UACC-OM-SFP10-1270-AO

Ubiquiti® UACC-OM-SFP10-1270 Compatible TAA 10GBase-CWDM SFP+ Transceiver (SMF, 1270nm, 20km, LC, DOM)

Features

- SFF-8432 and SFF-8472 Compliance
- Temperature-stabilized EML transmitter and PIN receiver
- 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

- 10x Gigabit Ethernet over CWDM

Product Description

This Ubiquiti® UACC-OM-SFP10-1270 compatible SFP+ transceiver provides 10GBase-CWDM throughput up to 20km over single-mode fiber (SMF) using a wavelength of 1270nm via an LC connector. It is guaranteed to be 100% compatible with the equivalent Ubiquiti® 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

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

CWDM Available Wavelengths

Band	Nomenclature	Wavelength		
		Min.	Typ.	Max
O-band Original	**A**	**1264**	**1270**	**1277.5**
	B	1284	1290	1297.5
	C	1304	1310	1317.5
	D	1324	1330	1337.5
	E	1344	1350	1357.5
E-band Extended	**F**	1364	1370	1377.5
	G	1384	1390	1397.5
	H	1404	1410	1417.5
	I	1424	1430	1437.5
	J	1444	1450	1457.5
S-band Short Wavelength	**K**	1464	1470	1477.5
	L	1484	1490	1497.5
	M	1504	1510	1517.5
	N	1524	1530	1537.5
C-band Conventional	**O**	1544	1550	1557.5
L-band Long Wavelength	**P**	1564	1570	1577.5
	Q	1584	1590	1597.5
	R	1604	1610	1617.5

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	Standard	-5		+70	°C
		Extended	-20		+75	°C
Data Rate	DR		0.614		11.3	Gb/s

Electrical Characteristics (V_{CC}=3.14V to 3.46V, T_C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage		Vcc	3.13	3.3	3.45	V	
Power Supply Current		Icc			350	mA	
Transmitter							
Input impedance (Differential)		Zin	85	100	115	ohm	
CML Inputs (Differential)		Vin	150		1200	mVpp	1
Tx_DISABLE Input Voltage	**High**		2		Vcc+0.3	V	
	Low		0		0.8	V	
Tx_FAULT Output Voltage	**High**		2		Vcc+0.3	V	
	Low		0		0.8	V	
Receiver							
CML Outputs (Differential)		Vout	350		700	mVpp	1
Output Impedance (Differential)		Zout	85	100	115	ohms	
Rx_LOS Output Voltage	**High**		2		Vcc+0.3	V	
	Low		0		0.8	V	
MOD_DEF (0:2)		VoH	2.5			V	2
		VoL	0		0.5	V	2

Notes:

1. After internal AC coupling.
2. Reference the SFF-8472 MSA.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Output Optical Power	P_{out}	-5		0	dBm	1
Optical Extinction Ratio	ER	3.5			dB	
Optical Wavelength	λ	λc-6	λc	λc+7.5	nm	2
Spectral Width (-20dB)	Δλ			1	nm	
Side Mode Suppression Ratio	SMSR	30			dB	
Transmitter Dispersion Penalty	TDP			2	dB	
Average Launch Power of OFF Transmitter	P_{OFF}			-30	dBm	
TX Jitter Generation (Peak-to-Peak)	TXi			0.1	UI	1
TX Jitter Generation (RMS)				0.01		
Receiver						
Receiver Sensitivity @ 10.7Gb/s	Pmin			-15	dBm	3
Maximum Input Power	Pmax	+0.5			dBm	
Optical Center Wavelength	λ	1260		1620	nm	
Receiver Reflectance	Rrf			-27	dB	
LOS De-Assert	LOS_D			-16	dBm	
LOS Assert	LOS_A	-28			dBm	
LOS Hysteresis		1			dB	

Notes:

1. Output power is coupled into a 9/125 μm SMF.
2. ITU-T G. 694.2 CWDM wavelength from 1270nm to 1610nm, each step 20nm.
3. Average received power; BER less than 1E-12 and PRBS 2^{31}-1 test pattern.

