SFPP-XGS-ONU-MAC-I-G2-AO

MSA and TAA 9.95Gbs/9.95Gbs XGS PON N1/N2 ONU SFP+ Stick with MAC (SMF, 1270nmTx/1577nmRx, SC, -40 to 85C) Gen 2

Features

- SC/UPC Connector
- 1577nm Continuous-Mode Receiver with APD-TIA
- 1270nm Burst-Mode Transmitter with DFB Laser
- Single 3.3V Power Supply
- Hot-Pluggable
- Compliant with ITU-T G.9807.1 XGS-PON N1/N2
- RoHS Compliant and Lead-Free
- Operating Temperature: -40 to 85 Celsius
- RoHS Compliant and lead-Free

Applications

- XGS PON
- Access and Enterprise

Product Description

This MSA compliant SFP+ transceiver provides 9.95Gbs/9.95Gbs XGS-PON throughput up to 20km over single-mode fiber (SMF) using a wavelength of 1270nmTx/1577nmRx via an SC connector. This bidirectional unit must be used with another transceiver or network appliance of complementing wavelengths. 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. 120525

Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Relative Humidity (Non-Condensing)	%	5		85	%	
Operating Case Temperature	Tc	-40		85	°C	
Storage Temperature	Tstg	-40		85	°C	
Supply Voltage	V	0		3.6		
Transmission Distance	TD			20	km	
Data Rate	DR		9.9532 10.3125		Gbps	

Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Power Supply Voltage		3.15	3.3	3.45	Vcc	
Power Supply Current	Icc			600	mA	
Power Consumption				2.0	W	
Transmitter						
Data Differential Input Swing		190		1000	mVp-p	
Data Differential Impedance		80	100	120	Ω	
Transmitter Disable Voltage – Low		0		0.8	V	
Transmitter Disable Voltage – High		2.0		Vcc	V	
Power Down Voltage – Low		0		0.8	V	
Power Down Voltage – High		2.0		Vcc	V	
Tx_Fault Assert Time				50	ms	
Tx_Fault Reset Time		10			µs	
Burst Turn On Time				51.2	ns	
Burst Turn Off Time				51.2	ns	
Tx Power Down Assert Time				512	ns	1
Tx Power Down De-Assert Time				512	ns	2
Receiver						
Data Output Differential Swing		300		850	mVp-p	
Loss of Signal (LOS) Assert Time				100	us	
Loss of Signal (LOS) De-Assert Time				100	us	
Differential Output Impedance		80	100	120	Ω	

Notes:

1. Measured to 10% of final supply current.
2. Measured to 90% of final supply current.

Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Notes
Transmitter						
Optical Center Wavelength	λC	1260	1270	1290	nm	
Spectral Width (-20dB)				1	nm	
Side-Mode Suppression Ratio	SMSR	30			dB	
Average Output Power	AOP	4		9	dBm	
Burst Enable is Off Power	Poff			-45	dBm	
Extinction Ratio	ER	6			dB	1
Optical Eye Mask	Compliant with ITU-T G9807.1					1
Receiver						
Optical Center Wavelength	λC	1575	1577	1580	nm	
Receiver Sensitivity (PRBS 2^{31}-1 @9.952G, ER 8.2 Tx)				-28.5	dBm	2
Receiver Overload (PRBS 2^{31}-1 @9.952G, ER 8.2 Tx)		-9			dBm	2
Loss of Signal Assert Level		-39			dBm	
Loss of Signal De-Assert Level				-29	dBm	
Isolation (1550nm-1560nm) into 1577nm Rx		35			dB	
Isolation (1490nm-1500nm GPON) into 1577nm Rx		25			dB	
Isolation (1260nm-1330nm XGS-PON) into 1577nm Rx		31			dB	
Isolation (1524nm-1544nm NGPON2) into 1577nm Rx		27			dB	
Isolation (1596nm-1603nm NGPON2) into 1577nm Rx		31			dB	
Isolation (1603nm-1625nm PtP) into 1577nm Rx		35			dB	
Isolation (1625nm-1650nm) into 1577nm Rx		35			dB	
Isolation (Internal 1260nm-1280nm Tx) into 1577nm Rx		35			dB	

Notes:

1. Measured with a PRBS 2^{31}-1 test pattern @9.9532Gbps.
2. Measured with a PRBS 2^{31}-1 test pattern @9.9532Gbps, ER=6dB, and BER≤$1.0E^{-3}$.

