

## DWDM-SFP10G-XX.XX-40-AO

Cisco® Compatible TAA Compliant 10GBase-DWDM 100GHz SFP+ Transceiver (SMF, XXXX.XXnm, 40km, LC, DOM)

### Features

- Duplex LC connector
- Support hot-pluggable
- Metal with lower EMI
- Excellent ESD protection
- RoHS compliant and Lead Free
- Compliant with IEEE 802.3ae
- Dispersion tolerance from -500ps/nm to 1600ps/nm
- Available in all C-Band Wavelengths on the DWDM ITU Grid
- Temperature-stabilized EML transmitter
- Up to 40KM for single mode fiber
- GR-253-CORE compliant
- Compliant with SFP+ MSA: SFF-8431 Rev.4.1
- Single 3.3V power supply and low power dissipation <1.5W

### Applications

- 10GBase-DWDM
- 10G Fibre Channel

### Product Description

This Cisco® compatible SFP+ transceiver provides 10GBase-DWDM throughput up to 40km over single-mode fiber (SMF) using a wavelength of XXXX.XXnm 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 SFP 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."



## 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

## DWDM Available Wavelengths

ITU Channel	Frequency (THZ)	Center Wavelength (nm)
61	196.1	1528.77
60	196.0	1529.55
59	195.9	1530.33
58	195.8	1531.12
57	195.7	1531.90
56	195.6	1532.68
55	195.5	1533.47
54	195.4	1534.25
53	195.3	1535.04
52	195.2	1535.82
51	195.1	1536.61
50	195.0	1537.40
49	194.9	1538.19
48	194.8	1538.98
47	194.7	1539.77
46	194.6	1540.56
45	194.5	1541.35
44	194.4	1542.14
43	194.3	1542.94
42	194.2	1543.73
41	194.1	1544.53
40	194.0	1545.32
39	193.9	1546.12
38	193.8	1546.92
37	193.7	1547.72
36	193.6	1548.51
35	193.5	1549.32
34	193.4	1550.12
33	193.3	1550.92
32	193.2	1551.72
31	193.1	1552.52
30	193.0	1553.33
29	192.9	1554.13
28	192.8	1554.94
27	192.7	1555.75
26	192.6	1556.55
25	192.5	1557.36

24	192.4	1558.17
23	192.3	1558.98
22	192.2	1559.79
21	192.1	1560.61
20	192.0	1561.42
19	191.9	1562.23
18	191.8	1563.05
17	191.7	1563.86

### Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Maximum Supply Voltage	V <sub>CC</sub>	-0.5	4.0	V
Storage Temperature	T <sub>S</sub>	-40	+85	°C
Operating Case Temperature	T <sub>C</sub>	0	70	°C
Operating Humidity	RH	5	85	%
Receiver Power	R <sub>MAX</sub>		-1	dBm
Maximum Bitrate	B <sub>max</sub>		11.3	Gbps

### Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
Input differential impedance	R <sub>in</sub>	85	100	115	Ω	1
Differential data input swing	V <sub>in, pp</sub>	120	600	850	mV	
TX Disable-High		2.0		V <sub>CC</sub> +0.3	V	
TX Disable-Low		V <sub>EE</sub>		V <sub>EE</sub> +0.8	V	
TX Fault-High		2.0		V <sub>CC</sub> +0.3	V	
TX Fault-Low		V <sub>EE</sub>		V <sub>EE</sub> +0.8	V	
<b>Receiver</b>						
Single ended data output swing	V <sub>out, pp</sub>	350	400	700	mV	
LOS-High		2.0		V <sub>CC</sub> +0.3	V	
LOS-Low		V <sub>EE</sub>		V <sub>EE</sub> +0.8	V	