Pin Descriptions

Pin	Symbol	Name/Descriptions	Plug Seq.	Ref.
1	VeeT	Transmitter Ground	1	Note 5
2	TX Fault	Transmitter Fault Indication	3	Note 1
3	TX Disable	Transmitter Disable	3	Note 2, Module disables on high
4	SDA	Module Definition 2	3	Data line for Serial ID
5	SCL	Module Definition 1	3	Clock line for Serial ID
6	MOD_ABS	Module Definition 0	3	Note 3
7	RS0	RX Rate Select (LVTTL)	3	No Function Implement
8	LOS	Loss of Signal	3	Note 4
9	RS1	TX Rate Select (LVTTL)	1	No Function Implement
10	VeeR	Receiver Ground	1	Note 5
11	VeeR	Receiver Ground	1	Note 5
12	RD-	Inv. Received Data Out	3	Note 6
13	RD+	Received Data Out	3	Note 6
14	VeeR	Receiver Ground	1	Note 5
15	VccR	Receiver Power	2	3.3V ± 5%, Note 7
16	VccT	Transmitter Power	2	3.3V ± 5%, Note 7
17	VeeT	Transmitter Ground	1	Note 5
18	TD+	Transmit Data In	3	Note 8
19	TD-	Inv. Transmit Data In	3	Note 8
20	VeeT	Transmitter Ground	1	Note 5

Notes:

1. TX Fault is an open collector/drain output, which should be pulled up with a 4.7K-10KΩ resistor on the host board. Pull up voltage between 2.0V and VccT/R+0.3V. 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 4.7K ~ 10 KΩ resistor. Its states are;

   Low (0-0.8V): Transmitter on

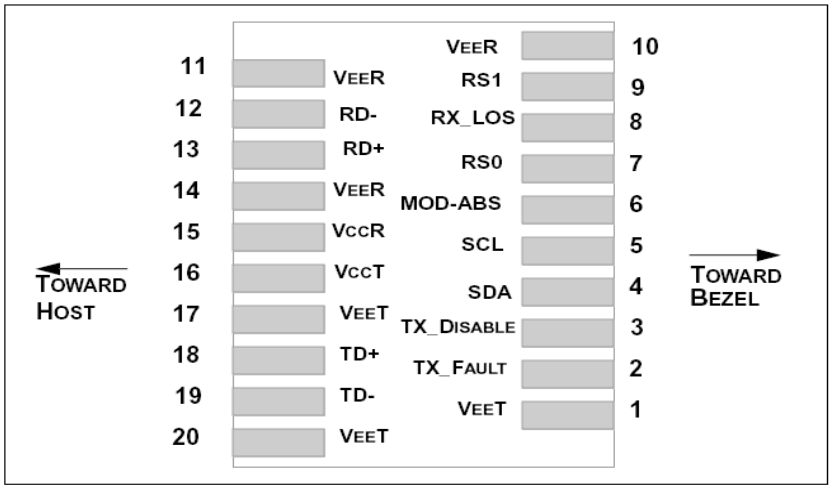
   (>0.8, <2.0V): Undefined

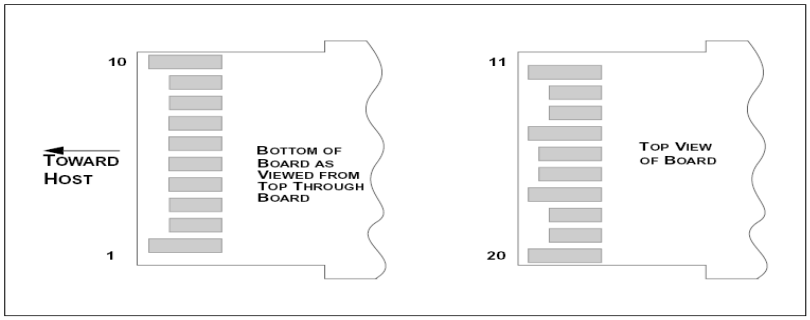
   High (2.0-3.465V): Transmitter disabled

   Open: Transmitter Disabled
3. Module Absent, connected to VeeT or VeeR in the module.
4. LOS (Loss of Signal) is an open collector/drain output, which should be pulled up with a 4.7K-10KΩ resistor. Pull up voltage between 2.0V and VccT/R+0.3V. When high, this output indicated the received optical power is below the worst-case receiver sensitivity (as defined by the standard in use). Low

