

Broadband Wireless Router

User's Manual

Rev:01

2002/10/17

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2002/07/11-10/17

Rev:01

Safety Notes

For Installation

- Use only the type of power source indicated on the marking labels.
- Use only the power adapter supplied with the product.
- Do not overload wall outlet or extension cords as this may increase the risk of electric shock or fire. If the power cord is frayed, replace it with a new one.
- Proper ventilation is necessary to prevent the product overheating. Do not block or cover the slots and openings on the device, which are intended for ventilation and proper operation. It is recommended to mount the product with a stack.
- Do not place the product near any source of heat or expose it to direct sunshine.
- Do not expose the product to moisture. Never spill any liquid on the product.
- Do not attempt to connect with any computer accessory or electronic product without instructions from qualified service personnel. This may result in risk of electronic shock or fire.
- Do not place this product on an unstable stand or table.

For Using

- Power off and unplug this product from the wall outlet when it is not in use or before cleaning. Pay attention to the temperature of the power adapter. The temperature might be high.
- After powering off the product, power on the product at least 15 seconds later.
- Do not block the ventilating openings of this product.
- When the product is expected to be not in use for a period of time, unplug the power cord of the product to prevent it from the damage of storm or sudden increases in rating.

For Service

Do not attempt to disassemble or open covers of this unit by yourself. Nor should you attempt to service the product yourself, which may void the user's authority to operate it. Contact qualified service personnel under the following conditions:

- If the power cord or plug is damaged or frayed.
- If liquid has been spilled into the product.
- If the product has been exposed to rain or water.
- If the product does not operate normally when the operating instructions are followed.
- If the product has been dropped or the cabinet has been damaged.
- If the product exhibits a distinct change in performance.

Warning

- 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.

Caution

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

Contents

Before you use	vii
Features	vii
System Requirements	viii
Unpacking	viii
Chapter 1: Overview.....	1
Physical Outlook	1
<i>Front Panel.....</i>	<i>1</i>
<i>Rear Panel.....</i>	<i>2</i>
Chapter 2: Installation	3
Chapter 3: Concepts for Connection	5
On Ethernet Client	5
On Wireless Client	6
xDSL/ATU-R Connection	7
<i>Connecting to Your xDSL Modem.....</i>	<i>7</i>
Chapter 4: Configuration	9
Setting TCP/IP on Client PC.....	9
<i>For Windows 98</i>	<i>9</i>
<i>For Windows ME.....</i>	<i>13</i>
<i>For Windows NT.....</i>	<i>13</i>
<i>For Windows 2000.....</i>	<i>17</i>
<i>For Windows XP</i>	<i>19</i>
Configure PC to get IP address from DHCP.....	20
<i>For Windows 98</i>	<i>20</i>
<i>For Windows ME.....</i>	<i>21</i>
<i>For Windows NT.....</i>	<i>21</i>
<i>For Windows 2000.....</i>	<i>21</i>
<i>For Windows XP</i>	<i>22</i>
Renew IP Address on Client PC.....	22
<i>For Windows 98</i>	<i>22</i>
<i>For Windows ME.....</i>	<i>23</i>
<i>For Windows NT.....</i>	<i>23</i>
<i>For Windows 2000.....</i>	<i>24</i>
<i>For Windows XP</i>	<i>24</i>
Chapter 5: Web Configuration	25
Using the Web-Based Manager	25
Outline of Web Manager	25
<i>To Have the New Settings Take Effect.....</i>	<i>25</i>
Setup Wizard	26
<i>WAN Type</i>	<i>26</i>
<i>WAN Setting.....</i>	<i>26</i>
<i>WLAN Settings.....</i>	<i>28</i>
<i>DNS.....</i>	<i>29</i>
Advanced Setup	30

System	30
<i>Administrator Settings</i>	30
<i>Firmware Update</i>	31
<i>Configuration Tools</i>	31
<i>Status</i>	33
<i>System Log</i>	34
<i>Reset Wireless Broadband Router</i>	34
WAN	35
<i>Dynamic IP Address</i>	35
<i>Static IP Address</i>	35
<i>PPPoE</i>	36
<i>DNS</i>	37
<i>Bridge</i>	37
LAN	37
<i>LAN Settings</i>	37
<i>DHCP Client List</i>	38
WLAN.....	39
<i>Wireless LAN Settings</i>	39
<i>WLAN MAC Control</i>	40
NAT	41
<i>Virtual Server</i>	41
<i>NAT Link Table</i>	42
Firewall	43
<i>MAC Control</i>	43
<i>DMZ(Demilitarized Zone)</i>	43
Routing	44
<i>Static Routing</i>	44
<i>Dynamic Routing</i>	44
<i>Routing Table</i>	45
Chapter 6: Troubleshooting	46
Chapter 7: Glossary	49
<i>Software</i>	51
<i>Hardware</i>	52

Before you use

The Wireless Broadband Router is a long-range, high performance wireless LAN product, which provides Access Point services to a 2.4 GHz RF network and bridges to an Ethernet backbone and routes to an Ethernet WAN port. The Wireless Broadband Router performs all the necessary inter-networking, bridging and routing functions. It receives data from both networks, stores them locally for further processing, installs and maintains connections, and transmits the packets to the proper destination.

The Wireless Broadband Router connects computers and laptops to your local network through wireless connection. The Radio Frequency (RF) waves link the wireless clients to the Access Point, and the Access Point works as a bridge between the wireless clients and the wired LAN or Ethernet clients.

The Wireless Broadband Router is compliant with the IEEE 802.11 / IEEE 802.11b DSSS specification and is Wi-Fi certified. Thus all wireless clients, even from different vendors, that meet the 802.11b standard can access your Ethernet network through this Wireless Access Point. Also, with throughput performance of up to 11 Mbps, the wireless connection is as efficient as the wired connection. The wireless LAN security is provided through its WEP (Wireless Equivalent Privacy) support.

Wireless Broadband Router has 4 10/100 Mbps switch ports. This switching automatically detects the speed of the device that you plug into it and routes it to the appropriate port.

