

## SFP-1000BASE-EX55-I-AO

MSA and TAA 1000Base-EX SFP Transceiver (SMF, 1550nm, 40km, LC, DOM, -40 to 85C)

### Features

- INF-8074 and SFF-8472 Compliance
- Duplex LC Connector
- Industrial Temperature -40 to 85 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free



### Applications

- 1x Fibre Channel
- 1000Base-EX Ethernet
- Access and Enterprise

### Product Description

This MSA compliant SFP transceiver provides 1000Base-EX throughput up to 40km over single-mode fiber (SMF) using a wavelength of 1550nm via an LC connector. It is capable of withstanding rugged environments and can operate at temperatures between -40 and 85C. All of our transceivers are built to comply with Multi-Source Agreement (MSA) standards and are uniquely serialized and tested for data-traffic and application to ensure 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.")



## Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate	DR		1.25		Gbps	1
	DR		1.062		Gbps	2
Bit Error Rate	BER			$10^{-12}$		
Operating Temperature	Tc	0		70	°C	3
		-40		85	°C	3
Storage Temperature	Tstg	-40		85	°C	4
Supply Current	Icc		200	300	mA	5
Input Voltage	Vcc	3.14	3.3	3.46	V	
Maximum Voltage	VMAX	-0.5		4	V	5

## Notes:

1. IEEE 802.3.
2. FC-P1-2 Rev. 5.
3. Case temperature.
4. Ambient temperature.
5. For the electrical power interface.

## Electrical Characteristics (Vcc=3.14V to 3.46V, Tc)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
Input Differential Impedance	RIN		100		$\Omega$	
Single-Ended Data Input Swing	VIN,pp	250		1200	mV	
Transmit Disable Voltage	VD	Vcc-1.3		Vcc	V	
Transmit Enable Voltage	VEN	Vee		Vee+0.8	V	
Transmit Disable Assert Time				10	$\mu$ s	
<b>Receiver</b>						
Single-Ended Data Output Swing	VOOUT,pp	300	400	800	mV	
Data Output Rise/Fall Time (20-80%)	Tr/Tf			300	ps	
LOS Fault	VLOSA	Vcc-0.5		Host_Vcc	V	
LOS Normal	VLOSD	Vee		Vee+0.5	V	

### Optical Characteristics (Vcc=3.14V to 3.46V, Tc)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
Output Optical Power	PTX			5	dBm	1
Optical Center Wavelength	$\lambda_C$	1530		1570	nm	
Extinction Ratio	ER	9			dB	
Side-Mode Suppression Ratio	SMSR	30			dB	
Spectral Width (-20dB)	$\Delta\lambda$			1	nm	
Optical Rise/Fall Time (20-80%)	Tr/Tf			180	ps	
Relative Intensity Noise	RIN			- 120	dB/Hz	
Deterministic Jitter Contribution	DJ			60	ps	
Total Jitter Contribution	TJ			130	ps	
<b>Receiver</b>						
Receiver Overload	POL				dBm	
Optical Center Wavelength	$\lambda_C$	1260		1600	nm	
Receiver Sensitivity	RX SEN			-27	dBm	
Optical Return Loss	ORL	12			dB	
Receiver Electrical 3dB Upper Cutoff Frequency				1500	MHz	
LOS Assert	LOSA	-35			dBm	
LOS De-Assert	LOSD			-27	dBm	
LOS Hysteresis	LOSH	0.5			dB	

### Notes:

1. Class 1 product.

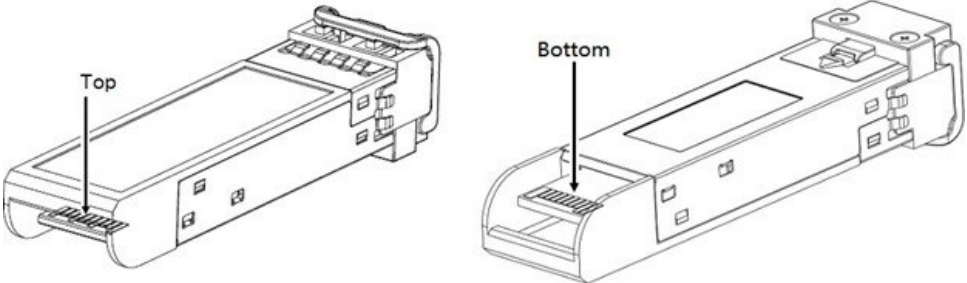
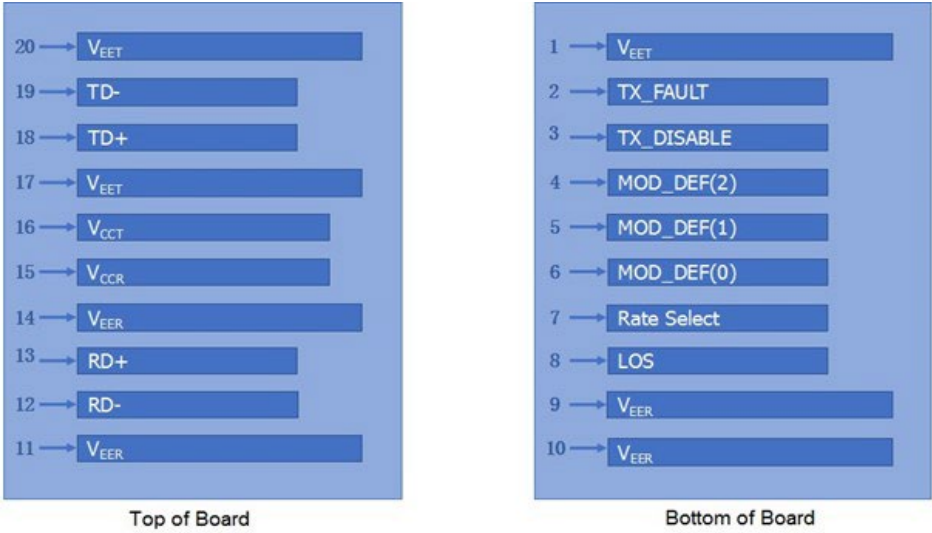
## Pin Descriptions

