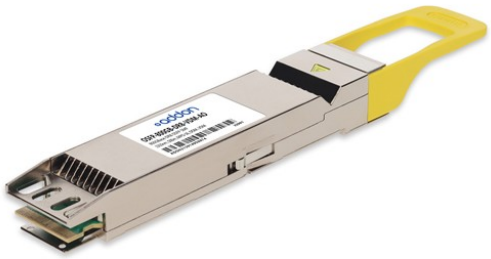
OSFP-800GB-DR8-VDM-AO

MSA Compliant 800GBase-DR8 PAM4 OSFP-IHS Transceiver (SMF, 1310nm, 500m, MPO-16, DOM, CMIS 5.0, VDM)

Features:

- Compliant with IEEE 802.3cn and IEEE 802.3ck
- CMIS 5
- Compliant with OSFP MSA
- Electrical Interface: 106.25Gbps (PAM4) x8
- 8 Duplex Channels Transmitters and Receivers
- Optical Interface: 106.25Gbps (PAM4) x8
- MPO-16 APC Connector
- Up to 500m over Single-Mode Fiber with FEC
- Single 3.3V Power Supply
- Maximum Power Consumption: 16W
- Operating Temperature: 0 to 70 Celsius
- RoHS Compliant and Lead-Free



Applications:

- Advance Monitoring Capable Transceiver
- 800GBase Ethernet

Product Description

This MSA compliant OSFP-IHS Transceiver provides 800GBase-DR8 throughput up to 500m over single-mode fiber (SMF) PAM4 using a wavelength of 1310nm via an MPO-16 connector. It can operate at temperatures between 0 and 70C. 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. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

AddOn's transceivers are RoHS compliant and lead-free.

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Supply Voltage	Vcc	-0.5	3.6	V
Storage Temperature	Tstg	-40	85	°C
Relative Humidity	RH	5	85	%
Damage Threshold Per Lane		5		dBm

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit
Electrical Signal Rate Per Lane		53.125 ± 100ppm			GBd
Optical Signal Rate Per Lane		53.125 ± 100ppm			GBd
Supply Voltage	Vcc	3.135	3.3	3.465	V
Operating Case Temperature	Tc	0		70	°C
Power Consumption	PC			16	W
Link Distance with G.652	Dl	2		500	m

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Signaling Rate Per Lane		53.125 ± 100ppm			GBd	
Modulation Format		PAM4				
Lane Wavelength (Range)	λ	1304.5	1310	1317.5	nm	
Average Launch Power Per Lane	P	-2.9		4	dBm	1
OMAouter Per Lane	P_{OMA}	-0.8		4.2	dBm	2
Launch Power in OMAouter Minus TDECQ Per Lane		-2.2			dBm	
Transmitter and Dispersion Eye Closure for PAM4 (TDECQ) Per Lane				3.4	dB	
Side-Mode Suppression Ratio (SMSR)		30			dB	
Extinction Ratio	ER	3.5			dB	
Average Launch Power of Off Transmitter Per Lane	P_{off}			-15	dBm	
$RIN_{21.4}OMA$	RIN			-136	dB/Hz	
Optical Return Loss Tolerance				21.4	dB	
Transmitter Reflectance				-26	dB	3
Receiver						
Signaling Rate Per Lane		53.125 ± 100ppm			GBd	

Modulation Format		PAM4				
Lane Wavelength (Range)	λ	1304.5	1310	1317.5	nm	
Damage Threshold Per Lane		5			dBm	4
Average Receive Power Per Lane		-5.9		4	dBm	5
Receive Power (OMAouter) Per Lane	R_{OMA}			4.2	dBm	
Receiver Reflectance				-26	dB	
Receiver Sensitivity (OMAouter) Per Lane	SEN	Max. (-3.9, SECQ-5.3)			dBm	6
LOS Assert		-26			dBm	
LOS De-Assert				-8	dBm	
LOS Hysteresis		0.5			dB	

Notes:

1. Average launch power, per lane (minimum), is informative and not the principal indicator of signal strength. A transmitter with launch power below this value cannot be compliant; however, a value above this does not ensure compliance.
2. Even if the TDECQ<1.4dB, the OMAouter (minimum) must exceed this value.
3. Transmitter reflectance is defined looking into the transmitter.
4. The receiver shall be able to tolerate, without damage, continuous exposure to an optical input signal having this average power level. The receiver does not have to operate correctly at this input power.
5. Average receive power, per lane (minimum), is informative and not the principal indicator of signal strength. A received power below this value cannot be compliant; however, a value above this does not ensure compliance.
6. Receiver sensitivity (OMAouter), per lane (maximum), is informative and is defined for a transmitter with a value of SECQ up to 3.4dB.