Features

Router Features

- ◆ NAT let multiple users on LAN to access the Internet for the cost of only one IP address and enjoy various multimedia applications.
- ◆ ALGs(Application Level Gateways) such as NetMeeting, FTP, RealPlayer, ICQ, CuSeeMe, mIRC, Quake, Internet Games, etc.
- ◆ DMZ hosting, Multiple Virtual Servers (e.g., Web, FTP, Mail servers) can be setup in local network.
- ◆ Static Route, RIP v1, v2
- ◆ Multiple kind of broadband WAN connection: PPPoE, DHCP Client, Fixed IP
- ◆ DHCP Server, DNS Relay

Bridging Features

- ◆ Supports self-learning bridge specified in IEEE 802.1 D Transparent Bridging
- ◆ Transparent Bridging between 4-port 10/100 MB Ethernet switch and 802.11b Wireless LAN interface.

Security Features

- ◆ PAP(RFC1334), CHAP(RFC1994) for PPPoE session
- ◆ Wireless support WEP (Wired Equivalent Privacy) uses RC4 with 40/64 and 128 bit key length
- ◆ Block WAN Ping and Client MAC control

Wireless LAN Features

- ◆ Fully compatible to 802.11b standard, allowing up to 11Mbps wireless rate with distance up to 300 feet/90 meters.
- ◆ The 2.4 GHz Direct Sequence Spread Spectrum (DSSS) technology is exploited.
- ◆ Seamless roaming within wireless LAN infrastructure.
- ◆ Low power consumption via efficient power management.

System Requirements

For using Wireless Broadband Router, you have to make sure you have the following that installed on the clients:

For Wireless Clients

- ◆ Operating System must be Windows98/2000/NT/ME/XP
- ◆ Wireless card installed
- ◆ Wireless card driver

For Ethernet Clients

- ◆ Operating System must be Windows98/2000/NT/ME/XP
- ◆ 10/100 Base-T NIC
- ◆ 10/100 Base-T(UTP) network cable
- ◆ A Hub

Note: Be aware that Cable/DSL Modem service registered from your Internet service provider is required for Internet access.

Unpacking

After unpack the Broadband Cable/DSL Wireless Router package, please check the contents of the package with the checklist stated below. If you find any item is missing, please contact the dealer directly.

- Broadband Cable/DSL Wireless Router
- Power Adapter
- Power Cord
- RJ-45 Ethernet Cable
- Quick Start Guide
- User's Manual
- Driver & Utility Software CD

Subscription for Router Service

To use the Cable/DSL Wireless Router, you have to subscribe for ADSL service from your broadband service provider. According to the service type you subscribe, you will get various IP addresses:

- Dynamic IP:** If you apply for dial-up connection, you will be given an Internet account with username and password. You will get a dynamic IP by dialing up to your service provider.
- Static IP address:** If you apply for full-time connectivity, you may get either one static IP address or a range of IP addresses from your service provider. The number of IP addresses varies according to different ADSL service provider.

Chapter 1: Overview

Before installing the Router, please take a look at the front panel and rear panel of the router. Getting acquainted with both panels will be helpful for installation later.

Physical Outlook

Front Panel

The figure below illustrates the front panel of the Broadband Cable/DSL Wireless Router. It indicates the status of the router in.

After powering on the router, the PWR LED will be on till powering off. These LEDs will not be on simultaneously. When this device is transferring data, the LED will be blinking to indicate that which port that you are using.



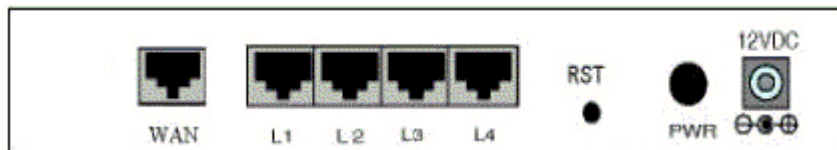
LED Indicators

The ADSL Router is equipped with eight LEDs on the front panel as described in the table below (from left to right):

LED	Color	Status	Description
PWR	Green	Unlit	Power off.
		Solid	Power on.
DIAG	Green	Unlit	Power off or initial self-test of the unit is OK.
		Blinking	When software downloading or updating operation parameters located in FLASH memory is in progress.
		Solid	Initial self-test failure or programming FLASH memory failure.
LAN	Green	Unlit	Power off or no Ethernet carrier is present.
		Blinking	Ethernet carrier is present and user data is going through Ethernet port.
		Solid	Ethernet carrier is present.
WLAN	Green	Unlit	Power off or no radio signal (WLAN card is not present or fails to function).
		Blinking	Traffic is going through Wireless LAN interface.
		Solid	Wireless LAN interface ready to work.
WAN	Green	Unlit	Power off or line connection is handshaking or training is in progress.
		Blinking	User data is going through WAN port.
		Solid	Line connection is OK.

Rear Panel

Take a look at the rear panel of this wireless router.



WAN - It is used to connect to an Ethernet port of Cable/DSL modem broadband device.

L1 ~ L4 - LAN port. 10/100 Base-TX, 4 ports auto-sensing & crossover Ethernet switching hub.

RST - A switch to reset to the default settings.

PWR - Power switch.

12VDC - Power connector.

Chapter 2: Installation

Connecting the Wireless Broadband Router

The Broadband Wireless Router incorporates a four-port switch for connection to your local Ethernet network. The Ethernet ports are capable of operation at either 10Mbps (10Base-T) or 100Mbps (100Base-Tx), depending on the Ethernet interface of the attached PC, hub or switch. For any connection which will operate at 100 Mbps, you must use a Category 5 rated cable, such as the Ethernet cable included with the Broadband Wireless Router.

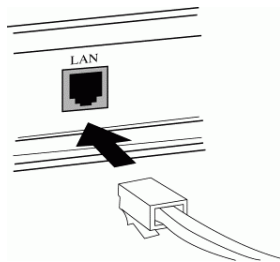
1. Connect the Ethernet cable with your xDSL/ATU-R to the 10Base-T Ethernet WAN port on your Broadband Wireless Router.

Note:

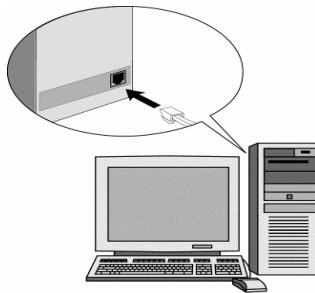
The attached xDSL/ATU-R must provide a standard 10Base-T Ethernet connection. Please use the Ethernet cable comes with your broadband device or any other standard 10Base-T Ethernet cable.

