

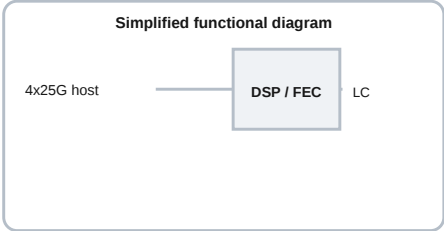
QSFP28-ZR-DCO

QSFP28 100GbE C-Band DWDM 50GHz

Coherent DCO, 80km SM, LC

1. Product overview

Digital Coherent Optics (DCO) QSFP28 transceiver for 100G Ethernet or OTU4 transport. The line interface uses dual-polarization differential QPSK with Staircase FEC and a full C-band tunable local oscillator. The source specification states up to 80 km unamplified and up to 120 km amplified, optionally extendable to 300 km.



2. Key features

- Hot-pluggable QSFP28 coherent DCO module
- 100GBASE-ZR / ITU-T G.709.2 aligned coherent interface
- IEEE 100GE CAUI-4 or ITU-T OTU4/OTL4.4 host interface
- Full C-band tunable on 50 GHz or 100 GHz grid
- Up to 80 km unamplified; 120 km amplified; optional extension to 300 km
- Remote digital diagnostics; C-temp and I-temp versions

3. Applications

- Access and aggregation networks
- Cable TV networks
- Wireless front-haul and mid-haul

4. Technical data

Parameter	Value	Parameter	Value
Technology	100G coherent DCO	Transmission media	SMF, duplex LC
Reach	80 km unamplified / 120 km amplified	Line modulation	DP-DQPSK, 27.9525 GBd
Grid	50 GHz / 100 GHz C-band	Host	100GE CAUI-4 / OTU4 OTL4.4
Power	<5.5 W C-temp / <6.0 W I-temp	DDM	Remote digital diagnostics

5. Recommended operating conditions

Parameter	Value
Operating temperature - C-temp	0 to +70 °C
Operating temperature - I-temp	-40 to +85 °C
Supply	3.3 V class
Low-power dissipation	1.5 W
High-power dissipation	5.5 W / 6.0 W

QSFP28-ZR-DCO

6. Optical characteristics

Parameter	Specification	Parameter	Specification
A. General		C. Receiver	
Symbol rate	27.95 GBd	Rx total input power - broadband	-30 to +3 dBm
Modulation format	DP-DQPSK	Rx signal input power - amplified, full OSNR tolerance	-18 to +1 dBm
Channel frequency range - 100 GHz grid	191.400 / 193.700 / 196.100 THz (min/typ/max)	Rx signal input power - amplified, extended range	-22 to +3 dBm
Channel frequency range - 50 GHz grid	191.350 / 193.700 / 196.100 THz (min/typ/max)	Rx OSNR tolerance - 100G DQPSK SC	16.5 dB/0.1 nm
Channel spacing - 100 GHz grid	100 GHz	Rx OSNR tolerance - 100G DQPSK RS	21.5 dB/0.1 nm
Channel spacing - 50 GHz grid	50 GHz	CD tolerance	OSNR penalty <0.5 dB
Frequency accuracy	-1.8 to +1.8 GHz	PMD tolerance	OSNR penalty <0.5 dB
Laser intrinsic linewidth	500 kHz	DGD tolerance	OSNR penalty <0.5 dB
Side-mode suppression ratio	40 dB	Tolerance to change in SOP	OSNR penalty <0.5 dB
Relative intensity noise	-140 dB/Hz; peak over 0.2 GHz < f < 10 GHz	PDL tolerance - 1 dB PDL	OSNR penalty specification per source
B. Transmitter		PDL tolerance - 2 dB PDL	OSNR penalty specification per source
Tx output power	-8 to -4 dBm	PDL tolerance - 4 dB PDL	3.0 dB/0.1 nm
Tx output power monitor range	-10 to -2 dBm	Rx signal input power transient amplitude	-3 dB peak excursion; OSNR penalty <0.5 dB
Tx output power monitor accuracy	-1.5 to +1.5 dB	Rx signal input power transient rise/fall time	100 us max; OSNR penalty <0.5 dB
Tx output power during tuning / Tx disabled	-35 dBm	Rx signal input power - unamplified, 100G DQPSK SC	-30 to +1 dBm; OSNR >35 dB/0.1 nm
Tx spectral excursion	-15 to +15 GHz	Rx signal input power - unamplified, 100G DQPSK RS	-24 to +1 dBm; OSNR >35 dB/0.1 nm
Tx output power imbalance X/Y polarizations	1.5 dB max	Rx signal input power monitor range	-21 to +3 dBm
Tx XY skew	6.0 ps max	Rx signal input power monitor accuracy	-2.5 to +2.5 dB
Tx IQ offset	-25 dB max	Rx total input power monitor range	-21 to +6 dBm
Tx IQ imbalance	1.0 dB max	Rx total input power monitor accuracy	-2.0 to +2.0 dB
Tx quadrature error	-7.0 to +7.0°	Rx reflectance	-20 dB max
Tx IQ skew	1.5 ps max		
Tx error vector magnitude mask ratio	23% max; 24 dB/0.1 nm noise loading		
Tx in-band optical signal-to-noise ratio	40 dB/0.1 nm; Df < 60 GHz		

7. Digital diagnostics and management

Parameter	Specification
Management interface	2-wire serial / I2C through QSFP28 management interface
Digital diagnostics	Temperature, supply voltage, TX bias/power and RX power where implemented
Module controls	ModSelL, ResetL, LPMode, ModPrsL and IntL as applicable
Form factor	Hot-pluggable QSFP28, 38-pin host interface

8. Safety and regulatory

RoHS compliance and normal ESD handling precautions apply. Where stated in the source specification, the optical module is a Class 1 laser product and must be handled in accordance with applicable laser-safety requirements.

9. Ordering information

Ordering number	Product description
Q100G-ZR-DCO	QSFP28 100GbE C-Band DWDM 50Ghz; Coherent DCO, 80km SM

10. General notes

Specifications in this two-page summary are condensed from the supplied GLOBALfiber source data sheet. Values and terminology are retained from the source; no external specifications have been substituted.