Digital Diagnostic Monitor Accuracy

Parameter	Accuracy	Unit	Notes
Measured Transceiver Temperature	±3	˚C	1
Measured Transceiver Supply Voltage	±3	%	1
Measured Tx Bias Current	±10	%	1
Measured Tx Output Power	±3	dB	1
Measured Rx Received Average Optical Power	±3	dB	1

Notes:

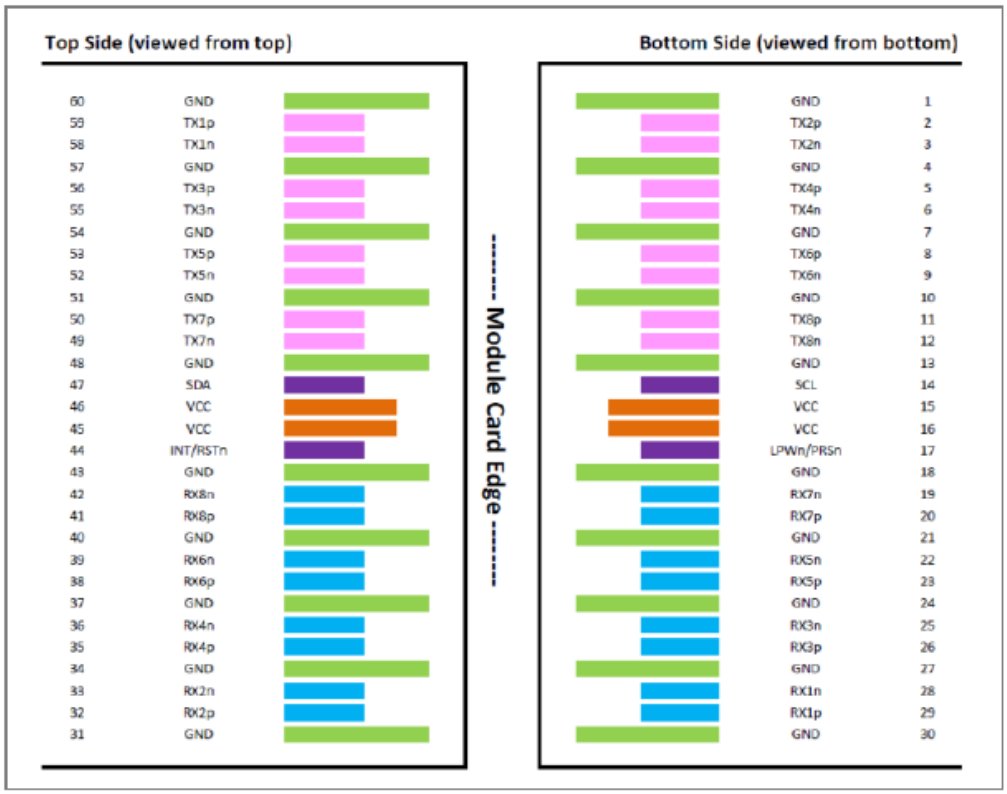
1. Defined over the recommended operating conditions.