The Ethernet cable supplied by your ISP for connecting to your xDSL/ATU-R may be an Ethernet crossover or a straight-through cable. It is important to use the cable provided by your ISP to connect the modem to your Broadband Wireless Router.

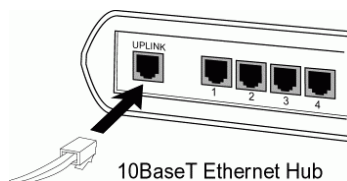
2. Please attach one end of the Ethernet cable with RJ-45 connector to the **LAN** port of your Wireless Broadband Router.



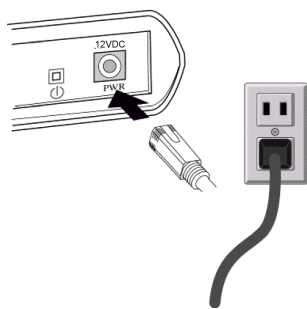
3. Connect the other end of the cable to the Ethernet port of the client PC.



4. If you want to connect to a hub for used by many devices, please connect the other end to the uplink port of the hub.



5. Connect the supplied power adapter to the **PWR** port of your Router, and plug the other end to a power outlet.



6. Turn on the power switch.

Chapter 3: Concepts for Connection

To configure the device via web browser, at least one properly-configured PC must be connected to the LAN port (connected directly or through an external hub/switch to the LAN port of the device). The configuration can also be performed on a wireless client station.

On Ethernet Client

To access the Broadband Wireless Router (AP) via the **Ethernet** interface, the host computer must install TCP/IP protocol:

1. Choose a client PC and configure it to get a dynamic IP from the Broadband Wireless Router (AP).
2. Start up your browser and type 192.168.1.1 as the address to enter the web-based manager.
3. Enter the default password - **admin**.
4. Go to **Setup Wizard** to finish basic configuration. Select your WAN connection type. Available options include: **Cable Modem, Fixed-IP xDSL, Dial-Up xDSL(PPPoE)**. Follow the onscreen instructions to finish the basic setting procedure. Finally, click Finish to exit basic setting web page.

Note: You should contact your ISP for the correct connection type and its corresponding configuration information.

5. When the connection is established, the client PCs can access the Internet or remote network through the Broadband Wireless Router.

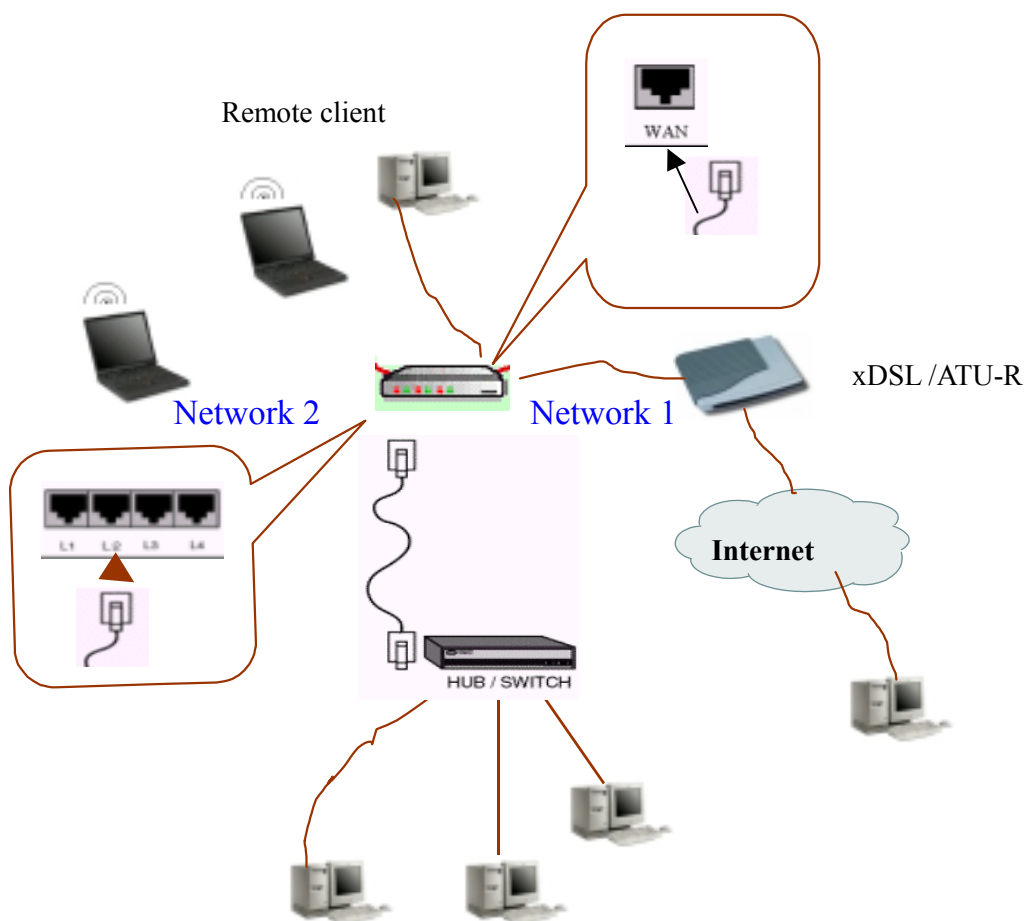
On Wireless Client

1. Install the wireless card driver and verify the wireless setting is as below:
The default SSID: **IEEE 802.11 LAN**
WEP encryption is **disabled**. Authentication Type is **Open Key** (or **Open System** according to your Wireless LAN Card).
Use **Infrastructure** connection mode.
2. Check that the TCP/IP protocol is installed on your wireless client PC. Configure it to get a dynamic IP from the Broadband Wireless Router.
3. Enter the default password - **admin**.
4. Go to **Setup Wizard** to finish basic configuration. Select your WAN connection type. Available options include: **Cable Modem, Fixed-IP xDSL, Dial-Up xDSL(PPPoE)**. Follow the onscreen instructions to finish the basic setting procedure. Finally, click Finish to exit basic setting web page.

