Wireless Broadband Router

User's Manual

July, 2006

FCC Warning

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the 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 communication. 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:

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

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of about eight inches (20cm) between the radiator and your body.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Notice

Changes or modifications to the equipment, which are not approved by the party responsible for compliance could affect the user's authority to operate the equipment. Company has an on-going policy of upgrading its products and it may be possible that information in this document is not up-to-date. Please check with your local distributors for the latest information.

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Revision History

Revision V1.0 History First release

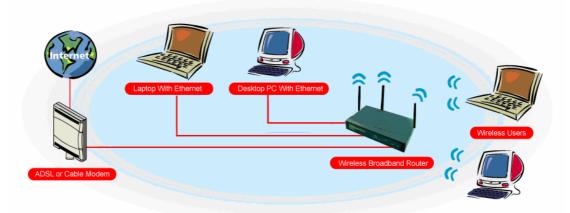
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1. Introduction

This Four ports MIMO Wireless Broadband Router is a full-featured wireless broadband router that establishes wireless connection from AP then provides direct connection to local area network or individual PC with build-in 4-port switch. This gateway uses advanced broadband router chipset and wireless LAN chipset solution let you enjoy high-speed Wired and Wireless connection. Simply connect this gateway to a cable or DSL modem and then you can share your high-speed Internet access with multiple PCs at your home. This gateway also creates a secure Wired and Wireless network for you to share photos, files, video and so on.

This gateway provides maximum transfer rate up to 90 Mbps from WAN to LAN, 100 Mbps from LAN to LAN and 11/54 Mbps through wireless channel. Built-in DHCP server automatically to assign IP addresses to all workstations on your LAN. It supports the advanced wireless security WPA and WPA2 standards to guarantee the best security for users. It also has firewall and NAT function to help prevent potential attacks from the Internet.



1.1 Features

Internet Access Features

- Shared Internet Access: All users on the LAN or WLAN can access the Internet through the Wireless Router, using only a single external IP address. The local (invalid) IP addresses are hidden from external sources. This process is called NAT (Network Address Translation).
- DSL and cable modem Support: The Wireless Router has a 10/100BaseT Ethernet WAN port for connecting a DSL or cable modem. All popular DSL and cable modems are supported.

- PPPoE and PPTP Support: The Internet (WAN port) connection supports PPPoE (PPP over Ethernet) and PPTP (Point-to-Point Tunneling Protocol), as well as "Direct Connection" type services.
- Fixed or Dynamic IP Address: On the Internet (WAN port) connection, the Wireless Router supports both Dynamic IP address (IP address is allocated on connection) and Fixed IP address.

Advanced Internet Functions

- Conferencing & Telephony Applications: Internet Telephony and Conferencing applications are supported.
- DMZ: One PC on your local LAN can be configured to allow unrestricted 2-way communication with Servers or individual users on the Internet.
- URL Filter: Use the URL Filter to block access to undesirable Web sites by LAN users, or Wireless LAN users.
- Internet Access Log: This feature is used to verify which Internet connections have been made.

Wireless Features

- Compatible with IEEE 802.11g standard and maximum data transfer rate up to 54Mbps
- Increase Speed and Coverage by MIMO XR[™] and Packet-OVERDRIVE[™] Technology
- Dynamic date rate scaling at 54, 48, 36, 24, 18, 12, 9 and 6Mbps for 802.11g
- Dynamic date rate scaling at 11, 5.5, 2 and 1Mbps for 802.11b
- · Maximum reliability, throughput and connectivity with automatic data rate switching
- Supports Quality of Service (QoS), 802.11e, WMM
- Range extension by using external antenna
- · Simple user setup and diagnostics utilities
- Access Control: This feature ensures that only access Wireless Stations that can access your LAN.

LAN Features

- 4-Port Ethernet switch: The Wireless Router provides 4 10/100BaseT switching ports
- DHCP Server Support: This feature provides a dynamic IP address to PCs and other devices upon request. The Wireless Router can act as a DHCP Server for devices on your local LAN and WLAN.
- Multi Segment LAN Support: This feature is enabled through Wireless Router's RIP (Routing Information Protocol) and build-in static routing table.

Configuration and Management

- Easy Setup: Users allow to configure Wireless Router from anywhere on the LAN or WLAN via WEB browser.
- Remote Management: The Wireless Router can be managed from any PC on the LAN.
- UPnP Support: Universal Plug and Play feature. UPnP is supported by Windows ME or later.

Security Features

- Password Protected Configuration: Optional password protection is provided to prevent unauthorized users from modifying the configuration data and settings.
- Wireless LAN Security: Supports 64/128bit WEP Encryption, WPA-TKIP/PSK, WP2-AES/PSK, 802.11i, RADIUS Server.
- NAT Protection: This feature allows all LAN users to share a single IP address and all users' IPs is hidden. From the external viewpoint, there is no network only Wireless Router exists.
- Firewall: All incoming data packets are monitored and all incoming server requests are filtered.

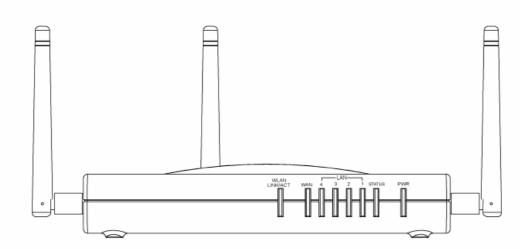
1.2 Package Contents

- One Wireless Broadband Router
- One Power Adapter
- One CD including user's manual
- One RJ-45 Ethernet Cable

1.3 System Requirements

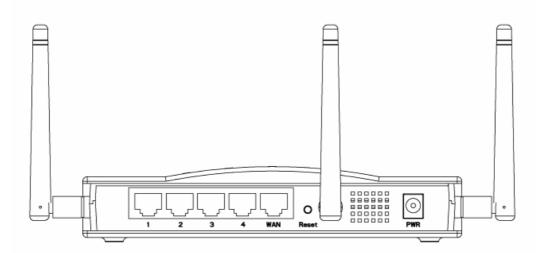
- One or more PCs (desktop or notebook) with Ethernet interface.
- TCP/IP protocol must be installed on all PCs.
- Have valid Internet Access account and a DSL or cable modem.
- 10/100BaseT network cables with RJ-45 connectors.
- In case to use Wireless Access Point, all Wireless devices must be compliant with IEEE 802.11b/g.
- System with MS Internet Explorer ver. 5.0 or later, or Netscape Navigator ver. 4.7 or later.

1.4 LEDs Indication & Connectors of Wireless Router <u>Front Panel LEDs Indication</u>



LED	Light Status	Description
PWR	On	Wireless Router is powered on.
	Off	No power.
Status	On	Wireless Router is hung.
	Flashing	Wireless Router is up and ready.
LAN	On	LAN port is successfully connected.
(1, 2, 3, 4)	Flashing	Data is being sent or received.
WAN	On	WAN port is successfully connected
	Flashing	Data is being sent or received.
WLAN	Flashing	Data is being sent or received.
LINK/ACT	On	WLAN is successfully connected.

Back Panel Connectors



Button/port	Description	
Reset	Reset configurations to default. Press the button and hold for 10 seconds.	
LAN	Connect LAN systems with RJ-45 cable.	
(1x, 2x, 3x, 4x)		
WAN	Connect DSL or Cable modem.	
PWR	Connect with Power Adapter.	

1.5 Installation Instruction

- 1) Power off Wireless Router and DSL/cable modem.
- 2) Connect systems to the LAN ports on the Wireless Router with straight LAN cables.
- 3) Connect the DSL or cable modem to the WAN port on the Wireless Router.
- 4) Power on DSL or cable modem first, then connect power adapter to the power jack on the rear panel of Wireless Router and plug the power cable into an outlet.
- 5) Check LEDs.
 - a) Once power on Wireless Router, Power LED should be on.
 - b) LAN LED should be on for each active LAN connection.
 - c) The WAN LED should be on when the DSL or cable modem is connected.

Warning: Only use the power adapter is provided from this package, use other power adapter may cause hardware damage

2. PC Configuration

User needs to configure TCP/IP network settings, Internet access configuration and Wireless configuration for each system within Wireless Router's LAN network.