#### Notes:

1. AC coupled.

## Optical Characteristics

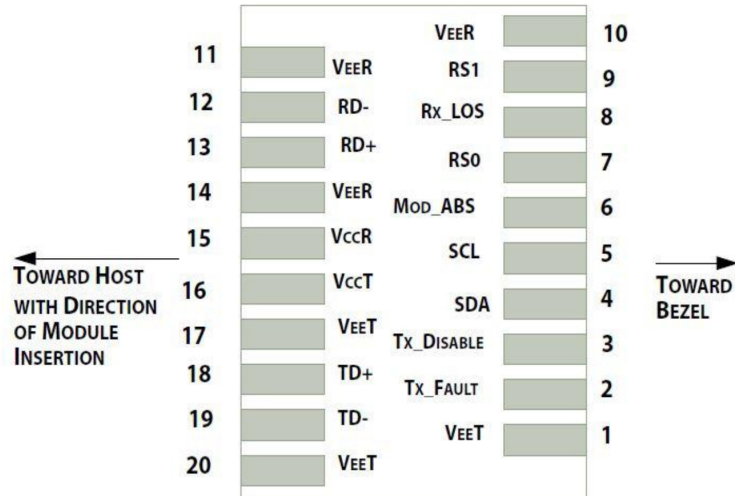
Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
<b>Transmitter</b>						
Output Opt. Power	$P_{AVE}$	-1		4	dBm	
Launch Power (Tx: OFF)	Poff			-30	dBm	
Side Mode Suppression Ratio	SMSR	30			dB	
Center Wavelength Spacing		x-0.1	x	x+0.1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Extinction Ratio	ER	3.5			dB	
Pout@TX Disable Asserted	Pout			-45	dBm	
Transmitter Dispersion Penalty@1600ps/nm	TDP			3.5	dB	
Relative Intensity Noise	RIN			-128	dB/Hz	
TX Jitter	TXj	Per 802.3ae requirements				
<b>Receiver</b>						
Overload		-8			dBm	
Optical Center Wavelength	$\lambda_C$	1270		1600	nm	
LOS De-Assert	LOSD			-24	dBm	
LOS Assert	LOSA	-37			dBm	
LOS Hysteresis		1			dB	

## Pin Descriptions

Pin	Symbol	Name/Descriptions	Ref.
1	VeeT	Transmitter Ground (Common with Receiver Ground).	1
2	TX Fault	Transmitter Fault. LVTTTL-O	2
3	TX Disable	Transmitter Disable. Laser output disabled on high or open. LVTTTL-I.	3
4	SDA	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTTL-I/O.	
5	SCL	2-Wire Serial Interface Data Line (Same as MOD-DEF2 in INF-8074i). LVTTTL-I.	
6	MOD_ABS	Module Absent, Connect to VeeT or VeeR in Module.	4
7	RS0	Rate Select 0. Not used	5
8	LOS	Loss of Signal indication. Logic 0 indicates normal operation. LVTTTL-O.	2
9	RS1	Rate Select 1. Not used	5
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. CML-O.	
13	RD+	Receiver Non-inverted DATA out. AC Coupled. CML-O.	
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. CML-I.	
19	TD-	Transmitter Inverted DATA in. AC Coupled. CML-O.	
20	VeeT	Transmitter Ground (Common with Receiver Ground).	1

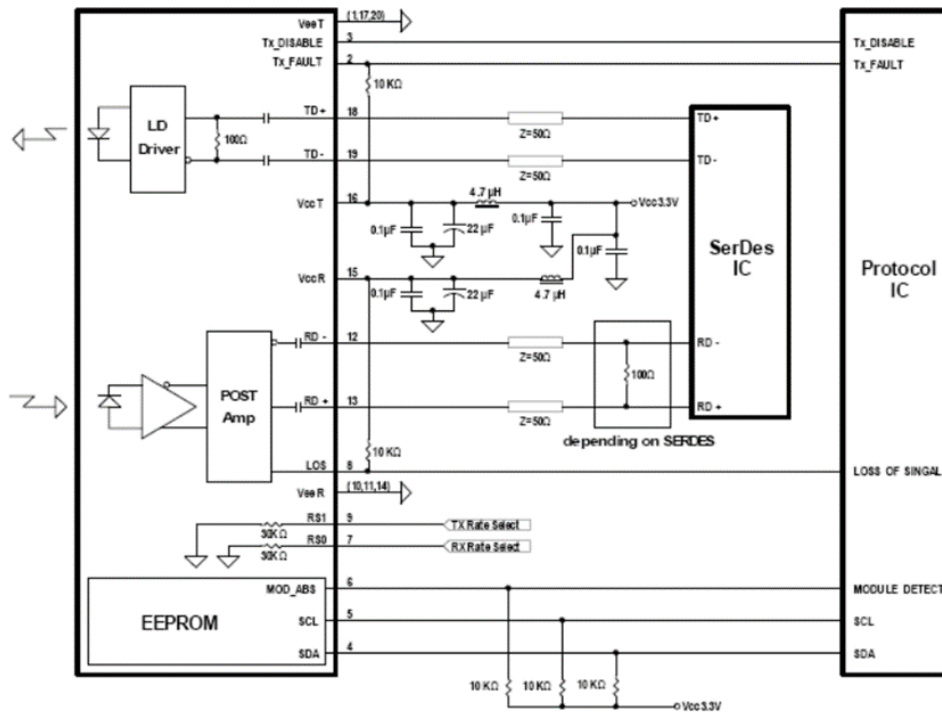
### Notes:

1. The module signal ground contacts, VeeR and VeeT, should be isolated from the module case.
2. This contact is an open collector/drain output and should be pulled up to the Vcc\_Host with resistor in the range 4.7KΩ to 10KΩ. Pull ups can be connected to one or several power supplies, however the host board design shall ensure that no module contract has voltage exceeding module VccT/R +0.5.V.
3. Tx\_Disable is an input contact with a 4.7KΩ to 10KΩ pull-up resistor to VccT inside module.
4. Mod\_ABS is connected to VeeT or VeeR in the SFP+ module. The host may pull the contract up to Vcc\_Host with a resistor in the range from 4.7KΩ to 10KΩ. Mod\_ABS is asserted "High" when the SFP+ module is physically absent from a host slot.
5. Internally pulled down per SFF-8431



Pin-out of connector Block on Host board

**Recommended Circuit Schematic**



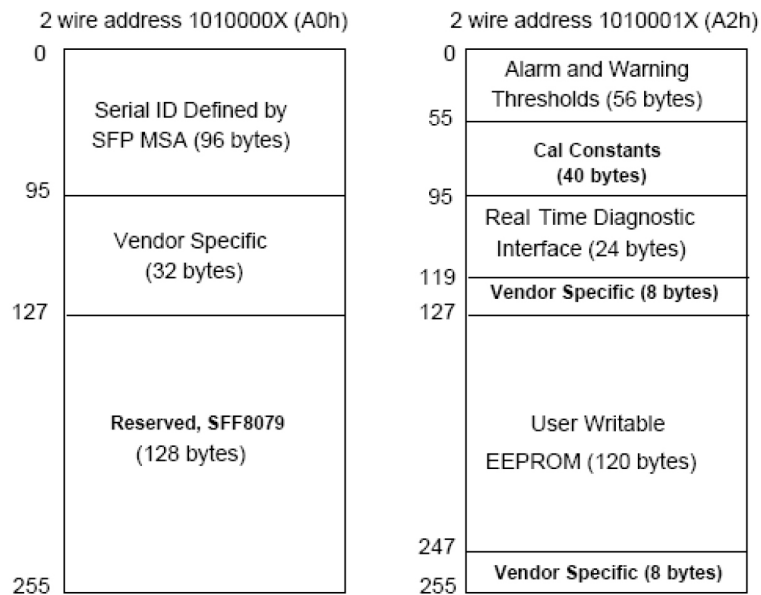
### Mechanical Specifications

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



### EEPROM Information

EEPROM memory map specific data field description is as below:



## Contact Information

Founded in 1999, AddOn Networks is North America's leading provider of transceivers and high speed cabling. With a reputation for high quality products as well as an extensive custom design portfolio, AddOn has the connectivity solution regardless of the requirement.

At AddOn, 100% of the products we ship every day are tested in the specific application for which they are intended—never batch or spec tested only. We run bandwidth, distance and IOS network tests. We have documented an impressive 0.03% failure rate over the last 10 years. To continue this rate of success we invest millions annually in our own on-site testing lab.

Corporate office:  
AddOn Networks  
15775 Gateway Circle  
Tustin, CA 92780

Tel: 877-292-1701

Fax: 949-266-9273

Email: [sales@addonnetworks.com](mailto:sales@addonnetworks.com)

Email: [support@addonnetworks.com](mailto:support@addonnetworks.com)

Web: <http://www.addonnetworks.com>