OSFP-800GB-DR8-LPO-AR-AO

Arista Networks® Compatible TAA 800GBase-DR8 PAM4 OSFP-IHS Transceiver (SMF, 1310nm, 500m, MPO-16, DOM, CMIS 5.0) LPO

Features

- Supports 106.25Gbps Data Rate Per Channel
- Single 3.3V Power Supply
- Electrically Hot-Pluggable
- Power Dissipation: Less Than 8.5W, Typical 7.5W
- Operating Temperature: 0 to 70 Celsius
- MPO-16 APC Optical Receptacle
- RoHS Compliant and Lead-Free
- Class 1 Laser

Applications

- 800GBase Ethernet

Product Description

This Arista Networks® compatible OSFP-IHS Transceiver provides 800GBase-DR8 throughput up to 500m over single-mode fiber (SMF) PAM4 using a wavelength of 1310nm via a 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. This transceiver is Trade Agreements Act (TAA) compliant. We stand behind the quality of our products and proudly offer a limited lifetime warranty.

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

TAA refers to the Trade Agreements Act (19 U.S.C. & 2501-2581), which is intended to foster fair and open international trade. TAA requires that the U.S. Government may acquire only "U.S.-made or designated country end products.")

TAA COMPLIANT

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Storage Temperature	Tstg	-40		85	°C	
Relative Humidity	RH	5		85	%	
Power Supply Voltage	Vcc	-0.5		3.6	V	
Optical Receiver Damage Threshold Input	Pdmg	5.0			dBm	

Recommended Operating Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Operating Case Temperature	Tc	0		70	°C	1
Power Supply Voltage	Vcc	3.135	3.3	3.465	V	
Power Supply Current	Icc			2575	mA	2
Data Rate Per Lane	BR		53.125 @ PAM4		GBd	3
Transmission Distance	TD		500		m	
Coupled Fiber			Single-Mode Fiber			4

Notes:

1. Without airflow.
2. When Vcc is 3.3V.
3. Each channel-Optical.
4. 9/125μm SMF.

Link Power Budget

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Budget (For Maximum TDECQ)			7.8		dB	
Operating Distance			500		m	
Channel Insertion Loss			4		dB	
Allocation for Penalties (For Maximum TDECQ)			3.8		dB	

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Signaling Speed Per Lane			53.125 ± 50ppm		GBd	
Modulation Format			PAM4			
Center Wavelength	λ	1304.5		1317.5	nm	1
Average Launch Power Per Lane	Pavg	-2.9		4	dBm	
Optical Modulation Amplitude (OMA_{outer}) Per Lane	POMA			4.2	dBm	
Launch Power in OMA Per Lane for Maximum (TECQ, TDECQ) < 1.4dB		-1.8			dBm	
Launch Power in OMA, Per Lane for 1.4dB ≤ Maximum (TECQ, TDECQ) ≤ 3.4dB		-3.2 + Max. (TECQ, TDECQ)			dBm	
Transmitter and Dispersion Eye Closure for PAM4 Per Lane	TDECQ			3.4	dB	
Ceq for ER ≤ 4.5dB and OMA ≤ 3.7dB		-0.5		2.5	dB	
Ceq for ER > 4.5dB or OMA > 3.7dB		0		2.5	dB	
Tx Overshoot/Undershoot				25	%	
Optical Extinction Ratio		2.5			dB	
Average Launch Power Off Per Lane				-15	dBm	
$RIN_{17.1}OMA$ (Maximum)				-138	dB/Hz	
Transmitter Reflectance				-26	dB	
Receiver						
Signaling Speed Per Lane			53.125 ± 100ppm		GBd	
Modulation Format			PAM4			
Center Wavelength	λ	1304.5		1317.5	nm	1
Damage Threshold Per Lane		5			dBm	3
Average Input Power Per Channel	PXPx	-5.9		4.0	dBm	
Receiver Power (OMA) Per Lane	ROMA			4.2	dBm	
Receiver Sensitivity (OMA) for TECQ ≤ 1.4dB Per Lane	RXsens			-5.1	dBm	2
Receiver Sensitivity (OMA) for 1.4dB < TECQ ≤ 3.4dB Per Lane	RXsens			-6.5 + TECQ	dBm	2
Receiver Reflectance	RR			-26	dB	

Notes:

1. The wavelength assignment is suitable for all channels.
2. Measured with a PRBS31Q test pattern and BER@$2.4x10^{-4}$.
3. The receiver shall be able to tolerate, without damage, continuous exposure to an optical input signal having this average power level.

