SFP-10GB-CW-45-80-I-N-AO

Alcatel-Lucent Nokia® Compatible TAA 10GBase-CWDM SFP+ Transceiver (SMF, 1450nm, 80km, LC, DOM, -40 to 85C)

Features

- Operating Data Rate up to 10.31Gbps
- Single 3.3V Power Supply and TTL Logic Interface
- APD-TIA Receiver
- Duplex LC Connector
- Power Dissipation: 1.5W
- Hot-Pluggable
- RoHS Compliant and Lead-Free
- Operating Temperature: -40 to 85 Celsius

Applications

- 8x/10x Fibre Channel
- 10x Gigabit Ethernet over CWDM
- Access, Metro and Enterprise
- Mobile Fronthaul CPRI/OBSAI

Product Description

This Alcatel-Lucent Nokia® compatible SFP+ transceiver provides 10GBase-CWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1450nm via an LC connector. It can operate at temperatures between -40 and 85C. It is guaranteed to be 100% compatible with the equivalent Alcatel-Lucent Nokia® 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

CWDM Wavelengths

Wavelengths	Min.	Typ.	Max.
27	1264.5	1271	1277.5
29	1284.5	1291	1297.5
31	1304.5	1311	1317.5
33	1324.5	1331	1337.5
35	1344.5	1351	1357.5
37	1364.5	1371	1377.5
39	1384.5	1391	1397.5
41	1404.5	1411	1417.5
43	1424.5	1431	1437.5
45	1444.5	1451	1457.5

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Data Rate				10.3125	Gbps	
Link Budget		24			dB	
Operating Case Temperature	Tc	-40		85	℃	
Storage Temperature	Tstg	-40		85	℃	
Maximum Voltage	Vcc	-0.5		3.6	V	
Relative Humidity (Non-Condensing)	RH	5		85	%	

Notes:

1. Exceeding any one of these values may destroy the device permanently.

Electrical Characteristics

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Supply Voltage		Vcc	3.13	3.3	3.47	V	
Supply Current		Icc			450	mA	
Transmitter							
Differential Data Input Swing		VIN	150		1200	mVp-p	1
Differential Input Impedance		ZIN	85	100	115	Ω	2
Tx_Disable	**High**		2		Vcc	V	
	Low		0		0.8		
Tx_Fault	**High**		2		Vcc+0.3	V	3
	Low		0		0.8		4
Receiver							

Differential CML Outputs		VOUT	350		700	mVp-p	1
Differential Output Impedance		ZOUT	85	100	115	Ω	
Rx_LOS	**High**		2		Vcc+0.3	V	3
	Low		0		0.8		4
MOD_DEF (0.2)		VOH	2.5			V	5
		VOL	0		0.5		

Notes:

1. AC coupled inputs.
2. RIN > 100kΩ @ DC.
3. Io = 400µA; Host_Vcc.
4. Io = -4.0mA.
5. With serial ID.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Center Wavelength	λC	λC - 6.5		λC + 6.5	nm	
Spectral Width (-20dB)	Δλ			1	nm	
Average Output Power	POUT	2		7	dBm	1
Extinction Ratio	ER	3.5			dB	
Average Power of Off Transmitter	Poff			-30	dB	
Side-Mode Suppression Ratio	SMSR	30			dB	
Relative Intensity Noise	RIN			-128	dB/Hz	
Receiver						
Optical Center Wavelength	λC	1260		1620	nm	
Receiver Sensitivity	Pmin			-22	dBm	2
Receiver Overload	Pmax	-7			dBm	
LOS De-Assert	LOSD			-23	dBm	
LOS Assert	LOSA	-36			dBm	
LOS Hysteresis	LOSH	0.5			dB	

Notes:

1. Output power is coupled into a 9/125µm SMF.
2. Minimum average optical power, measured at BER less than $1E^{-12}$. The measure pattern is PRBS 2^{31}-1.