By default, Wireless Router acts as a DHCP server for server version of Windows, it automatically assigns IP address to each system when systems boot up. For all non-server version of Windows, the default TCP/IP setting acts as a DHCP client. If user chooses fixed IP addresses for client systems, the **Gateway** of the client system must be set to the IP address of the Wireless Router and **DNS** of the client system should be set to the address provided by your ISP.

2.1 TCP/IP Networking Setup

Checking TCP/IP Settings for Windows 9x/Me

a) Select "Start → Control Panel → Network", the window below will appear,

Network		? ×	
Configuration Identification Access Control			
The following <u>n</u> etwork components are installed: Client for Microsoft Networks Microsoft Family Logon			
Microsoft Family Edgorf Dial-Up Adapter SiS 900-Based PCI Fast Ethernet Adapter TCP/IP -> Dial-Up Adapter TCP/IP -> SiS 900-Based PCI Fast Ethernet Adapter			
<u>A</u> dd Primary Network <u>L</u> ogo			
Microsoft Family Logon			
Description TCP/IP is the protocol you use to connect to the Internet and wide-area networks.			
		DK Cancel	

b) Click "Properties", the window below will appear and then click "IP Address" tab,

TCP/IP Properties				? ×
Bindings	Advanced NetBIOS Gateway WINS Configuration IP Add		etBIOS	
An IP address can If your network doa your network admir the space below.	es not auton	natically assign	n IP addre	esses, ask
Obtain an IP	address aut	omatically		
C <u>S</u> pecify an IP	address:—			
[P Address:				
S <u>u</u> bnet Masi	k:			
		ОК		Cancel

- If you decide to use DHCP, select "Obtain an IP address automatically", then click "OK" to confirm your settings. Once you restart your system, Wireless Router will obtain an IP address for this system.
- If you decide to use fixed IP address for your system, select "Specify an IP address", and make sure that IP Address and Subnet Mask are correct.

c) Select "Gateway" tab and enter correct gateway address in "New gateway" field, then click "Add",

TCP/IP Properties		? ×		
Bindings	Advanced	NetBIOS		
DNS Configuration	Gateway WINS Con	figuration IP Address		
The address order	The first gateway in the Installed Gateway list will be the default. The address order in the list will be the order in which these machines are used.			
<u>N</u> ew gateway:				
	. <u>A</u> d	d l		
_ <u>I</u> nstalled gateway	vs:			
	<u>H</u> emo	ive		
	0	K Cancel		

d) Select "DNS Configuration" tab and make sure select "Enable DNS", enter the DNS address provides from your ISP in the "DNS Server Search Order" field, then click "Add",

TCP/IP Properties	×
Bindings Advanced NetBIOS DNS Configuration Gateway WINS Configuration IP Addres	s
© Disable DNS © Enable DNS	
Host: Domain:	
DNS Server Search Order Add	
Domain Suffix Search Order Add Remove	
OK Cancel	

Checking TCI/IP Setting for Windows NT4.0

a) Select "Control Panel → Network", click "Protocols" tab then select "TCP/IP

protocol", window shown as below will appear,

Identification Services Protocols Adapters Bindings		
<u>N</u> etwork Protocols:		
 NetBEUI Protocol NWLink IPX/SPX Compatible Transport NWLink NetBIOS TCP/IP Protocol 		
Add <u>R</u> emove <u>Properties</u> Update		
Description: Transport Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.		
OK Cancel		

b) Click **"Properties"**, window shown as below will appear.

Microsoft TCP/IP Properties	<
IP Address DNS [WINS Address] DHCP Relay [Routing]	1
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.	
Ada <u>p</u> ter:	
PCI Fast Ethernet Adapter	
 Obtain an IP address from a DHCP server Specify an IP address 	
IP Address:	
Sybnet Mask:	
Default <u>G</u> ateway:	
[Advanced]	
OK Cancel Apply	

- Select the network card on your system from "Adapter" field.
- If you decide to use IP address from Wireless Router, select "Obtain an IP address from a DHCP server".
- If you decide to use the IP address you are desired, select "Specify an IP address". Make sure enter correct addresses in "IP Address" and "Subnet Mask" fields.
- You must set Wireless Router's IP address as "Default Gateway".

 c) To enter DNS address is provided from your ISP. Select "DNS" tab, click "Add" under "DNS Service Search Order" list, then enter DNS Server IP address in "TCP/IP DNS Server" window and click "Add".

Microsoft TCP/IP Properties	X
IP Address DNS WINS Address DHCP Relay Routing	
Domain Name System (DNS)	
Host Name: Domain	
DNS Service Served Order	
DNS Service Search Order	
Terrel	
Down4	
Add Edit Henove	
TCP/IP DNS Server ? X	
List	
Cancel Cown4	
OK Cancel Apply	

Checking TCP/IP Settings for Windows 2000

a) Select "Start → Control Panel → Network and Dial-up Connection" and right click

"Local Area Connection" then click "Properties",

Local Area Connection Properties		
General		
Connect using:		
SiS 900-Based PCI Fast Ethernet Adapter		
Configure		
Components checked are used by this connection:		
 Client for Microsoft Networks File and Printer Sharing for Microsoft Networks Internet Protocol (TCP/IP) 		
Install Uninstall Properties		
Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.		
OK Cancel		

b) Select the "Internet Protocol (TCP/IP)" for the network card on your system, then click "Properties", window shown as below will appear.

Internet Protocol (TCP/IP) Prope	rties ?X
General	
	utomatically if your network supports I to ask your network administrator for
Obtain an IP address automa	tically
\square^{\bigcirc} Use the following IP address:	
IP address:	
S <u>u</u> bnet mask:	
Default gateway:	
Obtain DNS server address a	utomatically
O Use the following DNS server	addresses:
Preferred DNS server:	
<u>A</u> lternate DNS server:	
	Ad <u>v</u> anced
	OK Cancel

- If you decide to use IP address from Wireless Router, select "Obtain an IP address automatically".
- If you decide to use the IP address you are desired, select "Use the following IP address". Make sure enter correct addresses in "IP Address" and "Subnet Mask" fields.
- You must set Wireless Router's IP address as "Default Gateway".
- If the DNS Server fields are empty, select "Use the following DNS server addresses" and enter the DNS address is provided by your ISP, then click "OK".

Checking TCP/IP Settings for Windows XP

a) Click "Start", select "Control Panel → Network Connection" and right click "Local Area Connection" then select "Properties". The window shown as below will appear.

🕹 Local Area Connection Properties 🛛 🔹 💽
General Authentication Advanced
Connect using:
SiS 900-Based PCI Fast Ethernet Adapter
Configure
This connection uses the following items:
 Client for Microsoft Networks File and Printer Sharing for Microsoft Networks QoS Packet Scheduler Internet Protocol (TCP/IP)
Install Uninstall Properties Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
Sho <u>w</u> icon in notification area when connected
OK Cancel

b) Select "Internet Protocol (TCP/IP)" then click "Properties", window shown as below will appear.

Internet Protocol (TCP/IP) Prop	erties 🛛 🖓 🔀		
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.			
Obtain an IP address automatica			
Use the following IP address: —			
IP address:			
S <u>u</u> bnet mask:			
Default gateway:	· · ·		
⊙ O <u>b</u> tain DNS server address auto	matically		
OUse the following DNS server ac	Idresses:		
Preferred DNS server:	· · · · · · · ·		
Alternate DNS server:			
	Ad <u>v</u> anced		
	OK Cancel		

- If you decide to use IP address from Wireless Router, select "Obtain an IP address automatically".
- If you decide to use the IP address you are desired, select "Use the following IP address". Make sure enter correct addresses in "IP Address" and "Subnet Mask" fields.
- You must set Wireless Router's IP address as "Default Gateway".
- If the DNS Server fields are empty, select "Use the following DNS server addresses" and enter the DNS address is provided by your ISP, then click "OK".

2.2 Setting up Internet Access

This section describes how to setup Wireless Router Internet access through DSL or cable modem.

For Windows 9x/2000

- a) Click "Start" and select "Settings → Control Panel → Internet Options".
- b) Select "Connection" tab then click "Setup" button.
- c) Select "I want to set up my Internet connection manually, or I want to connect through a local area network (LAN)" then click "Next".

- d) Select "I connect through a local area network (LAN)" then click "Next". Make sure all the boxes on the following LAN Internet Configuration screen are unchecked.
- e) Select "No" when "Do you want to set up an Internet mail account now?" prompts out.
- f) Click "Finish" to end setup process.

