Wireless N Broadband Router

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User's Manual

Version: 1.0

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Federal Communication Commission Interference Statement

FCC Part 15

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

FCC Caution

This equipment must be installed and operated in accordance with provided instructions and a minimum 20 cm spacing must be provided between computer mounted antenna and person's body (excluding extremities of hands, wrist and feet) during wireless modes of operation.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance could void the authority to operate equipment.

Federal Communication Commission (FCC) Radiation Exposure Statement

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

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The equipment version marketed in US is restricted to usage of the channels 1-11 only.

R&TTE Compliance Statement

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

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

Safety

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

EU Countries Intended for Use

The ETSI version of this device is intended for home and office use in Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

The ETSI version of this device is also authorized for use in EFTA member states: Iceland, Liechtenstein, Norway, and Switzerland.

EU Countries Not intended for use

None.

CATALOG

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Chapter 1 Introduction

Thank you for purchasing this wireless broadband router! This high cost-efficiency router is the best choice for Small office / Home office users, all computers and network devices can share a single xDSL / cable modem internet connection at high speed. Easy install procedures allows any computer users to setup a network environment in very short time - within minutes, even inexperienced. When the number of your computers and network-enabled devices grow, you can also expand the number of network slot by simple attach a hub or switch, to extend the scope of your network!

With built-in IEEE 802.11b/g/Draft-N wireless network capability, all computers and wirelessenabled network devices (including PDA, cellular phone, game console, and more!) can connect to this wireless router without additional cabling. New Draft-N wireless capability also gives you the highest speed of wireless experience ever! With a compatible wireless card installed in your PC, you can transfer file for up to 300Mbps (transfer data rate)! The radio coverage is also doubled, so don't worry if your office or house is really big!

1.1 Features

- High Internet Access throughput
- Allow multiple users to share a single Internet line
- Supports up to 253 users
- Share a single Cable or xDSL internet connection
- Access private LAN servers from the internet
- Four wired LAN ports (10/100M) and one WAN port (10/100M)
- Provides IEEE 802.11b/g/Draft-N wireless LAN capability
- Support DHCP (Server/Client) for easy IP-address setup
- Support multiple wireless modes like: AP, Client, WDS and AP with WDS.
- Advanced network and security features like: QoS, DMZ, Virtual Servers, Access Control, Firewall.
- Easy to use Web-based GUI for network configuration and management purposes
- Auto MDI / MDI-X function for all wired Ethernet ports.

1.2 Safety Information

In order to keep the safety of users and your properties, please follow the following safety instructions:

1. This router is designed for indoor use only; DO NOT place this router outdoor.

2. DO NOT put this router at or near hot or humid places, like kitchen or bathroom. Also, do not left this router in the car in summer.

3. DO NOT pull any connected cable with force; disconnect it from the router first.

4. If you want to place this router at high places or hang on the wall, please make sure the router is firmly secured. Falling from high places would damage the router and its accessories, and warranty will be void.

5. Accessories of this router, like antenna and power supply, are danger to small children under 3 years old. They may put the small parts in their nose or month and it could cause serious damage to them. KEEP THIS ROUTER OUT THE REACH OF CHILDREN!

6. The router will become hot when being used for long time (This is normal and is not a malfunction). DO NOT put this router on paper, cloth, or other flammable materials.

7. There's no user-serviceable part inside the router. If you found that the router is not working properly, please contact your dealer of purchase and ask for help. DO NOT disassemble the router, warranty will be void.

8. If the router falls into water when it's powered, DO NOT use your hand to pick it up. Switch the electrical power off before you do anything, or contact an experienced technician for help.

9. If you smell something strange, or even see some smoke coming out from the router or power supply, remove the power supply or switch the electrical power off immediately, and call dealer of purchase for help.

1.3 Minimum Requirements

- Computer or network devices with wired or wireless network interface card.
- Web browser (Microsoft Internet Explorer 4.0 or above, Netscape Navigator 4.7 or above, Opera web browser, or Safari web browser).
- An available AC power socket (100 240V, 50/60Hz)

1.4 Package Content

Before you starting to use this router, please check if there's anything missing in the package, and contact your dealer of purchase to claim for missing items:

•	Broadband router (main body, 1 pcs)	1
•	Quick installation guide (1 pcs)	2
•	User manual CDROM (1 pcs)	3
•	A/C power adapter (1 pcs)	4

1.5 Familiar with your new wireless broadband router

Front Panel

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LED Name	Light Status	Description
PWR	On	Router is switched on and correctly powered.
	On	Wireless WPS function is enabled.
WLAN	Off	Wireless network is switched off.
	Flashing	Wireless LAN activity (transferring or receiving data).
WAN	On	WAN port is connected.
LNK/ACT	Off	WAN port is not connected.
	Flashing	WAN activity (transferring or receiving data).
LAN 1-4	On	LAN port is connected.
LNK/ACT	Off	LAN port is not connected.
	Flashing	LAN activity (transferring or receiving data).

Back Panel



Item Name	Description
Antenna A/B	These antennas are 3dBi dipole antennas.
Radio ON/OFF	Switch the button to activate or deactivate the wireless functions.
Reset / WPS	Reset the router to factory default settings (clear all settings) or start WPS function. Press this button and hold for 10 seconds to restore all settings to factory defaults, and press this button for less than 5 seconds to start WPS function.
1 - 4	Local Area Network (LAN) ports 1 to 4.
WAN	Wide Area Network (WAN / Internet) port.
Power	Power connector, connects to A/C power adapter.

Chapter 2 System and Network Setup

2.1 Build Network Connection

Please follow the following instruction to build the network connection between your new WIRELESS router and your computers, network devices:

1. Connect your xDSL / cable modem to the WAN port of router by Ethernet cable.



2. Connect all your computers, network devices (network-enabled consumer devices other than computers, like game console, or switch / hub) to the LAN port of the router.



3. Connect the A/C power adapter to the wall socket, and then connect it to the 'Power' socket of the router.



Please check all LEDs on the front panel. 'PWR' LED should be steadily on, WAN and LAN LEDs should be on if the computer / network device connected to the respective port of the router is powered on and correctly connected.

2.2 Connecting to wireless broadband router by web browser

This is a step-by-step instruction on how to start using the router and get connected to the Internet.

- 1) Setup your network as shown in the setup diagram above (fig 1.1).
- You then need to set your LAN PC clients so that it can obtain an IP address automatically. All LAN clients require an IP address. Just like an address, it allows LAN clients to find one another. (If you have already configured your PC to obtain an IP automatically then proceed to step 3, page 11)

Configure your PC to obtain an IP address automatically

By default the broadband router's DHCP is on, this means that you can obtain an IP address automatically once you've configured your PC to obtain an IP address automatically. This section will show you how to configure your PC's so that it can obtain an IP address automatically for either Windows 95/98/Me, 2000 or NT operating systems. For other operating systems (Macintosh, Sun, etc.), follow the manufacturer's instructions. The following is a step-by-step illustration on how to configure your PC to obtain an IP address automatically for 2a) Windows 95/98/Me, 2b) Windows XP, 2c) Windows 2000, 2d) Windows NT, and 2e) Windows Vista.

2a) Windows 95/98/Me

- 1: Click the *Start* button and select *Settings*, then click *Control Panel*. The *Control Panel* window will appear.
- 2: Double-click Network icon. The Network window will appear.
- 3: Check your list of Network Components. If TCP/IP is not installed, click the *Add* button to install it now. If TCP/IP is installed, go to **step 6**.
- 4: In the Network Component Type dialog box, select Protocol and click Add button.
- 5: In the Select Network Protocol dialog box, select Microsoft and TCP/IP and then click the OK button to start installing the TCP/IP protocol. You may need your Windows CD to complete the installation.
- 6: After installing TCP/IP, go back to the *Network* dialog box. Select *TCP/IP* from the list of *Network Components* and then click the *Properties* button.
- 7: Check each of the tabs and verify the following settings:

- **Bindings**: Check Client for Microsoft Networks and File and printer sharing for Microsoft Networks.
- Gateway: All fields are blank.
- DNS Configuration: Select Disable DNS.
- WINS Configuration: Select Disable WINS Resolution.
- IP Address: Select Obtain IP address automatically.

TCP/IP Properties				? ×
Bindings DNS Configuration	Adv Gateway	anced WINS Confi	Ne guration	etBIOS
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space below.				
C Specify an IP	address:			
[P Address:				
S <u>u</u> bnet Masi	k:			

- 8: Reboot the PC. Your PC will now obtain an IP address automatically from your Broadband Router's DHCP server.
- **Note**: Please make sure that the Broadband router's DHCP server is the only DHCP server available on your LAN.

Once you've configured your PC to obtain an IP address automatically, please proceed to Step 3

2b) Windows 2000

- 1: Click the *Start* button and select *Settings*, then click *Control Panel*. The *Control Panel* window will appear.
- 2: Double-click Network and Dial-up Connections icon. In the Network and Dial-up Connection window, double-click Local Area Connection icon. The Local Area Connection window will appear.

- 3: In the Local Area Connection window, click the Properties button.
- 4: Check your list of Network Components. You should see *Internet Protocol [TCP/IP]* on your list. Select it and click the *Properties* button.
- 5: In the Internet Protocol (TCP/IP) Properties window, select *Obtain an IP address automatically* and *Obtain DNS server address automatically* as shown on the following screen.

Internet Protocol (TCP/IP) Proper	ties ?X
General	
You can get IP settings assigned au this capability. Otherwise, you need the appropriate IP settings.	itomatically if your network supports to ask your network administrator for
Obtain an IP address automati	cally
$\square^{\mathbb{O}}$ Use the following IP address:	
IP address:	
Subnet mask:	· · · ·
Default gateway:	
Obtain DNS server address au	utomatically
C Use the following DNS server	addresses:
Preferred DNS server:	
Alternate DNS server:	
	Advanced
	OK Cancel

- 6: Click *OK* to confirm the setting. Your PC will now obtain an IP address automatically from your Broadband Router's DHCP server.
- **Note**: Please make sure that the Broadband router's DHCP server is the only DHCP server available on your LAN.

Once you've configured your PC to obtain an IP address automatically, please proceed to Step 3.

2c) Windows NT

- 1: Click the *Start* button and select *Settings*, then click *Control Panel*. The *Control Panel* window will appear.
- 2: Double-click *Network* icon. The *Network* window will appear. Select the *Protocol* tab from the *Network* window.
- 3: Check if the *TCP/IP Protocol* is on your list of *Network Protocols*. If TCP/IP is not installed, click the *Add* button to install it now. If TCP/IP is installed, go to **step 5**.
- 4: In the Select Network Protocol window, select the TCP/IP Protocol and click the Ok button to start installing the TCP/IP protocol. You may need your Windows CD to complete the installation.
- 5: After you install TCP/IP, go back to the *Network* window. Select *TCP/IP* from the list of *Network Protocols* and then click the *Properties* button.
- 6: Check each of the tabs and verify the following settings:
 - IP Address: Select Obtain an IP address from a DHCP server.
 - **DNS:** Let all fields are blank.
 - WINS: Let all fields are blank.
 - Routing: Let all fields are blank.

Microsoft TCP/IP Properties
IP Address DNS WINS Address Routing
An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below.
Adapter:
[1] Realtek RTL8139/810X Family PCI Fast Ethernet Adapter
Obtain an IP address from a DHCP server
© Specify an IP address
IP Address:
Subnet Mask:
Default <u>G</u> ateway:
Advanced
OK Cancel Apply

- 7: Click *OK* to confirm the setting. Your PC will now obtain an IP address automatically from your Broadband Router's DHCP server.
- **Note**: Please make sure that the Broadband router's DHCP server is the only DHCP server available on your LAN.

Once you've configured your PC to obtain an IP address automatically, please proceed to Step 3.

2d) Windows XP

- 1: Click the *Start* button and select *Settings*, then click *Network Connections*. The *Network Connections* window will appear.
- 2: Double-click Local Area Connection icon. The Local Area Connection window will appear.

- 3: Check your list of Network Components. You should see *Internet Protocol [TCP/IP]* on your list. Select it and click the *Properties* button.
- 4: In the Internet Protocol (TCP/IP) Properties window, select *Obtain an IP address automatically* and *Obtain DNS server address automatically* as shown on the following screen.

J	nternet	Protocol (TCP/IP) Properties	6			? 🗙
ſ	General	Alternate Configuration				
	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.					ports tor for
	<u>⊙ O</u> t	btain an IP address automatically				
	<u>_</u> ∪ U <u>s</u>	se the following IP address:				
	IP ac	ddress:				
	Subr	net mask:				
	<u>D</u> efa	sult gateway:				
	Obtain DNS server address automatically					
	OUs	s <u>e</u> the following DNS server addresse	es:			
	Prefe	erred DNS server:				
	Alten	nate DNS server:				
				(Ad <u>v</u> ar	nced
				OK		Cancel

- 5: Click *OK* to confirm the setting. Your PC will now obtain an IP address automatically from your Broadband Router's DHCP server.
- **Note**: Please make sure that the Broadband router's DHCP server is the only DHCP server available on your LAN.

Once you've configured your PC to obtain an IP address automatically, please proceed to Step 3.

2e) Windows Vista

- 1: Click the Start button and select Settings and then select Control Panel. Double click Network and Sharing Center, the Network and Sharing Center window will appear.
- 2: Click Manage network connections and right click on the Local Area Connection icon and select Properties. The Local Area Connection window will appear.
- 3: Check your list of Network Components. You should see Internet Protocol Version 4 (TCP/IPv4) on your list. Select it and click the Properties button.
- 4: In the Internet Protocol Version 4 (TCP/IPv4) Properties window, select Obtain an IP address automatically and Obtain DNS server address automatically as shown on the following screen.

Seneral	Alternate Configuration					
You car this cap for the	n get IP settings assigned a bability. Otherwise, you ne appropriate IP settings.	automatic ed to ask	ally if your r	your n networ	etwork 'k admir	supports histrator
0	otain an IP address autom	atically				
- O U <u>s</u>	e the following IP address					
<u>I</u> P ac	ddress:	l.	÷)	3	+	
Sybr	iet mask:				2	
Defa	ult gateway;			(ie		
0	ntain DNS server address a	automatic	allv			
	e the following DNS serve	r address	es:			
Prefe	erred DNS server:		- 21	14	14	
<u>A</u> lter	nate DNS server:	0				
					Adv	anced

5: Click OK to confirm the setting. Your PC will now obtain an IP address automatically from your router's DHCP server. **Note**: Please make sure that the Broadband router's DHCP server is the only DHCP server available on your LAN.

Once you've configured your PC to obtain an IP address automatically, please proceed to Step 3.

3) Once you have configured your PCs to obtain an IP address automatically, the router's DHCP server will automatically give your LAN clients an IP address. By default the Broadband Router's DHCP server is enabled so that you can obtain an IP address automatically. To see if you have obtained an IP address, see Appendix A.

