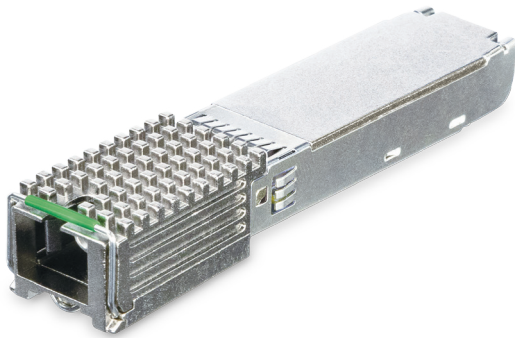


GPON ONU SFP Transceiver



Perfectly Designed for FTTx Applications

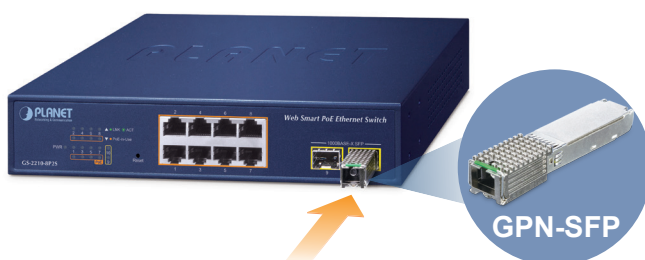
PLANET GPN-SFP is an SFP GPON ONU device designed in compliance with the **ITU-T G.984** standard. It is a cost-effective GPON customer premises system that provides broadband services with **1244 Mbps** upstream and **2488 Mbps** downstream by connecting to subscribers' switches or routers. The device complies with **G.984.x (1/2/3/4/5)** standards and features **SFP packaging** while integrating a bidirectional optical transceiver and a GPON media access control (**MAC**) layer function. It delivers Gigabit Ethernet (**GigE**) service to any device capable of hosting an **SFP module**, such as Ethernet switches, wireless backhaul equipment, Ethernet access devices (**EADs**), routers, remote digital subscriber line access modules (**DSLAMs**), and other customer premises equipment (**CPE**).

Excellent Access Capacity

GPON supports a PON transmission rate of 2.5 Gbps downstream and 1.25 Gbps upstream. When connected to OLTs, it supports a 1:128 splitting ratio. The network coverage radius can reach up to 20 km.

Compact and Easy-to-Install ONU Stick for SFP Slots

The GPN-SFP is a device that integrates the functions of a traditional Optical Network Terminal (ONT) or Optical Network Unit (ONU) into a compact Small Form-Factor Pluggable (SFP) module. It is designed to be inserted directly into the SFP slot of a switch, router, or industrial device, enabling Passive Optical Network (PON) access.



GPON SFP

- 1 SC/APC type GPON port
- Up to 2.5Gbps downstream and 1.25Gbps upstream
- Maximum distance of up to 20km
- Compliant with ITU-T G.984/988

Physical Hardware

- SFP feed power input
- Less than 2.5W power consumption
- High-sensitivity optical receiver: -28dBm or better
- Optical TX power: 0~5dBm

Multicast Features

- IGMP snooping
- Internet Group Management Protocol (IGMP)
- CTC defined dynamic multicast
- MLD snooping

QoS Features

- Back pressure flow control (half duplex)
- IEEE 802.3x flow control (full duplex)
- Head of Line (HoL) mechanism
- IEEE 802.1p, CoS
- 4 priority queues per port
- WR, SP and FIFO
- Rate limit

Security

- Limitation to the MAC addresses on the port (1K)

Management

- Received Signal Strength Indication (RSSI)
- Multiple Source Agreement (MSA)
- Full Service Access Network (FSAN)
- Dying gasp notification
- ONU Management and Control Interface (OMCI)

Secure Service Carrying Capability

To ensure the secure service carrying capability of the ONU, PLANET has developed various technologies, including VLAN, STP, port isolation, ACL, QoS and security filtering.

High-Service Control Capability

PLANET GPN-SFP supports DBA and rate limiting. It also features advanced dynamic bandwidth allocation and precise bandwidth control, enabling users to efficiently share 2.5 Gbps (GPON) and 1.25 Gbps (EPON) bandwidth resources. In addition, the QoS function ensures reliable service quality and prioritization.

Rich OMCI Functions

PLANET GPN-SFP supports the standard OMCI defined by ITU-T, as well as standard OAM and extended OAM defined by Telecom CTC 2.1/3.0, including configuration, alarm management, performance monitoring, fault isolation, and security management. Additionally, it supports private OMCI and OAM defined by PLANET.

