1. Introduction

1.1 Checklist

Check the contents of your package for the following parts:

- EPN-110 x 1
- User's Manual x 1
- Power Adaptor x 1

If any of these pieces are missing or damaged, please contact your dealer immediately; if possible, retain the carton including the original packing material, and use them again to repack the product in case there is a need to return it to us for repair.

1.2 Product Description

With the growing network services such as HDTV, IPTV, voice-over-IP (VoIP) and multimedia broadband applications, the demand for broadband has ultimately increased. However, the present broadband environment has not met these network services. Passive Optical Network (PON) is the most promising NGN (Next Generation Networking) technology. As compared to other broadband access technologies such as xDSL and cable modem, PON technology offers some competitive advantages, including a long-term life expectancy of the fiber infrastructure, lower operating costs through the reduction of "active" components, supports a distance of up to 20km between equipment nodes, and most importantly, provides much greater bandwidth.

PLANET EPN-110 is the GEPON SFU ONU device. The EPN-110 is designed with one GEPON port and one standard 10BASE-T, 100BASE-TX, 1000BASE-T Ethernet port. As it is a residential device or access device for users, it offers the economical connection system for GEPON users, and high broadband service by connecting to gateway or PC. GEPON can definitely meet your demand for high-speed access, thus making GEPON the best choice.

PLANET EPN-110 provides the core functionality of an 802.3ah Ethernet Passive Optical Network (EPON) Optical Network Unit (ONU) solution. In addition, the device also offers some advanced functions such as ACL, IGMP snooping and MAC filtering.

1.3 Features

GEPON Port

- 1 SC type GEPON port
- Up to 1.25Gbps upstream and downstream
- Maximum distance of up to 20km
- Compliant with IEEE 802.3ah
- LED indicators for link status

Physical Hardware

- One 10/100/1000Mbps Gigabit port
- 1 reset button
- 1 power switch

EPN-110 Features

- Dynamic bandwidth allocation (DBA) support
- PON interface complies with IEEE 802.3ah
- IEEE 802.3ah compliant Forward Error Correction (FEC)
- Supports up to 64 MAC addresses
- Enhanced IGMP features
- 1.5MB of integrated packet buffering
- Supports Layer 2/3/4 classification rules
- Supports IEEE 802.3x flow control
- Internal Management Information Base (MIB) counters for network statistics

1.4 Specifications

Product		EPN-110
Hardware Specifications		
Transmission Speed		Downstream: 1.25 Gbps Upstream: 1.25 Gbps
Port	PON Port	1 x PON Port
	Ethernet Port	1 x RJ45 (10/100/1000BASE-T)
Fiber Maximum Distance		20km
Optic Wavelength		TX: 1310mm RX: 1490mm
Optical Receive Sensitivity		-27 dBm
Input Saturation Power		-3 dBm
Signal Detect – Assert Power		-27 dBm
Signal Detect – Deassert Power		-42 dBm
LED Indicators		1 Power LED 1 PON LED 1 Link LED 1 LOS LED 1 SYS LED

EMS Utility Specifications	
ONU Features	MAC address learning Supports IGMP snooping 64 MAC addresses support Service Level Agreement (SLA) support Supports ACL and MAC filtering Remote loop-back test IEEE 802.3ah compliant Forward Error Correction (FEC)
Environment Specifications	
Dimensions (W x D x H)	120 x 78 x 30mm
Weight	95g
Power Input	12V DC, 0.5A
Temperature	Operating temperature: -5 ~ 55 degrees C Storage temperature: -30 ~ 60 degrees C
Humidity	Operating Humidity: 10 ~ 90% non-condensing Storage Humidity: 10 ~ 95% non-condensing
Standards Conformance	
Standards Compliance	IEEE 802.3 10BASE-T IEEE 802.3u 100BASE-TX IEEE 802.3ab 1000BASE-T IEEE 802.3x flow control and back pressure IEEE 802.1w Rapid Spanning Tree Protocol
Safety	CE

2. Hardware Description

The EPN-110 provides three different running speeds – 10Mbps, 100Mbps and 1000Mbps and automatically distinguishes the speed of the incoming connection.

This section describes the hardware features of the EPN-110. For easier management and control of the ONU, familiarize yourself with its display indicators and ports. Front and back panel illustrations in this chapter display the unit LED indicators. Before connecting any network device to the EPN-110, please read this chapter carefully.

2.1 Physical Specifications

Top view

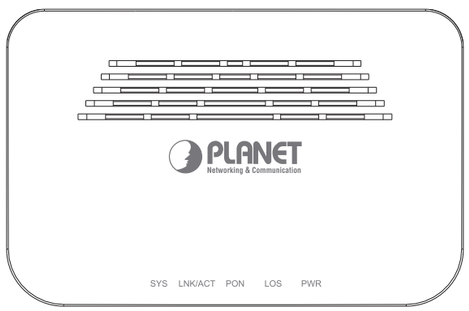


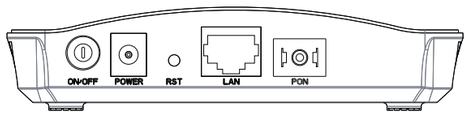
Figure 2-1: Top view of EPN-110 ONU

LED Indicators

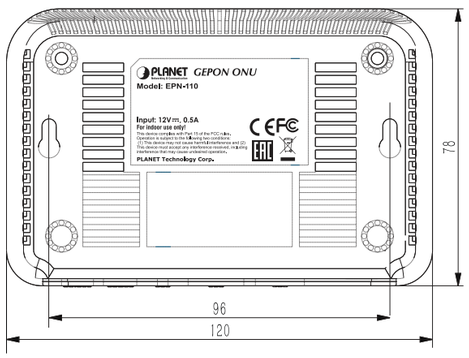
■ System

LED	Color	Function	
PWR	Green	Lights	Indicates the ONU has power.
		OFF	The ONU doesn't receive power.
LOS	Red	Blinks	Optical Power is too low.
		OFF	Optical Power is normal.
PON	Green	Blinks	Indicates the port is not getting normal Optical Signal.
		Lights	Indicates the port is getting normal Optical Signal.
LNK/ ACT	Green	OFF	No link
		Blinks	Indicates the link through that port is Registering.
		Lights	Indicates the link through that port is Registering successfully and established.
SYS	Green	Blinks	Device power is on.
		OFF	Device power is off.