Note: Please make sure that the Broadband router's DHCP server is the only DHCP server available on your LAN. If there is another DHCP on your network, then you'll need to switch one of the DHCP servers off. (To disable the Broadband router's DHCP server see chapter 3 LAN Port)

 Once your PC has obtained an IP address from your router, enter the default IP address 192.168.2.1 (broadband router's IP address) into your PC's web browser and press <enter>



5) The login screen below will appear. Enter the "User Name" and "Password" and then click <OK> to login.

Note: By default the user name is "admin" and the password is "1234". For security reasons it is recommended that you change the password as soon as possible (in General setup/system/password, see chapter 3)

Connect to 192.1	68.2.1 🛛 🛛 🔀
	GA
Default: admin/1234	
User name:	
Password:	
	Remember my password
	OK Cancel

6) The **HOME** page screen below will appear. The **Home** Page is divided into four sections, **Quick Setup Wizard**, **General Setup**, **Status Information** and **Tools**.

Quick Setup Wizard (Chapter 2)

If you only want to start using the broadband router as an Internet Access device then you ONLY need to configure the screens in the Quick Setup Wizard section.

General Setup (Chapter 3)

If you want to use more advanced features that the broadband router has to offer, then you'll need to configure the Quick Setup Wizard and the General Setup section. Alternatively, you can just configure the General Setup section, since the General Setup/WAN and the Quick Setup Wizard contain the same configurations.

Status Information (Chapter 4)

The Status Information section is for you to monitor the router's current status information only.

Tools (Chapter 5)

If you want to Reset the router (because of problems) or save your configurations or upgrade the firmware then the Tools section is the place to do this.



Menu	Description
Quick Setup Wizard (Chapter 2)	Setup your Internet connection type and then input the configurations needed to connect to your Internet Service Provider (ISP). Here you can also configure the wireless settings of the router.
General Setup (Chapter 3)	This section contains configurations for the Broadband router's advance functions such as: Address Mapping, Access Control, Hacker Attack Prevention, DMZ, Special applications and other functions to meet your LAN requirements.
Status Information (Chapter 4)	In this section you can see the Broadband router's system information, Internet Connection,

Tools (Chapter 5)This section contains the broadband router's
Tools - Tools include Configuration tools,
Firmware upgrade and Reset. Configuration
tools allow you to Backup (save), Restore, or
Restore to Factory Default configuration for you

Restore to Factory Default configuration for your Broadband router. The Firmware upgrade tool allows you to upgrade your Broadband router's firmware. The RESET tool allows you to reset your Broadband router.

Device Status, System Log, Security Log and

7) Click on Quick Setup Wizard (see chapter 2) to start configuring settings required by your ISP so that you can start accessing the Internet. The other sections (General Setup, Status Information and Tools) do not need to be configured unless you wish to implement/monitor more advance features/information.

Select the section (Quick Setup Wizard, General Setup, Status Information and Tools) you wish to configure and proceed to the corresponding chapter. Use the selections on the web management's top right hand page (see below) to navigate around the web-based management User Interface.

HOME | General Setup | Status | Tools

Chapter 2 Quick Setup

The Quick Setup section is designed to get you using the broadband router as quickly as possible. In the Quick Setup you are required to fill in only the information necessary to access the Internet. Once you click on the **Quick Setup Wizard** in the HOME page, you should see the following screen. Follow the setup procedures described below.

Setup Wizard

The setup wizard will guide you to configure access point for first time. Please follow the setup wizard step by step.

Welcome to Setup Wizard.

The Wizard will guide you the through following steps. Begin by clicking on Next.

- 1. Choose your Time Zone
- 2. Setup LÁN Interface
- 3. Setup WAN Interface
- 4. Wireless LAN Setting
- 5. Wireless Security Setting

2.1 Time Zone

The Time Zone allows your router to base its time on the settings configured here, this will affect functions such as Log entries and Firewall settings.

Next >>

Broadband Router			
 ✓ 1. Time Zone 2. LAN Interface 3. WAN Interface 4. Wireless LAN 5. Wireless Security 	1. Time Z You can main Enable N Time Zone Select : NTP server :	one Setting tain the system time by synchronizing with a public time server TP client update (GMT+08:00)Taipei 192.5.41.41 - North America V Cancel Bac	over the Internet.

Parameter	Description
Enable NTP client update	Check this box to enable the auto time synchronization function. The router will set its time based on your selection.
Automatically Adjust Daylight Saving	If the country you live uses daylight saving, please check this box.
Time Zone Select	You can select your local time zone here. The router will sync time according to your time zone selection.
NTP server	Select the time server to synchronize with.

Click on **NEXT** to proceed to the next page (step 2) LAN Interface.

NOTE: There are several time servers available on internet:	
129.6.15.28 (time-a.nist.gov)	
132.163.4.101 (time-a.timefreq.bldrdoc.gov)	
131.107.1.10 (time-nw.nist.gov)	
If you found that the time of router is incorrect, try another time server.	

Broadband Rout	ter HOME General Setup Status Tools			
 ✓ 1. Time Zone ✓ 2. LAN Interface ● 3. WAN Interface ● 4. Wireless LAN ● 5. Wireless Security 	2. LAN Interface Setup This page is used to configure the parameters for local area network which connects to the LAN port of your Access Point. Here you may change the setting for IP addresss, subnet mask, DHCP, etc			
	IP Address: 192.168.2.1			
	Subnet Mask: 255.255.255.0			
	Cancel Back Next			
Parameter	Description			
IP Address	This is the router's LAN port IP address (Your LAN clients default gateway IP address). The default IP Address is '192.168.2.1'.			
Subnet Mask	Specify a Subnet Mask for your LAN segment. The default subnet mask is '255.255.255.0'.			

Click on **NEXT** to proceed to the next page (step 3) WAN Interface.

2.3 WAN Interface

In this section you have to select one of five types of connections that you will be using to connect your broadband router's WAN port to your ISP (see screen below).

Note: Different ISP's require different methods of connecting to the Internet, please check with your ISP as to the type of connection it requires.

Broadband Route	r		Choose your language
			Home General Setup Status Tools
 1. Time Zone 2. LAN Interface 3. WAN Interface 4. Wireless LAN 5. Wireless Security 	3. WAN Interfac This page is used to cr your router. Here you r clicking the correspond WAN Access Type: Hostname:	ce Setup onfigure the parameters for Internet netw may change the access method to static ding item . DHCP Client Static IP DHCP Client PPPoE PPTP L2TP	ork which connects to the WAN port of : IP, DHCP, PPPoE or PPTP by

Menu	Description
2.3.1 Static IP	Your ISP will give a static IP address to you while you subscribe the service.
2.3.2 DHCP Client	Your ISP will automatically give you an IP address.
2.3.3 PPPoE	Your ISP requires you to use a Point-to-Point Protocol over Ethernet (PPPoE) connection.
2.3.4 PPTP	Your ISP requires you to use a Point-to-Point Tunneling Protocol (PPTP) connection.
2.3.5 L2TP	Your ISP requires you to use a Point-to-Point Tunneling Protocol (L2TP) connection.

Select one of the WAN types and set the manual's relevant sub-section (2.3.1, 2.3.2, 2.3.3, or 2.3.4). Click on **Back** to return to the previous screen.

2.3.1 Static IP

Select Static IP if your ISP has given you a specific IP address for you to use. Your ISP should provide all the information required in this section.

Broadband Route	٣	HOME General Setup Status Tools
 ✓ 1. Time Zone ✓ 2. LAN Interface ✓ 3. WAN Interface ✓ 4. Wireless LAN ● 5. Wireless Security 	3. WAN Interfac This page is used to co your Access Point. He click the item value of V	The Setup onfigure the parameters for Internet network which connects to the WAN port of re you may change the access method to static IP, DHCP, PPPoE or PPTP by WAN Access type.
	WAN Access Type: IP Address: Subnet Mask: Default Gateway:	Static IP 172.1.1.1 255.255.255.0 172.1.1.254
	DNS :	Cancel Back Next
Parameters	[Description
IP Address	-	This is the IP address that your ISP has given you.
Subnet Mask (e.g. 255.255.255.0)	I	Enter the Subnet Mask provided by your ISP.

Default Gateway IPThis is the ISP's IP address gateway.DNSThis is the ISP's DNS server IP address.

Click on **NEXT** to proceed to the next page (step 4) Wireless Basic Settings.

2.3.2 DHCP Client

Choose DHCP Client if your ISP will automatically give you an IP address.

Broadband Router	HOME General Setup Status	Tool:
 1. Time Zone 2. LAN Interface 3. WAN Interface 4. Wireless LAN 5. Wireless Security 	3. WAN Interface Setup This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPoE or PPTP by click the item value of WAN Access type. WAN Access Type: DHCP Client ▼ Cancel Back	

Click on **NEXT** to proceed to the next page (step 4) Wireless Basic Settings.

2.3.3 PPPoE

Select PPPoE if your ISP requires the PPPoE protocol to connect you to the Internet. Your ISP should provide all the information required in this section.

Broadband Router				HOME General Setup Status Tools
 1. Time Zone 2. LAN Interface 3. WAN Interface 4. Wireless LAN 5. Wireless Security 	3. WAN Interfact This page is used to co your Access Point. Her click the item value of V WAN Access Type: User Name: Password:	e Setup nfigure the parameters fo e you may change the a VAN Access type.	r Internet network whic ccess method to static	h connects to the WAN port of IP, DHCP, PPPoE or PPTP by Back Next

Parameter	Description
User Name	Enter the User Name provided by your ISP for the PPPoE connection.
Password	Enter the Password provided by your ISP for the PPPoE connection.

Click on **NEXT** to proceed to the next page (step 4) Wireless Basic Settings.

Note

The WAN "idle timeout" auto-disconnect function may not work due to abnormal activities of some network application software, computer virus or hacker attacks from the Internet. For example, some software sends network packets to the Internet in the background, even when you are not using the Internet. So please turn off your computer when you are not using it. This function also may not work with some ISP. So please make sure this function can work properly when you use this function in the first time, especially your ISP charge you by time used.

2.3.4 PPTP

Select PPTP if your ISP requires the PPTP protocol to connect you to the Internet. Your ISP should provide all the information required in this section.

Broadband Route	er		Home General Setup Status Tools
 ✓ 1. Time Zone ✓ 2. LAN Interface ✓ 3. WAN Interface ✓ 4. Wireless LAN ◆ 5. Wireless Security 	3. WAN Interface This page is used to co the WAN port of your A static IP, DHCP, PPPo type. WAN Access Type: Server IP Address: User Name: Password:	e Setup onfigure the parameters for Internet network which connects to access Point. Here you may change the access method to E, PPTP or L2TP by click the item value of WAN Access PPTP Cancel < <back next="">></back>	

Parameter	Description
Server IP Address	Enter the IP address of the ISP Gateway.
User Name	Enter the User Name provided by your ISP for the PPTP connection. Sometimes called a Connection ID.
Password	Enter the Password provided by your ISP for the PPTP connection.

Click on **NEXT** to proceed to the next page (step 4) Wireless Basic Settings.

2.3.5 L2TP

Select L2TP if your ISP requires the L2TP protocol to connect you to the Internet. Your ISP should provide all the information required in this section.

Broadband Route	r	Home General Setup Status Tools
 1. Time Zone 2. LAN Interface 3. WAN Interface 4. Wireless LAN 5. Wireless Security 	3. WAN Interface Setup This page is used to configure the parameters for Internet network which connects to the WAN port of your Access Point. Here you may change the access method to static IP, DHCP, PPPOE, PPTP or L2TP by click the item value of WAN Access type. WAN Access Type: Image: Concelement of the system of th	∘

Parameter	Description
Server IP Address	Enter the IP address of the ISP Gateway.
User Name	Enter the User Name provided by your ISP for the L2TP connection. Sometimes it is called a Connection ID.

Click on **NEXT** to proceed to the next page (step 4) Wireless Basic Settings.

2.4 Wireless Basic Settings

Wireless Access Point builds a wireless LAN and can let all PCs equipped with IEEE 802.11b or 801.11g wireless network adaptor connect to your Intranet. It supports WEP and WPA2 encryption to enhance the security of your wireless network.

Broadband Rout	er		Home General Setup Status Tools
 ✓ 1. Time Zone ✓ 2. LAN Interface ✓ 3. WAN Interface ✓ 4. Wireless LAN ● 5. Wireless Security 	4. Wireless Ba This page is used to connect to your Acce Band: Mode: Network Type: SSID: Channel Width: ControlSideband: Channel Number: Enable Mac Ci	AP Infrastructure V Infrastructure V Infrastructure Cients Infrastructure Cients Infrastructure Cients Infrastructure Cients Infrastructure Cients Infrastructure Cients Infrastructure Cients Cancel C	

Menu	Description
Band	Please select the radio band from one of the following options.
	2.4GHz(B): 2.4GHz band, only allows 802.11b wireless network client to connect this router (maximum transfer rate 11Mbps).
	2.4 GHz (N): 2.4GHz band, only allows 802.11n wireless network client to connect this router (maximum transfer rate 150Mbps).
	2.4 GHz (B+G):2.4GHz band, only allows 802.11b and 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, and maximum 54Mbps for 802.11g clients).

	2.4 GHz (G): 2.4GHz band, only allows 802.11g wireless network client to connect this router (maximum transfer rate 54Mbps).
	2.4 GHz (B+G+N): 2.4GHz band, allows 802.11b, 802.11g, and 802.11n wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, maximum 54Mbps for 802.11g clients, and maximum 150Mbps for 802.11n clients).
Mode	It allows you to set the router to AP, Client, WDS or AP + WDS mode.
Network Type	In client mode, you can specify your client to connect as an infrastructure client or an ad hoc client.
SSID	This is the name of wireless router. You can type any alphanumerical characters here, maximum 32 characters. SSID is used to identify your own wireless router from others when there are other wireless routers in the same area. Default SSID is 'default', it's recommended to change default SSID value to the one which is meaningful to you, like myhome, office_room1, etc.
Channel Width	Set channel width of wireless radio. Do not modify default value if you don't know what it is, default setting is '40 MHz'.
ControlSideBand	Select the upper band or lower band for your radio frequency. While upper band is selected, the channel number you can select is from channel 5 to channel 11. While lower band is selected, the channel number you can select is from channel 1 to channel 7.
Channel Number	Please select a channel from the dropdown list of 'Channel Number', available channel numbers are 1 to 13 for European countries, 1 to 11 for USA. You can choose any channel number you want to use, and almost all wireless clients can locate the channel you're using automatically without any problem. However, it's still useful to remember the channel number you use, some wireless client supports manual channel number select, and this would help in certain scenario when there is some radio communication problem.

