

BILLION™

BiPAC 7800VNP(O)X

Wireless-N ADSL2+/ Fibre Broadband Router

User Manual

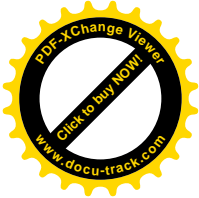
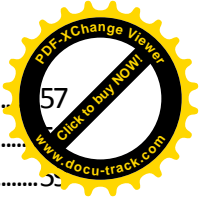
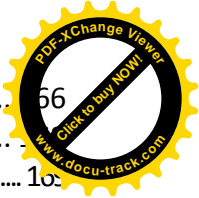
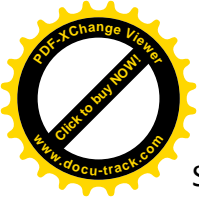


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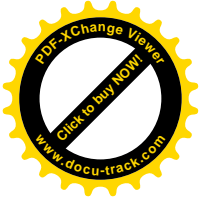
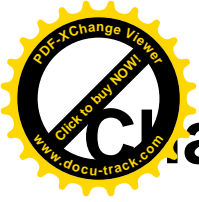
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Chapter 1: Introduction

Introduction to your Router

The BiPAC 7800VNP(O)X is a Wireless-N ADSL2+/ Fibre Broadband Router, an all-in-one advanced device integrating Wireless-N 300Mbps, Gigabit Ethernet, 3G/4G LTE, and NAS(Network Attached Storage) in one unit. As well as being IPv6-capable, the ADSL2+ router supports super fast fibre connections via dual-WAN connectivity through a Gigabit Ethernet WAN port. Users can choose the most economical rate of VoIP calls provided by different Internet Technology Service Provider (ITSP). The device integrates two FXS ports which allows for simultaneous VoIP calls. The extra FXO port enables you to make & receive calls via PSTN Fixed-line while sharing a high-speed internet connection. Its built-in 4-port Gigabit Ethernet Switch, supporting high-speed data transfer including a Gigabit WAN port for Broadband connectivity. The Quality of Service (QoS) feature ensures a smooth net connection for inbound and outbound data transmission with minimal traffic congestion. With the BiPAC 7800VNP(O)X, you can create your own mobile hotspot for Wi-Fi access.

Maximum wireless performance

With an integrated 802.11n Wireless Access Point, the router delivers up to 6 times the speed of an 802.11a/b/g network device. It supports a data rate of up to 300Mbps and is also compatible with 802.11a/b/g equipment. The Wireless Protected Access (WPA-PSK/WPA2-PSK) and Wireless Encryption Protocol (WEP) features enhance the level of transmission security and access control over wireless LAN. The router also supports the Wi-Fi Protected Setup (WPS) standard, allowing users to establish a secure wireless network by simply pushing a button. If your network requires wider coverage, the built-in Wireless Distribution System (WDS) repeater function allows you to expand your wireless network without the need for any external wires or cables.

Cost saving

Making VoIP calls is extremely simple; just connect the router to your existing telephones. The BiPAC 7800VNP(O)X complies with the most popularly adopted VoIP standard, SIP protocol, to ensure interoperability with SIP devices and major VoIP Gateways. One RJ-11 FXO port is integrated to transmit inbound and outbound calls through PSTN Fixed-line, so that users may still be able to receive phone calls through PSTN, while enjoying VoIP service at the same time. In addition, outgoing calls will be automatically redirected to PSTN when the Internet or VoIP service is not available. The router also supports a wider range of telephony features, such as call waiting, silence suppression, line echo cancellation, caller ID, etc.

3G/4G LTE Mobility and Always-on Connectivity

With 3G/4G LTE-based Internet connection (requires an additional 3G/4GLTE USB modem plugged into the built-in USB port), user can access internet through 3G/4G LTE, whether you are seated at your desk or taking a cross-country trip. The auto fail-over feature ensures optimum connectivity and minimum interruption by quickly and smoothly connecting to a 3G/4G LTE network in the event that you ADSL/Fibre/Cable line fails. The BiPAC 7800VNP(O)X will then automatically reconnect to the ADSL/Fibre/Cable connection when it is restored, reducing connection costs. These features are perfect for office situations when a constant and smooth WAN connection is critical.



IPv6 supported

Internet Protocol version 6 (IPv6) is a version of the Internet Protocol that is designed to succeed IPv4. IPv6 has a vastly larger address space than IPv4. This results from the use of a 128-bit address, whereas IPv4 uses only 32 bits. The new address space thus supports 2^{128} (about 3.4×10^{38}) addresses. This expansion provides flexibility in allocating addresses and routing traffic and eliminates the primary need for network address translation (NAT), which gained widespread deployment as an effort to alleviate IPv4 address exhaustion.

IPv6 also implements new features that simplify aspects of address assignment (stateless address autoconfiguration) and network renumbering (prefix and router announcements) when changing Internet connectivity providers. The IPv6 subnet size has been standardized by fixing the size of the host identifier portion of an address to 64 bits to facilitate an automatic mechanism for forming the host identifier from Link Layer media addressing information (MAC address).

Network security is integrated into the design of the IPv6 architecture. Internet Protocol Security (IPsec) was originally developed for IPv6, but found widespread optional deployment first in IPv4 (into which it was back-engineered). The IPv6 specifications mandate IPsec implementation as a fundamental interoperability requirement.

Jumbo frames supported

Jumbo frames are Ethernet frames with more than 1500 bytes (standard Ethernet frame) of payload. Conventionally, jumbo frames can carry up to 9720 bytes of payload to enjoy a high-efficiency communication in Gigabit Ethernet. Jumbo frames increase the frame size so that a certain large amount of data can be transported with less effort, reducing CPU utilization and increasing throughput by reducing the number of frames needing to be processed and reducing the total overhead byte count of all frames sent.

3G/LTE

With 3G/LTE-based Internet connection (requires an additional 3G/LTE USB modem), user can access internet through 3G/LTE, whether you are seated at your desk or taking a cross-country trip.

Virtual AP

A “Virtual Access Point” is a logical entity that exists within a physical Access Point (AP). When a single physical AP supports multiple “Virtual APs”, each Virtual AP appears to stations (STAs) to be an independent physical AP, even though only a single physical AP is present. For example, multiple Virtual APs might exist within a single physical AP, each advertising a distinct SSID and capability set. Alternatively, multiple Virtual APs might advertise the same SSID but a different capability set – allowing access to be provided via Web Portal, WEP, and WPA simultaneously. Where APs are shared by multiple providers, Virtual APs provide each provider with separate authentication and accounting data for their users, as well as diagnostic information, without sharing sensitive management traffic or data between providers. You can enable the virtual AP.

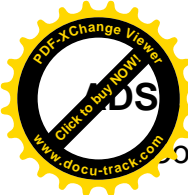
Web Based GUI

It supports web based GUI for configuration and management. It is user-friendly and comes with online help. It also supports remote management capability for remote users to configure and manage this product.

Firmware Upgradeable

Device can be upgraded to the latest firmware through the WEB based GUI.

- IPv6 ready (IPv4/IPv6 dual stack)
- Flexible WAN approach – ADSL2+, 3G/LTE mobile connection, and Ethernet WAN for Broadband Connectivity
- Auto fail-over
- High-speed Internet Access via ADSL2 / 2+; Backward Compatible with ADSL
- Jumbo frames
- IEEE 802.11 a/b/g/n compliant Wireless Access Point with Wi-Fi Protected Setup (WPS), Wi-Fi Protected Access (WPA-PSK/ WPA2-PSK) and Wired Equivalent Privacy (WEP) support
- SOHO Firewall Security with DoS Preventing and Packet Filtering
- Quality of Service Control for traffic prioritization and Bandwidth management
- Secured IPsec VPN with powerful DES/ 3DES/ AES (BiPAC7800VNOX only)
- PPTP VPN with Pap/ Chap/ MS-CHAPv2 authentication (BiPAC7800VNOX only)
- GRE tunnel (BiPAC7800VNOX only)
- Universal Plug and Play (UPnP) Compliance
- Supports IPTV Application^{*2}
- Supports Storage Service
- Ease of Use with Quick Installation Wizard (EZSO)
- Make phone calls via Internet as well as PSTN Fixed-line
- Gain control to reduce bad PSTN quality issue
- Voice over IP compliant with SIP standard
- Two FXS ports for connecting to regular telephones
- One FXO port for voice calls via PSTN Fixed-line
- Answering machine and voice mail for flexible phone answering and message recording
- Fax over IP network



Compliance

- Compliant with ADSL Standard
 - Full-rate ANSI T1.413 Issue 2
 - G.dmt (ITU G.992.1)
 - G.lite (ITU G.992.2)
 - G.hs (ITU G.994.1)
- Compliant with ADSL2 Standard
 - G.dmt.bis (ITU G.992.3)
 - ADSL2 Annex M (ITU G.992.3 Annex M)
- Compliant with ADSL2+ Standard
 - G.dmt.bis plus (ITU G.992.5)
 - ADSL2+ Annex M (ITU G.992.5 Annex M)

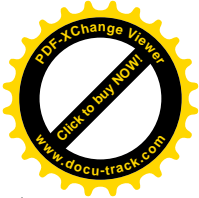
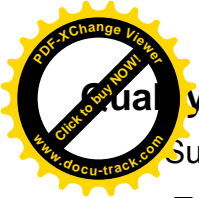


Network Protocols and Features

- IPv4 or IPv4 / IPv6 Dual Stack
- NAT, static (v4/v6) routing and RIP-1 / 2
- IPv6 Stateless / Stateful Address Auto-configuration
- IPv6 Router Advertisement
- IPv6 over PPP
- DHCPv6
- IP Tunnel IPv6 in IPv4(6RD)
- IP Tunnel IPv4 in IPv6(DS-Lite)
- Universal Plug and Play (UPnP) Compliant
- Dynamic Domain Name System (DDNS)
- Virtual Server, DMZ and one-to-one NAT
- SNTP, DNS relay, IGMP snooping and IGMP proxy for video service
- MLD snooping and MLD proxy for video service
- Management based-on IP protocol, port number and address

Firewall

- Built-in NAT Firewall
- Stateful Packet Inspection (SPI)
- DoS attack prevention
- Packet Filtering (v4/v6) - port, source IP address, destination IP address, MAC address
- URL Content Filtering (v4/v6) – string or domain name detection in URL string
- MAC Filtering



Quality of Service Control

Supports the DiffServ approach

- Traffic prioritization and bandwidth management based-on IPv4/IPv6 protocol, port number and address

VOIP

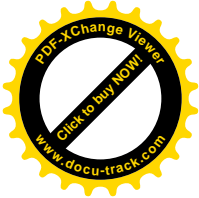
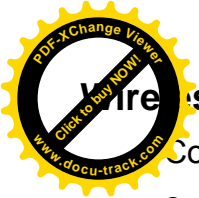
- Two RJ-11 FXS ports for connecting to regular phones
- One RJ-11 FXO port for PSTN Fixed-line
- Compliant with SIP standard (RFC 3261)
- Supports G.711 A/μ law, G.711Mu-Law, G.726_32, G.722and G.729 Audio Codec standards
- Supports Telephony Features – calling waiting, silence suppression, voice activity detection (VOD), comfort noise generation (CNG). G.168 line echo cancellation, caller ID (bell 202, V23), three-way conference
- Dialing rules for individual use of Internet and fixed line telephony
- Answering machine and voice mail for flexible phone answering and message recording
- Fax over IP network

ATM, PTM and PPP Protocols

- ATM Adaptation Layer Type 5 (AAL5)
- Multiple Protocol over ALL5 (RFC 268, formerly RFC 1483)
- Bridged or routed Ethernet encapsulation
- VC and LLC based multiplexing
- PPP over Ethernet (PPPoE)
- PPP over ATM (RFC 2364)
- Classical IP over ATM (RFC 1577)
- MAC Encapsulated Routing (RFC 1483 MER)
- OAM F4 / F5

IPTV Applications^{*2}

- IGMP Snooping and IGMP Proxy
- MLD Snooping and MLD Proxy
- Virtual LAN (VLAN)
- Quality of Service (QoS)



Wireless LAN

Compliant with IEEE 802.11 a/ b/ g/ n standards

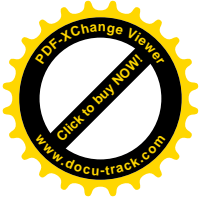
- 2.4 GHz radio band for wireless
- Up to 300 Mbps wireless operation rate
- 64 / 128 bits WEP supported for encryption
- WPS (Wi-Fi Protected Setup) for easy setup
- Supports WPS v2
- Wireless Security with WPA-PSK / WPA2-PSK support
- WDS repeater function support

USB Application Server

- 3G/LTE dongle support
- Storage: FTP server, Samba server, DLNA
- Printer Server

Virtual Private Network (VPN) (7800VNOX only)

- IKE key management
- DES, 3DES and AES encryption for IPSec
- Pap/ Chap/ MS-CHAPv2 authentication for PPTP
- IPSec pass-through
- GRE tunnel



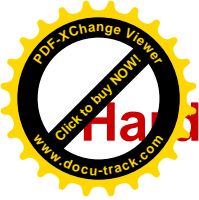
Management

Easy Sign-on (EZSO)

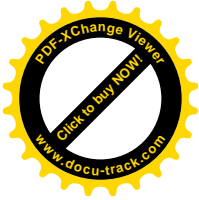
- Web-based GUI for remote and local management (Ipv4/IPv6)
- Firmware upgrades and configuration data upload and download via web-based GUI
- Embedded Telnet server for remote and local management
- Supports DHCP server / client / relay
- Supports SNMP v1,v2, MIB-I and MIB-II
- TR-069*¹ supports remote management
- Available Syslog
- Mail alert for WAN IP changed
- Auto failover and fallback
- Push Service



1. On request for Telco / ISP projects
2. IPTV application may require subscription to IPTV services from a Telco / ISP.
3. Specifications on this datasheet are subject to change without prior notice.



Hardware Specifications



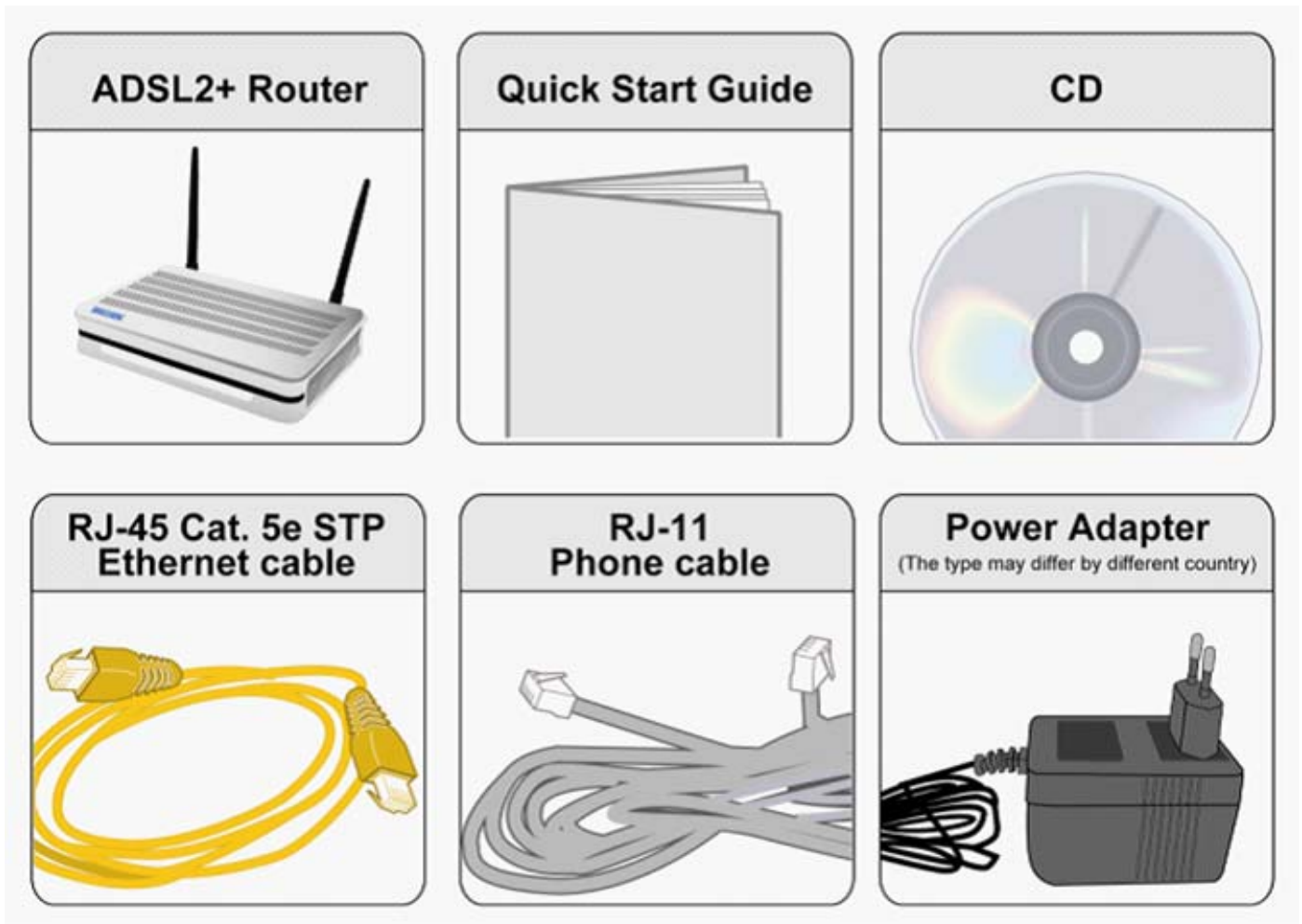
Physical Interface

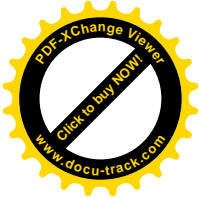
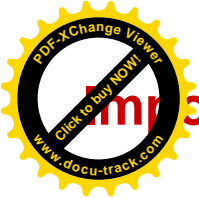
- WLAN: 2 detachable antennas
- DSL: ADSL port
- Telephone:
 - 1-port FXO (For PSTN Fixed-line)
 - 2-port FXS (For connecting to phones)
- USB 2.0 port for storage service and printer server
- Ethernet: 4-port 10 / 100 / 1000Mbps auto-crossover (MDI / MDI-X) Switch
- EWAN: Ethernet port #4 can be configured as a WAN interface for Broadband connectivity.
- Factory default reset button
- WPS push button
- Power jack
- Power switch

Chapter 2: Installing the Router

Package Contents

- BiPAC 7800VNP(O)X Wireless-N ADSL2+/Fibre Broadband Router
- Quick Start Guide
- CD containing the on-line manual
- Two detachable antennas
- RJ-45 Cat. 5e STP Ethernet cable
- RJ-11 ADSL/ telephone cable
- Power adapter
- Splitter / Micro-filter (Optional)





Important note for using this router



Warning

1. Do not use the router in high humidity or high temperatures.
2. Do not use the same power source for the router as other equipment.
3. Do not open or repair the case yourself. If the router is too hot, turn off the power immediately and have it repaired at a qualified service center.
4. Avoid using this product and all accessories outdoors.

