JNP-QSFP-DAC-5M

Part number: 740-038625

Optics Overview

Juniper Networks offers a complete portfolio of modular and fixed-chassis routers and switches for both WAN and data center networks. These solutions span Juniper's MX-Series Universal Routing Platform and PTX-Series Packet Transport Routers to EX-Series Ethernet Switches and QFX-Series Data Center Switches among others. Depending on deployment scenarios, Juniper's platforms support different pluggable optic modules that can be selected based on speed, distance, form-factor, and wavelength among other relevant attributes.

Additional Resources

Hardware Compatibility Tool

HCT contains a regularly updated database of Juniper's transceivers, DACs, and AOCs along with information regarding compatibility with Juniper's platforms and interface modules.

https://apps.juniper.net/hct/home/

Product Description

QSFP+ 40GBase Direct Attach Copper Cable 5-meter, passive

Overview

Part Number	740-038625
Speed	40 Gigabit Ethernet
Breakout Capable	No
Transceiver Type	QSFP+
Product Type	DAC
Connector	None. Transceivers are permanently attached.
Monitoring Available	—
Digital Optical Monitoring	—

Note:
- Monitoring Available - Can measure received optical power and display in CLI.
- Digital Optical Monitoring - Full support for SFF-8636.
- Common Optic - The common optics product line provides competitively priced single-SKU optics offerings for use across Juniper routing, switching, and security platforms.

Specifications

Standard: QSFP-DAC

Signaling rate, each lane	40-Gbps full-duplex serial transmission
Wire AWG	26 AWG
Cable type	N/A
Distance	5 m
Maximum Power consumption (W)	0.5 W
Operating Temperature (range)	−40° C to 85° C
Storage temperature	—

Supported Platforms

Platform	Introduced Release	Additional Information
Routing		
ACX5000		
ACX5448-D	Junos OS 19.3R1	
ACX5448-M	Junos OS 19.3R1	
ACX5448	Junos OS 18.2R1	
ACX6360	Junos OS 18.4R1	
ACX7100-32C	Junos OS Evolved 21.3R1	
ACX7100-48L	Junos OS Evolved 21.3R1	
ACX7509	Junos OS Evolved 21.4R1	
PTX1000	Junos OS 16.1X65-D30	
PTX10003	Junos OS Evolved 19.1R1	
PTX10008		
PTX10016		
Switching		
EX3400	Junos OS 15.1X53-D50	
EX4300	Junos OS 13.2X51-D15	EX4300-24T, EX4300-24P, EX4300-48T, EX4300-48T-AFI, EX4300-48P, EX4300-48T-DC, and EX4300-48T-DC-AF switches—Junos OS for EX Series switches, Release 13.2X50-D10 or later EX4300-32F switches—Junos OS for EX Series switches, Release 13.2X51-D15 or later EX4300-24T-S, EX4300-24P-S, EX4300-32F-S, EX4300-48T-S, and EX4300-48P-S switches—Junos OS for EX Series switches, Release 13.2X51-D26 or later
EX4300 Multigigabit	Junos OS 18.2R1	
EX4400	Junos OS 22.1R1	
EX4400-48T	Junos OS 22.1R1	
EX4400-24T	Junos OS 22.1R1	
EX4400 Multigigabit	Junos OS 22.1R1	

Platform	Introduced Release	Additional Information
EX4400-24X Breakout Supported	Junos OS 23.1R1	
EX4400-48F	Junos OS 22.1R1	
EX4600		
EX9251	Junos OS 18.1R1	
EX9253	Junos OS 18.2R1	
QFX3500		
QFX5100	Junos OS 14.1X53-D35	
QFX5110	Junos OS 15.1X53-D210	
QFX5200-32C	Junos OS 15.1X53-D30	
QFX5210-64C	Junos OS 18.1R1	
QFX5220-128C	Junos OS Evolved 19.2R1	
QFX5230-64CD		
QFX10002	Junos OS 15.1X53-D10	
QFX10008		
QFX10016		
QFX10002-60C		

