

SFP-10/16GB-SW-AO

MSA and TAA 10/16GBase-SR/SW FC SFP+ Transceiver Multi-Rate (MMF, 850nm, 100m, LC, DOM)

Features

- Up to 16Gbps Fiber Channel Serial Line Rate
- Duplex LC Connector
- Up to 10Gbps Ethernet
- OM3
- AC/AC Coupling Interface
- 850nm VCSEL
- Commercial Temperature: 0 to 70 Celsius
- Multi-Mode Fiber
- Metal with Lower EMI
- Hot Pluggable
- Excellent ESD Protection
- RoHS Compliant and Lead-Free



Applications

- 16GBase Ethernet
- Access and Enterprise

Product Description

This MSA Compliant SFP+ transceiver provides 10/16GBase-SR/SW Fibre Channel throughput up to 100m over multi-mode fiber (MMF) using a wavelength of 850nm via an LC connector. It is built to MSA standards and is uniquely serialized and data-traffic and application tested to ensure that they will integrate into your network seamlessly. Digital optical monitoring (DOM) support is also present to allow 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."



Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	V _{cc}	-0.5		4	V
Storage Temperature	T _{stg}	-40		85	°C
Operating Case Temperature	T _c	0	25	70	°C
Relative Humidity	RH	0		85	%

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Power Supply Voltage	V _{cc}	3.15	3.3	3.46	V
Supply Current	I _{cc}			300	mA
Transmitter					
Input Differential Impedance	R _{IN}		100		Ω
Single-Ended Data Input Swing	V _{IN,pp}	90		800	mV
Transmit Disable Voltage	V _D	2		V _{cc}	V
Transmit Enable Voltage	V _{EN}	V _{ee}		V _{ee} +0.8	V
Receiver					
Single-Ended Data Output Swing	V _{OUT,pp}	185		425	mV
LOS Fault	V _{LOS_{fault}}	2		Host_V _{cc}	V
LOS Normal	V _{LOS_{norm}}	V _{ee}		V _{ee} +0.8	V
Power Supply Rejection	PSR	100			mVp-p
Receiver Deterministic Jitter @14.025Gbps	DJ			0.22	UI
Receiver Deterministic Jitter @8.5Gbps	DJ			0.42	UI

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	BR	4.25		14.025	Gbps	
Bit Error Rate	BER			10^{-12}		1
Transmitter						
Center Wavelength	λ	840		860	nm	
RMS Spectral Width	σ			0.6	nm	
Average Optical Power	Pavg	-8.4		2.4	dBm	2
Optical Modulation Amplitude	OMA	-6.4		3	dBm	
Extinction Ratio	ER	2			dB	
Optical Return Loss Tolerance	ORLT			12	dB	
Receiver						
Center Wavelength	λ	840		860	nm	
Damage Threshold		3.4			dBm	
Receiver Power Overload		2.4			dBm	
Receiver Sensitivity	SENS			-10.3	dBm	
LOS Assert	LOSA	-30			dBm	
LOS De-Assert	LOSD			-13	dBm	
LOS Hysteresis	LOSH	0.5			dB	

Notes:

1. PRBS 2^7-1 for 8GFC. PRBS $2^{31}-1$ for 16GFC.
2. Class 1 Laser Safety limits CDRH and EN60825 standards.

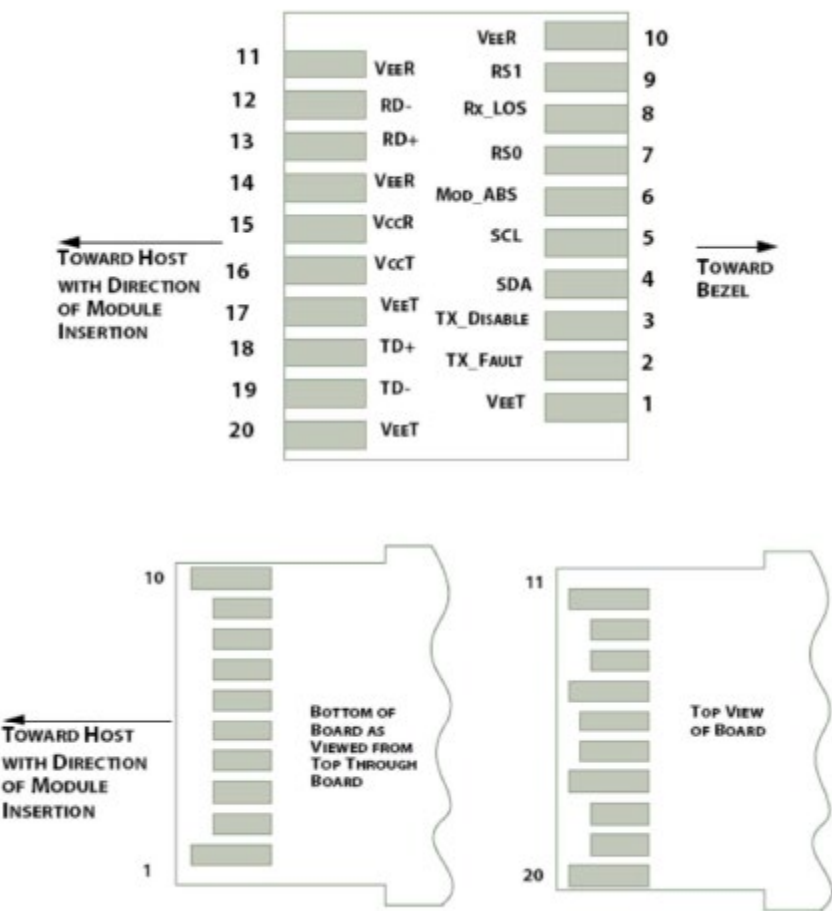
Pin Descriptions

Pin	Logic	Symbol	Name/Description	Notes
1		VeeT	Module Transmitter Ground.	1
2	LVTTL-O	Tx_Fault	Module Transmitter Fault.	2
3	LVTTL-I	Tx_Disable	Transmitter Disable. Turns off the transmitter laser output.	3
4	LVTTL-I/O	SDA	2-Wire Serial Interface Data.	
5	LVTTL-I	SCL	2-Wire Serial Interface Clock.	
6		MOD_ABS	Module Absent. Connected to the VeeT or VeeR in the module.	2
7	LVTTL-I	RS0	Rate Select 0. Optionally controls the SFP+ module receiver. When “high,” the input signaling rate is >4.25GBd. When “low,” the input signal rate is ≤4.25GBd.	
8	LVTTL-O	Rx_LOS	Receiver Loss of Signal Indication.	2
9	LVTTL-I	RS1	Rate Select 1. Optionally controls the SFP+ module transmitter. When “high,” the input signaling rate is >4.25GBd. When “low,” the input signal rate is ≤4.25GBd.	
10		VeeR	Module Receiver Ground.	1
11		VeeR	Module Receiver Ground.	1
12	CML-O	RD-	Receiver Inverted Data Output.	
13	CML-O	RD+	Receiver Data Output.	
14		VeeR	Module Receiver Ground.	1
15		VccR	3.3V Module Receiver Power Supply.	
16		VccT	3.3V Module Transmitter Power Supply.	
17		VeeT	Module Transmitter Ground.	1
18	CML-I	TD+	Transmitter Non-Inverted Data Input.	
19	CML-I	TD-	Transmitter Inverted Data Input.	
20		VeeT	Module Transmitter Ground.	1

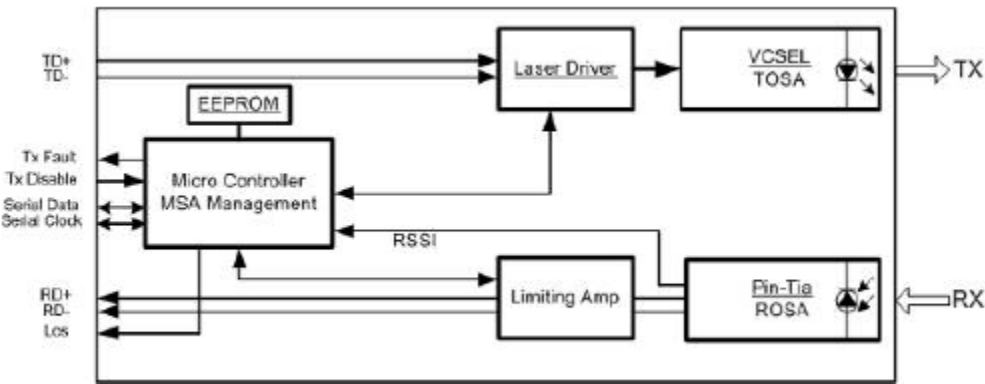
Notes:

1. Module ground pins are isolated from the module case and chassis ground within the module.
2. Shall be pulled up with 4.7kΩ to 10kΩ to a voltage between 3.15V and 3.45V on the host board.
3. Shall be pulled up with 4.7kΩ to 10kΩ to the VccT in the module.

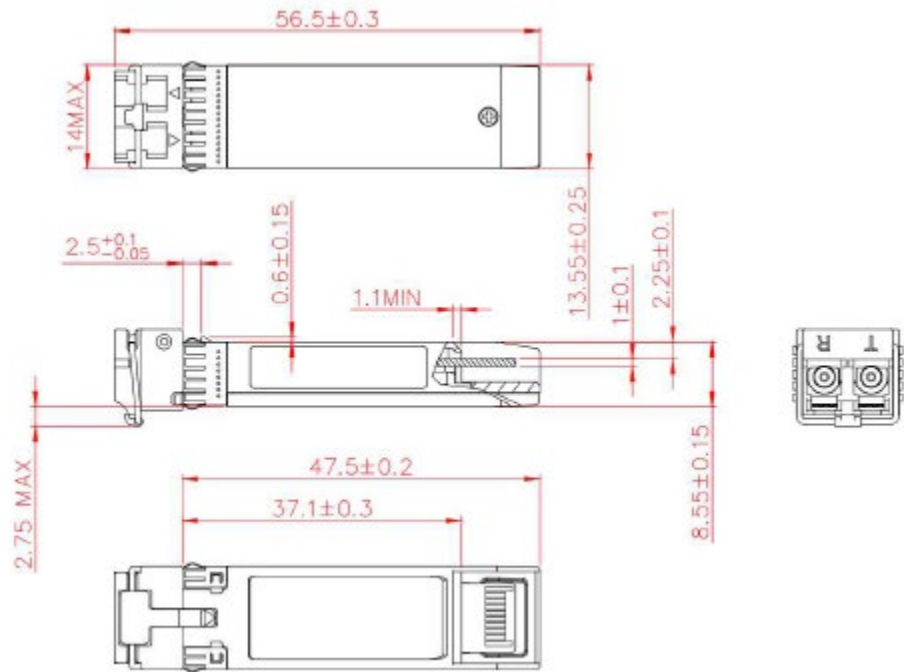
Electrical Pin-Out Details



Transceiver Block Diagram



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 from ranging from NEBS Level 3 to ISO 9001:2005 with every new development while maintaining the signature reliability of its products.



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