

GP-QSFP-40GE-ESR4-OPC

Dell Force10® GP-QSFP-40GE-ESR4 Compatible TAA 40GBase-SR4 QSFP+ Transceiver (MMF, 850nm, 300m, MPO, DOM)

Features

- SFF-8436 Compliance
- MPO Connector
- Multi-mode Fiber
- Commercial Temperature 0 to 70 Celsius
- Hot Pluggable
- Metal with Lower EMI
- Excellent ESD Protection
- RoHS Compliant and Lead Free



Applications:

- 40GBase Ethernet
- 4x10G Breakout Option
- Access and Enterprise

Product Description

This Dell Force10® GP-QSFP-40GE-ESR4 compatible QSFP+ transceiver provides 40GBase-SR4 throughput up to 300m over multi-mode fiber (MMF) using a wavelength of 850nm via an MPO connector. Our transceiver is built to meet or exceed OEM specifications and is guaranteed to be 100% compatible with Dell Force10®. It has been programmed, uniquely serialized, and tested for data-traffic and application to ensure that it will initialize and perform identically. All of our transceivers comply with Multi-Source Agreement (MSA) standards to provide seamless network integration. Additional product features include Digital Optical Monitoring (DOM) support which allows access to real-time operating parameters. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum Supply Voltage	V _{CC}	-0.5		4.0	V
Storage Temperature	T _s	-40		85	°C
Case Operating Temperature	T _c	0	25	70	°C
Humidity (non-condensing)	RH	5		95	%
Data Rate per Channel			10.3125		Gbps

Electrical Characteristics (TOP=25°C, V_{CC}=3.3Volts)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	V _{CC}	3.135	3.30	3.465	V	
Power Supply Current	I _{CC}			430	mA	
Power Consumption	P _{DISS}			1.5	W	
Transmitter						
Differential data input swing	V _{in,pp}	180		900	mV	
Input differential impedance	Z _{in}		100		Ω	
Receiver						
Differential data output swing	V _{out, pp}	300		850	mV	
Output differential impedance	Z _{in}		100		Ω	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Optical Power (average)	P _{AVE}	-7.6		+2.4	dBm	1
Optical Wavelength	Tλ	830	850	860	nm	
Optical Extinction Ratio	ER	3			dB	2
Spectral Width (RMS)	Δλ			0.4	nm	
Optical Return Loss Tolerance	ORLT			12	dB	
Transmitter and Dispersion Penalty	TDP			3.2	dB	
Receiver						
Receiver Sensitivity (average)	R _{AVE}			-9.5	dBm	3
Damage Threshold	P _{ol}	2.5			dBm	3
Receiver wavelength	Rλ	830	850	860	nm	

Notes:

1. The optical power is launched into OM3 MMF.
2. Measured with a PRBS 2³¹-1 test pattern @10.3125Gbps.
3. Measured with PRBS 2³¹-1 test pattern, 10.3125Gb/s, BER<10⁻¹².

Pin Descriptions

Pin	Logic	Symbol	Name/Descriptions	Ref.
1		GND	Module Ground	1
2	CML-I	Tx2-	Transmitter inverted data input	
3	CML-I	Tx2+	Transmitter non-inverted data input	
4		GND	Module Ground	1
5	CML-I	Tx4-	Transmitter inverted data input	
6	CML-I	Tx4+	Transmitter non-inverted data input	
7		GND	Module Ground	1
8	LVTTL-I	MODSEIL	Module Select	2
9	LVTTL-I	ResetL	Module Reset	2
10		VCCR _x	+3.3v Receiver Power Supply	
11	LVC MOS-I	SCL	2-wire Serial interface clock	2
12	LVC MOS-I/O	SDA	2-wire Serial interface data	2
13		GND	Module Ground	1
14	CML-O	RX3+	Receiver non-inverted data output	
15	CML-O	RX3-	Receiver inverted data output	
16		GND	Module Ground	1
17	CML-O	RX1+	Receiver non-inverted data output	
18	CML-O	RX1-	Receiver inverted data output	
19		GND	Module Ground	1
20		GND	Module Ground	1
21	CML-O	RX2-	Receiver inverted data output	
22	CML-O	RX2+	Receiver non-inverted data output	
23		GND	Module Ground	1
24	CML-O	RX4-	Receiver inverted data output	
25	CML-O	RX4+	Receiver non-inverted data output	
26		GND	Module Ground	1
27	LVTTL-O	ModPrsL	Module Present, internal pulled down to GND	
28	LVTTL-O	IntL	Interrupt output, should be pulled up on host board	2
29		VCCT _x	+3.3v Transmitter Power Supply	
30		VCC1	+3.3v Power Supply	
31	LVTTL-I	LPMode	Low Power Mode	2
32		GND	Module Ground	1
33	CML-I	Tx3+	Transmitter non-inverted data input	