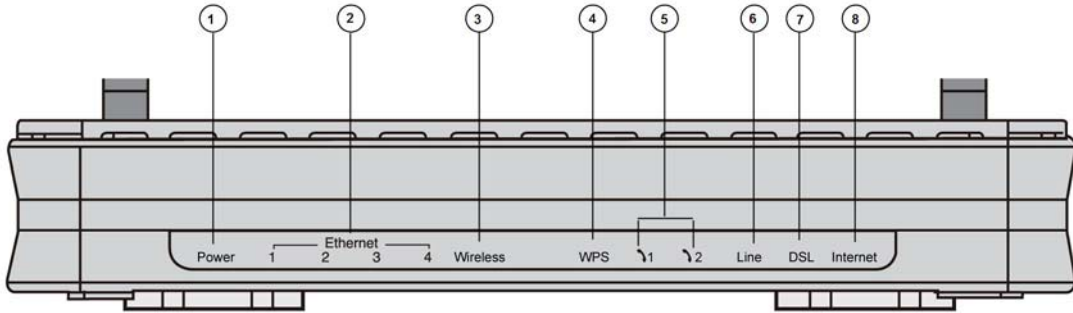


Attention

1. Place the router on a stable surface.
2. Only use the power adapter that comes with the package. Using a different voltage rating power adapter may damage the router.

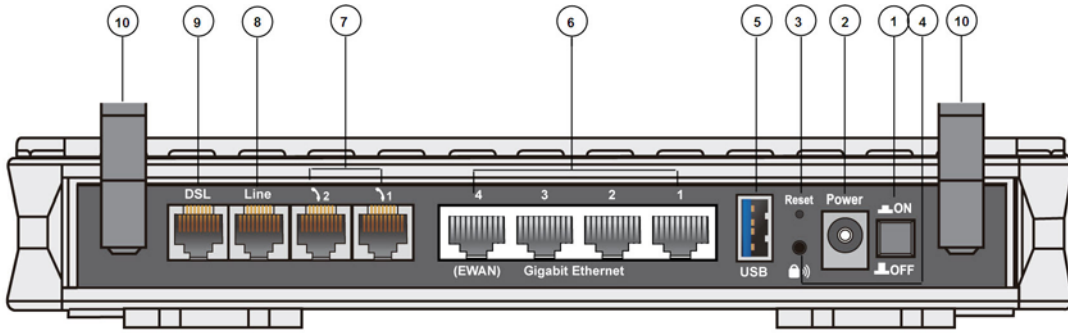
Device Description

The Front LEDs

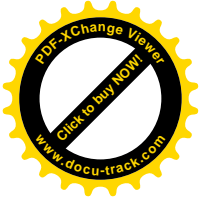


LED	Status	Meaning	
1	Power	Red	Boot failure or in emergency mode
	Power	Green	System ready
2	Ethernet Port 1-4 (EWAN)	Green	Transmission speed hitting 1000Mbps
		Orange	Transmission speed hitting 10/100Mbps
		Blinking	Data being transmitted/received
3	Wireless	Green	Wireless connection established
		Green blinking	Sending/receiving data
4	WPS	Green blinking	WPS configuration being in progress
		Off	WPS process completed or WPS is off
5	Phone (1X-2X) (RJ-11 connector)	Green	Phone off-hook
6	Line	Green	Inbound or outbound calls are being transmitted through PSTN
7	DSL	Green Blinking	DSL synchronizing or waiting for DSL synchronizing
		Green	Successfully connected to an ADSL DSLAM (Line Sync).
		Off	DSL cable unplugged
8	Internet	Red	Obtaining IP failure
		Green	Having obtained an IP address successfully
		Off	Router in bridge mode or DSL connection not present.

The Rear Ports

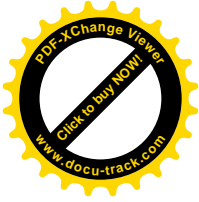
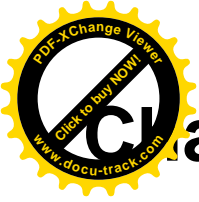


Port		Meaning
1	Power Switch	Power ON / OFF switch.
2	Power	Connect the supplied power adapter to this jack.
3	RESET	After the device is powered on, press it 5 seconds or above : to restore to factory default settings (this is used when you cannot login to the router, e.g. forgot the password)
4	WPS	Push WPS button to trigger Wi-Fi Protected Setup function.
5	USB	Connect the USB device (Printer, USB 2.0 storage, 3G/LTE 3G USB modem) to this port.
6	Ethernet	Connect a UTP Ethernet cable (Cat-5 or Cat-5e) to one of the four LAN ports when connecting to a PC or an office/home network of 10Mbps /100Mbps /1000Mbps. Note: Port #4 can be configured as a WAN Interface for Broadband connectivity.
7	Phone (1X-2X)	Connect your analog phone set to this port with the RJ-11 cable.
8	Line (PSTN)	Connect this port with an RJ-11 cable to the telephone jack on the wall.
9	DSL	Connect this port to the DSL network with the RJ-11 cable (telephone) provided.
10	Antenna	The detachable antennas.



One of the most common causes of problems is bad cabling or ADSL line(s). Make sure that all connected devices are turned on. On the front panel of your router is a bank of LEDs. Verify that the LAN Link and ADSL line LEDs are all lit. If they are not, verify if you are using the proper cables. If the error persists, you may have a hardware problem. In this case, you should contact technical support.

Make sure you have a line filter with all devices (e.g. telephones, fax machines, analogue modems) connected to the same telephone line and the wall socket (unless you are using a Central Splitter or Central Filter installed by a qualified and licensed electrician), and ensure that all line filters are correctly installed and the right way around. Missing line filters or line filters installed the wrong way around can cause problems with your ADSL connection, including causing frequent disconnections. If you have a back-to-base alarm system you should contact your security provider for a technician to make any necessary changes.




Chapter 3: Basic Installation

The router can be configured through your web browser. A web browser is included as a standard application in the following operating systems: Linux, Mac OS, Windows 7 / 98 / NT / 2000 / XP / Me / Vista, etc. The product provides an easy and user-friendly interface for configuration.

Please check your PC network components. The TCP/IP protocol stack and Ethernet network adapter must be installed. If not, please refer to your Windows-related or other operating system manuals.

There are ways to connect the router, either through an external repeater hub or connect directly to your PCs. However, make sure that your PCs have an Ethernet interface installed properly prior to connecting the router device. You ought to configure your PCs to obtain an IP address through a DHCP server or a fixed IP address that must be in the same subnet as the router. The default IP address of the router is 192.168.1.254 and the subnet mask is 255.255.255.0 (i.e. any attached PC must be in the same subnet, and have an IP address in the range of 192.168.1.1 to 192.168.1.253). The best and easiest way is to configure the PC to get an IP address automatically from the router using DHCP. If you encounter any problem accessing the router web interface it is advisable to uninstall your firewall program on your PCs, as they can cause problems accessing the IP address of the router. Users should make their own decisions on what is best to protect their network.

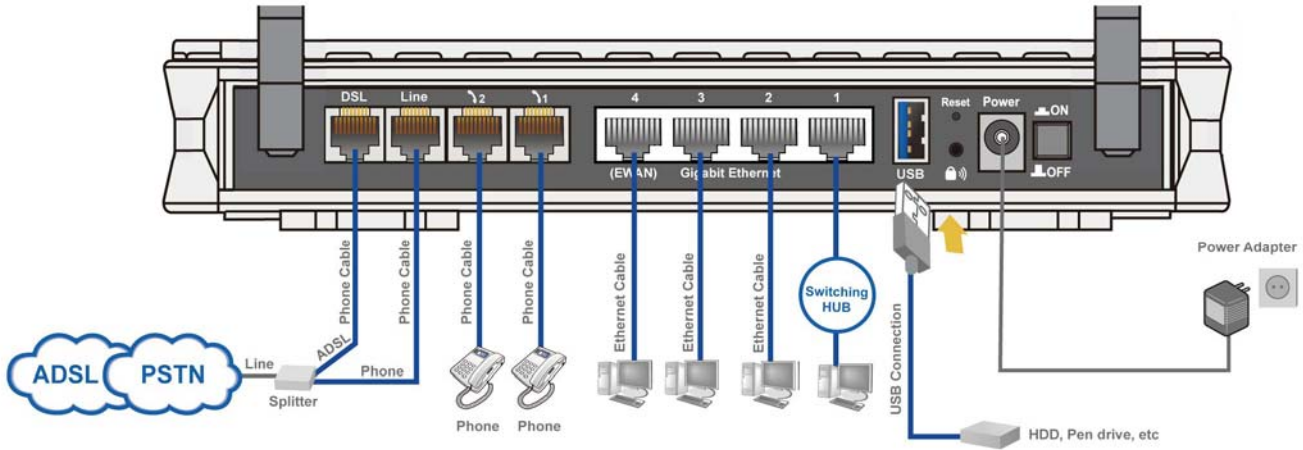
Please follow the following steps to configure your PC network environment.

	Any TCP/IP capable workstation can be used to communicate with or through this router. To configure other types of workstations, please consult your manufacturer documentation.
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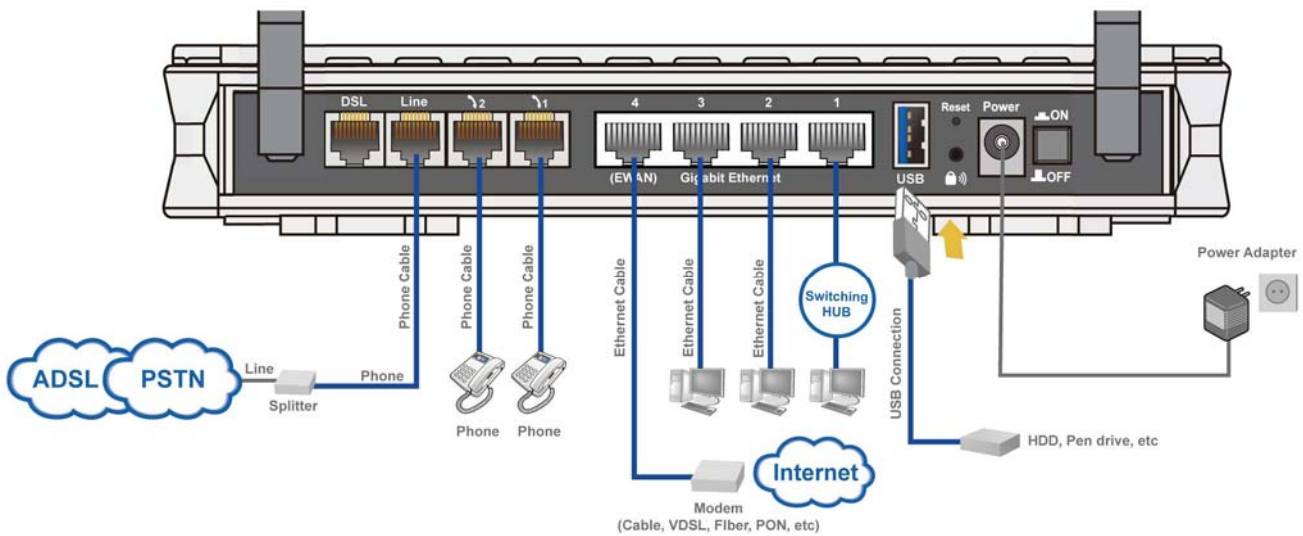
Connecting Your Router

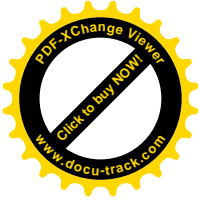
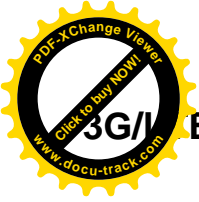
Users can connect the ADSL2+ router as the following.

ADSL Router mode:

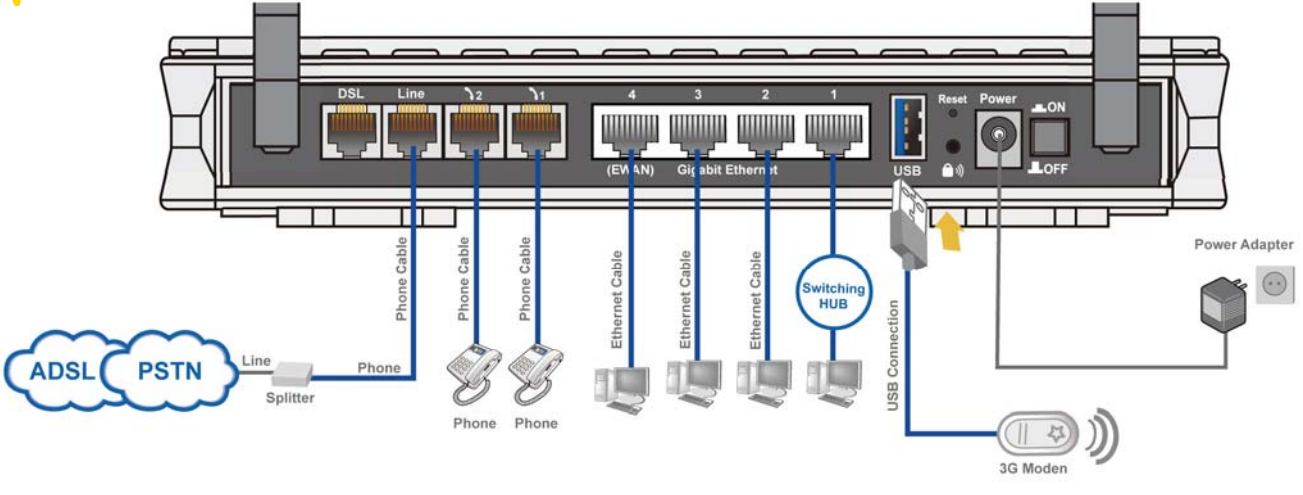


Broadband Router mode:





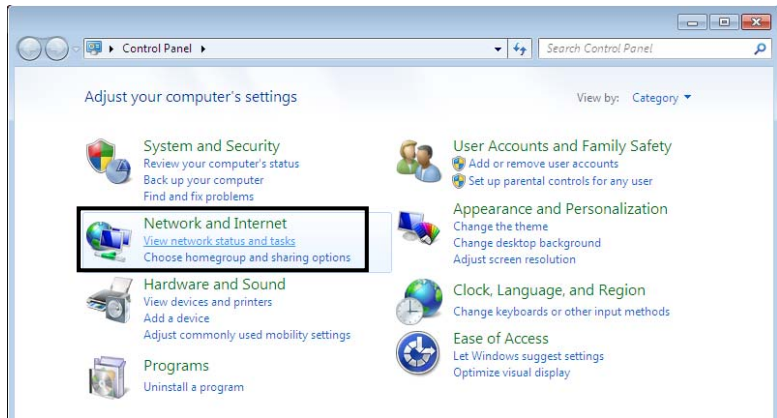
E Router mode



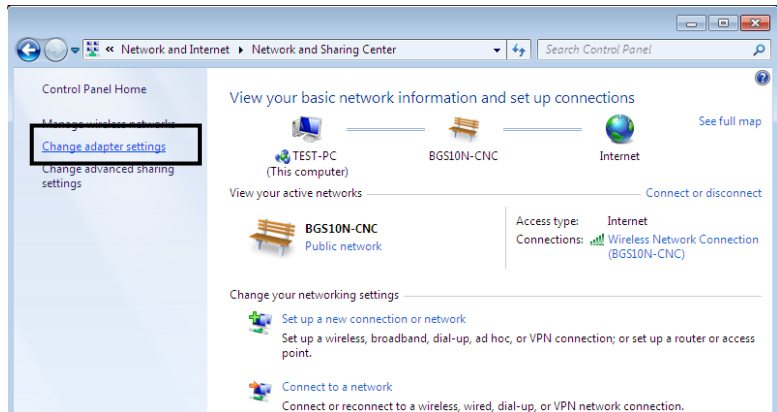
Network Configuration

Configuring a PC in Windows 7

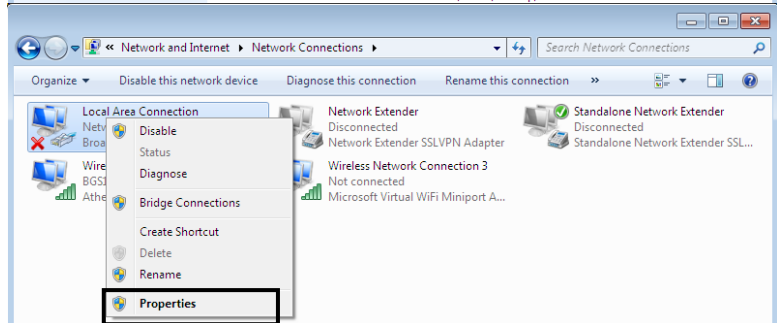
1. Go to **Start**. Click on **Control Panel**. Then click on **Network and Internet**.

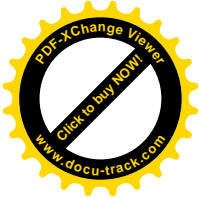
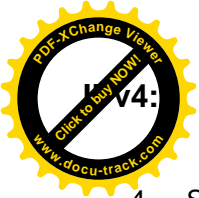


2. When the **Network and Sharing Center** window pops up, select and click on **Change adapter settings** on the left window panel.