Enable MAC Clone (Single Ethernet Client) Check the check box will let router copy the first seen MAC address to the WLAN MAC.

Click on **NEXT** to proceed to the next page (step 5) Wireless Security.

2.5 Wireless Security Settings

This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.

Broadband Router		HOME General Setup Status Tools
 ✓ 1. Time Zone ✓ 2. LAN Interface ✓ 3. WAN Interface ✓ 4. Wireless LAN ✓ 5. Wireless Security 	5. Wireless Security Setup This page allows you setup the wireless security. Turn on WEP or WPA could prevent any unauthorized access to your wireless network. Encryption: None WEP WPA (TKIP) WPA2(AES) WPA2 Mixed	by using Encryption Keys Back OK

Menu	Description
None	Do not apply any encryption to wireless usage. Everyone can access the wireless without permission.
2.5.1 WEP	You can select the WEP key length for encryption, 64-bit or 128- bit. Larger WEP key length will provide higher level of security, but the throughput will be lower.
2.5.2 WPA(TKIP)	You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. And use TKIP to change the encryption key frequently.
2.5.3 WPA2(AES)	You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. And use CCMP(AES) to change the encryption key frequently.
------------------	--
2.5.4 WPA2 Mixed	This will use TKIP or AES based on the other communication peer automatically.

Select one of the Security types and set the manual's relevant sub-section (2.5.1, 2.5.2, 2.5.3, or 2.5.4). Click on **Back** to return to the previous screen.

2.5.1 WEP

When you select 64-bit or128-bit WEP key, you have to enter WEP keys to encrypt data. You can generate the key by yourself and enter it. You can enter four WEP keys and select one of them as default key. Then the router can receive any packets encrypted by one of the four keys.

Broadband Router	Home General Setup	Status Tools '
 ✓ 1. Time Zone ✓ 2. LAN interface ✓ 3. WAN Interface ✓ 4. Wireless LAN ✓ 5. Wireless Security 	S. Wireless Security Setup This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network. Encryption: ● Key Length: 64-bit ● Key Format: ASCII (6 characters) ● Key Setting: ● Cancel < <back< td=""></back<>	
Parameters	Description	
Key Length	You can select the WEP key length for encryption or 128-bit. Larger WEP key length will provide h level of security, but the throughput will be lowe	on, 64-bit Iigher r.

Key Format	You may select to select ASCII Characters (alphanumeric format) or Hexadecimal Digits (in the "A- F", "a-f" and "0-9" range) to be the WEP Key. For example: ASCII Characters: guest Hexadecimal Digits: 12345abcde
Key Setting	The WEP key are used to encrypt data transmitted in the wireless network. Fill the text box by following the rules below. 64-bit WEP: input 10-digit Hex values (in the "A-F", "a-f" and "0-9" range) or 5-digit ASCII character as the encryption keys. 128-bit WEP: input 26-digit Hex values (in the "A-F", "a-f" a-f" and "0-9" range) or 5-digit ASCII character as the
	encryption keys.

Clicking on **OK** to save and active all the settings. Now, you can start to use the router as your internet gateway.

2.5.2 WPA(TKIP)

Wi-Fi Protected Access (WPA) is an advanced security standard. You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. It uses TKIP to change the encryption key frequently. So the encryption key is not easy to be broken by hackers. This can improve security very much.

Broadband Route	r	Home General Setup Status Tools
 ✓ 1. Time Zone ✓ 2. LAN Interface ✓ 3. WAN Interface ✓ 4. Wireless LAN ✓ 5. Wireless Security 	5. Wireless Security This page allows you setup th Encryption Keys could prever Encryption: WPA (TKIP) Pre-Shared Key Format: Pre-Shared Key:	r Setup e wireless security. Turn on WEP or WPA by using t any unauthorized access to your wireless network. Passphrase Cancel < <back finished<="" th=""></back>
Parameters		Description
Pre-shared Key For	mat	You may select to select Passphrase (alphanumeric format) or Hexadecimal Digits (in the "A-F", "a-f" and "0- 9" range) to be the Pre-shared Key. For example: Passphrase: iamguest Hexadecimal Digits: 12345abcde
Pre-shared Key		The Pre-shared key is used to authenticate and encrypt data transmitted in the wireless network. Fill the text box by following the rules below. Hex: input 64-digit Hex values (in the "A-F", "a-f" and "0- 9" range) or at least 8 character pass phrase as the pre- shared keys.

Clicking on **OK** to save and active all the settings. Now, you can start to use the router as your internet gateway.

2.5.3 WPA2(AES)

Wi-Fi Protected Access 2(WPA2) is an advanced security standard. You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. It uses CCMP(AES) to change the encryption key frequently. So the encryption key is not easy to be broken by hackers. This can improve security very much.

Broadband Rout	ter	Home General Setup Status Tools I
 ✓ 1. Time Zone ✓ 2. LAN Interface ✓ 3. WAN Interface ✓ 4. Wireless LAN ✓ 5. Wireless Security 	5. Wireless Security This page allows you setup th Encryption Keys could preven Encryption: WPA2(AES) Pre-Shared Key Format: Pre-Shared Key:	y Setup he wireless security. Turn on WEP or WPA by using ht any unauthorized access to your wireless network. Passphrase Cancel < <back finished<="" th=""></back>
Parameters		Description
Pre-shared Key F	Format	You may select to select Passphrase (alphanumeric format) or Hexadecimal Digits (in the "A-F", "a-f" and "0- 9" range) to be the Pre-shared Key. For example: Passphrase: iamguest Hexadecimal Digits: 12345abcde
Pre-shared Key		The Pre-shared key is used to authenticate and encrypt data transmitted in the wireless network. Fill the text box by following the rules below. Hex: input 64-digit Hex values (in the "A-F", "a-f" and "0- 9" range) or at least 8 character pass phrase as the pre- shared keys.

Clicking on **OK** to save and active all the settings. Now, you can start to use the router as your internet gateway.

2.5.4 WPA2 Mixed

Wi-Fi Protected Access 2(WPA2) is an advanced security standard. You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. It uses TKIP or CCMP(AES) to change the encryption key frequently. So the encryption key is not easy to be broken by hackers. This can improve security very much.

Broadband Rout	er	Home General Setup Status Tools
 ✓ 1. Time Zone ✓ 2. LAN Interface ✓ 3. WAN Interface ✓ 4. Wireless LAN ✓ 5. Wireless Security 	5. Wireless Security This page allows you setup th Encryption Keys could preven Encryption: WPA2 Mixed * Pre-Shared Key Format: Pre-Shared Key:	<pre>/ Setup e wireless security. Turn on WEP or WPA by using t any unauthorized access to your wireless network. Passphrase ▼ Cancel <<back finished<="" pre=""></back></pre>
Parameters		Description
Pre-shared Key F	ormat	You may select to select Passphrase (alphanumeric format) or Hexadecimal Digits (in the "A-F", "a-f" and "0- 9" range) to be the Pre-shared Key. For example: Passphrase: iamguest Hexadecimal Digits: 12345abcde
Pre-shared Key		The Pre-shared key is used to authenticate and encrypt data transmitted in the wireless network. Fill the text box by following the rules below.

Clicking on **OK** to save and active all the settings. Now, you can start to use the router as your

shared keys.

Hex: input 64-digit Hex values (in the "A-F", "a-f" and "0-9" range) or at least 8 character pass phrase as the pre-

internet gateway.

Chapter 3 General Settings

Once you click on the General Setup button at the Home Page, you should see the screen below.

If you have already configured the Quick Setup Wizard you do NOT need to configure anything thing in the General Setup screen for you to start using the Internet.

The General Setup contains advanced features that allow you to configure the router to meet your network's needs such as: Wireless, Address Mapping, Access Control, Hacker Attack Prevention, Special Applications, DMZ and other functions.

Broadband Router	HOME General Setup Status Tools
• System • WAN • LAN • Wirless • Firewall	General Setup The router supports advanced functions like hacker attack detection, client filtering, virtual servers, special application access, and a virtual DMZ host.

Below is a general description of what advance functions are available for this broadband router.

Menu	Description
3.1 System	This section allows you to set the Broadband router's system Time Zone, Password and Remote Management Administrator.
3.2 WAN	This section allows you to select the connection method in order to establish a connection with your ISP. (same as the Quick Setup Wizard section)
3.3 LAN	You can specify the LAN segment's IP address, subnet Mask, enable/disable DHCP and select an IP range for your LAN
3.4 Wireless	You can setup the wireless LAN's SSID, WEP key, MAC filtering.

3.5 Firewall	The Firewall section allows you to configure Access Control, Hacker Prevention and DMZ.
3.6 QoS	If you need to setup the bandwidth control for high priority network traffic, please go to this section.

Select one of the above six General Setup selections and proceed to the manual's relevant subsection

3.1 System

The system screen allows you to specify a time zone, to change the system password and to specify a remote management user for the broadband router.

Broadband Router	HOME General Setup Status Tools
System Time Zone Setting Password Setup WAN LAN Wirless Firewall	System Setting This page includes all the basic configuration tools for the router. The options are in the menu screen to the left.
Parameters	Description
3.1.1 Time Zone Setting	Select the time zone of the country you are currently in.

	The router will set its time based on your selection.
3.1.2 Password Setup	Allows you to select a password in order to access the web-based management website.

Select one of the above three system settings selections and proceed to the manual's relevant sub-section

3.1.1 Time Zone Setting

The Time Zone Setting allows your router to reference or base its time on the settings configured here, which will affect functions such as Log entries and Firewall settings.

Broadband Router			HOME General Setup Status Tools
 System Time Zone Setting Password Setup WAN LAN Wirless Firewall 	Time Zone S You can maintain Current Time :	Setting the system time by synchronizing with a public time se Yr 2000 Mon 1 Day 1 Hr 0 Mn 11	erver over the Internet.
	Time Zone Select :	(GMT+08:00)Taipei	
	NTP server :	 ● 192.5.41.41 - North America ● (Manual IP Setting) 	
	Apply	Cancel Refresh	

Description
Set the current time.
Select the time zone of the country you are currently in. The router will set its time based on your selection.
Check the box to enable router to update time from NTP server.
If the country you live uses daylight saving, please check this box.
Select one preset time server or manual input a server IP.

Click **<Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.1.2 Password Setup

You can change the password required to log into the broadband router's system web-based management. By default, there is no password. So please assign a password to the Administrator as soon as possible, and store it in a safe place. Passwords can contain 0 to 12 alphanumeric characters, and are case sensitive.

Broadband Router	HOME General Setup Status Tools		
 System Time Zone Setting Password Setup WAN LAN Wirless Firewall 	Password Setup This page is used to set the account to access the web server of Access Point. Empty user name and password will disable the protection. User Name: New Password: Confirmed Password: Apply Cancel		
Parameters	Description		
User Name	Change your login user name.		
New Password	Enter your new password		
Confirmed Password	Enter your new password again for verification purposes		
	Note : If you forget your password, you'll have to reset the router to the factory default (No password) with the reset button (see router's back panel)		

Click **<Apply>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.2 WAN

Use the WAN Settings screen if you have already configured the Quick Setup Wizard section and you would like to change your Internet connection type. The WAN Settings screen allows to specify the type of WAN port connect you want to establish with your ISP. The WAN settings offer the following selections for the router's WAN port, **Static IP Address**, **DHCP Client**, **PPPOE**, **PPTP**, **L2TP** and **DDNS**. Please choose one type and click 'More Configuration'.

Broadband Router		Home General Setup Status Tools
• System • WAN • Static IP • Dynamic IP • PPPOE • PPTP • L2TP • DDNS • LAN • Wireless • Firewall • QoS	WAN Settings The Broadband router can be Static IP DHCP client PPPoE PPTP L2TP	connected to your Service Provider through the following methods: Uses a Static IP Address. Your Service Provider gives a Static IP Address to access Internet services. Obtains an IP Address automatically from your Service Provider. PPP over Ethernet is a common connection method used in xDSL connections. Point-to-Point Tunneling Protocol is a common connection method used in xDSL connections. Layer Two Tunneling Protocol is a common connection method used in xDSL connections. More Configuration
Parameters		Description
3.2.1 Static IP		Your ISP has given you an IP address already.
3.2.2 DHCP Client		Your ISP will automatically give you an IP address.
3.2.3 РРРоЕ		Your ISP requires PPPoE connection.
3.2.4 PPTP		Your ISP requires you to use a Point-to-Point Tunneling Protocol (PPTP) connection.
3.2.5 L2TP		Your ISP requires L2TP connection.

Once you have made a selection, proceed to the manual's relevant sub-section.

3.2.1 Static IP

Select Static IP address if your ISP has given you a specific IP address for you to use. Your ISP should provide all the information required in this section.

Broadband Router		Home General Setup Status Tools
• System • WAN • Static IP • Dynamic IP • PPPoE • PPTP • L2TP • DDNS	Static IP If your Service Provider provided. IP Address: Subnet Mask:	has assigned a Fixed IP address; enter the assigned IP Address, Subnet Mask and the Gateway IP Address
 LAN Wireless Firewall QoS 	Default Gateway: MTU Size: DNS 1: DNS 2: DNS 3:	172.1.1.254 1500 (1400-1500 bytes)

Parameters	Description
IP Address	This is the IP address that your ISP has given you.
Subnet Mask	Enter the Subnet Mask provided by your ISP. (e.g. 255.255.255.0)
Default Gateway	This is the IP address of ISP's gateway.
MTU Size	MTU (Maximum Transmission Unit) determine the maximum size of each packet in any transmission within the network. Please specify the MTU range from 1400 to 1500 bytes. Please input the MTU value of your network connection here. If you don't know, you can use default value.
DNS 1	Please input the IP address of DNS server provided by your service provider.
DNS 2	Please input the IP address of additional DNS server provided by your service provider.

Click **<Apply Changes>** at the bottom of the screen to save the above configurations. If you want to configure other advanced settings in this web page, please go to section 3.2.6 for more information.

3.2.2 DHCP Client

Choose the Dynamic IP selection if your ISP will automatically give you an IP address. Some ISP's may also require that you fill in additional information such as Host Name, Domain Name and MAC address.

Broadband Router	Home General Setup Status Tools
System WAN Static IP Dynamic IP PPPoE PPTP PTP	Dynamic IP The Host Name is optional, but may be required by some Service Providers. The default MAC Address is set to the WAN physical interface on the Broadband router. If required by your Service Provider, you can use the "Clone MAC Address" button to copy the MA Address of the Network Interface Card installed in your PC and replace the WAN MAC Address with this MAC Address.
 L2IP DDNS LAN Wireless Firewall QoS 	Host Name: MTU Size: 1492 (1400-1492 bytes)
	Attain DNS Automatically Set DNS Manually DNS 1: DNS 2: DNS 3:

Parameters	Description
Host Name	Please input host name of your computer, this is optional, and only required if your service provider asks you to do so.
MTU Size	MTU (Maximum Transmission Unit) determine the maximum size of each packet in any transmission within the network. Please specify the MTU range from 1400 to 1492 bytes. Please input the MTU value of your network connection here. If you don't know, you can use default value.