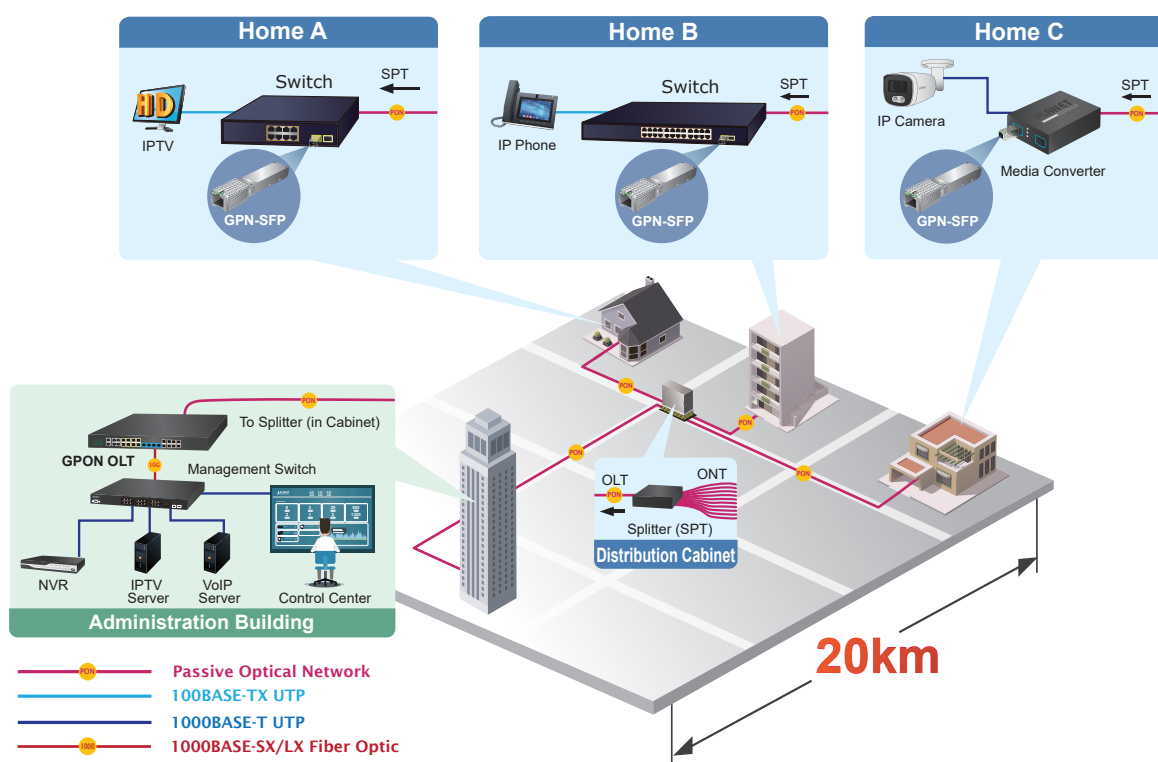
Comprehensive Interoperability

PLANET GPN-SFP complies with international standards, including ITU-T G.984.x (1/2/3/4/5), ITU-T G.988, IEEE 802.3ah, PRC Communication Industry Standard GB/T 33845-2017, YD/T 1475-2006, and China Telecom GPON Technical Requirement (CTC). With high interoperability and operability, PLANET GPN-SFP can seamlessly interconnect with OLTs from mainstream manufacturers in the industry, minimizing network construction costs.

Passive Optical Network Connection Solution

With the increasing adoption of network services such as HDTV, IPTV, Voice over IP (VoIP), and multimedia broadband applications, the demand for broadband communication has grown rapidly. PLANET GPN-SFP is one of the most promising next-generation networking (NGN) technologies to meet these needs. Compared to other broadband access technologies such as xDSL and cable modems, PON technology offers several competitive advantages, including the long-term viability of fiber infrastructure, lower operating costs due to the reduction of active components, support for long-distance connections of up to 20 km between equipment nodes, and, most importantly, significantly greater bandwidth.