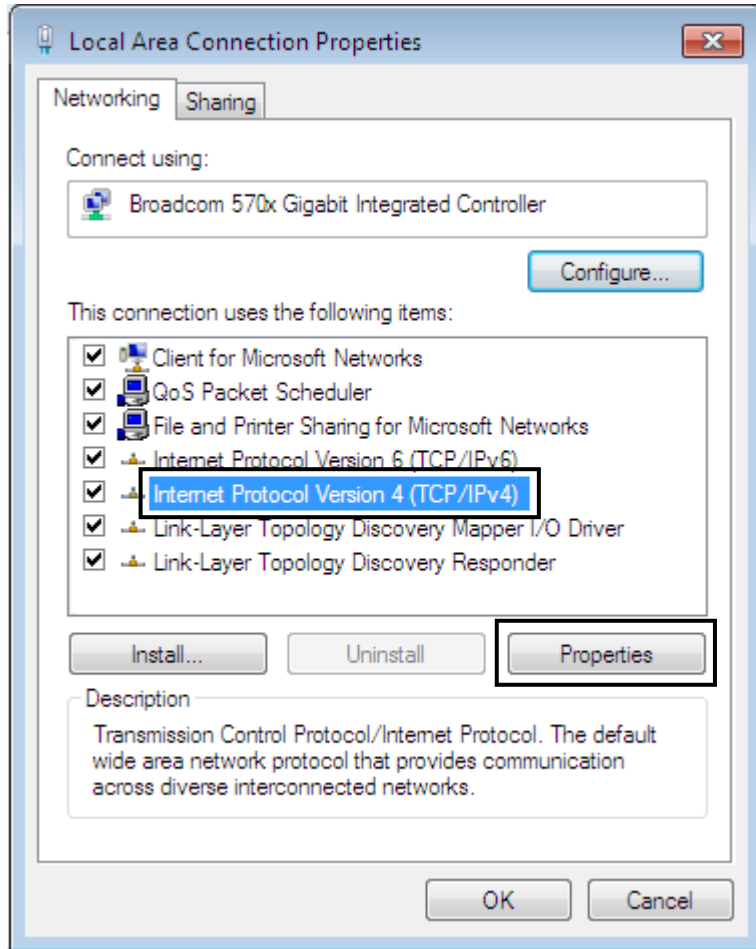


3. Select the **Local Area Connection**, and right click the icon to select **Properties**.

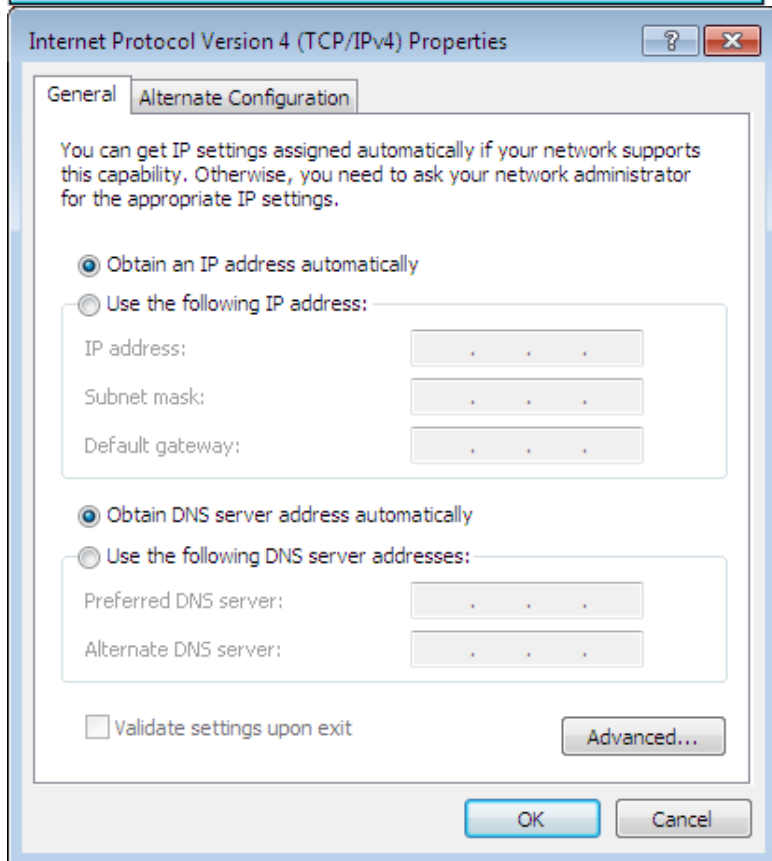




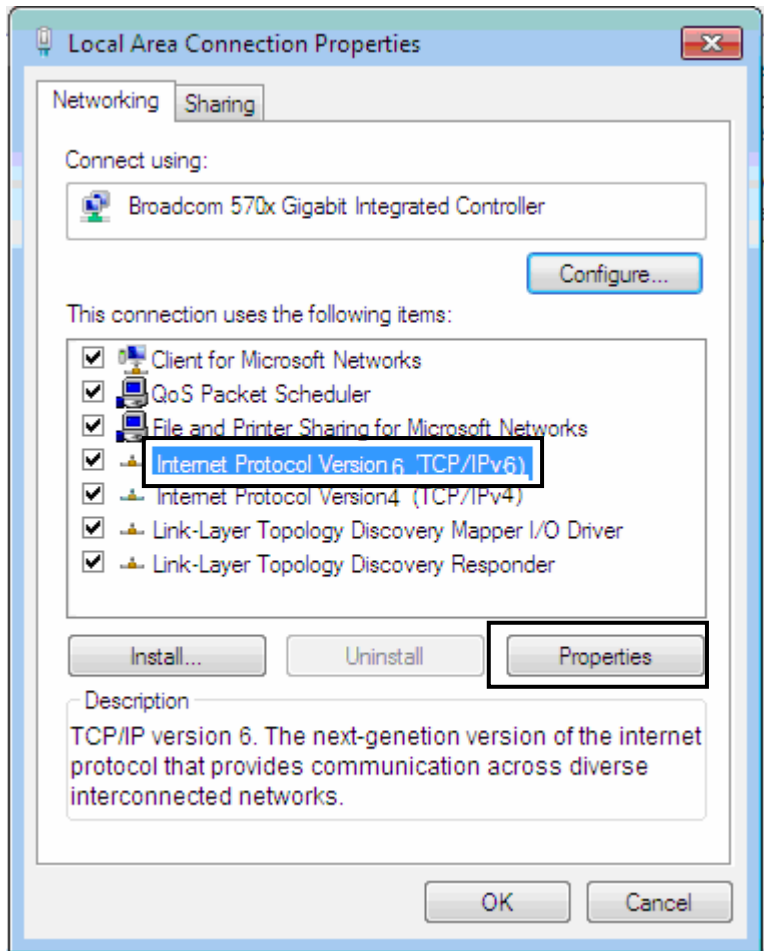
4. Select **Internet Protocol Version 4 (TCP/IPv4)** then click **Properties**



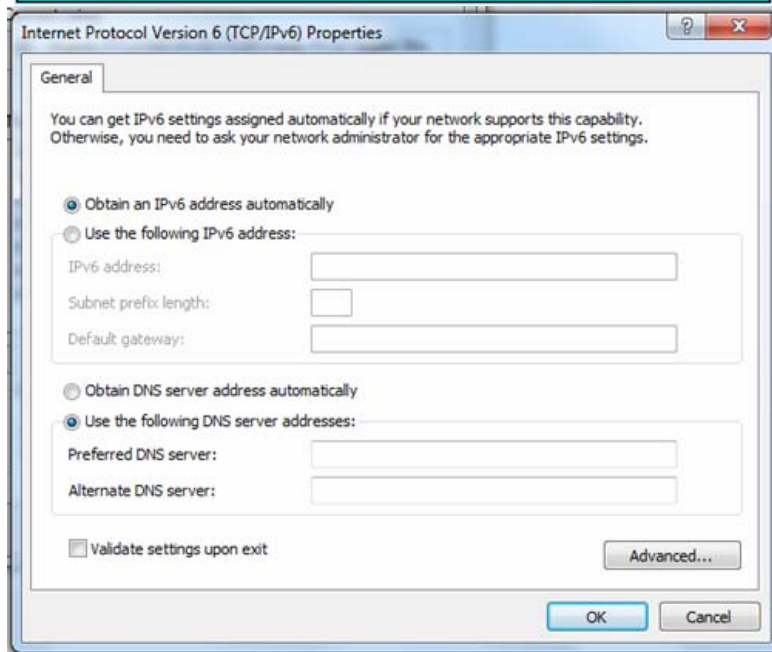
5. In the **TCP/IPv4 properties** window, select the **Obtain an IP address automatically** and **Obtain DNS Server address automatically** radio buttons. Then click **OK** to exit the setting.
6. Click **OK** again in the **Local Area Connection Properties** window to apply the new configuration.

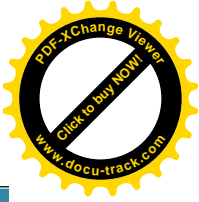


Select **Internet Protocol Version 6 (TCP/IPv6)** then click **Properties**



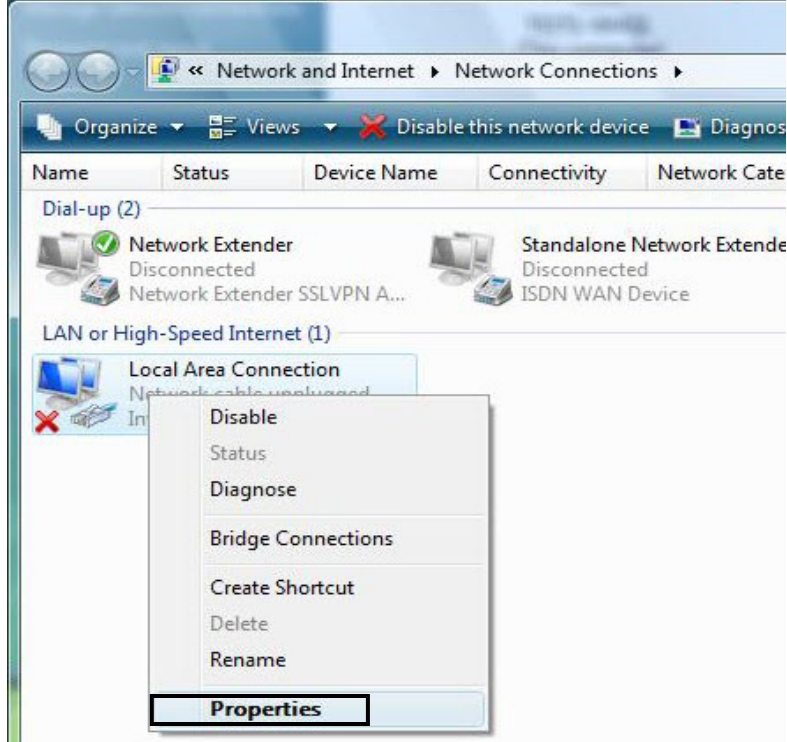
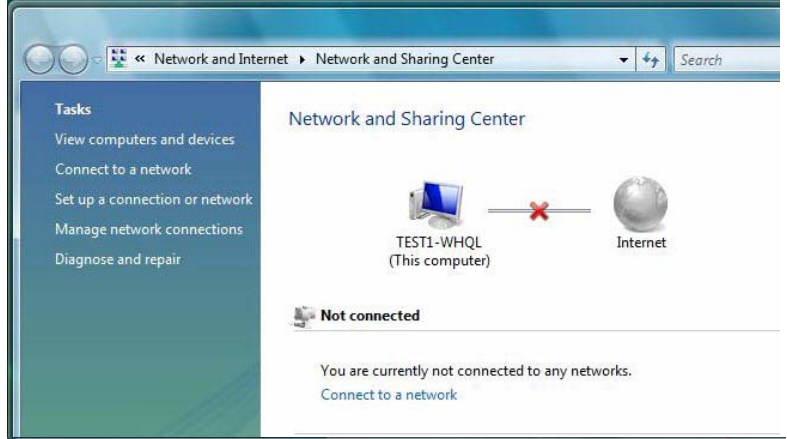
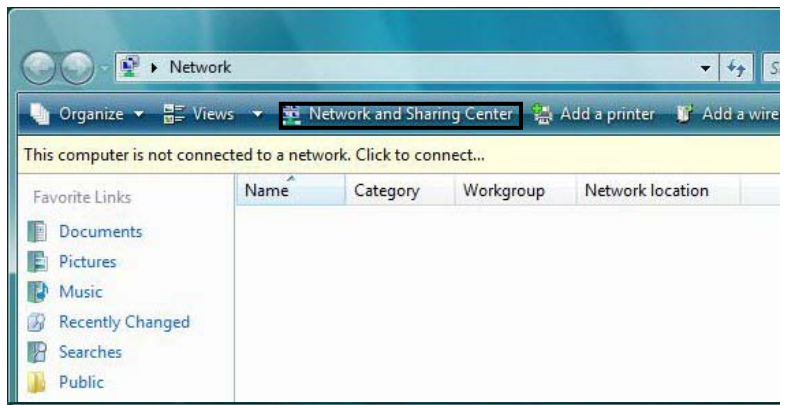
5. In the **TCP/IPv6** properties window, select the **Obtain an IPv6 address automatically** and **Obtain DNS Server address automatically** radio buttons. Then click **OK** to exit the setting.
6. Click **OK** again in the **Local Area Connection Properties** window to apply the new configuration.

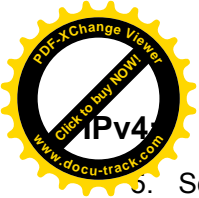




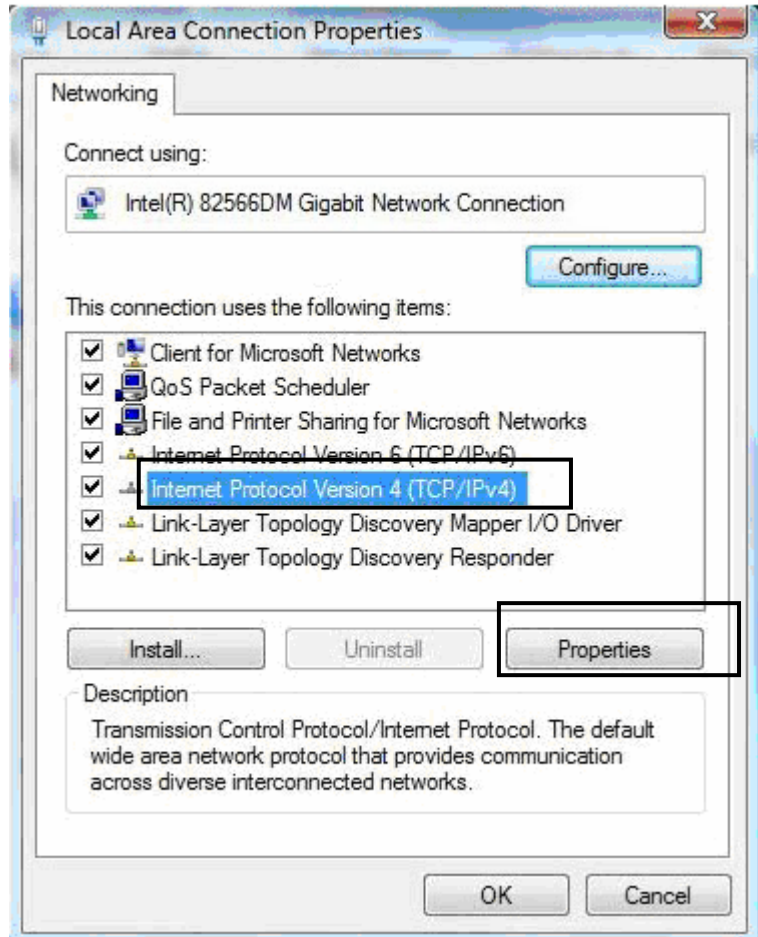
Configuring a PC in Windows Vista

1. Go to **Start**. Click on **Network**.
2. Then click on **Network and Sharing Center** at the top bar.
3. When the **Network and Sharing Center** window pops up, select and click on **Manage network connections** on the left window pane.
4. Select the **Local Area Connection**, and right click the icon to select **Properties**.

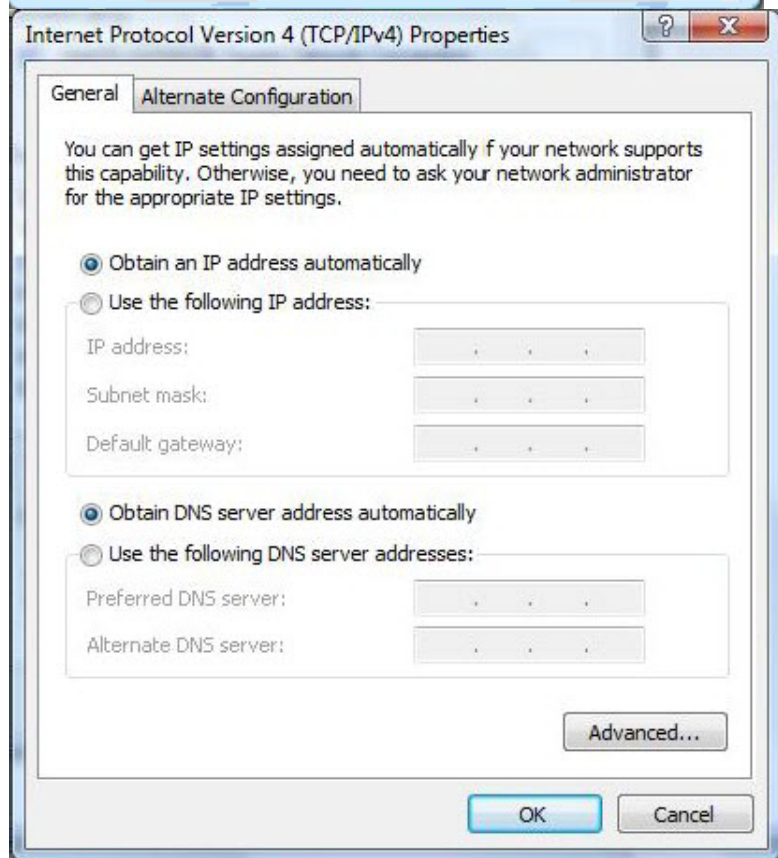


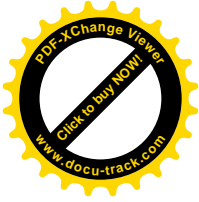


5. Select **Internet Protocol Version 4 (TCP/IPv4)** then click **Properties**.

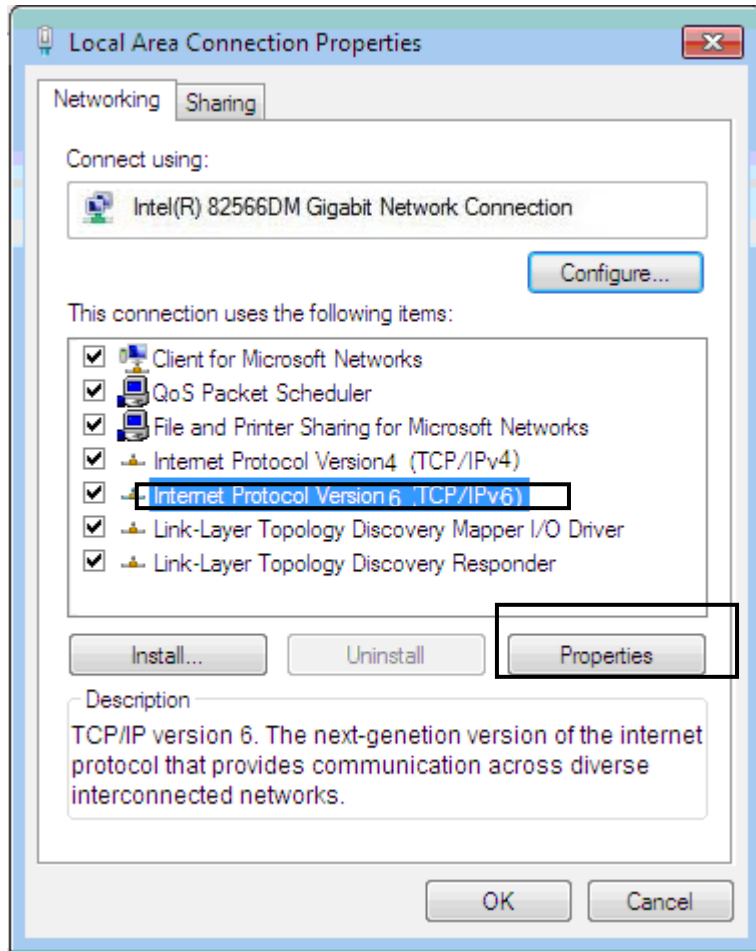


6. In the **TCP/IPv4 properties** window, select the **Obtain an IP address automatically** and **Obtain DNS Server address automatically** radio buttons. Then click **OK** to exit the setting.
7. Click **OK** again in the **Local Area Connection Properties** window to apply the new configuration.