Obtain DNS Automatically	The ISP requires you to obtain a DNS by DHCP server before you connecting to the internet.
Set DNS Manually	If your ISP gives you a static DNS server to be used to connect to the internet, please select this option.
DNS 1	Please input the IP address of DNS server provided by your service provider.
DNS 2	Please input the IP address of additional DNS server provided by your service provider.
DNS 3	Please input the IP address of additional DNS server provided by your service provider.

Click <**Apply Changes>** at the bottom of the screen to save the above configurations. If you want to configure other advanced settings in this web page, please go to section 3.2.6 for more information.

3.2.3 PPPoE (PPP over Ethernet)

Select PPPoE if your ISP requires the PPPoE protocol to connect you to the Internet. Your ISP should provide all the information required in this section. (See chapter 2 "PPPoE" for more detail)

Broadband Router		Home General Setup Status Tools
System VAN Static IP Dynamic IP PPP0E PTP L2TP	PPPoE Enter the PPPoE User required by some Servir maintained during inact can enable the Connect again. If your Internet S	Name and Password assigned by your Service Provider. The Service Name is normally optional, but may be ce Providers. Enter a Idle Time (in minutes) to define a maximum period of time for which the Internet connect wity. If the connection is inactive for longer than the Maximum Idle Time, then the connection will be dropped. on Demand option to automatically re-establish the connection as soon as you attempt to access the Interne ervice Provider requires the use of PPPoE, enter the information below.
 DDNS LAN Wireless Firewall QoS 	User Name: Password: Service Name: Connection Type:	Continuous Connect
	Idle Time: MTU Size:	5 (1-1000 minutes) 1412 (1360-1492 bytes)
		atically

Parameters	Description		
User Name	Please input user name assigned by your Internet service provider here.		
Password	Please input the password assigned by your Internet service provider here.		
Service Name	Please give a name to this Internet service, this is optional		
Connection Type	Please select the connection type of Internet connection you wish to use. There are 3 options: " Continuous " - keep internet connection alive, do not disconnect, " connect on Demand " - only connects to Internet when there's a connect attempt, and " Manual " - only connects to Internet when 'Connect' button on this page is pressed, and disconnects when 'Disconnect button is pressed.		

Idle Time	Please input idle time out. Specify the time to shutdown internet connection after no internet activity is detected after a while. This option is only available when connection type is 'Connect on Demand'.
MTU Size	MTU (Maximum Transmission Unit) determine the maximum size of each packet in any transmission within the network. Please specify the MTU range from 1360 to 1492 bytes. Please input the MTU value of your network connection here. If you don't know, you can use default value.
Obtain DNS Automatically	The ISP requires you to obtain a DNS by DHCP server before you connecting to the internet.
Set DNS Manually	If your ISP gives you a static DNS server to be used to connect to the internet, please select this option.
DNS 1	Please input the IP address of DNS server provided by your service provider.
DNS 2	Please input the IP address of additional DNS server provided by your service provider.
DNS 3	Please input the IP address of additional DNS server provided by your service provider.

Click <**Apply Changes>** at the bottom of the screen to save the above configurations. If you want to configure other advanced settings in this web page, please go to section 3.2.6 for more information.

3.2.4 PPTP

Select PPTP if your ISP requires the PPTP protocol to connect you to the Internet. Your ISP should provide all the information required in this section.

Broadband Router			Home General Setup Status Tools
	_		
• System	PPTP		
VIAN Static IP	Point-to-Point Tunneling	Protocol is a common connection method used in xDSL connection	3.
 Dynamic IP PPPoE 			
 PPTP L2TP 	⊖Attain IP Automati	ally	
> DDNS	⊙ Set IP Manually		
• Wireless	IP Address:	0.0.0.0	
Firewall	Subnet Mask:	0.0.0.0	
• QoS	Default Gateway:	0.0.0.0	
	Server IP Address:		
	User Name:		
	Password:		
	Connection Type:	Continuous Connect Disconnect	
	Idle Time:	5 (1-1000 minutes)	
	MTU Size:	1412 (1400-1460 bytes)	
	🔲 Request MPPE E	cryption 🔲 Request MPPC Compression	
	Server IP Address: User Name: Password: Connection Type: Idle Time: MTU Size: Request MPPE En	Continuous Connect Disconnect 5 (1-1000 minutes) 1412 (1400-1460 bytes) cryption Request MPPC Compression	

Parameters	Description	
Attain IP Automatically	Select this option if your ISP will assign IP Address to your router directly. Please contact your ISP if you don't know what you should select.	
Set IP Address	This is the IP address that your ISP has given you.	
Subnet Mask	Enter the Subnet Mask provided by your ISP. (e.g. 255.255.255.0)	
Default Gateway	This is the IP address of ISP's gateway.	
Server IP Address	Please input the IP address of PPTP gateway assigned by your Internet service provider here.	

User Name	Please input user name assigned by your Internet service provider here.		
Password	Please input the password assigned by your Internet service provider here.		
Connection Type	Please select the connection type of Internet connection you wish to use. There are 3 options: " Continuous " - keep internet connection alive, do not disconnect, " connect on Demand " - only connects to Internet when there's a connect attempt, and " Manual " - only connects to Internet when 'Connect' button on this page is pressed, and disconnects when 'Disconnect button is pressed.		
Idle Time	Please input idle time out. Specify the time to shutdown internet connection after no internet activity is detected after a while. This option is only available when connection type is 'Connect on Demand'.		
MTU Size	MTU (Maximum Transmission Unit) determine the maximum size of each packet in any transmission within the network. Please specify the MTU range from 1400 to 1460 bytes. Please input the MTU value of your network connection here. If you don't know, you can use default value.		
Request MPPE Encryption	MPPE (Microsoft Point-to-Point Encryption) is a method of encrypting data across PPTP virtual private network connections. Check this box if it is needed for your virtual private network links.		
Request MPPC Encryption	MPPC (Microsoft Point-to-Point Compression) which compresses data across virtual private network links. Check this box if it is needed.		
Obtain DNS Automatically	The ISP requires you to obtain a DNS by DHCP server before you connecting to the internet.		
Set DNS Manually	If your ISP gives you a static DNS server to be used to connect to the internet, please select this option.		
DNS 1	Please input the IP address of DNS server provided by your service provider.		
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DNS 2	Please input the IP address of additional DNS server provided by your service provider.
DNS 3	Please input the IP address of additional DNS server provided by your service provider.

Click **<Apply Changes>** at the bottom of the screen to save the above configurations. If you want to configure other advanced settings in this web page, please go to section 3.2.6 for more information.

3.2.5 L2TP

Select L2TP if your ISP requires the L2TP protocol to connect you to the Internet. Your ISP should provide all the information required in this section.

Broadband Rout	er			Home General Setup Status Tools I
 System WAN Static IP Dynamic IP PPPOE PPTP L2TP DDNS LAN Wireless Firewall QoS 	L2TP Layer Two Tunneling Pr Attain IP Automat Set IP Manually IP Address: Subnet Mask: Default Gateway: Server IP Address: User Name:	otocol is a cor ically 0.0.0.0 0.0.0.0 0.0.0	Imon connection method used in xDSL connections	
	Password:			
	Connection Type:	Continuous	Connect Disconnect	
	Idle Time:	5	(1-1000 minutes)	
	MTU Size:	1412	(1400-1460 bytes)	
Parameters	Des	scriptior		
Attain IP Automat	ically Ple	ase sele	ect the type of how you obtair	n IP address from your

Itomatically Please select the type of how you obtain IP address from your service provider here. You can choose "Attain IP automatically" or use the "Set IP Manually"

Set IP Manually	If you select the "Set IP Manually", please fill in these fields of the "IP Address" and "Subnet Mask"		
IP Address	This is the IP address that your ISP has given you.		
Subnet Mask	Enter the Subnet Mask provided by your ISP. (e.g. 255.255.255.0)		
Default Gateway	This is the IP address of ISP's gateway.		
Server IP Address	Please input the IP address of L2TP gateway assigned by your Internet service provider here.		
User Name	Please input user name assigned by your Internet service provider here.		
Password	Please input the password assigned by your Internet service provider here.		
Connection Type	Please select the connection type of Internet connection you wish to use. There are 3 options: " Continuous " - keep internet connection alive, do not disconnect, " connect on Demand " - only connects to Internet when there's a connect attempt, and " Manual " - only connects to Internet when 'Connect' button on this page is pressed, and disconnects when 'Disconnect button is pressed.		
Idle Time	Please input idle time out. Specify the time to shutdown internet connection after no internet activity is detected after a while. This option is only available when connection type is 'Connect on Demand'.		
MTU Size	MTU (Maximum Transmission Unit) determine the maximum size of each packet in any transmission within the network. Please specify the MTU range from 1400 to 1460 bytes. Please input the MTU value of your network connection here. If you don't know, you can use default value.		
Obtain DNS Automatically	The ISP requires you to obtain a DNS by DHCP server before you connecting to the internet.		

Set DNS Manually	If your ISP gives you a static DNS server to be used to connect to the internet, please select this option.
DNS 1	Please input the IP address of DNS server provided by your service provider.
DNS 2	Please input the IP address of additional DNS server provided by your service provider.
DNS 3	Please input the IP address of additional DNS server provided by your service provider.

Click <**Apply Changes>** at the bottom of the screen to save the above configurations. If you want to configure other advanced settings in this web page, please go to section 3.2.6 for more information.

3.2.6 WAN Advanced Settings

There are some advanced settings for different WAN connection types. Please refer to the description as below.

Broadband Route	er		Home General Setup Status Tools
System VAN Static IP Dynamic IP PPPoE PPTP I 278	Detault Gateway: MTU Size: DNS 1: DNS 2:	172.1.1.254 1500 (1400-1500 bytes)	
 DDNS LAN Wireless Firewall QoS 	DNS 3: Clone MAC Address: Enable uPNP Enable IGMP Pro Enable Ping Acc Enable Web Sen Enable FTP ALG Enable IPsec pas Enable IPTP pas Enable L2TP pas TTL: O TTL Standard Apply Changes	00000000000 Clone MAC oxy ess on WAN ver Access on WAN Port: 0000 on Port: 21 ss through on VPN connection ss through on VPN connection	
			~

Parameters	Description		
Clone MAC Address	For some applications, you may need to designate a specific MAC address for the router. Please enter the MAC address here. If you are connecting the router to a computer, you can simply press 'Clone Mac' button to fill the MAC address field with the MAC address of your computer.		
Enable UPnP	Check this box to enable UPnP feature here. After you enable the UPnP feature, all client systems that support UPnP, like Windows XP, can discover this router automatically and access the Internet through this router without any configuration. The NAT Traversal function provided by UPnP can let applications that support UPnP smoothly connect to Internet sites without any incompatibility problem due to the NAPT port translation.		
Enable IGMP Proxy	Check this box if you want to enable the router as IGMP proxy to implement multicast routing.		
Enable Ping Access on WAN	When this function is enabled, you will be allowed to ping the IP address of the router given by ISP from a remote site.		
Enable Web Server Access on WAN Port	Please check this box to start the Web Server Access on WAN when you want to access the web-based management from a remote site. Enter the port number of your Web Server.		
	Note: When you want to access the web-based management from a remote site, you must enter the router's WAN IP address (e.g. 10.0.0.1) into your web-browser followed by port number 8080, e.g. 10.0.0.1:8080 (as below).		
	ress 10.0.0.1:8080 ↓↓ [♣] > DAP 0r**		
Enable FTP ALG on Port	If you have built up a FTP server in your network, you can enable this function to let the FTP traffics correctly pass though the NAT gateway of the router. Enter the port number of your FTP server.		

Enable IPsec pass through On VPN connection	Check this box and the router will enable IPsec packets pass through the router for VPN connection.
Enable PPTP pass through On VPN connection	Check this box and the router will enable PPTP packets pass through the router for VPN connection
Enable L2TP pass through On VPN connection	Check this box and the router will enable L2TP packets pass through the router for VPN connection.
TTL	For some special applications, you might need to change the TTL value for the packets routing to your router. Please select 'TTL Standard', 'TTL+1', 'TTL=1' or 'User Defined" to define a value. If you don't know what it is / not sure if you need it, it's safe to set this option to 'TTL Standard'.

Click <**Apply Changes>** at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router.

3.2.7 DDNS

DDNS allows you to map the static domain name to a dynamic IP address. You must get an account, password and your static domain name from the DDNS service providers. This router supports DynDNS, and TZO.

Broadband Route	Home General Setup Status Tools
 System WAN Static IP Dynamic IP PPPAE PPTP L2TP DDNS LAN Wireless Firewall QoS 	Dynamic DNS Setting Dynamic DNS is a service, that provides you with a valid, unchanging, internet domain name (an URL) to go with that (possibly everchanging) IP-address.
	Enable DDNS
	Service Provider : DynDNS Y Domain Name : User Name/Email: Password/Key:
	Note: For TZO, you can have a 30 days free trial <u>here</u> or manage your TZO account in <u>control panel</u> For DynDNS, you can create your DynDNS account <u>here</u>
	Apply Change Reset

Parameters	Default	Description
Enable DDNS	Disable	Enable/Disable the DDNS function of this router.
Service Provider		Select a DDNS service provider.
Domain name		Your static domain name that use DDNS.
User Name/Email		The account that your DDNS service provider assigned to you.
Password/Key		The password you set for the DDNS service account above.

Click **<Apply Changes**> at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.3 LAN

The LAN Port screen below allows you to specify a private IP address for your router's LAN ports as well as a subnet mask for your LAN segment.

Broadband Route	r	Home General Setup Status Tools
● System ● WAN ダ LAN ● Wireless ● Firewall	LAN Interface Set This page is used to confi the LAN port of your Acce subnet mask, DHCP, etc.	tup gure the parameters for local area network which connects to iss Point. Here you may change the setting for IP addresss,
● QoS	IP Address:	192.168.2.1
	Subnet Mask:	255.255.255.0
	Default Gateway:	0.0.0.0
	DHCP:	Server 💌
	DHCP Client Range:	192.168.2.100 - 192.168.2.200 Show Client
	Static DHCP:	Disabled 💙 Set Static DHCP
	Domain Name:	
	802.1d Spanning Tree:	Disabled 🗸
	Clone MAC Address:	0000000000
	Apply Changes	Reset

Parameters	Default	Description
IP address	192.168.2.1	This is the router's LAN port IP address (Your LAN clients default gateway IP address).
Subnet Mask	255.255.255.0	Specify a Subnet Mask for your LAN segment.
Default Gateway		Specify the default gateway for LAN segment.
DHCP	Server	You can select the DHCP type for LAN segment. By selecting the DHCP server, the router will automatically give your LAN clients an IP address. By selecting the DHCP client, the router will get an IP address from LAN DHCP server automatically. If the DHCP server is not enabled then you'll have to manually set your LAN client's IP addresses; make sure the LAN Client is in the same subnet as this broadband
		53

	router if you want the router to be your LAN client's default gateway.
DHCP Client Range	You can select a particular IP address range for your DHCP server to issue IP addresses to your LAN Clients.
	Note: By default the IP range is from: Start IP 192.168.2.100 to End IP 192.168.2.199 . If you want your PC to have a static/fixed IP address then you'll have to choose an IP address outside this IP address Pool.
802.1d Spanning Tree Disabled	If 802.1d Spanning Tree function is enabled, this router will use the spanning tree protocol to prevent from network loop happened in the LAN ports.
Clone MAC Address	Specify the MAC Address for your LAN interface.