Rear view



Bottom view



3. Hardware Installation

This chapter offers information about installing your ONU. If you are not familiar with the hardware or software parameters presented here, please consult your service provider for the values needed.

3.1 Safety Requirement

- Make sure the GEPON service is enabled.
- Ensure that the optical fiber is long enough to achieve the desired installation place.
- Put the ONU on a sturdy table.
- Don’t open the device when the ONU is operating.
- Contact your local agent for permission if you want to remove the chassis.
- Allow about 10cm of clearance around the ONU chassis for heat dissipation.

3.2 Hardware Installation

Please connect the ONU to your devices as follows:

Step 1. Connecting the RJ45 network cable.

a. Plug in the RJ45 cable to 10/100/1000 GE port.

b. Plug in the other side to your host or devices.

Step 2. Connecting the fiber cable.

Before connecting, please note:

- Keep the optical connector and the optical fiber clean.
- Make sure the bending diameter of the fiber is more than 6cm. Otherwise, the optical signal loss may be increased.
- Cover a protective cap to guard against dust and water when the fiber is not used.

a. Remove the protective cap of the optical fiber.

b. Remove the protective cap of the ONU optical interface (PON interface). Insert the fiber into the PON interface.

Step 3. Connecting Power Adapter.

a. Connect the power adapter to the power socket on the ONU.

b. Insert the other end into a power outlet.

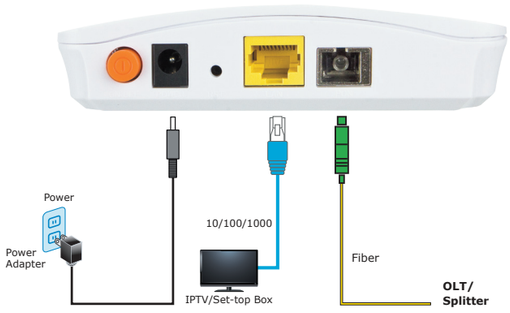


Figure 3-1: EPN-110 Connection Diagram

3.3 Verifying the Installation

After powering on the ONU, the Power LED will be lit and ONU system will start to check the Optical signal. If the ONU system receives the optical signal, the PON LED will be lit and ONU system will start to register. If OLT and ONU register successfully, the Link LED will be lit which means that the connection is establishing.

Note

The PLANET GEPON ONU was designed with PLANET OLT EPL-2220 system. If your connection device is a third-party OLT system, the PON connection might be unstable and malfunctioned, due to the configurations of ONU which must depend on the OLT settings.

If the ONU can’t work properly with OLT of other brands, contact the third-party OLT vendor for technical support.

3.4 Applications

The OLT device is deployed in the central office room. The ONU devices are connected to the OLT device through an optical splitter, which forms a P2MP (Point-to-Multipoint) topology, and are connected to the switches or the devices as computers, IP phone and IP surveillance for Triple Play service are shown in the following figure:

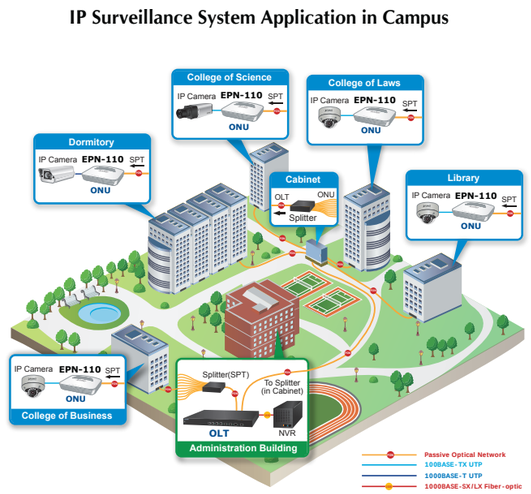


Figure 3-2: IP Surveillance System Application

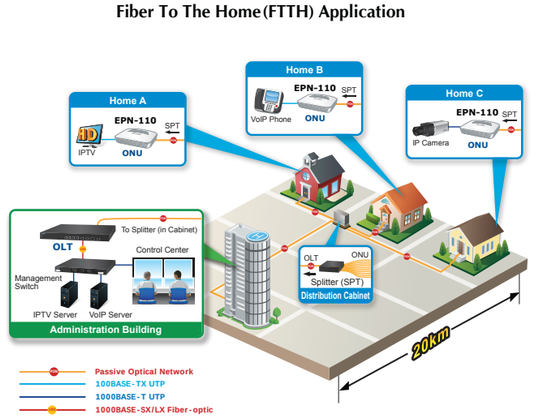


Figure 3-3: Fiber to the House Application

PLANET Networking & Communication

User’s Manual

GEPON
EPN-110

www.PLANET.com.tw

GEPON ONU with One Gigabit Port

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2351-BA0150-000

GEPON | 1.25 Gbps | ACL | IGMP Snooping | GUI Management