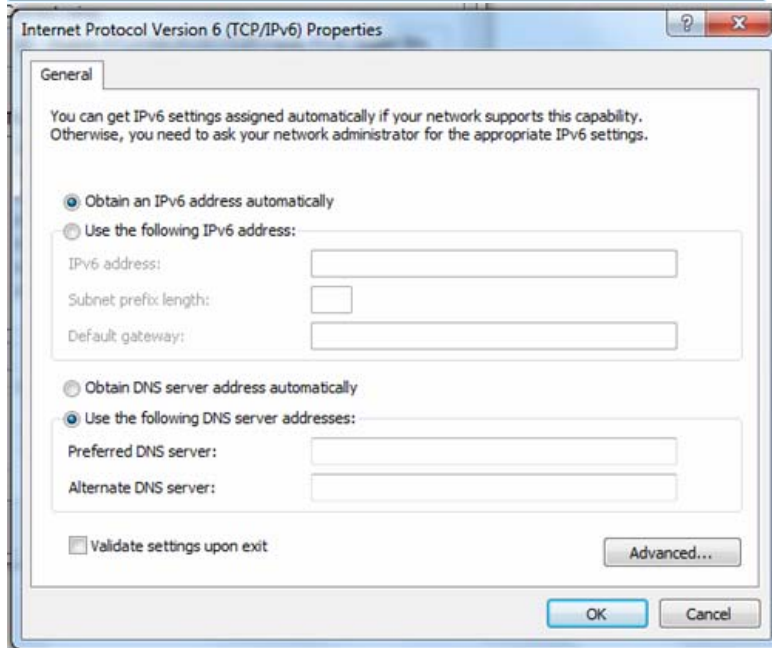


Select **Internet Protocol Version 6 (TCP/IPv6)** then click **Properties**.



9. In the **TCP/IPv6 properties** window, select the **Obtain an IPv6 address automatically** and **Obtain DNS Server address automatically** radio buttons. Then click **OK** to exit the setting.

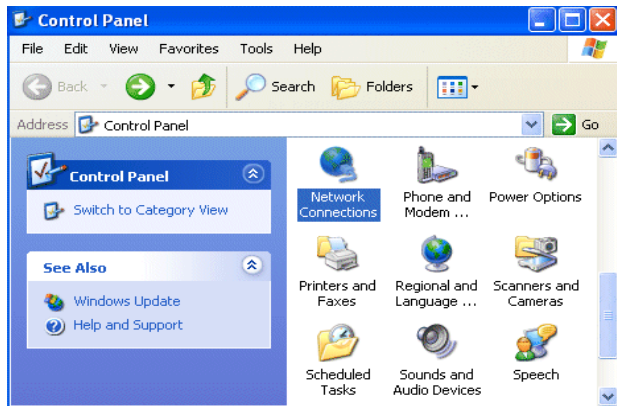
10. Click **OK** again in the **Local Area Connection Properties** window to apply the new configuration.



Configuring a PC in Windows XP

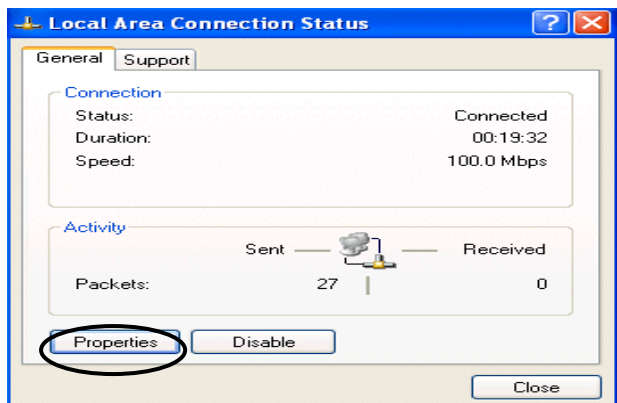
IPv4:

1. Go to **Start / Control Panel (in Classic View)**. In the Control Panel, double-click on **Network Connections**

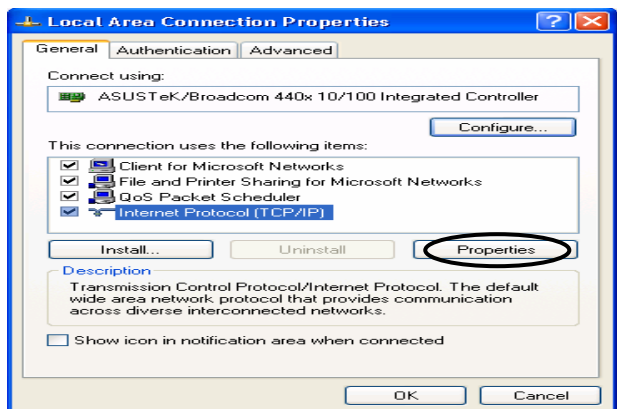


2. Double-click **Local Area Connection**.

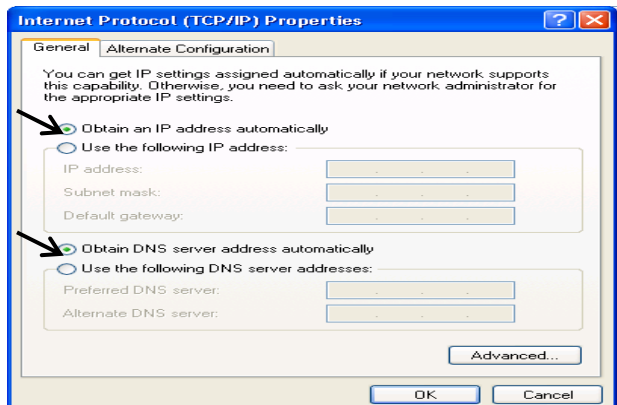
3. In the **Local Area Connection Status** window, click **Properties**.



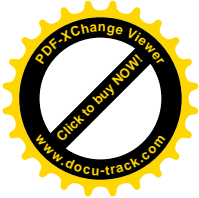
4. Select **Internet Protocol (TCP/IP)** and click **Properties**.



5. Select the **Obtain an IP address automatically** and the **Obtain DNS server address automatically** radio buttons.



6. Click **OK** to finish the configuration.



is supported by Windows XP, but you should install it first.

Act as shown below:

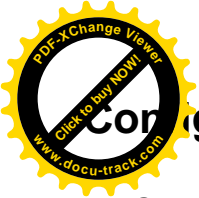
1. On the desktop, Click Start > Run, type cmd, then press Enter key in the keyboard, the following screen appears.

```
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\ytt>
```

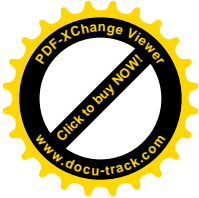
2. Key in command **ipv6 install**

```
C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\ytt>ipv6 install
Installing...
Succeeded.
C:\Documents and Settings\ytt>
```

Configuration is OK now, you can test whether it works ok.



Configuring PC in Windows 2000



1. Go to Start > Settings > Control Panel. In the Control Panel, double-click on Network and Dial-up Connections.

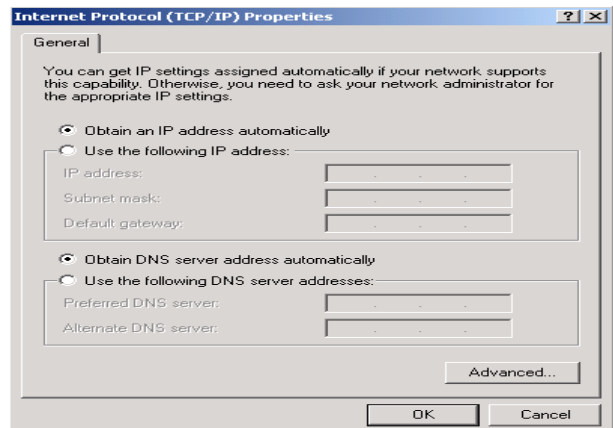
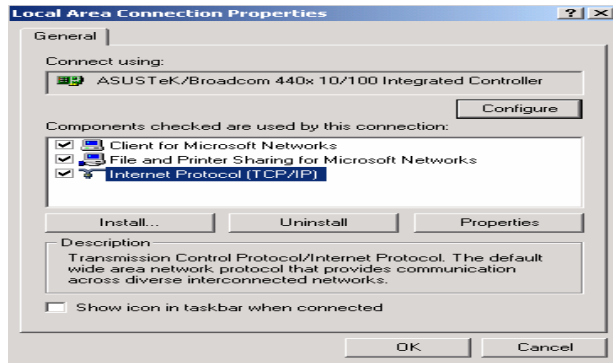
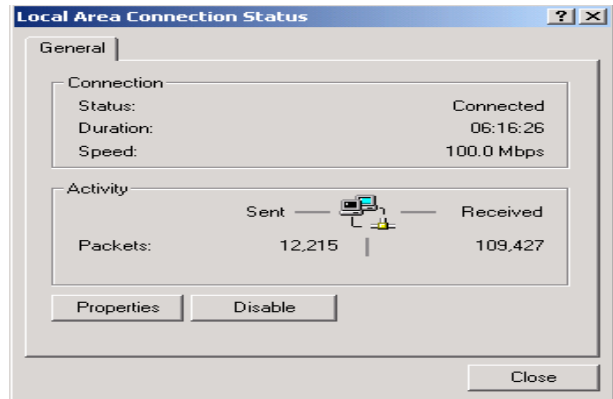
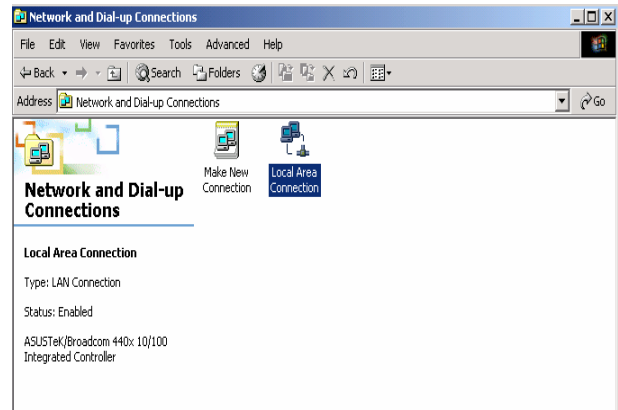
2. Double-click Local Area Connection.

3. In the Local Area Connection Status window click Properties.

4. Select Internet Protocol (TCP/IP) and click Properties.

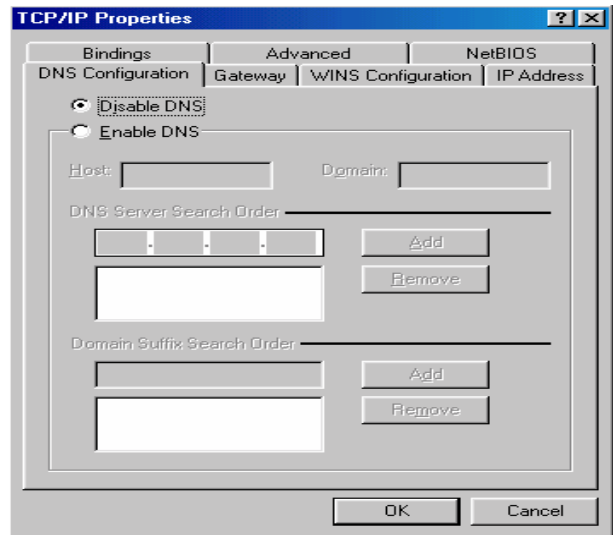
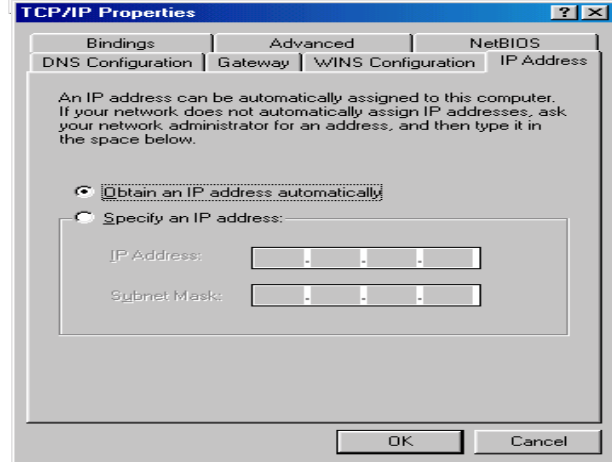
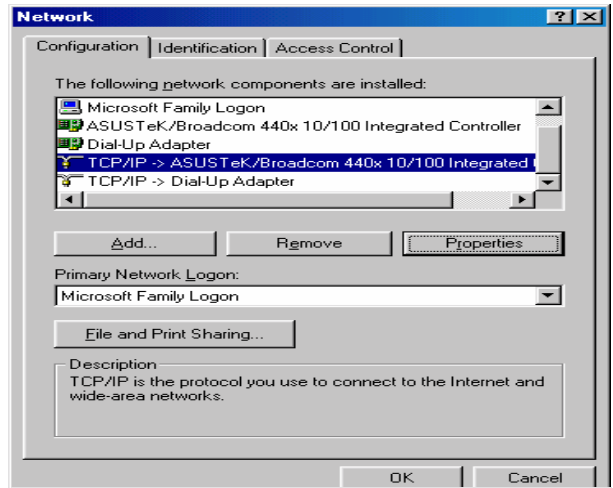
5. Select the Obtain an IP address automatically and the Obtain DNS server address automatically radio buttons.

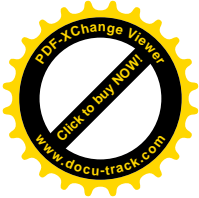
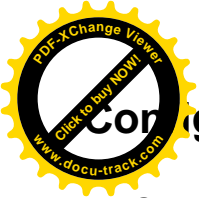
6. Click OK to finish the configuration.



Configuring PC in Windows 95/98/Me

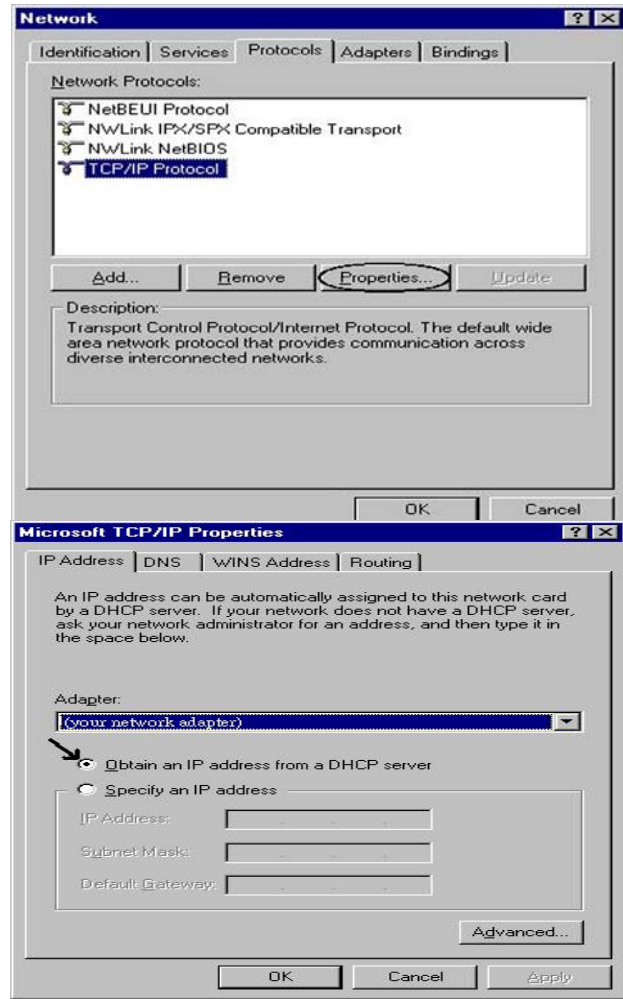
1. Go to Start > Settings > Control Panel. In the Control Panel, double-click on Network and choose the Configuration tab.
2. Select TCP/IP > NE2000 Compatible, or the name of your Network Interface Card (NIC) in your PC.
3. Select the Obtain an IP address automatically radio button.
4. Then select the DNS Configuration tab.
5. Select the Disable DNS radio button and click OK to finish the configuration.

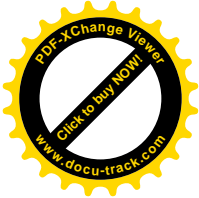
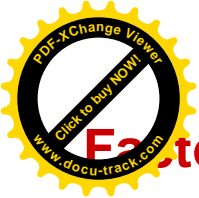




Configuring PC in Windows NT4.0

1. Go to Start > Settings > Control Panel. In the Control Panel, double-click on Network and choose the Protocols tab.
2. Select TCP/IP Protocol and click Properties.
3. Select the Obtain an IP address from a DHCP server radio button and click OK.





Factory Default Settings

Before configuring your router, you need to know the following default settings.

Web Interface (Username and Password)

Three user levels are provided by this router, namely **Administrator**, **Remote** and **Local** respectively. See [Access Control](#) .

Administrator


- ▶ Username: admin
- ▶ Password: admin

Local

- ▶ Username: user
- ▶ Password: user

Remote

- ▶ Username: support
- ▶ Password: support

 <p>Attention</p>	<p>If you have forgotten the username and/or password of the router, you can restore the device to its default setting by pressing the Reset Button more than 5 seconds.</p>
---	--

Device LAN IPv4 settings

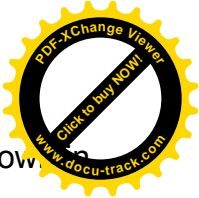
- ▶ IPv4 Address: 192.168.1.254
- ▶ Subnet Mask: 255.255.255.0

Device LAN IPv6 settings

- ▶ IPv6 Address / prefix: Default is a link-local address and is different from each other as MAC address is different from one to one. For example: fe80:0000:0000:0000:0204:edff:fe01:0001 / 64, the prefix initiates by fe80::

DHCP server for IPv4

- ▶ DHCP server is enabled.
- ▶ Start IP Address: 192.168.1.100
- ▶ IP pool counts: 100



LAN and WAN Port Addresses

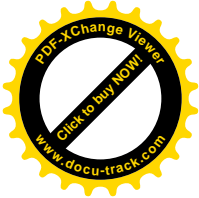
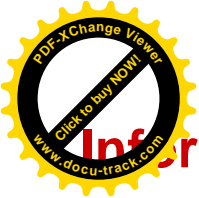
The parameters of LAN and WAN ports are pre-set in the factory. The default values are shown in the table.

IPv4

LAN Port		WAN Port
IPv4 address	192.168.1.254	The PPPoE function is enabled to automatically get the WAN port configuration from the ISP.
Subnet Mask	255.255.255.0	
DHCP server function	Enabled	
IP addresses for distribution to PCs	100 IP addresses continuing from 192.168.1.100 through 192.168.1.199	

IPv6

LAN Port		WAN Port
IPv6 address/prefix	Default is a link-local address and is different from each other as MAC address is different from one to one. For example fe80::204:edff:fe01:1/64, the prefix initiates by fe80::	The PPPoE function is enabled to automatically get the WAN port configuration from the ISP.
DHCP server function	Enabled	

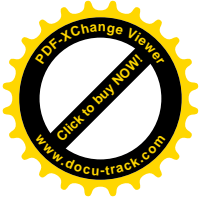
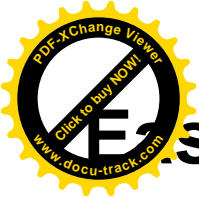


Information from your ISP

Before configuring this device, you have to check with your ISP (Internet Service Provider) to find out what kind of service is provided.

Gather the information as illustrated in the following table and keep it for reference.

PPPoE(RFC2516)	VPI/VCI, VC / LLC-based multiplexing, Username, Password, Service Name, and Domain Name System (DNS) IP address (it can be automatically assigned by your ISP when you connect or be set manually).
PPPoA(RFC2364)	VPI/VCI, VC / LLC-based multiplexing, Username, Password and Domain Name System (DNS) IP address (it can be automatically assigned by your ISP when you connect or be set manually).
DHCP Client	VPI/VCI, VC / LLC-based multiplexing, Domain Name System (DNS) IP address (it can be automatically assigned by your ISP when you connect or be set manually).
IPoA(RFC1577)	VPI/VCI, VC / LLC-based multiplexing, IP address, Subnet mask, Gateway address, and Domain Name System (DNS) IP address (it is a fixed IP address).
Pure Bridge	VPI/VCI, VC / LLC-based multiplexing to use Bridged Mode.