Click <**Apply Changes**> at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.4 Wireless

Wireless Access Point builds a wireless LAN and can let all IEEE 802.11b, IEEE 801.11g or IEEE 802.1n wireless stations connect to your Intranet. It supports WEP, WPA and WPA2 encryption to enhance the security of your wireless network. It also support WPS function for you to easy setup the wireless connection between the Access Point with other stations.



3.4.1 Basic Settings

You can set parameters that are used for the wireless stations to connect to this router. The parameters include Mode, ESSID, Channel Number and Associated Client.

Broadband Router		
_		
 System WAN LAN Wireless Basic Settings 	Wireless Basic This page is used to c connect to your Acces well as wireless netwo	Settings onfigure the parameters for wireless LAN clients which may ss Point. Here you may change wireless encryption settings as rk parameters.
 Advanced Settings Security 	Disable Wireles	ss LAN Interface
 Access Control ▶ Site Survey 	Band:	2.4 GHz (B+G+N) 💌
 WDS Setting WDS 	Mode:	AP Multiple AP
▶ Schedule	Network Type:	Infrastructure 😽
Firewall QoS	SSID:	WPS6fed737ee2
	Channel Width:	40MHz 💌
	Control Sideband:	Upper 💌
	Channel Number:	11 💌
	Broadcast SSID:	Enabled 💌
	WMM:	Enabled 💌
	Data Rate:	Auto 🔽
	Associated Clients:	Show Active Clients
	Enable Mac Cl	one (Single Ethernet Client)
	Enable University	sal Repeater Mode (Acting as AP and client simultaneouly)
	SSID of Extended In	iterface:
	Apply Changes	Reset

Parameters	Default	Description
Disable Wireless LAN Interface		Check this box to disable wireless LAN.
Band		Please select the radio band from one of the following options.
		2.4GHz(B): 2.4GHz band, only allows 802.11b wireless network client to connect this router (maximum transfer rate 11Mbps).

	 2.4 GHz (N): 2.4GHz band, only allows 802.11n wireless network client to connect this router (maximum transfer rate 150Mbps). 2.4 GHz (B+G):2.4GHz band, only allows 802.11b and 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, and maximum 54Mbps for 802.11g clients).
	2.4 GHz (G): 2.4GHz band, only allows 802.11g wireless network client to connect this router (maximum transfer rate 54Mbps).
	2.4 GHz (B+G+N): 2.4GHz band, allows 802.11b, 802.11g, and 802.11n wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, maximum 54Mbps for 802.11g clients, and maximum 150Mbps for 802.11n clients).
Mode	It allows you to set the wireless mode of the router to AP, Client, WDS or AP+WDS mode.
	AP : standard wireless access point.
	Client : Configure the router to Ethernet device such us TV, Game player, HDD&DVD to enable the Ethernet device be a wireless station.
	WDS : Connect this router with other WDS- capable wireless routers, to expand the scope of network.
	AP + WDS (Universal Repeater) : The router can act as Station and AP at the same time. It can use Station function to connect to a Root AP and use AP function to service all wireless stations within its coverage.
Multiple AP	This access point supports multiple APs function. Please go to section 3.4.1.1 for more information.
Network Type	You can set the client mode to Infrastructure or Ad Hoc mode here.

SSID	default	This is the name of wireless router. You can type any alphanumerical characters here, maximum 32 characters. SSID is used to identify your own wireless router from others when there are other wireless routers in the same area. Default SSID is 'default', it's recommended to change default SSID value to the one which is meaningful to you, like myhome, office_room1, etc.
Channel Width		Set channel width of wireless radio. Do not modify default value if you don't know what it is, default setting is '40 MHz'.
ControlSideBand		Select the upper band or lower band for your radio frequency. While upper band is selected, the channel number you can select is from channel 5 to channel 11. While lower band is selected, the channel number you can select is from channel 1 to channel 7.
Channel Number		Please select a channel from the dropdown list of 'Channel Number', available channel numbers are 1 to 13 for European countries, 1 to 11 for USA. You can choose any channel number you want to use, and almost all wireless clients can locate the channel you're using automatically without any problem. However, it's still useful to remember the channel number you use, some wireless client supports manual channel number select, and this would help in certain scenario when there is some radio communication problem.
Broadcast SSID		Decide if the wireless router will broadcast its own SSID or not. You can hide the SSID of your wireless router (set the option to 'Disable'), so only people those who know the SSID of your wireless router can get connected.
WMM		The short of Wi-Fi MultiMedia, it will enhance the data transfer performance of multimedia contents when they're being transferred over wireless network. If you don't know what it is /

	not sure if you need it, it's safe to set this option to 'Enable'.
Data Rate	Set the wireless data transfer rate to a certain value. Since most of wireless devices will negotiate with each other and pick a proper data transfer rate automatically, it's not necessary to change this value unless you know what will happen after modification.
Associated Clients	Click "Show Active Clients" button, then an "Active Wireless Client Table" will pop up. You can see the status of all active wireless stations that are connecting to the access point.
Enable MAC Clone (Single Ethernet Client)	Check the check box will copy the MAC address of your PC to wireless Interface when the first packet was received.
Enable Universal Repeater Mode (Acting as AP and client simultaneously)	By enable the universal repeater mode, the router will act as AP and client simultaneously.
SSID of Extended Interface	Set the SSID for the extended wireless interface.

Click **<Apply Changes**> at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.4.2.1 Multiple AP

This access point supports multiple APs function. With different SSID names, you can separate to four wireless networks with different wireless security, WMM, access control and etc.

This	page sho	ws and updates the wi	reless setting fo	r multiple AF	s.			
No.	Enable	Band	SSID	Data Rate	Broadcast SSID	WMM	Access	Active Client List
AP1	v	2.4 GHz (B+G+N) 💌	default-VAP0	Auto 🔽	Enabled 🔽	Enabled 💌	LAN+WAN 🔽	Show
AP2	V	2.4 GHz (B+G+N) 💌	default-VAP1	Auto 🔽	Enabled 💌	Enabled 💌	LAN+WAN 🔽	Show
AP3		2.4 GHz (B+G+N) 💌	default-VAP2	Auto 🔽	Enabled 💌	Enabled 💌	LAN+WAN 🔽	Show
AP4		2.4 GHz (B+G+N) 💌	default-VAP3	Auto 💌	Enabled 💌	Enabled 💌	LAN+WAN 🔽	Show
_								

Enable	Check this box if you want to enable multiple access points.
Band	Please select the radio band from one of the following options.
	2.4GHz(B): 2.4GHz band, only allows 802.11b wireless network client to connect this router (maximum transfer rate 11Mbps).
	 2.4 GHz (N): 2.4GHz band, only allows 802.11n wireless network client to connect this router (maximum transfer rate 150Mbps). 2.4 GHz (B+G):2.4GHz band, only allows 802.11b and 802.11g wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, and maximum 54Mbps for 802.11g clients).

2.4 GHz (G): 2.4GHz band, only allows 802.11g wireless network client to connect this router (maximum transfer rate 54Mbps).
2.4 GHz (B+G+N): 2.4GHz band, allows 802.11b, 802.11g, and 802.11n wireless network client to connect this router (maximum transfer rate 11Mbps for 802.11b clients, maximum 54Mbps for 802.11g clients, and maximum 150Mbps for 802.11n clients).
This is the name of wireless router. You can type any alphanumerical characters here, maximum 32 characters. SSID is used to identify your own wireless router from others when there are other wireless routers in the same area. Default SSID is 'default-VAP0/1/2/3', it's recommended to change default SSID value to the one which is meaningful to you, like myhome, office_room1, etc.
Set the wireless data transfer rate to a certain value. Since most of wireless devices will negotiate with each other and pick a proper data transfer rate automatically, it's not necessary to change this value unless you know what will happen after modification.
Decide if the wireless router will broadcast its own SSID or not. You can hide the SSID of your wireless router (set the option to 'Disable'), so only people those who know the SSID of your wireless router can get connected.
The short of Wi-Fi MultiMedia, it will enhance the data transfer performance of multimedia contents when they're being transferred over wireless network. If you don't know what it is / not sure if you need it, it's safe to set this option to 'Enable'.
If you want to limit stations connect to the specific access point with the right to access Internet only, please select 'WAN'. By default, it is not enabled the access control.

Active Client List

Click "Show" button, then an "Active Wireless Client Table" will pop up. You can see the status of all active wireless stations that are connecting to the access point.

Click **<Apply Changes**> at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.4.2 Advanced Settings

You can set advanced wireless LAN parameters of this router. The parameters include Authentication Type, Fragment Threshold, RTS Threshold, Beacon Interval, Preamble Type, etc. You should not change these parameters unless you know what effect the changes will have on this router.

Broadband Router		Home General Setup Status Tool:
 System WAN LAN Wireless Basic Settings 	Wireless Advanc These settings are only fo knowledge about wireless know what effect the char	ed Settings or more technically advanced users who have a sufficient s LAN. These settings should not be changed unless you nges will have on your Access Point.
 Advanced Settings Security 	Fragment Threshold:	2346 (256-2346)
Access Control	RTS Threshold:	2347 (0-2347)
 Site Survey WDS Setting 	Beacon Interval:	100 (20-1024 ms)
▶ WPS ▶ Schedule	Preamble Type:	Long Preamble O Short Preamble
FirewallQoS	IAPP:	● Enabled ○ Disabled
	Protection:	○ Enabled
	Aggregation:	● Enabled ○ Disabled
	Short GI:	● Enabled ○ Disabled
	WLAN Partition:	○ Enabled ④ Disabled
	RF Output Power:	⊙ 100% ○ 70% ○ 50% ○ 35% ○ 15%
	Apply Changes	Reset

Parameters	Default	Description
Fragment Threshold		"Fragment Threshold" specifies the maximum size of packet during the fragmentation of data to be transmitted. If you set this value too low, it will result in bad performance.
RTS Threshold		When the packet size is smaller than the RTS threshold, the wireless router will not use the RTS/CTS mechanism to send this packet.
Beacon Interval		The interval of time that this wireless router broadcast a beacon. Beacon is used to synchronize the wireless network.
Preamble Type		The "Long Preamble" can provide better wireless LAN compatibility while the "Short Preamble" can provide better wireless LAN performance.
ΙΑΡΡ		If you enable "IAPP", it will allow wireless station roaming between IAPP enabled access points within the same wireless LAN.
Protection		This is also called CTS Protection. It is recommended to enable the protection mechanism. This mechanism can decrease the rate of data collision between 802.11b and 802.11g/802.11n wireless stations. When the protection mode is enabled, the throughput of the AP will be a little lower due to many of frame traffic should be transmitted.
Aggregation		This function is used to join multiple data packets for transmission as a single unit to increase network efficiency.
Short GI		The 802.11n draft specifies two guard intervals: 400ns (short) and 800ns (long). Support of the 400ns GI is optional for transmit and receive. Enable this function will increase network efficiency.
WLAN Partition		Enable this function and all the wireless clients cannot access to each other. 63

RF Output Power

You can set the output power of wireless radio. Unless you're using this wireless router in a really big space, you may not have to set output power to 100%. This will enhance security (malicious / unknown users in distance will not be able to reach your wireless router).

Click <**Apply Changes**> at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router.

3.4.3 Security

This Access Point provides complete wireless LAN security functions, include WEP, IEEE 802.11x, IEEE 802.11x with WEP, WPA with pre-shared key and WPA with RADIUS. With these security functions, you can prevent your wireless LAN from illegal access. Please make sure your wireless stations use the same security function.

Broadband Route	r	Home General Setup Status Tools
 System WAN LAN Wireless Basic Settings Advanced Settings Security Access Control Site Survey WDS Setting WPS Schedule Firewall QoS 	Wireless Security Setu This page allows you setup the wi could prevent any unauthorized ac Select SSID: Root AP - default Encryption: 802.1x Authentication:	IP reless security. Turn on WEP or WPA by using Encryption Keys ccess to your wireless network.
Parameters	Default	Description
Select SSID		If you have configure multiple access points, please select the access point you want to configure.

Encryption	You can choose no encryption, WEP, WPA, WPA2 or WPA2 mixed mode for security.
Use 802.1x Authentication	IEEE 802.1x is an authentication protocol. Every user must use a valid account to login to this Access Point before accessing the wireless LAN. The authentication is processed by a RADIUS server. Check this box to authenticates user by IEEE 802.1x.

Click <**Apply Changes**> at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.4.3.1 WEP

When you select 64-bit or128-bit WEP key, you have to enter WEP keys to encrypt data. You can generate the key by yourself and enter it. You can enter four WEP keys and select one of them as default key. Then the router can receive any packets encrypted by one of the four keys.

Broadband Router		Home General Setup Status Tools
 System WAN LAN Wireless Basic Settings Advanced Settings Security Access Control Site Survey WDS Setting WPS Schedule Firewall QoS 	Wireless Security Setu This page allows you setup the win could prevent any unauthorized acc Select SSID: Root AP - default Encryption: 802.1x Authentication: Authentication: Key Length: Key Format: Encryption Key:	P eless security. Turn on WEP or WPA by using Encryption Keys ress to your wireless network.
Parameters	Description	
----------------	--	
Authentication	There are two authentication types: "Open System" and "Shared Key". When you select "Open System", wireless stations can associate with this wireless router without WEP encryption. When you select "Shared Key", you should also setup WEP key in the "Security" page and wireless stations should use WEP encryption in the authentication phase to associate with this wireless router. If you select "Auto", the wireless client can associate with this wireless router by using any one of these two authentication types.	
Key Length	You can select the WEP key length for encryption, 64-bit or 128-bit. Larger WEP key length will provide higher level of security, but the throughput will be lower.	
Key Format	You may select to select ASCII Characters (alphanumeric format) or Hexadecimal Digits (in the "A- F", "a-f" and "0-9" range) to be the WEP Key. For example: ASCII Characters: guest Hexadecimal Digits: 12345abcde	
Encryption Key	 The WEP key are used to encrypt data transmitted in the wireless network. Fill the text box by following the rules below. 64-bit WEP: input 10-digit Hex values (in the "A-F", "a-f" and "0-9" range) or 5-digit ASCII character as the encryption keys. 128-bit WEP: input 26-digit Hex values (in the "A-F", "a-f" and "0-9" range) or 13-digit ASCII characters as the encryption keys. 	