Pin	Symbol	Name/Description	Notes
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	Tx_Fault	Transmitter Fault. Not Supported.	
3	Tx_Disable	Transmitter Disable. Laser output disabled on "high" or "open."	2
4	MOD_DEF(2)	Module Definition 2. Data Line for Serial ID.	3
5	MOD_DEF(1)	Module Definition 1. Clock Line for Serial ID.	3
6	MOD_DEF(0)	Module Definition 0. Grounded within the module.	3
7	Rate Select	No Connection Required.	
8	LOS	Loss of Signal Indication. "Logic 0" indicates normal operation.	4
9	VeeR	Receiver Ground (Common with Transmitter Ground).	1
10	VeeR	Receiver Ground (Common with Transmitter Ground).	1
11	VeeR	Receiver Ground (Common with Transmitter Ground).	1
12	RD-	Receiver Inverted Data Out. AC Coupled.	
13	RD+	Receiver Non-Inverted Data Out. AC Coupled.	
14	VeeR	Receiver Ground (Common with Transmitter Ground).	1
15	VccR	Receiver Power Supply.	
16	VccT	Transmitter Power Supply.	
17	VeeT	Transmitter Ground (Common with Receiver Ground).	1
18	TD+	Transmitter Non-Inverted Data In. AC Coupled.	
19	TD-	Transmitter Inverted Data In. AC Coupled.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

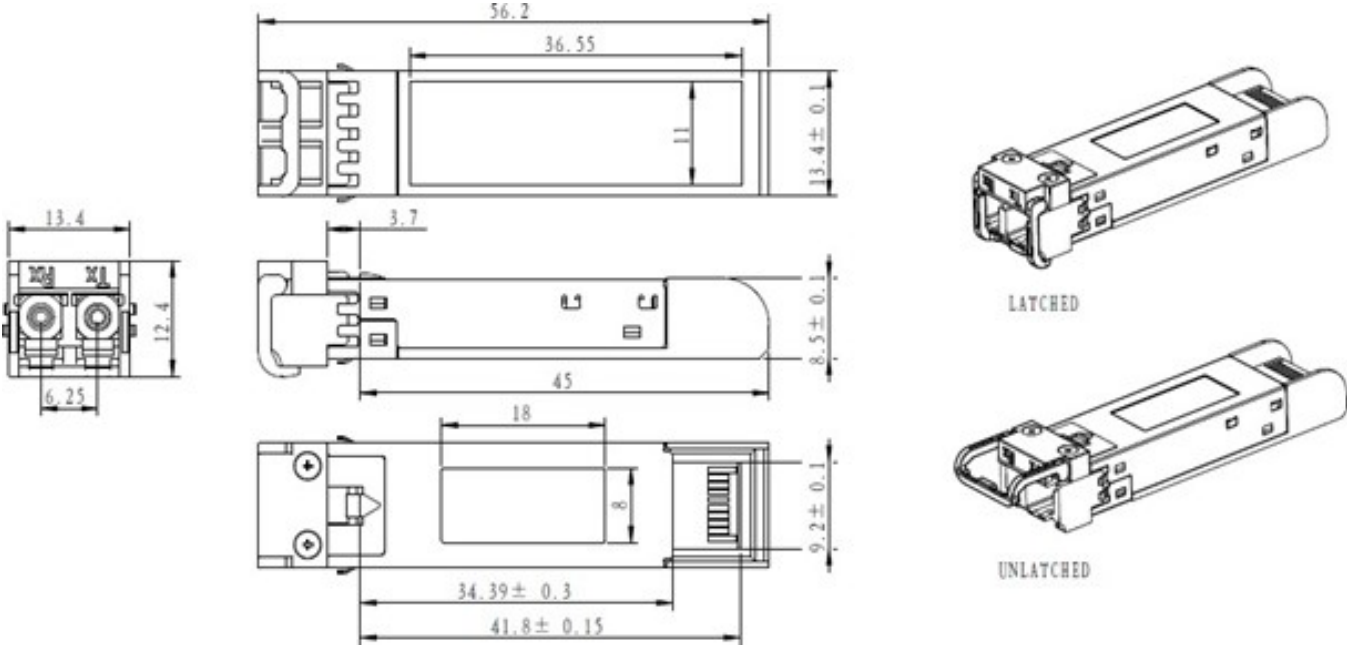
### Notes:

1. The circuit ground is isolated from the chassis ground.
2. Disabled: TDIS>2V or open, enabled: TDIS<0.8V.
3. Should be pulled up with 4.7kΩ to 10kΩ on the host board to a voltage between 2V and 3.6V.
4. LOS is an open collector output.

Electrical Pad Layout



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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