

# **User's Manual**

## **GEPON Wi-Fi ONU**

► EPN-402NV





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### Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in

a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1. Reorient or relocate the receiving antenna.
- 2. Increase the separation between the equipment and receiver.
- 3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- 4. Consult the dealer or an experienced radio technician for help.

#### **FCC Caution:**

To assure continued compliance, for example, use only shielded interface cables when connecting to computer or peripheral devices. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

## Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.

#### **R&TTE Compliance Statement**

This equipment complies with all the requirements of DIRECTIVE 1999/5/CE OF THE EUROPEAN PARLIAMENT AND THE COUNCIL OF 9 March 1999 on radio equipment and telecommunication terminal equipment and the mutual recognition of their conformity (R&TTE).

The R&TTE Directive repeals and replaces in the directive 98/13/EEC (Telecommunications Terminal Equipment and Satellite Earth Station Equipment) as of April 8, 2000.

#### Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

#### **National Restrictions**

This device is intended for home and office use in all EU countries (and other countries following the EU directive 1999/5/EC) without any limitation except for the countries mentioned below:

Country	Restriction	Reason/remarks
Bulgaria	None	General authorization required for outdoor use and public service
France	Outdoor use limited to 10 mW e.i.r.p. within the 2454-2483.5 MHz band	Military radio location use. Refarming of the 2.4 GHz band has been ongoing in recent years to allow the current relaxed regulation. Full implementation planned in 2012
Italy	None	If used outside of own premises, general authorization is required
Luxembourg	None	General authorization required for network and service supply (not for spectrum)
Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund
Russian Federation	None	Only for indoor applications

Note: Please don't use the product outdoors in France.

### **WEEE Regulations**



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste and have to collect such WEEE separately.

## Revision

User Manual of PLANET GEPON Wi-Fi ONU

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6.4			

## **Chapter 1. Product Introduction**

## **1.1 Package Contents**

Thank you for choosing PLANET EPN-402NV. Before installing the ONU, please verify the contents inside the package box.





If there is any item missing or damaged, please contact the seller immediately.

## **1.2 Product Description**

### Perfectly Designed for Fiber to the Home Applications

PLANET EPN-402NV is a fiber to the home (FTTH) broadband access equipment type. With built-in 1.25Gbps GEPON fiber interface, the EPN-402NV supports different optic types for WAN and the distance can be up to 20km through the fiber connection. It can handle multiple high-throughput services such as IPTV, on-line gaming, VoIP and Internet access, and keep the bandwidth usage smoothly via its QoS features. Thus, with the advantages of high reliability and scalability, the EPN-402NV can further be applied in the network of SOHO (small office or home office) or small businesses that provide high-performance access services.



## Fiber To The Home

### **Cost-effective Network Connection Solution**

With the growing network services such as HDTV, IPTV, voice over IP (VoIP) and multimedia broadband applications, the demand for broadband use has increased tremendously. The 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, the Passive Optical Network (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, support up to 20km distance between equipment nodes, and most importantly, provide much greater bandwidth.



#### **Flexibility and Extension solution**

PLANET EPN-402NV provides ultra high-speed Internet connection with PLANET OLT (EPL-2000) via the new GEPON technology. The upstream and downstream transmission speed provided is up to 1.25Gbps and its maximum distance can be 20km. Through the PON technology, the EPN-402NV can receive and deliver high-speed voice, data and video services. It offers competitive advantages including a long-term life expectancy of the fiber infrastructure, lower operating costs from the reduction of "active" components, easy Installation and maintenance, and most importantly, offering a much greater and more stable bandwidth. The EPN-402NV is the perfect solution working with PLANET OLT EPL-2000 to offer benefits of cost-effectiveness, scalability and flexibility to network deployment.

#### High-speed 802.11n Wireless Type

With built-in IEEE 802.11b/g and 802.11n wireless network capabilities, the EPN-402NV allows any computer and wireless-enabled network device to connect to it without additional cabling. 802.11n wireless capability brings users the speed of wireless data transmission rate to as high as **300Mbps**. The radio coverage is also doubled to offer strong wireless connection even in widely spacious offices or houses.



#### **Standard Compliance with FXS Port**

The EPN-402NV provides two FXS ports that can easily integrate with general voice over IP system. The EPN-402NV makes it simple for the enterprise featuring voice and data system or expanding voice system to new locations. It helps you to save money on long-distance calls; for example, the remote users can dial in

through a Unified VoIP Communication System just like an extension call but no long-distance call charge would occur.

#### Robust ONU Management

The EPN-402NV is designed to work with PLANET OLT EPL-2000 to provide robust FTTx applications. With the **Element Management System (EMS) built** in the EPL-2000, the administrators can manage and configure the facilities such as adding or removing PLANET OLTs and ONUs to or from the network architecture easily and economically. The EMS also supports many operating and monitoring functions for efficient ONU management including ONU auto-detection, auto-registration, testing link connection, binding MAC address, loopback test and filtration, bandwidth control, flow control, and multicast stream control.



## **1.3 Product Features**

- GEPON
  - Supports 802.3ah CTC external OAM
  - 1 x SC type GEPON port
  - Up to 1.25Gbps upstream and downstream
  - Up to 20km
  - Supports 128-bit triple churning algorithm
  - Supports dying gasp
- Ethernet
  - Supports 802.1Q VLAN, QoS
  - Supports broadcast storm protection
  - Supports bandwidth control
  - Supports IGMP snooping/proxy
  - Supports IPv4/IPv6
- VolP
  - Supports G.711 a/u law, G.712, G.729a code/decode
  - Supports VAD, CNG
  - Supports G.711/T.38 fax
  - Supports SIP/H.248/MGCP
- Wireless
  - Up to 300Mbps bandwidth
  - Compatible with 802.11b/g/n
  - Compatible with equipment working on 2.4G Hz
  - Supports WPS

#### • Physical Hardware

- 4 x 10/100Mbps Fast Ethernet port
- 2 x FXS port
- 1 x Reset Button
- 1 x Power Connector

#### Features

- Dynamic Bandwidth Allocation (DBA) support
- IEEE 802.3ah compliant Forward Error Correction (FEC)
- Enhanced IGMP feature
- 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 Product Specifications**

Product		EPN-402NV
		GEPON WI-FI ONU
Hardware Spe	ecifications	
Transmission	Speed	Downstream: 1.25 Gbps Upstream: 1.25 Gbps
PON Port		1 x PON Port
Port	Ethernet Port	4 x RJ45 (10/100Base-TX)
FUIL	FXS Port	2 x RJ11 Port
	USB Port	1 x USB 2.0 Port Type A, 5V 500mA
Optic Wavele	ngth	TX: 1270mm RX:1480mm
<b>Optical Recei</b>	ve Sensitivity	-25 dBm
Dimensions (	W x D x H)	190 x 137 x 48 mm
Weight		350g
Power Input		12V DC, 1A
Power Consu	mption	12W
EMS Utility S	pecifications	
ONU Feature		Supports IGMP Snooping Supports MLD Snooping Supports 802.3ah CTC external OAM Supports DBA algorithm Supports 128-bit triple churning algorithm Supports dying gasp IEEE 802.3ah compliant forward error Correction (FEC) Supports TR-069
Wireless Int	erface Specificat	ions
Standard		Compliant with IEEE 802.11b/g/n
Frequency B	and	2.4~2.4835GHz
Antenna		Gain: 3 dBi internal antennas
Extended Fre	equency	DSSS
Modulation T	ӯре	DBPSK, DQPSK, QPSK, CCK and OFDM (BPSK/QPSK/16-QAM/ 64-QAM)
Data Transm	ission Rates	802.11n (40MHz):270/243/216/162/108/81/54/27Mbps 135/121.5/108/81/54/40.5/27/13.5Mbps (Dynamic) 802.11n (20MHz):130/117/104/78/52/39/26/13Mbps 65/58.5/52/39/26/19.5/13/6.5Mbps (Dynamic) 802.11g:54/48/36/24/18/12/9/6Mbps (Dynamic) 802.11b:11/5.5/2/1Mbps (Dynamic)
Channel		Europe/ ETSI: 2.412~2.472GHz (13 Channels)
Max. RF Pow	ver	16 dBm max. (EIRP)
Encryption S	ecurity	<ul> <li>WEP (64/128-bit) encryption security</li> <li>WPA-Personal / WPA2-Personal (TKIP/AES)</li> <li>Mixed WPA / WPA2-PSK</li> </ul>

	Provides wireless LAN ACL (Access Control List) filtering	
Wireless Security	Wireless URL filtering	
Wireless Security	Supports WPS (Wi-Fi Protected Setup)	
	Enables/Disables SSID broadcast	
Wireless Advanced	WMM (Wi-Fi multimedia): 802.11e wireless QoS	
	Provides wireless statistics	
Max. Supported Clients	128	
	NAT firewall with SPI (Stateful Packet Inspection)	
Firowall	Built-in NAT server supporting DMZ	
Thewall	Built-in firewall with IMAC address/ port/ URL filtering	
	Supports DoS protection	
VoIP Protocols and Standard		
Oten dend	SIP/H.248/MGCP	
Standard	T.38 (G.711 fax pass-through)	
Voice Codec	G.711 a/u law, G.712, G.729a code/decode	
Vaine Standard	VAD (Voice Activity Detection)	
voice Standard	CNG (Comfort Noise Generation)	
Environment Specifications		
Tomporaturo	Operating temperature: -5 ~ 55 degrees C	
	Storage temperature: -30 ~ 60 degrees C	
Humidity	Operating Humidity: 10 ~ 90% non-condensing	
Trainiarty	Storage Humidity: 5 ~ 95% non-condensing	
Standards Conformance		
	IEEE 802.3 10BASE-T	
Standarda Complianas	IEEE 802.3u 100BASE-TX	
Stanuards Compliance	IEEE 802.3x flow control and back pressure	
	IEEE 802.11n	

## **Chapter 2. Hardware Installation**

Please follow the instructions below to connect the EPN-402NV to the existing network devices and your computers.

## 2.1 Hardware Description

- Dimensions: 190x 137 x 48mm (L x W x H)
- Diagram :



Figure 2-1



Figure 2-2







Figure 2-4

## 2.1.1 Front Panel

The front panel provides a simple interface monitoring the ONU. Figure 2-5, 2-6 shows the front panel of the EPN-402NV.



PWR	PON	LOS	INT	WLAN	FXS1	FXS2	ETH1	ITV	ETH3	ETH4	WPS	USB	1
0	i	5	*	((•	)	2	1	iTV	3	4		⇒ <del>{}</del>	)

Figure 2-6 EPN-402NV Front Panel

LED (Left to Right)	COLOR	STATE	FUNCTION
	Groop	On	Device power on
FWK	Green	Off	Device power off
		On	MPCP and OAM be active
PON	Green	Flash	Registering
		Off	MPCP and OAM not founded
1.05	Rod	Flash	Optical Power too Low
103	Reu	Off	Optical Power normal
	Green	On	In ONU mode, Internet is connected, no data transmission
INT		Flash	Connected, no data transmission
		Off	Data is transmitting
		On	WLAN is active
WLAN	Green	Flash	Data is transmitting
		Off	System power off or WLAN is forbidden
		On	Registered successfully to server
FXS1 / FXS2	Green	Flash	Data is transmitting
		Off	Registered unsuccessfully
ETH1/iTV	Green	On	Linked

ETH3 / ETH4		Flash	Data is transmitting
		Off	No link
		On	Linked successfully
WPS	Green	Flash	Negotiating
		Off	Linked unsuccessfully
		On	Linked and in master mode
USB	Green	Flash	Data is transmitting
		Off	No link

## 2.1.2 Rear Panel

## Rear Panel



Figure 2-7 EPN-402NV Rear Panel

Object	Description
	RJ11 FXS Connecter, connected to telephone or fax.
FX51 FX52	Supply Voice Service
ETH1	
ETH3	Connected to Local Area Network.
ETH4	
iTV	iTV Port can be connected to IPTV BOX
WPS	Press WPS Button, start to negotiate for WPS.
WLAN	Switch to open or close WLAN function.
Reset Button	Press this button and hold for 1 second for the equipment to be defaulted.
USB	USB 2.0 host port.

12V DC	Power input port.
Power	Power switch.

## 2.1.3 Side Panel



Figure 2-8 EPN-402NV Side Panel

Port Type	Function
Indicator LED turn on/off	Press down to turn LED on; pop up to turn LED off.

## 2.1.4 Bottom Side



Figure 2-8 EPN-402NV Bottom Side

## Chapter 3. Connecting to the Wi-Fi ONU

## 3.1 System Requirements

- Broadband Internet Access Service (Passive Optical Network connection)
- PCs with a working Ethernet Adapter and an Ethernet cable with RJ45 connectors
- PC subscribers use Windows 98/ME, NT4.0, 2000/XP, Windows Vista / Win 7, MAC OS 9 or later, or Linux, UNIX or other platforms compatible with TCP/IP protocols
- The above PC is installed with a Web browser



The GEPON in the following instructions means PLANET EPN-402NV.
 It is recommended to use Internet Explore 7.0 or above to access the Wi-Fi ONU.

## 3.2 Installing the Wi-Fi ONU

Before installing the Wi-Fi ONU, make sure your PC is connected to the Internet through the broadband service successfully at this moment. If there is any problem, please contact your local ISP. After that, please install the Wi-Fi ONU according to the following steps. Don't forget to pull out the power plug and keep your hands dry.

Step 1. Power off your PC and PLANET EPN-402NV.

- **Step 2.** Locate an optimum location for the EPN-402NV. The best place is usually at the center of your wireless network.
- Step 3. Connect the Passive Optical Network to the SC Port of the EPN-402NV with fiber cable, shown in Figure 3-1.



Figure 3-1



**Step 4.** Please fix the fiber cable on the bottom of the EPN-402NV as shown in Figure 3-2.

Figure 3-2

## Chapter 4. Quick Installation Guide

This chapter will show you how to configure the basic functions of your Wi-Fi ONU.



A computer with wired Ethernet connection to the Wi-Fi ONU is required for the first-time configuration.

## 4.1 Manual Network Setup - TCP/IP Configuration

The default IP address of the Wi-Fi ONU is **192.168.1.1** and the default Subnet Mask is **255.255.255.0**. These values can be changed as you desire in the web UI of the Wi-Fi ONU. In this section, we use all the default values for description.

Whether the Wi-Fi ONU is configured via wired or wireless connection, the PC needs to be assigned an IP address first. Before you connect the local PC to the Wi-Fi ONU via wired or wireless connection, please configure the IP address for your PC in the following two ways first.

- Obtaining an IP address automatically
- Configuring the IP address manually

In the following sections, we'll introduce how to install and configure the TCP/IP correctly in **Windows 7**. And the procedures in other operating systems are similar. First, make sure your Ethernet Adapter is working, and refer to the Ethernet adapter's manual if needed.

### 4.1.1 Obtaining an IP Address Automatically

#### Summary:

- 1. Set up the TCP/IP Protocol in "Obtain an IP address automatically" mode on your PC.
- 2. Then the Wi-Fi ONU built-in DHCP server will assign IP address to the PC automatically.

If you are sure the DHCP server of Wi-Fi ONU is enabled (the default setting of ONU Mode), you can set up the TCP/IP Protocol in **"Obtain an IP address automatically**" mode on your PC. And then the Wi-Fi ONU built-in DHCP server will assign an IP address to the PC automatically.

#### 1. Installing TCP/IP Component

1) On the Windows taskbar, click the Start button, point to Control Panel and then click it.

2) Under the Network and Internet icon, click on the View network status and tasks. And then click



#### Figure 4-1 Change Adapter Settings

#### 3) Right-click on the Wireless Network Connection and select Properties in the appearing window.



#### Figure 4-2 Network Connection Properties

4) In the prompt window shown below, double-click on the Internet Protocol Version 4 (TCP/IPv4).

tworking			
onnect using:			
Intel(R) Wireles	s WiFi Link 4965	AGN	
		Config	ure
his c <u>o</u> nnection uses	the following item	s:	
🗹 🍷 Client for Mic	rosoft Networks		
🗹 📙 QoS Packet	Scheduler		
🗹 县 File and Prini	ter Sharing for Mic	crosoft Networks	
🗹 🔺 Reliable Mult	ticast Protocol		
Internet Prot	ocol Version 6 (TO	CP/IPv6)	
🗹 📥 Internet Prot	ocol Version 4 (TO	CP/IPv4)	
🗹 🔺 Link-Layer T	opology Discover	y Mapper I/O Driver	
🗹 🔺 Link-Layer T	opology Discover	y Responder	
I <u>n</u> stall	<u>U</u> ninstall	Proper	ties
Description			
Transmission Contr wide area network across diverse inte	ol Protocol/Intern protocol that prov rconnected netwo	et Protocol. The def rides communication orks.	ault 1

Figure 4-3 TCP/IP Setting

5) Choose **Obtain an IP address automatically**, and **Obtain DNS server address automatically** as shown in the figure below. Then click **OK** to save your settings.

cricial	Alternate Configuration				
You car this cap for the	n get IP settings assigned auto ability. Otherwise, you need appropriate IP settings.	omatically if to ask your r	your n networ	etwork s k admini:	upports strator
() () ()	otain an IP address automatic	ally			
	e the following IP address:				
IP ac	ldress:				
S <u>u</u> br	et mask:				
Defa	ult gateway:			1	
© O O Us Prefe	etain DNS server address auto the following DNS server ad erred DNS server:	omatically Idresses:			
Alter	nate DNS server:				
V	aļidate settings upon exit			Ad <u>v</u> a	nced

Figure 4-4 Obtain an IP Address Automatically

### 4.1.2 Configuring the IP Address Manually

Summary:

- Set up the TCP/IP Protocol for your PC.
- Configure the network parameters. The IP address is 192.168.1.xxx ("xxx" is any number from 2 to 254), Subnet Mask is 255.255.255.0, and Gateway is 192.168.1.1 (The ONU's default IP address)

If you are sure the DHCP server of WiFi ONU is disabled, you can configure the IP address manually. The IP address of your PC should be 192.168.1.xxx (the same subnet of the IP address of the Wi-Fi ONU, and "xxx" is any number from 2 to 254), Subnet Mask is 255.255.255.0, and the Gateway is 192.168.1.1 (The default IP address of the Wi-Fi ONU)

1) Continue the settings from the last figure. Select **Use the following IP address** radio button.

- If the LAN IP address of the Wi-Fi ONU is 192.168.1.1, enter IP address 192.168.1.x (x is from 2 to 254), and Subnet mask 255.255.255.0.
- 3) Enter the LAN IP address of the Wi-Fi ONU (the default IP is 192.168.1.1) into the default gateway field.
- 4) Select **Use the following DNS server addresses** radio button. In the preferred DNS Server field, you can enter the DNS server IP address provided by your local ISP. Then click OK to save your settings.

Internet Protocol Version 4 (TCP/IPv	4) Properties								
General									
You can get IP settings assigned au this capability. Otherwise, you need for the appropriate IP settings.	tomatically if your network supports to ask your network administrator								
Obtain an IP address automatically									
Use the following IP address:									
IP address:	192.168.1.200								
S <u>u</u> bnet mask:	255.255.255.0								
Default gateway:	192.168.1.1								
<ul> <li>O<u>b</u>tain DNS server address auto</li> </ul>	omatically								
Output of the server as the	ddresses:								
Preferred DNS server:	8.8.8.8								
Alternate DNS server:	8.8.4.4								
🔲 Vaļidate settings upon exit	Ad <u>v</u> anced								
	OK Cancel								

Figure 4-5 IP and DNS Server Addresses

Now, you can run the ping command in the **command prompt** to verify the network connection between your PC and the ONU. The following example is in **Windows 7** OS. Please follow the steps below:

- 1. Click on Start
- 2. Type "cmd" in the Search box.



3. Open a command prompt, and type ping **192.168.1.1**, and then press Enter.

If the result displayed is similar to Figure 4-7, it means the connection between your PC and the ONU has been established well.



Figure 4-7 Successful Ping Command

If the result displayed is similar to Figure 4-8, it means the connection between your PC and the ONU has failed.



Figure 4-8 Failed Ping Command

If the address is 0.0.0.0, check your adapter installation, security settings, and the settings on your ONU. Some firewall software programs may block a DHCP request on newly installed adapters.



If the ONU's IP address is 192.168.1.1, your PC's IP address must be within the range of  $192.168.1.2 \sim 192.168.1.254$ .

## 4.2 Starting Setup in the Web UI

It is easy to configure and manage the EPN-402NV with the web browser.

**Step 1.** To access the configuration utility, open a web-browser and enter the default IP address <u>http://192.168.1.1</u> in the web address field of the browser.



Figure 4-9 Login the ONU

After a moment, a login window will appear. Enter **admin** for the User Name and Password, both in lower case letters. Then click the **OK** button or press the **Enter** key.

	Username	admin	
PLANET	Password	•••••	Ŷ
Networking & Communication	Apply	C	ancel

Figure 4-10 Login Window

Default IP Address: 192.168.1.1

Default User Name: admin

Default Password: admin



If the above screen does not pop up, it may mean that your web browser has been set to a proxy. Go to Tools menu>Internet Options>Connections>LAN Settings in the screen that appears, cancel the Using Proxy checkbox, and click OK to finish it.

## Chapter 5. Configuring the Wi-Fi ONU

This chapter delivers a detailed presentation of ONU's functions and features.

PLANET Networking & Communication								Logout >>
OTATIO	STATUS	NETWOR	K SECURI	TY APPLIC	ATION	MANAGEMENT	DIAGNOSIS	HELP
STATUS	DEVICE INFO	WAN INFO	USERSIDE INFO	VoIP INFO	REM MANAG	NOTE GEMENT		

#### Figure 5-1 Wi-Fi ONU Functions

## 5.1 STATUS

### 5.1.1 Device Info

On this page, you can view information about the current running status of the EPN-402NV, including device identifier, hardware version, software version and PON status.

Device Info		
Device Model:	EPN-402NV	
Device Identifier:	A8F7E0-BA00014700001	
Hardware Vesion:	1.0.0	
Software Vesion:	1.0.0	
PON Status:	MPCP ok CTC ok	

#### Figure 5-1-1 Device Info

The page includes the following information:

Object	Description
Device Type	The Wi-Fi ONU model.
Software Version	This is the current software the Wi-Fi ONU is using. This will change
	if you upgrade your ONU.
PON Status	The current mode in use.

### 5.1.2 WAN Info

This page shows the status of your WAN network.

WAN Inf	0								
Interface	Description	Туре	VlanMuxId	Igmp	NAT	Firewall	STATUS	DNS	Ipv4 address
epon0.1	1_TR069_R_VID_46	IPoE	46	Disable	Disable	Enable	Connecting		
Defaul	t Gateway								
Sub	net Mask								
Prim	nary DNS								
Secor	ndary DNS								

## Figure 5-1-2 WAN Info

EPON Information	- 12	
EPON Interface Status:	ОК	
EPON MAC:	a8:f7:e0:03:36:e9	
FEC Capablity:	Support	
FEC Status:	Disabled	
Tripe-Churning :	Close	
EPON Statics		
Rx Bytes:	0	
Tx Bytes:	89432	
Rx Frames:	0	
Tx Frames:	294	
Rx Muticast Frames:	0	
Tx Muticast Frames:	8	
Rx Broadcast Frames:	0	
Tx Broadcast Frames:	294	
Error Frames:	0	
Drop Frames:	0	
Alarm Info		
Optical:	Normal	
Fiber Model Info		
Temperature(C):	56.273438	
Voltage(V):	3.241	
Current(mA):	12.276	
Tx Power(dBm):	1.962038	
Rx Power(dBm):	-8.37137	

Figure 5-1-3 EPON information

## 5.1.3 Userside Info

This page shows the status of your WLAN, LAN and USB.

WLAN Co	nnect	Er	Enable					
Channel:	11							
SSID-1 n	ame:	EPN-402NV						
SSID-2 n	ame:		iTV-402NV					
SSID-1 S	ecurity	Enable						
rx/rx s	Status	5	ال حدث			Se	ond	
Interface		Rece	iveu			00	crua.	
Interface	Bytes	Rece	Errs	Drops	Bytes	Pkts	Errs	Drops

Figure 5-1-4 WLAN information

10.	LAN IPv4 :			192.168.1.1					
1P :		LAN IPv6 :			fe80::1/64				
MAC:		a8:f7:e0:0	3:36:	e9					
X/TX F	rames	-				-			
Interface	0.4	RX	E	Deser	Deter	1X	Erro	Deser	
	Bytes	PKts	Errs	Drops	Bytes	PKts	Errs	Drops	
LAN1	606299	5 34746	0	0	18831749	41310	0	0	
LAN2	498922	6 23419	0	0	5284032	30122	0	0	
LAN3	0	0	0	0	0	0	0	0	
I AN4	787502	8 17676	0	0	18308956	34102	0	0	
L. 13 4 1		and the second of the second	1.000						
AN-Side	Device	.C		Туре					

#### Figure 5-1-5 LAN information



Figure 5-1-6 USB information

## 5.1.4 VoIP Info

#### This page shows the status of your VoIP.

#### VoIP -- VoIP Status

Interface forbidden display "Disabled", When registered successfully display "UP", When registered failed display "Error"

SIP Account	Call Duration	Phone Number	Registration Status
1	0:00:00		Disabled
2	0:00:00		Disabled

#### Figure 5-1-7 VoIP status

VoIP STATUS	Phone Status				
Phone Number					
	Line	Status			
	1	Free			
	2	Free			

Figure 5-1-8 Phone status

## 5.1.5 Remote Management

This page shows the status of your WAN connection.

CONNECTION CONFIGURATION	Active Inform Status:
STATUS	Not (Remote Manage WAN Is Inactive)
	Accept ITMS Status:
	No Connection

Figure 5-1-9 Connection

CONNECTION	Configuration Ctatuce	
CONFIGURATION	Configuration Status:	
STATUS	Cannot Receive Remote Configuration	

#### Figure 5-1-10 Configuration

## 5.2 NETWORK

## 5.2.1 WAN Setup

Uplink mode:	EPON 🗸
Connection name:	1_TR069_R_VID_46
Mode:	Route 💌
Link mode:	IPv4 💌
C DHCP	Get one dymaic ipaddress from ISP
C Static	Get one static ipaddress from ISP
C PPPoE	If ISP use PPPOE Please select this
MTU:	1492
Vlan:	V
Vlan ID:	46
802.1p:	7 🗸
Service mode:	TR069
Save/Apply	Delete

This page displays the information of the WAN interface for you to set up.

Figure 5-2-1 WAN Setup

The page includes the following fields:

Object	Description	
Connection Name	The default setting is TR-069. You can add a new WAN connection.	
Mode	Select Bridge or Route.	
Link Mode	Select IPv4, IPv6 or IPv4/ v6.	
DHCP	Select this option to let ONU obtain IP settings automatically from your ISP, if your ISP does not give you any IP information or account information. You don't need to configure any settings for this connection.	

	If your ISP offers you static IP Internet connection type, select		
Static	"Static IP" from corresponding drop-down menu and then enter IP		
	address, subnet mask, primary DNS and secondary DNS		
	information provided by your ISP in the corresponding fields.		
PPPoE	Select PPPoE, if your ISP is using a PPPoE connection and provide		
	you with PPPoE user name and password info.		
MTU	The maximum transmission unit. You can keep it as default.		
VLAN	Enable or disable VLAN function.		
VLAN ID	Enter the VLAN ID from 1 to 4094.		
802.1p	Select the priority levels.		
Service mode	Select a different kind of service.		

## 5.2.2 Banding Setup

This page displays the information of the Banding Setup. You can enable or disable the function.

Lan Side Banding Setting	
🔽 Enable Port Banding	
🔽 Enable Vlan Banding	
	Save/Apply

Figure 5-2-2 Banding Setup

## 5.2.3 LAN Setup

This page displays LAN information.
LAN Setting	11013			
Configure LAN IF	P Address a	nd Subnet mask, C	lick "Save/Apply" to save conf	guration.It need to reboot to take
new configuratio	on effect!			
IP Address:	192.168	3.1.1		
Subnet mask:	255.255	5.255.0		
C Diable DHC	P service			
Enable DHC	P service			
PC start IP Addres	PC start IP Address: 192.168.1.2			
PC end IP Address	s:	192.168.1.100		
Camera start IP Ad	ddress:	192.168.1.110		
Camera end IP Ad	dress:	192.168.1.120		
Set Top Box Start	IP Address:	192.168.1.130		
Set Top Box end	IP Address:	192.168.1.150		
IP Phone start IP	Address:	192.168.1.170		
IP Phone end IP A	Address:	192.168.1.180		
Duration:		1 day 🔽		
C Enable DHC	P server Pr	oxy		
			Save/Apply	
Resver IP				
Select "Edit Resy	vered IP Ad	dress List" to reser	ve IP Address''	
Note:It can on	ly reseve 10	) IP Addresses for 1	10 specific MACS only	10 14
		MAC	IP Address	Delete
			Add	

Figure 5-2-3 IPv4 Setup

IPv6 IP Address (Need Prefix): fe80::1/64		
IPv6 LAN Configuration		
Enable DHCPv6 Service     Relase time :24		
Prefix length: 56		
Enable IP Address Pools		
IPv6 Site Prefix configuration:		
Tx MAX circle: 600 (41800)Sec		
Tx MIN circle: 450 (31350)Sec		
Diable M flag(no state mode)		
Enable O flag(Enable get DHCP6 besides address)		
<ul> <li>Authorization from Wan side</li> </ul>		
C Static		
Site Prefix:		
Site Prefix Length:		
Save/Apply		

Figure 5-2-4 IPv6 Setup

# 5.2.4 WLAN Setup

On the coming page, you can configure the basic wireless parameters.

WIFI Setting Basic			
Configuring WLAN basic featur Click "Save/Apply"to take new	e of WLAN,including En setting effect	able/Disable WLAN,Seaco	ching SSID,configuring SSID),
Enable WIFI			
Enable SSID2			
SSID2: ITV-402NV			
T Hide AP			
☐ Wireless Client Isolation			
Diable WMM Broadcast			
Enable WMF			
SSID: EPN-402NV			
BSSID: A8:F7:E0:03:36:EA			
Band:	2.4GHz	~	
Channel Select:	Auto	Current Chann	el: 1
802.11n/EWC:	auto	~	
Bandwidth:	20MHz in Both Bands	3	Current bandwidth: 20MHz
Sideband Signal:	Lower	2	Current Sideband: None
802.11n Rate:	Auto	~	



Object	Description		
Enable Wi-Fi	You may choose to enable or disable wireless function.		
	You may choose to enable or disable SSID broadcast. When it is enabled,		
	the ONU SSID will be broadcast in the wireless network, so that it can be		
nice AP	scanned by wireless clients and they can join the wireless network with		
	this SSID.		
Wireless Client	Enable or disable wireless Isolation function		
Isolation			
Disable WMM	After enabling this option, the transmission performance of the voice and		
Broadcast	video data can be improved.		
	After enabling this option, the transmission quality of video service such as		
	IPTV can be improved.		
	Set a name (SSID) for your wireless network the ID of the wireless		
SSID	network. User can access the wireless network through it only. However,		
	if you switch to Client Mode, this field becomes the SSID of the AP you		

	want to connect with.		
	Default: EPN-402NV		
BSSID	Display the MAC address of the wireless interface.		
Channel Select	For an optimal wireless performance, you may select the least interferential channel. It is advisable that you select an unused channel or "Auto" to let device detect and select the best possible channel for your wireless network to operate on from the drop-down list.		
802.11n/EWC	Select or disable this function.		
Bandwidth	Select a proper channel bandwidth to enhance wireless performance. When there are 11b/g and 11n wireless clients, please select the 802.11n mode of 20/40M frequency band.		
Sideband Signal	If you select 20MHz in both Bands or 20MHz in 2.4G Band and 40MHz in 5G Band, the service of control sideband does not work. When you select 40MHz in both Bands as the bandwidth, the following page appears. Then you can select Lower or Upper as the value of sideband. As the control sideband, when you select Lower, the channel is 1~7. When you select Upper, the channel is 5~11.		
802.11n Rate	Select the transmission rate for the network. The rate of data transmission should be set depending on the speed of your wireless network. You can select from a range of transmission speeds, or you can select Auto to have the ONU automatically use the fastest possible data rate and enable the Auto-Fallback feature. Auto-Fallback will negotiate the best possible connection speed between the ONU and a wireless client. The default value is <b>Auto</b> .		
802.11n Protection Mode	The 802.11n standards provide a protection method so 802.11b/g and 802.11n devices can co-exist in the same network without "speaking" at the same time.		
802.11n Client Support Only	Only stations that are configured in 802.11n mode can associate.		
54g Rate	This enables Broadcom 54G Wireless Chipset to be more compatible with other IEEE802.11b, IEEE802.11g based devices.		
Muti Rate	To set the wireless transmission power for multicast applications		
XPress™ Technology	Broadcom's standards-based frame-bursting technology is to improve 802.11 wireless LAN performance. If the WMM (Quality of Service) is enabled, the XPress <sup>™</sup> Technology option can also be enabled.		
TX Power	To set the Wireless Transmission power for the wireless router.		
WMM(Wi-Fi Media)	To enable Wi-Fi Multimedia.		

WMM QoS	Enable or disable QoS features.
WMM APSD	To enable the Power Saving mode in Wi-Fi Multimedia.

# Click "Advanced" to configure wireless security policies.

WLAN Security		
Configuring WLAN security SSID:	y including Authentica EPN-402NV	ation Mode,Data Encryption,Authentication Key and Key Length
Authentication Mode:	Mixed WPA2/WPA	-PSK 💌
WPA Pre-share Key: WPA Refresh Session Key	••••••	Click Here to display
Interval: WPA Encryption:	TKIP+AES 🗸	
WEP Encryption:	diasbled 🗸	
Back	Save/Apply	

# Figure 5-2-6 WLAN Security Setup

Object	Description		
SSID	To choose the appropriate SSID that you configured.		
	Select the security mode from the dropdown list. There are 5		
	options in the Security Mode dropdown list:		
	■ OPEN		
Authentication Mode	■ SHARE		
	■ WPA-PSK		
	■ WPA2-PSK		
	Mixed WPA2/WPA-PSK		

## Open Mode

WLAN Security	
Configuring WLAN security	r including Authentication Mode, Data Encryption, Authentication Key and Key Length
SSID:	EPN-402NV
Authentication Mode:	OPEN 💌
WEP Encryption:	enabled 🗸
Key Length:	64-bit 🔽
Current Key Index:	1 🗸
Key 1:	0987654321
Key 2:	0987654321
Key 3:	0987654321
Key 4:	0987654321
	128 Bit Key need input 13 ASCII char or 26 hex number 64 Bit need 5 ASCII charactor or 10 Hex Number
Back	Save/Apply

# Figure 5-2-7 WLAN Security OPEN mode

Object	Description	
SSID	Select an SSID for configuring the security settings.	
Authentication Mode	Select the Open mode.	
	Enable or disable WEP encryption. After enabling this function, you	
WEP Encryption	can set the encryption strength, current network key, and network	
	keys.	
Key Length	You can set 64-bit or 128-bit key.	
Current Key Index	The current key that you use.	
	Set the network key. If it is 128-bit key, you need to enter 13 ASCII	
Key1/2/3/4	characters or 26 hexadecimal digits. For the 64-bit key, you need to	
	enter 5 ASCII characters or 10 hexadecimal digits.	

Shared Mode

Configuring WLAN secur	ity including Authentication Mode, Data Encryption, Authentication Key and Key Length
SSID:	EPN-402NV
Authentication Mode:	SHARE
WEP Encryption:	enable 🔽
Key Length:	64-bit 🔽
Current Key Index:	1 🐱
Key 1:	0987654321
Key 2:	0987654321
Key 3:	0987654321
Key 4:	0987654321
	128 Bit Key need input 13 ASCII char or 26 hex number 64 Bit need 5 ASCII charactor or 10 Hex Number
Back	Save/Apply

## Figure 5-2-8 WLAN Security Shared Mode

For the parameters' description of shared mode, please refer to the **Open Mode**.

#### WPA Mode

WLAN Security		
Configuring WLAN security SSID:	Pincluding Authenticat	ion Mode,Data Encryption,Authentication Key and Key Length
Authentication Mode:	WPA-PSK	~
WPA Pre-share Key: WPA Refresh Session Key Interval: WPA Encryption: WEP Encryption:	0 AES diasbled	<u>Click Here to display</u>
Back	Save/Apply	

## Figure 5-2-9 WLAN Security WPA Mode

Object	Description
Select SSID	Select an SSID for configuring the security settings.

Authentication Mode	Select the WPA-PSK mode.	
WPA Pre-share	The key for WPA encryption. Click the "Click Here to display" button	
Key	to display the current key. The default key is 12345678.	
WPA Refresh		
Session key	Setting the interval for refresh session key.	
Interval		
WPA Encryption	You may select AES, or TKIP+AES.	

#### WPA2 Mode

WLAN Security		
Configuring WLAN security SSID:	Pincluding Authentica	tion Mode,Data Encryption,Authentication Key and Key Length
Authentication Mode:	WPA2 -PSK	~
WPA Pre-share Key: WPA Refresh Session Key	0	<u>Click Here to display</u>
WPA Encryption: WEP Encryption:	TKIP+AES 🐱 diasbled 🐱	
Back	Save/Apply	

## Figure 5-2-10 WLAN Security WPA2 Mode

For the parameters' description of WPA2 mode, please refer to the **WPA Mode**.

Mixed WPA2/WPA-PSK Mode

WLAN Security		
Configuring WLAN security SSID:	/ including Authentic	ation Mode,Data Encryption,Authentication Key and Key Length
Authentication Mode:	Mixed WPA2/WPA	-PSK
WPA Pre-share Key: WPA Refresh Session Key	0	Click Here to display
WPA Encryption: WEP Encryption:	TKIP+AES 👽	
	and a second	
Back	Save/Apply	

Figure 5-2-11 WLAN Security WPA2/WPA-PSK Mode

For the parameters' description of WPA2/WPA-PSK mode, please refer to the **WPA Mode**.

## 5.2.5 Remote Management

On the coming page, you can configure the parameters for remote management of the ONU through TR069.

TR069

TR-069 client - Configu	ration
TR-069 allow the auto-con device.	figuration sever(ACS) to auto-configuration, supply, collection and diagnostics to this
TR069 Configuration	
Inform C Disable C	Enable
safety Connection:	cert inport
Inform Interval:	43200
ACS URL:	http://devacs.edatah
ACS username:	hgw
ACS password:	•••
✓ connection requests user	authentication:
Request username:	itms
Request password:	••••
middleware:	Enabled (including TR069)
Middleware Address:	0.0.0.0
Middleware Port:	0
	Apply/Save

Figure 5-2-12 TR069

Object	Description	
Inform	To Enable or Disable TR069	
Safety Connection	To import the license for the ITMS Server	
Inform Interval	The time interval to send a notification (seconds)	
ACS URL	The TR069 ACS Server address	
ACS username	The User Name for the Remote Management Server	
ACS password	The password for the associated User Name	
Connection requests	To enable or disable User Authentication for the Remote	
user authentication	Management Server	
Request username	The Authentication ID for the Remote Management Server	
Request password	The password for the Authentication ID	

	To enable or disable the middleware		
	Enabled (including TR069): To enable middleware with TR069		
Middlewore	functionalities		
Middleware	Disabled: Check the box to disable middleware		
	Disabled (excluding TR069): To enable middleware without		
	TR069 functionalities		
Middleware Address	The remote server address for the Middleware		
Middleware Port	To set the port number for the Middleware server		

#### OLT AUTH

To authorize the GEPON OLT with LOID, this function can prevent your Internet connection from being illegally connected by other unknown users. It is available only if your GEPON OLT supports LOID authorization.

LOID Auth Con	figuration	
"Save/Apply" to sa	ave configuration	
LoID: password :		
Save/Apply		

Figure 5-2-13 OLT AUTH

The page includes the following fields:

Object	Description
LOID	The Authorization LOID (The length must be within 24 digits)
Password	The password for the associated LOID

### 5.2.6 QoS

QoS

Qos Templates:	INTERNET, TRO69	~	
Enable QoS:			
Upstream Bandwith:	) (0-1024	400)kbps	
Scheduling Policy :	• PQ • O WRR	C CAR	
Enable DSCP flags:	enable TC flag :	Enable 802- 1_P flag:	0 signal 💌
Queue	Prority	Enable	
Q1	Highest		
Q2	High		
Q3	Middle	V	
Q4	Low		
name	queue	delete	edit
TR069	1		Edit
	1		Edit
Group ID Add	ssify IP Max Min Protoc ark type Max Min type Delete	<sup>OI</sup> DSCP TC 802.1p	Delete Edit

Figure 5-2-14 QoS

Object	Description		
	To choose the available templates or to customize the		
	template to determine what services to enable the QoS for.		
	■ Internet, TR069 – To enable QoS for Internet Data and TR069		
	service		
	■ Internet, TR069, VoIP – To enable QoS for Internet Data,		
OoS Tomplatos	TR069 and VoIP services		
Q05 remplates	■ Internet, TR069, IPTV – To enable QoS for Internet Data,		
	TR069 and IPTV services		
	■ Internet, TR069, VoIP, IPTV – To enable QoS for Internet		
	Data, TR069, VoIP and IPTV services		
	• Manual templates – To customize the template to determine		
	the services to enable QoS		
Enable QoS	Check the box to enable QoS		

Upstream Bandwidth	To set the uploading bandwidth for the customized QoS template
Scheduling Policy	To determine the alternative QoS mode. You can choose to use
	QoS PQ, QoS WRR or QoS CAR mode.
Enable DSCP Flag	To enable the DSCP (Differentiated Services Code Point) flag for
	QoS
Enable TC Flag	To enable the TC (Traffic Categories) flag for QoS
Enable 802.1_P Flag	To enable IEEE802.1P flag for QoS
Q1	To enable the highest QoS level
Q2	To enable a high QoS level
Q3	To enable a medium QoS level
Q4	To enable a low QoS level



Figure 5-2-14 QoS

name	queue		de	delete		edit			
TR069 1						Edit			
		3	5			Π		Edit	
Group ID Queue Class	sify IP rk type	Max	Min	Protoco type	DSCP	тс	802.1p	Delete	Edit
Add				Delete					
<ul> <li>Service Edit</li> </ul>				C Q0	s Edit				
Server Name:	*								
Mark Queue: 1 💌									
Apply									



Object	Description
Name	The Service Name that you want to enable QoS for, e.g, VoIP,
	TR069
Queue	The QoS queue for the service specified
Delete	Remove the service from the QoS template
Edit	To edit the service that you want to enable for QoS
Add	Click this button to edit Service Classification and edit Flow
Add	Classification.
Delete	Click this button to delete the configured QoS service and flow
Delete	classification template
Server Name	The service that you want to enable QoS for; you can set either
	VoIP or TR069 service
Mark Queue	The QOS level that you want to enable for the configured service

Classify Edit :		
C Service Edit	(·	Qos Edit
Queue: 1 🗸		
Group ID: New IP	v4 🔽	
Classify Type: SMAC	~	
Min Value: 0		
Max Value: 0		
Protocol Type: TCP	*	
Apply		

Figure 5-2-16 QoS

Object	Description
Nama	The Service Name that you want to enable QoS for, e.g, VoIP,
name	TR069
Queue	The QoS queue for the service specified
Delete	Remove the service from the QoS template
Edit	To edit the service that you want to enable for QoS
Add	Click this button to edit Service Classification and edit Flow
Adu	Classification.
Doloto	Click this button to delete the configured QoS service and flow
Delete	classification template
Server Name	The service that you want to enable QoS for; you can set either
	VoIP or TR069 service
Mark Queue	The QoS level that you want to enable for the configured service

Classify Edit :			
C Service Edit	œ	Qos Edit	
Queue: 1 💌			
Group ID: New IPv4	*		
Classify Type: SMAC	*		
Min Value: 0			
Max Value: 0			
Protocol Type:	~		
Apply			

Figure 5-2-17 QoS

Object	Description			
	To set the priority for the flow classification that you enabled.			
Queue	1 is the highest QoS level			
	2 is the high QoS level			
	3 is the medium QoS level			
	■ 4 is the low QoS level			
Group ID	To set the IPV4 or IPV6 version for the flow classification.			
	To set a different service or interface for flow classification			
	■ SMAC: To set flow classification for SMAC service			
	DMAC: To set flow classification for DMAC Service			
	■ 802.1P: To set based flow classification for IEEE802.1P			
	service			
	■ <b>DIP:</b> To set flow classification for DIP service			
Classify Type	SPORT: To set flow classification for SPORT service			
	DPORT: To set flow classification for DPORT service			
	<b>TOS:</b> To set flow classification for TOS service			
	DSCP: To set flow classification for DSCP service			
	■ WAN Interface: To set flow classification for WAN interface			
	■ LAN Interface: To set flow classification for LAN interface			
Min Value	The minimum QoS level for the enabled Service			

Max Value	The maximum QoS level for the enabled Service
Protocol Type	To determine which protocol to enable QoS

### FLOW CACHE



Figure 5-2-18 Flow Cache

The page includes the following fields:

Object	Description
Enable Flow Cache	Check the box for 'Enable Flowcache' to enable Cache for the
	transmission flow

# 5.2.7 SNTP



Figure 5-2-19 SNTP

Time Setting	
Configure the time fo	or onu and make it sync with NTP Server.
Auto Syn to NTP	Servers.
Connetion Mode:	INTERNET 🔽
NTP server 1:	time.nist.gov 💙
NTP server 2:	ntpl.tummy.com 💙
NTP server 3:	None
NTP server 4:	None
NTP server 5:	None
Time Zone:	(GMT+08:00) Beijing, Chongqing, Hong Kong, Urumqi 🗸
	Apply

# Figure 5-2-20 SNTP

The page includes the following fields:

Object	Description
Auto Syn to NTP	Check the box to automatically sync with the available NTP time
Servers	servers
Connection Mode	To determine the way to connect to NTP servers.
Time Server	Select the available NTP servers for your NTP Server
Time Zone	To choose the appropriate Time Zone for your EPN-402NV

# 5.2.8 Route Setup

Static Route

RouterAdd static route		
Enter the destination network ad to add the entry to routing table gateway	ess,subnet mask,gateway,WAN interface(optional) then click "Save ote:If you select "MER" as WAN interface,and will configure the def	e/Apply" fault
Destination Network Address:		
All Gateway Address     All Interface	✓	
	Save/Apply	

Figure 5-2-21 Static Route

Object	Description	
Destination Network	The destination address that you want to add a route for	
Address		
Subnet Work Mask	The Subnet Mask for your Destination Routing address	
All Gateway Address	The Gateway IP Address for your destination routing address	
All Interfaces	To determine which interface to enable the Static Route for	

#### Dynamic Route

Route	RIP	Config	uration
-------	-----	--------	---------

Note:RIP cannot be configured on WAN interface which has NAT enabled such as PPPoE

Interface	Vers	ion	Action	Enable
epon0.1	2	~	Passive 🗸	Г

Figure 5-2-22 Dynamic Route

Apply/Save

Object	Description
Interface	The LAN interface of your EPN-402NV
Version	To determine which RIP Version for the Dynamic Routing
Enable	To enable or disable dynamic routing for the LAN interface

#### IPv6 Static Route

RouteIPv Enter the des add the entry gateway	<b>6 Static Route</b> stination IPv6 address,sul / to routing table.Note:If	bnet mask,gateway,\ you select "MER" as	WAN interface( WAN interface	(optional) e,and will c	then cli configur	ck ''Save/App e the default	oly" to
	Destination IPv6 Address	Subnet Prefix Length	IPv6 Gateway	Interface	Metric	Delete	
Destination IPv Subnet Prefix I	/6 address : length:	Add					
IPv6 Gateway	Address						
Interface Metric		UNKNOW IN	IERFACE 🔽				
(optional: me	tric can be 0~42614128	:64)					
		Save/Ap	ply				

Figure 5-2-23 IPv6 Static Route

Object	Description		
Add	Click 'Add' to add an IPV6 Static Route for your EPN-402NV		
Destination IPv6	Input the destination IPV6 address that you want to add a Static		
Address	Route for		
Subnet Prefix	To determine the length for your IDV/6 Subnet Prefix		
Length	to determine the length for your IPV6 Subnet Prefix		
IPv6 Gateway	Input the Gateway IP address for your destination IP//6 address		
Address	input the Galeway if address for your destination if vo address		
Interface	To determine which WAN interface to be associated with the Static		
Interface	IPV6 Route		
Metric	To determine the Metric for your IPV6 Static Route (Value in		

between 0-4261412864)

# 5.3 SECURITY

# 5.3.1 WAN Access Setup

On this page, you can enable or disable URLs to pass through the WAN interface.

URL FilterI	Plea	ise selec	t th	e list type and then configure Max 100 rules.
URL Filter:	С	Enable	ſ	Disable
URL list type:	œ	Blacklist	C	Whitelist
				URL Port Delete
				Add

Figure 5-3-1 WAN Access Setup

Object	Des	cription		
	Che	Check the box on ' <b>Enable</b> ' to enable URL filter; check the box on		
URL Filter	'Dis	able' to disable URL Filter		
		Blacklist: Check the box on 'Blacklist' and click the 'Add'		
UDL Classification		button to specify a URL in blacklist		
URL Classification	-	Whitelist : Check the box on 'Whitelist' and click the 'Add'		
		button to specify a URL in whitelist		

URL Filteradd URL filte	er Rules
please input current URL a	ind port , save/apply to active .
URL address: Port Number:	(Default 80 will be applied if leave blank.)
	Apply/Save

Figure 5-3-2 URL Filter

Object	Description
URL	The URL address that you want to allow access with
Port Number	The port number that you want to enable for the whitelist URL

### 5.3.2 Firewall

On this page, you can set the firewall level for the multiple services that pass through the EPN-402NV.

Security Level

Select SECURITY LEVEL, to configure.	
SECURITY LEVEL:	Low
Save/Apply	

Figure 5-3-3 Security Level

#### Attack Protection

DoS protect	ion	
If you want to	prevent from Dos	protection ,you need to enable this function
C pinh	C Epoble	Apply

Figure 5-3-4 Attack Protection

The page includes the following fields:

Object	Description
Disable	To disable protection for DOS attack
Enable	To enable protection for DOS attack

## 5.3.3 MAC Filter

On this page, you can create a firewall filter based on a specific MAC Address.

add mac niter rules					
MAC Filter:	ſ	Enable	C	Disable	
Filter mode:	•	Blacklist	C	Whitelist	
Protocol type:				~	
MAC:(xx::xx::xx::xx::xx::xx:)					
			Ad	d	
			Ad	d	
MAC			Ad	d Protocol	Delete

Figure 5-3-5 MAC Filter

Object	Description
MAC Filter	Enable or Disable to create a filter based on MAC address
Filter Mode	Blacklist: Enable banning a specific MAC Address
	Whiltelist: Enable allowing a specific MAC Address
Drotocol Turno	To determine which service to be allowed or denied with the
Protocol Type	appointed MAC address
MAC	The MAC address that you want to add the MAC Address filter for
Add	Click the 'Add' button to add a MAC Address filter
	Click the 'Delete' button to delete a MAC Address filter that you
Delete	created

### 5.3.4 IP Filter

On this page, you can create a firewall filter based on a specific port.

Filter mode:          • Blacklist(LAN=>WAN upstream filter)         • Whitelist(WAN=>LAN down Note:Black list White list can work at the         same time?          add IP filteregess         you can add new filter and at lease one of statue list below for marking ip communica ruleif Setting source or destination ip address then can not setup relate filter. click 'sa         and active source filter.          filter name:	unstreamfilter) cation to create filte
Note:Black list White list can work at the same time?         add IP filteregess         you can add new filter and at lease one of statue list below for marking ip communica ruleif Setting source or destination ip address then can not setup relate filter. click 'sa and active source filter.         filter name:	cation to create filte
add IP filteregess you can add new filter and at lease one of statue list below for marking ip communica ruleif Setting source or destination ip address then can not setup relate filter. click 'sa and active source filter.	cation to create filte
you can add new filter and at lease one of statue list below for marking ip communica ruleif Setting source or destination ip address then can not setup relate filter. click 's and active source filter.	cation to create filte
filter name:	'save/apply'to save
IP version: IPv4	
protocol: ALL	
source ipaddress(range):	
source networkmask:	
destination ipaddress(range):	
destination netmask:	

Figure 5-3-6 IP Filter

Object	Description
IP Filter	Enable or disable the IP filter
Filter Mode	<ul> <li>Blacklist: To disable the specified port to pass through LAN to WAN</li> <li>While list: To enable the specified part to pass through WAN</li> </ul>
	• Whitelist: To enable the specified port to pass through WAN to LAN
Filter Name	To specify a name for the filter
IP Version	To determine either IPV4 or IPV6 version for the filter
Protocol	To determine which protocol to be allowed or denied
Source IP Address	The IP address range that you want to allow or deny, e.g,
(range)	192.168.1.2 – 192.168.1.254

Source Network	The subnet mask for the IP range that you specified	
Mask	The subher mask for the P range that you specified	
Destination IP	The Destination IP or host that you want to allow or deny for the	
Address (range)	filter	
Destination Network	The Subnet Mask for the Destination IP or host that you allowed	
Mask	or denied	

# 5.4 APPLICATION

# 5.4.1 DDNS Setup

On this page, you can create a Dynamic DNS for your EPN-402NV.

DDNS					
DDNS allow you change one dyn Any domain statis host , allow yo To access easiler by any place fro	nain ip to ur routei om intern	) r net.			
Enable DDNS service					
Select add/remove to configure [	DDNS.				
	Domain	Usename	Service	Interface	Remove
		Ad	d Dele	ete	

Figure 5-4-1 DDNS

Add DDNS	
This page allow you ADD D	ymaic address from DynDNS.org or TZO
DDNS Privater:	DynDNS. org 🔽
Domain	
Interface	2_VOIP_INTERNET_R_VID_/epon0.2 💟
DDNS Setting	
Username	
Password	
	Save/Apply

Figure 5-4-2 Add DDNS

Object	Description
DDNS provider	To determine the DDNS service provider
Domain	The URL/Host name for your DDNS service provider
Interface	To determine which WAN connection to be applied with DDNS service
Username	The user name of your DDNS
Password	The password of your DDNS

# 5.4.2 Advanced NAT

### ALG SETUP

ALG		
Select AL	.G:	
<b>N</b>	Enable H.323	
V	Enable RTSP	
<b>v</b>	Enable IPSEC	
Г	Enable SIP	
<b>v</b>	Enable L2TP	
~	Enable FTP	
		Save/Apply

Figure 5-4-3 ALG

Object	Description
Enable H.323	Check the box to enable H.323 ALG
Enable RTSP	Check the box to enable RTSP ALG
Enable IPSEC	Check the box to enable IPSEC
Enable SIP	Check the box to enable SIP
Enable L2TP	Check the box to enable L2TP
Enable FTP	Check the box to enable FTP

### DMZ SETUP

NATDMZ host
The onu will send all IP messages that not belong to virtual sevice list to the DMZ host
enable DMZ host
Enter the IP address and click "Save/Apply" to active dmz host.
Empty the IP address and click "Save/Apply" to lift dmz host
DMZ host IP Address: 192.168.10.10
Save/Apply

Figure 5-4-4 DMZ

The page includes the following fields:

Object	Description	
Enable DMZ Host	Check the box to enable DMZ	
DMZ Host IP	The LAN IP address that you want to enable with DMZ	
Address	The LAN IF address that you want to enable with DMZ	

### VIRTUAL HOST

NATVi	rtual server Set	up						
Virtual ser outgoing	ver allow the inco port needs to res	oming WAN flov solve to a differ	v to lan .It ent LAN po Ad	requires to co ort .Max 32 Vi d Delete	onfigure the in rtual Host list (	ncomming can be co	) port only w nigured.	hen
Server Name	WAN Starting Port	WAN Ending Port	Protocol	Lan Starting Port	Lan Ending Port	Server IP	WAN Interface	Delete

## Figure 5-4-5 Virtual Server

NATvistual server						
select service and inpu Note: cannt change port change. the left number of can	t server ip , an end of privat	id the e poi :32	en click save/app <b>rt ,if you chan</b> g	ly to enable ti <b>je it . this lik</b> e	his item e <b>public en</b>	d port or private start
interface	2_VOIP_INTER	NET_R	R_VID_/epon0.2	~		
<ul> <li>select one service:</li> </ul>	select one				~	
C self-define server:					(canal)	
public start port public er	nd port protoc	ol p	private start portp	rivate end port	-	
	TCP	~				
	TCP	~				
	TCP	*	Í			
	TCP	~				
	TCP	~				
Í	TCP	~				
	TCP	~	Í			
	TCP	~				
	TCP	~				
	TCP	~				

Figure 5-4-6 Add Virtual Server

Object	Description
Add	Click 'Add' to add a virtual host server
Delete	Click 'Delete' to remove a Virtual Host Server
Interface	The WAN interface that you want to enable with Virtual Host
Internace	Server service
Sonvor Namo	Select the services that you want to enable with Virtual Host
Server Maine	Server service
Sonvor ID Addross	The LAN IP address that you want to enable for Virtual Host
Server IF Address	Server
Public Start Port	The outbound start port of your Virtual Host Server
Public End Port	The outbound end port of your Virtual Host Server

Private Start Port	The inbound start port of your Virtual Host Server
Private End Port	The inbound end port of your Virtual Host Server

# 5.4.3 UPnP Setup

On this page you can enable or disable UPNP.

UPnP C	onfigu	ation	
F Ena	ble UPnP		
			Save/Apply
			284610464
Forbidde	en IP list		
Start IP	End IP	Delete	
Add	)elete		

Figure 5-4-7 UPnP

- 5.4.4 VolP
- Basic

Voice SIP Basic	Configuration		
Enter SIP paramete	rs,and click "Appl	y" to take the ne	ew setting effect.
Banding WAN for VoI	P: LAN 🔽		
SIP Port[range:0-655]	35]: 5058		
Enable Primary	SIP proxy		
enable Primary	SIP outband prox	(y	
Enable Primary	SIP register.		
Enable Backup	SIP proxy.		
Enable backup !	SIP outband prox	ίγ.	
Enable Backup	sip register:		
SIP Account	1	2	
Enable Account			
Phone Number			
Auth ID			
Auth Nassword			

Figure 5-4-8 VoIP Basic

Object	Description	
Banding WAN for	Check the box to select the WAN connection interface for your	
VoIP	VoIP service	
	To input the port number for SIP, generally default SIP port is	
SIPPOrt	5058	
Enable Primary SIP	Check the boy to enable register to a SID Server	
Proxy	Check the box to enable register to a SIP Server	
Enable Primary SIP	The primery SID Server address can be Heat name or ID address	
Outbound Proxy	The phinary SIF Server address can be nost hame of iF address	
Enable Primary SIP	The primary SIP port by default is 5060	
Register	The primary SIP port by default is 5060	
Enable Backup SIP	Check the box to enable register to a backup SIP Server	
Proxy		

Enable Backup SIP Outbound Proxy	The backup SIP Server address can be Host name or IP address
Enable Backup SIP	The besturn SID part by default is 5060
Register	The backup SIP port by default is 5060

SIP Account	1	2	
Enable Account	~		
Phone Number	101	102	
Auth ID	101	102	
Auth Nassword			

Figure 5-4-8 VoIP Account

Object	Description
SID Account	There are two SIP accounts able to be registered with
SIP ACCOUNT	EPN-402NV simultaneously
Enable Account	Check the boxes to enable the associated SIP 1 and SIP 2
	accounts
Phone Number	The SIP user name
Auth ID	The ID for your SIP account
Auth Password	The password for your SIP account

Digital Map

Basic Digital Map Status ON 🗸		
Digital Map Setting	Import	
Digital Map Match Mode	: min-matchir	*
hitspace long timer	16	(upitus rap.go:1, 30)
official and the second s	10	(unic.s range.1~20)
offnook no-dial time:	15	(unit:s range:10~20)
T timer:	5	(unit:s range:1~20)
end charactor dealmod	e auto-senser	~
Matching supply		
Special Number Setting Status ON 🗸	]	
		(length:150)
PBX Setting		1
Line	1	2
Enable PBX	OFF 🗸	OFF 🔽
Public Line Prefix:		
Public Line Hint Voice	▼	

Figure 5-4-9 Digital Map

Object	Description
Status	Enable Standard Digital Map/Dial plans for VoIP service
Digital Map Match Mode	The matching mode of the specified dialing plans
Bit Space Long Timer	Specify the max timer time
Off Hook No-dial Time	Specify the time of not dialing after you pick up the phone
T Timer	Specify the T-timer time
End Character Deal Mode	To select the stop character processing mode

Matching Supply	Match with the specified number
Status	Enable hotline number

#### Voice Media

Vegotiation	Local 💟		
Voice Codecline 1	Package time[unit:ms]	Voice code priority	Switch
G722	20 🖌	2 (1-100)	•
G711A	20 💌	1 (1-100)	•
G711U	20 🗸	3 (1-100)	•
G729	20 🗸	4 (1-100)	•
Voice Codecline 2	Package time[unit:ms]	Voice code priority	Switch
G722	20 🐱	2 (1-100)	•
G711A	20 💌	1 (1-100)	•
G711U	20 🗸	3 (1-100)	1
6729	20 🗸	4 (1-100)	V

Figure 5-4-10 Voice Media

Object	Description
Status	Enable Standard Digital Map/Dial plans for VoIP service
Digital Map Match Mode	The matching mode of the specified dialing plans
Bit Space Long Timer	Specify the max. timer time
Off Hook No-dial Time	Specify the time of not dialing after you pick up the phone
T timer	Specify the T-timer time
End character deal mode	To select the stop character processing mode
Matching supply	Match with the specified number

Enable hotline number

Enable VBD redundance	Y
Fax Negotiation model	Auto
Fax Codec	G711A V
ax couce	
Enable VAD	
RFC2198 Payload value [range:96~127]	96
Howler tone time [unit:second]	60
Busy time[unit:second]	40
non-reply[unit:second]	60
Dtmf translate configuration	InBand 🗸
6	
Send delay[range:500- 1500.unit:ms]	600
Calling display mode	FSK_MDMF 🐱
Number acquisition mode	UserInfo 🖌
Time synchronization mode	not syn 👻 🗖 None date-mode
FSK mode	BellcoreGen 🗸
📕 SIP syn time	
FSK currect	\$
Signalling DSCP	0 (000000)
Media DSCP	0 (000000) 🗸
litter buffer mode	dynmaic 🐱
Minimum jitter buffer(range	
)-180.unit:ms)	
180.unit:ms)	80
Expected voicejitter buffer	50
(range 0-180.unit:ms)	
Expected data jitter buffer	50

Figure 5-4-11 Voice Media

Object	Description	
Enable T38	Check the box to enable T 29 fox redundancy	
Redundancy		
Enable VBD	Check the box to enable VBD (Voice Band Data) redundancy	
Redundancy		
---------------------------------	--	
Fax Negotiation Mode	Set the fax session mode	
Fax Codec	Set the codec for fax	
Enable T38 Fax	Enable T.38 fax	
Enable G711 Fax	Enable fax with G.711 codec	
Enable VAD	Check the box to enable VAD (Voice Activation Detection)	
CNG Mode	Select the CNG mode	
RFC2198 Payload Value	Set the value of RFC2198 payload, ranging from 96 to 127	
Howler Tone Time	Set the urging tone time	
Busy Time	Set the busy tone time	
Non-reply	Set the no answer tone time	
DTMF Translate Configuration	Set the DTMF mode of VoIP	
Send Delay	Set the Caller ID sending delay time	
Calling Display Mode	Set the Caller ID mode	
Signaling DSCP	The QoS value of SIP signaling	
Media DSCP	The QoS value for SIP media	
Jitter Buffer Mode	Set the Voice Jitter buffer mood	
Minimum Jitter Buffer	Set the minimum value of Voice Tendencies Jitter buffer	
Maximum Jitter Buffer	Set the maximum value of Voice Tendencies Jitter buffer	
Expected Voice Jitter Buffer	Set the value of Voice Static Jitter buffer	
Expected Data Jitter Buffer	Set the value of Transparent Voice Static Jitter buffer	
Fixed Payment Number	Set the PSTN telephone number	
RTP Port Range	Set the range of RTP port	
Enable Reversed Polarity	Check the box to enable Reverse Polarity for SIP account 1 and 2	

Echo Suppression	Check the box to enable Echo Suppression settings for SIP
Set	account 1 and 2
Receiving Gain	Set the Receiving Gain value for Echo Suppression
Transmission Gain	Set the Sending Gain value for Echo Suppression
Bat Minimum Time	Set the minimum Hook Time
Bat Maximum Time	Set the maximum Hook Time

SIP

Line	1	2
Call waiting	E	
Call transfer number		
unconditional forward	Γ	
Busy Forward		
No-reply forward	Г	
MWI voice message		
Anonymous call blocking		
Anonymous call		
Dnd	Г	
Calling forward	Γ	
Meeting call		
Call waiting tone play times	5	5
Enable local hotline	Г	Г
Hot-Line Delay[unit:s]	5	5
Hot-Line URI		
ETSI MALCT	Г	

Figure 5-4-12 SIP Configuration

🥅 "URI "*"sign translate	setting
🦵 "URI "#"sign translate	e setting
📕 18x have no SDP ring	j.
Enable inital disregister	
📁 Enble HeartBeat	
HeartBeat time [unit:second]	60
Heartbeat mode	auto heartbeat 🛛 👻
Heartbeat format	outbound 🐱
UserAgent type	default 🗸
Register refresh mode	50%
Register refresh interval [unit:s]	3600
Register retry interval [unit:s]	60
Session Expire time[unit:m]	] 30
Min Session Expire[unit:m]	0
SIP message resend timer	0.5s 🗸
INVITE menage total time	10
[unit:s] None-INVITE menage tota time[unit:s]	32
VoIP delay register time [unit:s]	30
Anonymous mode	Display and 🗸
SIP transmit protocol	UDP 🔽
Replenish service mode	CTC_IMS supply service 🗸
MCID mode	ZTE_IMS 🔽
🔽 Net sniffer enable	
VoIP service mode	SIP

Figure 5-4-13 SIP Configuration

The page includes the following fields:

Object	Description
"URL" "*" Sign Translate Setting	Check the box to enable URL and '*' Escape setting
"URL" "#" Sign Translate Setting	Check the box to enable URL and '#' Escape setting
18x has no SDP Ring	Check the box to disable SDP in 18x ring process
Enable Initial Deregister	Check the box to enable SIP initial cancellation
Enable Heartbeat	Check the box to enable SIP Heartbeat Switch

Heartbeat Time	Set the SIP Heartbeat Switch time interval
Heartbeat Mode	Set the SIP heartbeat mode
Heartbeat Format	Set SIP heartbeat switch in different authentication modes
User Agent Type	Set the SIP agent type
Register Refresh Mode	Set the SIP registration Refresh mode
Register Refresh Interval	Set the SIP registration Update time interval
Register Retry Interval	Set the SIP registration re-try time interval
Session Expire Time	Set the SIP session expiration time
Min. Session Expire	Set the minimum SIP Session Expiration Time
SIP Message Resend Timer	Set the SIP message re-transit initial time
Invite Message Total Time	Set the SIP Invite Message re-transit time
Non-Invite Message Total Time	Set the SIP non-invite message re-transit time
VoIP Delay Register Time	Set the SIP registration delay time
Anonymous Mode	Set the SIP Anonymous mode
SIP Transmit Protocol	Set SIP protocol through UDP or TCP
Replenish Service Mode	Set the Supplementary service mode
MCID Mode	Set the Malicious Call Identification mode
Net Sniffer Enable	Check the box to enable Network detection
VoIP Service Mode	Set VoIP protocol

### IMS Service

On this page you can configure the Voice IMS Parameters. This is a feature available with IMS server configurations. (Not specified).



Figure 5-4-14 IMS Service

### Debug

On this page you can debug the VoIP SIP configurations.

Voice SIP Debug S	Setting
Log Server IP:	192.168.1.1
Log Server Port:	514
Enable Syslogd	
🔲 Enable Klogd	
🔽 Enable ggxxx Conso	le Log
Vodsl Console log level:	Error 💌
GEN_SYS_LOG	SPY_EVENT 💌
STACK_LOG	SPY_MAJOR_ERR 🗸
CALL_CONTROL_LOG	SPY_MAJOR_ERR 🗸
REG_LOG	SPY_MAJOR_ERR 🗸
DSP_LOG	SPY_MAJOR_ERR 🗸
TELE_LOG	SPY_MAJOR_ERR 🗸
DIALPLAN_LOG	SPY_MAJOR_ERR 🗸
RESTART_LOG	SPY_MAJOR_ERR 🗸
LOGLEVEL	Crit 🗸
LOGIC	Error 🗸
MODULE	Error 🗸
VOICE	Error 🗸
AGENT	Error 🗸

Ringing voltage [range:40~60,unitV]: Ringing frequency [range:22-28.unitH7]:	60 25	
Ringing wave:	sinusoidal 💌	
Dial tone level	-10 🗸	
Loop current	24mA 🐱	
		Start SIP client
		Stop SIP client

Figure 5-4-15 Debug

The page includes the following fields:

Object	Description
Log Server IP	The Server Address that you want to store your SIP Syslog

Log Server Port	The port number of your SIP Syslog server
Enable Syslog	Check the box to enable SIP Syslog
Enable Klog	Check the box to enable SIP Klog
Vodsl Console Log Level	Set the Vodsl console level of your SIP Syslog
GEN_SYS_LOG	To determine the general system log level
STACK_LOG	To determine the STACK Log level
CALL_CONTROL_LOG	To determine the Call Control Log level
REG_LOG	To determine the Registration Log level
DSP_LOG	To determine the Voice DSP log level
TELE_LOG	To determine the telecommunication logo level
DIALPLAN_LOG	To determine the Dialplan_LOG level
RESTART_LOG	To determine the Rebooting Log level
LOGLEVEL	To set the log level of your SIP Syslog
LOGIC	To set different SIP Syslog type of SIP logic
MODULE	To set different SIP Syslog type of SIP module
VOICE	To set different SIP Syslog type of SIP Voice
AGENT	To set different SIP Syslog type of SIP Agent
Ringing Voltage	To set the ringing voltage level of your SIP Syslog
Ringing Frequency	To set the ringing frequency of your SIP Syslog
Ringing Wave	To set the ringing waveform of your SIP Syslog
Start SIP Client	Enable SIP client starting to report syslog
Stop SIP Client	Stop SIP client reporting SIP Syslog

### 5.4.5 IGMP

### IGMP Snooping

Check the box to enable IGMP Snooping of your Wi-Fi ONU.



Figure 5-4-16 IGMP Snooping

### IGMP Proxy

On this page, you can enable IGMP pass-through a specific WAN interface.

able server function then you can use	nedia service from internet.
GMP configuration	
his page allows you to enable IGMP Prox	y for a special WAN connectio
his page allows you to enable IGMP Prox	y for a special WAN connectio Enable

Figure 5-4-17 IGMP proxy

The page includes the following fields:

Object	Description
WAN Connection	The WAN interface that you will enable for the IGMP Server
Enable	Check the box to enable IGMP Server

### 5.4.6 MLD Setup

### MLD Snooping

This page allows you to enable or disable MLD Snooping function.



Figure 5-4-18 MLD Snooping

#### MLD Proxy

On this page you can enable MLD Proxy for a special WAN connection.

MLD Server Setting				
Enable server function and you can use media service from internet.				
MLD configuration				
This page allow you enable MLD Proxy for a special WAN connection.				
WAN Connection Enable MLD Server				
Save/Apply				

#### Figure 5-4-19 MLD Proxy

The page includes the following fields:

Object	Description
WAN Connection	The WAN interface that you will enable for the MLD Server
Enable MLD Server	Check the box to enable MLD Server

### 5.4.7 Daily Application

#### Family Storage

On this page you can download files, music, and video from internet to the family storage USB device even you are not at home.

Service Status	
FTP server: Off Refresh	
USB remote download	
Download file storage: non usb storage V/xdown	
Username: Password: Port:	
Remote URL:	Download



The page includes the following fields:

Object	Description
Download File Storage	Specify the downloading directory of your USB Storage device
Username	Your remote FTP user name
Password	The password for your remote FTP server
Port	The port number specified for your remote FTP Server
Remote URL	The URL that you download from
Download	Click the 'Download' button to start downloading files to your USB storage device.

### ■ IPTV

On this page, you can configure a specific Multicast VLAN for your IPTV application.

Public Muticast VLAN	4
Select the Wan connec	ction for Muticast VLAN and fill in Public Muticast vlan ID ,Click "Save/Apply"
-1 is disable Public VLAN	N
Connection Name :	2_VOIP_INTERNET_R_VID_
Public Muticast VLAN:	-1
	Save/Apply

Figure 5-4-21 IPTV

The page includes the following fields:

Object	Description		
Connection Name	The WAN interface for your IPTV Application		
Public Multicast VLAN	Specify the VLAN ID for your public Multicast streaming		

### 5.5 MANAGEMENT

### 5.5.1 User Management

On this page you can set up the User Account password for your EPN-402NV. By default, the password for user account is 'admin'. You can modify this password.

Password		
The ONU can be n "admin" have the "useradmin" can c	anaged by two user name,"admin" and "useradmin" nighest authority to control the onu nly access the ONU and view statistics	
Note: Username	nd password must be within 16 character and cannot have blank spa	ace
User name: NEW Password:	useradmin	
Confirm password :		
	Save/Apply	

Figure 5-5-1 Password

The page includes the following fields:

Object	Description
User Name	The original user name, by default, it's 'admin'
New Password	The new password that you want to apply to your ONU
Confirm Password	Re-enter the new password

### 5.5.2 Device Management

### Device Reboot

On this page, you can reboot the Wi-Fi ONU by pressing the Reboot button.

Click Butt	on to Reboot ONU.	
	Reboot	

Figure 5-5-2 Reboot

#### USB Backup

On this page you can back up the configuration file to your USB Storage device.



Figure 5-5-3 USB Backup

### Reset ONU

On this page, you can click the button to reset the ONU to factory default setting.



Figure 5-5-4 Reset to Default

### 5.5.3 Log Management

### LOG LEVEL

### On this page, you can manage the log of your EPN-402NV.

System LogCo If log is enable syst display .event with logsever if mode se select mode and co	nfiguration em will log select log level equal o elected is local or ick "apply/save"	d event for loglevel. event with log level equal or above will be record for above will be record if mode selected is remoter or both , event will send to oth , event will record locally. o configure log
Log: 📀 Dis	sable <sup>C</sup> Enable	
Log level:	Error	×
Display level:	Error	×
Mode:	Local	×
		Save/Apply

Figure 5-5-5 Log Level

The page includes the following fields:

Object	Description
Log	Check the box to enable or disable Log for your EPN-402NV
Log Level	To determine which type of log to be recorded in the log file
Display Level	To determine which type of log to be displayed in the log file
Mode	To determine either to enable local or remote logs
Server IP	The Server that you will store the logs
Server UDP Port	The port number for the Server which you will store up the logs

### ■ LOG

On this page, you can check or manage logs of your EPN-402NV.

System Log			
You can view s	ystem log at	this page.	
Click "Access L	og" to check	access log.	
Click "Safty Log	g" to check s	safty log.	
and after enab	e log, you ca	an create log a	nd clear log .
Access log	Safty log	Create log	Clear log

Figure 5-5-6 Log

The page includes the following fields:

Object	Description	
A	Click the 'Access Log' button to view the access logs of your	
Access Log	Wi-Fi ONU	
Safatular	Click the 'Safety Log' button to view the Security logs of your	
Safety Log	Wi-Fi ONU	
Create Log	Click the 'Create log' button to compose a new log file.	
Clear Log	Click the 'Clear log' button to clear all access logs and security	
	logs of your Wi-Fi ONU	

### Maintenance

This function is for TR-069 management; it's for manually provisioning new configurations/data to the remote ACS server.

Maintenance Upload	
Click "Maintenance", the system will send new	database to server.
	Maintenance

Figure 5-5-7 Maintenance

### 5.6 DIAGNOSIS

### 5.6.1 Line Diagnosis

On this page, you can to view the connection status of your LAN and WLAN interfaces. Click the '**Retesting'** button to refresh the page

Line Diagnosis			
You can test the phy "Retesting" button '	ysical ' to te	conne st aga	ction of the ONU at this page. ALL the interface are listed below.Click in "if your testing fails.
Test eth0 connect:	Pass	Help	
Test eth1 connect:	Fail	Help	
Test eth2 connect:	Fail	Help	
Test eth3 connect:	Fail	Help	
Test wifi connection:	Fail	Help	
			Retesting

Figure 5-6-1 Line Diagnosis

### 5.6.2 Ping Test

On this page you can diagnose the Internet connections.

Ping Test		
you can run Ping test	at this page	
Interface	LAN/br0	~
Destination IP or URL;		
		Start
Summary Information	::	

Figure 5-6-2 Ping Test

The page includes the following fields:

Object	Description
Interface	Choose one of the internet connection to run Ping Tests
Destination IP or	Enter the IP address or the Host Name that you want to Ping

URL	
Start	Click the 'Start' button to start ping the destination IP or URL

### 5.6.3 Tracert Diagnosis

On this page you can trace the route table for the destination IP address or Host.

Trace Route Diagno	sis	
You can run Trace Ro	ute test at this page.	
Interface	LAN/br0	*
Destination IP or URL:		
	Start	
Summary Information		

Figure 5-6-3 Trace Route

The page includes the following fields:

Object	Description	
Interface	Choose one of the internet connection to run Trace Route	
Destination IP or	Enter the IP address or the Host Name that you want to trace	
URL	route with	
Start	Click the 'Start' button to start ping the destination IP or URL	

### 5.6.4 Inform Manual

Inform manual is a function for reporting failures or logs to the ACS server. On this page you can diagnose the inform report function of the EPN-402NV.



Figure 5-6-4 Inform Manual

Click the 'Testing' button to manually send message to a remote TR069 ACS Server.

### 5.7 HELP

You can view the help information of this device on this page.

	STATUS	NETWORK	SECURI	TY APPLIC	ATION MANAG	EMENT	DIAGNOSIS	HELP
NELF	STATUS HELP	NETWORK HELP	SECURITY HELP	APPLICATION HELP	MANAGEMENT HELP	DIAGNOSI HELP	IS	
DEVICE INFO	dovico b	acic information	n nagodisplay d	lovico trao and r	en bardware vers	ion coffwara	version	
HELP	device D	dSIC IIIIOIIIIdUOI	n pageuspiay u	levice type and s	sii ,iidiuwale veis	ion, sonware	e version.	
WAN HELP								
LAN HELP								



# Chapter 6. Quick Connection to a Wireless Network

### 6.1 Windows XP (Wireless Zero Configuration)

Step 1: Right-click on the wireless network icon displayed in the system tray



Figure 6-1

Step 2: Select [View Available Wireless Networks]

Step 3: Highlight and select the wireless network (SSID) to connect

- (1) Select SSID (Take PLANET for example)
- (2) Click the [Connect] button



**Figure 6-2 Wireless Network Connection** 

#### Step 4: Enter the encryption key of the Wi-Fi ONU

- (1) The Wireless Network Connection box will appear
- (2) Enter the encryption key that is configured in section 5.7.3
- (3) Click the [Connect] button

Wireless Network Conne	ection	×		
The network 'PLANET' requires a network key (also called a WEP key or WPA key). A network key helps prevent unknown intruders from connecting to this network.				
Type the key, and then click	Connect.			
Network <u>k</u> ey:	••••••			
Confirm network key:	••••••			
	Connect Cancel			

Figure 6-3

#### Step 5: Check if "Connected" is displayed



Figure 6-4



Some laptops are equipped with a "Wireless ON/OFF" switch for the internal wireless LAN. Make sure the hardware wireless switch is switched to "ON" position.

### 6.2 Windows 7 (WLAN AutoConfig)

WLAN AutoConfig service is built-in in Windows 7 that can be used to detect and connect to wireless network. This built-in wireless network connection tool is similar to wireless zero configuration tool in Windows XP.





Step 2: Highlight and select the wireless network (SSID) to connect

- (1) Select SSID (Take default\_2.4G for example)
- (2) Click the [Connect] button

Not connected	69	•
Connections are available		
Wireless Network Connection	^	=
default_2.4G	llee	
Connect automatically	inect	
default_5G	llee	
link	llee	
juntion_wap	Il	Ŧ
Open Network and Sharing Ce	enter	

#### Figure 6-6



If you will be connecting to this Wi-Fi ONU in the future, check [Connect automatically].

# Step 4: Enter the encryption key of the Wi-Fi ONU

(1) Connect to a Network box will appear

- (2) Enter the encryption key that is configured in section 5.7.3
- (3) Click the [OK] button

Connect to a Network
Type the network security key
Security key:
Hide characters
You can also connect by pushing the button on the router.
OK Cancel

Figure 6-7 Connect to a Network

P Connect to a Network	<b>X</b>
Connecting to default_2.4G	
	Cancel

Figure 6-8 Connecting

#### Step 5: Check if "Connected" is displayed



Figure 6-9

### 6.3 Mac OS X 10.x

Step 1: Right-click on the network icon displayed in the system tray

The AirPort Network Connection menu will appear



Figure 6-10

#### Step 2: Highlight and select the wireless network (SSID) to connect

- (1) Select and SSID (Take PLANET for example)
- (2) Double-click on the selected SSID



Figure 6-11

Step 4: Enter the encryption key of the Wi-Fi ONU

- (1) Enter the encryption key that is configured in section 5.7.3
- (2) Click the [OK] button

1	The network	"PLANET" requires a WPA password
	Password:	
		Show password
		Remember this network
		Cancel OK

Figure 6-12



If you want to connect this Wi-Fi ONU in the future, check [Remember this network].

**Step 5**: Check if the AirPort is connected to the selected wireless network.

If "Yes", then there will be a "check" symbol in the front of the SSID.



Figure 6-13

### 6.4 iPhone / iPod Touch / iPad

#### Step 1: Tap the [Settings] icon displayed in the home screen



Figure 6-14

Step 2: Check Wi-Fi setting and select the available wireless network

- (1) Tap [General] \ [Network]
- (2) Tap [Wi-Fi]

If this is the first time to connect to the Wi-Fi ONU, it should show "Not Connected".

iPad	10:35 AM	🕒 100% 💻
Settings	General	
Airplane Mode OFF		
SWI-FI Not Connected	About	>
Notifications On	Usage	>
Carrier	Sounds	>
😰 Cellular Data		
🙀 Brightness & Wallpaper	Network	>
Picture Frame	Bluetooth	Off >
General	Location Services	On >
Mail, Contacts, Calendars	Spotlight Search	
Safari		

Figure 6-15

iPad	10:35 AM	🕒 100% 🔳
Settings	General	letwork
Airplane Mode OFF		
SWI-FI Not Connected	VPN	Not Connected >
Notifications On	Wi-Fi	Not Connected >
Carrier		
Cellular Data		
🙀 Brightness & Wallpaper		
Picture Frame		
General		
Mail, Contacts, Calendars		
Safari		

Figure 6-16

Step 3: Tap the target wireless network (SSID) in "Choose a Network..."

- (1) Turn on Wi-Fi by tapping "Wi-Fi"
- (2) Select SSID (Take PLANET for example)

iPad	10:35 AM	100% 100% 100%	
Settings	Network Wi-Fi Netwo	rks	
Airplane Mode			
Wi-Fi Not Connected	Wi-Fi	ON	
Notifications On	Choose a Network		
Carrier	PLANET	≙ ≎ 🧿	
🔀 Cellular Data	Other	>	
Brightness & Wallpaper	Ask to Join Networks	ON	
Picture Frame	Known networks will be joined automatically. If no		
General	before joining a new network.		
Mail, Contacts, Calendars			

Figure 6-17

#### Step 4: Enter the encryption key of the Wi-Fi ONU

- (1) The password input screen will be displayed
- (2) Enter the encryption key that is configured in section 5.7.3
- (3) Tap the [Join] button

i₽ad		10:36 AM			(2) 100%
Settings	C		Wi-Fi Netv	vorks	
Airplane Mode	OFF				
WI-FI Not Co	mected	Wi-Fi			ON
Notifications	On	Choose a Ne	twork		
Carrier	Enter the pastwo	PLANET	WNRT-617		8 7 0
Cellular Cancel	Entr	er Passwor	d		>
Brightne					
Picture I Password	1				e If no :
General					allowed .
Mail, Co					
Safari					
IPod					
Video					
👷 Photos					
Notes					
Store					
Apos					
QWE	RT	Y	UI	0	P 43
A S D	FG	н	JK	L	Join
φzx	c v	BN	М	1	? 💠
.7123				.?123	Ģ

Figure 6-18

**Step 5**: Check if the iDevice is connected to the selected wireless network.

If "Yes", then there will be a "check" symbol in the front of the SSID.

iPad ᅙ	10:36 AM	(a) 100%	
Settings	Wi-Fi Networks		
Airplane Mode OFF	10		
WI-FI PLANET_WNRT-617	Wi-Fi	ON	
Notifications On	Choose a Network		
Carrier	✓ PLANET	<b>≜</b> ≈ <b>0</b>	
🔀 Cellular Data	Other	>	
Brightness & Wallpaper	Ask to Join Networks	ON	
Picture Frame	Known networks will be joined automatically. If no		
Seneral	before joining a new network	k.	
Salendars Mail, Contacts, Calendars			

Figure 6-19

# **Appendix A: Specifications**

Product		EPN-402NV		
		GEPON Wi-Fi ONU		
Hardware Sp	ecifications			
Transmission Speed		Downstream: 1.25 Gbps Upstream: 1.25 Gbps		
PON Port		1 x PON Port		
Dort	Ethernet Port	4 x RJ45 (10/100BASE-TX)		
TOR	FXS Port	2 x RJ11 Port		
	USB Port	1 x USB 2.0 Port Type A, 5V 500mA		
Optic Wavele	ength	TX: 1270mm RX:1480mm		
<b>Optical Rece</b>	ive Sensitivity	-25 dBm		
Dimensions	(W x D x H)	190 x 137 x 48 mm		
Weight		350g		
Power Input		12V DC, 1A		
Power Const	umption	12W		
EMS Utility S	pecifications			
ONU Feature		Supports IGMP snooping Supports MLD snooping Supports 802.3ah CTC external OAM Supports DBA algorithm Supports 128-bit triple churning algorithm Supports dying gasp IEEE 802.3ah compliant forward error Correction (FEC) Supports TR-069		
Wireless In	terface Specificat	ions		
Standard		Compliant with IEEE 802.11b/g/n		
Frequency E	Band	2.4~2.4835GHz		
Antenna		Gain: 3 dBi internal antennas		
Extended Fr	equency	DSSS		
Modulation	Туре	DBPSK, DQPSK, QPSK, CCK and OFDM (BPSK/QPSK/16-QAM/ 64-QAM)		
Data Transmission Rates		802.11n (40MHz):270/243/216/162/108/81/54/27Mbps 135/121.5/108/81/54/40.5/27/13.5Mbps (Dynamic) 802.11n (20MHz):130/117/104/78/52/39/26/13Mbps 65/58.5/52/39/26/19.5/13/6.5Mbps (Dynamic) 802.11g:54/48/36/24/18/12/9/6Mbps (Dynamic) 802.11b:11/5.5/2/1Mbps (Dynamic)		
Channel		Europe/ ETSI: 2.412~2.472GHz (13 Channels)		
Max. RF Pov	ver	16 dBm max. (EIRP)		

	WEP (64/128-bit) encryption security		
Encryption Security	WPA-Personal / WPA2-Personal (TKIP/AES)		
	Mixed WPA / WPA2-PSK		
	Provides wireless LAN ACL (Access Control List) filtering		
Wireless Security	Wireless URL filtering		
Wheless Security	Supports WPS (Wi-Fi Protected Setup)		
	Enables/Disables SSID broadcast		
Wireless Advensed	WMM (Wi-Fi multimedia): 802.11e wireless QoS		
wireless Advanced	Provides wireless statistics		
Max. Supported Clients	128		
	NAT firewall with SPI (Stateful Packet Inspection)		
Firewall	Built-in NAT server supporting DMZ		
Firewall	Built-in firewall with IMAC address/ port/ URL filtering		
	Supports DoS protection		
VoIP Protocols and Standard			
Ofenseland	SIP/H.248/MGCP		
Standard	T.38 (G.711 fax pass-through)		
Voice Codec	G.711 a/u law, G.712, G.729a code/decode		
	VAD (Voice Activity Detection)		
Voice Standard	CNG (Comfort Noise Generation)		
Environment Specifications			
	Operating temperature: -5 ~ 55 degrees C		
Temperature	Storage temperature: -30 ~ 60 degrees C		
	Operating Humidity: 10 ~ 90% non-condensing		
Humidity	Storage Humidity: 5 ~ 95% non-condensing		
Standards Conformance			
	IEEE 802.3 10BASE-T		
Stendende Cerenlieres	IEEE 802.3u 100BASE-TX		
Standards Compliance	IEEE 802.3x flow control and back pressure		
	IEEE 802.11n		

## **Appendix B: Glossary**

- 802.11n 802.11n builds upon previous 802.11 standards by adding MIMO (multiple-input multiple-output). MIMO uses multiple transmitter and receiver antennas to allow for increased data throughput via spatial multiplexing and increased range by exploiting the spatial diversity, perhaps through coding schemes like Alamouti coding. The Enhanced Wireless Consortium (EWC) [3] was formed to help accelerate the IEEE 802.11n development process and promote a technology specification for interoperability of next-generation wireless local area networking (WLAN) products.
- 802.11b The 802.11b standard specifies a wireless networking at 11 Mbps using direct-sequence spread-spectrum (DSSS) technology and operating in the unlicensed radio spectrum at 2.4GHz, and WEP encryption for security. 802.11b networks are also referred to as Wi-Fi networks.
- 802.11g specification for wireless networking at 54 Mbps using direct-sequence spread-spectrum (DSSS) technology, using OFDM modulation and operating in the unlicensed radio spectrum at 2.4GHz, and backward compatibility with IEEE 802.11b devices, and WEP encryption for security.
- DDNS (Dynamic Domain Name System) The capability of assigning a fixed host and domain name to a dynamic Internet IP Address.
- DHCP (Dynamic Host Configuration Protocol) A protocol that automatically configure the TCP/IP parameters for the all the PC(s) that are connected to a DHCP server.
- DMZ (Demilitarized Zone) A Demilitarized Zone allows one local host to be exposed to the Internet for a special-purpose service such as Internet gaming or videoconferencing.
- DNS (Domain Name System) An Internet Service that translates the names of websites into IP addresses.
- **Domain Name -** A descriptive name for an address or group of addresses on the Internet.
- DSL (Digital Subscriber Line) A technology that allows data to be sent or received over existing traditional phone lines.
- > ISP (Internet Service Provider) A company that provides access to the Internet.
- > MTU (Maximum Transmission Unit) The size in bytes of the largest packet that can be transmitted.
- NAT (Network Address Translation) NAT technology translates IP addresses of a local area network to a different IP address for the Internet.
- PPPoE (Point to Point Protocol over Ethernet) PPPoE is a protocol for connecting remote hosts to the Internet over an always-on connection by simulating a dial-up connection.
- > SSID A Service Set Identification is a thirty-two character (maximum) alphanumeric key identifying a

wireless local area network. For the wireless devices in a network to communicate with each other, all devices must be configured with the same SSID. This is typically the configuration parameter for a wireless PC card. It corresponds to the ESSID in the wireless Access Point and to the wireless network name.

- WEP (Wired Equivalent Privacy) A data privacy mechanism based on a 64-bit or 128-bit or 152-bit shared key algorithm, as described in the IEEE 802.11 standard.
- Wi-Fi A trade name for the 802.11b wireless networking standard, given by the Wireless Ethernet Compatibility Alliance (WECA, see http://www.wi-fi.net), an industry standards group promoting interoperability among 802.11b devices.
- WLAN (Wireless Local Area Network) A group of computers and associated devices communicate with each other wirelessly, which network serving users are limited in a local area.

# EC Declaration of Conformity

English	Hereby, <b>PLANET Technology Corporation</b> , declares that this <b>802.11ac Wireless Broadband</b> <b>ONU</b> is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.	Lietuviškai	Šiuo <b>PLANET Technology Corporation,</b> , skelbia, kad <b>802.11ac Wireless Broadband ONU</b> tenkina visus svarbiausius 1999/5/EC direktyvos reikalavimus ir kitas svarbias nuostatas.
Česky	Společnost <b>PLANET Technology Corporation,</b> tímto prohlašuje, že tato <b>802.11ac Wireless</b> <b>Broadband ONU</b> splňuje základní požadavky a další příslušná ustanovení směrnice 1999/5/EC.	Magyar	A gyártó <b>PLANET Technology Corporation</b> , kijelenti, hogy ez a <b>802.11ac Wireless Broadband ONU</b> megfelel az 1999/5/EK irányelv alapkövetelményeinek és a kapcsolódó rendelkezéseknek.
Dansk	PLANET Technology Corporation, erklærer herved, at følgende udstyr 802.11ac Wireless Broadband ONU overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF	Malti	Hawnhekk, <b>PLANET Technology Corporation</b> , jiddikjara li dan <b>802.11ac Wireless Broadband ONU</b> jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC
Deutsch	Hiermit erklärt <b>PLANET Technology Corporation</b> , dass sich dieses Gerät <b>802.11ac Wireless</b> <b>Broadband ONU</b> in Übereinstimmung mit den grundlegenden Anforderungen und den anderen relevanten Vorschriften der Richtlinie 1999/5/EG befindet". (BMWi)	Nederlands	Hierbij verklaart , <b>PLANET Technology orporation,</b> dat <b>802.11ac Wireless Broadband ONU</b> in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG
Eestikeeles	Käesolevaga kinnitab <b>PLANET Technology</b> <b>Corporation</b> , et see <b>802.11ac Wireless</b> <b>Broadband ONU</b> vastab Euroopa Nõukogu direktiivi 1999/5/EC põhinõuetele ja muudele olulistele tingimustele.	Polski	Niniejszym firma <b>PLANET Technology Corporation</b> , oświadcza, że <b>802.11ac Wireless Broadband ONU</b> spełnia wszystkie istotne wymogi i klauzule zawarte w dokumencie "Directive 1999/5/EC".
Ελληνικά	ME THN ΠΑΡΟΥΣΑ , PLANET Technology Corporation, ΔΗΛΩΝΕΙ ΟΤΙ ΑΥΤΟ802.11ac Wireless Broadband ONU ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ	Português	PLANET Technology Corporation, declara que este 802.11ac Wireless Broadband ONU está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
	1999/5/EK		
Español	Por medio de la presente, <b>PLANET Technology</b> <b>Corporation,</b> declara que <b>802.11ac Wireless</b> <b>Broadband ONU</b> cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE	Slovensky	Výrobca <b>PLANET Technology Corporation</b> , týmto deklaruje, že táto <b>802.11ac Wireless Broadband</b> <b>ONU</b> je v súlade so základnými požiadavkami a ďalšími relevantnými predpismi smernice 1999/5/EC.
Français	Par la présente, <b>PLANET Technology</b> <b>Corporation</b> , déclare que les appareils du <b>802.11ac Wireless Broadband ONU</b> sont conformes aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE	Slovensko	PLANET Technology Corporation, s tem potrjuje, da je ta 802.11ac Wireless Broadband ONU skladen/a z osnovnimi zahtevami in ustreznimi določili Direktive 1999/5/EC.
Italiano	Con la presente , <b>PLANET Technology</b> <b>Corporation,</b> dichiara che questo <b>802.11ac</b> <b>Wireless Broadband ONU</b> conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.	Suomi	PLANET Technology Corporation, vakuuttaa täten että 802.11ac Wireless Broadband ONU tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
Latviski	Ar šo <b>PLANET Technology Corporation,</b> apliecina, ka šī <b>802.11ac Wireless Broadband</b> <b>ONU</b> atbilst Direktīvas 1999/5/EK pamatprasībām un citiem atbilstošiem noteikumiem.	Svenska	Härmed intygar, <b>PLANET Technology Corporation</b> , att denna <b>802.11ac Wireless Broadband ONU</b> står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.