For Windows XP

- a) Click "Start" and select "Control Panel → Network and Internet Connections".
- b) Select "Set up or Change your Internet Connection".
- c) Click "**Connection**" tab, and then click the "**Setup**" button. Click "**Cancel**" in the pop-up "**Location Information**" window.
- d) Click "Next" in the "New Connection Wizard" window.
- e) Select "Connect to the Internet" then click "Next".
- f) Select "Set up my connection manually" then click "Next".
- g) Select "Connect using a broadband connection that is always on" then click "Next".
- h) Click "Finish" to complete the setup process.

For Macintosh Clients

To access Internet via wireless router on Macintosh system, the set up procedures are showing below:

- a) Open the TCP/IP Control Panel.
- b) Select Ethernet from the Connect via pop-up menu.
- c) Select **Using DHCP Server** from the Configure pop-up menu. The **DHCP Client ID** field can be left blank.
- d) Close the TCP/IP panel and save your new settings.

If you decide to assign IP addresses manually instead of DHCP, set the **Router Address** field with wireless router's IP address and make sure DNS settings are correct.

For Linux Clients

To access Internet via the wireless router, you need to set the wireless router as the "Gateway". Make sure login as "root" before attempting any changes.

Fixed IP Address

Most Linux installations use fixed IP address, if you wish to use a fixed IP address, make sure make the following changes.

- a) Set "Default Gateway" with the IP address of the wireless router.
- b) Make sure DNS settings are correct.

To act as a DHCP Client (recommended)

The procedures below may vary depending on version of Linux and X-windows shell.

- a) Start X-Windows.
- b) Select Control Panel → Network.
- c) Select the "Interface" entry for your Network card. Normally, this is called "eth0".
- d) Click "Edit" button, set the "protocol" to "DHCP" and save.
- e) To apply all changes, use **Deactivate** and **Activate** buttons, if it is possible, restart your system.

2.3 Configure Wireless Stations

This section describes how to configure all the wireless stations use Wireless Router as an Access Point. Each wireless station must have compatible settings as below.

Mode	All wireless stations must be set to "Infrastructure" mode.
SSID	This code must match the value uses for the Wireless Router. (Note: SSID
(ESSID)	code is case sensitive.)
WEP	By default, WEP encryption is set to 64-bits 10 hex digit.
WPA	By default, WPA-PSK Pass Phrase is set at PassPhrase, WPA G-Rekey
	Interval is set at 0 and WPA Data Encryption is at TKIP.

3. Setup Wireless Router Configurations via Web Browser

The Wireless Router comes with a web-based configuration utility. Users can access this configuration utility from any of client system within Wireless Router's LAN. For best results, either use Microsoft Internet Explorer 5.0 or later, or Netscape Navigator 4.7 or later.

Before you start configuring your Wireless Router, you have to get following information from your ISP:

- a) Has your ISP assigned you a static IP address, or they will assign one to you dynamically? If you have received static IP address, what is it?
- b) Does your ISP use PPPoE? If so, what is your PPPoE username and password?

If you are not sure of above questions, please contact your ISP.

3.1 Start your Web Browser

To use the Web-Based Utility, you have to launch your Internet Browser (MS IE 5.0 or later, Netscape Navigator 4.7 or later).

Step1: Enter Wireless Router default IP address <u>http://192.168.10.1</u> in the Address field then press Enter,



Step2: Login dialog box will appear, enter **admin** as User Name and default password is **1234**, then click **"OK"** to login web-based utility.

Connect to 19	2.168.10.1	? 🔀
R		
<u>U</u> ser name: <u>P</u> assword:	admin	word
	ОК	Cancel

3.2 System

This section displays the basic configuration parameters of your Wireless Router, such as System Status, System Settings, Administrator Settings, Firmware Upgrade, Configuration Tools and System Log. Although most users will be able for accept the default settings, but every ISP is different. Please check with your ISP if you are not sure which settings ISP requires.

System Status

You can use the Status screen to see the connection status for the Wireless Broadband Router WAN/LAN interfaces, firmware and hardware version numbers, and the number of connected clients to your network.

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dress 🕘 http://192.168.10.1	I		So Links
Wireles	is Droa	adband 🖪	outer
Vizard Sustam WAN I	AN NAT Firowall D	outing UPnP DDNS Wireless	Logout
rizaru System www.	AN NAT FILEWALL K	outing or in DDAS Witcless	rogour
ystem Settings			
	LASS ON CREAK IN		
System Status System Settings	System Status		Help
Administrator Settings		5 / 1	
Firmware Upgrade	INTERNET	Refresh	9
Configuration Tools	Cable/DSL	Disconnected	
System Log	WAN IP	0.0.0.0	
	Subnet Mask	0.0.0.0	
	Gateway	0.0.0.0	
	DNS	192.168.10.60	
	C I DHC	192.168.10.63	
	Secondary DNS		
	Secondary DNS Domain Name		
		Dynamic IP	
	Domain Name		
	Domain Name Connection Type	Dynamic IP	

<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites	<u>T</u> ools <u>H</u> elp			25
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ddress 🕘 http://192.168.10	.1/		💌 🄁 Go	Links *
	GATEWAY			1
	IP Address	192.168.10.1		
	Subnet Mask	255.255.255.0		
	DHCP Server	Enabled		
	NAT	Enabled		
	Firewall	Enabled		
	INFORMATION			
	System Up Time	00:11:14		
	System Date	1/1/1970 8:11:14		
	Connected Clients	1		
	Runtime Code Version	V20.1.2.101		
	Boot Code Version	V0.1.5.22		
	LAN MAC Address	00:06:4F:1F:34:5C		
	WAN MAC Address	00:06:4F:1F:34:5D		
	Hardware Version	V0.1.2.3		
	Serial Number	12345678		

INTERNET: Displays WAN connection type and status.

GATEWAY: Displays system IP settings, as well as DHCP, NAT and Firewall status.

INFORMATION: Displays the number of connected clients, as well as the Wireless Broadband Router's hardware and firmware version numbers.

System Settings

The System Settings window configures wireless broadband router basic settings, such as router's Host Name, Domain Name, Set Time Zone, Daylight Saving and NAT.

🗿 Router Setup - Microsof	t Internet Explorer	
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites	<u>T</u> ools <u>H</u> elp	
🌀 Back 🔹 🕥 - 💌	😰 🏠 🔎 Seard	th 📩 Favorites 🚱 🎯 🦓 🔜 🦓
Address 🙋 http://192.168.10.1	T	So Links 🎽
		adband Router
System Settings		
System Settings		
System Status System Settings	System Setti	ngs Help
Administrator Settings Firmware Upgrade	Host Name	Wireless_Router
Configuration Tools	Domain Name	Router
System Log	NTP Server	(option)
	Set Time Zone	(GMT+08:00) Hong Kong, Perth, Singapore, Taipei 🛛 👻
	Daylight Saving	Enabled From: FEB 💌 2 💌 To: FEB 💌 2 💌
	NAT	✓ Enabled
		OK Cancel
Done :		Internet

Host Name: Enter a hostname if it provided by the ISP (Default: Wireless_Router).

Domain Name: Enter a Domain Name if it provided by the ISP (Default: Router).

NTP Server (option): Enter a NTP Server IP Address.

Set Time Zone: Select the time zone of the country you are currently in. The router will set its time based on your selection.

Daylight Saving: The router can also take Daylight savings into account. If you wish to use this function, you must check/tick the enable box to enable your daylight saving configuration. **NAT:** You can select to enable NAT function.

Administrator Settings

Use this menu to restrict management access based on a specific password. 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 from 3-12 alphanumeric characters, and are case sensitive.

Administrator Time-out - The amount of time of inactivity before the Wireless Broadband

Router will automatically close the Administrator session. Set this to zero to disable it.

Remote Management - By default, management access is only available to users on your local network. However, you can also manage the Wireless Broadband Router from a remote host by adding the IP address of an administrator to this screen.