34	CML-I	Tx3-	Transmitter inverted data input	
35		GND	Module Ground	1
36	CML-I	Tx1+	Transmitter non-inverted data input	
37	CML-I	Tx1-	Transmitter inverted data input	
38		GND	Module Ground	1

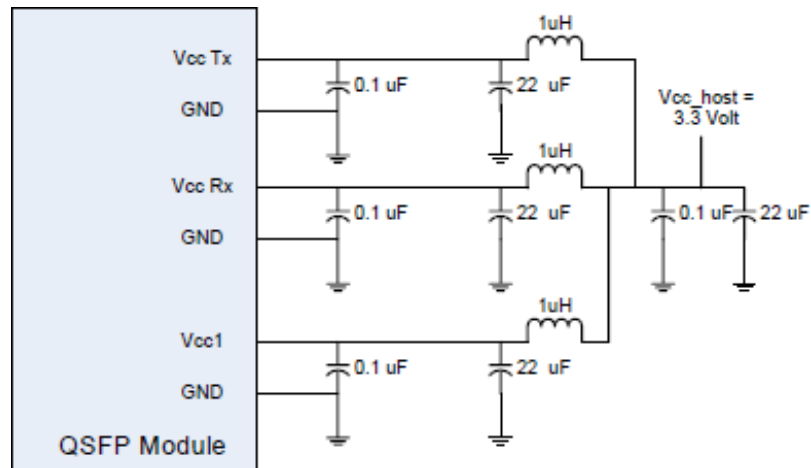
Notes:

1. Module circuit ground is isolated from module chassis ground with in the module.
2. Open collector; should be pulled up with 4.7k-10k ohms on host board to a voltage between 3.15V and 3.6V.

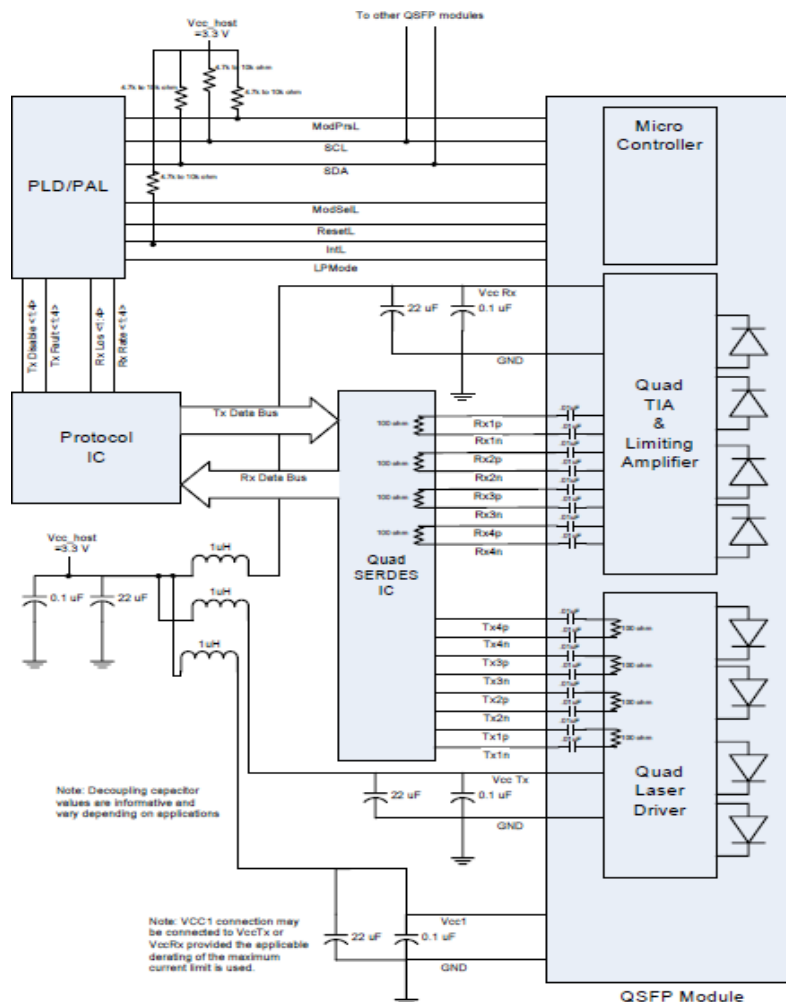
Electrical Pin-out Details



Recommended Host Board Power Supply Filter Network



Recommended Application Interface Block Diagram



Mechanical Specifications

