ONS-SE-155-1510-AO

Cisco® ONS-SE-155-1510 Compatible TAA OC-3-CWDM SFP Transceiver (SMF, 1510nm, 120km, 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

- Ethernet over CWDM
- Access, Metro and Enterprise

Product Description

This Cisco® ONS-SE-155-1510 compatible SFP transceiver provides OC-3 (155mbs) transmission rates for up to 120km over single-mode fiber (SMF) using a wavelength of 1510nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Cisco® transceiver. This easy to install, hot swappable transceiver has been programmed, uniquely serialized and data-traffic and application tested to ensure that it will initialize and perform identically. 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. 031323

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Maximum Supply Voltage	Vcc	-0.5		4.0	V	
Storage Temperature	Tstg	-40		85	°C	
Operating Case Temperature	Tc	-40	25	85	°C	
Relative Humidity	RH	5		95	%	
Data Rate			125 155		Mbps	

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage	Vcc	3.135	3.3	3.465	V	
Power Supply Current	Icc			300	mA	
Power Dissipation	P_{DISS}			1000	mW	
Transmitter Differential Input Voltage (TD +/-)		300		2200	mVp-p	1
Receiver Differential Output Voltage (RD +/-)		600		1200	mVp-p	2
Low-Speed Output: Transmitter Fault (Tx_Fault)/Loss of Signal (LOS)	VOH	2.0		Vcc	V	3
	VOL	0		0.8	V	
Low-Speed Input: Transmitter Disable (Tx_Disable), MOD_DEF 1, MOD_DEF 2	VIH	2.0		Vcc	V	4
	VIL	0		0.8	V	

Notes:

1. Internally AC coupled and terminated to 100Ω differential load.
2. Internally AC coupled bit requires a 100Ω differential termination or internal to Serializer/Deserializer.
3. Pulled up externally with a 4.7kΩ to 10kΩ resistor on the host board to VccT/R.
4. MOD_DEF1 and MOD_DEF2 must be pulled up externally with a 4.7kΩ to 10kΩ resistor on the host board VccT/R.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power	Pavg	2		7	dBm	
Center Wavelength Range	λC	λ-6.5	λ	λ+6.5	nm	
Extinction Ratio	ER	10			dB	
Spectral Width (-20dB)	Δλ			1	nm	
Side-Mode Suppression Ratio	SMSR	30			dB	
Total Jitter	TJ			0.1	ps	
Dispersion Penalty				1.5	dB	
Optical Rise/Fall Time	Tr/Tf			1.5	ns	
Pout @ Tx_Disable Asserted	POUT			-35	dBm	
Eye Diagram	ITU-T G.957 STM-1 and Telcordia GR-253-CORE Compatible					
Receiver						
Receiver Sensitivity	S			-34	dBm	1
Receiver Overload	POL	-10			dBm	1
Optical Return Loss	ORL	12			dB	
LOS De-Assert	LOSD			-35	dBm	
LOS Assert	LOSA	-45			dBm	

Notes:

1. Measured with PRBS 2^{23}-1 test pattern, 155.52Mbps, ER=10dB, and BER<10^{-12}.

Pin Descriptions

Pin	Symbol	Name/Description	Engagement Order (Insertion)	Notes
1	VeeT	Transmitter Ground.	1	
2	Tx_Fault	Transmitter Fault Indication.	3	1
3	Tx_Disable	Transmitter Disable. Module disables on high or open.	3	2
4	MOD_DEF2	Module Definition 2. 2-Wire Serial ID Interface.	3	3
5	MOD_DEF1	Module Definition 1. 2-Wire Serial ID Interface.	3	3
6	MOD_DEF0	Module Definition 0. Grounded within the module.	3	3
7	Rate Select	Not Connected.	3	
8	LOS	Loss of Signal.	3	4
9	VeeR	Receiver Ground.	1	
10	VeeR	Receiver Ground.	1	
11	VeeR	Receiver Ground.	1	
12	RD-	Inverse Received Data Out.	3	5
13	RD+	Received Data Out.	3	5
14	VeeR	Receiver Ground.	1	
15	VccR	Receiver Power. +3.3V±5%.	2	6
16	VccT	Transmitter Power. +3.3V±5%.	2	6
17	VeeT	Transmitter Ground.	1	
18	TD+	Transmitter Data In.	3	7
19	TD-	Inverse Transmitter Data In.	3	7
20	VeeT	Transmitter Ground.	1	

Notes:

1. Tx_Fault is open collector/drain output which should be pulled up externally with a 4.7KΩ-10KΩ resistor on the host board to supply <VccT +0.3V or VccR+0.3V. When “high,” this output indicates a laser fault of some kind. “Low” indicates normal operation. In the “low” state, the output will be pulled to <0.8V.
2. Tx_Disable input is used to shut down the laser output per the state table below. It is pulled up within the module with a 4.7KΩ-10KΩ resistor.