Note: You should contact your ISP for the correct connection type and its corresponding configuration information.

5. When the connection is established, the client PCs can access the Internet or remote network through the Broadband Wireless Router.

For the wireless-interfaced station, you need to set its SSID to the Broadband Wireless Router (AP)'s default SSID value and disable the WEP encryption.



xDSL/ATU-R Connection

The Broadband Wireless Router provides continuous and high-speed access between your wireless and Ethernet devices. In addition, it can connect your entire network to the Internet through an external broadband access device.

Note:

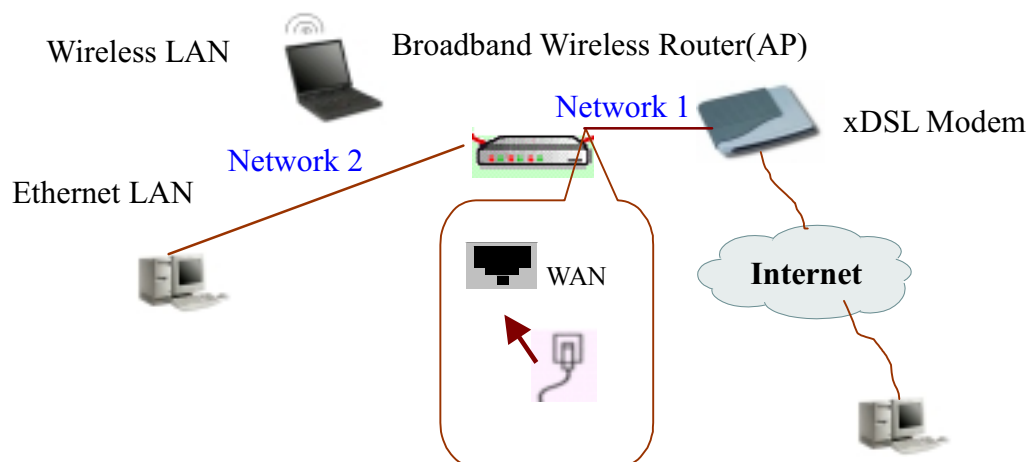
The attached xDSL/ATU-R must provide a standard 10Base-T Ethernet connection. Please use the Ethernet cable comes with your broadband device or any other standard 10Base-T Ethernet cable.

The Ethernet cable supplied by your ISP for connecting to your xDSL/ATU-R may be an Ethernet crossover cable or a straight-through cable. It is important to use the cable provided by your ISP to connect the modem to your Broadband Wireless Router.

Connecting to Your xDSL Modem

If you are going to connect the WAN port to a DSL modem, follow the steps below:

1. Use the Ethernet cable comes with your DSL modem. Plug one end to the 10Base-T Ethernet port of the modem, and the other end to the WAN port on your Broadband Wireless Router.
2. Attach one end of the Ethernet cable with RJ-45 connector to the LAN port of your Broadband Wireless Router, and the other end to a hub or a client PC.
3. At the LAN side, you also can use wireless client at the same time.
4. Set the DSL Modem's connection mode as bridge mode.
5. Enter the web-based Configuration Manager to configure the WAN setting. Choose the connection type that you registered from your ISP.



Chapter 4: Configuration

In order to access the Internet through the router, each host on your network must install/setup TCP/IP. Please follow the steps below for select a network adapter.

Setting TCP/IP on Client PC

To access the Router via Ethernet, the host computer must meet the following requirements:

- With Ethernet network interface.
- Must have TCP/IP installed.
- Set client PC with obtain an IP address automatically or set fix IP address.
- With a web browser installed: Internet Explorer 5.x or later.

The Router is configured with the **default IP address of 192.168.1.1** and subnet mask of **255.255.255.0**. As the DHCP server is **Enable** by default, the DHCP clients should be able to access the Router. Or you could assign an IP address to the host PC first for initial configuration.

You also can manage the Router through a web browser-based manager. The Router manager uses the HTTP protocol via a web browser to allow you to set up and manage the device.

To configure the device via web browser, at least one properly-configured PC must be connected to the network (either connected directly or through an external hub/switch to the LAN port of the device).

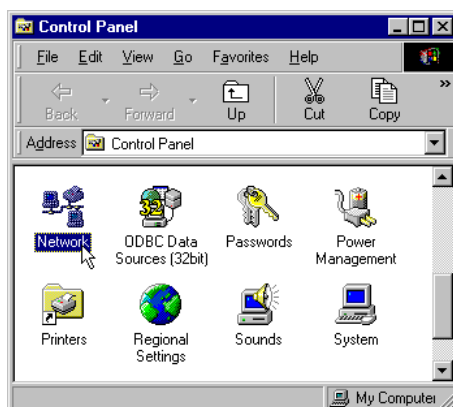
If TCP/IP is not already installed, follow the steps below for installation.

For Windows 98

1. Click on the **Start** menu, point to **Settings** and click on **Control Panel**.



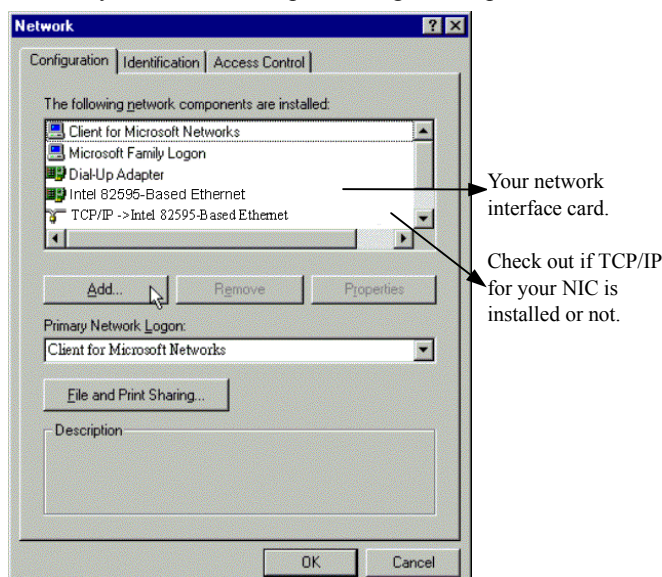
2. Double-click the **Network** icon.



