CFP2-400G-DCO

400G CFP2 DCO Coherent module Tunable / Supp. ultra long distance wo adding DCM

1. Product overview

400G / 200G Coherent CFP2-DCO Transceiver – Up to 640 km / 2000 km The CFP2-400G-DCO is a high-performance coherent CFP2-DCO optical transceiver designed for high-capacity DWDM transmission in DCI, metro and long-haul networks. The module supports transmission beyond 640 km at 400G and up to 2000 km at 200G over single-mode fiber. The module supports both muxponder and transponder applications and integrates coherent DSP, OTN framing, SD-FEC and flexible host-side electrical interfaces. It is designed for direct integration into CFP2-DCO compatible transport equipment, routers and optical platforms.

Simplified functional illustration

2. Key features

CFP2-DCO coherent optical transceiver • Supports 400G and 200G transmission • DWDM coherent transmission over single-mode fiber • Integrated SD-FEC

3. Applications

Data Center Interconnect – DCI • Metro DWDM networks • Regional transport networks • Long-haul DWDM • 400G coherent point-to-point links • 200G ultra-long-haul transport • Muxponder applications • Transponder applications • 4 × 100G to 400G aggregation • Router and optical transport platform integration

4. Technical data

CFP2-DCO coherent optical transceiver
Supports 400G and 200G transmission
DWDM coherent transmission over single-mode fiber
Integrated SD-FEC
Integrated OTN Framer
Supports muxponder and transponder applications
Hot-pluggable 104-pin CFP2 electrical interface
LC duplex optical connector
Single 3.3 V DC power supply
Typical power consumption: approximately 32 W
CFP2 MSA Hardware Specification Rev. 1.0 compliant
The module supports multiple client-side formats, making it suitable for both native 400G transport and aggregation of multiple 100G services.
1 × 400GE
4 × 100GE
2 × 100GE
4 × OTU4
2 × OTU4
4 × 100G FlexO
2 × 100G FlexO
400GAUI-8
100GAUI-4
100GAUI-2
OTL4.4
OTL4.2
FOIC1.4

FOIC1.2
CEI-28G-MR
CEI-56G-VSR.
Supply voltage: Minimum: 3.2 V, Typical: 3.3 V, Maximum: 3.4 V
Maximum steady-state current: 11.25 A
High-speed electrical interface: CEI-56G-VSR-PAM4, CEI-28G-MR-NRZ
Supports:; FOIC1.2; FOIC1.4; OTL4.2; OTL4.4; 100GAUI-2; 100GAUI-4; 400GAUI-8
High-speed data lines are internally AC-coupled.
Typical power consumption with framer enabled: 32 W
Maximum with framer enabled: 36 W
Typical power consumption with framer bypass: 29 W
Maximum with framer bypass: 33 W
Low-power mode: =2 W.
Supports asynchronous muxponder mapping using GMP
Supports synchronous transponder mapping using BMP
Supports 100G FlexO
Supports OTU4
Supports 100GE
Supports 400GE
Form factor: CFP2-DCO
Dimensions: 107.5 × 41.5 × 12.4 mm
Host interface: 104-pin CFP2 connector
Optical connector: Duplex LC
Fiber type: Single-mode fiber
Mechanically compliant with CFP2 HW Baseline Design Rev. 1L.

5. Recommended operating conditions

Operating case temperature: 0°C to +75°C
Short-term operating case temperature: up to +80°C
Storage temperature: -40°C to +85°C
Relative humidity: 15% to 85%, non-condensing.

