



The bridge to possible

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Cisco CFP2-to-CPAK Port Adapter

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Product overview

The Cisco® CFP2-to-CPAK adapter allows a Cisco C Form-Factor Pluggable 2 (CPAK) optical module to be plugged into a CFP2 port and to emulate an optical CFP2 100G Module.

Features and benefits

The Cisco CFP2-to-CPAK port adapter provides the ability to use the pluggable Cisco CPAK 100GBASE Module in any Cisco platform with a CFP2 client port. The Cisco CPAK module is the lowest power consuming pluggable 100G module available in a variety of IEEE standard optical interfaces from 100GBASE-SR10 to 100GBASE-ER4L. Some platforms may even be able to take advantage of CPAK and Cisco AnyPort breakout technology, enabling 10 G, 40 G or 100 G interconnects to a 100 G port.

There are two port adapters to support Cisco CPAK modules. The CVR-CFP2-CPAK4 supports modules with a 4x25G electrical interface such as CPAK-100G-LR4 and CPAK-100G-ER4L. The CVR-CFP2-CPAK10 supports modules with a 10x10G electrical interface such as CPAK-100G-SR10 and CPAK-10X10G-LR. The CVR-CFP2-CPAK4 adapter supports the two aggregate data rates of 100 Gbps Ethernet and Optical Transport Network (OTN) rates. The CVR-CFP2-CPAK10 supports only the 100GBase Ethernet data rate. Both adapters are optically, electrically, and functionally compliant to IEEE 802.3ba/802.3ae, ITU G.709/G.959 standards.

Main features include:

- Provides the performance advantages and availability of Cisco CPAK for 100 G client CFP2 ports
- Complies with IEEE standards for optical interfaces
- Reduces inventory and costs of multiple 100 G form factors across multivendor platforms environments
- Provides green design with up to 45 percent lower power consumption than comparable CFP2 modules
- The CVR-CFP2-CPAK4 supports 100 Gigabit Ethernet and OTU4 data rates
- The CVR-CFP2-CPAK10 supports 100 Gigabit Ethernet rate only
- Allows any CPAK module to be used in a CFP2 module-based switch, router, or other optical platform port with hot swappable adapter
- Enables interface choice for 4x25G or 10x10G modules
- Supports a pay-as-you-grow model
- Supports Digital Optical Monitoring (DOM)
- Has interoperability with any IEEE-compliant 100GBASE-LR4 or 100GBASE-SR10 form factors
- Provides easy-to-use pull-release handle that is color coded for reach identification
- Comes with Cisco support and reliability
- Supports the Cisco quality ID feature, which enables a Cisco switch or router to identify whether the module is certified and tested by Cisco

Cisco CFP2 to CPAK (CVR-CFP2-CPAK4)

The Cisco CFP2-to-CPAK port adapter (Figure 1) offers the flexibility to convert a CFP2 100 Gigabit Ethernet port of a Cisco switch or router to a Cisco CPAK 100 G port.

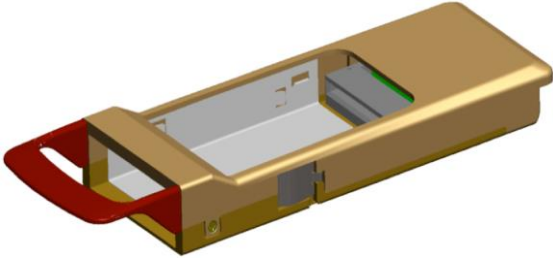


Figure 1.
Cisco CFP2-to-CPAK Port adapter module

Product specifications

Following is information about platform support, and connectors and cabling.

Platform Support

Cisco CVR-CFP2-CPAK4 and CVR-CFP2-CPAK10 port adapters are supported on 100 Gigabit Ethernet CFP2 ports of Cisco switches. For more details, see this document:

https://www.cisco.com/c/en/us/td/docs/interfaces_modules/transceiver_modules/compatibility/matrix/100GE_Tx_Matrix.html.

Connectors and Cabling

CVR-CFP2-CPAK10 and CVR-CFP2-CPAK10 contain no optics, Connector and fiber type information should be determined from the CPAK module datasheet:

https://www.cisco.com/c/en/us/products/collateral/routers/carrier-routing-system/data_sheet_c78-728110.html.

