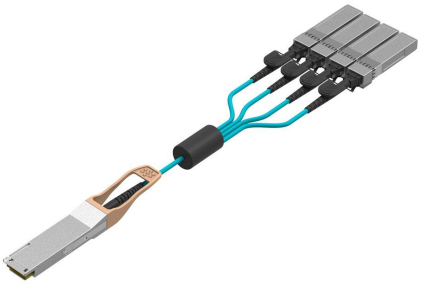
40G QSFP+ to 4x 10G SFP+ Breakout Active Optical Cables

P/N: GQP-MDO400-xxxC (xxx: 001 to 100)

Features



- SFF-8436 QSFP+ compliant
- SFF-8431 SFP+ compliant
- Hot-pluggable electrical interface
- 850nm VCSEL transmitter
- PIN photo-detector receiver
- Up to 100m on OM3 MMF
- Low power consumption < 1.5W (QSFP+) < 1W (SFP+)
- Operating case temperature range 0°C to +70°C
- All-metal housing for superior EMI performance
- RoHS compliant (lead free)

Applications

- IEEE 802.3ba 40GBASE-SR4
- IEEE 802.3ae 10GBASE-SR
- InfiniBand SDR/DDR/QDR
- High-Performance Computing (HPC) clusters
- Servers, switches, storage and host card adapters

Description

The Gigalight 40G QSFP+ to 4x 10G SFP+ breakout Active Optical Cables (AOCs) offer IT professionals a cost-effective interconnect solution for merging 40G QSFP+ and 10G SFP+ enabled host adapters, switches and servers.

For typical applications, users can install this breakout or splitter cable between an available QSFP+ port on 40GE switch and feed up to 4 upstream SFP+ enabled 10GE switches. Each cable features a single SFF-8436 compliant QSFP+ connector rated for 41.2Gb/s on one end and 4 SFF-8431 complicant SFP+ connectors rated for 10.3Gb/s each on the other end.

QSFP interface Specifications

Parameter	Description
Module Form Factor	QSFP+ (Supports SFF8436/SFF8472)
Channel Data Rate	Rate 41.25Gbps
BER	$<10^{-12}$
Operating Case Temperature	0 to + 70ºC
Storage Temperature	-20 to + 85ºC
Supply Voltage	3.3V
Maximum supply current	180mA per end typical
Management Interface Serial	I^2C (Supports SFF8472)

Optical Characteristics

The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Transmitter						
Centre Wavelength	λc	840	850	860	nm	-
RMS spectral width	Δλ	-	-	0.65	nm	-
Average launch power, each lane	Pout	-7.6	-	2.4	dBm	-
Difference in launch power between any two lanes (OMA)				4	dB	-
Extinction Ratio	ER	3	-	-	dB	-
Peak power, each lane				4	dBm	-
Transmitter and dispersion penalty (TDP), each lane	TDP			3.5	dB	-
Average launch power of OFF transmitter, each lane				-30	dBm	-
Eye Mask coordinates: X1, X2, X3, Y1, Y2, Y3	SPECIFICATION VALUES 0.23, 0.34, 0.43, 0.27, 0.35, 0.4					Hit Ratio = 5x10-5
Receiver						
Centre Wavelength	λc	840	850	860	nm	-
Stressed receiver sensitivity in OMA, each lane				-5.4	dBm	1
Maximum Average power at receiver input, each lane				2.4	dBm	-

Receiver Reflectance				-12	dB	-
Peak power, each lane				4	dBm	-
LOS Assert		-30			dBm	-
LOS De-Assert – OMA				-7.5	dBm	-
LOS Hysteresis		0.5			dB	-

Note:

1. Measured with conformance test signal at TP3 for BER = 10e-12

SFP+ interface Specifications

Parameter	Description
Module Form Factor	SFP+ (Supports SFF8431/SFF8432/SFF8472)
Channel Data Rate	Rate 1 to 10.3125Gbps
BER	$<10^{-12}$
Operating Case Temperature	0 to + 70ºC
Storage Temperature	-20 to + 85ºC
Supply Voltage	3.3V
Supply current	455mA maximum
Management Interface Serial	I^2C (Supports SFF8472)

Optical characteristics

The following optical characteristics are defined over the Recommended Operating Environment unless otherwise specified.

Parameter	Symbol	Min.	Typical	Max	Unit	Notes
Transmitter						
Center Wavelength	λt	840	850	860	nm	
RMS spectral width	Pm	-	-	Note 1	nm	
Average Optical Power	Pavg	-6.5	-	-1	dBm	2
Extinction Ratio	ER	3.5	-	-	dB	3
Transmitter Dispersion Penalty	TDP	-	-	3.9	dB	
Relative Intensity Noise	Rin	-	-	-128	dB/Hz	12dB reflection
Optical Return Loss Tolerance		-	-	12	dB	
Receiver						
Center Wavelength	λr	840	850	860	nm	
Receiver Sensitivity	Psens	-	-	-11.1	dBm	4
Stressed Sensitivity in OMA		-	-	-7.5	dBm	4
Los function	Los	-30	-	-12	dBm	
Overload	Pin	-	-	-1.0	dBm	4
Receiver Reflectance		-	-	-12	dB	

Note:

1. Trade-offs are available between spectral width, center wavelength and minimum OMA, as shown in table 6.
2. The optical power is launched into MMF
3. Measured with a PRBS 2^{31}-1 test pattern @10.3125Gbps
4.Measured with a PRBS 2^{31}-1 test pattern @10.3125Gbps,BER$\leqslant 10^{-12}$.

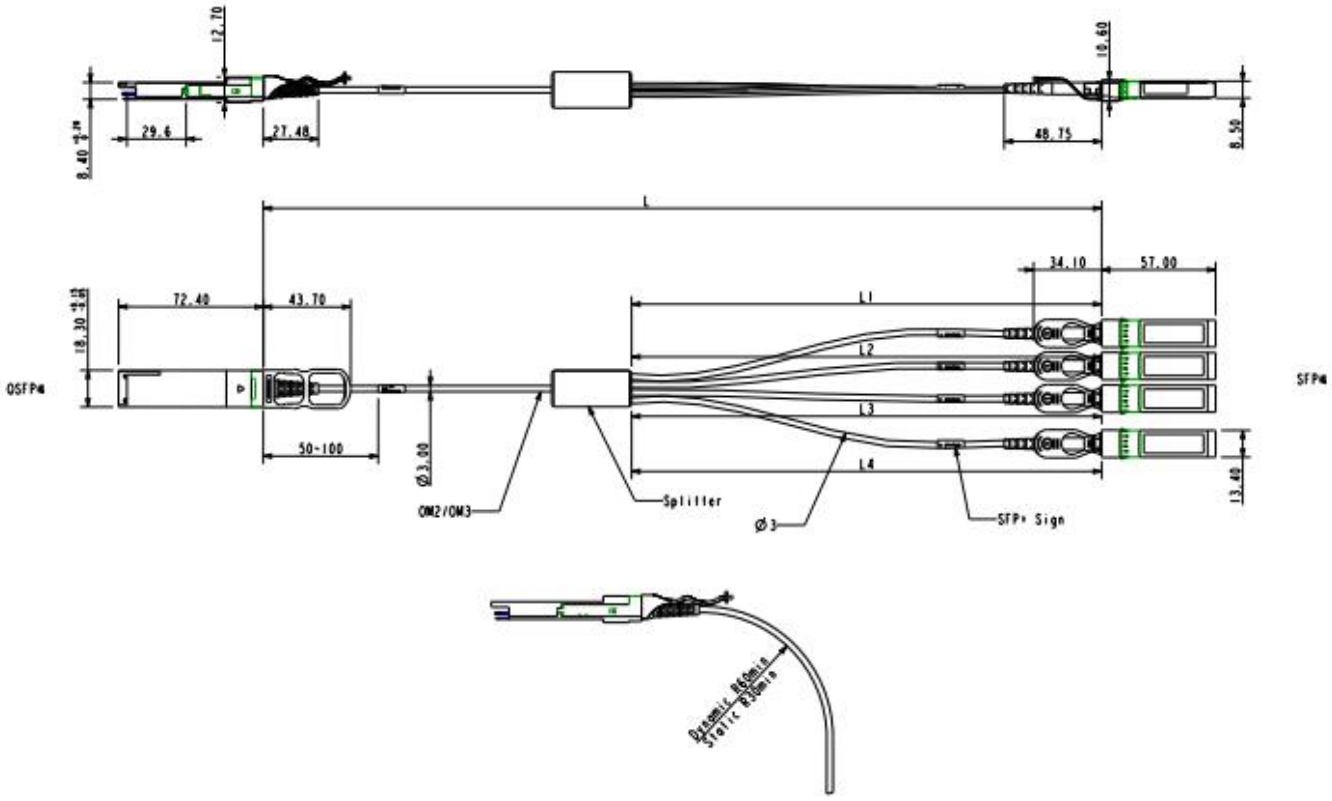


Figure1. Mechanical Specifications

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by GIGALIGHT before they become applicable to any particular order or contract. In accordance with the GIGALIGHT policy of continuous improvement specifications may change without notice.

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Ordering information

Part Number	Product Description
GQP-MDO400-xxxC	40G QSFP to 4x 10G SFP+ Active Optical Cable
xxx :001~100,1~100 Length in meters. (OM3 fiber is available)	
Further details are available from any Gigalight sales representative.	

E-mail: sales@gigalight.com
Web : https://www.gigalight.com/