3.4.3.2 WPA

Wi-Fi Protected Access (WPA) is an advanced security standard. You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. It uses TKIP to change the encryption key frequently. So the encryption key is not easy to be broken by hackers. This can improve security very much.

Broadband Router		Home General Setup Status Tools
 System WAN LAN Wireless Basic Settings Advanced Settings Security Access Control Site Survey WDS Setting WPS Schedule 	Wireless Security Setur This page allows you setup the wire could prevent any unauthorized acc Select SSID: Root AP-default Encryption:	 Idess security. Turn on WEP or WPA by using Encryption Keys ess to your wireless network. Apply Changes Reset WPA
● Firewall ● QoS	Authentication Mode: WPA Cipher Suite: Pre-Shared Key Format: Pre-Shared Key:	O Enterprise (RADIUS)

Parameters	Description
WPA Authentication	WPA can authenticate by Enterprise (RADIUS) or by
Mode	Personal (Pre-Shared key). If you enable 'Enterprise (RADIUS)', please go to section 3.4.3.5 for more information.
WPA/WPA2 Cipher Suite	You can choose TKIP or AES for WPA/WPA2 key method.
Pre-shared Key Format	You may select to select Passphrase (alphanumeric format) or Hexadecimal Digits (in the "A-F", "a-f" and "0- 9" range) to be the Pre-shared Key. For example: Passphrase: iamguest Hexadecimal Digits: 12345abcde
Pre-shared Key	The Pre-shared key is used to authenticate and encrypt data transmitted in the wireless network. Fill the text box by following the rules below. 67

Hex: input 64-digit Hex values (in the "A-F", "a-f" and "0-9" range) or at least 8 character pass phrase as the preshared keys.

Click <**Apply Changes**> at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.4.3.3 WPA2(AES)

Wi-Fi Protected Access 2(WPA2) is an advanced security standard. You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. It uses CCMP(AES) to change the encryption key frequently. So the encryption key is not easy to be broken by hackers. This can improve security very much.

Broadband Router	Home General Setup Status Tools
 System WAN LAN ✓ Wireless ▶ Basic Settings ▶ Advanced Settings 	Wireless Security Setup This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network.
 Advanced Settings Security Access Control Site Survey WDS Setting WPS Schedule Firewall QoS 	Select SSID: Root AP - default Encryption: WPA2 Authentication Mode: Encryption: Centerprise (RADIUS) Personal (Pre-Shared Key) WPA2 Cipher Suite: TKIP AES Pre-Shared Key: Pre-Shared Key:
Parameters	Description
WPA Authentication Mode	WPA can authenticate by Enterprise (RADIUS) or by Personal (Pre-Shared key). If you enable 'Enterprise (RADIUS)', please go to section 3.4.3.5 for more information.
WPA/WPA2 Cipher Suit	You can choose TKIP or AES for WPA/WPA2 key

method.

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Pre-shared Key Format	You may select to select Passphrase (alphanumeric format) or Hexadecimal Digits (in the "A-F", "a-f" and "0- 9" range) to be the Pre-shared Key. For example: Passphrase: iamguest Hexadecimal Digits: 12345abcde
Pre-shared Key	The Pre-shared key is used to authenticate and encrypt data transmitted in the wireless network. Fill the text box by following the rules below. Hex: input 64-digit Hex values (in the "A-F", "a-f" and "0- 9" range) or at least 8 character pass phrase as the pre- shared keys.

3.4.3.4 WPA2Mixed

Wi-Fi Protected Access 2(WPA2) is an advanced security standard. You can use a pre-shared key to authenticate wireless stations and encrypt data during communication. It uses TKIP or CCMP(AES) to change the encryption key frequently. So the encryption key is not easy to be broken by hackers. This can improve security very much.

Broadband Router		
 System WAN LAN Wireless Basic Settings Advanced Settings Security Access Control Site Survey WDS Setting WPS Schedule Firewall QoS 	Wireless Security Setu This page allows you setup the wir could prevent any unauthorized act Select SSID: Root AP - default Encryption: Authentication Mode: WPA Cipher Suite: WPA2 Cipher Suite: Pre-Shared Key:	P eless security. Turn on WEP or WPA by using Encryption Keys cess to your wireless network. ✓ Apply Changes Pase ✓ Apply Changes Personal (Pre-Shared Key) ✓ TKIP AES TKIP AES
	6	59

Parameters	Description
WPA Authentication Mode	WPA can authenticate by Enterprise (RADIUS) or by Personal (Pre-Shared key). If you enable 'Enterprise (RADIUS)', please go to section 3.4.3.5 for more information.
WPA Cipher Suite	You can choose TKIP or AES for WPA key method.
WPA2 Cipher Suite	You can choose TKIP or AES for WPA2 key method.
Pre-shared Key Format	You may select to select Passphrase (alphanumeric format) or Hexadecimal Digits (in the "A-F", "a-f" and "0- 9" range) to be the Pre-shared Key. For example: Passphrase: iamguest Hexadecimal Digits: 12345abcde
Pre-shared Key	The Pre-shared key is used to authenticate and encrypt data transmitted in the wireless network. Fill the text box by following the rules below. Hex: input 64-digit Hex values (in the "A-F", "a-f" and "0- 9" range) or at least 8 character pass phrase as the pre- shared keys.

3.4.3.5 RADIUS Server

IEEE 802.1x is an authentication protocol. Every user must use a valid account to login to this wireless router before accessing the wireless LAN. The authentication is processed by a RADIUS server. This mode only authenticates user by IEEE 802.1x, but it does not encryption the data during communication. If there is a RADIUS server in you environment, please enable this function. Check this box and another sub-menu will appear.

Broadband Router	Home General Setup Status Tools
 System WAN LAN Wireless Basic Settings Advanced Settings Security Access Control Site Survey WDS Setting WPS Schedule Firewall QoS 	Wireless Security Setup This page allows you setup the wireless security. Turn on WEP or WPA by using Encryption Keys could prevent any unauthorized access to your wireless network. Select SSID: Root AP - default Apply Changes Reset Encryption: Disable B02.1x Authentication: RADIUS Server IP Address: RADIUS Server Port: 1812 RADIUS Server Password:

Parameters	Description
Radius Server IP Address	The IP address of external RADIUS server.
Radius Server Port	The service port of the external RADIUS server.
Radius Server Password	The password used by external RADIUS server.

3.4.4 Access Control

This function will help you to prevent unauthorized users from connecting to your wireless router; only those wireless devices who have the MAC address you assigned here can gain access to your wireless router. You can use this function with other security measures described in previous section, to create a safer wireless environment.

Broadband Router		Status Tools
 System WAN LAN Wireless Basic Settings Advanced Settings Security Access Control Site Survey WDS Setting WPS Schedule Firewall QoS 	Wireless Access Control If you choose 'Allowed Listed', only those clients whose wireless MAC addresses are in the access control list will be able to connect to your Access Point. When 'Deny Listed' is selected, these wireless clients on the list will not be able to connect the Access Point. Wireless Access Control Mode: Disable V MAC Address: Comment: Apply Changes Reset	
	MAC Address Comment Select Delete Selected Delete All Reset	

Parameters

Description

Wireless Access Control Mode	Enable/Disable wireless access control. You can choose 'Allow Listed' if you allow the MAC Addresses listed in the following table to connect to the router; choose 'Deny Listed' if you deny the MAC Addressed listed in the following table to connect to the router.
MAC Address	Input the MAC address of your wireless devices here, dash (-) or colon (:) are not required. (i.e. If the MAC address label of your wireless device indicates 'aa-bb-cc-dd-ee-ff' or aa:bb:cc:dd:ee:ff', just input 'aabbccddeeff'.

Comment	You can input any text here as the comment of this MAC address, like 'ROOM 2A Computer' or anything.
Current Access Control List	From the table, you can check the access control settings.
Delete Selected	If you want to delete a specific MAC address entry, check the 'select' box of the MAC address you want to delete, then click 'Delete Selected' button. (You can select more than one MAC addresses).
Delete All	If you want to delete all MAC addresses listed here, please click 'Delete All' button.
Reset	You can also click 'Reset' button to unselect all.

3.4.5 Site Survey

This page provides tool to scan the wireless network. If any Access Point or IBSS is found, you could choose to connect it manually when client mode is enabled.

Broadband Router							
● System ● WAN ● LAN ダ Wireless	Wireless Site Survey This page provides tool to scan the wireless network. If any Access Point or IBSS is found, you could choose to connect it manually when client mode is enabled.						
 Basic Settings Advanced Settings 	SSID	RSSID	Channel	Type	Encrypt	Signal	
 Security Access Control Site Survey 	AP	00:0e:2e:44:84:a0	11 (B+G+N)	AP	WPA- PSK/WPA2- PSK	62	
▶ WPS	IPCam	d6:36:c5:e0:9a:18	11 (B+G)	Ad hoc	no	60	
 Schedule Firewall QoS 	JAMES	00:0e:2e:b3:4f:15	11 (B+G)	AP	WPA- PSK/WPA2- PSK	46	
	default	00:e0:4c:81:96:b1	11 (B+G+N)	AP	no	36	
		00:1f:1f:19:da:d0	1 (B+G+N)	AP	no	34	
	6F	00:0e:2e:ff:ff:01	11 (B+G)	AP	no	32	
	AP	00:1f:1f:3a:37:00	11 (B+G+N)	AP	no	30	
	MEETING_ROOM_6F	00:50:fc:50:50:50	1 (B+G+N)	AP	no	28	
	Refresh Connect						

3.4.6 WDS Settings

In this mode, you can expand the scope of network by combining up to other access points together, and every access point can still accept wireless clients.

Broadband Router		Home General Setup Status Tools
 System WAN LAN Wireless Basic Settings Advanced Settings Security Access Control Site Survey WDS Setting WPS Schedule Firewall OoS 	WDS Settings Wireless Distribution System uses wireless media to communicate with on like the Ethernet does. To do this, you must set these APs in the same of set MAC address of other APs which you want to communicate with in the then enable the WDS. Enable WDS MAC Address: Data Rate: Auto Comment:	other APs, channel and le table and
	Apply Changes Reset Set Security Show Current WDS AP List: MAC Address Tx Rate (Mbps) Comment Set Security Delete Selected Delete All Reset	Statistics

Parameters	Description
Enable WDS	Check this box to enable Wireless Distribution System.
MAC Address	Input the MAC address of other wireless routers.
Data Rate	Designate the transmit data rate for the routers in the WDS network.
Comment	You can input any text here as the comment of this MAC address, like 'ROOM 2A AP' or anything.
Set Security	Click this button to configure the security used in the WDS network.

Show Statistics	Click this button and a table will pop up. This table shows the MAC Address, transmission, reception packet counters and state information for each configured WDS AP.
Current WDS AP List	From the table, you can check the settings for each WDS AP.
Delete Selected	If you want to delete a specific WDS AP, check the 'select' box of the WDS AP you want to delete, then click 'Delete Selected' button. (You can select more than one WDS AP).
Delete All	If you want to delete all WDS APs listed here, please click 'Delete All' button.
Reset	You can also click 'Reset' button to unselect all.

3.4.7 WPS

Wi-Fi Protected Setup (WPS) is the simplest way to build connection between wireless network clients and this wireless router. You don't have to select encryption mode and input a long encryption passphrase every time when you need to setup a wireless client, you only have to press a button on wireless client and this wireless router, and the WPS will do the rest for you.

This wireless router supports two types of WPS: Push-Button Configuration (PBC), and PIN code. If you want to use PBC, you have to push a specific button on the wireless client to start WPS mode, and switch this wireless router to WPS mode too. You can push Reset/WPS button of this wireless router, or click 'Start PBC' button in the web configuration interface to do this; if you want to use PIN code, you have to know the PIN code of wireless client and switch it to WPS mode, then provide the PIN code of the wireless client you wish to connect to this wireless router. The detailed instructions are listed follow:

Please click 'Wireless' menu on the left of web management interface, then click 'WPS', and the following message will be displayed on your web browser:

Broadband Router 1		
System WAN LAN Wireless ► Basic Settings	Wi-Fi Protected Setup This page allows you to change the sett let your wireless client automically sync without any hassle.	ting for WPS (Wi-Fi Protected Setup). Using this feature could cronize its setting and connect to the Access Point in a minute
 > Basic Settings > Advanced Settings > Security > Access Control > Site Survey 	Disable WPS	Configured OunConfigured
 WDS Setting WPS Schedule 	Self-PIN Number:	Reset to UnConfigured
 Firewall QoS 	Push Button Configuration: Apply Changes Reset Reset Reset	Start PBC
	Client PIN Number:	Start PIN

Parameters	Description
Enable WPS	Check this box to enable WPS function.
WPS Status	If the wireless security (encryption) function of this wireless router is properly set, you'll see 'Configured' message here. If wireless security function has not been set, you'll see 'unConfigured'.
Reset to UnConfigured	Reset the WPS status to unconfigured, please click this button.
Self-PIN Number	This is the WPS PIN code of this wireless router. This code is useful when you need to build wireless connection by WPS with other WPS- enabled wireless devices.
Push Button Configuration	Click 'Start PBC' to start Push-Button style WPS setup procedure. This wireless router will wait for WPS requests from wireless clients for 2 minutes. The 'WLAN' LED on the wireless router will be steady on for 2 minutes when this wireless router is waiting for incoming WPS request. 77

Client PIN Number

Please input the PIN code of the wireless client you wish to connect, and click 'Start PIN' button. The 'WLAN' LED on the wireless router will be steady on when this wireless router is waiting for incoming WPS request.

Click < Apply Changes> at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

3.4.8 Schedule

This page allows you to set up the wireless schedule rule. You can designate to enable wireless access point by time or day.

Broadband Router	Home General Setup Status	s Tools
 System WAN LAN Wireless Basic Settings Advanced Settings Security Access Control Ste Survey WDS Setting WPS Schedule Firewall QoS 	Wireless Schedule This page allows you setup the wireless schedule rule. Please do not forget to configure system time before enable this feature. Enable Wireless Schedule Days: Everyday Sun Mon Tue Wed Time: 24 Hours From Image: Constraints Apply Changes Reset	

Parameters	Description	
Enable Wireless Schedule	Check this box to enable wireless schedule.	
Days	Select to enable the wireless access point every day or some other weekdays.	
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3.5 Firewall

The Broadband router provides extensive firewall protection by restricting connection parameters, thus limiting the risk of hacker attack, and defending against a wide array of common Internet attacks. However, for applications that require unrestricted access to the Internet, you can configure a specific client/server as a Demilitarized Zone (DMZ).

