

XGSONU-STICK-C-I

XGS-PON ONU Stick SFP+ SC/UPC MAC I-Temp | 9.95T/9.95R 1270T/1577R 20km

1. Product overview

Hot-pluggable, single-fiber bidirectional SFP+ ONU with an integrated MAC, for 10-Gigabit-capable passive optical networks. A 1270 nm DML DFB laser and 1577 nm APD support symmetric 9.953 Gb/s PON transmission over 20 km of single-mode fiber. The Ethernet UNI operates at 10 Gb/s in each direction.

2. Key features

•SC/UPC receptacle; single +3.3 V power supply •Commercial and industrial temperature variants •Digital diagnostics; low EMI and ESD protection; RoHS-10 •AES-128, FEC, automatic serial-number/password activation and remote debug •Flexible XGEM port/T-CONT mapping; maximum eight T-CONT and GEMPORT

3. Applications

10-Gigabit-capable passive optical networks (XGS-PON ONU).

4. Technical data

Parameter	Specification
Package / connector	SFP+ / SC/UPC
Link distance / PON rate	20 km SMF / TX and RX 9.953 Gb/s
Absolute supply / storage / humidity	0-3.6 V / -40 to +85°C / 5-95%
TX impedance, min/typ/max	90 / 100 / 110 ohm
TX input / RX output differential swing	200-1600 mV / 300-850 mV; AC-coupled
Burst disable / enable levels	2.0 V to Vcc / 0-0.8 V
TX fault low / high	0-0.4 V / 2.4 V to Vcc
RX LOS low / high	0-0.4 V / 2.4 V to Vcc

Ethernet / OMCI: IEEE 802.1Q VLAN virtual switch; Q-in-Q, translation, tagging and transparent modes; CoS based on VLAN ID and 802.1p. OMCI MIB create/delete/set/get/getnext; alarm reporting, performance monitoring, remote software download, activation and reboot. Source also lists "Black pressure", loop detection and MAC filtering. Mechanical callouts (source drawing): 38.5; 47.5 ±0.2; 13.9 ±0.1; 13.6 ±0.1; 8.55 ±0.1; 2.25 ±0.1; 3.7; 1.75.

5. Recommended operating conditions

Parameter	Specification
Supply voltage, min/typ/max	3.15 / 3.3 / 3.45 V
XGSONU-STICK-C	0 to +70°C; 900 mA max; 3 W max
XGSONU-STICK-C-I	-40 to +85°C; 970 mA max; 3.2 W max
Ethernet upstream / downstream	10 / 10 Gb/s
Maximum input power	+3 dBm

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6. Optical characteristics

Transmitter	Specification	Receiver	Specification
Average launch power	+4 to +9 dBm into 9/125 µm SMF	Wavelength, min/typ/max	1575 / 1577 / 1580 nm
Center wavelength, min/typ/max	1260 / 1270 / 1280 nm	Sensitivity (BOL, over temperature)	-28 dBm max
Extinction ratio	6 dB min	Sensitivity test	PRBS 2^31-1 @ 9.953 Gb/s; BER £ 1 x 10^-3
Spectral width (-20 dB)	1 nm max	Overload	-8 dBm min
SMSR	30 dB min	Overload test	PRBS 2^31-1 @ 9.953 Gb/s; BER £1 x 10^-3
Burst on / off time	50 ns max each	Receiver reflectance	-12 dB max
TDP over 20 km SMF	1.5 dB max	LOS Assert / De-assert	-45 dBm min / -29 dBm max
TX reflected-power tolerance	-15 dB min	LOS hysteresis	0.5-5 dB
Eye diagram	ITU-T G.9807; PRBS 2^31-1 @ 9.953 Gb/s		

7. Digital diagnostics and management

Monitor	Range	Accuracy	Resolution (1 LSB)
Temperature	-40 to +85°C	±3°C	1/256°C
Supply voltage	3-3.6 V	±3%	0.1 mV
Bias current	0-90 mA	±10%	2 µA
TX optical power	2-11 dBm	±3 dB	0.1 µW
RX optical power	-30 to -7 dBm	±3 dB	0.1 µW

All monitors use internal calibration. Serial ID A0h (1010000X): bytes 0-95 SFP MSA ID; 96-127 vendor-specific; 128-255 reserved. Diagnostics A2h (1010001X): 0-55 alarm/warning thresholds; 56-95 calibration constants; 96-119 real-time diagnostics; 120-127 vendor-specific; 128-247 user-writable EEPROM; 248-255 vendor-specific. Pin assignment: Ground: 1/17/20 VeeT; 10/11/14 VeeR. 2 TX_Fault (low normal/high fault); 4 SDA; 5 SCL; 6 MOD_ABS (internally grounded); 8 RX_LOS (low signal/high loss); 12/13 RD-/RD+; 18/19 TD+/TD- (AC-coupled). 3/7/9 NC; 15/16 Vcc +3.3 V.

8. Safety and regulatory

SFP+ MSA (SFF-8431); SFF-8472; RoHS-10; ITU-T G.9807.1 (02/2023), G.988 (11/2022). FCC 47 CFR Part 15 Class B; FDA 21 CFR 1040.10 and 1040.11.

9. Ordering information

GLOBALfiber part number	Product description
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