🗿 Router Setup - Microsoft	Internet Explorer			
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites	<u>T</u> ools <u>H</u> elp		2	
• • •		Favorites 🕢 🖉 🦓 🔛 🖏		
Address 🛃 http://192.168.10.1/	i.	👻 🛃 G	o Links 🌺	
		dband Route	r	
System Status System Settings	Administrator Sett	ings He	alp	
Administrator Settings Firmware Upgrade	Password Settings			
Configuration Tools	User Name	admin		
System Log	Current Password			
	Password	•••••		
	Re₋type password	(3-12 Characters)		
	Idle Time Out	300 seconds (0: No timeout)		
	Remote Manager	nent		
	Enabled			
	IP Address	0,0,0,0		
	Port	81		
			<u>(633</u>)	
		OK Cancel		
e		🔮 Internet		

Password Settings: Allows you to select a password in order to access the web-based management website.

Remote Management: You can specify a Host IP address that can perform remote management functions.

Firmware Upgrade

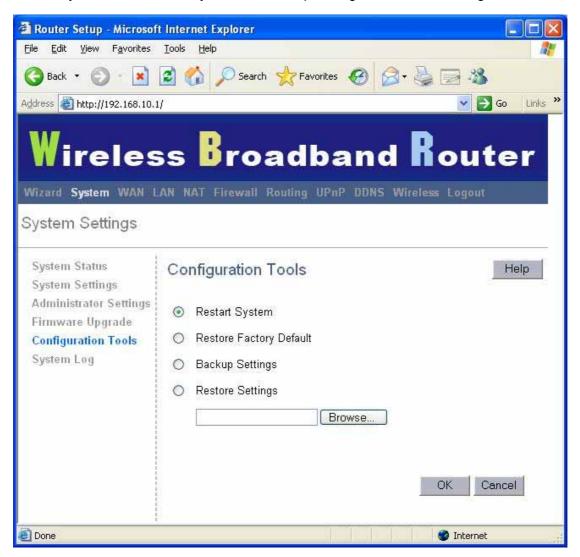
User uses the Firmware Upgrade window to locate the new firmware then upgrade the system firmware. Click **Browse** to search for the new firmware location, and then click **OK** to proceed the upgrade.

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	AN NAT Firewall Routing UPnP DDNS Wireless Logout	er
oystern cettinge		
System Status System Settings	Firmware Upgrade	Help
Administrator Settings Firmware Upgrade	Current Firmware Version: V20.1.2.101for FCC Firmware Date: build:5 @ Tue Jun 13 11:47:05 2006	
Configuration Tools System Log	Enter the path and name of the upgrade file then click the OK buttor	i below.
	Browse	
	OKCan	cel
🙆 Done	🔮 Internet	

Firmware Upgrade: This tool allows you to upgrade the Wireless 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.

Configuration Tools

Use this window to restore or backup wireless broadband router settings, such as Restart System, Restore Factory Defaults, Backup Settings and Restore Settings.



Restart System: Reset Wireless Broadband Router, Reboot this device.

Restore Factory Defaults: Reset the settings of this device to the factory default values.

Backup Settings: Save the settings of this device to a file.

Restore Settings: Restore the settings of this device to the backup settings.

System Log

The System Log window displays wireless broadband router's system activities, such as System Log and Security Log.

🗿 Router Setup - Microsof	t Internet Explorer		
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	AN NAT Firewall Routing UPnP	nd Router	
System Settings			
System Status System Settings Administrator Settings Firmware Upgrade	System Log	Help Download Clear Refres	sh
Firmware Upgrade Configuration Tools System Log	[Thu Jan 01 08:00:09 1970]:[HTTP] [Thu Jan 01 08:00:09 1970]:[DHCP[[Thu Jan 01 08:00:09 1970]:[DHCP[[Thu Jan 01 08:00:10 1970]:[DHCP[[Thu Jan 01 08:00:10 1970]:[DHCP[[Thu Jan 01 08:07:05 1970]:[HTTP] [Thu Jan 01 08:07:07 1970]:[HTTP]	Ver 20.1.2.101 build:5 @ Tue Jun 13 11:47:05 2006 login (192.168.10.2))] received REQUEST D] no leases, packet->ciaddr:c0a80a02 D] sending ACK to 192.168.10.2 D] unicasting packet to client ciaddr logout (192.168.10.2)	
	Remote Log Setting		
	Remote Log	Enabled	
	Send log to		
	Email Log	Enabled	
	Send Email to		
	SMTP Server	0.0.0.0	
Done		OK Cancel	

System Log: Wireless broadband router's system activity.

Remote Log Setting: Setting the IP address of remote log server.

3.3 WAN

Connected Type

Specify the WAN connection type required by your Internet Service Provider, then click "OK" Button to provide detailed configuration parameters for the selected connection type.

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Address 🙆 http://192.168.10	0.1/	🔽 🄁 Go Links 🎽
		aband Router
WAN Settings		
Connected Type DNS	Connected Type	Help
	 Dynamic IP Address 	Obtain an IP address automatically from your service provider.
	O Static IP Address	Uses a static IP address. Your service provider gives a static IP address to access Internet services.
	O PPPoE	PPP over Ethernet is a common connection method used for xDSL
	O PPTP	PPP Tunneling Protocol can support multi-protocol Virtual Private Networks (VPN).
	O L2TP	Layer 2 Tunneling Protocol can support multi-protocol Virtual Private Networks (VPN).
	Dynamic IP Addre	ss
	Request IP address	
	MTU(576-1500)	1500
	MAC Cloning	Enabled
	MAC Address	
		Clone MAC Address
	BigPond	Enabled
		_
		OK Cancel 🗸
ê		🥏 Internet

Dynamic IP address: Your ISP will automatically give you an IP address

Static IP address: Your ISP has given you an IP address already

PPPoE: Your ISP requires PPPoE connection.

PPTP: Your ISP requires you to use a Point-to-Point Tunneling Protocol (PPTP) connection. **L2TP:** Your ISP requires L2TP connection.

<u>DNS</u>

Domain Name Servers are used to map an IP address to the equivalent domain name (e.g.www.waveplus.com). Your ISP should provide the IP address for one or more domain name servers.

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Address 🕘 http://192.168.10.	1/	💌 🔁 Go) Links »
		oand Route	r
Wizard System WAN	LAN NAT Firewall Routing L	IPnP DDNS Wireless Logout	
WAN Settings			
Connected Type DNS	DNS	Hel	p
	DNS Proxy	☑ Enabled	
	Static DNS Server	🗹 Enable	
	Domain Name Server (DNS) Address	192 . 168 . 10 . 60	
	Secondary DNS Address (optional)	192 , 168 , 10 , 63	
	Search Static DNS Firstly	🗌 Enabled	
		OK Cancel	
🕘 Done		🥶 Internet	

DNS Proxy: You can enable or disable the DNS Proxy.

Static DNS Server: You can enable or disable the Static DNS Server.

Domain Name Server (DNS) Address: This is the ISP's DNS server IP address that they gave you; or you can specify your own preferred DNS server IP address

Secondary DNS Address (optional): This is optional. You can enter another DNS server's IP address as a backup. The secondary DNS will be used should the above DNS fail.

Search Static DNS Firstly: You can enable or disable the function of Search Static DNS Firstly.

3.4 LAN

LAN Settings

Configure the gateway address of the Wireless Broadband Router. To dynamically assign the IP address for client PCs, enable the DHCP Server, set the lease time, and then specify the address range.

Valid IP addresses consist of four numbers, and are separated by periods. The first three fields are the network portion, and can be from 0-255, while the last field is the host portion and can be from 1-254.

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Address 🕘 http://192.168.10.	1/	🕑 🔁 Go 🛛 Links 🐣
Wireles	ss <mark>B</mark> roadb	and Router
Wizard System WAN	LAN NAT Firewall Routing UP	nP DDNS Wireless Logout
LAN Settings		
		······································
LAN Settings DHCP Client List	LAN Settings	Help
	IP Address	192 . 168 . 10 . 1
	Subnet Mask	255.255.255.0
	The Gateway acts as DHCP Server	✓ Enabled
	IP Pool Starting Address	192.168.10. 2
	IP Pool Ending Address	192.168.10. 254
	Lease Time	One day 👻
		OK Cancel
🕘 Done		🔮 Internet

IP address: This is the router's LAN port IP address (Your LAN clients default gateway IP address)

Subnet Mask: Specify a Subnet Mask for your LAN segment.

The Gateway acts as DHCP Server: You can enable or disable the DHCP server.

