



# DQF8501 QSFP+ SR4 AOC

## 4X10.3125Gb/s QSFP+ SR4 Active Optical Cable

### Product Description

The DQF8501 is a QSFP+ active optical cable (AOC) for 40Gb/s optical links. It is compliant with the QSFP+ MSA, IEEE802.3ba 40GBASE - SR4 specifications. It operates at 10.3125Gb/s and the cable length is up to 100m .

### Applications

- Infiniband QDR interconnects.
- 40GBASE- SR4 Ethernet
- High performance computing interconnect

### Features

- 4 independent parallel optical channels
- Channel data rate up to 10.3125Gb/s
- Hot Pluggable
- Up to 100m link on Multi-mode Fiber
- CML Compatible electrical I/O
- QSFP+ MSA Compliance
- Diagnostic monitors for VCSEL bias, received power (optional), module temperature, and module supply
- Case Operating Temperature Ranges:
  - Commercial: 0 to 70°C
- RoHS compliance

Ordering Information				
Part Number	Temperature Option (X)		Standard Cable Length (YZ)	
<b>DQF8501-4XYZ</b>	<b>C</b>	0 to 70 °C	<b>03</b>	3m
			<b>05</b>	5m
			<b>10</b>	10m
			<b>15</b>	15m
			<b>20</b>	20m
			<b>30</b>	30m
			<b>40</b>	40m
			<b>50</b>	50m
			<b>60</b>	60m
			<b>70</b>	70m
			<b>80</b>	80m
<b>90</b>	90m			
<b>A0</b>	100m			



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Absolute Maximum Ratings					
Parameter	Symbol	Min	Max	Units	Notes
Storage Ambient Temperature	$T_{stg}$	-40	+100	°C	Exceeding the Absolute Maximum Ratings may cause irreversible damage to the device. The device is not intended to be operated under the condition of simultaneous Absolute Maximum Ratings, a condition which may cause irreversible damage to the device.
Relative Humidity - Storage	$RH_S$	0	95	%	
Relative Humidity - Operating	$RH_O$	0	85	%	
Module Supply Voltage	$V_{CC}$	-0.5	3.6	V	

Recommended Operating Conditions						
Parameter	Symbol	Min	Typ	Max	Units	Notes
Case Operating Temperature	$T_{case}$	0	+25	+70	°C	Temperature Range = C
Module Supply Voltage	$V_{CC}$	3.14	3.3	3.46	V	
Module Supply Current	$I_{IN}$	-	-	350	mA	
Signaling Speed Per Channel	S	-	10.3125	-	Gb/s	

Transmitter Electrical Interfaces							
Parameter	Symbol	Min	Typ	Max	Units	Notes	
Tx_Data Differential Input Voltage	$V_{IN}$	200	-	1600	mV		
Tx_Data Differential Input Impedance	$Z_{IN}$	-	100	-	$\Omega$		
Differential Input Return Loss	SDD11	Compatible with IEEE 802.3ba 86A.4.1.1		-	-	dB	10MHz to 11.1GHz
Differential to Common Mode Conversion Loss	SCD11	10	-	-	dB	10MHz to 11.1GHz	
J2 Jitter Tolerance	$T_{J2}$	-	-	0.17	UI		
J9 Jitter Tolerance	$T_{J9}$	-	-	0.29	UI		



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Receiver Electrical Interfaces						
Parameter	Symbol	Min	Typ	Max	Units	Notes
Rx_Data Differential Output Voltage	$V_{OUT}$	-	550	-	mV	
Rx_Data Differential Output Impedance	$Z_{OUT}$	90	100	110	$\Omega$	
Differential Output Return Loss		Per IEEE P802.3ba, Section 86A.4.2.1			dB	10MHz to 11.1GHz
Common Mode Output Return Loss		Per IEEE P802.3ba, Section 86A.4.2.2			dB	10MHz to 11.1GHz
J2 Jitter output	$T_{J2}$	-	-	0.42	UI	
J9 Jitter output	$T_{J9}$	-	-	0.65	UI	
Rx Output Data Rising Time (20% to 80%)	$T_r$	28	-	-	ps	
Rx Output Data Falling Time (20% to 80%)	$T_f$	28	-	-	ps	

Cable specification	
Parameter	Value
Type	Multimode loose tube fiber
Minimum Bend radius (mm)	30
Cable diameter (mm)	$3.0 \pm 0.15$