Pin Descriptions

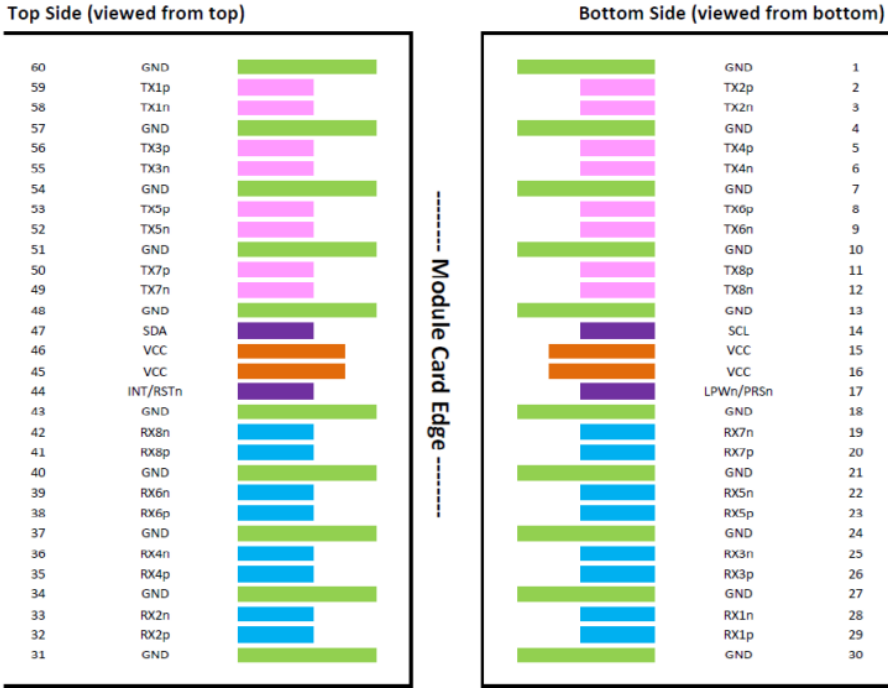
Pin	Symbol	Name/Description	Notes
1	GND	Module Ground.	1
2	Tx2p	Transmitter Non-Inverted Data.	
3	Tx2n	Transmitter Inverted Data.	
4	GND	Module Ground.	1
5	Tx4p	Transmitter Non-Inverted Data.	
6	Tx4n	Transmitter Inverted Data.	
7	GND	Module Ground.	1
8	Tx6p	Transmitter Non-Inverted Data.	
9	Tx6n	Transmitter Inverted Data.	
10	GND	Module Ground.	1
11	Tx8p	Transmitter Non-Inverted Data.	
12	Tx8n	Transmitter Inverted Data.	
13	GND	Module Ground.	1
14	SCL	2-Wire Serial Interface Clock.	2
15	Vcc	+3.3V Power Supply.	
16	Vcc	+3.3V Power Supply.	
17	LPWn/PRSn	Low-Power Mode/Module Present.	
18	GND	Module Ground.	1
19	Rx7n	Receiver Inverted Data.	
20	Rx7p	Receiver Non-Inverted Data.	
21	GND	Module Ground.	1
22	Rx5n	Receiver Inverted Data.	
23	Rx5p	Receiver Non-Inverted Data.	
24	GND	Module Ground.	1
25	Rx3n	Receiver Inverted Data.	
26	Rx3p	Receiver Non-Inverted Data.	
27	GND	Module Ground.	1
28	Rx1n	Receiver Inverted Data.	
29	Rx1p	Receiver Non-Inverted Data.	
30	GND	Module Ground.	1
31	GND	Module Ground.	1
32	Rx2p	Receiver Non-Inverted Data.	
33	Rx2n	Receiver Inverted Data.	
34	GND	Module Ground.	1
35	Rx4p	Receiver Non-Inverted Data.	
36	Rx4n	Receiver Inverted Data.	
37	GND	Module Ground.	1