Broadband Router	Home General Setup Status Tools
 System WAN LAN Wireless Firewall Port Filtering MAC Filtering Port Forwarding URL Filtering Denial-of-Service DMZ QoS 	Firewall Setting The router provides extensive firewall protection by restricting connection parameters to limit the risk of intrusion and defending against a wide array of common hacker attacks. However, for applications that require unrestricted access to the Internet, you can configure a specific client/server as a demilitarized zone (DMZ).

Parameters	Description
3.5.1 Port Filtering	Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway.
3.5.2 IP Filtering	IP Filtering allows you to specify which IP can or can not be used to access to internet.
3.5.3 MAC Filtering	MAC Filtering allows you to specify which MAC Address can or can not be used to access to internet.

3.5.4 Port Forwarding	You can have different services (e.g. email, FTP, Web etc.) going to different service servers/clients in your LAN. The Port Forwarding allows you to re-direct a particular range of service port numbers (from the Internet/WAN Ports) to a particular LAN IP address.
3.5.5 URL Filtering	You can enable this function to block specific web sites.
3.5.6 Denial-of-Service	Denial of Service (DoS) is a common attack measure, by transmitting a great amount of data or request to your Internet IP address and server, the Internet connection will become very slow, and server may stop responding because it is not capable to handle too much traffics.
3.5.7 DMZ	The DMZ function allows you to re-direct all packets going to your WAN port IP address to a particular IP address in your LAN.
3.5.8 Static Routing	You can enable Static Routing to turn off NAT function of your router and let the router forward packets by your routing policy.
3.5.9 Virtual Server	This function allows you to redirect a port on Internet IP address (on WAN port) to a specified port of an IP address on local network, so you can setup an Internet service on the computer on local network, without exposing it on Internet directly. You can also build many sets of port redirection, to provide many different Internet services on different local computers via a single Internet IP address.

Click on one of the firewall selections and proceed to the manual's relevant sub-section

3.5.1 Port Filtering

If you want to restrict users from accessing certain Internet applications/services (e.g. Internet websites, email, FTP etc.), then this is the place to set that configuration. Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Broadband Router	Home General Setup Status Tools
 System WAN LAN Wireless Firewall Port Filtering IP Filtering MAC Filtering Port Forwarding URL Filtering Denial-of-Service DMZ 	Port Filtering Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network. Enable Port Filtering Port Range: • Protocol: Both 💌 Comment: Apply Changes Reset
• QoS	Port Range Protocol Comment Select Delete Selected Delete All Reset

Parameters	Description
Enable Port Filtering	Check this box to enable the port filtering function.
Port Range	The range of ports to be forward to the private IP.
Protocol	Choose 'TCP' or 'UDP' or 'Both' protocols for port filtering.
Comment	You can input any text here as the comment of this settings.
Current Filter Table	From the table, you can check each port filter setting.
Delete Selected	If you want to delete a specific setting, check the 'select' box of the setting you want to delete, then click 'Delete Selected' button. (You can select more than one setting).

Delete All	If you want to delete all settings listed here, please click 'Delete All' button.
Reset	You can also click 'Reset' button to unselect all.

3.5.2 IP Filtering

If you want to restrict users from accessing certain Internet applications/services (e.g. Internet websites, email, FTP etc.), then this is the place to set that configuration. Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Broadband Router	Home General Setup Status Tools
 System WAN LAN Wireless Firewall Port Filtering MAC Filtering Port Forwarding URL Filtering Denial-of-Service DMZ QoS 	IP Filtering Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network. Enable IP Filtering Loal IP Address: Protocol: Both Comment: Apply Changes Reset Current Filter Table: Comment Delete Selected Delete All

Parameters	Description
Enable IP Filtering	Check this box to enable the IP filtering function.
Local IP Address	Input the IP Address you want to filter.
Protocol	Choose 'TCP' or 'UDP' or 'Both' protocols for port filtering.
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Comment	You can input any text here as the comment of this settings.
Current Filter Table	From the table, you can check each IP filter setting.
Delete Selected	If you want to delete a specific setting, check the 'select' box of the setting you want to delete, then click 'Delete Selected' button. (You can select more than one setting).
Delete All	If you want to delete all settings listed here, please click 'Delete All' button.
Reset	You can also click 'Reset' button to unselect all.

3.5.3 MAC Filtering

If you want to restrict users from accessing certain Internet applications/services (e.g. Internet websites, email, FTP etc.), then this is the place to set that configuration. Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network.

Broadband Router	Home Gen	eral Setup Status Tools
 System WAN LAN Wireless Firewall Port Filtering MAC Filtering Port Forwarding URL Filtering Denial-of-Service DMZ QoS 	MAC Filtering Entries in this table are used to restrict certain types of data packets from your local network to Internet through the Gateway. Use of such filters can be helpful in securing or restricting your local network. Enable MAC Filtering MAC Address: Comment: Apply Changes Reset Current Filter Table: MAC Address Comment Select	
	Delete Selected Delete All Reset	

Parameters	Description
Enable MAC Filtering	Check this box to enable the MAC filtering function.
MAC Address	Input the MAC address of the devices you want to filter, dash (-) or colon (:) are not required. (i.e. If the MAC address label of your wireless device indicates 'aa-bb- cc-dd-ee-ff' or aa:bb:cc:dd:ee:ff', just input 'aabbccddeeff'.
Comment	You can input any text here as the comment of this MAC address, like 'ROOM 2A Computer' or anything.
Current Filter Table	From the table, you can check each MAC Address filter setting.
Delete Selected	If you want to delete a specific MAC address entry, check the 'select' box of the MAC address you want to delete, then click 'Delete Selected' button. (You can select more than one MAC addresses).
Delete All	If you want to delete all MAC addresses listed here, please click 'Delete All' button.
Reset	You can also click 'Reset' button to unselect all.

3.5.4 Port Forwarding

The Port Forwarding allows you to re-direct a particular range of service port numbers (from the Internet/WAN Ports) to a particular LAN IP address. It helps you to host some servers behind the router NAT firewall.

Broadband Router	Home General Setup Status Tools
 System WAN LAN Wireless Firewall Port Filtering MAC Filtering Port Forwarding URL Filtering Denial-of-Service DMZ QoS 	Port Forwarding Entries in this table allow you to automatically redirect common network services to a specific machine behind the NAT firewall. These settings are only necessary if you wish to host some sort of server like a web server or mail server on the private local network behind your Gateway's NAT firewall. Enable Port Forwarding IP Address: Protocol: Both Port Range: Comment: Comment: Apply Changes Reset Local IP Address Protocol Port Range Comment Select Delete All Reset

Parameter	Description
Enable Port Forwarding	Enable Port Forwarding
IP Address	This is the private IP of the server behind the NAT firewall. Note: You need to give your LAN PC clients a fixed/static IP address for Port Forwarding to work properly.
Protocol	This is the protocol type to be forwarded. You can choose to forward "TCP" or "UDP" packets only or select "both" to forward both "TCP" and "UDP" packets.
Port Range	The range of ports to be forward to the private IP.
Comment	The description of this setting.

Current Port Forwarding Table	From the table, you can check each Port forwarding setting.
Delete Selected	If you want to delete a setting, check the 'select' box of the setting you want to delete, then click 'Delete Selected' button. (You can select more than one setting).
Delete All	If you want to delete all settings listed here, please click 'Delete All' button.
Reset	You can also click 'Reset' button to unselect all.

3.5.5 URL Filtering

You can block access to some Web sites from particular PCs by entering a full URL address or just keyword of the Web site.

Broadband Router	Home Gi	eneral Setup Status Tools
 System WAN LAN Wireless Firewall Port Filtering MAC Filtering MAC Filtering Port Forwarding URL Filtering Denial-of-Service DMZ QoS 	URL Filtering URL filter is used to deny LAN users from accessing the internet. Block those URLs which contain keywords listed below. Enable URL Filtering URL Address: Apply Changes Reset Current Filter Table: URL Address Select Delete Selected Delete All Reset	

Parameter	Description
Enable URL Filtering	Enable/disable URL Blocking.

URL Address	You can enter the full URL address or the keyword of the web site you want to block.
Current Filter Table	From the table, you can check each URL filter setting.
Delete Selected	If you want to delete a setting, check the 'select' box of the setting you want to delete, then click 'Delete Selected' button. (You can select more than one setting).
Delete All	If you want to delete all settings listed here, please click 'Delete All' button.
Reset	You can also click 'Reset' button to unselect all.

3.5.6 Denial-of-Service

Denial of Service (DoS) is a common attack measure, by transmitting a great amount of data or request to your Internet IP address and server, the Internet connection will become very slow, and server may stop responding because it is not capable to handle too much traffics.

This router has a built-in DoS attack prevention mechanism; when you activate it, the router will stop the DoS attack for you.

Broadband Router

● System ● WAN ● LAN ● Wireless	Denial of Service A "denial-of-service" (DoS) attack is characterized by an explicit attempt by hackers to prevent legitimate users of a service from using that service.			
 Wireless Firewall Port Filtering IP Filtering Port Forwarding URL Filtering Denial-of-Service DMZ QoS 	 Enable DoS Prevention Whole System Flood: SYN Whole System Flood: UDP Whole System Flood: UDP Whole System Flood: ICMP Per-Source IP Flood: SYN Per-Source IP Flood: UDP Per-Source IP Flood: UDP Per-Source IP Flood: ICMP TCP/UDP PortScan ICMP Smurf IP Land IP Spoof IP TearDrop PingOfDeath TCP Scan TCP SynWithData UDP Bomb UDP EchoChargen Select ALL Clear ALL Enable Source IP Blocking 	Image: Constraint of the system of the sy		

3.5.7 DMZ

If you have a local client PC that cannot run an Internet application (e.g. Games) properly from behind the NAT firewall, then you can open the client up to unrestricted two-way Internet access by defining a DMZ Host. The DMZ function allows you to re-direct all packets going to your WAN port IP address to a particular IP address in your LAN.

Broadband Router	Home General Setup Status Tools	
 System WAN LAN Wireless Firewall Port Filtering IP Filtering Port Forwarding URL Filtering Denial-of-Service DMZ QoS 	A Demilitarized Zone is used to provide Internet services without sacrificing unauthorized access to its local private network. Typically, the DMZ host contains devices accessible to Internet traffic, such as Web (HTTP) servers, FTP servers, SMTP (e-mail) servers and DNS servers. Brable DMZ DMZ Host IP Address: Apply Changes Reset	
Parameters	Description	
Enable DMZ	Enable/disable DMZ.	
DMZ Host IP Address	Input the IP address of a particular host in your LAN that will receive all the packets originally going to the WAN port/Public IP address above	
	Note: You need to give your LAN PC clients a fixed/static IP address for DMZ to work properly.	

3.5.8 Static Routing

You can enable Static Routing to turn off NAT function of your router and let the router forward packets by your routing policy.

Broadband Router	Home General Setup Status Tools
 System WAN LAN Wireless Firewall Port Fittering MAC Fittering MAC Fittering Denial-of-Service DMX Static Routing Virtual Server QoS 	Static Routing You can enable Static Routing to turn off NAT function of this router and let this router forward packets by your routing policy. Enable Static Routing Destination LAN IP Subnet Mask Default Gateway Apply Changes Reset Current Static Routing Table: Destination IP Address Netmask Gateway Select Delete Selected Delete All
Parameter	Description
Enable Static Routing	Enter the IP Address of the destination LAN.
Destination LAN IP	Enter the Subnet Mask of the destination LAN.
Default Gateway	This is the gateway IP Address where packets are sent. Input the gateway IP Address.
Current Static Routi	g Table From the table, you can check each Static Routing setting.
Delete Selected	If you want to delete a setting, check the 'select' box of the setting you want to delete, then click 'Delete Selected' button. (You can select more than one setting).
Delete All	If you want to delete all settings listed here, please click 'Delete All' button.
Reset	You can also click 'Reset' button to unselect all.

3.5.9 Virtual Server

This function allows you to redirect a port on Internet IP address (on WAN port) to a specified port of an IP address on local network, so you can setup an Internet service on the computer on local network, without exposing it on Internet directly. You can also build many sets of port redirection, to provide many different Internet services on different local computers via a single Internet IP address.

Broadband Router	Home General Setup Status Tools t
 System WAN LAN Wireless Firewall Port Filtering NAC Filtering Port Forwarding URL Filtering Denial-of-Service DMZ Static Routing Virtual Server QoS 	Virtual Server You can configure the Broadband router as a Virtual Server so that remote users accessing services such as the Web or FTP at your local site via Public IP Addresses can be automatically redirected to local serves configured with Private IP Addresses. In other words, depending on the requested service (TCP/UDP) port number, the Broadband router redirects the external service request to the appropriate internal server (located at one of your LAN's Private IP Addresses). Enable Virtual Server Private IP Private Port Both Apply Changes Reset No. Private IP Private IP Poit Port Po
Parameter	Description
Enable Virtual Server	Check this box to enable virtual server, and uncheck this box to disable virtual server.
Private IP	Input the IP address of the computer which provides Internet service.

 Private Port
 Input the port number of the IP address which provides

 Internet service.
 Internet service.

Туре	Select the type of connection, TCP or UDP. If you're not sure, please select 'Both'.
Public Port	Please select the port number of Internet IP address which will be redirected to the port number of local IP address defined above.
Comment	Please input any text to describe this mapping.
Current Virtual Server Table	From the table, you can check each virtual server setting.
Delete Selected	If you want to delete a setting, check the 'select' box of the setting you want to delete, then click 'Delete Selected' button. (You can select more than one setting).
Delete All	If you want to delete all settings listed here, please click 'Delete All' button.
Reset	You can also click 'Reset' button to unselect all.

3.6 QoS

Quality of service provides an efficient way for computers on the network to share the internet bandwidth with a promised quality of internet service. Without QoS, all computers and devices on the network will compete with each other to get internet bandwidth, and some applications which require guaranteed bandwidth (like video streaming and network telephone) will be affected, therefore an unpleasing result will occur, like the interruption of video / audio transfer.

With this function, you can limit the maximum bandwidth or give a guaranteed bandwidth for a	
specific computer, to avoid said unpleasing result from happening.	

Broadband Router	Home General Setup Status 100is
 System WAN LAN Wireless Firewall ✓ QoS 	CoS Entries in this table improve your online gaming experience by ensuring that your game traffic is prioritized over other network traffic, such as FTP or Web. Enable QoS Chable QoS Automatic Uplink Speed Manual Uplink Speed (Kbps): CoS Rule Setting: Address: Mathematic Address: Mac Address: Mode: Guaranteed minimum bandwidth * Bandwidth (Kbps):
Parameter	Description
Enable QoS	Check this box to enable QoS, and uncheck this box to disable QoS.

