

EPON ONU
User Handbook
V1.1

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1 Overview

This chapter mainly gives a description of the functions and structures of P1501C1 and P1501C2.

1.1 Functionality and Characteristics

EPON ONU series, according to the meaning of their names, is ONUs based on the EPON technology. These ONUs provide the hi-speed Internet access, online VOD, video conference and big-size file transmission. Their characteristics are described below:

- High speed: The downlink or uplink transmission rate of the uplink port may reach 1Gbps, and each client's port can support bidirectional 100M data transmission.
- Easy maintenance: The indicators show different statuses, which help to locate the troubles.
- Long transmission distance: The transmission distance can reach up to 20KM.
- OAM: OAM is supported.
- CLI: CLI is supported.

1.2 Front and Rear Templates

1.2.1 Templates of P1501C1

The front template of ONU P1501C1 is shown in figure 1-1:



Figure 1-1 Front template of P1501C1

The rear template of ONU P1501C1 is shown in figure 1-2:



Figure1-2 Rear template of P1501C1

1.3 LEDs and Buttons

The description of LEDs is shown in table 1-1:

Table 1-1 LED Description

Name	Status	Description
PON	On	It means that the registration is already conducted and the authentication has passed through.
	Flicker	It means that registration is being conducted.
	off	It means that registration has not yet been done.
LOS/ ALARM	On	It means that the optical power is too low.
	off	It means that the optical power is normal.
RUN	On	It means that the device is powered and started up.
	Flicker	It means that the system runs normally.
	off	It means that the system is abnormal.
POWER (PWR)	On	It means that ONU works normally.
	off	It means that ONU is not powered or the power source is abnormal.
LAN1~4/ LAN1~8/	On	It means that the Ethernet interface is correctly connected.
	Flicker	It means that the Ethernet interface has data transmission.
	off	It means that the Ethernet interface is not connected.

Table 1-2 Description of interfaces and buttons

Interface/button	Function
LAN1~4/ LAN1~8/	They are Ethernet interfaces, which are used to connect a PC or a switch.
PON	It is the SC connector of the optical fiber, and can be registered on OLT after connection.
ON/OFF	It stands for the switch of the power source, which is used to open or shut down the power source of ONU.
RESET	If this RESET button is pressed for about 4 seconds, P1501C1 will resume its original configuration and then start up again.

Interface/button	Function
POWER(PWR)	It is used to connect the interface of the power adapter.
CONSOLE	It is a serial interface with RJ45 connector and used for command-line management.

2 ONU Installation

This chapter describes the installation procedure before the first usage of ONU.

2.1 Application

2.1.1 FTTH

FTTH, representing Fiber To The Home, means that the ONU is installed at the residential or office home.

Optical Line Terminal (OLT) is laid at the center of the machine room, while ONU, according to actual requirements, can be directly put at your home and its Ethernet interface provides connectivity. OLT and ONU in FTTH are also connected in point-to-multipoint mode through the optical splitter. For the detailed topology, see figure 2-1:

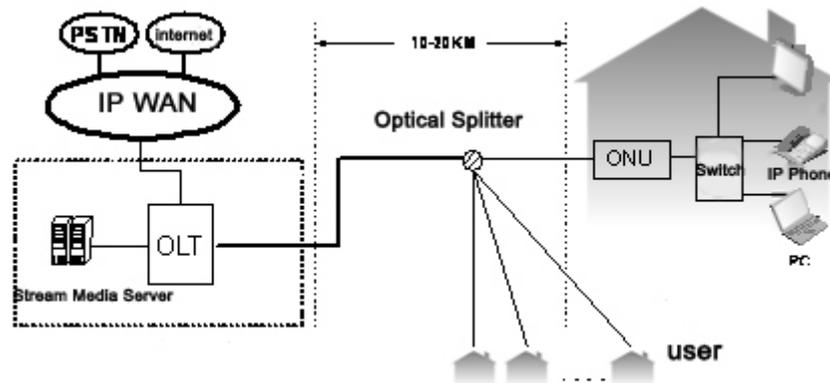


Figure 2-1 FTTH

2.1.2 FTTB

Fiber to The Building (FTTB) is a broadband access mode based on the improved, hi-speed and optical-fiber LAN. In this access mode, the optical fiber is extended to the building and then the network cable is deployed to each home, so this access mode is most reasonable, most practical and most effective.

In FTTB, after OLT is put at the center of the machine room and ONU is installed beside the corridor switch, a networking layout for the whole building should be conducted according to actual requirements. OLT and ONU in FTTH are also connected in point-to-multipoint mode through the optical splitter. For the detailed topology, see figure 2-2:

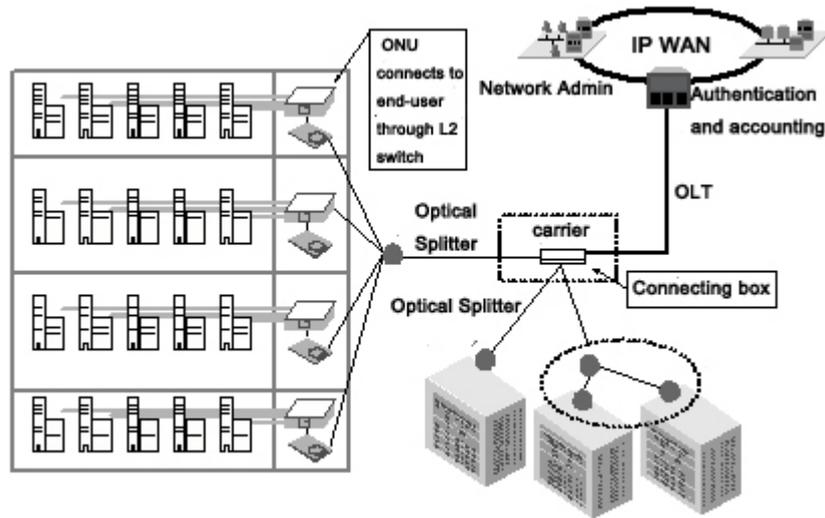


Figure 2-2 FTTB

Note:

ONU is suitable to be installed in the home or at the corridor. Due to the complex of corridor-based installation and cabling, professional engineers are required to conduct the corresponding operations according to actual requirements, and in this case the home-based installation procedure, which will be described in this manual, is only for your reference.

2.2 Installation Preparation

The computer must connect an Ethernet interface of ONU through another Ethernet interface. So before ONU installation make sure that the Ethernet card is installed on the computer.

2.3 Connecting ONU

2.3.1 Connecting the Network Cable

- (1) Use one end of the network cable to connect the Ethernet port at the rear template of ONU.
- (2) Use the other end of network cable to connect the Ethernet port of the computer.

2.3.2 Connecting the Optical Fiber

Note:

- When the optical fiber is not used, make sure of wearing the dust-proof cap on the optical interface of ONU and on the optical fiber. By doing so, dust and vapor can be prevented from contaminating the optical fiber and the optical interface of ONU.
 - Do not bind parallel optical fibers too tightly so that the optical fibers can be prevented from being dysfunctionally crushed.
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Before ONU connects the optical fiber, you should get the optical fiber well installed. The detailed procedure of installing the optical fiber is shown below:

- (1) Screw off the dust-proof cap.
- (2) Connect the connector of the optical fiber to the optical interface on the wall.

2.3.3 Connecting the Power Adapter and the Power Line

- (1) Connect the output terminal of the power adapter to the input terminal of the ONU's power source.
- (2) Insert the other end of the power line into the socket of the power source.
- (3) Check whether the POWER (PWR) LED is on. If the LED is always on, it means the power source runs normally; if not, please check whether the connection between the power line and the power adapter is correct.

2.3.4 Checkup After Installation

- (1) Check whether the LOS LED is on after ONU is powered. In case the LED is on, meaning the received light is too poor, please check whether the optical fiber is correctly connected.

3 Rapid Trouble Locating

Trouble	Solution
The power indicator is off.	<ul style="list-style-type: none"> ● Check whether power lines are connected correctly. ● Check whether the power adapter matches.
The PON indicator is off.	<ul style="list-style-type: none"> ● Check whether the carrier authorizes ONU.
The LOS indicator is on.	<ul style="list-style-type: none"> ● Check whether the optical fiber is inserted well. ● Check whether the connector of the optical fiber is clean.
LAN1~4/ LAN1~8/ All these LAN indicators are off.	<ul style="list-style-type: none"> ● Check whether this ONU is authorized by the carrier. ● Check whether the used network cable matches up the equipment. ● Check whether the network cable is connected correctly. ● Check whether the indicator for the network interface card of a computer is on. ● Check whether the network interface card works normally. <p>You can check whether there are devices with symbols “?” or “!” by clicking Windows operating system -> Device manager -> Network adapter. If there are devices with the above-mentioned symbols, please delete these devices and then install them again, or replace a slot for the network interface card.</p> <p>If these devices still exist, please modify the network interface card.</p>

4 Technical Indexes

Main Technical Specifications		
Standard	EPON Standard	IEEE802.3ah
Data transmission rate	Uplink	1 Gbps
	Downlink	1 Gbps
Interface	One optical interface	Single mode
	4 to 24 fast-Ethernet ports	RJ-45, 10/100Mbit/s, MDI/MDIX auto-adaptation

Physical Features and Environmental Requirements		
Model Parameter	P1501C1	P1501C2
Power input of the power adapter	100V-240VAC	100V-240VAC
Frequency	50Hz-60Hz	
Power supply for the whole machine	12V DC, 1A	12V DC, 1A
Standard power consumption	<16W	
Working temperature	0°C-40°C	
Working humidity	5%-95% (non-condensing)	
Dimensions (W*H*D)	133×103×29	170×98×28
Weight	<0.5kg	<0.5kg

Appendix A Abbreviations

EPON	Ethernet Passive Optical Network
FEC	Forward Error Correction
FTTB	Fiber to The Building
FTTH	Fiber To The Home
IGMP	Internet Group Management Protocol
OLT	Optical Line Terminal
ONU	Optical Network Unit
PON	Passive Optical Network
UNI	User Network Interfaces