50DW-SFP10G-49.72-AO

Cisco® 50DW-SFP10G-49.72 Compatible TAA 10GBase-DWDM SFP+ Transceiver C-Band Channel DW34.5 50GHz (SMF, 1549.72nm, 80km, LC, DOM)

Features

- SFF-8432 and SFF-8472 Compliance
- Duplex LC Connector
- Commercial Temperature 0 to 70 Celsius
- Single-mode Fiber
- Hot Pluggable
- Excellent ESD Protection
- Metal with Lower EMI
- RoHS Compliant and Lead Free

Applications

- 8x/10x Fibre Channel
- 10x Gigabit Ethernet over DWDM
- Access, Metro and Enterprise

Product Description

This Cisco® 50DW-SFP10G-49.72 compatible SFP+ transceiver provides 10GBase-DWDM throughput up to 80km over single-mode fiber (SMF) using a wavelength of 1549.72nm 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. 113022

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

Tunable SFP+ Channel Number and Wavelength

ITU Channel	Frequency (THz)	Center Wavelength (nm)	ITU Channel	Frequency (THz)	Center Wavelength (nm)
1	191.35	1566.72	**49**	193.75	1547.32
2	191.40	1566.31	**50**	193.80	1546.92
3	191.45	1565.90	**51**	193.85	1546.52
4	191.50	1565.50	**52**	193.90	1546.12
5	191.55	1565.09	**53**	193.95	1545.72
6	191.60	1564.68	**54**	194.00	1545.32
7	191.65	1564.27	**55**	194.05	1544.92
8	191.70	1563.86	**56**	194.10	1544.53
9	191.75	1563.45	**57**	194.15	1544.13
10	191.80	1563.05	**58**	194.20	1543.73
11	191.85	1562.64	**59**	194.25	1543.33
12	191.90	1562.23	**60**	194.30	1542.94
13	191.95	1561.83	**61**	194.35	1542.54
14	192.00	1561.42	**62**	194.40	1542.14
15	192.05	1561.01	**63**	194.45	1541.75
16	192.10	1560.61	**64**	194.50	1541.35
17	192.15	1560.20	**65**	194.55	1540.95
18	192.20	1559.79	**66**	194.60	1540.56
19	192.25	1559.39	**67**	194.65	1540.16
20	192.30	1558.98	**68**	194.70	1539.77
21	192.35	1558.58	**69**	194.75	1539.37
22	192.40	1558.17	**70**	194.80	1538.98
23	192.45	1557.77	**71**	194.85	1538.58
24	192.50	1557.36	**72**	194.90	1538.19
25	192.55	1556.96	**73**	194.95	1537.79
26	192.60	1556.56	**74**	195.00	1537.40
27	192.65	1556.15	**75**	195.05	1537.00
28	192.70	1555.75	**76**	195.10	1536.61
29	192.75	1555.34	**77**	195.15	1536.22
30	192.80	1554.94	**78**	195.20	1535.82
31	192.85	1554.54	**79**	195.25	1535.43
32	192.90	1554.13	**80**	195.30	1535.04
33	192.95	1553.73	**81**	195.35	1534.64
34	193.00	1553.33	**82**	195.40	1534.25
35	193.05	1552.93	**83**	195.45	1533.86
36	193.10	1552.52	**84**	195.50	1533.47
37	193.15	1552.12	**85**	195.55	1533.07

38	193.20	1551.72	**86**	195.60	1532.68
39	193.25	1551.32	**87**	195.65	1532.29
40	193.30	1550.92	**88**	195.70	1531.90
41	193.35	1550.52	**89**	195.75	1531.51
42	193.40	1550.12	**90**	195.80	1531.12
43	193.45	1549.72	**91**	195.85	1530.72
44	193.50	1549.32	**92**	195.90	1530.33
45	193.55	1548.91	**93**	195.95	1529.94
46	193.60	1548.52	**94**	196.00	1529.55
47	193.65	1548.11	**95**	196.05	1529.16
48	193.70	1547.72	**96**	196.10	1528.77

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	-40		85	°C
Relative Humidity	RH	5		95	%
Data Rate			10.3125		Gb/s

Electrical Characteristics (TOP=25°C, Vcc=3.3Volts)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage		Vcc	3.135	3.3	3.465	V	
Module Supply Current		Icc		300	550	mA	
Power Dissipation		P_D		1.0	1.8	W	
Transmitter							
Input Differential Impedance		Zin		100		Ω	
Differential Data Input Swing		$V_{IN, P-P}$	180		700	mVp-p	
TX_FAULT	**Transmitter Fault**	V_{OH}	2.0		V_{CCHOST}	V	
	Normal Operation	V_{OL}	0		0.8	V	
TX_DISABLE	**Transmitter Disable**	V_{IH}	2.0		V_{CCHOST}	V	
	Transmitter Enable	V_{IL}	0		0.8	V	
Receiver							
Output differential impedance		Zo		100		Ω	
Differential Data Output Swing		$V_{OUT, P-P}$	300		850	mVp-p	1
Data Output Rise Time, Fall Time		t_r, t_f	28			ps	2
RX_LOS	**Loss of signal (LOS)**	V_{OH}	2.0		V_{CCHOST}	V	3
	Normal Operation	V_{OL}	0		0.8	V	3

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 4.7Ω on the host board.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Launch Optical Power	Po	0		5	dBm	1
Center Wavelength Range	λc	1528.77		1563.86	nm	
Center Wavelength Spacing			50		GHz	
Extinction Ratio	EX	9.0			dB	2
Side Mode Suppression Ratio	SMSR	30			dB	
Spectral Width (-20dB)				1	nm	
Transmitter and Dispersion Penalty	TDP			3.0	dB	
Relative Intensity Noise	RIN			-128	dB/Hz	
Optical Return Loss Tolerance	ORLT			21	dB	
Pout @TX-Disable Asserted	Poff			-30	dBm	1
Tx Power Monitor Accuracy				±3	dB	
Eye Diagram	IEEE Std 802.3-2005 10Gb Ethernet 10GBASE-ZR compatible					
Receiver						
Center Wavelength	λc	1528		1565	nm	
Receiver Sensitivity (Pavg)	S			-23	dBm	3
Receiver overload (Pavg)	P_{OL}	-8			dBm	3
Optical Return Loss	ORL			-27	dB	
Chromatic Dispersion	CD			1600	ps/nm	
OSNR		27			dB	4
Max OSNR Path Penalty				4	dB	4
Optical Power Path Penalty				3	dB	
Rx Power Monitor Accuracy				±3	dB	
Dispersion Limited Distance				80	km	
Attenuation Limited Distance				80	km	
LOS De-Assert	LOSD			-25	dBm	
LOS Assert	LOSA	-35			dBm	
LOS Hysteresis		0.5			dB	

Notes:

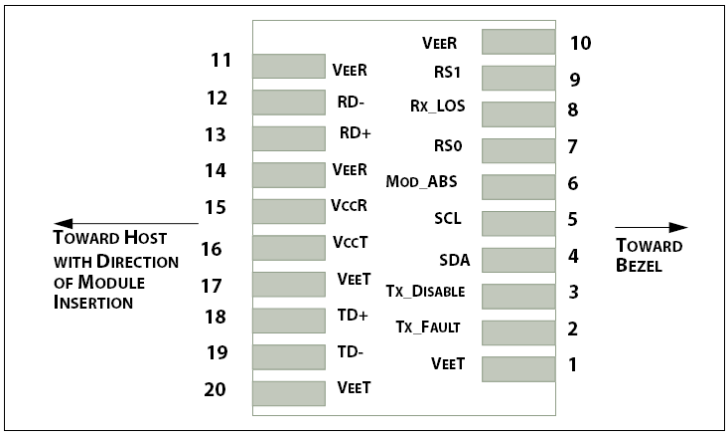
1. The optical power is launched into 9/125μm SMF.
2. Measured with a PRBS 2^{31}-1 test pattern @10.3125Gbps.
3. Measured with PRBS 2^{31}-1 test pattern, 10.3125Gb/s, BER<10^{-12}.
4. Receiver power @ -7 ~-18dBm, 10.3125Gb/s, BER<10^{-12}.

Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground	1
2	TX_Fault	Transmitter Fault (LVTTL-O) - High indicates 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	
8	RX_LOS	Receiver Loss of Signal (LVTTL-O)	2
9	RS1	Rate Select 1 – Not used, Presents high input impedance	
10	VeeR	Receiver Ground	1
11	VeeR	Receiver Ground	1
12	RD-	Inverse Received Data out (CML-O)	
13	RD+	Received Data out (CML-O)	
14	VeeR	Receiver Ground	
15	VccR	Receiver Power - +3.3V	
16	VccT	Transmitter Power - +3.3 V	
17	VeeT	Transmitter Ground	1
18	TD+	Transmitter Data In (CML-I)	
19	TD-	Inverse Transmitter Data In (CML-I)	
20	VeeT	Transmitter Ground	1

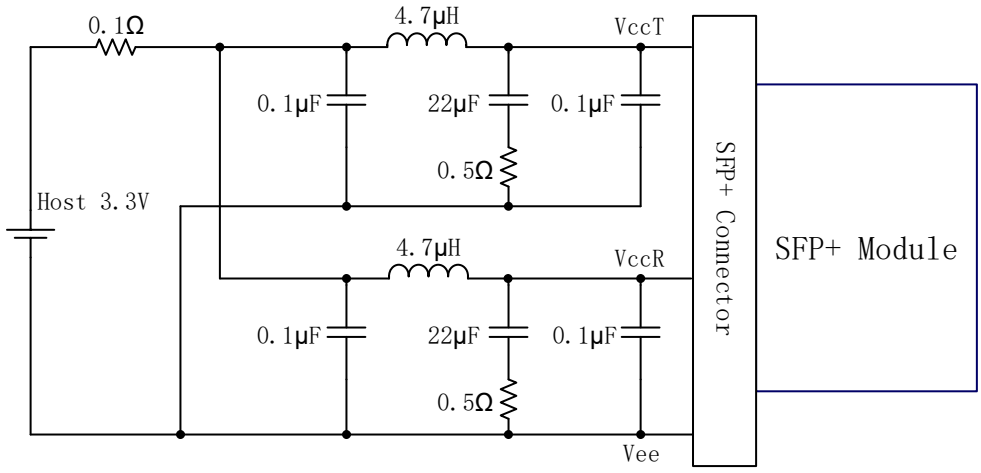
Notes:

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.

