ZISA OP151XGS

10G XGSPON ONU STICK SFP+

Overview

The OP151XGS XGS-PON ONU Stick SFP+ is a high performance module for single fiber communications that can be plugged into the SFP optical port of switch or router device to provide XGS-PON fiber network access to the device. The XGS-PON ONU Stick is based on the mature XGS-GPON/XG-PON technology, highly reliable and easy to maintain. And it is fully compliant with technical regulations such as ITU-T G.984.x and IEEE802.3ah.

Highlights

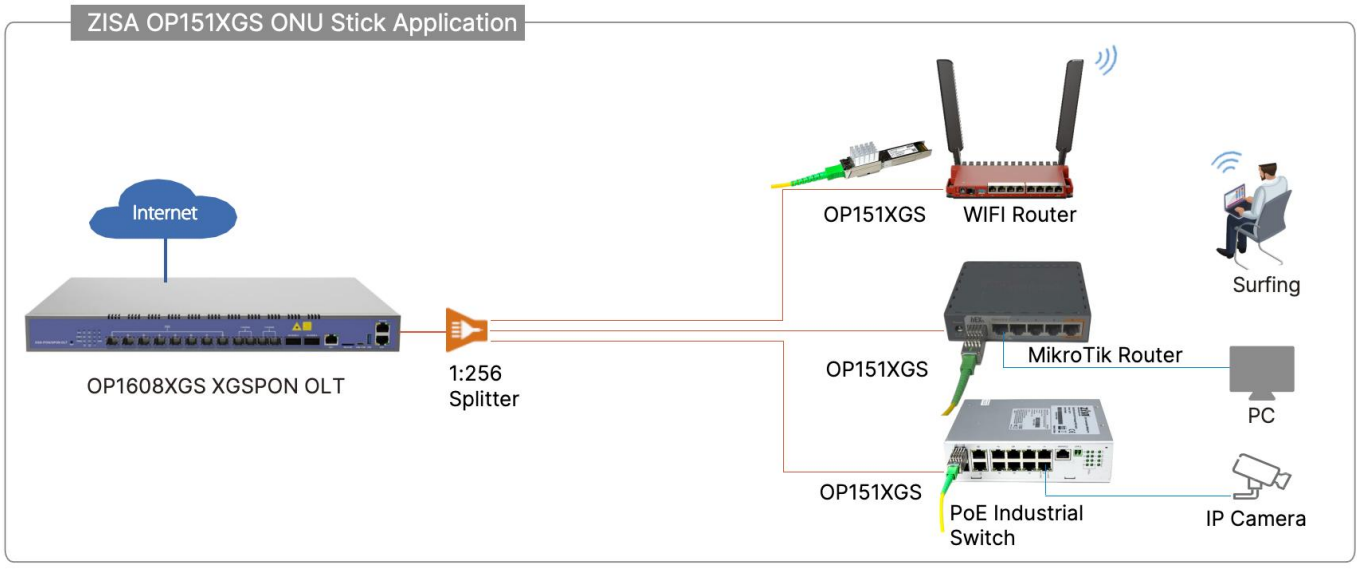
- Single fiber bi-directional data links symmetric TX 9.953 Gb/s / RX 9.953 Gb/s with MAC function
- Hot-pluggable capability SFP package with SC/ APC receptacle
- 8311 Firmware Version with Web management
- Case temperature range: Industrial -40 ℃ to 85 ℃
- Support of GPON/XGS-PON/NGPON2 standards
- 256 GEM/XGEM ports, 64 T-CONTs or 16 LLIDs
- Available Configuration PON SN (ONT ID), Vendor ID, Equipment ID, Logical ONU ID, Logical password, and MAC address.
- High power 1270 nm DML DFB LD and high sensitivity 1577 nmAPD
- Support 20km transmission distance with SMF
- CML compatible data input/output interface
- Low EMI and excellent ESD protection
- Digital diagnostic monitor interface

Features

- Compatible with Ubiquiti, MikroTik, Netgate, TP Link,10G Switches and Routers, 8311 Firmware Version with Web management, Chipset: MaxLinear PRX126 (SMF, 9.953G-TX/9.953G-RX,1270 nm-TX/1577 nm-RX, 20km, SC/APC, DDM)
- Firmware Compatibility, Supports 8311 community firmware. Streamlined device configuration with one-click web configuration. Access the interface at 192.168.11.1 using username root (no password required)
- SFP package with SC /APC receptacle High power 1270 nm DML DFB LD and high sensitivity 1577 nm APD, Support 20km transmission distance with SMF, CML-compatible data input/output interface
- Support Hot-pluggable capability Low power dissipation < 3W, Case temperature range: -40 °C to 85 °C, Low EMI and excellent ESD protection
- Support of GPON/XGS-PON/NGPON2 standards, 256 GEM/XGEM ports, 64 T-CONTs or 16 LLIDs
- Available configuration of parameters for PON serial number (ONT ID), Vendor ID, Equipment ID, Logical ONU ID, Logical password, and MAC address.
- Carrier Grade QoS Engine, Supports Synchronous Ethernet (SyncE),Advanced loopback and diagnostic capabilities
- Complies with ITU-T G.987.2, Complies with ITU-T G.9807.1, G.9807.2 , Complies ITU-T G.988 OMCI L2 MAC Bridge (Up to 64 L2 bridges), G.8275/Y.1369/IEEE 1588v2, IEEE 802.1ag and ITU-TY.1731 Ethernet OAM delay & loss measurement hardware support.

Applications

- Residential home gateway, Network switch/Router, VDSL MDU, and G.fast, G.hn DPU, Mobile backhaul



Specifications

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit	Note
StorageAmbient Temperature	TSTG	-40	85	℃	
Operating Humidity	OH	5	95	%	
Supply Voltage	Vcc	0	3.6	V	

Recommended Operating Conditions

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Operating Case Temperature	Tc	0		70	℃	Commercial
		40		85	℃	Industrial
Power Supply Voltage	Vcc	3.13	3.3	3.47	V	
Power Supply Current	Icc			1200	mA	
Nominal Upstream Line Rate			9.953		Gb/s	
Nominal Downstream Line Rate			9.953		Gb/s	

Transmitter Optical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Average Launch Optical Power	Pout	4		9	dBm	
Power-OFF Transmitter Optical	Pof			-45	dBm	
Extinction Ratio	ER	6			dB	
Centre Wavelength	λc	1260	1270	1280	nm	
Spectral Width (-20dB)	Δλ			1	nm	
Side Mode Suppression Mode	SMSR	30			dB	
Eye Diagram				Compliant With802.3av		

Transmitter Electrical Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Input Diferential Impedance	ZIN	90	100	110	Ω	
Data Input Swing Diferential	VIN	200		1000	mV	
Burst Disable		2.0		Vcc	V	
Burst Enable		0		0.8	V	
Tx-Fault Voltage - Low		0		0.8	V	
Tx-Fault Voltage - HIGH		2.0		Vcc	V	

Receiver Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Note
Optical Center Wavelength	λc	1575	1577	1580	nm	
Sensitivity	SEN			-29	dBm	
Receiver Overload	OL	-9			dBm	
LOSAssert	SDA	40			dBm	
LOS De-Assert	SDD			-29	dBm	
LOS Hysteresis		0.5		5	dB	
Data Output Swing Diferential	Vout	300		1200	mV	
LOS	High	2.0		Vcc	V	
	Low	0		0.8	V	

Pin Description

VeeT	Module Transmitter Ground	Host pull-up 4.7 KΩ– 10 KΩ
Tx_Fault	Module Transmitter Fault	Low = normal, High = abnormal, Host pull-up 4.7 KΩ– 10 KΩ
Tx-Disable	Transmitter Disable; turns oftransmitter laser	
Mod-Def(2)	SDAI2C Data line	2 wire serial ID interface, SDA, Host pull-up 4.7 KΩ– 10 KΩ
Mod-Def(1)	SCLI2C Clock line	2 wire serial ID interface, SCL, Host pull-up 4.7 KΩ– 10 KΩ
Mod-Def(0)	ModuleAbsent, connected to VeeR	Connected to VeeTor VeeR in the module, Host pull-up 4.7 KΩ– 10 KΩ
Rate Select	For Dying Gasp detect, input low active	
LOS	Loss of Signal	High = loss of signal, Low = normal operation, Host pull-up 4.7 KΩ– 10 KΩ
VeeR	Module Receiver Ground	
VeeR	Module Receiver Ground	
VeeR	Module Receiver Ground	
RD-	Inverted Received Data Out	InternallyAC-coupled
RD+	Non-inverted Received Data Out	InternallyAC-coupled
VeeR	Module Receiver Ground	
VccR	Module Receiver3.3 V Supply	
VccT	Module Transmitter 3.3 V Supply	
VeeT	Module Transmitter Ground	
TD+	Non-Inverted Transmit Data in	InternallyAC-coupled
TD-	Inverted Transmit Data in	InternallyAC-coupled
VeeT	Module Transmitter Ground	

Pin-out Drawing

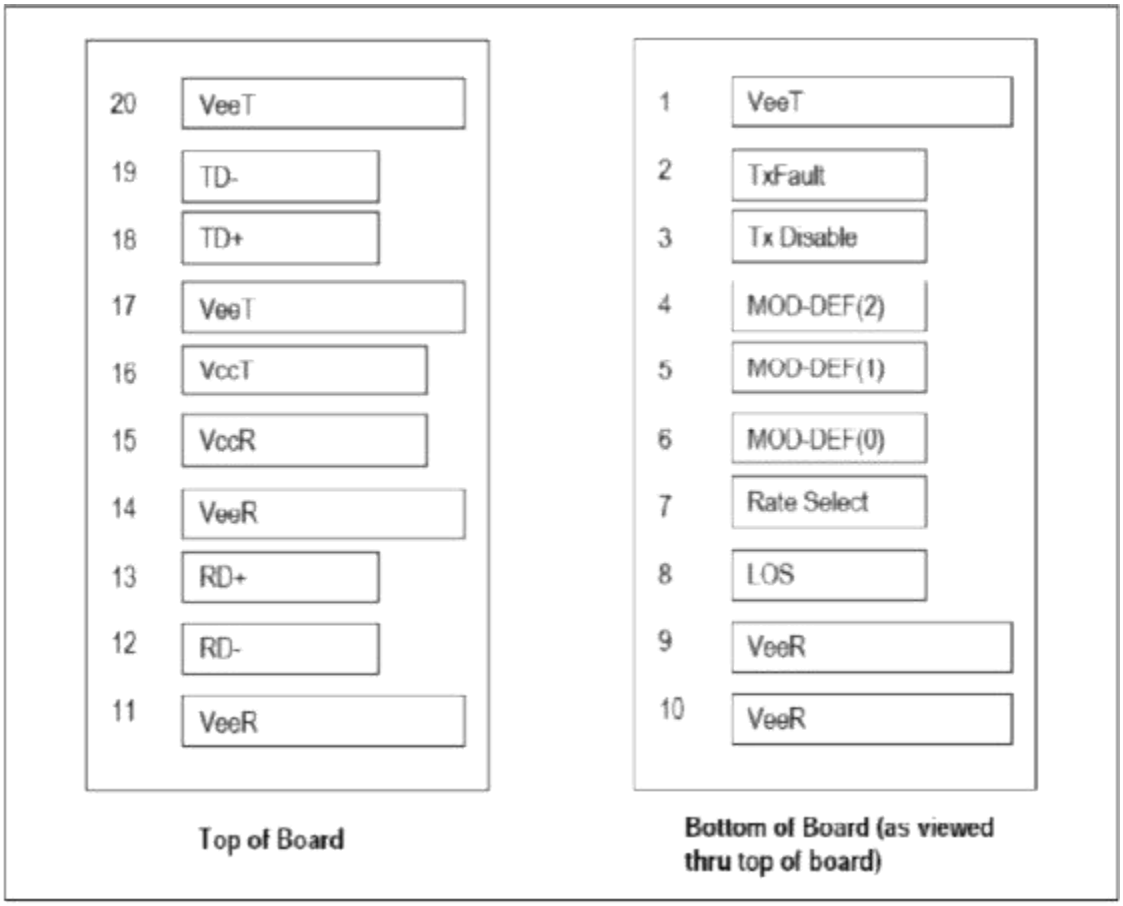


Figure 1. Pin-out Drawing

Package Outline

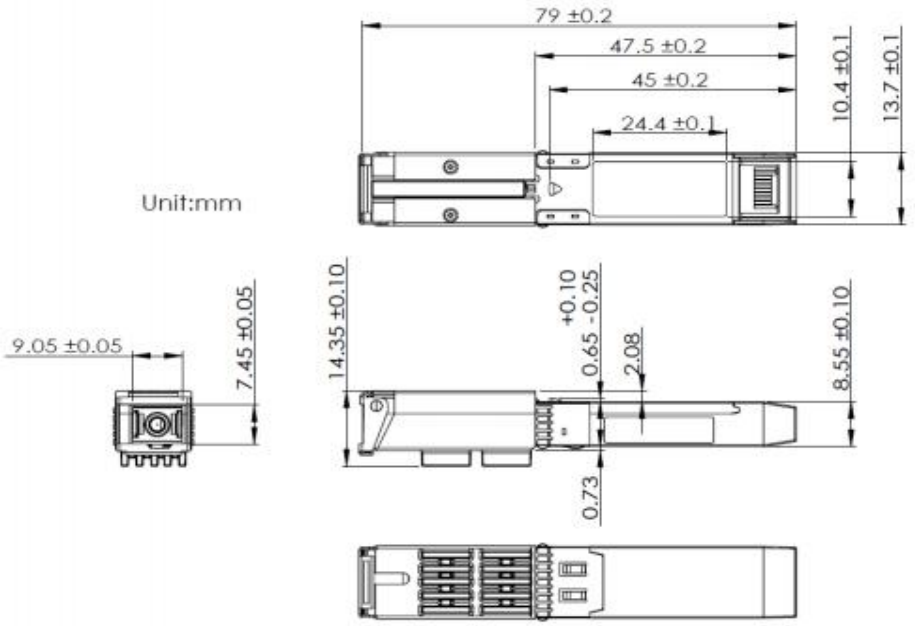


Figure 2. Package Outline

EEPROM Block Diagram

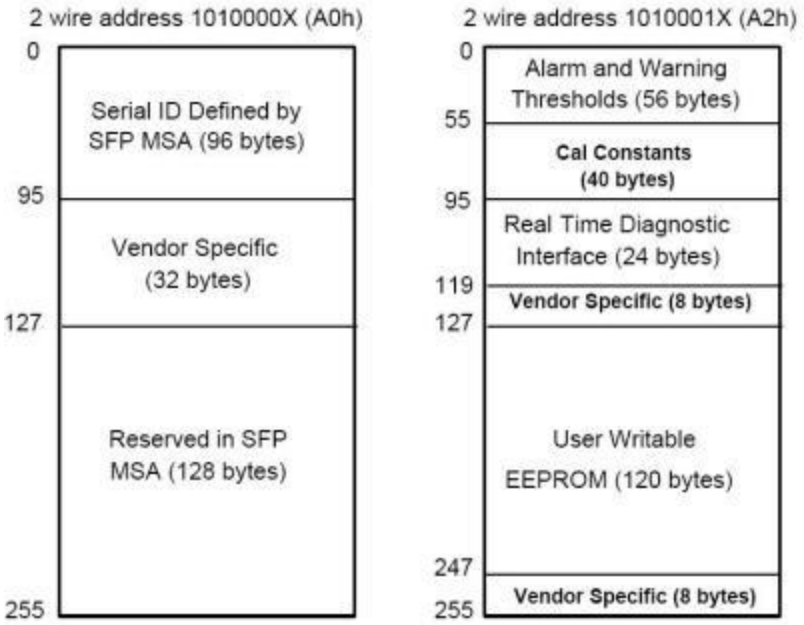


Figure 3. EEPROM Memory Map Specific Data Field Descriptions

Digital Diagnostic Monitoring Interface

Parameter	Range	Accuracy	Calibration	Notes
Temperature	0 to 70 ℃	±3 ℃	Internal	Commercial
	-40to 85 ℃			Industrial
Voltage	3 to 3.6 V	±3%	Internal	
Bias Current	0 to 131 mA	±10%	Internal	
TX Power	4 to9 dBm	±3 dB	Internal	
RX Power monitor	-29 to -9dBm	±3 dB	Internal	

Ordering Information

Part No.	Package	Data Rate	Reach	Wavelength	Temp.
OP151XGS	SFP+	TX: 9.953 Gb/s RX: 9.953 Gb/s	20 km	TX: 1270 nm RX: 1577 nm	-40 to 85 ℃

Warnings

- Handling Precautions: This device is susceptible to damage as a result of electrostatic discharge (ESD). A static free environment is highly recommended.
- Follow guidelines according to proper ESD procedures.
- Laser Safety: Radiation emitted by laser devices can be dangerous to human eyes. Avoid eye exposure to direct or indirect radiation.

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Specifications are subject to change without notice.