Fiber To The Home (FTTH) Application

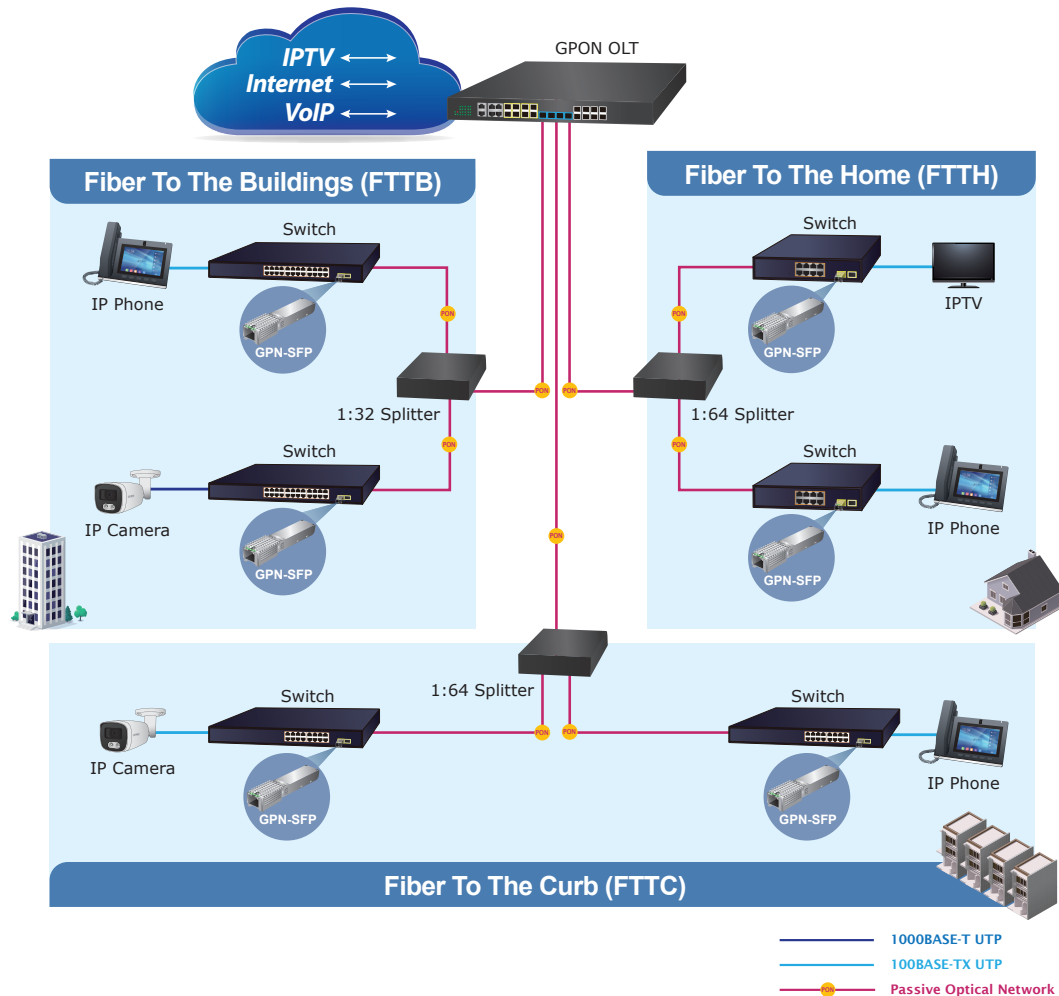


Applications

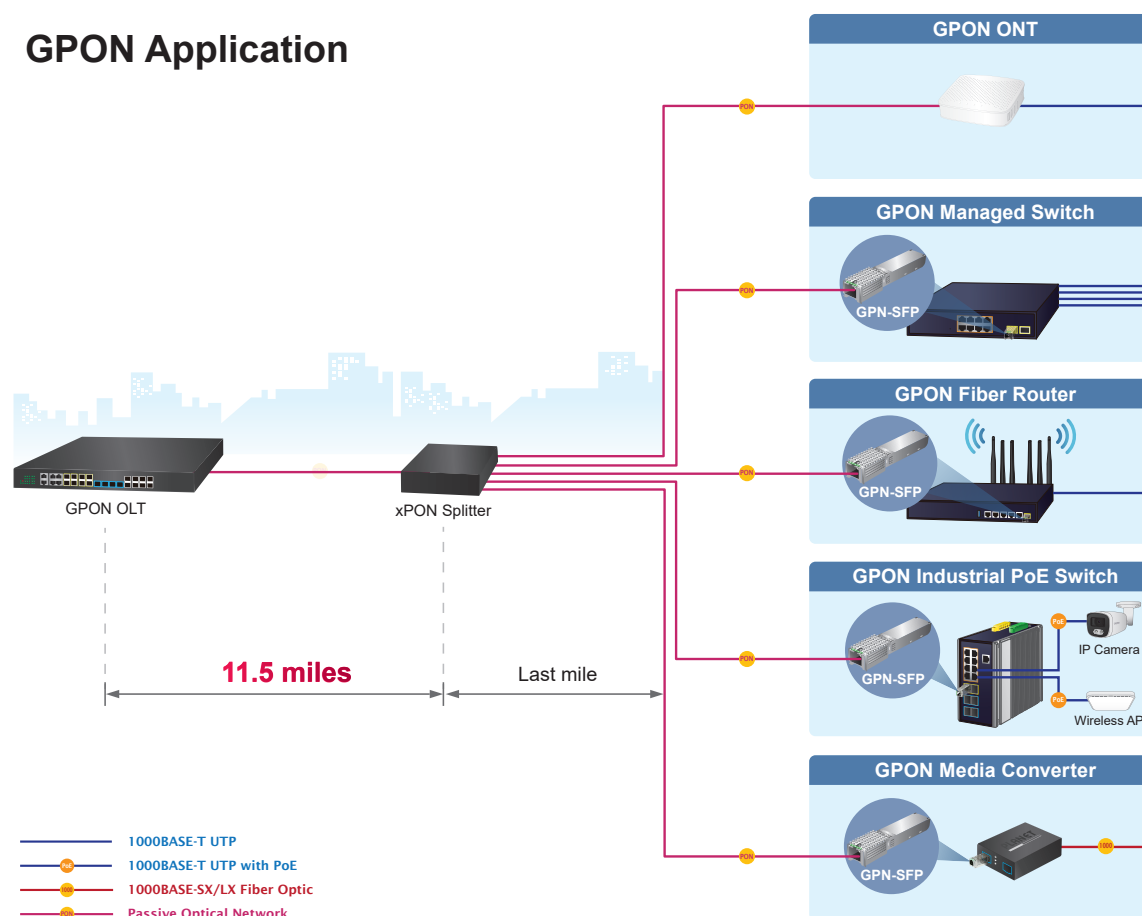
High Scalability and Flexibility in Multiple Applications

