

Q40G-AOC

QSFP+ 40G Active Optical Cable 40GBase AOC

1. Product overview

GLOBALfiber Q40G-AOC is an active optical cable assembly for optical interconnection between compatible host ports.

2. Key features

QSFP+ to QSFP+; four full-duplex channels; 850 nm VCSEL / PIN. Power: <1.4 W per end.

3. Applications

10G/40G Ethernet; 4G/8G/10G Fibre Channel; PCI Express, SAS/SATA and high-performance computing interconnects.

4. Technical data

Parameter	Specification
Module Form Factor	QSFP+; Notes: Supports SFF8431/SFF8432/SFF8472
Number of Lanes	4 Tx and 4 Rx
Maximum Aggregate Data Rate	41.2; Unit: Gb/s
Maximum Data Rate per Lane	10.3; Unit: Gb/s; Notes: No retimer or CDR devices embedded in the module. Allows operation at data-rates below 10.3 Gbps
Protocols Supported	Typical applications include Fibre Channel, 40G Ethernet, SATA/SAS3
Bit Error Rate Performance	<10E-12
Management Interface	Serial, I2C-based, 400 kHz maximum frequency; Notes: As defined by the QSFP+ MSA
Power Consumption per end	540; Unit: mW; Notes: Nominal Power
Electrical Interface and Pin-out	38-pin edge connector; Notes: Pin-out as defined by the QSFP+ MSA

5. Recommended operating conditions

Parameter	Specification	Parameter	Specification
Power consumption	<1.4 W per end	Fiber Bend Radius	Min: 3; Unit: cm
Operating Case Temperature	Min: 0; Max: 70; Unit: °C	Bit rate	Min: 1; Max: 10.5; Unit: Gb/s
Ambient Humidity	Min: 5; Max: 85; Unit: %	Module Turn-on Time	Max: 2000; Unit: ms
Storage Ambient Humidity	Min: 0; Max: 85; Unit: %	Input Control Voltage- High	Min: 2; Max: Vcc+0.3; Unit: V
+3.3V Supply Voltage	Min: 3.135; Typ.: 3.3; Max: 3.465; Unit: V	Input Control Voltage - Low	Min: -0.3; Max: 0.8; Unit: V
+3.3V Supply Current	Max: 400; Unit: mA	Digital Output Voltage- High	Min: 2; Max: Vcc+0.3
Total Power Dissipation	Max: 1.4; Unit: W	Digital Output Voltage- Low	Min: 0; Max: 0.8
		Clock Rate-I2C	Max: 400; Unit: kHz

Simplified functional illustration - not to scale



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6. Optical characteristics

Parameter	Specification	Parameter	Specification
TX Center Wavelength	Min: 840; Typ.: 850; Max: 860; Unit: nm	Eye Mask coordinates: X1, X2, X3, Y1, Y2, Y3	Notes: Hit Ratio = 5x10-5
RMS spectral width	Max: 0.65; Unit: nm	RX Center Wavelength	Min: 840; Typ.: 850; Max: 860; nm
Average launch power, each lane	Min: -7.5; Max: 2.5; Unit: dBm	Stressed receiver sensitivity in OMA, each lane	Max: -5.4; dBm
Difference in launch power between any two lanes (OMA)	Max: 4; Unit: dB	Maximum Average power at receiver input, each lane	Max: 2.4; dBm
Extinction Ratio	Min: 3; Unit: dB	Receiver Reflectance	Max: -12; dB
TX Peak power, each lane	Max: 4; dBm	RX Peak power, each lane	Max: 4; dBm
Transmigrate and dispersion penalty (TDP), each lane	Max: 3.5; dB	LOS Assert	Min: -30; dBm
Average launch power of OFF transmitter, each lane	Max: -30; dB	LOS De-Assert - OMA	Max: -7.5; dBm
		LOS Hysteresis	Min: 0.5; dB

7. Digital diagnostics and management

Serial I2C, up to 400 kHz; QSFP+ management interface.

8. Safety and regulatory

QSFP+ MSA; SFF-8436; RoHS-6. Use ESD-safe handling and observe the stated cable bend limits.

9. Ordering information

Parameter	Specification
GLOBALfiber product number	Q40G-AOC
Product description	QSFP+ 40G Active Optical Cable 40GBase AOC
Selectable lengths	1 m, 2 m, 3 m, 5 m, 7 m, 10 m, 15 m
Available coding	Arista, Cisco, Custom, Dell, Extreme, Generic, Huawei, Juniper, NVIDIA-Mellanox(ETH)

Confirm equipment model, port mode and software version when ordering. Coding availability does not guarantee support for every platform or mode.

Cable variants documented in the technical source:

Parameter	Specification
1m	Data Rate: Up to 40G; Connector Type: QSFP+ AOC; Temp. Range: 0-70°C; Cable Jacket: ONFP
2m, 3m, 5m, 7m, 10m, 15m, 20m, 25m, 30m, 50m, 75m	Data Rate: Up to 40G; Connector Type: QSFP+ AOC; Temp. Range: 0-70°C; Cable Jacket: OFNP
100m	Connector Type: QSFP+ AOC; Temp. Range: 0-70°C; Cable Jacket: OFNP