IP Pool Starting Address: Enter the first address that should be assigned by the DHCP

server.

IP Pool Ending Address: Enter the last address that should be assigned by the DHCP server.

Lease Time: Enter the number of hours that a client can use the assigned IP address. **DNS Proxy:** To enable or disable DNS Proxy (Domain Name Service).

DHCP Client List

The DHCP client list allows you to see which clients are connected to the Wireless Broadband Router via IP address, host name, and MAC address.

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Address 🙆 http://192.168.10	.1/			💌 🄁 G	io Links [»]
Wireles	ss Bro	adb	and R	oute	
Wizard System WAN	LAN NAT Firewa	ll Routing U	PnP DDNS Wirele	ss Logout	
LAN Settings					
LAN Settings DHCP Client List	DHCP Client List Help				
				Refresh	
	Host Name	IP Address	MAC Address	Remaining Time	Static
	admin-gtbs0m3f6	192.168.10.2	00:06:4F:13:B1:BF	23:40:35	
	Static client				
	Host Name				
	IP address	192.168.10.			
	MAC Address]:;; [
		Add			
				OK Can	cel 🖌
🙆 Done				🥥 Internet	

DHCP Client List: This page shows all DHCP clients (LAN PCs) currently connected to your network. The "DHCP Client List" displays the IP address and the MAC address and Remaining Time of each LAN Client. Use the **Refresh** button to get the most updated situation **Static Client:** You can select static to fix it.

3.5 NAT

Virtual Server

If you configure the Wireless Broadband Router as a virtual server, remote users accessing services such as Web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP address. In other words, depending on the requested service (TCP/UDP port number), the Wireless Broadband Router redirects the external service request to the appropriate server.

Example:

ID	Private IP	Private Port	Туре	Public Port	Comment
1	192.168.2.20	80	TCP	200	Web Server
2	192.168.2.12	21	TCP	333	FTP Server
3	192.168.2.28	23	TCP	455	Telnet Server

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Wireles Wizard System WAN I NAT Settings Virtual Server Special Application	AN							
Port Mapping		Private IP	Private Port	Туре	Public Port	Comment	Enabled	
ALG DMZ	1.	192.168.10.						
	2.	192.168.10.		TCP 🔽				
	З.	192.168.10.		TCP 💌				
	4.	192.168.10.		TCP 💌]	
	5.	192.168.10.		TCP 👻				
	6.	192.168.10.		TCP 💌				~
ど Done						🌍 Intern	et	

Private IP: This is the LAN client/host IP address that the Public Port number packet will be sent to.

Private Port: This is the port number (of the above Private IP host) that the below Public Port number will be changed to when the packet enters your LAN (to the LAN Server/Client IP) **Type:** Select the port number protocol type (TCP, UDP or both). If you are unsure, then leave it to the default both protocols. Public Port: Enter the service (service/Internet application) port number from the Internet that will be re-directed to the above Private IP address host in your LAN.
Comment: The description of this setting.
Enabled: Enable the Virtual Server.

Special Application

Some applications require multiple connections, such as Internet gaming, video conferencing, Internet telephony and others. These applications cannot work when Network Address Translation (NAT) is enabled. If you need to run applications that require multiple connections, specify the port normally associated with an application in the "Trigger Port" field, select the protocol type as TCP or UDP, then enter the public ports associated with the trigger port to open them for inbound traffic.

Example:

ID	Trigger Port	Trigger Type	Public Port	Public Type	Comment
1	28800	UDP	2300-2400,47624	UDP	MSN Game Zone
2	28800	UDP	2300-2400,47624	TCP	MSN Game Zone
3	6112	UDP	6112	UDP	Battle.net

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http://192.168.10	3/					💌 🛃 Go Liri
AT Settings						
Virtual Server Special Application	Sp	ecial Applica	tion		Help	
Port Mapping At G		Trigger Port	Trigger Type	Public Port	Public Type	Comment Enabled
DMZ	1.	-	TCP 💌		TCP 💌	
1999/03/25	2	4	TCP 🛩		TCP 🖌	
	3.	-	TCP 👻		TCP 🛩	
	4	-	TOP 💌		TCP 💌	
	5.	-	TCP 💌		TCP 💌	
	6.	-	TCP 💌		TCP V	
	Z. [-	TOP V		TCP 💌	
	8	H	TCP 💌		TCP 💌	
	9.	-	TCP 👻		TCP 👻	
	10	H	TOP 👻		TCP 💌	
						OK Cancel

Trigger Port: This is the out going (Outbound) range of port numbers for this particular application.

Trigger Type: Select whether the outbound port protocol is "TCP", "UDP" or both.

Public Port: Enter the In-coming (Inbound) port or port range for this type of application (e.g. 2300-2400, 47624)

Public Type: Select the Inbound port protocol type: "TCP", "UDP" or both.

Comment: The description of this setting.

Enable: Enable the Special Application function.

Port Mapping

This functionality allows one or more public IP addresses to be shared by multiple internal users. Enter the Public IP address you wish to share into the Global IP field. Enter a range of internal IP that will share the global IP.

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Wireless Broadband Router								
Wizard System WAN	LAN	NAT Firewall R	outing UPnP DDNS Wi	reless Logo	ut			
NAT Settings								
Virtual Server Special Application	Ρ	ort Mapping			Help	X A		
Port Mapping ALG		Server IP	Mapping Ports	Туре	Comment	Enabled		
DMZ	1.	192.168.10.		TCP 🗸				
1	2.	192.168.10.		TCP 🔽				
1 1 1 1 1	З.	192.168.10.		TCP 🔽				
	4.	192.168.10.		TCP 🗸				
	5.	192.168.10.		TCP 🔽				
2 2 1 2	6.	192.168.10.		TCP 💙				
	7.	192.168.10.		TCP 🔽				
1	8.	192.168.10.		TCP 🔽				
	9.	192.168.10.		TCP 💌				
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🙆 Done					🔮 Interne	et ,		

Server IP: Enter the NAT server IP address.

Mapping Ports: Enter the port address NAT server maps to.Type: Select the Inbound port protocol type: "TCP", "UDP" or both.Comment: The description of this setting.Enabled: Enable the Port Mapping function.

ALG (Application Level Gateway)

The ALG window allows user to configure ALG settings for the wireless broadband router.

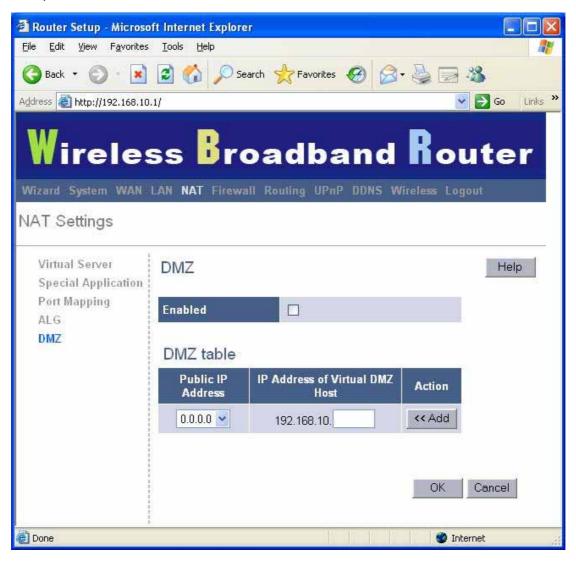
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Wireles	ss <mark>B</mark> roadban	d Ro	uter
Wizard System WAN	LAN NAT Firewall Routing UPnP DDI	NS Wireless Lo	gout
NAT Settings			
Virtual Server Special Application	ALG		Help
Port Mapping ALG	FTP		
DMZ	H323/netmeeting		
	PPTP passthrough		
	Windows messenger(file transfer)		
	ipsec passthrough		
	Battle.Net multiplayers		
	Non-Standard FTP Port		
			4
		OK	Cancel
Done			🔮 Internet 💦

ALG (Application Layer Gateway): You can select to enable, then the router will let that application correctly pass though the NAT gateway.

DMZ (Demilitarized Zone)

If you have a client PC that cannot run Internet application properly from behind the NAT firewall or after configuring the Special Applications function, then you can open the client up to unrestricted two-way Internet access.