Pin Descriptions

Pin	Symbol	Logic	Name/Description
1	GND		Ground.
2	TX2p	CML-I	Transmitter Data Non-Inverted.
3	TX2n	CML-I	Transmitter Data Inverted.
4	GND		Ground.
5	TX4p	CML-I	Transmitter Data Non-Inverted.
6	TX4n	CML-I	Transmitter Data Inverted.
7	GND		Ground.
8	TX6p	CML-I	Transmitter Data Non-Inverted.
9	TX6n	CML-I	Transmitter Data Inverted.
10	GND		Ground.
11	TX8p	CML-I	Transmitter Data Non-Inverted.
12	TX8n	CML-I	Transmitter Data Inverted.
13	GND		Ground.
14	SCL	LVCMOS-I/O	2-Wire Serial Interface Clock.
15	VCC		+3.3V Power.
16	VCC		+3.3V Power.
17	LPWn/PRSn	Multi-Level	Low-Power Mode/Module Present.
18	GND		Ground.
19	RX7n	CML-O	Receiver Data Inverted.
20	RX7p	CML-O	Receiver Data Non-Inverted.
21	GND		Ground.
22	RX5n	CML-O	Receiver Data Inverted.
23	RX5p	CML-O	Receiver Data Non-Inverted.
24	GND		Ground.
25	RX3n	CML-O	Receiver Data Inverted.
26	RX3p	CML-O	Receiver Data Non-Inverted.
27	GND		Ground.
28	RX1n	CML-O	Receiver Data Inverted.
29	RX1p	CML-O	Receiver Data Non-Inverted.
30	GND		Ground.
31	GND		Ground.
32	RX2p	CML-O	Receiver Data Non-Inverted.
33	RX2n	CML-O	Receiver Data Inverted.
34	GND		Ground.
35	RX4p	CML-O	Receiver Data Non-Inverted.

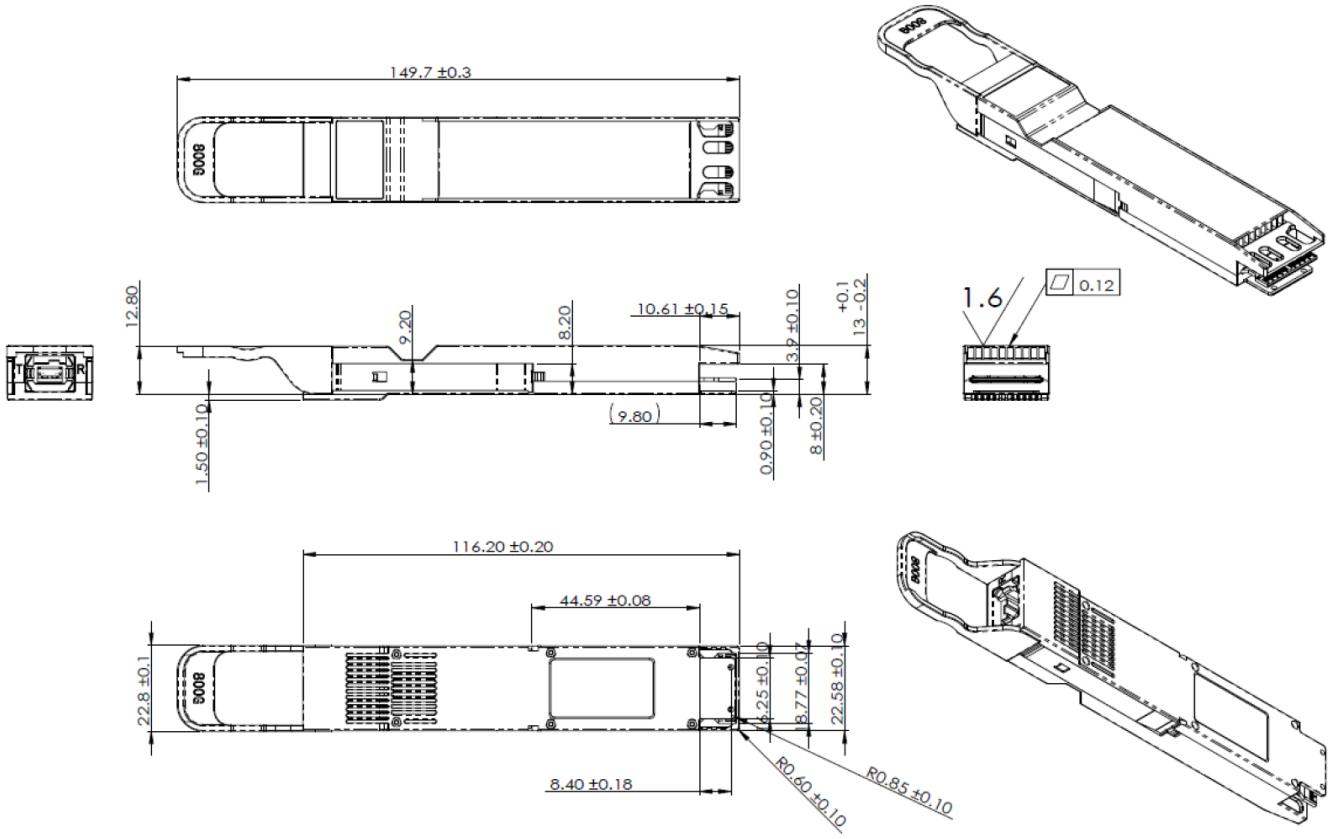
36	RX4n	CML-O	Receiver Data Inverted.
37	GND		Ground.
38	RX6p	CML-O	Receiver Data Non-Inverted.
39	RX6n	CML-O	Receiver Data Inverted.
40	GND		Ground.
41	RX8p	CML-O	Receiver Data Non-Inverted.
42	RX8n	CML-O	Receiver Data Inverted.
43	GND		Ground.
44	INT/RSTn	Multi-Level	Module Interrupt/Module Reset.
45	VCC		+3.3V Power.
46	VCC		+3.3V Power.
47	SDA	LVCMOS-I/O	2-Wire Serial Interface Data.
48	GND		Ground.
49	TX7n	CML-I	Transmitter Data Inverted.
50	TX7p	CML-I	Transmitter Data Non-Inverted.
51	GND		Ground.
52	TX5n	CML-I	Transmitter Data Inverted.
53	TX5p	CML-I	Transmitter Data Non-Inverted.
54	GND		Ground.
55	TX3n	CML-I	Transmitter Data Inverted.
56	TX3p	CML-I	Transmitter Data Non-Inverted.
57	GND		Ground.
58	TX1n	CML-I	Transmitter Data Inverted.
59	TX1p	CML-I	Transmitter Data Non-Inverted.
60	GND		Ground.