Table 1. Optical transmit and receive specifications

Adapter - CPAK Combination	λ (nm)	Architecture	Protocol	Lane	Optical	Max BER	Cable Type	Link	Optics Connector
CVR-CFP2-CPAK4 w/ CPAK-LR4	1295.56 1300.05 1304.58 1309.14	4x25	IEEE 802.3ba	25.78125	100GBASE-LR4	10-12	SMF G.652	10km	SC duplex
CVR-CFP2-CPAK4 w/ CPAK-ER4L	1295.56 1300.05 1304.58 1309.14	4x25	IEEE 802.3ba	25.78125	100GBASE-ER4L	10-12	SMF G.652	<40km	SC duplex

Adapter - CPAK Combination	λ (nm)	Architecture	Protocol	Lane	Optical	Max BER	Cable Type	Link	Optics Connector
CVR-CFP2-CPAK10 w/ CPAK-10x10LR	1310	10x10	IEEE 802.3ae	10.3125	10GBASE-LR	10-12	SMF G.652	10km	SMF MPO (24 fibers)
CVR-CFP2-CPAK10 w/ CPAK-SR10	850	10x10	IEEE 802.3ae	10.3125	100GBASE-SR10	10-12	MMF OM3 OM4	100m 150m	MMF MPO (24 fibers)

Power management

The power supply takes the 3.3V from the host through the CFP2 connector.

Table 2. Adapter with CPAK module power supply requirements

Voltage Supply (V)	Symbol	DC Tolerance (%)	Peak Inrush Current (mA)	Max. Current (mA)	Max. Current Ramp rate mA/ μ s	Maximum Power (W)	
						Low-power mode is negated	Low-power mode is asserted
3.3	Vcc	+/-5	4306	2871	100	LR4: 9 SR10, 10x10G-LR: 5.5	LR4: 5 SR10, 10x10G-LR:

Table 3. Adapter operating conditions

	PID	Min	Typ.	Max	Unit
Case Temperature	CVR-CFP2-CPAK4/ CVR-CFP2-CPAK10	0		70	$^{\circ}$ C
Power supply voltage	CVR-CFP2-CPAK4/ CVR-CFP2-CPAK10	3.135	3.3	3.465	V
Power consumption (EOL)	CVR-CFP2-CPAK4/ CVR-CFP2-CPAK10 without CPAK			1	W
	CVR-CFP2-CPAK4 w/ CPAK-LR4			9	
	CVR-CFP2-CPAK10 w/ CPAK-SR10			5.5	
	CVR-CFP2-CPAK10 w/ CPAK-10x10LR			5.5	

Adapter with CPAK in comparison to CFP2 MSA length

With the CPAK module inserted, the CFP2-to-CPAK solution has an additional 1-inch protrusion length in comparison with a standard MSA-compliant CFP2 module.

Platform Support

For more details, see the document, “Cisco 100 Gigabit Ethernet Transceiver Modules Compatibility Matrix.”

The adapter supports CPAK form factor portfolio to be adapted in CFP2 ports. These include but are not limited to:

- CPAK-100G-SR10
- CPAK-100G-LR4
- CPAK-100G-ER4L
- CPAK-10X10G-LR
- CPAK-10X10G-ERL

Physical specifications

Maximum outer dimensions (H x W x D)	17.3mm x 41.6mm x 153mm
Weight	115.8g

Environmental conditions and power requirements

- Operating temperature range: 0° to 70° C (32° to 158° F)
- Storage temperature range: -40° to 85° C (-40° to 185° F)

Warranty

- Standard warranty: 1 year
- Expedited replacement available via a Cisco SMARTnet® Service support contract

Regulatory and standards compliance

Standards

- GR-20-CORE: generic requirements for optical fiber and optical fiber cable
- GR-326-CORE: generic requirements for single-mode optical connectors and jumper assemblies
- GR-1435-CORE: generic requirements for multifiber optical connectors
- IEEE 802.3ba: 40GBASE requirements
- ITU-T G.709: OTU3 requirements

Safety

- Laser Class 1 21CFR-1040 LN#50 7/2001
- Laser Class 1 IEC60825-1

Ordering information

To place an order, visit the Cisco Ordering webpage at <https://cisco-pps.cisco.com/cisco/psn/commerce>.

Table 4. Ordering information

Product Name	Product Description
CVR-CFP2-CPAK4=	Cisco QSA Module
CVR-CFP2-CPAK10=	Cisco QSA Module

Cisco environmental sustainability

Information about Cisco’s environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the “Environment Sustainability” section of Cisco’s [Corporate Social Responsibility](#) (CSR) Report.

Reference links to information about key environmental sustainability topics (mentioned in the “Environment Sustainability” section of the CSR Report) are provided in the following table:

Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	WEEE compliance

Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

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For more information

For more information about the Cisco CFP2-to-CPAK adapter, contact your local sales representative or visit https://www.cisco.com/en/US/products/hw/modules/ps5455/prod_module_series_home.html.

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