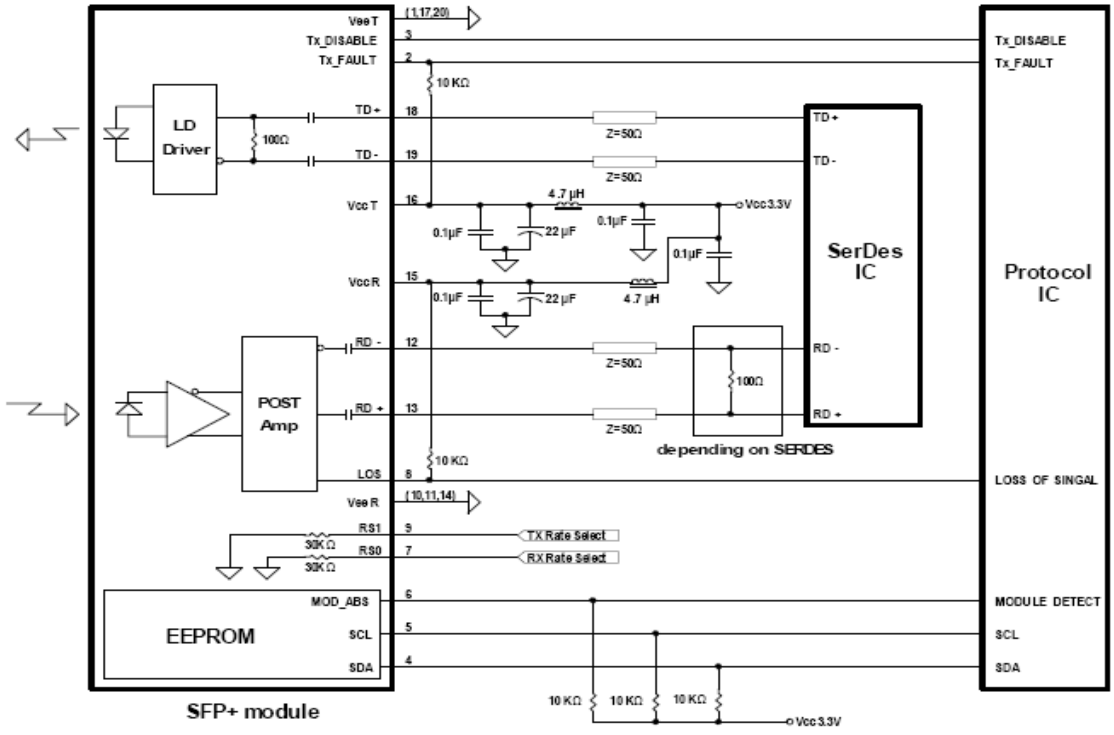
indicates normal operation. In the low state, the output will be pulled to <0.8V.

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 which should be terminated with 100 Ω (differential) at the user SERDES. The AC coupling is done inside the module and is thus not required on the host board. The voltage swing on these lines will be between 350 and 700mV differential (175-350mV single ended) when properly terminated.
7. VccR and VccT are the receiver and transmitter power supplies. They are defined as 3.3V±5% at the SFP+ connector pin. Maximum supply current is 350mA. Recommended host board power supply filtering is shown below. Inductors with DC resistance of less than 1 ohm should be used in order to maintain the required voltage at the SFP+ input pin with 3.3V supply voltage. When the recommended supply-filtering network is used, hot plugging of the SFP+ transceiver module will result in an inrush current of no more than 30mA greater than the steady state value. VccR and VccT may be internally connected within the SFP+ transceiver module.
8. 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 the host board. The inputs will accept differential swings of 150 -1200mV (75-600mV single ended), though it is recommended that values between 150 and 1200mV differential (75-600mV single ended) be used for best EMI performance.