Pin-Out of Connector Block on Host Board



Name	Direction	Description
TX[8:1]p	Input	Transmit differential pairs from host to module.
TX[8:1]n	Input	
RX[8:1]p	Output	Receive differential pairs from module to host.
RX[8:1]n	Output	
SCL	Bi-Directional	2-wire serial clock signal. Requires pull-up resistor to 3.3V on host.
SDA	Bi-Directional	2-wire serial data signal. Requires pull-up resistor to 3.3V on host.
LPWn/PRSn	Bi-Directional	Multi-level signal for low power control from host to module and module presence indication from module to host. This signal requires the circuit as described in the OSFP Specification.
INT/RSTn	Bi-Directional	Multi-level signal for interrupt request from module to host and reset control from host to module. This signal requires the circuit as described in OSFP Specification.
VCC	Power	3.3V power for module.
GND	Ground	Module ground. Logic and power return path.

Mechanical Specifications



Notes:

1. Reference to OSFP Type 2 closed top.

About AddOn Networks

In 1999, AddOn Networks entered the market with a single product. Our founders fulfilled a severe shortage for compatible, cost-effective optical transceivers that compete at the same performance levels as leading OEM manufacturers. Adhering to the idea of redefining service and product quality not previously had in the fiber optic networking industry, AddOn invested resources in solution design, production, fulfillment, and global support.

Combining one of the most extensive and stringent testing processes in the industry, an exceptional free tech support center, and a consistent roll-out of innovative technologies, AddOn has continually set industry standards of quality and reliability throughout its history.

Reliability is the cornerstone of any optical fiber network and is ingrained in AddOn's DNA. It has played a key role in nurturing the long-term relationships developed over the years with customers. AddOn remains committed to exceeding industry standards with certifications ranging from NEBS Level 3 to ISO 9001:2015 with every new development while maintaining the signature reliability of its products.

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