PLANET GPN-SFP provides a high-speed Internet connection to PLANET OLT via GPON technology. It offers a downstream transmission speed of up to **2.5 Gbps** and an upstream transmission speed of up to **1.25 Gbps**, with a maximum transmission distance of **20 km**.

Leveraging PON technology, the GPN-SFP can receive and deliver high-speed voice, data, and video services. It provides long-term service, lower operating costs, an **SFP interface**, easy installation and maintenance, and a more stable bandwidth. The GPN-SFP is the perfect solution when deployed with PLANET OLT, offering cost-effectiveness, scalability, and flexibility for network deployments.



GPON Application



Product Specifications

Product	GPN-SFP
Hardware Specifications	
UNI	2.5G and 1G Ethernet UNI modes
Transmission Speed	GPON: Downstream: 2.5 Gbps/Upstream: 1.25 Gbps
Port Type	SC/APC connector
Fiber Maximum Distance	20km
Dimensions (W x D x H)	75 x 13.55 x 14 mm
Weight	31g
Power Input	SFP feed 3.3V
Power Consumption	Less than 2.5W
Optical Receive Sensitivity	-28 dBm
Optical TX Power	0~5 dBm
Functions	
Multicast	Internet Group Management Protocol (IGMP) IGMP snooping CTC defined dynamic multicast MLD snooping
QoS	Back pressure flow control (half duplex) IEEE 802.3x flow control (full duplex) Head of Line (HoL) mechanism IEEE 802.1p, CoS 4 priority queues per port WR, SP and FIFO Rate limit
Reliability	Loop detect Dying-Gasp
Security	Limitation to the MAC addresses on the port (1K)

Heat Dissipation	Supports 24/7 continuous operation; the device can operate continuously without performance degradation due to heat.
Management	Received Signal Strength Indication (RSSI) Multiple Source Agreement (MSA) Full Service Access Network (FSAN) Dying gasp notification ONU Management and Control Interface (OMCI) specification
Standards Conformance	
Laser Classification	IEC60825 Class 1 Laser Product
Standards Compliance	GPON network Class B+ IEEE 802.3x flow control and back pressure IEEE 802.1Q, VLAN IEEE 802.1p Class of Service ITU-T G.984/G.988 GBT33845-2017, YD/T 1475-2006
Environment	
Operating	Temperature: -40 ~ 85 degrees C Relative Humidity: 5 ~ 80% (non-condensing)
Storage	Temperature: -40 ~ 85 degrees C Relative Humidity: 0 ~ 95% (non-condensing)

Ordering Information

GPN-SFP	GPON ONU SFP Transceiver
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Related Product

GPL-8000	8 PON GPON OLT with 4-Port Gigabit TP/SFP Combo + 4-Port 1000X SFP + 4-Port 10G SFP+
GPN-400ACV	GPON HGU with 4-Port GbE, 1200Mbps 802.11ac Wireless and 2-Port FXS (1 x USB)
GPL-GSFP-C+	GPON OLT SFP Transceiver (Class C+, Optical Power: 3dBm~7dBm, Download 2.5G/Upload 1.25G, TX: 1490nm, RX: 1310nm) - 20km
GPL-GSFP-C++	GPON OLT SFP Transceiver (Class C++, Optical Power: 6dBm~10dBm, Download 2.5G/Upload 1.25G, TX: 1490nm, RX: 1310nm) - 20km

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GPN-SFP