Supported Interface Modules

Line Cards

Name	Description	Platforms and Introduced Releases
40 Gigabit Ethernet		
ACX7509-FPC-16C	ACX7509 16X40GE/16X100GE LINE CARD	ACX7509 Junos OS Evolved 21.4R1
EX9253-6Q12C (EOL)	A line card with six built-in QSFP+ ports, each of which can house QSFP+ pluggable transceivers and 12 built-in QSFP28 ports, each of which can house QSFP28 pluggable transceivers.	EX9253 Junos OS 18.2R1

Name	Description	Platforms and Introduced Releases	
EX9253-6Q12C-M (EOL)	A line card with six built-in QSFP+ ports, each of which can house QSFP+ pluggable transceivers and 12 built-in QSFP28 ports with Media Access Control Security (MACsec) capability, each of which can house QSFP28 pluggable transceivers.	EX9253 Junos OS 18.2R1	
QFX10000-36Q	A 36-port 40-Gigabit Ethernet quad small form-factor pluggable plus transceiver (QSFP+) or 12-port 100GbE QSFP28 line card	QFX10008 Junos OS 15.1X53-D30	QFX10016 Junos OS 15.1X53-D61
QFX10000-60S-6Q	QFX10000 60-port 1/10G SFP/SFP+ line card with 6 40G QSFP+ / 2 100G QSFP28 ports	PTX10008 Junos OS 19.1R1 QFX10008 Junos OS 17.1R1	PTX10016 Junos OS 19.1R1 QFX10016 Junos OS 17.1R1

Uplink Modules

Name	Description	Platforms and Introduced Releases	
40 Gigabit Ethernet			
EX-UM-2QSFP	EX4300, 2-Port 40G QSFP+ Uplink Module	EX4300 Junos OS 13.2X51-D15	
EX4400-EM-1C	1x100GbE QSFP28 extension module for EX4400 series of switches	EX4400 Junos OS 23.1R1 EX4400-24T Junos OS 23.1R1 EX4400-24X Junos OS 23.1R1	EX4400-48T Junos OS 23.1R1 EX4400 Multigigabit Junos OS 23.1R1 EX4400-48F Junos OS 23.1R1

Why buy optics from Juniper?
There is <u>value</u> in choosing Juniper over 3rd party optics

✓ **Full testing, validation, and JTAC support for Juniper optics**

- Power, Electrical, and Management interfaces tested at the system level.

- Extended temperature and functional testing in DVT chamber using fully loaded systems.

- Full software integration into JUNOS/EVO for seamless part recognition, functionality, and telemetry.

- Latest qualification status and optics specifications published on <u>Hardware Compatibility Tool.</u>

✓ **Single-source provider for 1G to 400G on a variety of optical technologies**

- Juniper's optics portfolio is maintained and constantly refreshed based on vendor availability.

- Automatic supply chain diversity and supply continuity - multiple optics suppliers fulfilled through Juniper.

✓ **Rigorous evaluation of optical vendors**

- Juniper ensures uniformity across all vendors by standardizing P-Specs for management, specs, and logs.

- Vendors are scored based on engineering and supply-chain analysis.

- Factory audits and critical component evaluation (Ex. Who is supplying the laser?).

Aren't 3rd party optics the same?
Optics may be a commodity, but some things are too good to be true

× **Juniper does not Provide JTAC support for 3rd party optics**

- JTAC will only assist with host-related issues unrelated to the use of 3rd party optics.

× **Not all optics are the same - standards compliance does <u>not</u> guarantee quality or performance**

- Third-party providers lack system-level knowledge and testing.

- No guarantee of vendor reliability or accountability.

× **Newer technologies (ex. Coherent 400G ZR/ZR+) are complex and not simply plug-and-play**

- Significant software integration necessary to enable full functionality, management, and telemetry.

- Use of unqualified 3rd party high-power optics can damage the host equipment.

× **Third-party providers simply can't scale**

- Incomplete solution offerings and fast turnaround times only for limited quantities.