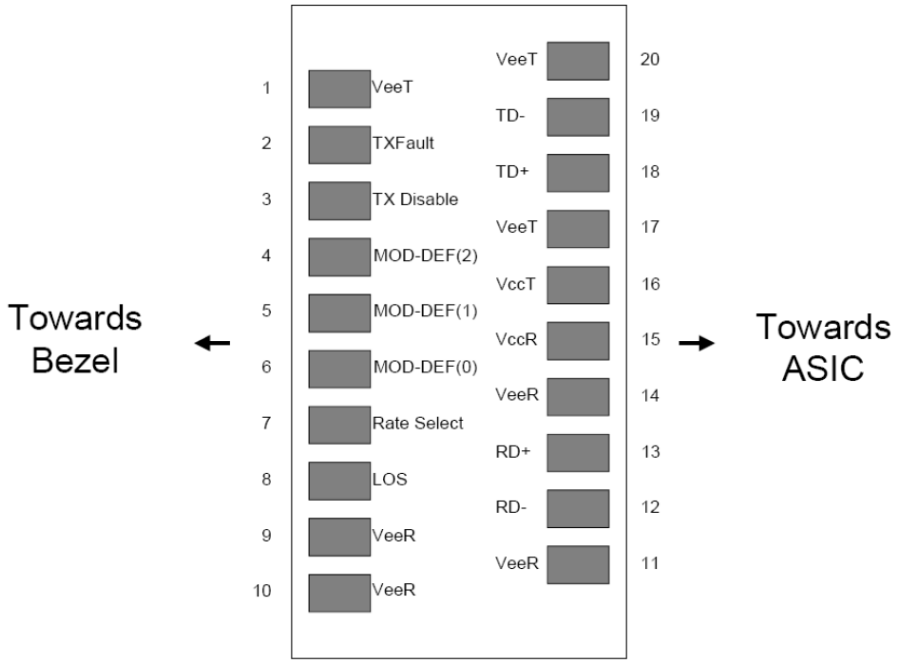
   Low (0V-0.8V): Transmitter On
   Between (0.8V and 2V): Undefined
   High (2.0V-VccT): Transmitter Disabled
   Open: Transmitter Disabled
3. MOD_Def0, 1, 2. These are the module definition pins. They should be pulled up with a 4.7KΩ-10KΩ resistor on the host board to supply less than VccT+0.3V or VccR+0.3V.

   Mod-DEF0 is grounded by the module to indicate that the module is present.

Mod_DEF1 is clock line of the 2-wire serial interface for optional serial ID.

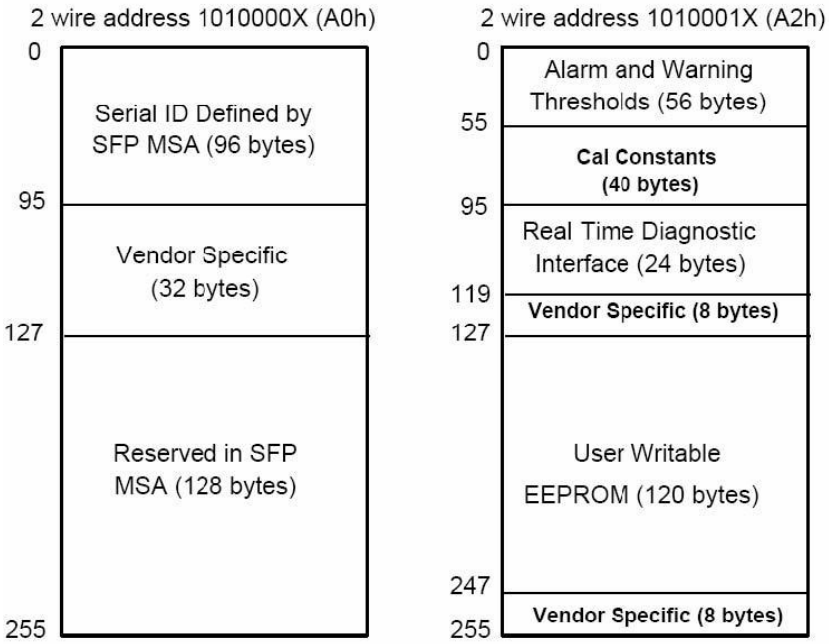
Mod_DEF2 is data line of the 2-wire serial interface for optional serial ID.