Automatic Uplink Speed	Check this box to enable automatic uplink speed.
Manual Uplink Speed (Kbps)	You can set the limit of uplink speed in kbits. To disable uplink bandwidth limitation, input '0' here.
Local IP Address	Input the IP Address of your computer for configure the QoS rule.
Mode	Select to guarantee a minimum or maximum bandwidth to the IP Address you designate.
Bandwidth (Kbps)	Input the bandwidth in kbits.
Comment	Please input any text to describe this QoS rule.
Current QoS Rules Table	From the table, you can check each QoS rule setting.
Delete Selected	If you want to delete a setting, check the 'select' box of the setting you want to delete, then click 'Delete Selected' button. (You can select more than one setting).
Delete All	If you want to delete all settings listed here, please click 'Delete All' button.
Reset	You can also click 'Reset' button to unselect all.

Chapter 4 Status

The Status section allows you to monitor the current status of your router. You can use the Status page to monitor: the connection status of the Broadband router's WAN/LAN interfaces, the current firmware version numbers, and any illegal attempts to access your network.

Broadband Router			Choose your language
			Home General Setup Status Tools
✓ Status	Status Informatio	n	
♦System Log ♦Statistics	This page shows the curre device.	nt status and some basic settings of the	-
	System		
	Uptime	Oday:Oh:40m:5s	
	Firmware Version	1.75	
	Wireless Configuration		
	Mode	AP	
	Band	2.4 GHz (B+G)	
	SSID	default	
	Channel Number 11		
	Encryption	Disabled	
	BSSID	00:1f:1f:1f:6c:d2	
	Associated Clients	U	
	TCP/IP Configuration		
	Attain IP protocol	Fixed IP	
	IP Address	192.168.2.1	
	Subnet Mask	255.255.255.0	
	Default Gateway	192.168.2.1	
	DHCP Server	Enabled	
	MAC Address	00:11:11:11:66:02	
	WAN Configuration		1
	Attain IP protocol	Getting IP from DHCP server	
	IP Address Subuct Mack	0.0.0	
	Subnet Mask Default Gateway	0.0.0	
	MAC Address	00.16161665.43	
	MAC Address	00. H. H. H. OC. 03	
Parameters	Description		
	01 11		

5.1 Status	Shows the router's system information.	
5.2 System Log	View the Broadband router's system log.	
5.3 Statistics	Shows the statistics.	

Select one of the above five Status selections and proceed to the manual's relevant sub-section.

4.1 Status

The Status section allows you to view the router's system information.

Broadband Route	r		Choose your language 🛛 👻
≪ Status	Status Informat	ion	
♦System Log ♦Statistics	This page shows the cu	urrent status and some basic settings of the	
	device.		_
	Sustam		
	System	Reference in the second	
	Uptime Firmwara Varaian	0day:00:40m:5s	
	Firmware version	1.75	
	Wireless Configuration	on	
	Mode	AP	
	Band	2.4 GHz (B+G)	
	SSID	default	
	Channel Number	11 Disable l	
	Encryption	Disabled	
	Accordante	0.11.11.11.80.42	
	TCP/IP Configuration	0	
	Attain ID protocol	Eived ID	•
	Attain IP protocol	FIXED IP 100 169 0 1	
	Fr Autress Subnot Maek	255 255 255 0	
	Default Gateway	192 168 2 1	
	DHCP Server	Enabled	
	MAC Address	00:1f:1f:1f:6c:d2	
	WAN Configuration		
	Attain IP protocol	Getting IP from DHCP server	•
	IP Address		
	Subnet Mask	0.0.0.0	
	Default Gateway	0.0.0.0	
	MAC Address	00:1f:1f:1f:6c:d3	
Parameters	Descriptic	on	
Information	You can s	ee the router's system inform	nation such as the router's
	Uptime, F	irmware version, Wireless Co	onfiguration, LAN Address
	informatio	n WAN Configuration inform	ation

4.2 System Log

View the operation log of the system.

Status System Log Statistics Inis page can be used to set remote log server and show the system log. Enable Log system all system Cog Apply Changes Refresh Clear	Broadband Router		Home General Setup Status Tools
	✓ Status ▶System Log ▶Statistics	System Log This page can be used to set remote log server and show the system log. Enable Log system all wireless Enable Remote Log Log Server IP Address: Apply Changes Refresh Clear	

Parameters	Description
Enable Log	Check this box to enable the logging system.
System all	This page shows the current system log of the Broadband router. It displays any event occurred after system start up. At the bottom of the page, the system log can be cleared < Clear > or it can be refreshed < Refresh > to get the most updated situation. When the system is powered down, the system log will disappear if not saved to a local file.
Wireless	By select this options, you can check wireless log.
DoS	By select this options, you can check DoS log.
Enable Remote Log	If you want to send all log information to remote server, please check this box to enable this function and fill the server IP Address in the "Log Server IP Address" field.
	97

Input the server IP address where you want to save the logs.

Click **<Apply Changes**> at the bottom of the screen to save the above configurations. You can now configure other advance sections or start using the router (with the advance settings in place)

4.3 Statistics

View the statistics of packets sent and received on WAN, LAN and Wireless LAN.

Broadband Router				Home General Setup Status Tools
✓ Status ▶System Log ▶Statistics	Statistics This page shows the wireless and Ethern	e packet counters for trar et networks.	nsmission and	reception regarding to
		Sent Packets	0	_
	Wireless LAN	Received Packets	145230	_
	Matural AD4	Sent Packets	0	
	Virtual AP1	Received Packets	142027	
	10-1-1-000	Sent Packets	0	
	Virtual AP2	Received Packets	142009	
	Vistual AD2	Sent Packets	0	
	VITUALAPS	Received Packets	141992	
	Viewel AD4	Sent Packets	0	
	VITUALAP4	Received Packets	141976	
	Fals and a M	Sent Packets	1247	
	Ethernet LAN	Received Packets	1028	
	Ethorpot WAN	Sent Packets	225	
	Eulernet WAN	Received Packets	0	
	Refresh			

Shows the counters of packets sent and received on WAN, LAN and Wireless LAN.

Chapter 5 Tool

This page includes the basic configuration tools, such as Configuration Tools (save or restore configuration settings), Firmware Upgrade (upgrade system firmware) and Reset.

Broadband Router		HOME General Setup Status Tools
✓ Tool	Tools Settings The Tools Settings section includes the basic configuration tools, such Configuration Settings, and Upgrade System Firmware.	as Save, Restore
Parameters	Description	
5.1 Save/Reload Settings	You can save the router's current confi router's saved configuration files and re default settings.	guration, restore the estore the router's factory

5.2 Upgrade Firmware This page allows you to upgrade the router's firmware.

Select one of the above three **Tools Settings** selection and proceed to the manual's relevant sub-section

5.1 Save/Reload Settings

The Save/Reload Settings screen allows you to save (**Backup**) the router's current configuration setting. Saving the configuration settings provides an added protection and convenience should problems occur with the router and you have to reset to factory default. When you save the configuration setting (Backup) you can re-load the saved configuration into the router through the **Restore** selection. If extreme problems occur you can use the **Restore Settings to Defaults** selection, this will set all configurations to its original default settings (e.g. when you first purchased the router).

Broadband Router	HOME General Setup Status Tools
 ✓ Tool ▶ Save/Reload Settings ▶ Upgrade Firmware 	Save/Reload Settings This page allows you save current settings to a file or reload the settings from the file which was saved previously. Besides, you could reset the current configuration to factory default. Save Settings to File: Save Load Settings from File: Browse Upload Reset Settings to Default: Reset
Parameters	Description
Configuration Tools	Save Settings to File : Click Save button to save the Broadband router current configuration to a file named "config.bin" on your PC.
	Load Settings from File : Click Browse button to search the file you have saved before and click Upload button to restore the saved configuration to the Broadband router.
	Restore Settings to Default : Click Reset button if you want to force the Broadband router to perform a power reset and restore the original factory settings.

5.2 Firmware Upgrade

This page allows you to upgrade the router's firmware

Broadband Router	HOME General Setup Status Tools
✓ Tool	Upgrade Firmware This page allows you upgrade the Access Point firmware to new version. Please note, do not power off the device during the upload because it may crash the system.
	Select File: Browse Upload Reset
Parameters	Description
Upgrade Firmware	This tool allows you to upgrade the Broadband router's system firmware. To upgrade the firmware of your Broadband router, you need to download the firmware file to your local hard disk, and enter that file name and path in the appropriate field on this page. You can also use the Browse button to find the firmware file on your PC.

Once you've selected the new firmware file, click **<Upload>** at the bottom of the screen to start the upgrade process. (You may have to wait a few minutes for the upgrade to complete). Once the upgrade is complete you can start using the router.
Appendix A

How to manually find your PC's IP and MAC address?

1) In Window's open the Command Prompt program



2) Type Ipconfig /all and <enter>

Command Prompt	×
Microsoft Windows 2000 [Version 5.00.2195] (C) Copyright 1985-1999 Microsoft Corp.	-
C:\>ipconfig /all	
Windows 2000 IP Configuration	
Host Name : pete Primary DNS Suffix : Node Type : Broadcast IP Routing Enabled : No WINS Proxy Enabled : No	
Ethernet adapter Local Area Connection:	
Connection-specific DNS Suffix .: Description Realtek RTL8139(A) PCI Fast Ethernet Adapter	
Physical Address. : : : : : : : : : : : : : : : : : : :	
C:\>_	•

- Your PC's IP address is the one entitled IP address (192.168.1.77)
- The router's IP address is the one entitled **Default Gateway** (192.168.1.254)
- Your PC's MAC Address is the one entitled Physical Address (00-50-FC-FE-02-DB)

Glossary

Default Gateway (Router): Every **non-router IP device** needs to configure a default gateway's IP address. When the device sends out an IP packet, if the destination is not on the same network, the device has to send the packet to its default gateway, which will then send it out towards the destination.

DHCP: Dynamic Host Configuration Protocol. This protocol automatically gives every computer on your home network an IP address.

DNS Server IP Address: DNS stands for Domain Name System, which allows Internet servers to have a domain name (such as www.Broadbandrouter.com) and one or more IP addresses (such as 192.34.45.8). A DNS server keeps a database of Internet servers and their respective domain names and IP addresses, so that when a domain name is requested (as in typing

"Broadbandrouter.com" into your Internet browser), the user is sent to the proper IP address. The DNS server IP address used by the computers on your home network is the location of the DNS server your ISP has assigned to you.

DSL Modem: DSL stands for Digital Subscriber Line. A DSL modem uses your existing phone lines to transmit data at high speeds.

Ethernet: A standard for computer networks. Ethernet networks are connected by special cables and hubs, and move data around at up to 10/100 million bits per second (Mbps).

Idle Timeout: Idle Timeout is designed so that after there is no traffic to the Internet for a preconfigured amount of time, the connection will automatically be disconnected.

IP Address and Network (Subnet) Mask: IP stands for Internet Protocol. An IP address consists of a series of four numbers separated by periods, that identifies a single, unique Internet computer host in an IP network. Example: 192.168.2.1. It consists of 2 portions: the IP network address, and the host identifier.

A network mask is also a 32-bit binary pattern, and consists of consecutive leading 1's followed by consecutive trailing 0's, such as

1111111111111111111111111100000000. Therefore sometimes a network mask can also be described simply as "x" number of leading 1's.

When both are represented side by side in their binary forms, all bits in the IP address that correspond to 1's in the network mask become part of the IP network address, and the remaining bits correspond to the host ID.

For example, if the IP address for a device is, in its binary form, <u>11011001.10110000.1001</u>0000.00000111, and if its network mask is, 11111111.11111111110000.00000000 It means the device's network address is 11011001.10110000.10010000.00000000, and its host ID is, **ISP Gateway Address:** (see ISP for definition). The ISP Gateway Address is an IP address for the Internet router located at the ISP's office.

ISP: Internet Service Provider. An ISP is a business that provides connectivity to the Internet for individuals and other businesses or organizations.

LAN: Local Area Network. A LAN is a group of computers and devices connected together in a relatively small area (such as a house or an office). Your home network is considered a LAN.

MAC Address: MAC stands for Media Access Control. A MAC address is the hardware address of a device connected to a network. The MAC address is a unique identifier for a device with an Ethernet interface. It is comprised of two parts: 3 bytes of data that corresponds to the Manufacturer ID (unique for each manufacturer), plus 3 bytes that are often used as the product's serial number.

NAT: Network Address Translation. This process allows all of the computers on your home network to use one IP address. Using the broadband router's NAT capability, you can access the Internet from any computer on your home network without having to purchase more IP addresses from your ISP.

Port: Network Clients (LAN PC) uses port numbers to distinguish one network application/protocol over another. Below is a list of common applications and protocol/port numbers:

Application	Protocol	Port Number
Telnet	TCP	23
FTP	ТСР	21
SMTP	ТСР	25
POP3	ТСР	110
H.323	TCP	1720
SNMP	UCP	161
SNMP Trap	UDP	162
HTTP	TCP	80
PPTP	ТСР	1723
PC Anywhere	ТСР	5631
PC Anywhere	UDP	5632

PPPoE: Point-to-Point Protocol over Ethernet. Point-to-Point Protocol is a secure data transmission method originally created for dial-up connections; PPPoE is for Ethernet connections. PPPoE relies on two widely accepted standards, Ethernet and the Point-to-Point Protocol. It is a communications protocol for transmitting information over Ethernet between different manufacturers

Protocol: A protocol is a set of rules for interaction agreed upon between multiple parties so that when they interface with each other based on such a protocol, the interpretation of their behavior is well defined and can be made objectively, without confusion or misunderstanding.

Router: A router is an intelligent network device that forwards packets between different networks based on network layer address information such as IP addresses. **Subnet Mask:** A subnet mask, which may be a part of the TCP/IP information provided by your ISP, is a set of four numbers (e.g. 255.255.255.0) configured like an IP address. It is used to create IP address numbers used only within a particular network (as opposed to valid IP address numbers recognized by the Internet, which must be assigned by InterNIC). **TCP/IP, UDP:** Transmission Control Protocol/Internet Protocol (TCP/IP) and Unreliable Datagram Protocol (UDP). TCP/IP is the standard protocol for data transmission over the Internet. Both TCP and UDP are transport layer protocol. TCP performs proper error detection and error recovery, and thus is reliable. UDP on the other hand is not reliable. They both run on top of the IP (Internet Protocol), a network layer protocol.

WAN: Wide Area Network. A network that connects computers located in geographically separate areas (e.g. different buildings, cities, countries). The Internet is a wide area network.

Web-based management Graphical User Interface (GUI): Many devices support a graphical user interface that is based on the web browser. This means the user can use the familiar Netscape or Microsoft Internet Explorer to Control/configure or monitor the device being managed.