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6. Optical characteristics

Transmission reach: 400G: beyond 640 km, 200G: up to 2000 km
Supports 75 GHz and 100 GHz channel spacing
400G modulation: PM-16QAM
200G modulation: PM-QPSK
400G Mode | Line rate: 400G
400G Mode | Modulation: PM-16QAM
400G Mode | Baud rate: 66 Gbaud
400G Mode | Minimum grid spacing: 75 GHz
400G Mode | FEC: SD-FEC
400G Mode | FEC overhead: 15%
400G Mode | BOL Rx OSNR requirement: approximately 21.5 dB
400G Mode | Transmission reach: >640 km over SMF.
200G Mode | Line rate: 200G
200G Mode | Modulation: PM-QPSK
200G Mode | Baud rate: 66 Gbaud
200G Mode | Minimum grid spacing: 75 GHz
200G Mode | FEC: SD-FEC
200G Mode | FEC overhead: 21%
200G Mode | BOL Rx OSNR requirement: approximately 14.5 dB
200G Mode | Transmission reach: up to 2000 km over SMF
Optical Transmitter Specifications | Laser frequency range: 190.69375 to 196.65625 THz
Optical Transmitter Specifications | Frequency tuning grid: 6.25 GHz
Optical Transmitter Specifications | Laser frequency stability: ±1.5 GHz
Optical Transmitter Specifications | Optical output power range: -10 to +1 dBm
Optical Transmitter Specifications | Typical output power: +0.5 dBm
Optical Transmitter Specifications | Output power stability: ±0.3 dB

Optical Transmitter Specifications | Output power reporting accuracy: ±1 dB
Optical Transmitter Specifications | In-band transmitter OSNR: =37 dB/0.1 nm
Optical Transmitter Specifications | Transmitter optical return loss tolerance: 20 dB
Optical Transmitter Specifications | Polarization-dependent output power: maximum 1 dB
Optical Transmitter Specifications | Wavelength switching time: maximum 30 seconds
Optical Transmitter Specifications | Cold-start turn-up time: approximately 60–120 seconds
Optical Transmitter Specifications | TX-disabled optical output: maximum approximately -30 dBm.
Optical Receiver Specifications | Receiver frequency range: 190.69375 to 196.65625 THz
Optical Receiver Specifications | Optimum input power range: -14 to 0 dBm
Optical Receiver Specifications | Typical optimum input level: approximately -8 dBm
Optical Receiver Specifications | Extended input power range: -19 to +1 dBm
Optical Receiver Specifications | Receiver sensitivity: -21 dBm
Optical Receiver Specifications | Optical return loss: 20 dB
Optical Receiver Specifications | BOL OSNR tolerance: 200G PM-QPSK: 13.9 dB typical / 14.5 dB max, 400G PM-16QAM: 20.7 dB typical / 21.5 dB max
Optical Receiver Specifications | Chromatic dispersion tolerance: 200G PM-QPSK: -1,000 to +40,000 ps/nm, 400G PM-16QAM: -1,000 to +20,000 ps/nm
Optical Receiver Specifications | PMD tolerance: 200G: 25 ps, 400G: 20 ps
Optical Receiver Specifications | PDL tolerance: up to 6 dB
Optical Receiver Specifications | Input power monitoring accuracy: ±1.5 dB from 0 to -18 dBm, ±2.5 dB from -18 to -25 dBm.

7. Digital diagnostics and management

CFP MSA Management Interface Specification Version 2.6 compliant.
MDIO management interface
Module reset
Transmitter disable
Receiver loss-of-signal monitoring
Global alarm
Programmable alarms

Programmable controls
Low-power mode
Module-present detection
Firmware management
Status reporting
Internal thermal monitoring
OTN overhead access via OHIO interface.
Configurable via MDIO.

8. Safety and regulatory

UL 62368-1 • CAN/CSA C22.2 No. 62368-1 • EN 62368-1 • EN 60825-1 • EN 60825-2 • FDA 21 CFR 1040.10 / 1040.11 • EN 55032 • EN 55035 • EMC Directive 2014/30/EU • EU RoHS 2011/65/EU • EU 2015/863 • UK RoHS.

9. Ordering information

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10. General notes

Important interoperability note: The datasheet specifies a proprietary line framing format with proprietary SD-FEC. Both ends of the optical connection therefore need to use compatible technology for the specified coherent line configuration. • The source heading says up to 640 km at 400G; its description and performance data say beyond 640 km. Both source values are retained. • Equality signs (for example “=30 W”) and source asterisks are retained as published; no different limit is inferred. • Technical values and product image: GLOBALfiber product page, Technical Info. Unspecified parameters have not been inferred. Accessed 06.09.2026.

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