38	Rx6p	Receiver Non-Inverted Data.	
39	Rx6n	Receiver Inverted Data.	
40	GND	Module Ground.	1
41	Rx8p	Receiver Non-Inverted Data.	
42	Rx8n	Receiver Inverted Data.	
43	GND	Module Ground.	1
44	INT/RSTn	Module Input/Module Reset.	
45	Vcc	+3.3V Power Supply.	
46	Vcc	+3.3V Power Supply.	
47	SDA	2-Wire Serial Interface Data.	2
48	GND	Module Ground.	1
49	Tx7n	Transmitter Inverted Data.	
50	Tx7p	Transmitter Non-Inverted Data.	
51	GND	Module Ground.	1
52	Tx5n	Transmitter Inverted Data.	
53	Tx5p	Transmitter Non-Inverted Data.	
54	GND	Module Ground.	1
55	Tx3n	Transmitter Inverted Data.	
56	Tx3p	Transmitter Non-Inverted Data.	
57	GND	Module Ground.	1
58	Tx1n	Transmitter Inverted Data.	
59	Tx1p	Transmitter Non-Inverted Data.	
60	GND	Module Ground.	1

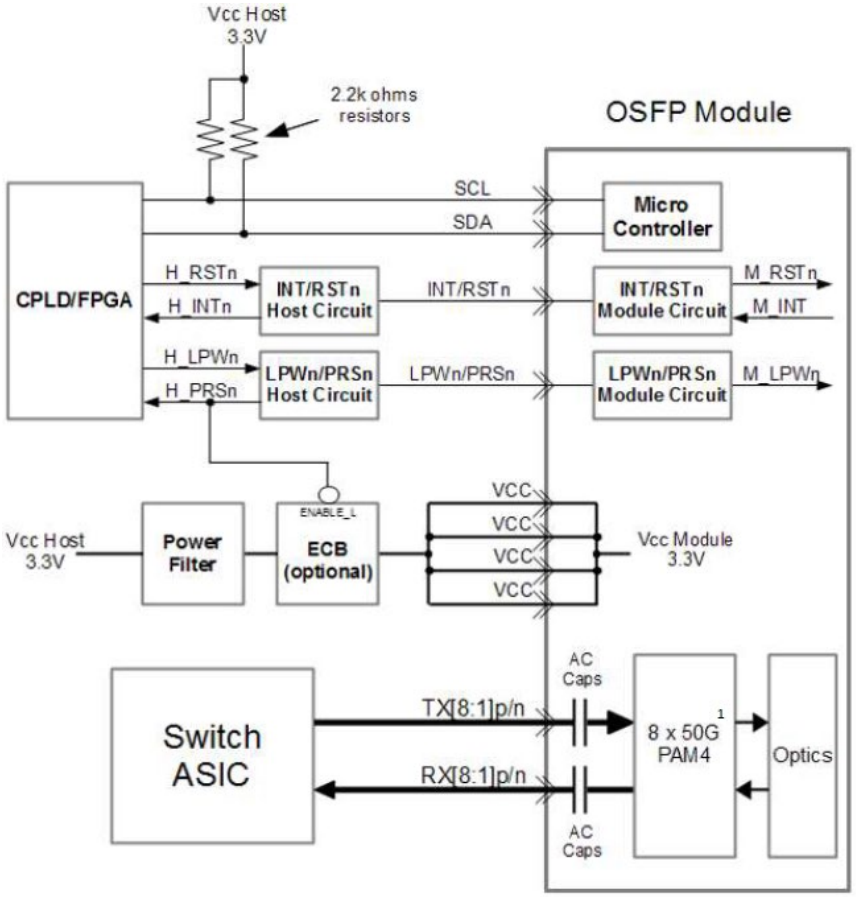
Notes:

1. OSFP uses common ground (GND) for all signals and supply (power). All are common within the OSFP module, and all module voltages are referenced to this potential unless otherwise noted.
2. Open-drain with pull-up resistor on the host.