Easy Sign On (EZSO)

This special feature makes it easier for you to configure your router so that you can connect to the internet in a matter of seconds without having to logon to the router GUI for any detail configuration. This configuration method is usually auto initiated if user is to connect to the internet via Billion's router for the first time.

After setting up the router with all the appropriate cables plugged-in, open up your IE browser, the EZSO WEB GUI will automatically pop up and request that you enter some basic information that you have obtained from your ISP. By following the instructions given carefully and through the information you provide, the router will be configured in no time and you will find yourself surfing the internet sooner than you realize.

DSL mode

Before configuring with DSL mode, please confirm you have correctly connected the DSL line, and it is now synchronized.

Easy Sign On

WAN Interface (WAN > Wireless > VOIP)

Select WAN Interface

Main Port: DSL (Current Main Port: DSL)

Layer2 Interface: ATM PTM

Continue Done

1. Select DSL, press **Continue** to go on to next step, press “Done” to quit the setting.
2. Enter the username, password from your ISP, for IP and DNS settings; also refer to your ISP. Here IPv6 service is enabled by default.

Easy Sign On

WAN Interface (WAN > Wireless > VOIP)

WAN Service

Type: PPP over Ethernet (PPPoE)

VPI / VCI: [0-255] / [32-65535]

Username: []

Password: []

Service Name: []

Encapsulation Mode: LLC/SNAP-BRIDGING

Authentication Method: AUTO

IPv4 Address: Static

IP Address: []

IPv6 for this service: Enable

IPv6 Address: Static

IP Address: []

MTU: 1492

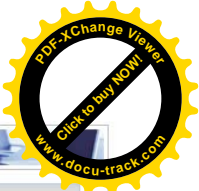
Continue

If the DLS line doesn't synchronize, the page will pop up warning of the DSL connection failure.

Easy Sign On

WAN Interface (WAN > Wireless > VOIP)

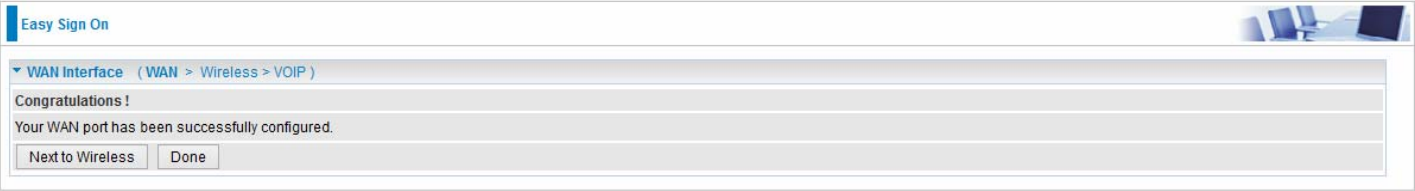
DSL Line Is Not Ready. Please Check your DSL Line and wait for a while.



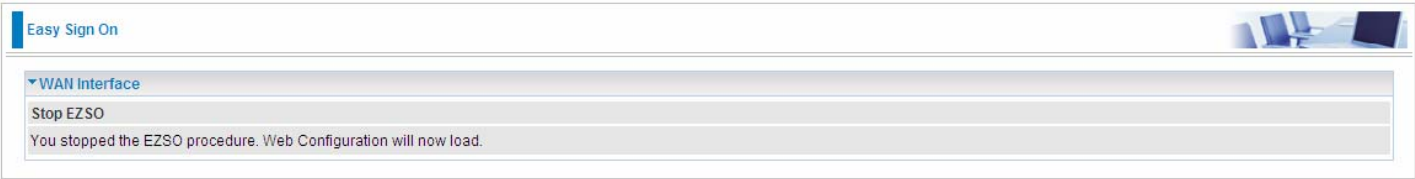
while the device is configured (DSL synchronized).



4. WAN port configuration is success and next to wireless, if you want skip wireless setting, click **Done**.

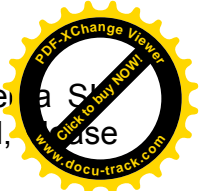


Click **Done**, web configuration will be loaded, you will enter the web configuration page.



5. After the configuration is successful, click **Next to Wireless** button and you may proceed to configure the Wireless setting. Here you can set to activate wireless and set the SSID and encryption Key. (1. Leave it empty to disable the wireless security; 2. Fill in the Key, and the encryption mode will be WPA2-PSK/AES).





Set the VoIP parameters. First user should turn to a VoIP service provider to register a SIP account, write down the registration information and fill it in the following blanks. For detail, see [How to Set up VoIP](#).

Easy Sign On

VOIP Setting (WAN > Wireless > VOIP)

Enter SIP Account Information

Account Name	<input type="text"/>
Account Enabled	<input type="checkbox"/> Enable
SIP Registrar	<input type="text"/>
SIP Registrar Port	5060
Registration Expire Timeout	3600 [1-2147483647]
Extension	<input type="text"/>
Username	<input type="text"/>
Password	<input type="password"/>
Authentication ID	<input type="text"/>
Incoming Phone Port	None
Answering Machine	<input type="checkbox"/> Enable
Send Messages Via E-mail	<input type="checkbox"/> Enable

Apply Cancel Finish

Easy Sign On

VOIP Setting (WAN > Wireless > VOIP)

SIP Account Information

Account Name	Enable	Service Provider Name	SIP Registrar	Port	Registration Expire Timeout	Extension	Username	Incoming Phone Port	Answering Machine	Send Messages Via E-mail	Answering Machine Access Code	Edit
test1	✓	defaultSP	http://union66.com	5060	3600	1218	test1	Phone Port 1	Enable	Enable	*#01	Edit
SIP2	✗	defaultSP	http://union66.com	5060	3600	2218		Phone Port 2	Disabled	Disabled	*#02	Edit

VOIP Dial Plan

Phone Port	Rule Name
Phone Port 1	X.@test1
Phone Port 2	X.@SIP2

Add SIP Account Configure Dial Plan Finish

7. In the above page, click finish to complete the EZSO settings.

Easy Sign On

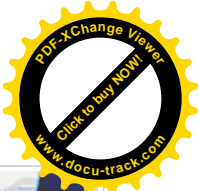
Process finished

Success.

The Easy-Sign-On process is finished. Your device has been successfully configured.

You can now:

1. Log onto the router management interface for more advanced settings on 192.168.1.254
2. Continue to [wpad.home.gateway/wpad.dat](#)



Click 192.168.1.254, it will lead you to the following page.

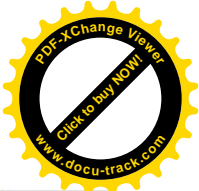
Status

Device Information

Model Name	BIPAC 7800VNOX
Host Name	home.gateway
System Up-Time	0D 0H 11M 47S
Date/Time	Fri Jan 4 07:10:36 2013
Software Version	2.23
LAN IPv4 Address	192.168.1.254
LAN IPv6 Address	2000:1211:1000:5fb2:204:edff:fe02:1/64
MAC Address	00:04:ed:02:00:01
DSL PHY and Driver Version	A2pD035j.d24d
Wireless Driver Version	5.100.138.2008.cpe2.23L.4

WAN

Line Rate - Upstream (Kbps)	1315
Line Rate - Downstream (Kbps)	27431
Default Gateway	ppp0.1 (DSL)
Connection Time	00:01:57
Primary DNS Server	218.2.135.1
Secondary DNS Server	218.2.135.1
Default IPv6 Gateway	ppp0.1 (DSL)



Ethernet mode

Select **Ethernet**, press **Continue** to go on to next step.

Easy Sign On

WAN Interface (WAN > Wireless > VOIP)

Select WAN Interface

Main Port: Ethernet (Current Main Port: DSL)

Continue Done

2. Enter the username, password from your ISP, for IP and DNS settings, also refer to your ISP. Here IPv6 service is enabled by default.

Easy Sign On

WAN Interface (WAN > Wireless > VOIP)

WAN Service

Type: PPP over Ethernet (PPPoE)

Username: []

Password: []

Service Name: []

Authentication Method: AUTO

IPv4 Address: Static

IP Address: []

IPv6 for this service: Enable

IPv6 Address: Static

IP Address: []

MTU: 1492

Continue

3. Wait while the device is configured.

Easy Sign On

WAN Interface (WAN > Wireless > VOIP)

Please wait while the device is configured.

4. WAN port configuration is success.

Easy Sign On

WAN Interface (WAN > Wireless > VOIP)

Congratulations!

Your WAN port has been successfully configured.

Next to Wireless Done

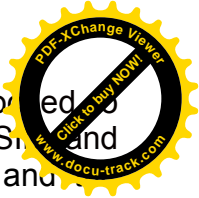
Click **Done**, web configuration will be loaded, you will enter the web configuration page.

Easy Sign On

WAN Interface

Stop EZSO

You stopped the EZSO procedure. Web Configuration will now load.



After the configuration is successful, click **Next to Wireless** button and you may proceed to configure the Wireless setting. Here you can set to activate wireless and set the SSID and WPA Pre-Shared Key (1. Leave it empty to disable the wireless security; 2. Fill in the Key, and encryption mode will be WPA2-PSK/AES).

Easy Sign On

Wireless (WAN > Wireless > VOIP)

Parameters

Wireless Enable

SSID wan-ap

WPA Pre-Shared Key [Click here to display](#)

Continue

Easy Sign On

Wireless (WAN > Wireless > VOIP)

Please wait while the device is configured.

6. Set the VoIP parameters. First user should turn to a VoIP service provider to register a SIP account, write down the registration information and fill it in the following blanks. For detail, please refer to [VoIP](#).

Easy Sign On

VOIP Setting (WAN > Wireless > VOIP)

Enter SIP Account Information

Account Name

Account Enabled Enable

SIP Registrar

SIP Registrar Port 5060

Registration Expire Timeout 3600 [1-2147483647]

Extension

Username

Password

Authentication ID

Incoming Phone Port None

Answering Machine Enable

Send Messages Via E-mail Enable

Apply Cancel Finish

Easy Sign On

VOIP Setting (WAN > Wireless > VOIP)

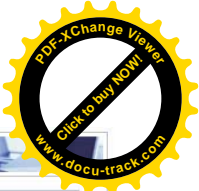
SIP Account Information

Account Name	Enable	Service Provider Name	SIP Registrar	Port	Registration Expire Timeout	Extension	Username	Incoming Phone Port	Answering Machine	Send Messages Via E-mail	Answering Machine Access Code	Edit
test1	✓	defaultSP	http://union66.com	5060	3600	1218	test1	Phone Port 1	Enable	Enable	*#01	Edit
SIP2	✗	defaultSP	http://union66.com	5060	3600	2254		Phone Port 2	Disabled	Disabled	*#02	Edit

VOIP Dial Plan

Phone Port	Rule Name
Phone Port 1	X.@test1
Phone Port 2	X.@SIP2

Add SIP Account Configure Dial Plan Finish



In the above page, click finish to complete the EZSO settings.

Process finished

Success.

The Easy-Sign-On process is finished. Your device has been successfully configured.

You can now:

1. Log onto the router management interface for more advanced settings on 192.168.1.254
2. Continue to wpad.home.gateway/wpad.dat

Click **192.168.1.254**, it will lead you to the following page.

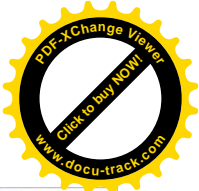
Status

Device Information

Model Name	BiPAC 7800VNOX
Host Name	home.gateway
System Up-Time	0D 0H 13M 27S
Date/Time	Fri Jan 4 07:12:16 2013
Software Version	2.23
LAN IPv4 Address	192.168.1.254
LAN IPv6 Address	2000:1211:1000:5fb2:204:edff:fe02:1/64
MAC Address	00:04:ed:02:00:01
DSL PHY and Driver Version	A2pD035j.d24d
Wireless Driver Version	5.100.138.2008.cpe2.23L.4

WAN

Line Rate - Upstream (Kbps)	0
Line Rate - Downstream (Kbps)	0
Default Gateway	ppp0.1 (Ethernet)
Connection Time	00:00:46
Primary DNS Server	218.2.135.1
Secondary DNS Server	218.2.135.1
Default IPv6 Gateway	ppp0.1 (Ethernet)



Select **3G/LTE**, press **Continue** to go on to next step.

Easy Sign On

WAN Interface (WAN > Wireless > VOIP)

Select WAN Interface

Main Port: 3G/LTE (Current Main Port: DSL)

Continue Done

2. Enter the APN, username, password from your ISP, for settings about Authentication method, PIN, etc, also refer to your ISP.

Easy Sign On

WAN Interface (WAN > Wireless > VOIP)

Parameters

Mode	UMTS 3G preferred
APN	internet
Username	
Password	
Authentication Method	AUTO
PIN	
Obtain DNS	<input checked="" type="checkbox"/> Automatic
Primary DNS / Secondary DNS	

*Warning: Entering the wrong PIN code three times will lock the SIM.

Continue

3. Wait while the device is configured.

Easy Sign On

WAN Interface (WAN > Wireless > VOIP)

Please wait while the device is configured.

4. WAN port configuration is success.

Easy Sign On

WAN Interface (WAN > Wireless > VOIP)

Congratulations !

Your WAN port has been successfully configured.

Next to Wireless Done

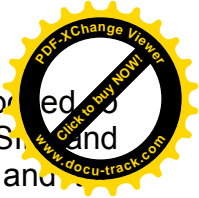
Click **Done**, web configuration will be loaded, you will enter the web configuration page.

Easy Sign On

WAN Interface

Stop EZSO

You stopped the EZSO procedure. Web Configuration will now load.



After the configuration is successful, click **Next to Wireless** button and you may proceed to configure the Wireless setting. Here you can set to activate wireless and set the SSID and WPA Pre-Shared Key (1. Leave it empty to disable the wireless security; 2. Fill in the Key, and encryption mode will be WPA2-PSK/AES).

Easy Sign On

Wireless (WAN > Wireless > VOIP)

Parameters

Wireless Enable

SSID wlan-ap

WPA Pre-Shared Key [Click here to display](#)

Continue

Easy Sign On

Wireless (WAN > Wireless > VOIP)

Please wait while the device is configured.

6. Set the VoIP parameters. First user should turn to a VoIP service provider to register a SIP account, write down the registration information and fill it in the following blanks. For detail, please refer to [VoIP](#).

Easy Sign On

VOIP Setting (WAN > Wireless > VOIP)

Enter SIP Account Information

Account Name

Account Enabled Enable

SIP Registrar

SIP Registrar Port 5060

Registration Expire Timeout 3600 [1-2147483647]

Extension

Username

Password

Authentication ID

Incoming Phone Port None

Answering Machine Enable

Send Messages Via E-mail Enable

Apply Cancel Finish

Easy Sign On

VOIP Setting (WAN > Wireless > VOIP)

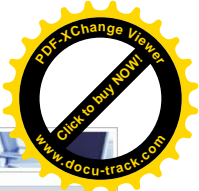
SIP Account Information

Account Name	Enable	Service Provider Name	SIP Registrar	Port	Registration Expire Timeout	Extension	Username	Incoming Phone Port	Answering Machine	Send Messages Via E-mail	Answering Machine Access Code	Edit
test1	✓	defaultSP	http://union66.com	5060	3600	1218	test1	Phone Port 1	Enable	Enable	*#01	Edit
SIP2	✗	defaultSP	http://union66.com	5060	3600	2254		Phone Port 2	Disabled	Disabled	*#02	Edit

VOIP Dial Plan

Phone Port	Rule Name
Phone Port 1	X.@test1
Phone Port 2	X.@SIP2

Add SIP Account Configure Dial Plan Finish



In the above page, click finish to complete the EZSO settings.

Process finished

Success.

The Easy-Sign-On process is finished. Your device has been successfully configured.

You can now:

1. Log onto the router management interface for more advanced settings on 192.168.1.254
2. Continue to www.sohu.com/

Click **192.168.1.254**, it will lead you to the following page.

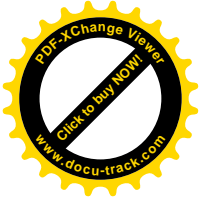
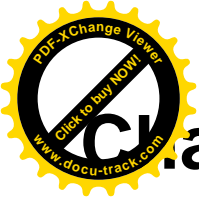
Status

Device Information

Model Name	BiPAC 7800VNOX
Host Name	home.gateway
System Up-Time	0D 0H 15M 26S
Date/Time	Fri Jan 4 07:14:16 2013
Software Version	2.23
LAN IPv4 Address	192.168.1.254
LAN IPv6 Address	fe80::204:edff:fe02:1/64
MAC Address	00:04:ed:02:00:01
DSL PHY and Driver Version	A2pD035j.d24d
Wireless Driver Version	5.100.138.2008.cpe2.23L.4


WAN

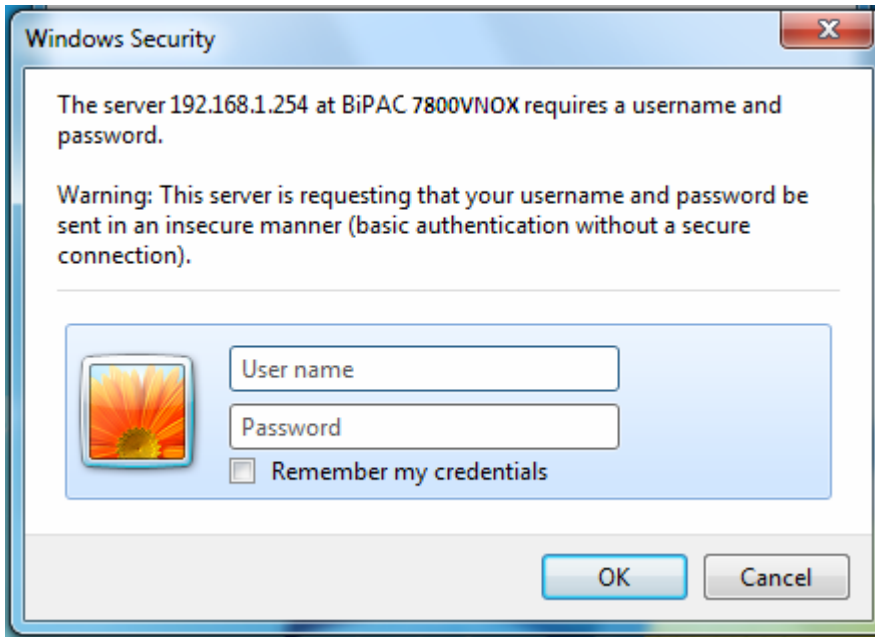
Line Rate - Upstream (Kbps)	0
Line Rate - Downstream (Kbps)	0
Default Gateway	ppp3g0 (3G/LTE)
Connection Time	00:03:21
Primary DNS Server	221.6.4.66
Secondary DNS Server	58.240.57.33
Default IPv6 Gateway	ppp0.1 (DSL)



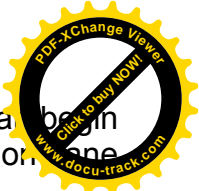
Chapter 4: Configuration

Configuration via Web Interface

Open your web browser; enter the IP address of your router, which by default is 192.168.1.254, and click  or press 'Enter' key on the keyboard, a login prompt window will appear. The default root username and password are "admin" and "admin" respectively.