Enter the IP address of a DMZ host to this screen. Adding a client to the DMZ (Demilitarized Zone) may expose your local network to a variety of security risks, so only use this option as a last resort.



DMZ (Demilitarized Zone): Enable/disable DMZ.

Public IP Address: The IP address of the WAN port or any other Public IP addresses given to you by your ISP.

IP Address of Virtual DMZ Host: Enter the DMZ host IP address.

3.6 Firewall

Firewall Options

The Wireless Broadband 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).

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	ss Broadband		
Wizard System WAN	LAN NAT Firewall Routing UPnP DDNS W	lireless Log	lout
Firewall Settings			
Firewall Options Client Filtering	Firewall Options		Help
URL Filtering MAC Control	Enable Hacker Attack Protect		
	Discard PING from WAN side		
	Unallow to PING the Gateway		
	Drop Port Scan Packets		
	Allow to Scan Security Port (113)		
	Discard NetBios Packets		
	Accept Fragment Packets		
	Send ICMP packets when error		
	Advance Settings		
			_
	E	OK	Cancel
Done		🌒 Int	ernet

Firewall Options: Select the functions that firewall supports. The selections include Enable Hacker Attack Protect, Discard PING from WAN side, Unallow to PING the Gateway, Drop Port Scan packets, Allow to Scan Security Port (113), Discard NetBios Packets, Accept Fragment Packets and Send ICMP packets when error.

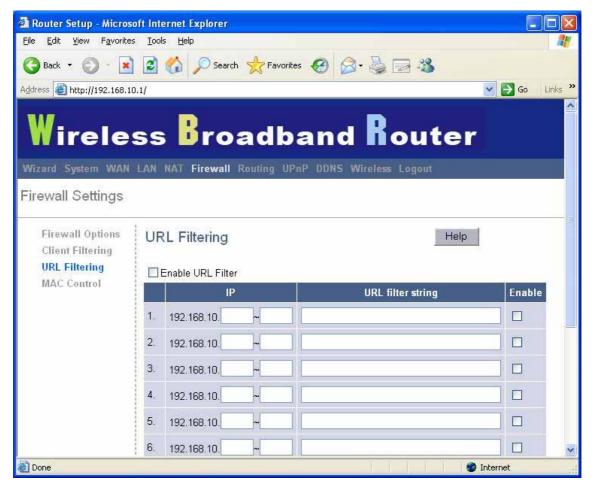
Client Filtering

You can filter Internet access for local clients based on IP addresses, application types, (i.e., HTTP port), and time of day. For example, this screen shows that clients in the address range 192.168.2.50-99 are permanently restricted from using FTP (Port 21), while clients in the address range 192.168.2.110-119 are blocked from browsing the Internet from Monday through Friday.

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irewall Settings									
						- 22			
Firewall Options Client Filtering	Cli	ent Filtering				Help			
URL Filtering		Enable Client Filt	er						
MAC Control									
		P	Ni -	Port	Туре	Block Time	Day	Time	Comment Enab
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URL Filtering

To configure the URL Filtering feature, use the table as below to specify the web sites (www.somesite.com) and/or web URLs containing the keyword you want to filter on your network.



MAC Control

The MAC Control window allows user to block certain client PCs accessing the Internet based on MAC address.

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	ess Broadband Router	
Wizard System W	/AN LAN NAT Firewall Routing UPnP DDNS Wireless Logout	
Firewall Setting	js	
Firewall Options Client Filtering	MAC Control Help	
URL Filtering	MAC Address Control	
MAC Control	Filter out or only accept the following MAC address connect to Internet. OFilter out OAcc	ept:
	Configure MAC Address	
	MAC Address Comment Action	
	Manual Setting	< Add
	OK Cance	÷.
Done .	🔮 Internet	. d

MAC Address Control: This function allows user to determine whether to filter out or accept the following MAC address connect to Internet.

Configure MAC Address: Enter the MAC address to filter out or to accept.

3.7 Routing

Routing Table

The Routing Table window displays the current routing information in the system.

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Address 🕘 http://192.168.10	.1/					Go	Links »
Wireles							
Wizard System WAN	LAN NAT Fire	wall Routing	UPnP DDNS	Wirele	ess Logout	ł	
Routing Settings							
Routing Table Static Routing	Routing T	able				Help	
Dynamic Routing	Destination LAN IP	Subnet Mask	Gateway	Metric	Interface	Refresh	
	192.168.10.0	255.255.255.0	192.168.10.0	0	eth0		
-					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		*
🙆 Done					🔮 In	ternet	11

Static Routing

A static route is a pre-determined pathway that network information must travel to reach a specific host or network.

🗿 Router Setup - Micros	oft Internet Explorer			
<u>File Edit View Favorite</u>				
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Address 🙋 http://192.168.10	D.1/		S (🗲 Go Links 🂙
				<u> </u>
194 <i>0</i> . 13. 0.	LAN NAT FREWAR KOULING UPDF	DDWS WITCHESS LOGO	ar.	
Routing Settings				
Routing Table Static Routing	Static Routing		Help	
Dynamic Routing	Destination LAN IP	Subnet Mask	Gateway	Action
				<< Add
			C	ancel
Done 🖉			🌍 Interne	et

Destination LAN IP: The network address of destination LAN.

Subnet Mask: The subnet mask of destination LAN.

Gateway: The next stop gateway of the path toward the destination LAN. This is the IP of the neighbor router that this router should communicate with on the path to the destination LAN.

Dynamic Routing

Dynamic Routing can be used to cache routes learned by routing protocols, thus allowing the automation of static routing maintenance. The router, using the RIP (Routing Information Protocol) protocol, determines the network packet's route based on the fewest number of hops between the source and the destination. In this case, you could automatically adjust to physical changes in the network layout.

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Address 🕘 http://192.168.10	.1/			👻 🛃 Go	Links »
	SS Broa				
Routing Table Static Routing	Dynamic Routing	1		Help	2
Dynamic Routing	Working Mode	⊙ Router ⊖ Gate	eway		
	Listen Mode	Disabled	×		
	Supply Mode	Disabled	~		
Done			OK	Cancel	

Working Mode: Select whether the wireless broadband router acts like router or gateway.

Listen Mode: Enable this mode to allow RIP server to receive routing information and updating the routing information.

Supply Mode: Enable this mode to allow RIP server to send out routing information and updating the routing information.

3.8 UPnP (Universal Plug and Play)

UPnP Settings

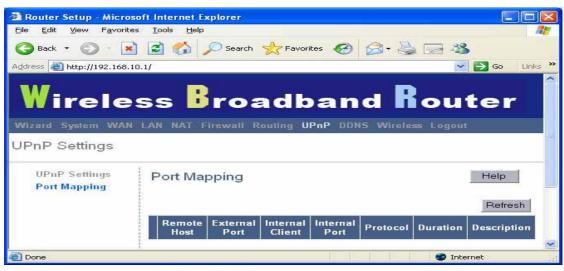
UPnP (Universal Plug and Play) allows automatic discovery and configuration of equipment attached to your LAN. UPnP is by supported by Windows ME, XP, or later. It provides compatibility with networking equipment, software and peripherals of the over 400 vendors that cooperate in the Plug and Play forum.

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	SS Froadband	
UPnP Settings Port Mapping	UPnP Settings	Help
	Enable UPnP	Enabled
	UPnP Port Number	1780
	Advertise Time(60-1800)	1800 seconds
	Subscribe Timeout (60 1800)	1800 seconds
Done		OK Cancel

UPnP Settings: You can enable or Disable UPnP feature here.

Port Mapping

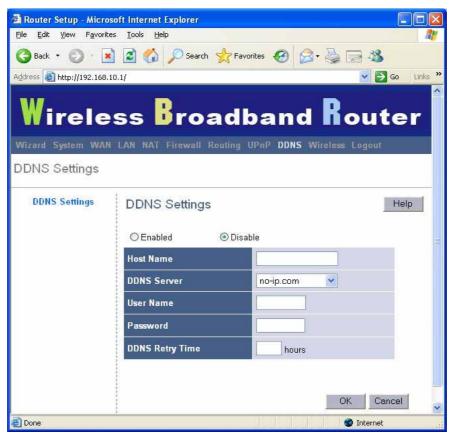
The Port Mappings window displays all UPnP ports mapping information.