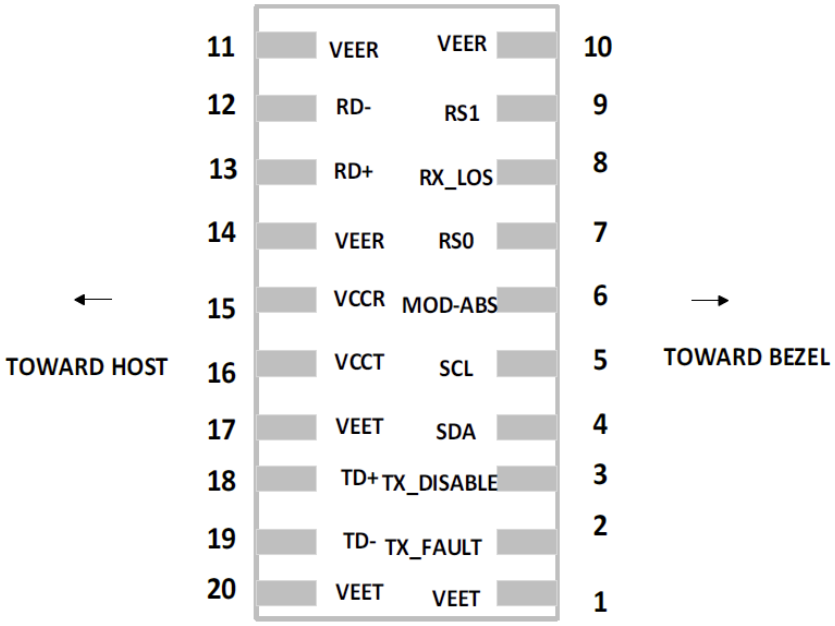
Pin Descriptions

Pin	Symbol	Name/Description	Plug Seq.	Notes
1	VeeT	Transmitter Ground.	1	5
2	Tx_Fault	Transmitter Fault Indication.	3	1
3	Tx_Disable	Transmitter Disable. Module disables on “high” or “open.”	3	2
4	SDA	Module Definition 2. 2-wire serial ID interface.	3	3
5	SCL	Module Definition 1. 2-wire serial ID interface.	3	3
6	MOD_ABS	Module Absent.	3	3
7	RS0	Rx Rate Select (LVTTL). NC (pin not used).	3	
8	LOS	Loss of Signal.	3	4
9	RS1	Tx Rate Select (LVTTL). NC (pin not used).	1	
10	VeeR	Receiver Ground.	1	5
11	VeeR	Receiver Ground.	1	5
12	RD-	Inverted Received Data Out.	3	6
13	RD+	Received Data Out.	3	6
14	VeeR	Receiver Ground.	1	5
15	VccR	3.3V±5% Receiver Power.	2	7
16	VccT	3.3V±5% Transmitter Power.	2	7
17	VeeT	Transmitter Ground.	1	5
18	TD+	Transmit Data In.	3	8
19	TD-	Inverted Transmit Data In.	3	8
20	VeeT	Transmitter Ground.	1	5

