

Cisco 400G Digital Coherent BiDi CFP2

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Cisco offers a comprehensive range of pluggable optical modules in the Cisco pluggables portfolio. The wide variety of modules gives you flexible and cost-effective options for all types of interfaces. Cisco offers a range of GBIC, SFP, XFP, SFP+, CXP, CFP, Cisco CPAK, and QSFP+ pluggable modules. These small, modular optical interface transceivers offer a convenient and cost-effective solution for an array of applications in the data center, campus, metropolitan-area access and ring network, storage area network, and long-haul network. In recent times, with longer strides of innovation, Cisco has introduced analog and digital DWDM CFP2 interfaces to the market as well the 400G Digital Coherent QSFP-DD Pluggable Optical Module. All of the above have been designed for fiber pair transmission. Cisco is now offering the new Cisco 400G Digital Coherent BiDi CFP2 capable of supporting single-fiber bidirectional coherent transmission.

Product overview

Cisco already offers a range of Digital Coherent CFP2 transceivers capable of supporting up to a 400-Gbps wavelength. Thanks to technology miniaturization, Cisco is now able to offer a CFP2 DCO supporting up to 400 Gbps of line rate that can cope with single-fiber bidirectional transmission thanks to the availability of a dual-laser approach between Tx and Rx.

The Cisco 400G Digital Coherent BiDi CFP2 is mechanically compliant with CFP2 MSA hardware. The CFP2 module contains a PCB with a 104-contact card-edge electrical interface to external Host/Client-side logic. The Network Lane Interface is a duplex LC connector coupled to an optical fiber carrying the WDM coherent signal in the C-band.

Features and benefits

The Cisco 400G Digital Coherent BiDi CFP2 key application is the transmission over single fiber of both the TX and RX data streams. To achieve this, an external solution is needed to combine the TX and RX ports of the pluggable as depicted in the following pictures:

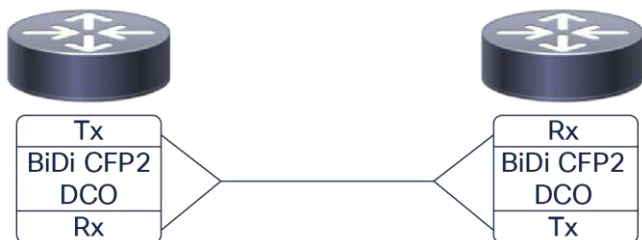


Figure 1.
Single-fiber bidirectional communication with BiDi CFP2 DCO

Cisco 400G Digital Coherent BiDi CFP2 also provides flexible modulation benefits. As in the case of other Cisco Coherent Pluggable Interfaces (CFP2 DCO and QSFP-DD DCO), Cisco 400G Digital Coherent BiDi CFP2 provides the capability to support multiple bit rates:

100 Gbps with QPSK modulation

200 Gbps with QPSK modulation

400 Gbps with 16-QAM modulation

Product sustainability

Information about Cisco's environmental, social and governance (ESG) initiatives and performance is provided in Cisco's CSR and sustainability [reporting](#).

Table 1. Cisco Environmental Sustainability Information

Sustainability Topic		Reference
General	Information on product-material-content laws and regulations	Materials
	Information on electronic waste laws and regulations, including our products, batteries and packaging	WEEE Compliance
	Information on product takeback and resuse program	Cisco Takeback and Reuse Program
	Sustainability Inquiries	Contact: csr_inquiries@cisco.com
Material	Product packaging weight and materials	Contact: environment@cisco.com

Product specifications

The CFP2 DCO BiDi supports the following combinations of network framing and modulation modes as shown in the tables below.

Table 2. TX Optical Specifications

Payload Rate	Line Mode	Symbol Baud Rate (+/-20 ppm)	Modulation	Tx Power	FEC
400G	400G-400ZR-OFEC-16QAM	60 138 546 798	16QAM	-12 dBm (Typ) -13 dBm (EoL)	OFEC
200G	200G-FOIC2-OFEC-QPSK	63 139 467 923	QPSK	-9 dBm (Typ) -10 dBm (EoL)	
	200G-200ZR-OFEC-QPSK	60 138 546 798	QPSK		
100G	FOIC1-OFEC-DP-DQPSK	31 569 733 961	QPSK	-5 dBm (Typ) -6 dBm (EoL)	
	100G-100ZR-OFEC-QPSK	30 069 273 399			

Table 3. RX Optical Specifications

Payload Rate	Line Mode	RX Sensitivity High OSNR	RX OSNR Sensitivity	CD Robustness	DGD Robustness
400G	400G-400ZR-OFEC-16QAM	-18 dBm	22.5 dB (Typ) 24 dB (EoL)	+/-9600 ps/nm	60 ps
200G	200G-FOIC2-OFEC-QPSK	-27 dBm	13.7 dB (Typ) -14.6 dB (EoL)		
	200G-200ZR-OFEC-QPSK				
100G	FOIC1-OFEC-DP-DQPSK	-32 dBm	11.2 dB (Typ) 11.8 dB (EoL)		
	100G-100ZR-OFEC-QPSK				

Ordering information

Cisco CFP2 BiDi Digital Coherent Optical Module 400G

Product ID	Product Description
DP04CFP2-D15	400G Bidirectional DP04CFP2-D15 full C Band tuneable

Warranty information

Product warranty terms and other information applicable to Cisco products are available at www.cisco.com/go/warranty

Cisco and Partner Services

Services from Cisco and our certified partners can help you transform the WDM system setup experience and accelerate business innovation and growth. We have the depth and breadth of expertise to create a clear, replicable, optimized Coherent Transport footprint across technologies. Planning and design services align technology with business goals and can increase the accuracy, speed, and efficiency of your deployment. Technical services can help you improve operational efficiency, save money, and mitigate risk. Optimization services are designed to continuously improve performance and help your team succeed with new technologies. For more information, please visit www.cisco.com/go/services.

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For more information

Our experts recommend

1. Cisco Digital CFP2-DCO Coherent Optical Module Data Sheet
2. Cisco 400G Digital Coherent Optics QSFP-DD Optical Modules Data Sheet

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