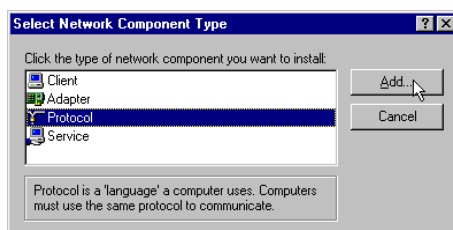
3. The **Network** window appears. On the **Configuration** tab, check out the list of installed network components.

Option 1: If you have **no** TCP/IP protocol, click **Add**.

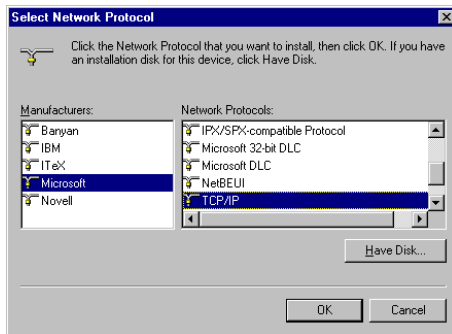
Option 2: If you have TCP/IP protocol, go to Step 6.



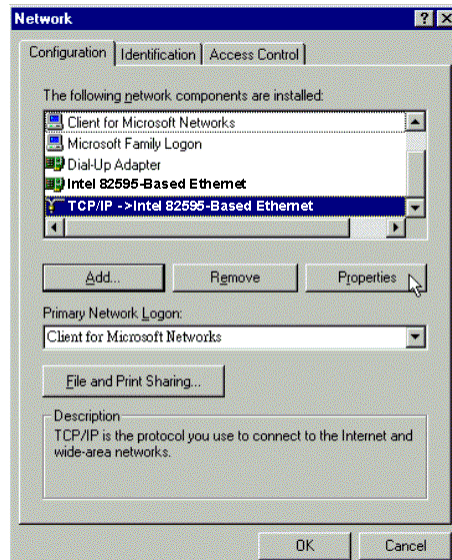
4. Highlight **Protocol** and click **Add**.



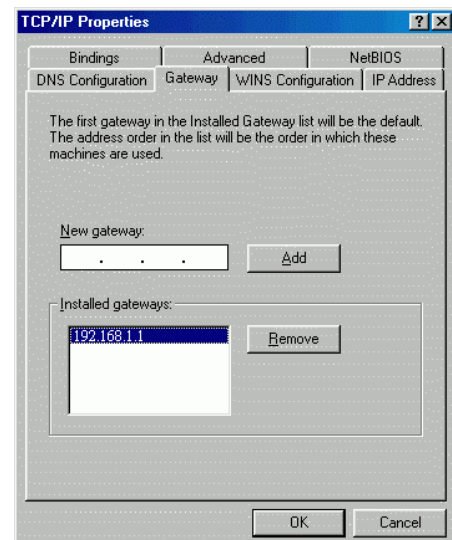
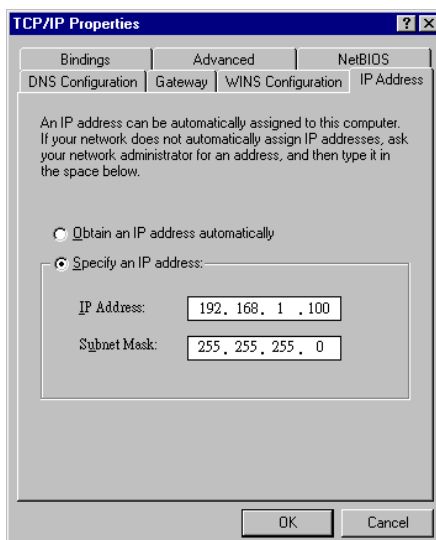
5. On the left side of the windows, highlight **Microsoft** and then select **TCP/IP** on the right side. Then click **OK**.



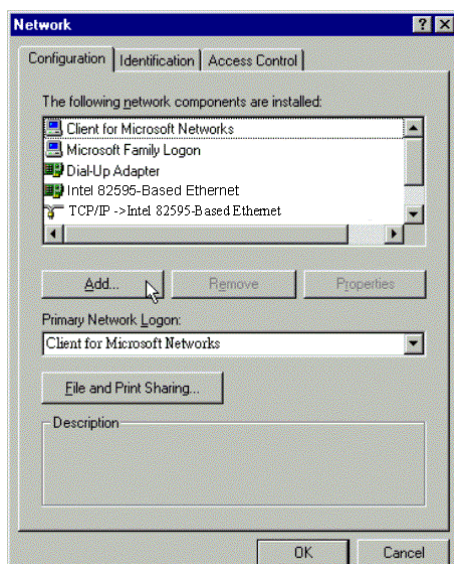
6. When returning to **Network** window, highlight **TCP/IP** protocol for your NIC and click **Properties**.



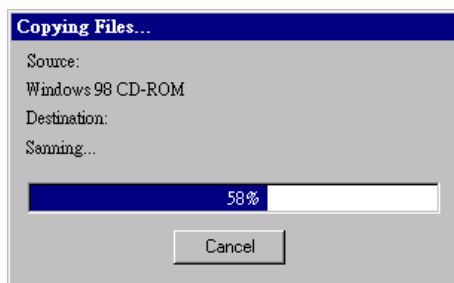
7. On **IP Address** tab:
Enable **Specify an IP address** option. Enter the **IP Address**: 192.168.1.x (x is between 2 and 254) and **Subnet Mask**: 255.255.255.0 as in figure below. On **Gateway** tab: Add a gateway IP address: 192.168.1.1. And click **OK**.



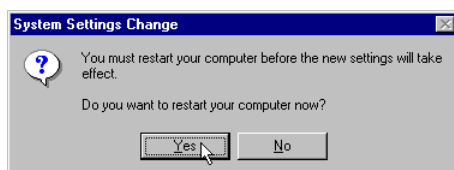
8. When returning to **Network** window, click **OK**.