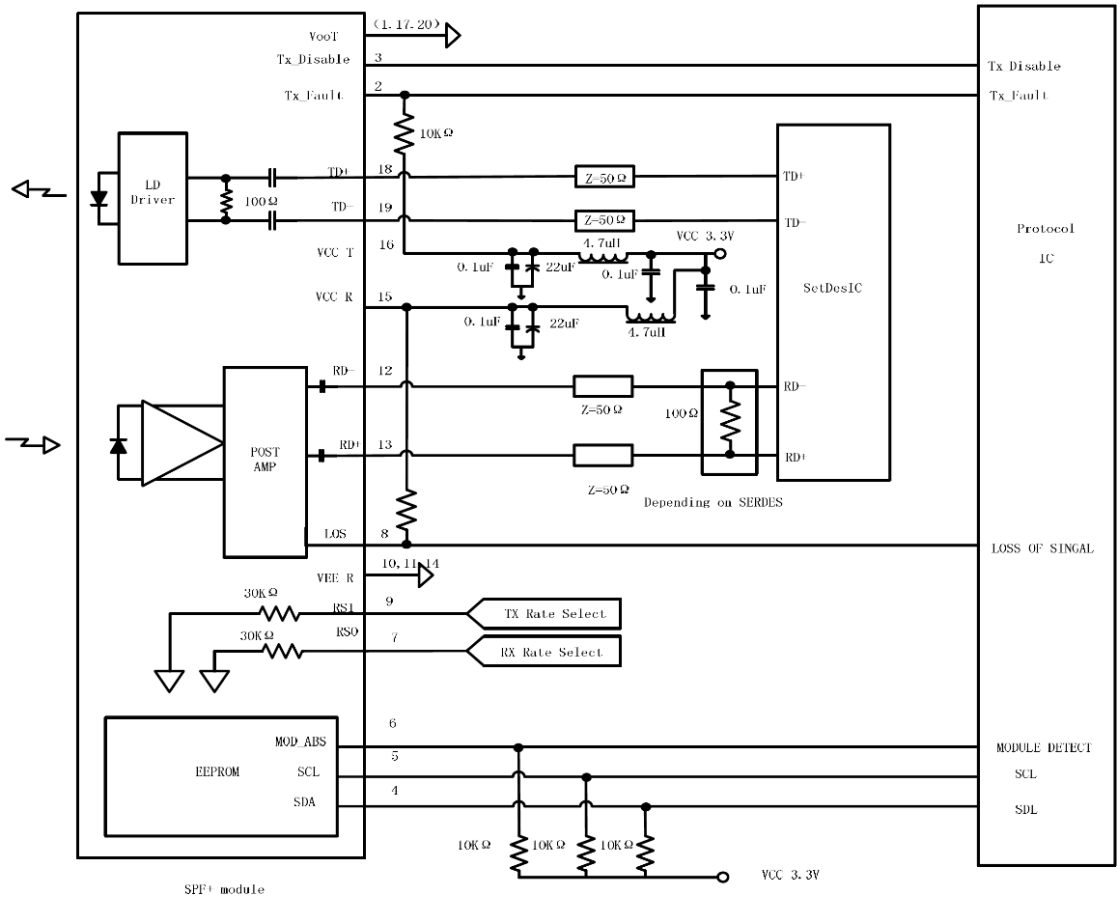
Notes

1. Tx_Fault is an open collector/drain output that should be pulled up with a 4.7kΩ to 10kΩ resistor on the host board. When “high,” 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 is an input that is used to shut down the transmitter optical output. It is pulled up within the module with a 4.7kΩ to 10kΩ resistor. It states are:
   Low (0V-0.8V): Transmitter On
   (>0.8V, <2.0V): Undefined
   High (2.0V – 3.465V): Transmitter Disabled
   Open: Transmitter Disabled.
3. Modulation Absent. Connected to the VeeT or VeeR in the module.
4. LOS (Loss of Signal) is an open collector/drain output that should be pulled up with a 4.7kΩ to 10kΩ resistor. When “high,” this output indicates that 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. VeeR and VeeT may be internally connected within the SFP module.
6. RD-/+. These are the differential receiver outputs. They are AC-coupled, 100Ω differential lines that should be terminated with 100Ω (differential) at the user SERDES.
7. VccR and VccT are the receiver and transmitter power supplies. They are defined as 3.3V±5% at the SFP connector pin.
8. TD-/+. These are the differential transmitter inputs. They are AC-coupled, differential lines with 100Ω differential termination inside the module.