Congratulations! You are now successfully logged in to the ADSL2+ Router!



Once you have logged on to your BiPAC 7800VNP(O)X Router via your web browser, you can begin to set up according to your requirements. On the configuration homepage, the left navigation pane links you directly to the setup pages, which include:

- **Status** (Summary, WAN, Statistics, Bandwidth Usage, Route, 3G/LTE Status, ARP, DHCP, IPSec(7800VNOX only), Log, VOIP)
- **Quick Start** (Quick Start, VOIP Quick Setup)
- **Configuration** (LAN, Wireless, WAN, VOIP, System, USB, IP Tunnel, Security, Quality of Service, NAT, Wake On LAN)
- **Advanced Setup** (Routing, DNS, Static ARP, UPnP, VPN (7800VNOX only), Certificate, Multicast, Management, Diagnostics)

Note: VPN is only available for 7800VNOX.

This Section gives users an easy access to the information about the working router and access to view the current status of the router. Here [Summary](#), [WAN](#), [Statistics](#), [Bandwidth Usage](#), [3G/LTE Status](#), [Route](#), [ARP](#), [DHCP](#), [IPSec \(7800VNOX only\)](#), [PPTP \(7800VNOX only\)](#), [Log](#) and [VoIP](#) subsections are included.

▼ Status
▪ Summary
▪ WAN
▶ Statistics
▶ Bandwidth Usage
▪ 3G/LTE Status
▪ Route
▪ ARP
▪ DHCP
▪ IPSec
▪ PPTP
▶ Log
▶ VOIP
▶ Quick Start
▶ Configuration
▶ Advanced Setup

(7800VNOX)

The basic information about the device is provided here (the following is a configured screenshots to let users understand clearly).

Status	
Device Information	
Model Name	BIPAC 7800VNOX
Host Name	home.gateway
System Up-Time	0D 0H 11M 47S
Date/Time	Fri Jan 4 07:10:36 2013
Software Version	2.23
LAN IPv4 Address	192.168.1.254
LAN IPv6 Address	2000:1211:1000:5fb2:204:edff:fe02:1/64
MAC Address	00:04:ed:02:00:01
DSL PHY and Driver Version	A2pD035j.d24d
Wireless Driver Version	5.100.138.2008.cpe2.23L.4
WAN	
Line Rate - Upstream (Kbps)	1315
Line Rate - Downstream (Kbps)	27431
Default Gateway	ppp0.1 (DSL)
Connection Time	00:01:57
Primary DNS Server	218.2.135.1
Secondary DNS Server	218.2.135.1
Default IPv6 Gateway	ppp0.1 (DSL)

Device Information

Model Name: Displays the model name.

Host Name: Displays the name of the router.

System Up-Time: Displays the elapsed time since the device is on.

Date/Time: Displays the current exact date and time.

Software Version: Firmware version.

LAN IPv4 Address: Displays the LAN IPv4 address.

LAN IPv6 Address: Displays the LAN IPv6 address. Default is a Link-Local address, but when connects to ISP, it will display the Global Address, like above figure.

MAC Address: Displays the MAC address.

DSL PHY and Driver Version: Display DSL PHY and Driver version.

Wireless Driver Version: Displays wireless driver version.

WAN

Line Rate – Upstream (Kbps): Displays Upstream line Rate in Kbps.

Line Rate – Downstream (Kbps): Displays Downstream line Rate in Kbps.

Default Gateway: Displays Default Gateway.

Connection Time: Displays the elapsed time since ADSL connection is up.


Primary DNS Server: Displays IPV4 address of Primary DNS Server.

Secondary DNS Server: Displays IPV4 address of Secondary DNS Server.

Default IPv6 Gateway: Displays the IPv6 Gateway used.



This table displays the information of the WAN connections; users can turn here for WAN connection information.

Status 

▼ WAN

Wan Info

Interface	Description	Type	Status	Connection Time	IPv4 Address	IPv6 Address
ppp0.1	pppoe_0_8_35	PPPoE	<input type="button" value="Disconnect"/>	00:04:54	10.40.90.194	2000:db98:1000:1000:6669:bf38:a1e0:6ce2/64
USB3G0			3G/LTE Card not found			

Interface: The WAN connection interface.

Description: The description of this connection.

Type: The protocol used by this connection.

Status: To disconnect or connect the link.

Connection Time: The WAN connection time since WAN is up.


IPv4 Address: The WAN IPv4 Address the device obtained.

IPv6 Address: The WAN IPv6 Address the device obtained.

LAN

The table shows the statistics of LAN.

Note: P4 can be configured as EWAN, and when the device is in EWAN profile, there is no P4/EWAN interface as P4 is working as a WAN port.


Status 

LAN Statistics

Interface	Received				Transmitted			
	Bytes	Packets	Errors	Drops	Bytes	Packets	Errors	Drops
P4/EWAN	0	0	0	0	0	0	0	0
P3	0	0	0	0	0	0	0	0
P2	398001	3178	0	0	3661257	4655	0	0
P1	0	0	0	0	0	0	0	0
wl0	0	0	0	0	3296	24	0	0
wl1	0	0	0	0	3296	24	0	0

Reset

(DSL)

Status 

LAN Statistics

Interface	Received				Transmitted			
	Bytes	Packets	Errors	Drops	Bytes	Packets	Errors	Drops
P3	0	0	0	0	0	0	0	0
P2	92917	693	0	0	294711	650	0	0
P1	0	0	0	0	0	0	0	0
wl0	0	0	0	0	37703	185	0	0
wl1	0	0	0	0	33909	153	0	0

Reset

(EWAN)

Interface: List each LAN interface. P1-P4 indicates the four LAN interfaces.

Bytes: Display the Received and Transmitted traffic statistics in Bytes.

Packets: Display the Received and Transmitted traffic statistics in Packets.

Errors: Display the statistics of errors arising in Receiving or Transmitting data.

Drops: Display the statistics of drops arising in Receiving or Transmitting data.

Reset: Press this button to refresh the statistics.

able shows the statistics of WAN.

The screenshot shows a 'Status' page with a 'WAN Service' section. Under 'Statistics', there is a table with columns for Interface, Description, Received (Bytes, Packets, Errors, Drops), and Transmitted (Bytes, Packets, Errors, Drops). A 'Reset' button is located below the table.

Interface	Description	Received				Transmitted			
		Bytes	Packets	Errors	Drops	Bytes	Packets	Errors	Drops
ppp0.1	pppoe_0_8_35	216903	993	0	0	10763	597	0	0

Interface: Display the connection interface.

Description: the description for the connection.

Bytes: Display the WAN Received and Transmitted traffic statistics in Bytes.

Packets: Display the WAN Received and Transmitted traffic statistics in Packests.

Errors: Display the statistics of errors arising in Receiving or Transmitting data.

Drops: Display the statistics of drops arising in Receiving or Transmitting data.

Reset: Press this button to refresh the statistics.

xTM

The Statistics-xTM screen displays all the xTM statistics

The screenshot shows a 'Status' page with an 'xTM' section. Under 'Interface Statistics', there is a table with columns for Port Number, In Octets, Out Octets, In Packets, Out Packets, In OAM Cells, Out OAM Cells, In ASM Cells, Out ASM Cells, In Packet Errors, and In Cell Errors. A 'Reset' button is located below the table.

Port Number	In Octets	Out Octets	In Packets	Out Packets	In OAM Cells	Out OAM Cells	In ASM Cells	Out ASM Cells	In Packet Errors	In Cell Errors
1	14467180	1330512	11347	7340	2	4	0	0	0	0

Port Number: Shows number of the port for xTM.

In Octets: Number of received octets over the interface.

Out Octets: Number of transmitted octets over the interface.

In Packets: Number of received packets over the interface.

Out Packets: Number of transmitted packets over the interface.

In OAM Cells: Number of OAM cells received.

Out OAM Cells: Number of OAM cells transmitted.

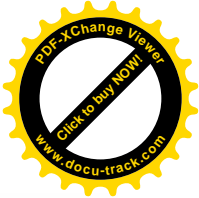
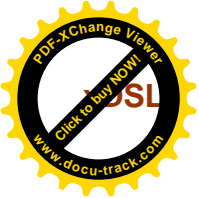
In ASM Cells: Number of ASM cells received.

Out ASM Cells: Number of ASM cells transmitted.

In Packet Errors: Number of received packets with errors.

In Cell Errors: Number of received cells with errors.

Reset: Click to reset the statistics.



xDSL		
xDSL		
Mode	ADSL_2plus	
Traffic Type	ATM	
Status	Up	
Link Power State	L0	
	Downstream	Upstream
Line Coding (Trellis)	On	On
SNR Margin (0.1 dB)	71	74
Attenuation (0.1 dB)	0	8
Output Power (0.1 dBm)	72	93
Attainable Rate (Kbps)	28008	1331
Rate (Kbps)	27403	1303
MSGc (# of bytes in overhead channel message)	51	27
B (# of bytes in Mux Data Frame)	243	81
M (# of Mux Data Frames in FEC Data Frame)	1	1
T (Mux Data Frames over sync bytes)	4	1
R (# of check bytes in FEC Data Frame)	0	0
S (ratio of FEC over PMD Data Frame length)	0.2846	1.9878
L (# of bits in PMD Data Frame)	6858	330
D (interleaver depth)	1	1
Delay (msec)	0.7	0.49
INP (DMT symbol)	0.0	0.0
Super Frames	0	0
Super Frame Errors	0	0
RS Words	0	1553346
RS Correctable Errors	0	0
RS Uncorrectable Errors	0	0
HEC Errors	0	0
OCD Errors	0	0
LCD Errors	0	0
Total Cells	54842488	2595079
Data Cells	2543	1681
Bit Errors	0	0
Total ES	0	0
Total SES	0	0
Total UAS	1869	1869
<input type="button" value="xDSL BER Test"/> <input type="button" value="Reset"/>		

Mode: Modulation protocol, including G.dmt, G.lite, T1.413, ADSL2, AnnexL, ADSL2+ and AnnexM.

Traffic Type: transfer mode, here supports ATM and PTM.

Status: Show the status of DSL link.

Link Power State: Show link output power state.

Line Coding (Trellis): Trellis on/off.

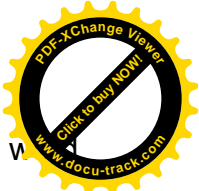
SNR Margin (0.1 dB): show the Signal to Noise Ratio(SNR) margin.

Attenuation (0.1 dB): This is estimate of average loop attenuation of signal.

Output Power (0.1 dBm): show the output power.

Attainable Rate (Kbps) : The sync rate you would obtain.

Rate (Kbps): show the downstream and upstream rate in Kbps.



L (number of bytes in DMT frame): show the number of bytes in DMT frame.

R (number of check bytes in RS code word): show the number of check bytes in RS code word.

S (RS code word size in DMT frame): show the RS code word size in DMT frame.

D (interleaver depth): show the interleaver depth.

Delay (msec): show the delay time in msec.

INP (DMT symbol): show the DMT symbol.

Super Frames: the total number of super frames.

Super Frame Errors: the total number of super frame errors.

RS Words: Total number of Reed-Solomon code errors.

RS Correctable Errors: Total number of RS with correctable errors.

RS Uncorrectable Errors: Total number of RS words with uncorrectable errors.

HEC Errors: Total number of Header Error Checksum errors.

OCD Errors: Total number of out-of-cell Delineation errors.

LCD Errors: Total number of Loss of Cell Delineation.

Total Cells: Total number of cells.

Data Cells: Total number of data cells.

Bit Errors: Total number of bit errors.

Total ES: Total Number of Errored Seconds.

Total SES: Total Number of Severely Errored Seconds.

Total UAS: Total Number of Unavailable Seconds.

xDSL BER Test: Click this button to start a bit Error Rate Test. The ADSL Bit Error Rate (BER) test determines the quality of the ADSL connection. The test is done by transferring idle cells containing a known pattern and comparing the received data with this known pattern to check for any errors.

ADSL BER Test -- Start

The ADSL Bit Error Rate (BER) test determines the quality of the ADSL connection. The test is done by transferring idle cells containing a known pattern and comparing the received data with this known pattern to check for any errors.

Tested Time (sec)

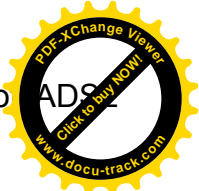
Select the Tested Time(sec), press **Start** to start test.

ADSL BER Test -- Running

The xDSL BER test is in progress.

Connection Speed 8000 Kbps

The test will run for 20 seconds



If the connection is OK, the following test result window will appear. You can view the quality of the connection. Here the connection is OK.

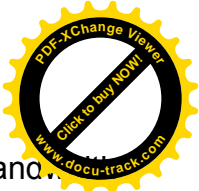
ADSL BER Test -- Result

The ADSL BER test completed successfully.

Test Time	20 seconds
Total Transferred Bits	0x0000000008A31680
Error Ratio	0.00e+00

Close

Reset: Click this button to reset the statistics.

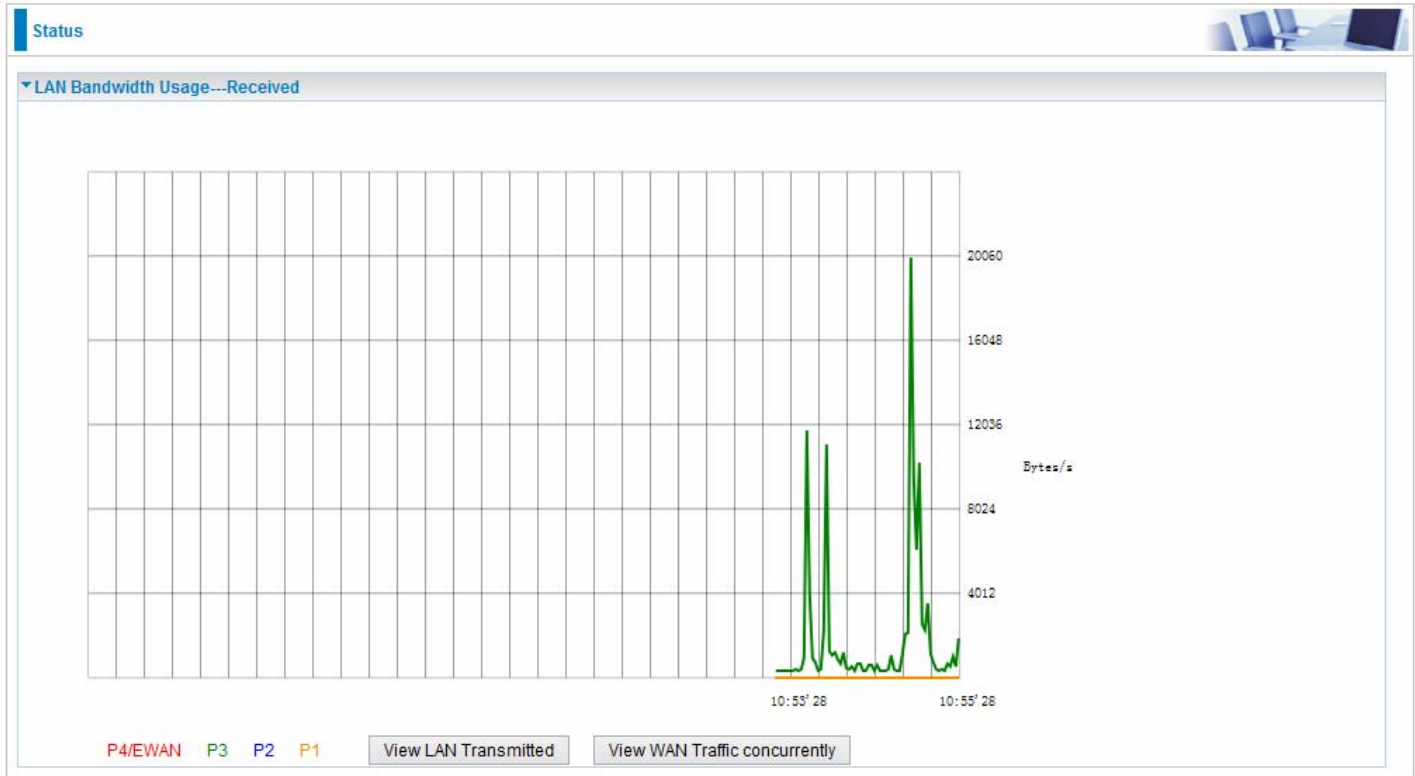


Bandwidth Usage

Bandwidth Usage provides users direct view of bandwidth usage with simple diagram. Bandwidth usage shows the use of the bandwidth from two angles: Transmitted and Received, giving users a clear idea of the usage.

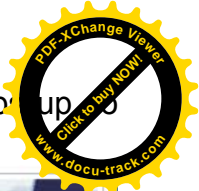
LAN

Note: P4 can be configured as EWAN, and when the device is in EWAN profile, there is no P4/EWAN interface as P4 is working as a WAN port.