9. Wait for Windows copying files.

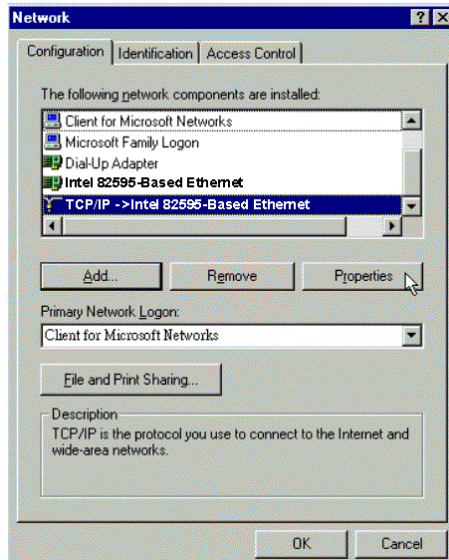


10. When prompted with **System Settings Change** dialog box, click **Yes** to restart your computer.

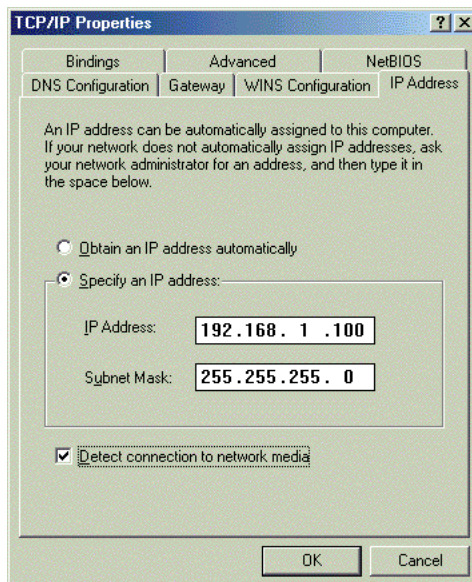


For Windows ME

- Step 1 Click on the **Start** menu, point to **Settings** and click on **Control Panel**.
- Step 2 Double-click the **Network** icon.
- Step 3 The **Network** window appears. On the **Configuration** tab, check out the list of installed network components.
- Option 1:** If you have **no** TCP/IP protocol, click **Add**.
- Option 2:** If you have TCP/IP protocol, go to Step 6.
- Step 4 Highlight **Protocol** and click **Add**.
- Step 5 On the left side of the windows, highlight **Microsoft** and then select **TCP/IP** on the right side. Then click **OK**.
- Step 6 While returning to **Network** window, highlight **TCP/IP** protocol for your NIC and click **Properties**.



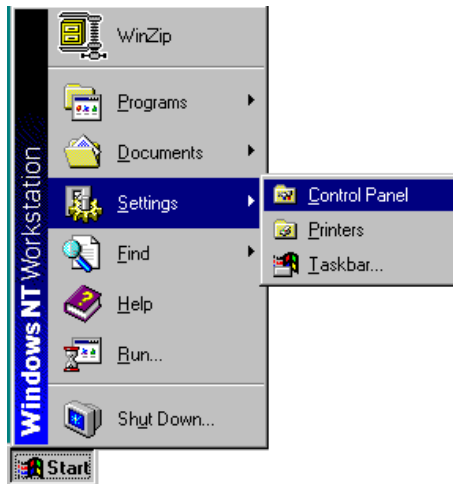
- Step 7 On the **IP Address** tab, select **Specify an IP address**. Enter the **IP address**: 192.168.1.x (x is between 2 and 254), **Subnet Mask**: 255.255.255.0 and **Default gateway**: 192.168.1.1. Then click **OK**.



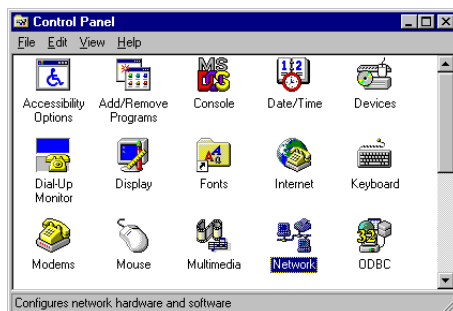
- Step 8 While returning to the **Network** window, click **OK**.
- Step 9 Wait for Windows copying files.
- Step 10 When prompted with the **System Settings Change** dialog box, click **Yes** to restart your computer.

For Windows NT

1. Click **Start**, point to **Settings**, and then click **Control Panel**.



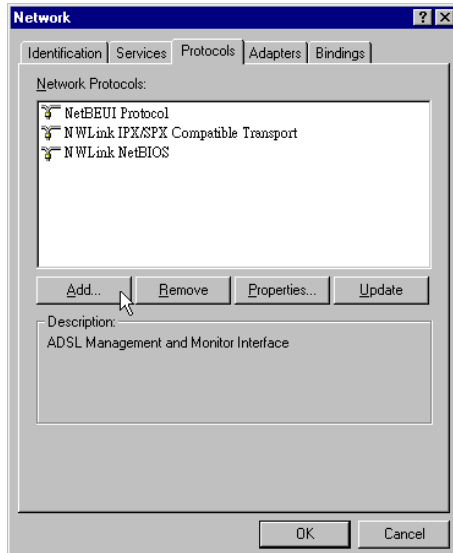
2. Double-click the **Network** icon.



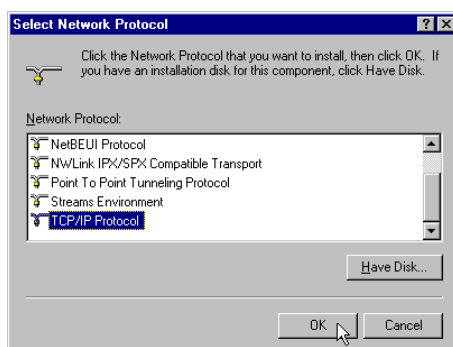
3. The **Network** window appears. On the **Protocols** tab, check out the list of installed network components.

Option 1: If you have **no** TCP/IP Protocol, click **Add**.

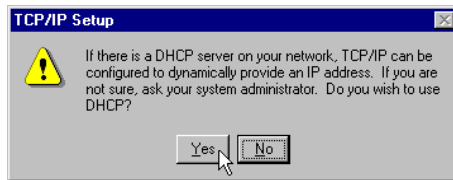
Option 2: If you have TCP/IP Protocol installed, go to Step 7.



