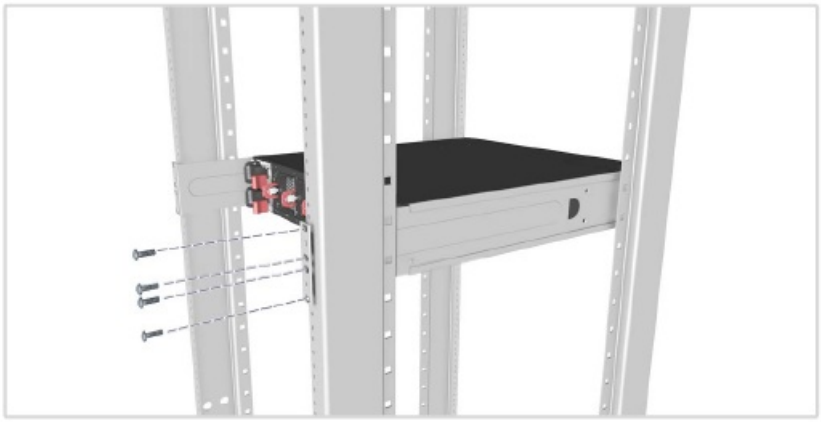
1. Mount the Device



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.

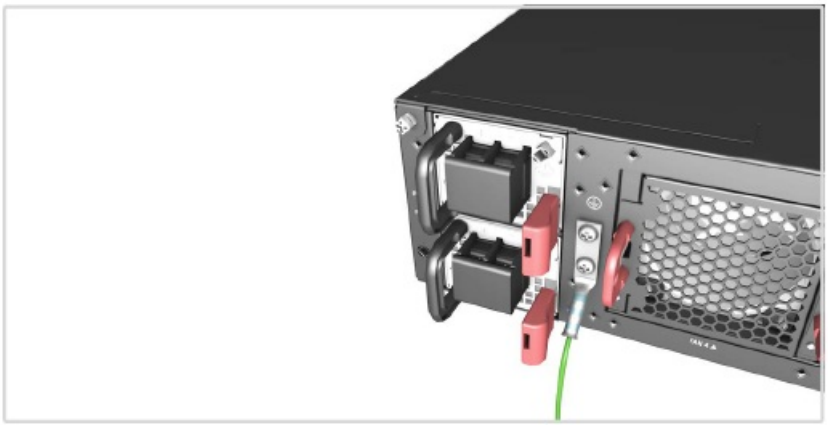


5. While holding the device in place, slide the inner section of rack-rail assembly from the back until it fits the rear post.
6. Secure the rack-rail assembly to the rear using four screws.

installation

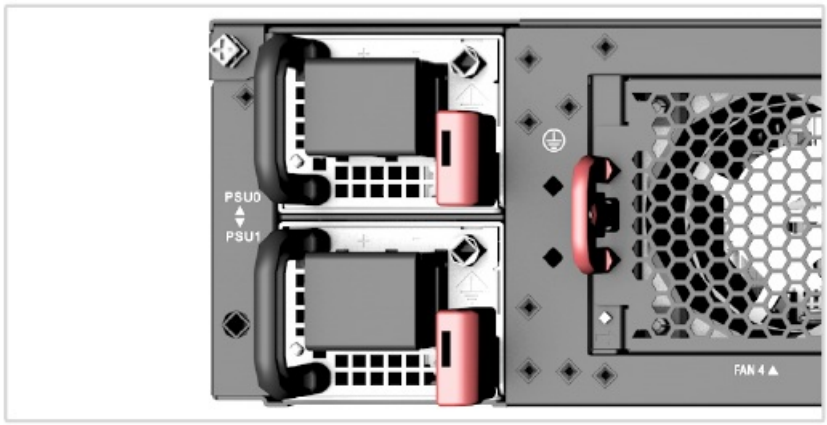
Ground the Device

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.



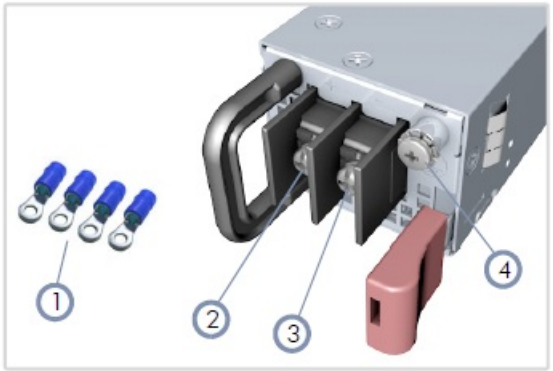
Caution: The device must be installed in a restricted-access location. It should have a separate protective ground terminal on the chassis that must be permanently connected to a well grounded chassis or frame to adequately ground the device chassis and protect the operator from electrical hazards.

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



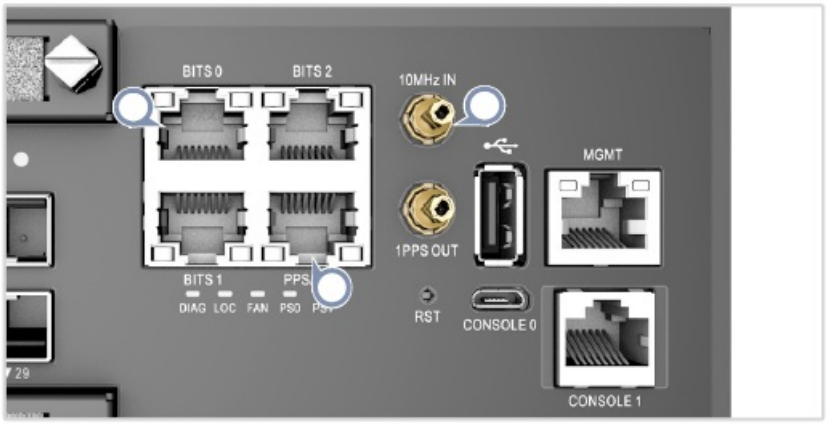
1. Use the ring lugs included with the DC PSU.
2. DC return
3. -40 – -75 VDC

4. Use a 8 AWG green/yellow ground wire to ground the DC PSU.

   AC Power

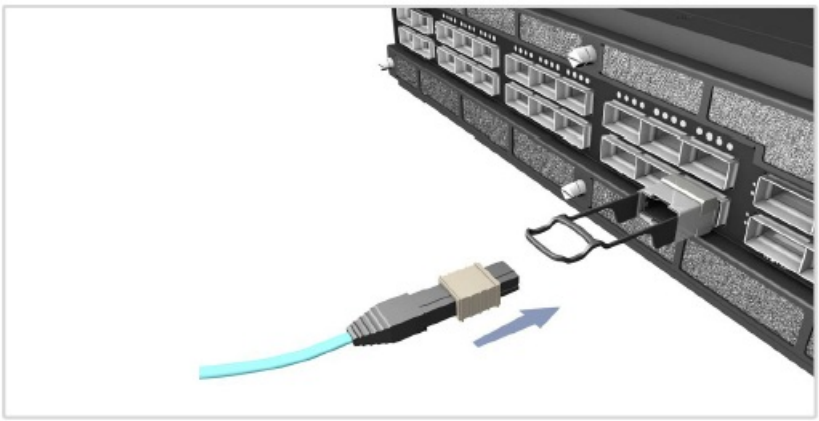
   Install two AC PSUs and then connect them to an AC power source.

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

Alternatively, connect DAC cables directly to the QSFP-DD slots.
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

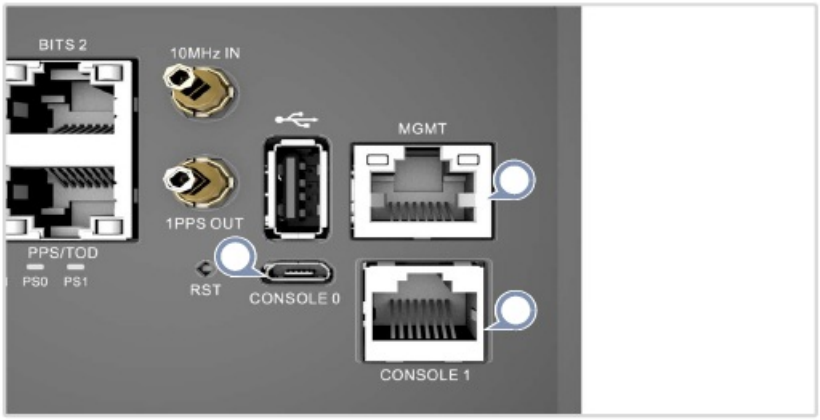
- 40GBASE-SR4, LR4

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

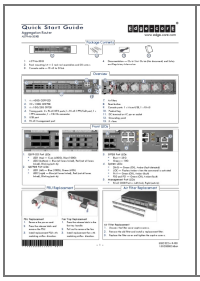


MGMT RJ-45 Port
Connect Cat. 5e or better twisted-pair cable.
RJ-45 Console Port
Connect the included console cable and then configure the serial connection: 115200 bps, 8 characters, no parity, one stop bit, 8 data bits, and no flow control.
Micro-USB Console Port
Connect using a standard USB to Micro-USB 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	22 x 100G QSFP28 4 x 400G QSFP-DD 4 x 10G/25G SFP28
Chassis	
Size (WxDxH)	440 x 480 x 87 mm (17.3 x 18.9 x 3.4 in)
Weight	16 kg (35.27 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	527 W at 25° C (77° F) 684 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)
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)

Documents / Resources

	Edge-core AS7946-30XB Aggregation Router [pdf] User Guide AS7946-30XB, Aggregation Router, AS7946-30XB Aggregation Router

References

- Edgecore Networks