4. LOS (Loss of signal) is an open collector/drain output which should be pulled up externally with a 4.7KΩ-10KΩ resistor on the host board to supply <VccT+0.3V or VccR+0.3V. When “high,” this output indicates the received optical power is below the worst case receiver sensitivity (as defined by the standard in use). “Low” indicates normal operation. In the “low" state, the output will be pulled to <0.8V.
5. RD-/+: These are the differential receiver outputs. They are AC coupled 100Ω differential lines which should be terminated with 100Ω differential at the user SERDES. The AC coupling is done inside the module and thus not required on the host board.
6. VccR and VccT are the receiver and transmitter power supplies. They are defined as 3.3V±5% at the SFP connector pin. The in-rush current will typically be no more than 30mA above steady state supply current after 500ns.
7. TD-/+: These are the differential transmitter inputs. They are AC coupled differential lines with 100Ω differential termination inside the module. The AC coupling is done inside the module and is thus not required on host board.

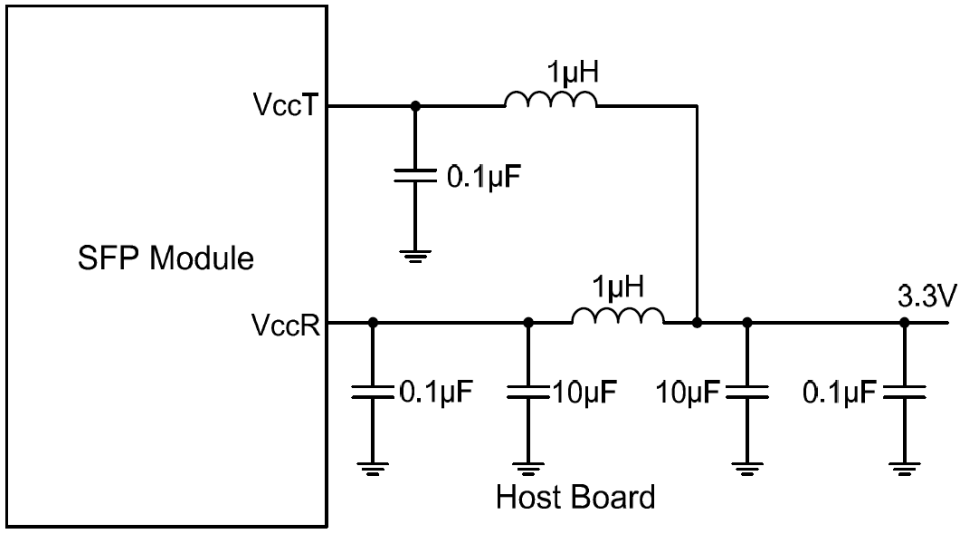


Pin-Out of Connector Block on the Host Board

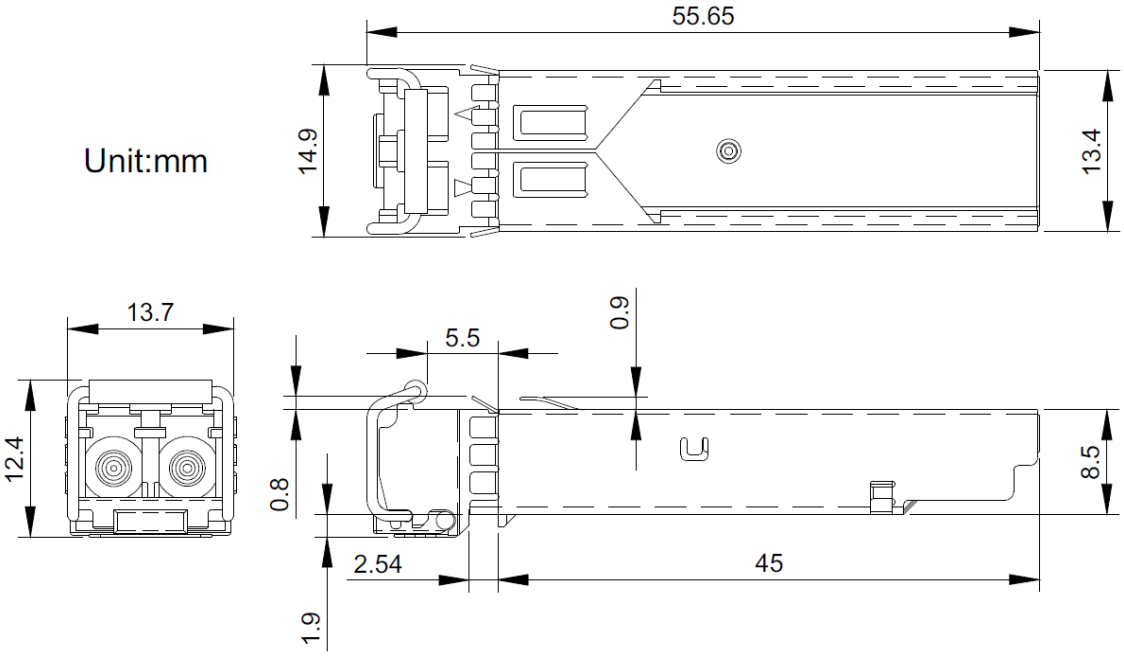
Digital Diagnostic Memory Map



Recommended Host Board Power Supply



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 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.

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