3.9 DDNS

DDNS (Dynamic DNS)

DDNS (Dynamic DNS) provides you on the Internet with a method to tie their domain name to a computer or server. DDNS allows your domain name to follow your IP address automatically by having your DNS records changed when your IP address changes.



DDNS: Enable/Disable the DDNS function of this router.

3.10 Wireless

Basic Configuration

The Basic Configuration window allows user to set wireless SSID, Channel and enable/disable SSID Broadcast.

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Basic Configuation WEP	Basic Configuation		Help
Advanced MAC Filter	SSID	Default_11G	
Client List	BSSID	00:00:43:26:61:14	
Security RADIUS	Channel	11 - 2.462GHz 💌	
RADIUS	SSID Broadcast	C Enabled	
		OK Ca	incel
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SSID: SSID (Service Set Identifier) is the network name (by default: Default_11G). It is case-sensitive and must not exceed 32 characters. To communicate, all wireless devices in the network should share the same SSID.

BSSID: Basic Service Set Identification. BSSID is used to identify the name of an ad-hoc wireless network.

Channel: The channel used by the wireless LAN (by default: channel 6). All devices in the same wireless LAN should use the same channel.

SSID Broadcast: To enable or disable SSID broadcast function.

WEP (Wired Equivalent Privacy)

The WEP window allows user to set up wireless WEP settings, such as set WEP key length and generate new key. It's a secure data transmission that protects wireless LAN from casual eavesdropping.

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Wizard System WAN	LAN NAI Firewall Ro	uting UPAP DONS WIR	eless Logout	
Wireless Settings				
Basic Configuation WEP	WEP			Help
Advanced MAC Filter	WEP Encryption	64 bits 10 hex digits 💉		
Client List	Passphrase	passphrase	Generate	
Security RADIUS	Key 1			
	Key 2			
	Key 3			
	Key 4			
	Default Transmit key	⊙1 ○ 2 ○ 3 ○ 4		
			OK Canc	el
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WEP Encryption: You may disable or enable the WEP function from the setting item. The selections in the setting item are changed based on the key format.

Passphrase: The name of the set of WEP keys.

Key 1 - Key 4: The WEP keys 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 "AF", "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.

Default Transmit key: To select which key to be the default key for the router.

Advanced

The Advanced window allows user to set up wireless broadband router's advanced wireless settings, such as Regulatory Domain, Beacon Period, RTS Threshold, Fragmentation, DTIM Period, Basic Rate Set, TX Rates and Preamble.

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Wizard System WAN LAN	NAT Firewall Ro	outing UPnP DDNS Wireless Logout
Wireless Settings		
Basic Configuation Ac	lvanced	Help
Advanced MAC Filter	te Mode	Mixed
1	gulatory Domain	Auto (channel 1-14)
Security RADIUS	thentication Type	Open System 👻
Be	acon Period	100 (Default: 100, Milliseconds, Range: 1 - 65535)
RT	'S Threshold	2347 (Default: 2347, Range: 0 - 2347)
Fra	agmentation	2346 (Default: 2346, Range: 256 - 2346)
DT	IM Period	1 (Default: 3, Range: 1 - 255)
Ва	sic Rate Set	Default(1-2-5.5-11)
Co	ntrol Tx Rates	Auto
ст	S Protection	Auto
Pre	eamble	⊙Long Preamble ◯ Short Preamble
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		OK Cancel
Done		ON Candel

Rate Mode: Allow user to select the rate mode. The choice has Disable, B-Only, Mexed, G-Only.

Regulatory Domain: Allows user to select the region wireless broadband router is located. The router's Default setting is Auto that means router will automatically adjust which regulatory domain it will operate with.

Authentication Type: Allow user to select Authentication Type. The choice has Open System, Shared key, and Auto.

Beacon Period: This value represents the time interval between beacons broadcast by the AP.

RTS Threshold: This value represents the minimum size of data frames above which Request-To-Send (RTS) protocol is used. RTS helps to prevent data collision from hidden nodes.

Fragmentation: For efficient high-traffic situations, large files are split into fragments. This parameter specifies the default packet size.

DTIM Period: This parameter specifies the number of beacon intervals between successive

Delivery Traffic Indication Maps (DTIMs).

Basic Rate Set: Basic data transfer rate.

Control Tx Rates: The value is between 1Mbps to 54Mbps.

CTS Protection: CTS Protection Mode boosts your gateway's ability to intercept Wireless-G and 802.11b transmissions. Conversely, CTS Protection Mode decreases performance. **Preamble:** Either Short (72 bits) or Long (144 bits).

Tx Burst: This setting allow user to enable or disable Tx Burst.

Packet Aggregation: This setting allow user to enable or disable Packet Aggregation.

Antenna: User can choose different Antenna setting which as Diversity, Antenna 1, or Antenna 2.

MAC Filter

The MAC Filter window allows user to set wireless broadband router to allow/prevent devices from listed MAC addresses to access the router.

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	s Broadband Rout	er
Wireless Settings		
WEP	MAC Filter	Help
Advanced MAC Filter	Status Enabled	
Security	Action OPrevent MAC addresses listed from accessing the wire O Allow only MAC addresses listed to access the wirele	
RADIUS	MAC Address List	
	MAC 1 MAC 2	
	MAC 3 MAC 4	
	MAC 5 MAC 6	
ē)		Internet

MAC Address Filter: This field allows user to select whether the broadband wireless router allows the MAC address to access the wireless network or prevent the MAC address to access the wireless network.

MAC Address List: Enter the MAC addresses for the router filtering function.

Client List

The Client List windows displays all the clients connect to wireless broadband router.

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Advanced MAC Filter	Refresh	
Client List	MAC Address IP Address	
Security		
RADIUS		*
Done 🖉	🎯 Internet	,d

Security

The Security Setting window allows user to set up wireless security settings, such as Security Mode, WPA-PSK Pass Phrase, WPA G-Rekey Interval and WPA Data Encryption.

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Wireless Settings			
Basic Configuation WEP	Security	1	Help
Advanced MAC Filter	Security Mode	None 💽 (Default: None)	
Client List	WPA-PSK Pass Phrase	passphrase	
Security RADIUS	WPA G-Rekey Interval	0 (O: Disable)	
	WPA Data Encryption	TKIP 💽 (Default: TKIP)	
		OK Car	ncel
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Security Mode: Select whether the broadband wireless router operates without any security mode or with WEP, WPA and WPA-PSK mode.

WPA-PSK Pass phrase: The name for WPA-PSK mode.

WPA G-Rekey Interval: Enter the time period the broadband wireless router changes WPA G-Rekey.

WPA Data Encryption: Select whether the broadband wireless router uses TKIP or AES data encryption.

RADIUS

The Radius Settings windows allows user to set up wireless broadband router's Radius server, such as Radius Server (server IP address), Radius Server Port, Shared Secrete (like password) and Confirm Shared Secrete (confirm password).

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Wireless Settings			
Basic Configuation WEP	RADIUS	He	alp
Advanced MAC Filter	Radius Server	0.0.0	
Client List	Radius Server Port	1812	
Security RADIUS	Shared Secrete	•••••	
	Comfirm Shared Secerte		
		OK Cancel	l .
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Radius Server: Enter the Radius (Remote Authentication Dial-In user Service) server IP address.

Radius Server Port: Enter the Raduis server port number.

Shared Secrete: Enter the password for the Radius server.

Confirm Shared Secrete: Confirm the password for the Radius server.

3.11 Wizard

Host Settings

The Host Settings window allows user to configure basic settings of wireless broadband router, such as Host Name, Domain Name, Time Zone and Daylight Saving. Click "**Next**" to update WAN settings.

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Wizard System WA	N LAN NAT Firewall Routing UPnP DDNS Wireless Logout	
Wizard		
1. Host Settings	Wizard	
2. WAN Settings 3. DNS	Host Name Wireless_Router	
	Domain Name Router	
	Time Zone (GMT+08:00) Hong Kong, Perth, Singapore, Taipei 💌	
	Daylight Saving	
	Ne	xt
ē	🌍 Internet	

Host Name: Enter a hostname if it provided by the ISP (Default: Wireless_Router).