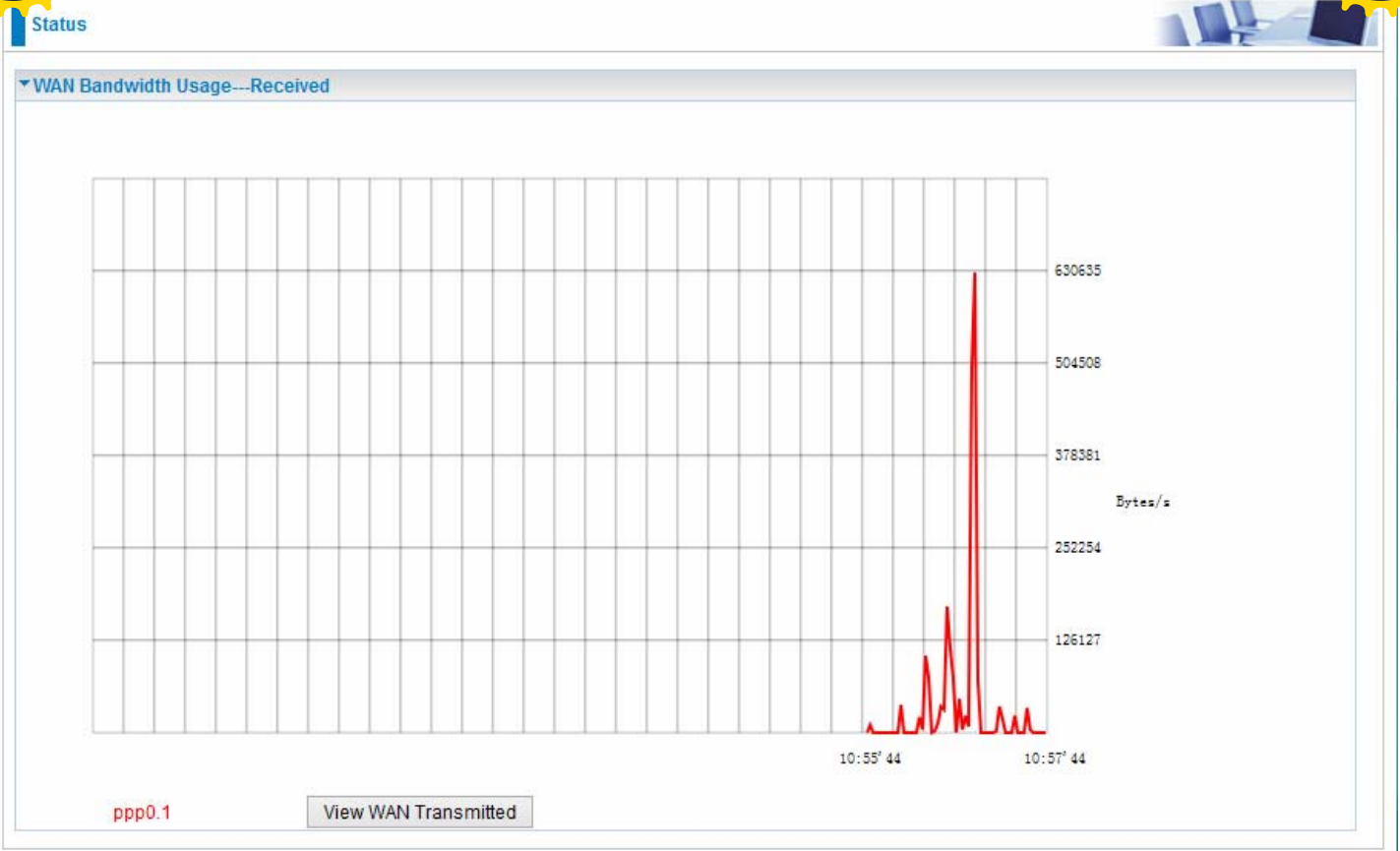


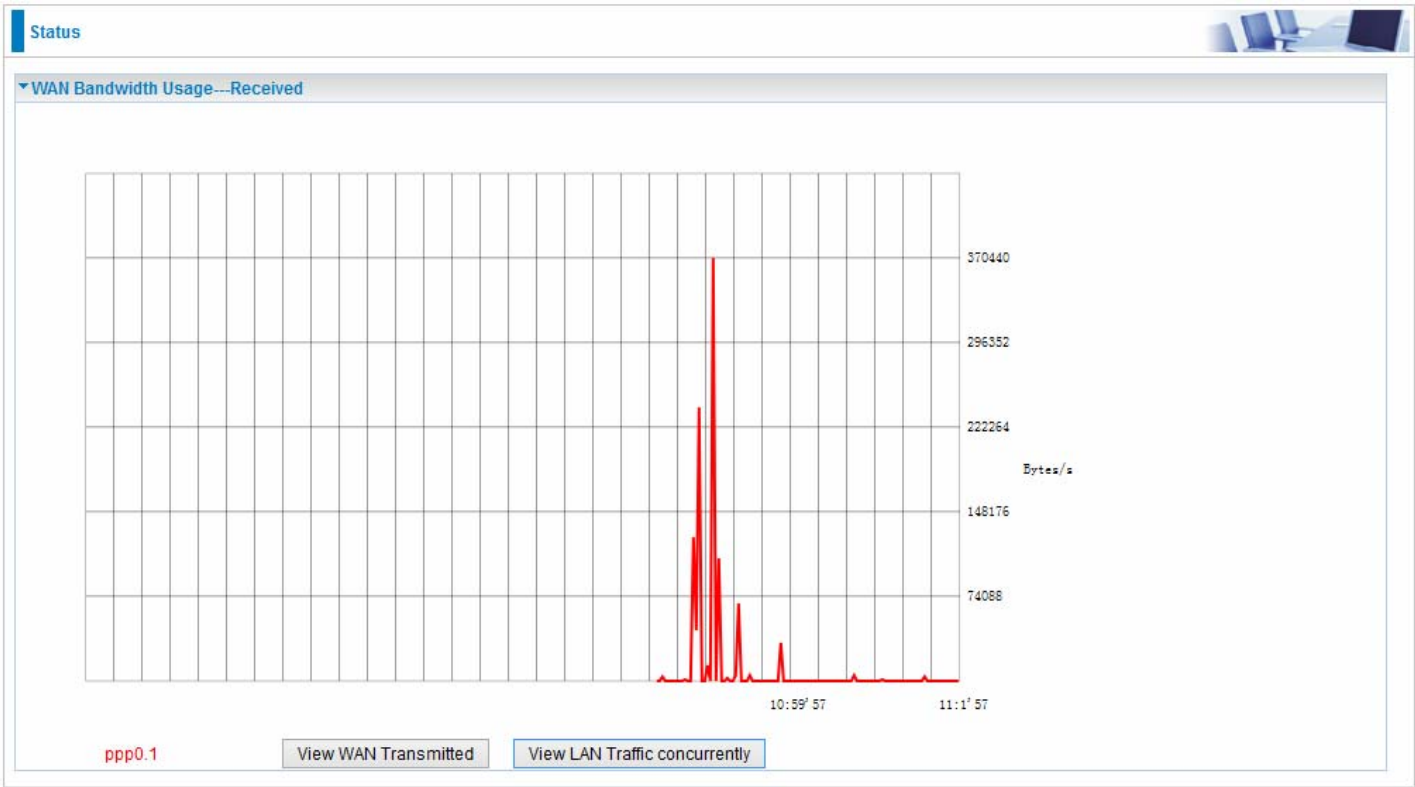
(DSL)

Press **View LAN Transmitted** button to change the diagram to the statistics from a Received Bytes of view. (**Note:** P3 means Ethernet port #3, and the traffic information of the port #3 is identified with green, the same color with P3 in the diagram; other ports all take the same mechanism.)



When you press **View WAN Traffic concurrently** button, the WAN Bandwidth Usage pop up window appears that users can view the WAN traffic concurrently.

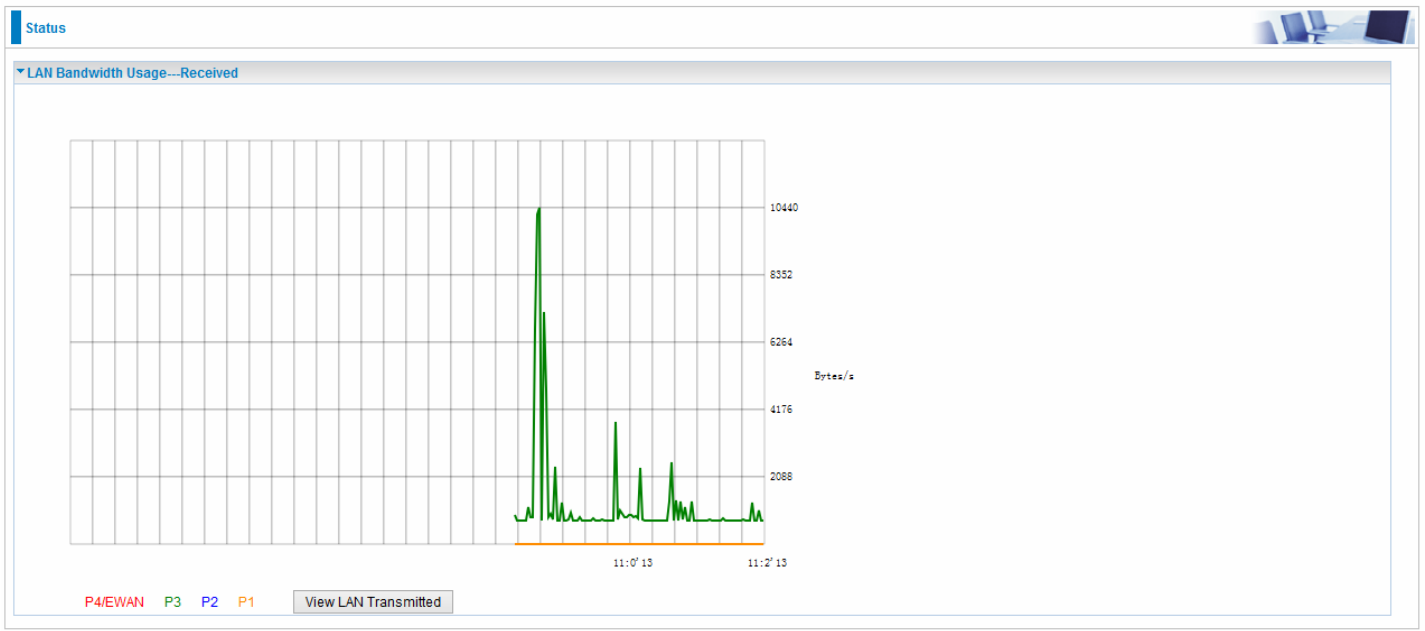


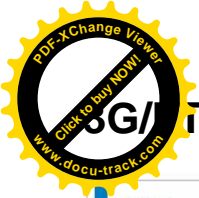


Press **View WAN Transmitted** button to change the diagram to the statistics from a Received Bytes of view.

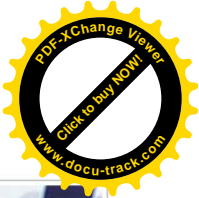


Press **View LAN Traffic concurrently** button to directly switch to the LAN Bandwidth Usage page to view the LAN traffic concurrently.






3G/LTE Status



Status

3G/LTE Status

Parameters

Status	Up
Signal Strength	
Network Name	China Unicom
Network Mode	UMTS
Card Name	K4505-Z
Card Firmware	BD_P680A2V1.0.0B05

Status: The current status of the 3G/LTE card.

Signal Strength: The signal strength bar indicates current 3G signal strength.

Network Name: The network name that the device is connected to.

Network Mode: The current operation mode for 3G/LTE card, it depends on service provider and card's limitation, GSM or UMTS.

Card Name: The name of the 3G/LTE card.

Card Firmware: The current firmware for the 3G/LTE card.

Status

Route

Flags: U - up, ! - reject, G - gateway, H - host, R - reinstate, D - dynamic (redirect), M - modified (redirect)

Destination	Gateway	Subnet Mask	Flag	Metric	Service	Interface
10.0.0.46	0.0.0.0	255.255.255.255	UH	0	pppoe_0_8_35	ppp0.1
192.168.1.0	0.0.0.0	255.255.255.0	U	0		br0
0.0.0.0	0.0.0.0	0.0.0.0	U	0	pppoe_0_8_35	ppp0.1

Destination: The IP address of destination network.

Gateway: The IP address of the gateway this route uses.

Subnet Mask: The destination subnet mask.

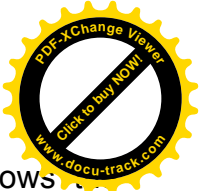
Flag: Show the status of the route.

- ① **U:** Show the route is activated or enabled.
- ① **H (host):** destination is host not the subnet.
- ① **G:** Show that the outside gateway is needed to forward packets in this route.
- ① **R:** Show that the route is reinstated from dynamic routing.
- ① **D:** Show that the route is dynamically installed by daemon or redirecting.
- ① **M:** Show the route is modified from routing daemon or redirect.

Metric: Display the number of hops counted as the Metric of the route.

Service: Display the service that this route uses.

Interface: Display the existing interface this route uses.



This section displays the router's ARP (Address Resolution Protocol) Table, which shows mapping of Internet (IP) addresses to Ethernet (MAC) addresses. This is useful as a quick way of determining the MAC address of the network interface of your PCs to use with the router's **Security – MAC Filtering** function. Here IPv6 Neighbor Table, listed with IPv6 address-MAC mapping, is supported.

Device Info																								
<div style="border: 1px solid #ccc; padding: 5px;"> <div style="background-color: #f0f0f0; padding: 2px;"> ▼ ARP </div> <div style="padding: 5px;"> <p>ARP Table</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 35%;">IP Address</th> <th style="width: 20%;">Flag</th> <th style="width: 30%;">MAC Address</th> <th style="width: 15%;">Device</th> </tr> </thead> <tbody> <tr> <td>192.168.1.1</td> <td>Incomplete</td> <td>00:00:00:00:00:00</td> <td>br0</td> </tr> <tr> <td>192.168.1.100</td> <td>Complete</td> <td>00:22:64:1b:6f:fd</td> <td>br0</td> </tr> </tbody> </table> <p>Neighbor Cache Table</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">IPv6 Address</th> <th style="width: 25%;">MAC Address</th> <th style="width: 25%;">Device</th> </tr> </thead> <tbody> <tr> <td>fe80::d160:5adb:9009:87ae</td> <td>00:22:64:1b:6f:fd</td> <td>br0</td> </tr> <tr> <td>2000:1211:1002:4f0b:bd94:aa1e:3567:9759</td> <td>00:22:64:1b:6f:fd</td> <td>br0</td> </tr> </tbody> </table> </div> </div>				IP Address	Flag	MAC Address	Device	192.168.1.1	Incomplete	00:00:00:00:00:00	br0	192.168.1.100	Complete	00:22:64:1b:6f:fd	br0	IPv6 Address	MAC Address	Device	fe80::d160:5adb:9009:87ae	00:22:64:1b:6f:fd	br0	2000:1211:1002:4f0b:bd94:aa1e:3567:9759	00:22:64:1b:6f:fd	br0
IP Address	Flag	MAC Address	Device																					
192.168.1.1	Incomplete	00:00:00:00:00:00	br0																					
192.168.1.100	Complete	00:22:64:1b:6f:fd	br0																					
IPv6 Address	MAC Address	Device																						
fe80::d160:5adb:9009:87ae	00:22:64:1b:6f:fd	br0																						
2000:1211:1002:4f0b:bd94:aa1e:3567:9759	00:22:64:1b:6f:fd	br0																						

ARP table

IP Address: Shows the IP Address of the device that the MAC address maps to.

Flag: Shows the current status of the ARP entries.

- ① Complete: the route resolving is processing well.
- ① M(Marked as permanent entry): the route is permanent.
- ① P (publish entry): publish this route item.

MAC Address: Shows the MAC address that is corresponded to the IP address of the device it is mapped to.

Device: here refers to the physical interface, it is a concept to identify Clients from LAN or WAN. For example, the Clients in LAN, here displays “br0”.

Neighbor Cache Table

IPv6 address: Shows the IPv6 Address of the device that the MAC address maps to.

MAC Address: Shows the MAC address that is corresponded to the IPv6 address of the device it is mapped to.

Device: here refers to the physical interface, it is a concept to identify Clients from LAN or WAN. For example, the Clients in LAN, here displays “br0”.

The DHCP Table lists the DHCP lease information for all IP addresses assigned by the DHCP server in the device.

Status			
DHCP			
Leased Table			
Host Name	MAC Address	IP Address	Expires In
billion-17bc6f1	18:a9:05:38:04:03	192.168.1.1	21 hours, 19 minutes, 7 seconds
ytt-PC	00:16:d4:a7:54:4a	192.168.1.2	23 hours, 26 minutes, 20 seconds

Host Name: The Host Name of DHCP client.

MAC Address: The MAC Address of internal DHCP client host.

IP Address: The IP address which is assigned to the host with this MAC address.

Expires in: Show the remaining time after registration.

Note: The devices are free to access each other through device name on condition that they all obtain their IPs from the DHCP. If the device IP is obtained from the DHCP, other devices can access the device through the device name.

For example, the PC ytt-PC can ping the billion-17bc6f1 using the host name instead of its IP.

```

C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\ytt>ping billion-17bc6f1

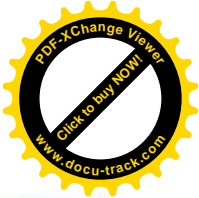
Pinging billion-17bc6f1.home.gateway [192.168.1.1] with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\ytt>
  
```



IPSec (7800VNOX only)



Status

IPSec Status

VPN Tunnels					
Name	Active	Local Subnet	Remote Subnet	Remote Gateway	SA
11	✘	192.168.1.0 -- 255.255.255.0	192.168.0.0 -- 255.255.255.0	172.16.1.235	

Refresh

Name: The IPSec connection name.

Active: Display the connection status.

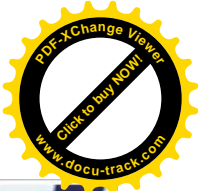
Local Subnet: Display the local network.

Remote Subnet: Display the remote network.

Remote Gateway: The remote gateway address.

SA: The Security Association for this IPSec entry.

Refresh: Click this button to refresh the tunnel status.



PPTP (7800VNOX only)

Status

▼ PPTP Status

PPTP Server ▼

Name	Enable	Status	Connection Type	Peer Network IP	Connect By	Action
test	<input checked="" type="checkbox"/>	Connected	Remote Access		172.16.1.207	<input type="button" value="Drop"/>

PPTP Client ▼

Name	Enable	Status	Connection Type	Peer Network IP	Client IP	Action
<input type="button" value="Refresh"/>						

PPTP Server

Name: The PPTP connection name.

Enable: Display the connection status with icons.

Status: The connection status.

Connection Type: Remote Access or LAN to LAN.

Peer Network IP: Display the remote network and subnet mask in LAN to LAN PPTP connection.

Connected By: Display the IP of remote connected client.

Action: Act to the connection. Click Drop button to disconnect the tunnel connection.

PPTP Client

Name: The PPTP connection name.

Enable: Display the connection status with icons.

Status: The connection status.

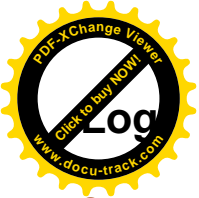
Connection Type: Remote Access or LAN to LAN.

Peer Network IP: Display the remote network and subnet mask in LAN to LAN PPTP connection.

Client: Assigned IP by PPTP server.


Action: Act to the connection. Click Drop button to disconnect the tunnel connection.

Refresh: Click this button to refresh the connection status.



System Log

Display system logs accumulated up to the present time. You can trace historical information with this function. And the log policy can be configured in [Configure Log](#) section.

Status 

System Log

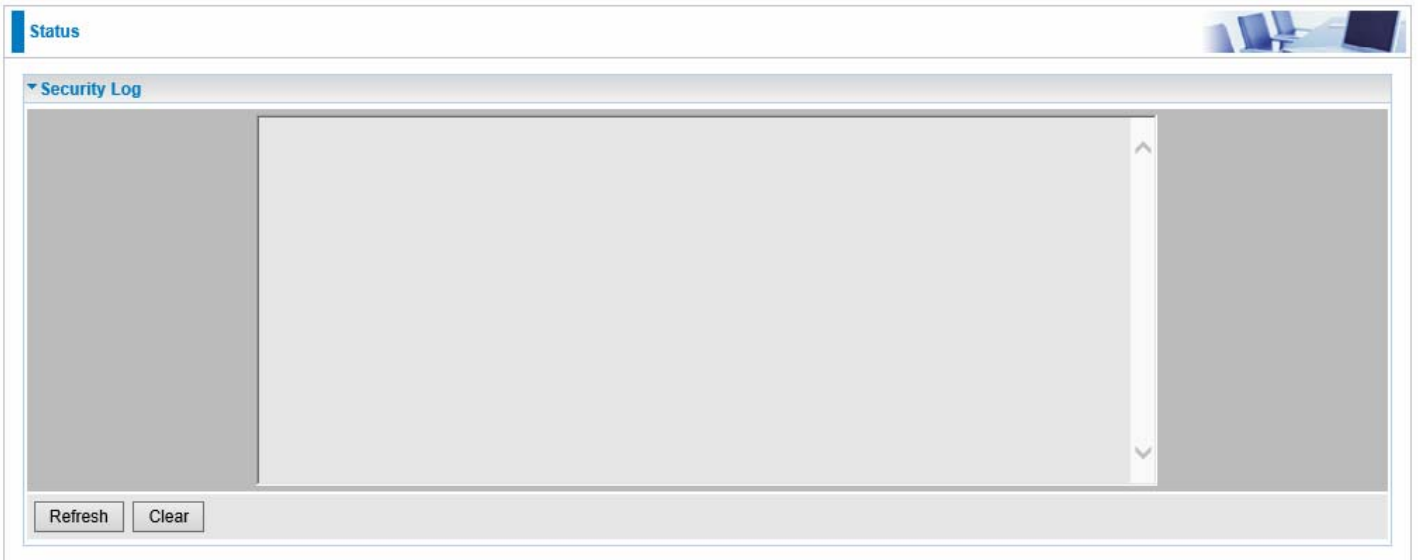
```
Sep 12 02:36:37 daemon info kernel: br0: port 6(wl1) entering forwarding state
Sep 12 02:36:38 daemon info kernel: br0: port 6(wl1) entering disabled state
Sep 12 02:36:38 daemon info kernel: device wl1 left promiscuous mode
Sep 12 02:36:38 daemon info kernel: br0: port 6(wl1) entering disabled state
Sep 12 02:36:38 daemon info kernel: device wl1 entered promiscuous mode
Sep 12 02:36:38 daemon info kernel: br0: port 5(wl0) entering disabled state
Sep 12 02:36:38 daemon info kernel: br0: port 3(eth2) entering disabled state
Sep 12 02:36:38 daemon info kernel: br0: port 5(wl0) entering forwarding state
Sep 12 02:36:38 daemon info kernel: br0: port 3(eth2) entering forwarding state
Sep 12 02:36:38 daemon warn radvd[2036]: sendmsg: Invalid argument
Sep 12 02:36:38 daemon info radvd[2103]: version 1.0 started
Sep 12 02:36:39 daemon warn radvd[2103]: sendmsg: Invalid argument
Sep 12 02:36:39 daemon info kernel: br0: port 6(wl1) entering forwarding state
Sep 12 02:37:44 daemon info kernel: dahdi: Unregistering tone zone 0 (United States / North America)
Sep 12 02:37:44 daemon info kernel: dahdi: Registered tone zone 0 (United States / North America)
```

Refresh Clear

Refresh: Click to update the system log.