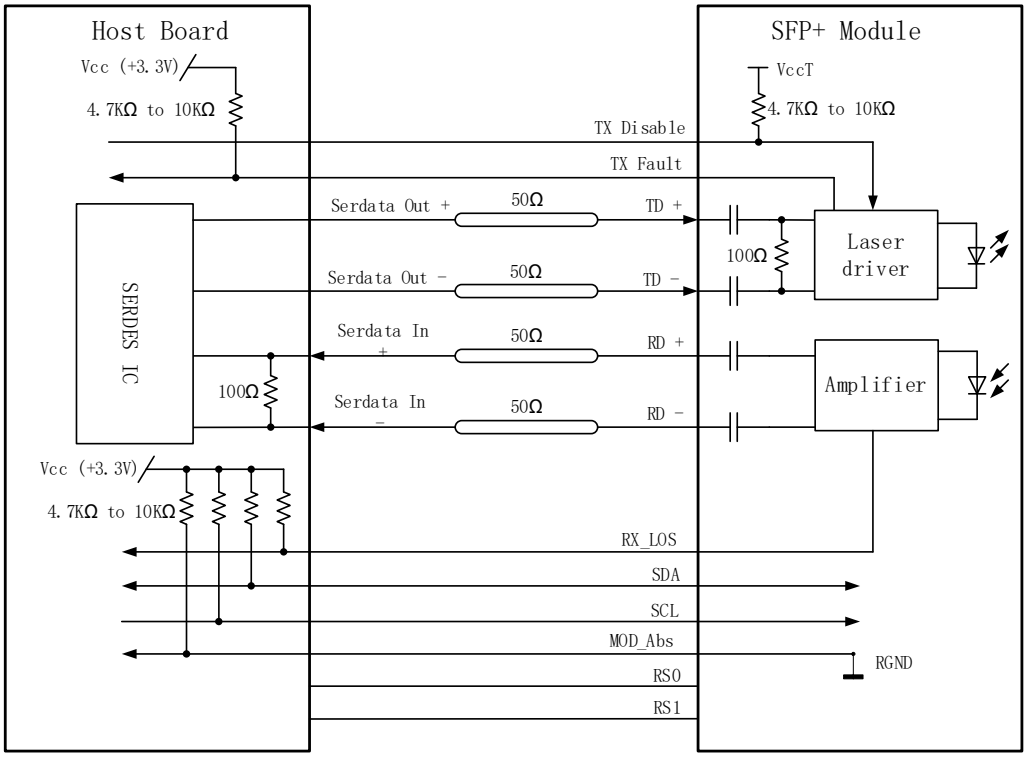


Pin-out of connector Block on Host board

Recommended Host Board Power Supply Filter Network

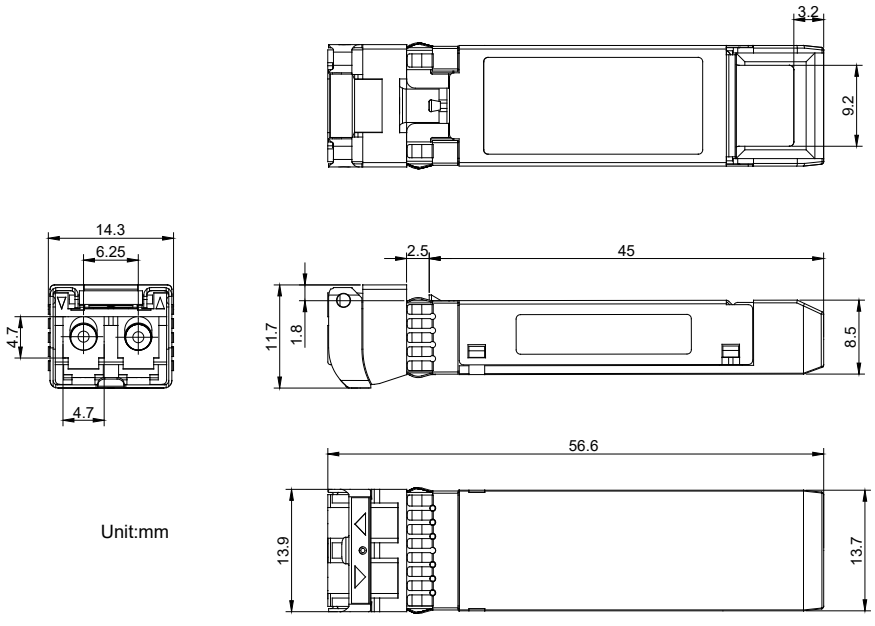


Recommend Application Interface Block Diagram



Mechanical Specifications

Small Form Factor Pluggable (SFP) transceivers are compatible with the dimensions defined by the SFP Multi-Sourcing Agreement (MSA).



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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