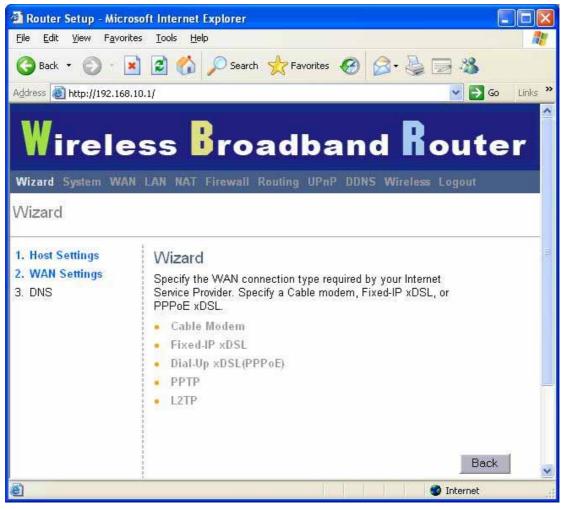
Domain Name: Enter a Domain Name if it provided by the ISP (Default: Router).

Time Zone: Select the time zone of the country you are currently in. The router will set its time based on your selection.

Daylight Saving: The router can also take Daylight savings into account. If you wish to use this function, you must check/tick the enable box to enable your daylight saving configuration. **Next:** Click **Next** to update WAN settings.

WAN Settings

The WAN Settings window allows user to specify the WAN connection type, such as Cable Modem, Fixed-IP xDSL, or PPPoE xDSL. After you setup the connection settings, click **Next** to update the DNS settings.



Cable Modem: If your broadband wireless router connects to the cable modem, click Cable Modem to enable/disable the MAC cloning function (MAC address is provided by your ISP).

Fixed-IP xDSL: If your broadband wireless router connects to the Fixed-IP xDSL, click Fixed-IP xDSL to enter the IP address and gateway address are provided by ISP.

Dial-Up xDSL (PPPoE): If your broadband wireless router connects to the Dial-Up xDSL, click Dial-Up xDSL to enter the login information is provided by ISP.

PPTP: If your broadband wireless router connects through the PPTP, click PPTP to enter the login information is provided by ISP.

L2TP: If your broadband wireless router connects through the L2TP, click L2TP to enter the login information is provided by ISP.

<u>DNS</u>

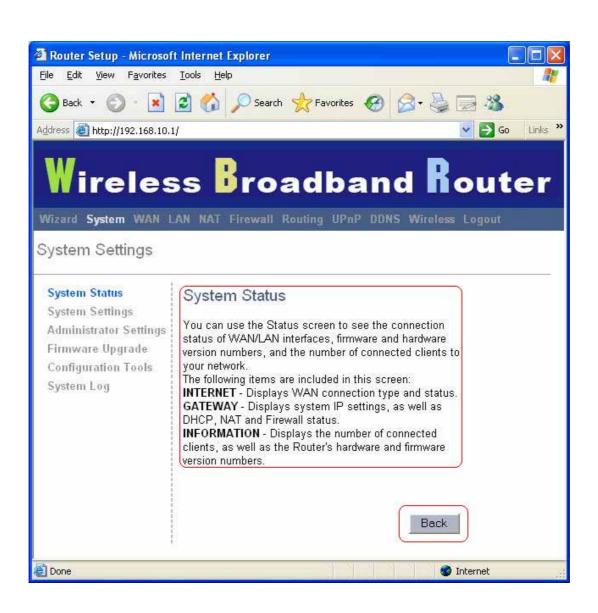
You can update the DNS settings only if you enabled the DNS server under the WAN configuration page (please refer DNS configuration in page 31). After you change the DNS configurations, click **Finish** to update the DNS settings of the broadband wireless router.

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	SS Froadb	and Router
 Host Settings WAN Settings DNS 	Wizard DNS Settings	
	Static DNS Server	⊡ Enable
	Primary DNS address	192 168 10 60
	Secondary DNS address	192 , 168 , 10 , 63
Done		Back Finish
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3.12 Help

Click **Help** on the Top-right button of each Web-based Utility section to connect Help screen. On the Help screen, you can see each Web-based Utility of wireless broadband router. The wireless broadband router functions are described and some technology terms are listed too.

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System Settings	AN NAT FIEWER KOU	ang or in DDRS Witcless I	5.00
System Status System Settings	System Status		Help
Administrator Settings Firmware Upgrade	INTERNET	Refresh	
Configuration Tools	Cable/DSL	Disconnected	
System Log	WAN IP	0.0.0.0	
	Subnet Mask	0.0.0.0	
	Gateway	0.0.0.0	
	DNS	192.168.10.60	
	Secondary DNS	192.168.10.63	
	Domain Name		
	Connection Type	Dynamic IP	
	Connection Time	00:00:00	
	Remaining Time	00:00:00	
	Release	Renew	>
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3.13 Logout

Click Logout in the task bar to initiate wireless broadband router logout process.



Click **OK** to logout the wireless broadband router utility.

Microsoft Internet Explorer 🛛
Do you want to logout ?
OK Cancel

4. Troubleshooting

This chapter covers some common problems that user may encounter while accessing the wireless router and some possible solutions for them. If you follow the suggested instructions to configure the wireless router, but router still does not function properly, please contact your local dealer for assistance.

Q1) Cannot connect to the wireless router.

Ans: Check the following.

a) If the wireless router is properly installed, if LAN connections are OK, and if wireless Router is powered on.

- b) Ensure that your PC and wireless router are on the same network segment.
- c) If your PC is set to "Obtain an IP Address automatically" (DHCP client), restart it.
- d) If your PC uses a Fixed (Static) IP address, ensure that it is using an IP Address within the range 192.168.10.2 to 192.168.10.254 and thus compatible with the wireless router's default IP Address of 192.168.10.1. Also, the Network Mask should be set to 255.255.255.0 to match the wireless router. In Windows, you can check these settings by using "Control Panel → Network" to check the "Properties" for the TCP/IP protocol.

Q2) When I enter a URL or IP address I get a timed out error.

Ans: A number of things could be causing this. Try the following troubleshooting steps.

a) Check if other PCs work. If they do, ensure that your PCs IP settings are correct. If using a fixed (static) IP address, check the Network Mask, Default gateway, and DNS as well as the IP Address.

b) If the PCs are configured correctly, but still not working, check the wireless router. Ensure that it is connected and on. Connect to it and check its settings. If you can't connect to it, check the LAN and power connections.

c) If the wireless router is configured correctly, check your Internet connection (DSL/cable modem etc) to see that it is working correctly.

Q3) Some applications do not run properly when using the wireless router.

Ans: The wireless router processes the data passing through it, so it is not transparent.

Use the Special Applications feature to allow the use of Internet applications that do not function correctly. For example, you can use DMZ function, this should work with almost every application but there is a security risk since firewall is disabled and only one PC can be used in this feature.

Q4) My PC cannot locate the wireless router.

Ans: Check the following.

a) If your PC is set to Infrastructure Mode, because the router is always in Infrastructure Mode.

- b) If the SSID on your PC and wireless router are the same. Remember that the SSID is case-sensitive.
- c) If both of your PC and wireless router have the same WEP settings. The default setting for the wireless router is disabled, so your wireless station should also have WEP disabled.
- d) If WEP is enabled on the wireless router, your PC must have WEP enabled, and the key tables (64/128 bit encryption) must match.
- e) If the wireless router's wireless screen is set to allow LAN access to select wireless stations only, then each of your wireless stations must have been selected or access will be blocked.
- f) To see if radio interference is causing a problem, check if connection is possible when close to the wireless router. Remember that the transmission range can be as short as 100 feet in poor environment.

Q5) Wireless connection speed is very slow.

- *Ans:* A wireless system transmission speed depends on the distance and the environment. To obtain the highest possible connection speed, you can try the followings:
 - a) Try to adjust wireless router location and orientation.
 - b) If there are interference problems, change to another wireless channel.
 - c) If other devices cause the interference, you should turn off that device or relocate it.

Q6) The "Status" light is ON (steady Green) after power on, it means the router is hung

Ans: Please disconnect the power adapter from the power jack on the router and reconnect the power adapter again to the router, check if the "Status" light is flashing normally.

If you have any troubles to configure or setup this WLAN adapter, please feel free to contact us.

Before contacting us, make sure collect following information. Submit complete detailed information of your problem will help us to provide you accurate answers.

Model Name: Serial Number: PC Settings: Other: