



Features

- Hot pluggable
- Electrical interface compliant to QSFP+ connector (SFF-8436) and SFP+ connectors (SFF-8431)
- 850nm VCSEL transmitter, PIN photo-detector receiver
- Up to 100m on OM3 MMF
- Operating case temperature: 0 to 70°C
- All-metal housing for superior EMI performance
- RoHS compliant (lead free)

Application

- 40G Ethernet
- InfiniBand QDR, SDR, DDR
- Fibre Channel Applications
- High-performance computing clusters
- Servers, switches, storage and host card adapters



QSFP+ 40G-4SFP AOC

40G QSFP+ to 4X 10G Active Optical Cable

Description

QSFP to 4x SFP+ breakout Active Optical Cable offers 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 splitter Active Optical cable between an available QSFP port on their 40Gbps rated switch and feed up to four upstream 10GbE-SFP+ enabled switches. Each QSFP-SFP+ splitter Active Optical cable features a single QSFP connector (SFF-8436) rated for 40Gbps on one end and (4) SFP+ connectors (SFF-8431), each rated for 10-Gb/s, on the other.

QSFP interface Specifications

Parameter	Description
Module Form Factor	QSFP+ (Supports SFF8436/SFF8472)
Channel Data Rate	Rate 40Gbps
BER	10^{-12}
Operating Case Temperature	0 to + 70°C
Storage Temperature	-20 to + 85°C
Supply Voltage	3.3V
Supply current	180mA per end typical
Management Interface Serial	I2C(Supports SFF8472)

Optical Characteristics

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

Parameter	Symbol	Min	Max	Typical	Unit	Note
Transmitter						
Centre Wavelength	λ_c	840	860	850	nm	/
RMS spectral width	$\Delta\lambda$	/	0.65	/	nm	/
Average launch power, each lane	P _{out}	-7.5	2.5	/	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	/	dB	/
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	λ_c	840	860	850	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 = 10⁻¹²



QSFP+ 40G-4SFP AOC

40G QSFP+ to 4X 10G Active Optical Cable

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 + 70°C
Storage Temperature	-20 to + 85°C
Supply Voltage	3.3V
Supply current	455mA maximum
Management Interface Serial	I2C(Supports SFF8472)

Optical characteristics

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

Parameter	Symbol	Min	Max	Typical	Unit	Note
Transmitter						
Centre Wavelength	λ_c	840	860	850	nm	/
RMS spectral width	$\Delta\lambda$	/	0.65	/	nm	/
Average Optical Power	Pout	-7.5	2.5	/	dBm	2
Extinction Ratio	/	/	4	/	dB	3
Transmitter Dispersion Penalty	ER	3	/	/	dB	/
Relative Intensity Noise	/	/	4	/	dBm	12dB reflection
Optical Return Loss Tolerance	TDP	/	3.5	/	dB	/
Receiver						
Centre Wavelength	λ_c	840	860	850	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 2³¹-1 test pattern @10.3125Gbps
4. Measured with a PRBS 2³¹-1 test pattern @10.3125Gbps, BER ≤ 10⁻¹².