Electrical Pad Layout



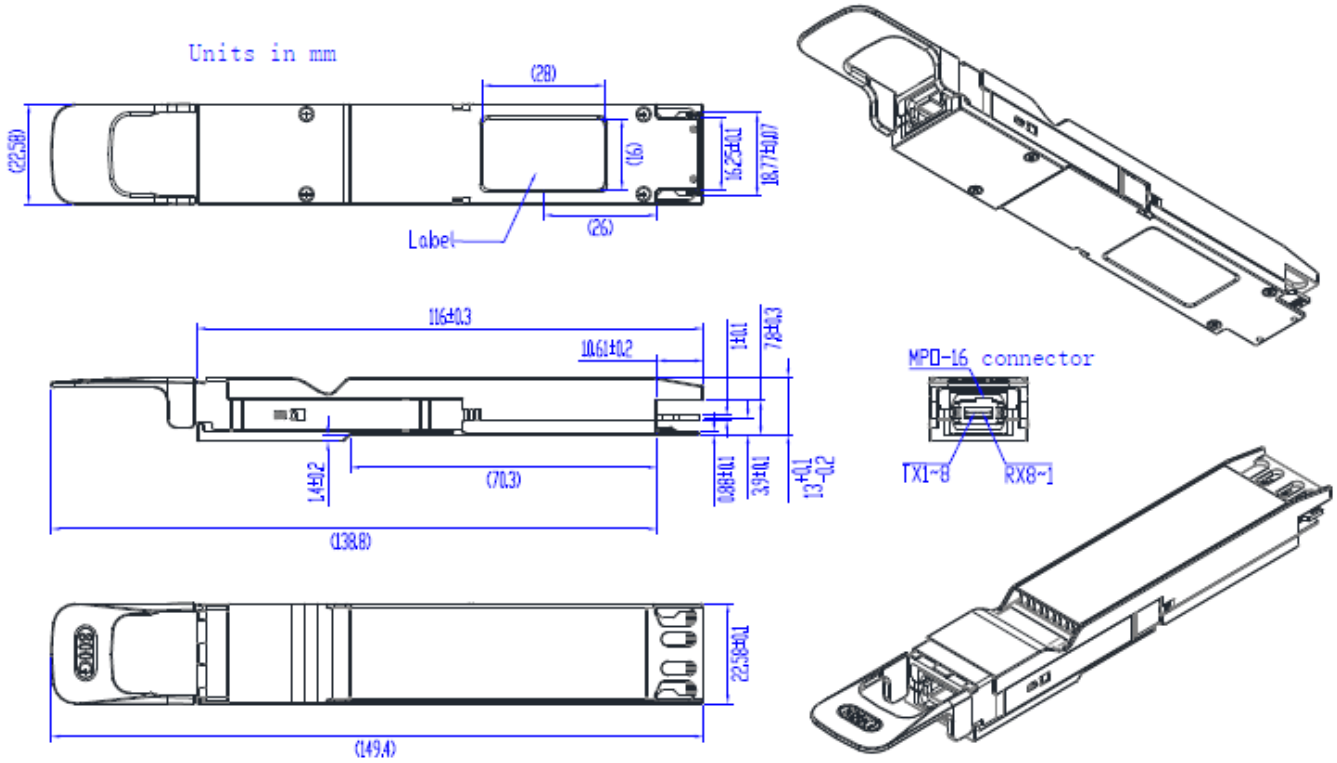
Transceiver Block Diagram



Notes:

1. LPO module does not have a CDR.

Mechanical Specifications



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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