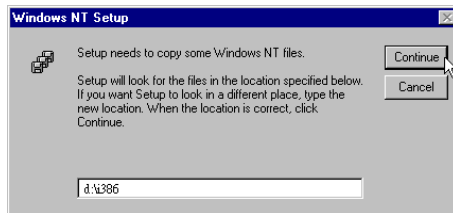
4. Highlight **TCP/IP Protocol** and click **OK**.



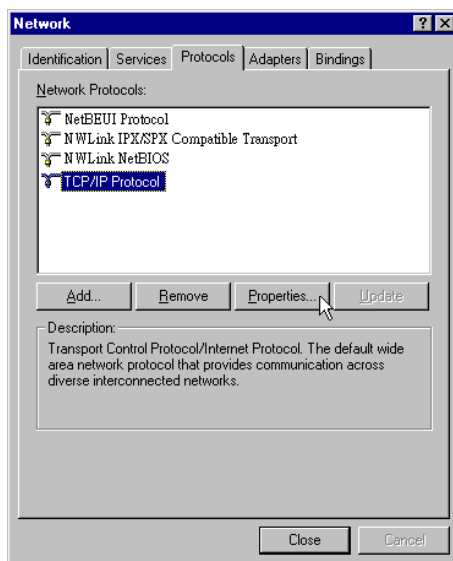
- Click **Yes** to use DHCP.



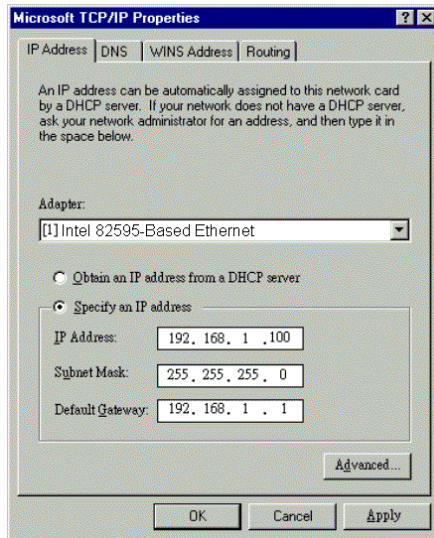
- Insert the Windows NT CD into your CD-ROM drive and type the location of the CD. Then click **Continue**.



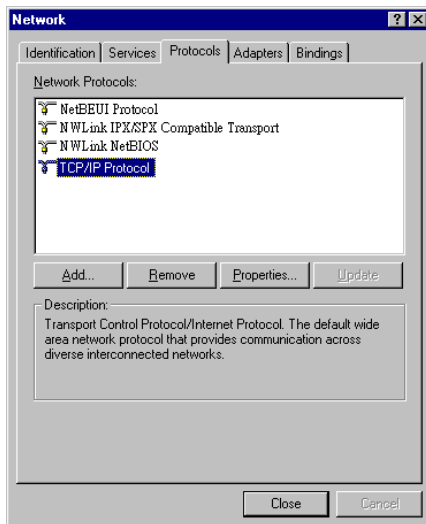
- Returning to the **Network** window, you will find the **TCP/IP Protocol** among the list. Select **TCP/IP Protocol** and click **Properties**.



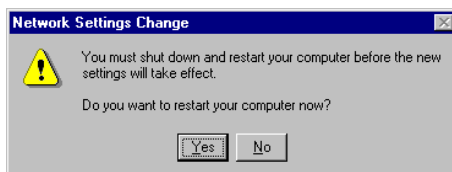
8. Enable **Specify an IP address** option. Enter the **IP Address**: 192.168.1.x (x is between 2 and 254) and **Subnet Mask**: 255.255.255.0 and **Default Gateway**: 192.168.1.1 as in figure below.



9. When returning to **Network** window, click **Close**.

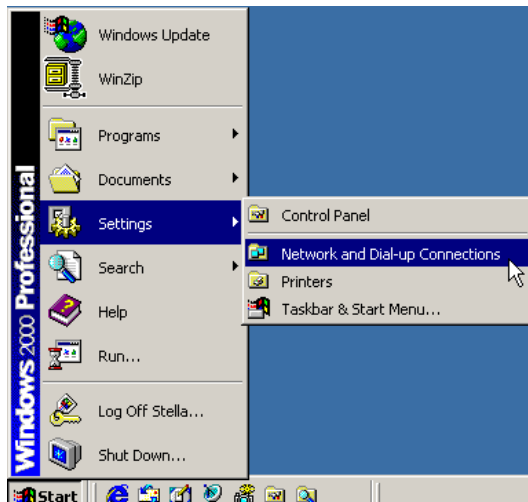


10. When prompted with **Network Settings Change** dialog box, click **Yes** to restart your computer.

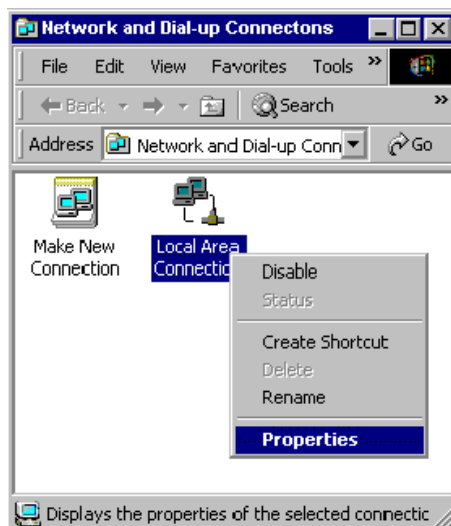


For Windows 2000

1. From the Start menu, point to Settings and then click Network and Dial-up Connections.



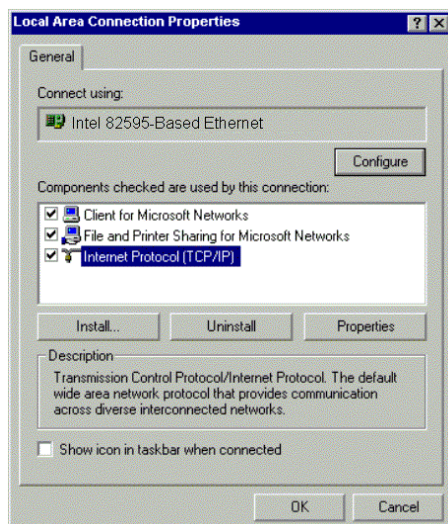
2. Right-click the **Local Area Connection** icon and then click **Properties**.



