



PICadvanced

GPON SFP ONU stick

PA -GPON-ONU-SFP-STICK-IT

Revision 1

Revision History

Revision #	Description	Date
1	Initial release	March 2019

Features

- GPON ONU in SFP MSA structure
- 1.244Gbps uplink / 2.488Gbps downlink GPON
- Single fiber bi-directional receptacle, support SC/UPC or SC/APC
- 1310nm burst mode DFB transmitter / 1490nm continuous mode APD receiver
- Built in digital diagnostics functions (SFF-8472)
- Support SGMII or 1000BASE-X mode on golden finger
- One single 3.3V power supply.
- Support receiving Dying Gasp interrupt from Host, & reporting to OLT
- -40 to 60°C operating ambient temperature (no fan)

Product Applications

- Providing pluggable GPON ONU function for Ethernet Switch, Router, Home gateway & other customer premises equipment

Standards

- Compliant with ITU-T G.984.x (G.984.5 support)
- Compliant with SFP MSA, INF-8074i
- Compliant with SFF-8472
- Compliant with FDA 21 CFR 1040.10 & 1040.11, Class I
- Compliant with IEEE 802.3
- Compliant with ITU-T G.984.2 Amd1, Class B+

General

This product is a GPON stick which is completely compliant to SFP MSA structure, providing customers a great convenience to update the uplink port of their devices from the legacy Ethernet to up-to-date high bandwidth GPON.

The GPON stick integrates one GPON MAC & one Ethernet MAC inside, requires no external GPON ONU for the update.

Overview	
Type	GPON SFP ONU
Main Chip	Lantiq PEF98035ET
Uplink	GPON
Downlink	Golden Finger, SGMII or 1000Base-X
Operating Temperature	-40 ~ 60°C for Ambient Temperature -40 ~ 85°C for Case Temperature
Operating Humidity	5%~95%, non-condensing
Dimension	Compliant with SFF 8472i, 74.7x14.1x12.4mm
Installation	SFP, hot pluggable
Weight	<40g
Regulatory	CE

GPON uplink

Parameter	Symbol	Min.	Typ.	Max.	Unit
Wavelength transmitter	λ		1310		nm
Extinction Ratio	ER	10			dB
Mean Launch power	Po	0.5		5	dBm
SMSR	SMSR	35			dB
Turn on/off burst mode	t			12.8	ns
Wavelength receiver	λ		1490		nm
Sensitivity	Sens	-8		-28	dBm
Isolation to 1310	Iso	47			dB
Isolation (1440~1450) (1530~1540)	Iso	25			dB
Isolation (1400~1440) (1540~1625)	Iso	36			dB
TCONT/GEM	Support type 1~5 TCONT defined in G.984.3 Support 32 TCONT (including OMCI TCONT) Support 32 GEMPORT Support flexible mapping between TCONT & GEMPORT				
FEC	Support upstream & downstream FEC				
Security	AES-128 Decryption with key generation and switching				

Golden Finger Downlink

Type	Support 1000BASE-X or SGMII, 1.25Gbps
Transmit Rise Time	100~200ps, from 20% to 80%
Transmit Fall Time	100~200ps, from 20% to 80%
Differential Impedance	80~120ohm
RX Differential Voltage	Output range 370 ~ 1000 mV

Power Solution

Type	SFP, single 3.3V power
DC input	3.3V +/- 5%
Consumption	At 25C: 1.0W for idle condition; 1.8W for full loading condition At 60C: 1.4W for idle condition; 2.2W for full loading condition