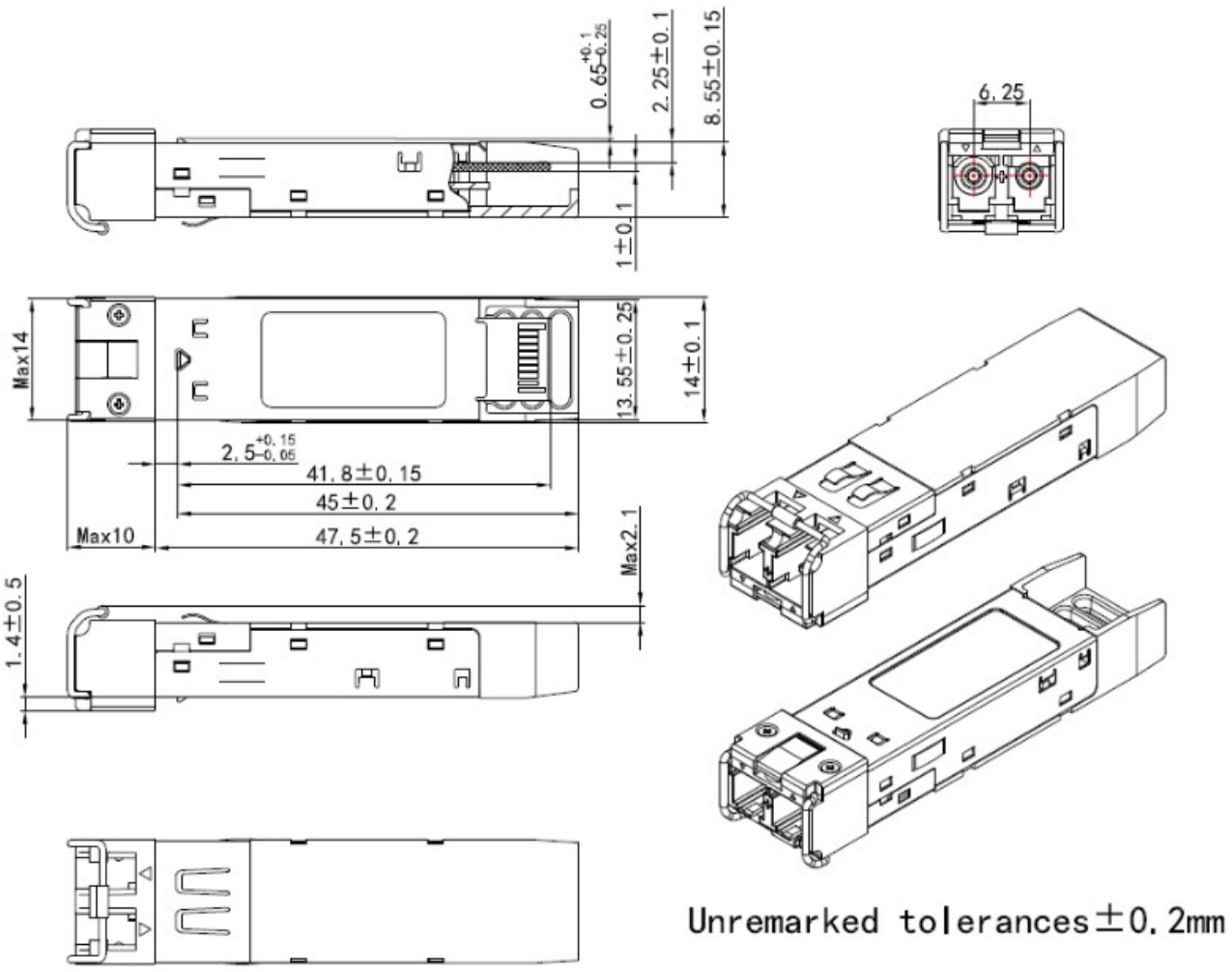


Recommended Circuit Schematic



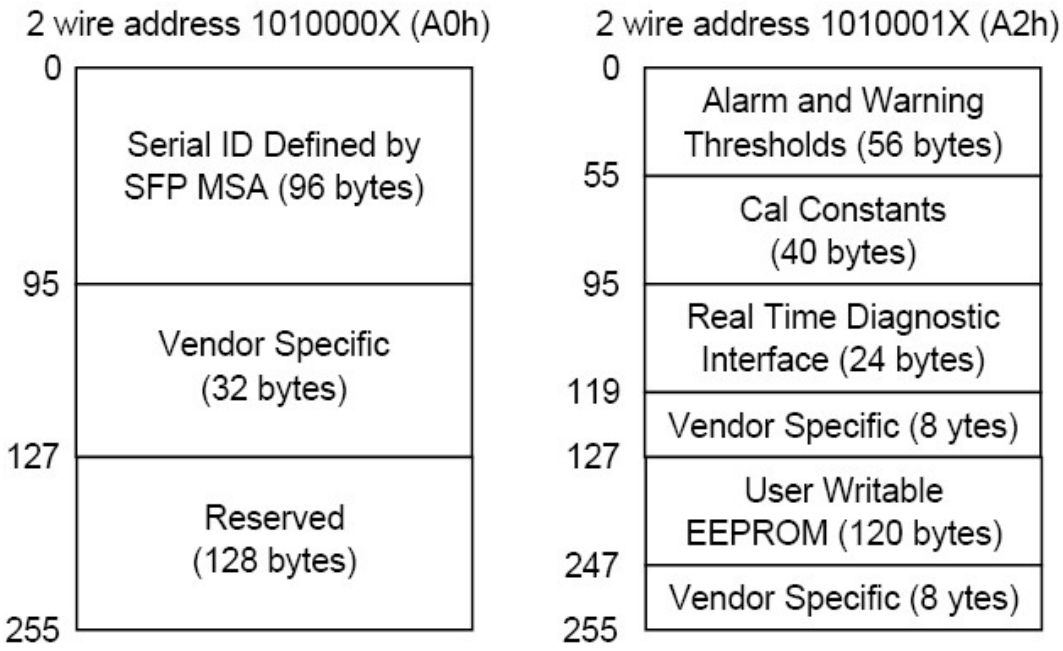
Mechanical Specifications

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:



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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