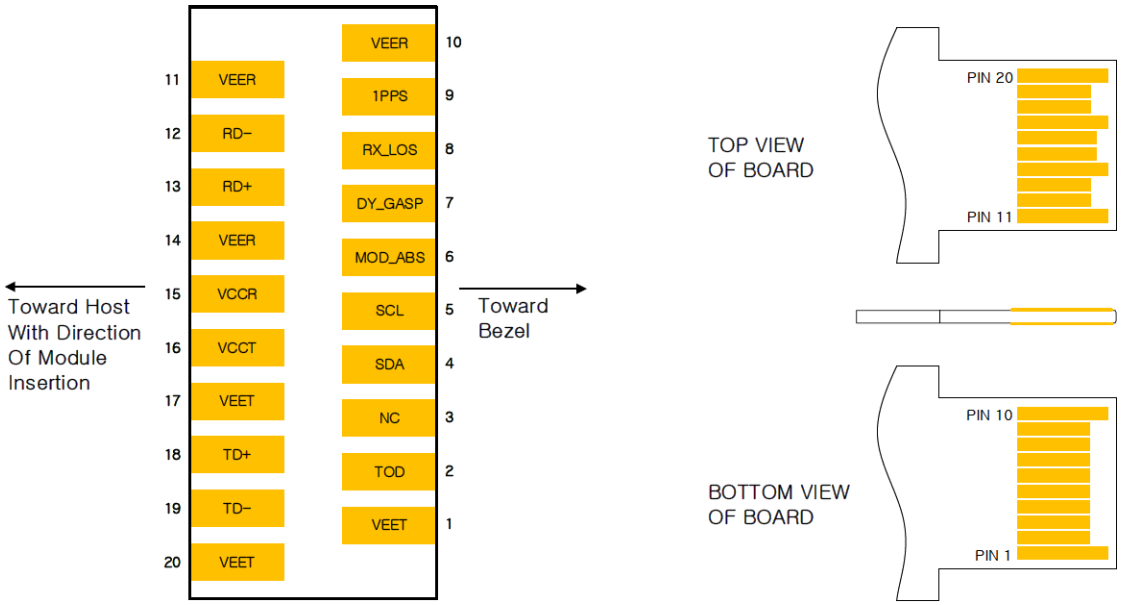
Pin Descriptions

Pin	Symbol	Logic	Name/Description	Notes
1	VeeT		Module Transmitter Ground.	
2	ToD	LVTTL-O	Time of Day.	1, 5
3	NC	LVTTL-I	Not Connected.	4
4	SDA	LVTTL-I/O	2-Wire Serial Interface Data Line.	2
5	SCL	LVTTL-I	2-Wire Serial Interface Clock Line.	2
6	MOD_ABS	LVTTL-O	Module Absent. Set to Low.	3
7	Dying_Gasp	LVTTL-I	Default: Not Used. Dying Gasp Function (Software Option).	5
8	Rx_LOS	LVTTL-O	Receiver Loss of Signal Indication.	3
9	1PPS	LVTTL-O	1 Pulse Per Second.	5
10	VeeR		Receiver Ground.	
11	VeeR		Receiver Ground.	
12	RD-	CML-O	Receiver Inverted Data Output.	
13	RD+	CML-O	Receiver Non-Inverted Data Output.	
14	VeeR		Receiver Ground.	
15	VccR		Receiver 3.3V Power Supply.	
16	VccT		Transmitter 3.3V Power Supply.	
17	VeeT		Transmitter Ground.	
18	TD+	CML-I	Transmitter Non-Inverted Data Input.	
19	TD-	CML-I	Transmitter Inverted Data Input.	
20	VeeT		Transmitter Ground.	

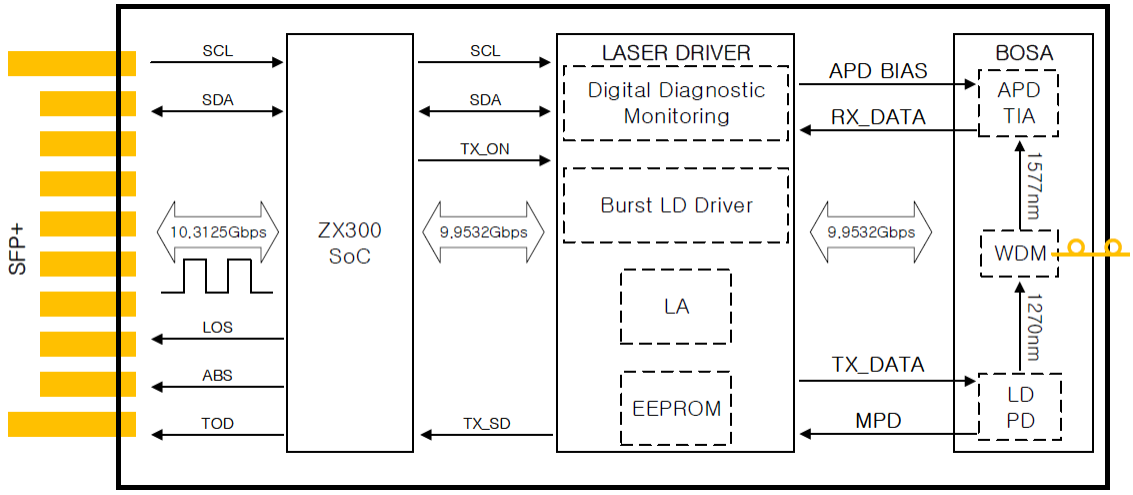
Notes:

1. Output from the MCU_UART_TX post.
2. 10kΩ pull-up is applied inside the XGSPON stick.
3. It needs to be pulled up with 4.7kΩ-10kΩ to a Host_Vcc on the host board.
4. NC pin. It needs to be pulled up or down, or NC on the host board.
5. Software option: ToD/1PPS/Dying Gasp functions disabled by the software. If the ToD, 1PPS, or Dying Gasp function is required, you need to upgrade the software with the function enabled.

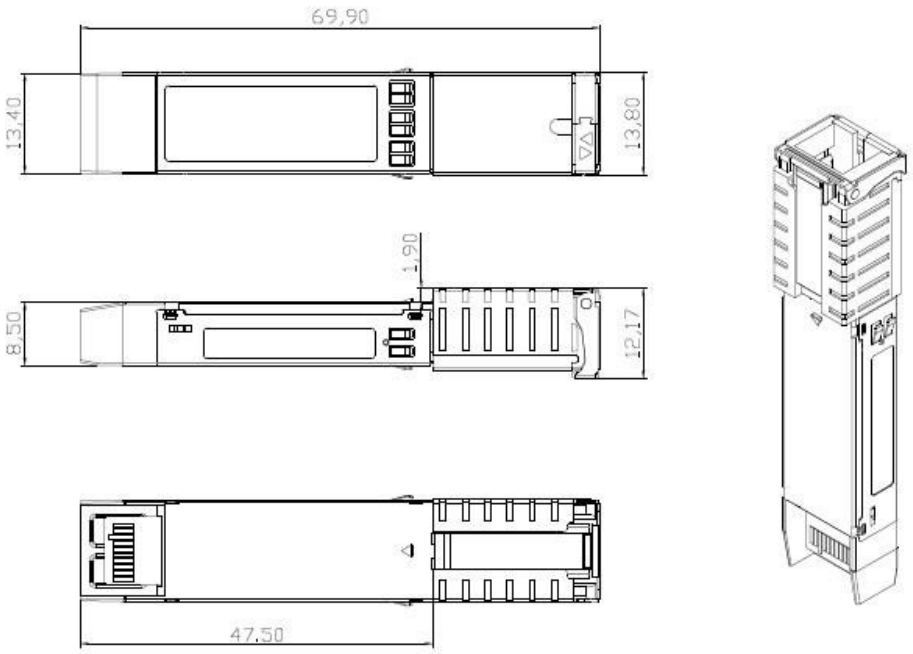
Pin-Out Details



Block Diagram



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.

U.S. Headquarters

Email: sales@addonnetworks.com

Telephone: +1 877.292.1701

Fax: 949.266.9273

Europe Headquarters

Email: salessupportemea@addonnetworks.com

Telephone: +44 1285 842070