Compliance

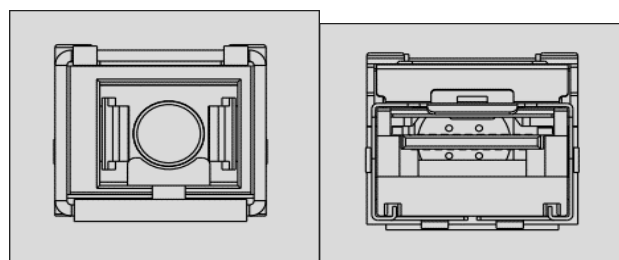
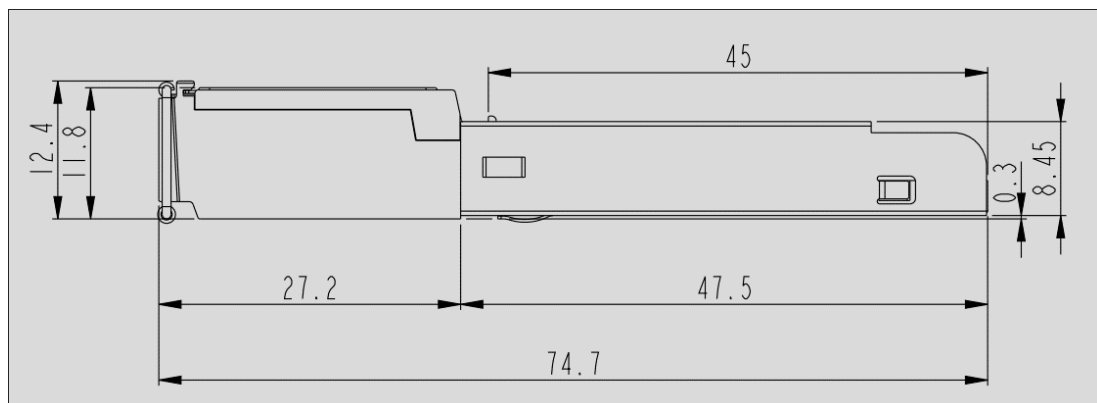
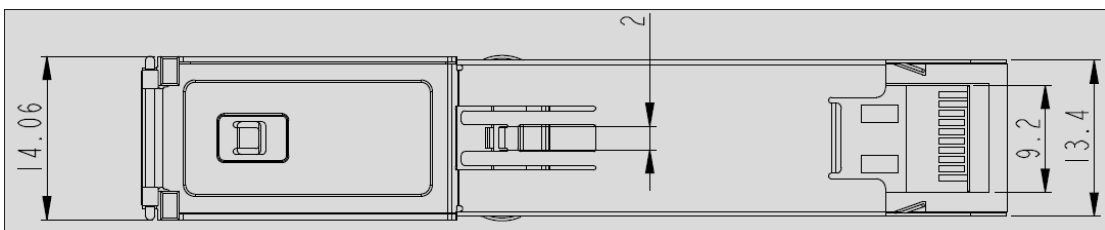
Regulatory	CE, TUV, WT-177 compliant
EMC/EMI	Compliant with EN 55022, class B Compliant with EN 300 386 Compliant with EN 61000-4-1~5
Safety	Compliant with IP20 mechanical design Support fire resistance material, compliant with UL 94-V1, V0 is optional Compliant with IEC 60950-1
ENV kindness	Compliant with RoHS 2.0 standard

PIN Diagram

Pin#	Name	In/Out	Function	Remark
1	VEET	Power	Transmitter Ground	
2	TX_fault/ ToD	Output	Transmitter Fault interrupt High: TX fault / Low: Normal	Open collector output.
3	TX_disable	Input	Disable transmitter High: Disable / Low: Enable	Pulled up internally.
4	SDA	Bi-	I2C SDA	Pulled up internally.
5	SCL	Input	I2C SCL	Pulled up internally.
6	Module Present	Output	Low active. High: Absent / Low: Present	Pulled up Internally.
7	Dying-Gasp	Input	Dying-Gasp input. High: Normal / Low: Dying	Pulled up with 10Kohm internally.
8	LOS/1PPS	Output	LOS of RX Signal High: loss of RX signal Low: Normal	Pulled up int, max 8mA driver
9	VEER	Power	Receiver Ground	*This pin can be 1pps with a different mounting option.
10	VEER	Power	Receiver Ground	
11	VEER	Power	Receiver Ground	
12	RD-	Out	Receiver Inverted DATA out.	AC coupled internally.

13	RD+	Out	Receiver Non-inverted DATA out.	AC coupled internally.
14	VEER	Power	Receiver Ground	
15	VCCR	Power	Receiver Power Supply	3.3V±5%, connected with VCCT int
16	VCCT	Power	Transmitter Power Supply	3.3V±5%, connected with VCCR int
17	VEET	Power	Transmitter Ground	
18	TD+	In	Transmitter Non-Inverted DATA in.	AC coupled int.
19	TD_	In	Transmitter Inverted DATA in.	AC coupled int.
20	VEET	Power	Transmitter Ground	

Package Diagram



Notice

PICadvanced reserves the right to make changes to this product in this specification without notice, in order to improve product performance.

Order information

Please contact PICadvanced for ordering and quotation: global@picadvanced.com