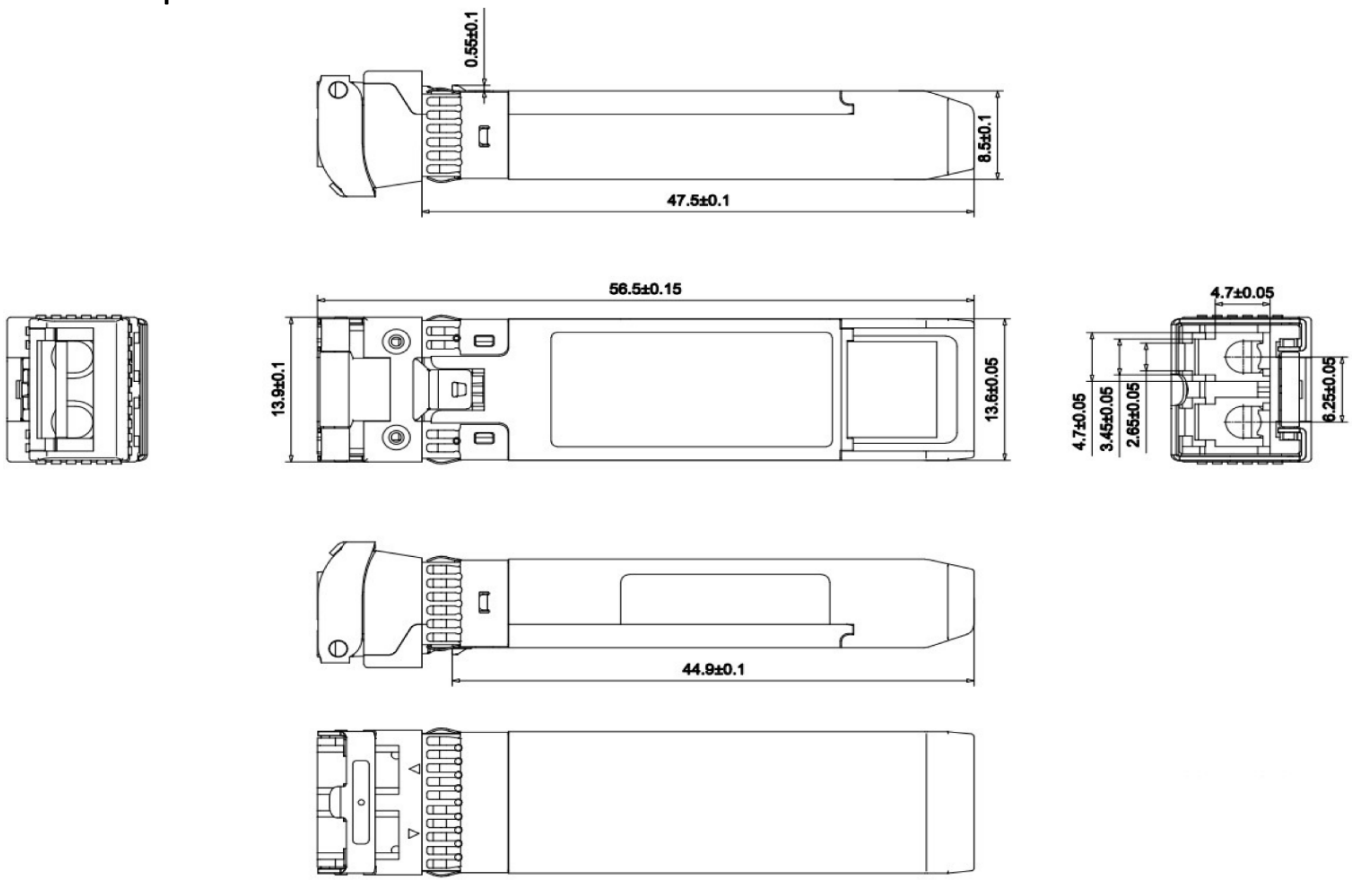
Pin-Out Details



Recommended Circuit Schematic



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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