SFP28-10/25G-SR-AO

MSA and TAA Compliant 25GBase-SR SFP28 Transceiver Dual Rate 10/25G (MMF, 850nm, 100m, LC, DOM)

Features

- SFF-8402 and SFF-8472 Compliance
- Duplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Multi-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free

Applications

- 25GBase Ethernet
- Access and Enterprise

Product Description

This MSA Compliant SFP28 transceiver provides 25GBase-SR 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."

TAA COMPLIANT

Rev. 062923

Regulatory Compliance

- ESD to the Electrical PINs: compatible with MIL-STD-883E Method 3015.4
- ESD to the LC Receptacle: compatible with IEC 61000-4-3
- EMI/EMC compatible with FCC Part 15 Subpart B Rules, EN55022:2010
- Laser Eye Safety compatible with FDA 21CFR, EN60950-1& EN (IEC) 60825-1,2
- RoHS compliant with EU RoHS 2.0 directive 2015/863/EU

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit
Maximum Supply Voltage	Vcc	-0.5		4.0	V
Storage Temperature	TS	-40		85	°C
Operating Case Temperature	Tc	0	25	70	°C
Relative Humidity	RH	5		85	%
Data Rate		10.3	25.78		Gb/s

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage		Vcc	3.135	3.3	3.465	V	
Module Supply Current		Icc			290	mA	
Power Dissipation		P_D			1000	mW	
Transmitter							
Input Differential Impedance		ZIN		100		Ω	
Differential Data Input Swing		Vin,p-p	180		700	mVp-p	
TX Fault	**Transmitter Fault**	VOH	2.0		Vcc	V	TX_FAULT
	Normal Operation	VOL	0		0.8	V	
TX Disable	**Transmitter Disable**	VIH	2.0		Vcc	V	TX_DISABLE
	Transmitter Enable	VIL	0		0.8	V	
Receiver							
Output Differential Impedance		Zo		100		Ω	
Differential Data Output Swing		Vout,p-p	300		850	mVp-p	1
Data Output Rise Time, Fall Time		tr, tf		30		ps	2
RX_LOS	**Loss of Signal (LOS)**	VOH	2.0		Vcc	V	RX_LOS
	Normal Operation	VOL	0		0.8	V	

Notes:

1. Internally AC coupled, but requires an external 100Ω differential load termination.

2. 20-80%
3. LOS is an open collector output. Should be pulled up with 4.7KΩ on the host board.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power	Po	-4.0		+2.4	dBm	1
Tx Power (OMA)	Poma	-4			dBm	1
Extinction Ratio	ER	2			dB	
Center Wavelength Range	λc	840	850	860	nm	
Transmitter Dispersion Penalty @25.78Gb/s	TWDP			4.3	dB	
Spectral Width (RMS) @25.78Gb/s	Δλ			0.6	nm	
Optical Return Loss Tolerance	ORLT			12	dB	
Pout @TX-Disable Asserted	Poff			-30	dBm	1
Receiver						
Center Wavelength	λc	840		860	nm	
Receiver Sensitivity (Pavg)	S			-10.3	dBm	2
Receiver Sensitivity (Pavg)	S			-11.0	dBm	3
Receiver Overload (Pavg)	POL	2.5			dBm	
Optical Return Loss	ORL	12			dB	
LOS De-Assert	LOSD			-11	dBm	
LOS Assert	LOSA	-30			dBm	
LOS Hysteresis		0.5			dB	

Notes:

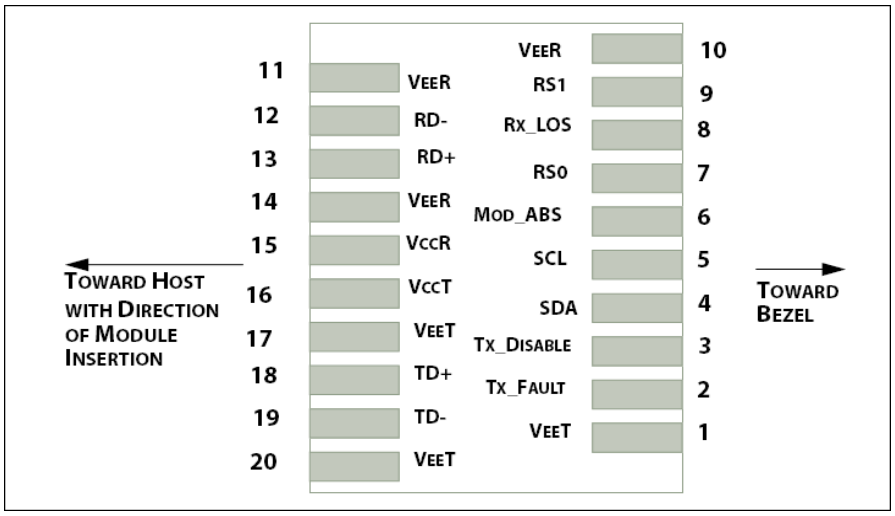
1. 50/125μm fiber with NA = 0.2.
2. Measured with PRBS 2^{31}-1 at 5e-5 BER @25.78Gb/s.
3. Measured with PRBS 2^{31}-1 at 5e-5 BER @10.3Gb/s.

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground.	1
2	TX_Fault	Transmitter Fault (LVTTL-O) – High indicated a fault condition.	2
3	TX_Disable	Transmitter Disable (LVTTL-I) – High or open disables the transmitter.	3
4	SDA	Two wire serial interface Data Line (LVCMOS-I/O)(MOD-DEF2)	4
5	SCL	Two wire serial interface Clock Line (LVCMOS-I/O)(MOD-DEF1)	4
6	MOD_ABS	Module Absent (Output), connected to VeeT or VeeR in the module.	5
7	RS0	Rate Select 0 - Not used, Presents high input impedance.	6
8	RX_LOS	Receiver Loss of Signal (LVTTL-O)	2
9	RS1	Rate Select 1 - Not used, Presents high input impedance.	6
10	VeeR	Receiver Ground.	1
11	VeeR	Receiver Ground.	1
12	RD-	Inverse Received Data out (CML-O). AC Coupled.	
13	RD+	Received Data out (CML-O). AC Coupled.	
14	VeeR	Receiver Ground.	
15	VccR	Receiver Power +3.3V	
16	VccT	Transmitter Power +3.3V	
17	VeeT	Transmitter Ground.	1
18	TD+	Transmitter Data In (CML-I). AC Coupled	
19	TD-	Inverse Transmitter Data In (CML-I). AC Coupled.	
20	VeeT	Transmitter Ground.	1

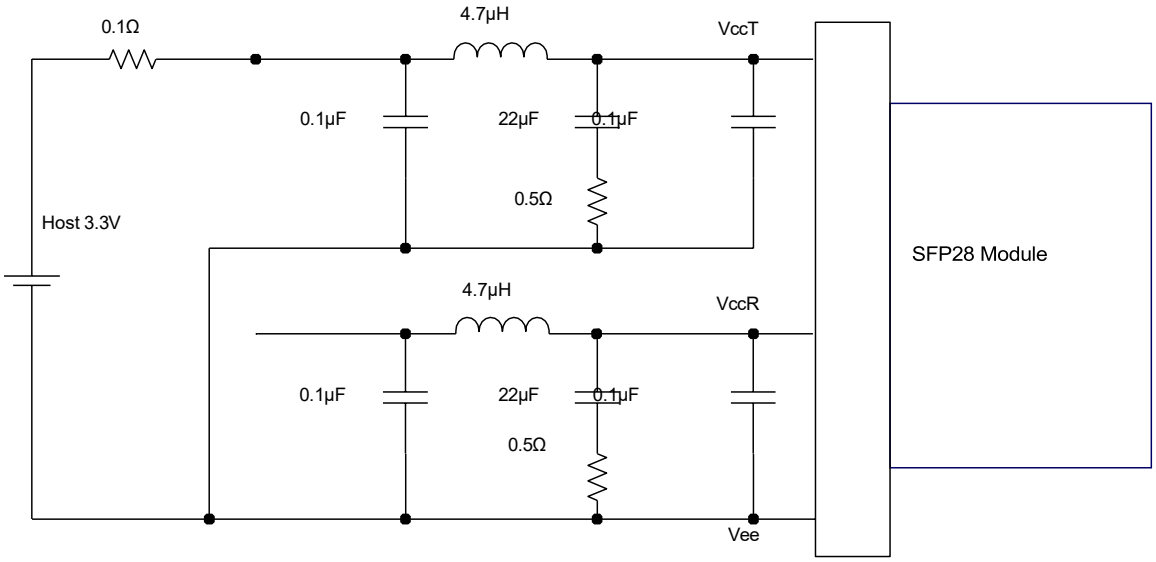
Notes:

1. The module signal grounds are isolated from the module case.
2. This is an open collector/drain output that on the host board requires a 4.7KΩ to 10KΩ pull-up resistor to VccHost.
3. This input is internally biased high with a 4.7KΩ to 10KΩ pull-up resistor to VccT.
4. Two-Wire Serial interface clock and data lines require an external pull-up resistor dependent on the capacitance load.
5. This is a ground return that on the host board requires a 4.7KΩ to 10KΩ pull-up resistor to VccHost.
6. Rate select can also be set through the 2-wire bus in accordance with SFF-8472 v. 10.2, Rx Rate Select is set at Bit 3, Byte 110, Address A2h. Tx Rate Select is set at Bit 3, Byte 118, Address A2h.
   Note: writing a “1” selects maximum bandwidth operation. Rate select is the logic OR of the input state of Rate Select Pin and 2-wire bus.



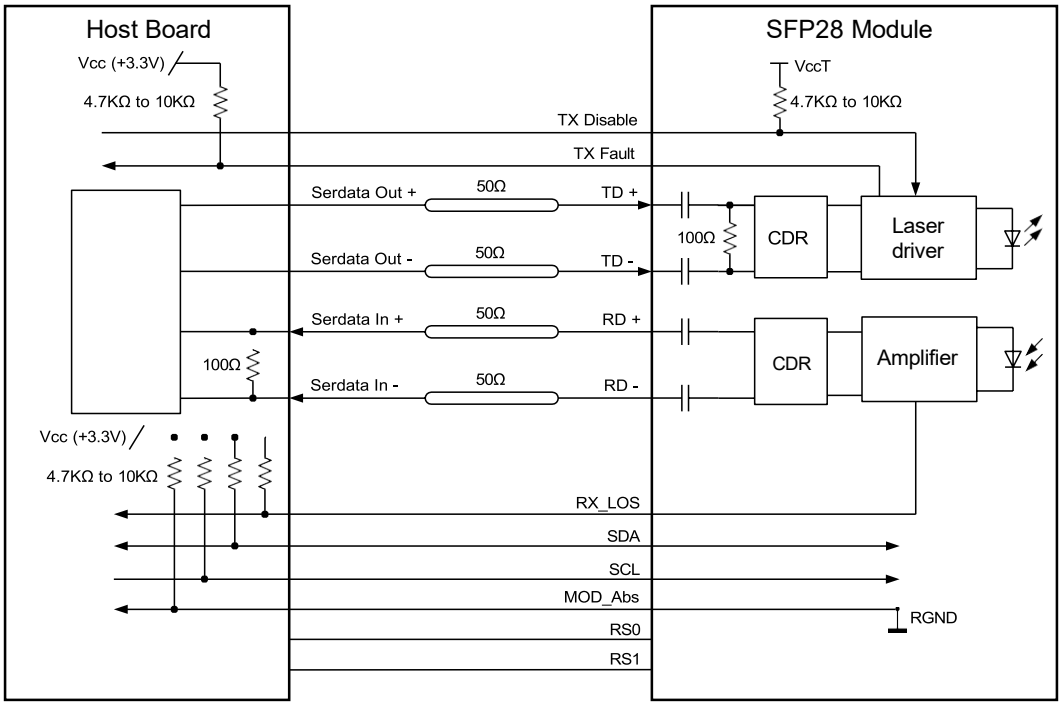
Host PCB SFP+ pad assignment

Recommended Host Board

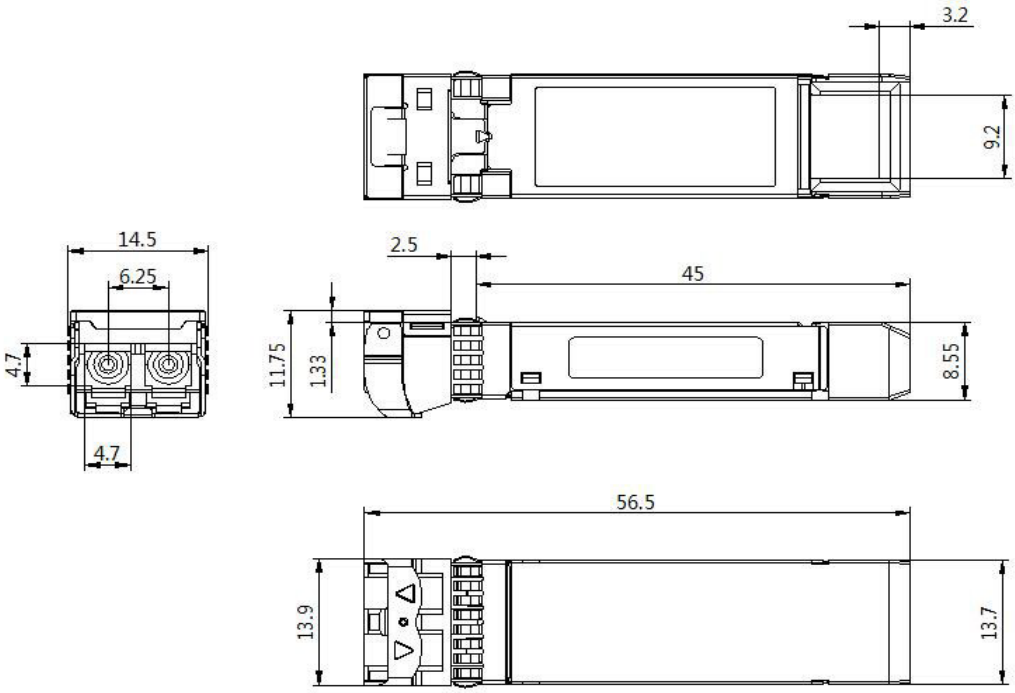


Recommended Host Board Power Supply Filter Network

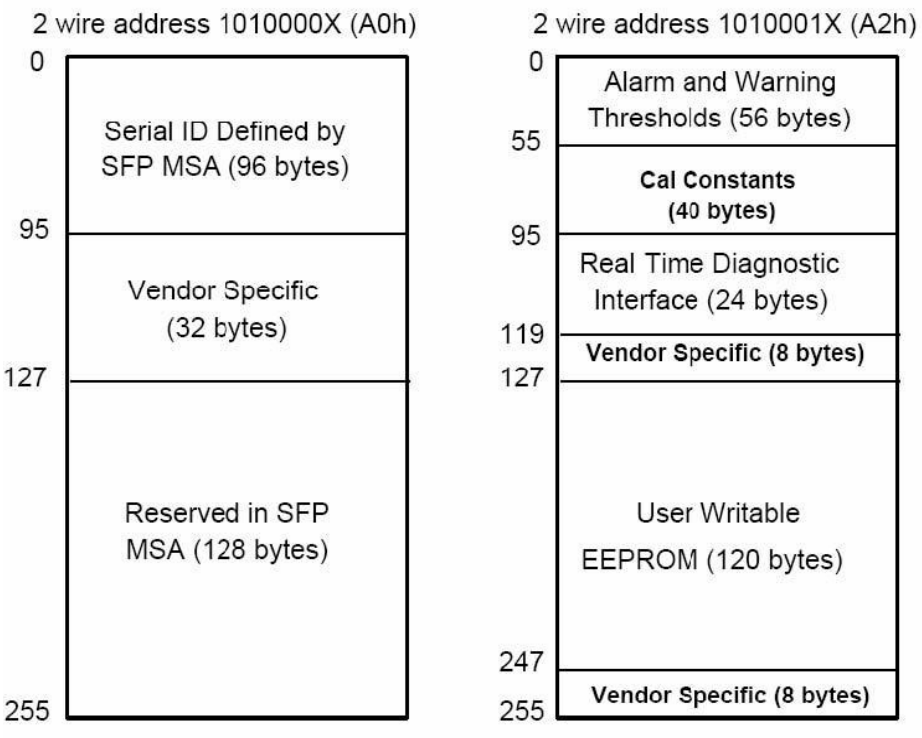
Recommended Application Interface Block Diagram



Mechanical Specifications



EEPROM Information



Digital Diagnostic Memory Map Specific Data Field Descriptions

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 in engrained 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.

U.S. Headquarters

Email: sales@addonnetworks.com

Telephone: +1 877.292.1701

Fax: 949.266.9273

Europe Headquarters

Email: salessupportemea@addonnetworks.com

Telephone: +44 1285 842070