

Quick Start Guide

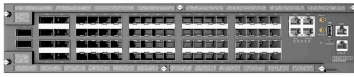
Ethernet Switch

AS7946-74XKSB

Edge-core®

www.edge-core.com

Package Contents



1



2



3

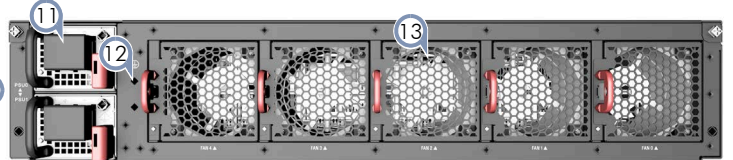
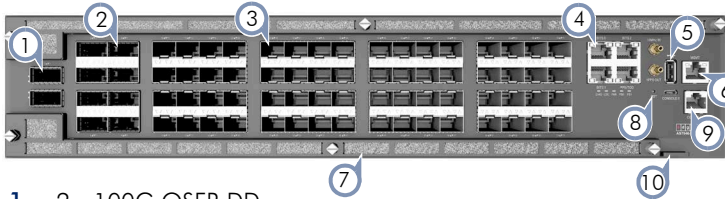


4

1. AS7946-74XKSB
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

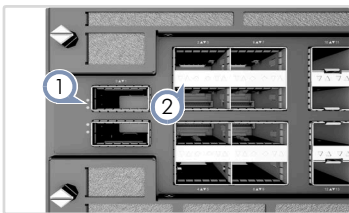
Overview



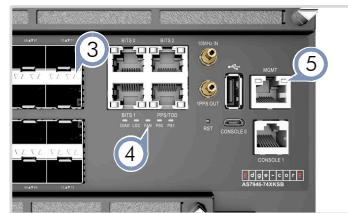
1. 2 x 100G QSFP-DD
2. 8 x 40G/100G QSFP28
3. 64 x 10G/25G SFP28
4. Timing ports: 3 x RJ-45 BITS ports, 1 x RJ-45 1PPS/ToD port, 1 x 1PPS connector, 1 x 10MHz connector
5. USB port
6. RJ-45 Management port
7. Air filters
8. Reset button
9. Console ports: 1 x Micro-USB, 1 x RJ-45
10. Product tag

11. DC terminal or AC power socket
12. Grounding point
13. 5 x fans

Front LEDs

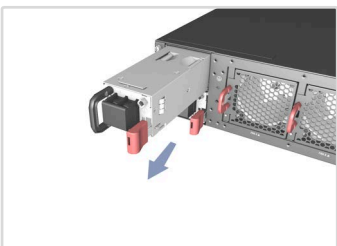


1. **QSFP-DD Port LEDs:**
 - LED1 (top) — Blue (100G)
 - LED2 (bottom) — Blue (all lanes linked), Off (not all lanes linked), Blinking (activity)
2. **QSFP28 Port LEDs:**
 - LED1 (left) — Blue (100G), Green (40G)
 - LED2 (right) — Blue (link), Off (not all lanes linked), Blinking (activity)



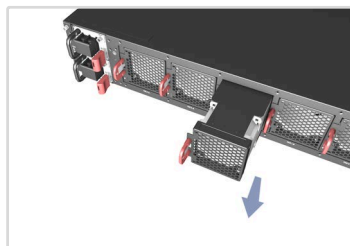
3. **SFP28 Port LEDs:**
 - LED1 (left) — Blue (25G), Green (10G)
 - LED2 (right) — Blue (link), Blinking (activity)
4. **System LEDs:**
 - DIAG — Green (OK), Amber (fault detected)
 - LOC — Flashes Amber when the command is activated
 - FAN — Green (OK), Amber (fault)
 - PS0 and PS1 — Green (OK), Amber (fault)
5. **Management Port LEDs:**
 - RJ-45 OOB Port — Left (link), Right (activity)

FRU Replacement



PSU Replacement

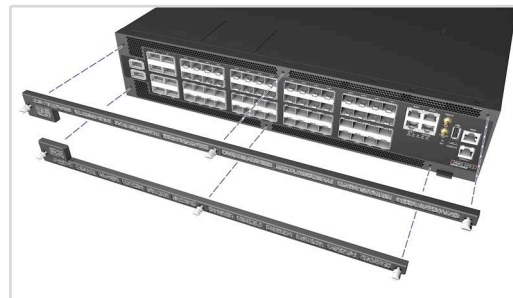
1. Remove the power cord.
2. Press the release latch and remove the PSU.
3. Install replacement PSU with matching airflow direction.



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



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.

Avertissement: Pour une installation sûre et fiable, utilisez uniquement les accessoires et les vis fournies avec l'appareil. L'utilisation d'autres accessoires et vis pourrait endommager l'appareil. Les dommages causés par l'utilisation d'accessoires non approuvés ne sont pas couverts par la garantie.

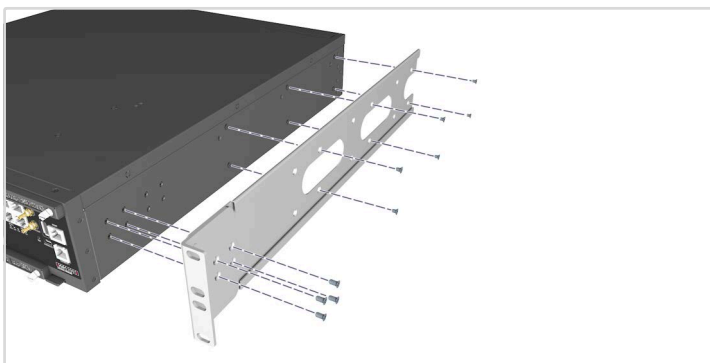


Caution: The device must be installed in a restricted-access location.

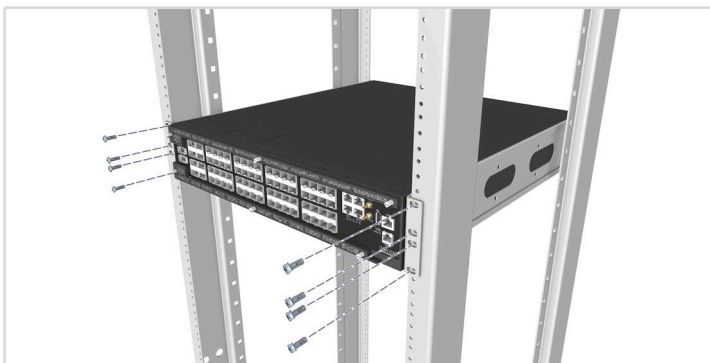
Attention: L'appareil doit être installé dans un emplacement à accès restreint.



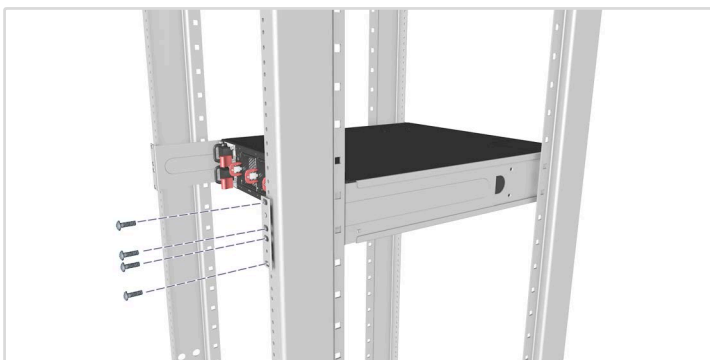
Note: The drawings in this document are for illustration only and may not match your particular model.

1 Mount the Device

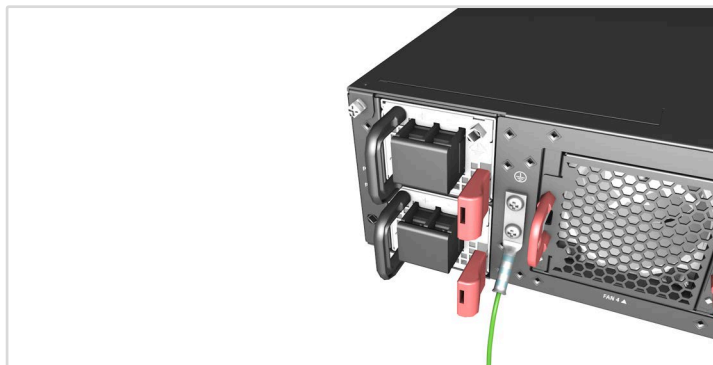
1. Separate the rack-rail assembly into two sections.
2. Use the included ten screws to attach the bracket to each side of the device.



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.

2 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.



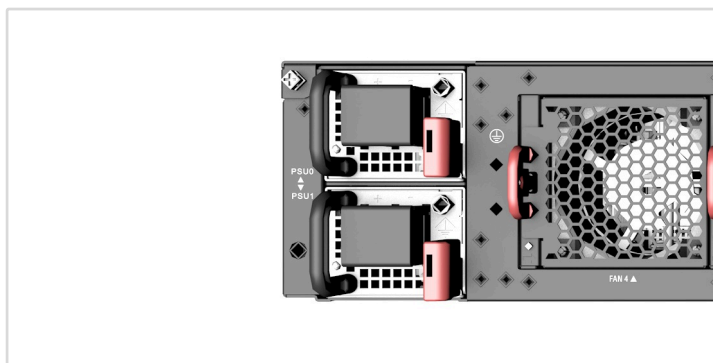
Caution: The chassis ground connection must not be removed unless all supply connections have been disconnected.

Attention: Le raccordement à la terre ne doit pas être retiré sauf si toutes les connexions d'alimentation ont été débranchées.






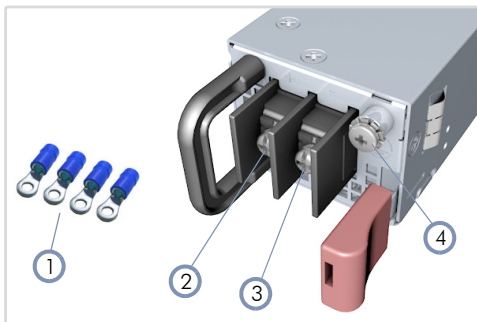
Caution: The device must be installed in a restricted-access location. It should have a separate protective ground terminal on the chassis that must be permanently connected to a well grounded chassis or frame to adequately ground the device chassis and protect the operator from electrical hazards.

Attention: L'appareil doit être installé dans un emplacement à accès restreint. Il doit comporter une borne de terre de protection distincte sur le châssis, qui doit être connectée en permanence à la terre pour assurer une mise à la terre adéquate du châssis et protéger l'opérateur des risques électriques.

3 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.
Attention: Utilisez une alimentation certifiée IEC/UL/EN 60950-1 et/ou 62368-1 pour vous connecter à un convertisseur CC.
-  **Caution:** All DC power connections should be performed by a qualified professional.
Attention: Toutes les connexions d'alimentation CC doivent être effectuées par un professionnel qualifié.
-  **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.

4 Connect Timing Ports



RJ-45 BITS

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

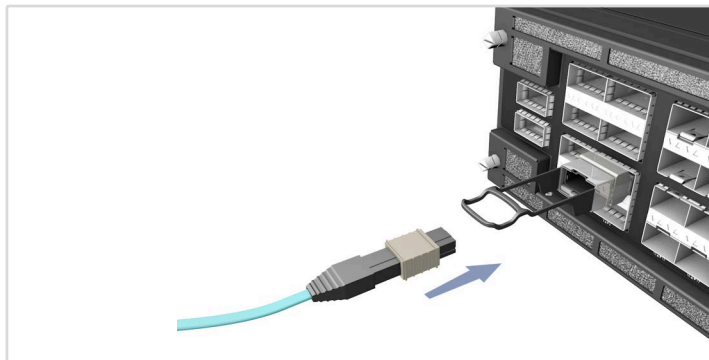
RJ-45 1PPS/ToD

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.

5 Make Network Connections



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

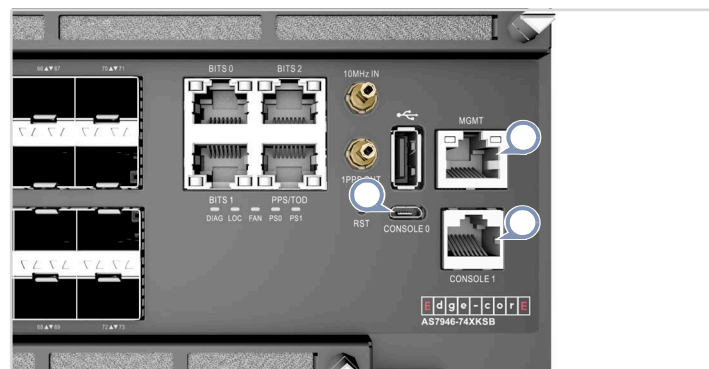
Install transceivers and then connect fiber optic cabling to the transceiver ports.

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.

6 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	64 x 10G/25G SFP28 8 x 40G/100G QSFP28 2 x 100G QSFP-DD

Chassis

Size (WxDxH)	440 x 480 x 87 mm (17.3 x 18.9 x 3.4 in)
Weight	15.3 kg (33.73 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) 723 W at 45° C (113° F)

48 VDC PSU

DC Input	-40 – -75 VDC, 40 A max
----------	-------------------------

AC PSU

AC Input	100-120 VAC, 50-60 Hz, 12 A Max. 200-240 VAC, 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 GB/T 9254.1-2021 Class A 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/CSA 22.2 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

包装清单



①



②



③



④

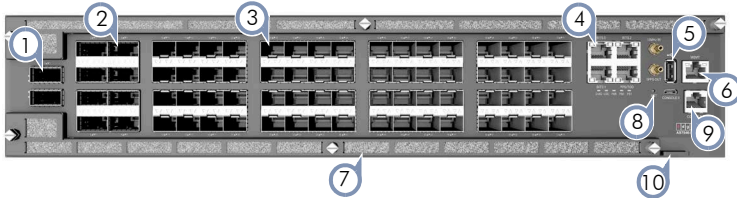
1. AS7946-74XKSB

2. 机架安装套件 — 2个机架安装的组件和20个螺钉

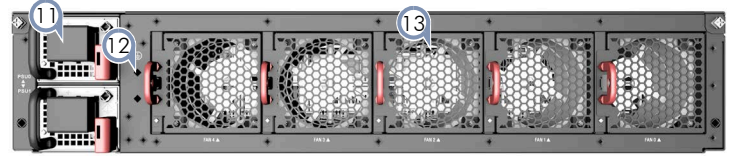
3. 控制台线—RJ-45 转D-Sub

4. 文档 — 快速入门指南（本文档）以及安全和管制信息

概述

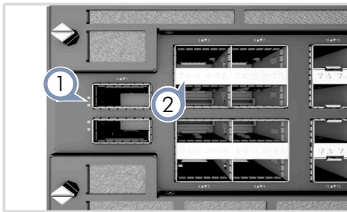


1. 2 x 100G QSFP-DD
2. 8 x 100G QSFP28
3. 64 x 1G/10G/25G SFP28
4. 定时端口: 3 x RJ-45 BITS 端口, 1 x RJ-45 1PPS/ToD 端口, 1 x 1PPS 连接器, 1 x 10MHz 连接器
5. USB 端口
6. RJ-45 管理端口

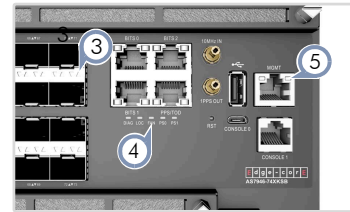


7. 空气过滤器
8. 重置按钮
9. 控制台: 1 x Micro-USB, 1 x RJ-45
10. 产品标签
11. 直流终端或交流电源插座
12. 接地螺丝
13. 5 x 风扇

状态 LED

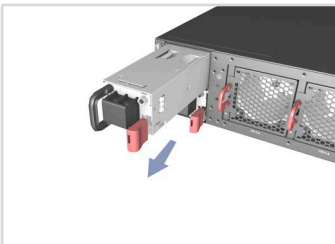


1. QSFP-DD 端口 LED:
 - LED1 (顶部) — 蓝色 (100G)
 - LED2 (底部) — 蓝色 (所有数据通道连接), 离开 (非所有数据通道连接), 闪烁 (活动)
2. QSFP28 端口 LED:
 - LED1 (左侧) — 蓝色 (100G)、绿色 (40G)
 - LED2 (右侧) — 蓝色 (链路), 红色 (非所有数据通道连接), 闪烁 (活动)



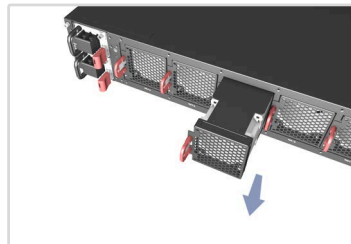
3. SFP28 端口 LED:
 - LED1 (左侧 — 蓝色 (25G)、绿色 (10G))
 - LED2 (右侧) — 蓝色 (链路), 闪烁 (活动)
4. 系统 LED:
 - DIAG — 绿色 (OK), 琥珀色 (检测到故障)
 - LOC — 当命令被激活时, 闪烁着琥珀色
 - FAN — 绿色 (OK), 琥珀色 (故障)
 - PS0/PS1 — 绿色 (OK), 琥珀色 (故障)
5. 管理端口 LED:
 - RJ-45 OOB Port — 左侧 (链路), 右侧 (活动)

FRU 更换



PSU 更换

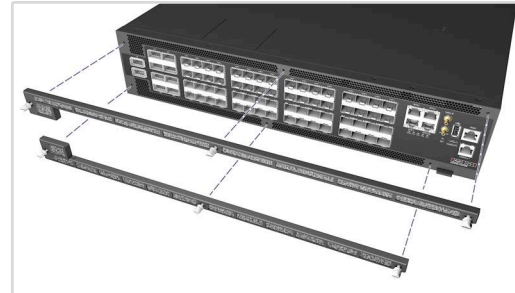
1. 拔下电源线。
2. 按下释放闩锁并卸下PSU。
3. 安装气流方向匹配的更换



风扇架更换

1. 按下风扇托盘手柄中的释放闩锁。
2. 拉出, 以移除风扇。
3. 安装气流方向匹配的更换风扇。

更换空气过滤器



更换空气过滤器

1. 松开过滤器盖板上的栓系螺钉。
2. 移除旧的过滤器, 并安装更换用的过滤器。
3. 更换过滤器盖板并上紧栓系螺钉。

安装



警告： 仅使用和设备随附提供的附件和螺钉，以确保安全和可靠的安装。使用其他附件和螺钉可能会造成设备损坏。使用未经许可的附件而造成的任何损坏，将不予保修。

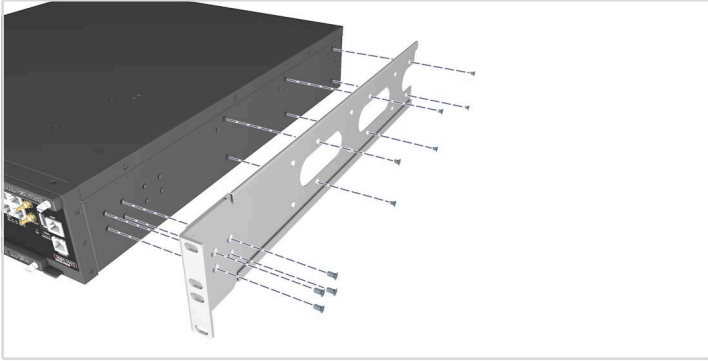


小心： 必须将设备安装在限制访问位置。

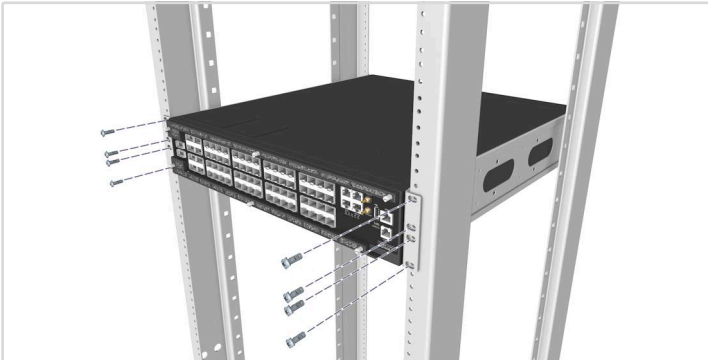


注意： 本文件中的图纸仅用于说明，可能与您的特定型号不匹配。

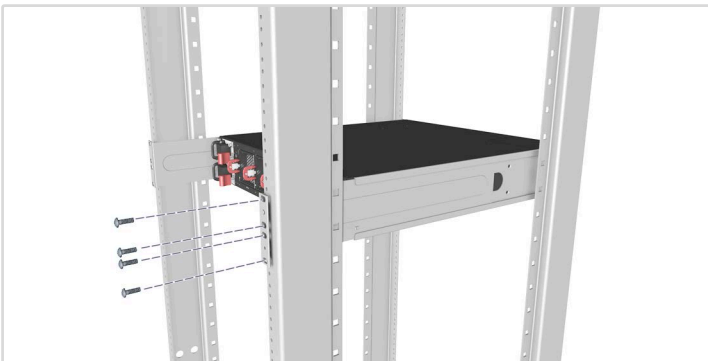
1 安装交换机



1. 将机架-导轨组件分成两部分。
2. 使用随附的十个螺钉，将机架安装架连接到设备的每一侧。

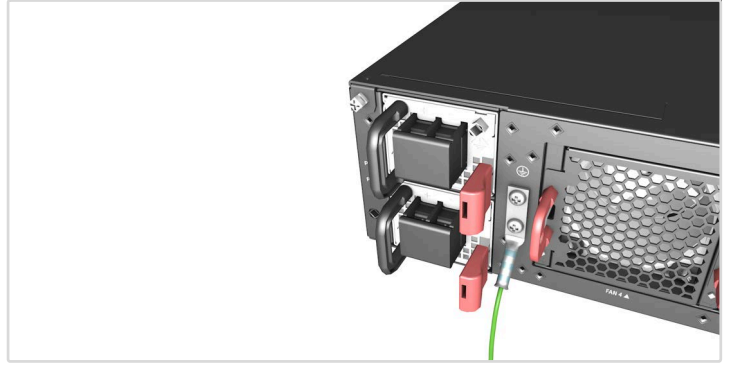


3. 将设备滑入机架。
4. 将其固定好，用四颗螺丝将机架组件固定在前柱上。



5. 在固定设备的同时，从后面滑动机架组件的内部部分，直到它适合后部的柱子。
6. 用四颗螺丝将机架组件固定在后面。

2 将交换机接地



确认机架接地

确保要安装交换机的机架已正确接地，并且符合 ETSI ETS 300 253 规范。确认到机架上接地点的电力连接良好（未经过油漆或绝缘表面处理）。

安装接地线

将接线片（未提供）连接到 #8 AWG 最小规格的接地线（未提供），并将其连接到交换机后侧面板上的接地点。然后将另一端连接到机架接地端。

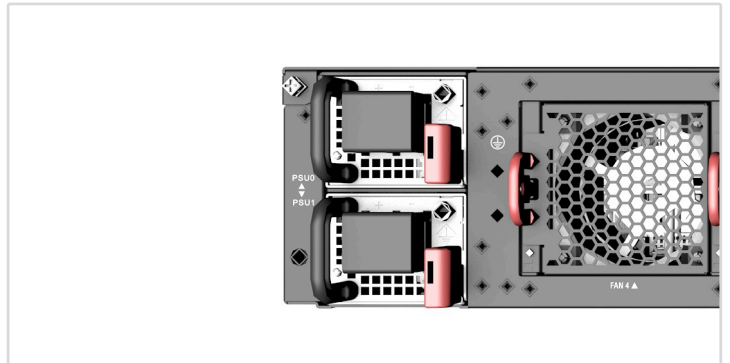


小心： 在所有电源连接已断开之前不得断开机箱接地连接。



小心： 必须将设备安装在限制访问位置。在机箱上应有单独的保护接地端子，该端子必须永久连接到接地良好的机箱或框架以使设备机箱充分接地，使操作人员免受电击。

3 连接电源



直流电源

安装 2 个直流 PSU，然后将其连接到直流电源。



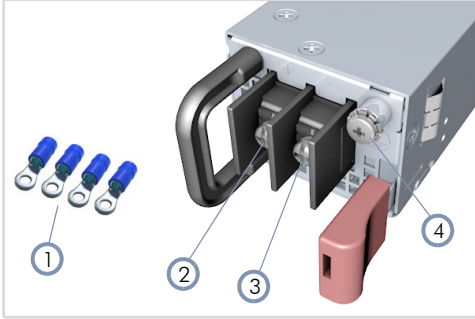
小心： 使用一个通过 IEC/UL/EN 60950-1 和 / 或 62368-1 认证的电源连接到直流转换器。



小心： 所有直流电源连接应由合格的专业人员执行。



注意： 使用 #8 AWG / 6 mm² 铜芯线（用于 -40 至 75 VDC PSU）连接到直流 PSU。



1. 使用直流PSU 随附的环形接线片。
2. 直流回路
3. -40 – -75 VDC
4. 使用8号绿色/黄色的接地线将直流电源接地。

交流电源

安装2 个交流PSU，然后将其连接到交流电源。

4 连接定时端口



RJ-45 BITS

使用类别 5e 或更高等级的双绞线进行设备同步。

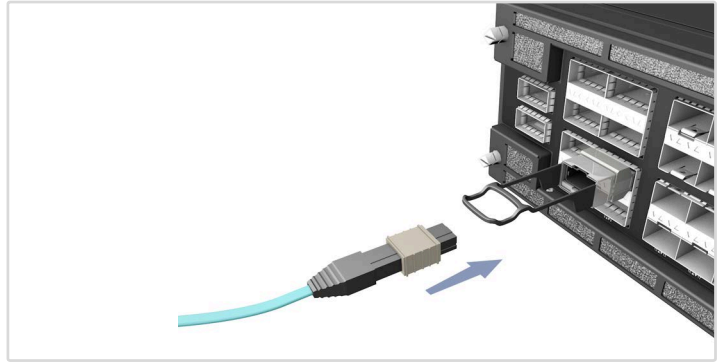
RJ-45 1PPS/ToD

使用类别 5e 或更高等级的双绞线，以每秒 1 脉冲 (1PSS) 和当天时间连接到其他同步的设备。

10MHz IN/1PPS OUT

使用同轴电缆，连接10MHz IN及以每秒1 脉冲(1PPS) OUT端口到另一台同步的设备。

5 建立光纤连接



100G QSFP-DD 端口

安装收发器，随后将光纤线连接到收发器端口。

QSFP-DD 端口支持以下收发器：

- 功率等级 8 高达 16.5W

100G QSFP28 端口

安装收发器，随后将光纤线连接到收发器端口。

QSFP28 端口支持以下收发器：

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

作为替代方式，可将DAC 线缆直接连接到QSFP28 插槽。

SFP28 端口

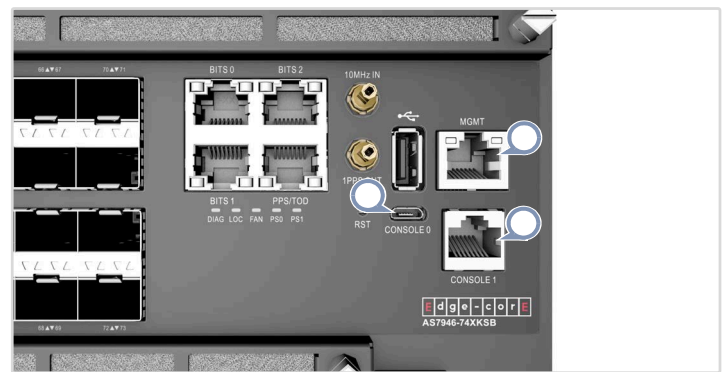
安装收发器，随后将光纤线连接到收发器端口。

SFP28 端口支持以下收发器：

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

作为替代方式，可将DAC/AOC 线缆直接连接到SFP28 插槽。

6 建立管理连接



MGMT RJ-45 端口

连接 5e 类或更好双绞线缆。

RJ-45 控制台端口

连接附带的控制台线缆，然后配置串行连接：115200 bps，8 个字符，无奇偶校验，一个停止位，8 个数据位，无流量控制。

Micro USB 控制台端口

使用标准USB 转 Micro USB 线进行连接。

硬件规格

介面

管理	1 x RJ-45 控制台端口 1 x RJ-45 10/100/1000BASE-T 管理端口 1 x USB2.0 端口 1 x Micro USB 控制台端口
----	---

网络	64 x 10G/25G SFP28 8 x 40G/100G QSFP28 2 x 100G QSFP-DD
----	---

交换机机箱

尺寸 (宽 x 深 x 高)	440 x 480 x 87 mm (17.3 x 18.9 x 3.4 in)
----------------	--

重量	15.3 kg (33.73 lb)
----	--------------------

工作时温度	0° C 到 45° C (32° F 到 113° F)
-------	-------------------------------

存放时温度	-40° C 到 70° C (-40° F 到 158° F)
-------	----------------------------------

湿度	工作时: 5% 到 85% (无冷凝) 存放时: 5% 到 95% (无冷凝)
----	--

功耗	527 W @ 25° C (77° F) 723 W @ 45° C (113° F)
----	---

48VDC PSU

直流输入	-40 – -75 VDC, 40 A max
------	-------------------------

AC PSU

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

管制符合性

辐射	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 GB/T 9254.1-2021 Class A BSMI VCCI
----	--

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

安全	UL/CUL (CAN/CSA 22.2 No 62368-1 & UL 62368-1) CB (IEC/EN 60950-1 & IEC/EN 62368-1) CCC (GB4943.1-2011) BSMI VCCI
----	--

RoHS	CNS 15663
------	-----------

Warranty Information and Technical Support

Registering your product enables you to receive a more efficient warranty service. Be sure to register at www.edge-core.com.