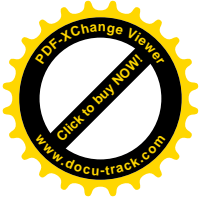
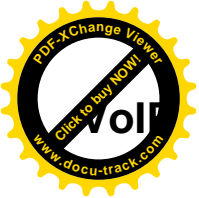
Clear: Click to clear the current log from the screen.

Security log displays the message logged about security, like filter messages and some firewall messages. You can turn to [IP Filtering Outgoing](#), [IP Filtering Incoming](#), [URL Filter](#) to determine if you want to log this information. Also you can turn to Configure Log section below to determine the level to log the message. You can use this to track potential threats to your system and network.



Refresh: Click to update the system log.

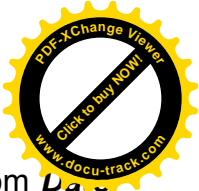
Clear: Click to clear the current log from the screen.



Status


This table shows the status of the phone ports after they are being used for the VoIP feature. It will display some information such as domain name, display name & phone number of the VoIP device.

Status			
VOIP			
VOIP Status			
Username	Host	Status	Registered Time



Incoming Call Log

Incoming call log monitors incoming calls. It records all incoming call information ranging from **Date**, **Time**, **Duration**, **Caller ID**, **Caller Number** & **My Number**.

Status 

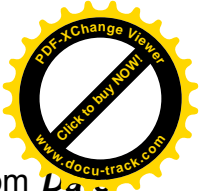
Incoming Call Log

Phone 1

Date	Time	Duration	Caller ID	Caller Number	My Number
12/09/07	17:45:53	00:07:57	UNKNOWN	UNKNOWN	PSTN
12/09/07	17:53:57	00:02:50	UNKNOWN	UNKNOWN	PSTN
12/09/07	18:02:34	00:01:35	UNKNOWN	UNKNOWN	PSTN
12/09/07	19:21:22	00:00:30	UNKNOWN	UNKNOWN	PSTN
12/09/07	19:22:55	00:00:18	UNKNOWN	UNKNOWN	PSTN


Phone 2

Date	Time	Duration	Caller ID	Caller Number	My Number
12/09/05	11:08:12	00:26:58	UNKNOWN	UNKNOWN	PSTN
12/09/05	12:08:00	00:00:59	UNKNOWN	UNKNOWN	PSTN
12/09/05	12:26:53	00:01:10	UNKNOWN	UNKNOWN	PSTN
12/09/05	12:35:45	00:16:33	UNKNOWN	UNKNOWN	PSTN
12/09/05	19:19:16	00:00:23	UNKNOWN	UNKNOWN	PSTN
12/09/05	19:26:55	00:00:30	UNKNOWN	UNKNOWN	PSTN



Outgoing Call Log

Outgoing call log monitors outgoing calls. It records all outgoing call information ranging from **Date**, **Time**, **Duration**, **Caller ID**, **Caller Number** & **My Number**.

Status 

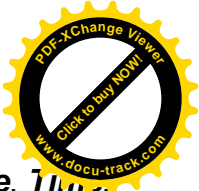
▼ Outgoing Call Log

Phone 1

Date	Time	Duration	Caller ID	Caller Number	My Number
------	------	----------	-----------	---------------	-----------


Phone 2

Date	Time	Duration	Caller ID	Caller Number	My Number
12/09/05	12:58:24	00:01:20	UNKNOWN	UNKNOWN	UNKNOWN
12/09/05	19:25:47	00:00:00	UNKNOWN	*11#	UNKNOWN
12/09/05	19:25:40	00:00:10	UNKNOWN	UNKNOWN	UNKNOWN
12/09/05	19:26:30	00:00:00	UNKNOWN	**771	UNKNOWN



Missed Call Log

Missed call log monitors missed calls. It records all missed call information ranging from **Date, Time, Duration, CallerID, Caller Number & My Number.**

Status 

▼ Missed Call Log

Phone 1 120907.log ▼

Date	Time	Duration	Caller ID	Caller Number	My Number
12/09/07	17:32:38	00:00:00	UNKNOWN	UNKNOWN	PSTN
12/09/07	17:33:25	00:00:00	UNKNOWN	UNKNOWN	PSTN
12/09/07	17:45:27	00:00:00	UNKNOWN	UNKNOWN	PSTN
12/09/07	19:21:00	00:00:00	UNKNOWN	UNKNOWN	PSTN
12/09/07	19:21:56	00:00:00	UNKNOWN	UNKNOWN	PSTN

Clear

Phone 2 120907.log ▼

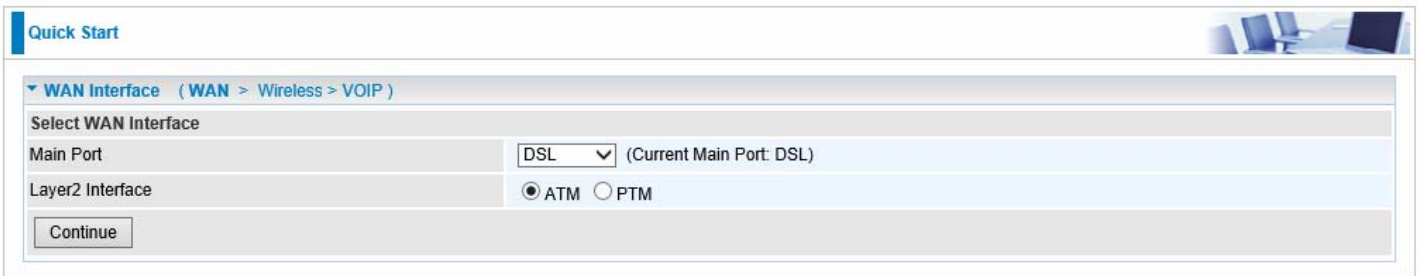
Date	Time	Duration	Caller ID	Caller Number	My Number
12/09/07	17:45:53	00:00:00	UNKNOWN	UNKNOWN	PSTN
12/09/07	17:53:57	00:00:00	UNKNOWN	UNKNOWN	PSTN
12/09/07	18:02:34	00:00:00	UNKNOWN	UNKNOWN	PSTN
12/09/07	19:21:22	00:00:00	UNKNOWN	UNKNOWN	PSTN
12/09/07	19:22:55	00:00:00	UNKNOWN	UNKNOWN	PSTN

Clear

Quick Start

This part allows you to quickly configure and connect your router to internet.

DSL mode



Quick Start

▼ WAN Interface (WAN > Wireless > VOIP)

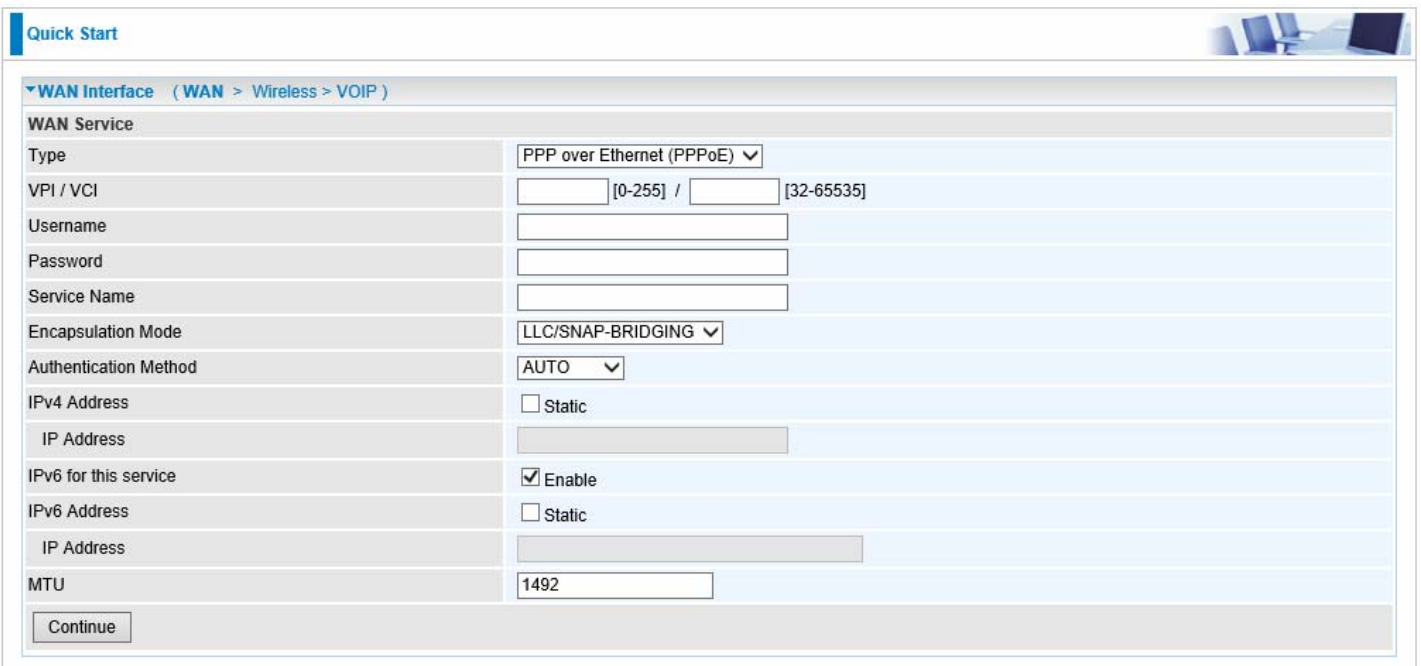
Select WAN Interface

Main Port: DSL (Current Main Port: DSL)

Layer2 Interface: ATM PTM

1. Select DSL, press **Continue** to go on to next step.

2. Enter the username, password from your ISP, for IP and DNS settings; also refer to your ISP. Here IPv6 service is enabled by default.



Quick Start

▼ WAN Interface (WAN > Wireless > VOIP)

WAN Service

Type: PPP over Ethernet (PPPoE)

VPI / VCI: [] [0-255] / [] [32-65535]

Username: []

Password: []

Service Name: []

Encapsulation Mode: LLC/SNAP-BRIDGING

Authentication Method: AUTO

IPv4 Address: Static

IP Address: []

IPv6 for this service: Enable

IPv6 Address: Static

IP Address: []

MTU: 1492

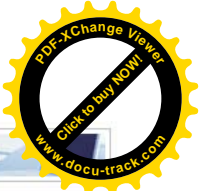
If the DLS line is not synchronized, the page will pop up warning of the DSL connection failure.



Quick Start

▼ WAN Interface (WAN > Wireless > VOIP)

DSL Line Is Not Ready. Please Check your DSL Line and wait for a while.



while the device is configured.

Quick Start

WAN interface (WAN > Wireless > VOIP)

Please wait while the device is configured.

4. WAN port configuration is successful.

Quick Start

WAN interface (WAN > Wireless > VOIP)

Congratulations !
Your WAN port has been successfully configured.

Next to Wireless

5. After the configuration is successful, click **Next to Wireless** button and you may proceed to configure the Wireless setting. Here you can set to activate wireless and set the SSID and encryption Key (1. Leave it empty to disable the wireless security; 2. Fill in the Key, and the encryption mode will be WPA2-PSK/AES).

Quick Start

Wireless (WAN > Wireless > VOIP)

Parameters

Wireless	<input checked="" type="checkbox"/> Enable
SSID	wlan-ap
WPA Pre-Shared Key	<input type="text"/> Click here to display

Continue

Quick Start

Wireless (WAN > Wireless > VOIP)

Please wait while the device is configured.

6. Set the VoIP parameters. First user should turn to a VoIP service provider to register a SIP account, please write down the registration information and fill it in the following blanks.

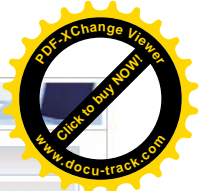
Quick Start

VOIP Setting (WAN > Wireless > VOIP)

Enter SIP Account Information

Account Name	<input type="text"/>
Account Enabled	<input type="checkbox"/> Enable
SIP Registrar	<input type="text"/>
SIP Registrar Port	5060
Registration Expire Timeout	3600 [1-2147483647]
Extension	<input type="text"/>
Username	<input type="text"/>
Password	<input type="text"/>
Authentication ID	<input type="text"/>
Incoming Phone Port	None
Answering Machine	<input type="checkbox"/> Enable
Send Messages Via E-mail	<input type="checkbox"/> Enable

Apply Cancel



Setting

SIP Account Information

Account Name	Enable	Service Provider Name	SIP Registrar	Port	Registration Expire Timeout	Extension	Username	Incoming Phone Port	Answering Machine	Send Messages Via E-mail	Answering Machine Access Code	Edit
test1	✓	defaultSP	http://union66.com	5060	3600	1126	test1	Phone Port 1	Enable	Enable	*#01	Edit
SIP2	✗	defaultSP	http://union66.com	5060	3600	2190		Phone Port 2	Disabled	Disabled	*#02	Edit

VOIP Dial Plan

Phone Port	Rule Name
Phone Port 1	X.@test1
Phone Port 2	X.@SIP2

In this page, user can continue to add SIP account and configure dial plan, for more, please refer to [SIP Account](#) and [VoIP Plan](#).

If Quick Start is finished, user can turn to Status > Summary to see the basic information.

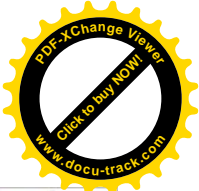
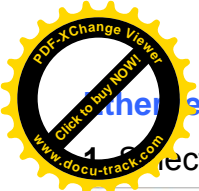
Status

▼ Device Information

Model Name	BIPAC 7800VNOX
Host Name	home.gateway
System Up-Time	0D 0H 11M 47S
Date/Time	Fri Jan 4 07:10:36 2013
Software Version	2.23
LAN IPv4 Address	192.168.1.254
LAN IPv6 Address	2000:1211:1000:5fb2:204:edff:fe02:1/64
MAC Address	00:04:ed:02:00:01
DSL PHY and Driver Version	A2pD035j.d24d
Wireless Driver Version	5.100.138.2008.cpe2.23L.4

▼ WAN

Line Rate - Upstream (Kbps)	1315
Line Rate - Downstream (Kbps)	27431
Default Gateway	ppp0.1 (DSL)
Connection Time	00:01:57
Primary DNS Server	218.2.135.1
Secondary DNS Server	218.2.135.1
Default IPv6 Gateway	ppp0.1 (DSL)



Step 1: Select Ethernet mode

1. Select **Ethernet**, press **Continue** to go on to next step.

Quick Start

▼ WAN Interface (WAN > Wireless > VOIP)

Select WAN Interface

Main Port (Current Main Port: DSL)

2. Enter the username, password from your ISP, for IP and DNS settings; also refer to your ISP. Here IPv6 service is enabled by default.

Quick Start

▼ WAN Interface (WAN > Wireless > VOIP)

WAN Service

Type	<input type="text" value="PPP over Ethernet (PPPoE)"/>
Username	<input type="text"/>
Password	<input type="text"/>
Service Name	<input type="text"/>
Authentication Method	<input type="text" value="AUTO"/>
IPv4 Address	<input type="checkbox"/> Static
IP Address	<input type="text"/>
IPv6 for this service	<input checked="" type="checkbox"/> Enable
IPv6 Address	<input type="checkbox"/> Static
IP Address	<input type="text"/>
MTU	<input type="text" value="1492"/>

3. Wait while the device is configured.

Quick Start

▼ WAN Interface (WAN > Wireless > VOIP)

Please wait while the device is configured.

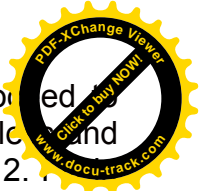
4. WAN port configuration is successful.

Quick Start

▼ WAN Interface (WAN > Wireless > VOIP)

Congratulations !

Your WAN port has been successfully configured.



After the configuration is successful, click **Next to Wireless** button and you may proceed to configure the Wireless setting. In Quick Start part, users can only enable or disable the wireless and set the exact SSID and encryption Key (1. Leave it empty to disable the wireless security; 2. Set the Key, and the encryption mode will be WPA2-PSK/AES). For detail setting, please go to the Wireless part in this Manual.

Quick Start

▼ **Wireless** (WAN > Wireless > VOIP)

Parameters

Wireless Enable

SSID

WPA Pre-Shared Key [Click here to display](#)

Quick Start

▼ **Wireless** (WAN > Wireless > VOIP)

Please wait while the device is configured.

6. Set the VoIP parameters. First user should turn to a VoIP service provider to register a SIP account, write down the registration information and fill it in the following blanks.

Quick Start

▼ **VOIP Setting** (WAN > Wireless > VOIP)

Enter SIP Account Information

Account Name

Account Enabled Enable

SIP Registrar

SIP Registrar Port

Registration Expire Timeout [1-2147483647]

Extension

Username

Password

Authentication ID

Incoming Phone Port ▼

Answering Machine Enable

Send Messages Via E-mail Enable

Quick Start

▼ **VOIP Setting**

SIP Account Information

Account Name	Enable	Service Provider Name	SIP Registrar	Port	Registration Expire Timeout	Extension	Username	Incoming Phone Port	Answering Machine	Send Messages Via E-mail	Answering Machine Access Code	Edit
test1	✓	defaultSP	http://union66.com	5060	3600	1126	test1	Phone Port 1	Enable	Enable	*#01	<input type="button" value="Edit"/>
SIP2	✗	defaultSP	http://union66.com	5060	3600	2190		Phone Port 2	Disabled	Disabled	*#02	<input type="button" value="Edit"/>

VOIP Dial Plan

Phone Port	Rule Name
Phone Port 1	X.@test1
Phone Port 2	X.@SIP2

In this page, user can continue to add SIP account and configure dial plan, for more, please refer to [SIP Account](#) and [VoIP Plan](#).