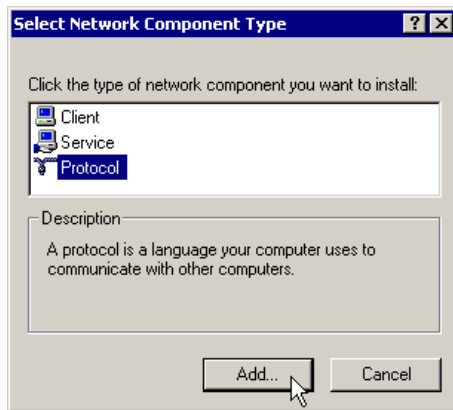
3. On the **General** tab, check out the list of installed network components.

Option 1: If you have **no** TCP/IP Protocol, click **Install**.

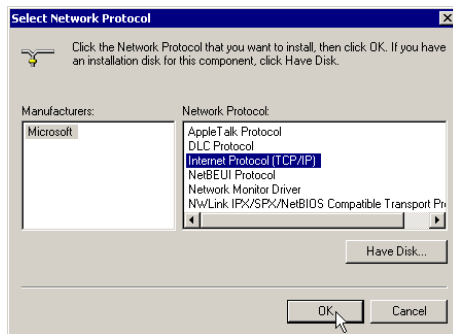
Option 2: If you have TCP/IP Protocol, go to Step 6.



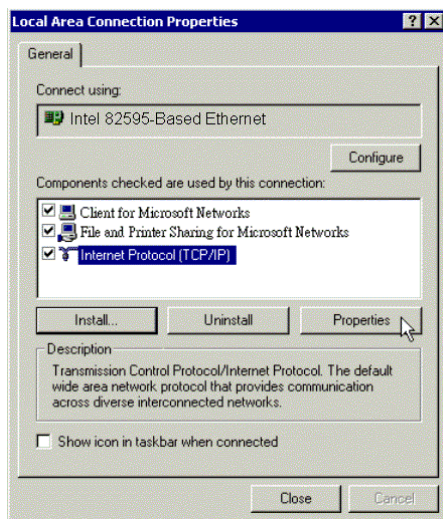
4. Highlight **Protocol** and then click **Add**.



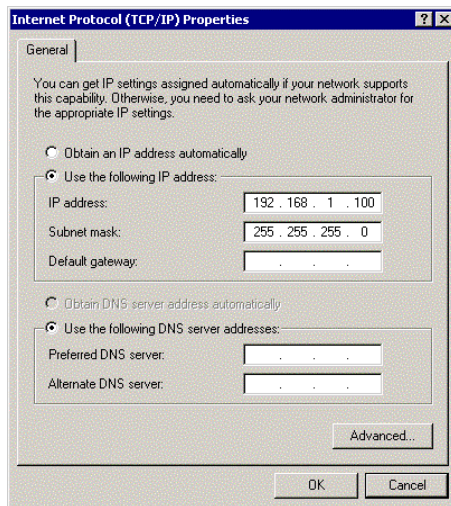
5. Click Internet Protocol (TCP/IP) and then click OK.



6. When returning to Local Area Connection Properties window, highlight Internet Protocol (TCP/IP) and then click Properties.

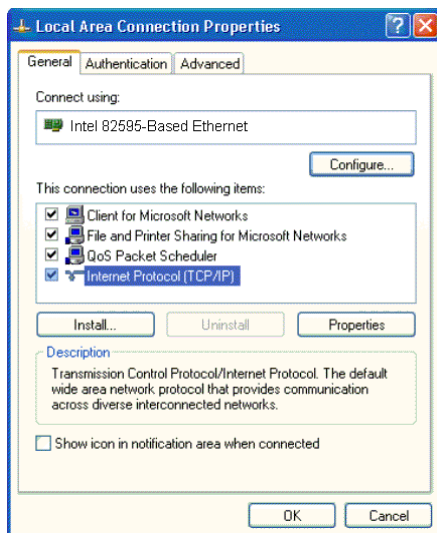


7. Under the **General** tab, enable **Use the following IP Address**. Enter the **IP address: 192.168.1.x** (x is between 2 and 254), **Subnet Mask: 255.255.255.0** and **Default gateway: 192.168.1.1**. Then click **OK**. When prompted to restart your computer, reboot it to enable the settings.

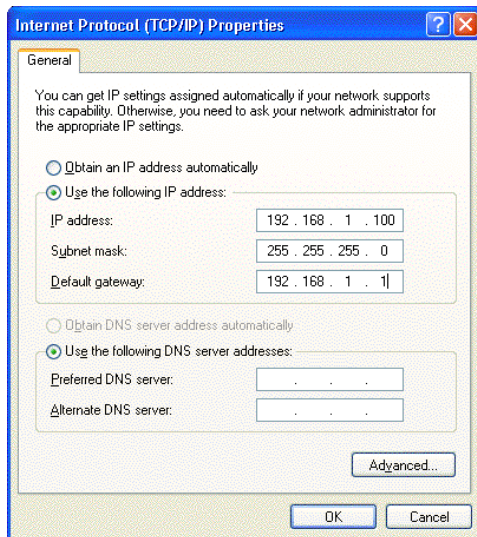


For Windows XP

- Step 1 From the **Start** menu, point to **Control Panel** and then click **Network and Internet Connections**.
- Step 2 Click **Network Connection** and then click **Properties**.
- Step 3 On the **General** tab, check out the list of installed network components.
 - Option 1:** If you have **no** TCP/IP Protocol, click **Install**.
 - Option 2:** If you have TCP/IP Protocol, go to Step 6.
- Step 4 Highlight **Protocol** and then click **Add**.
- Step 5 Click **Internet Protocol(TCP/IP)** and then click **OK**.
- Step 6 On the **Local Area Connection Properties** window, highlight **Internet Protocol (TCP/IP)** and then click **Properties**.



- Step 7 Under the **General** tab, enable **Use the following IP address**. Enter the **IP address: 192.168.1.x** (x is between 2 and 254), **Subnet Mask: 255.255.255.0** and **Default gateway: 192.168.1.1**. Then click **Ok**



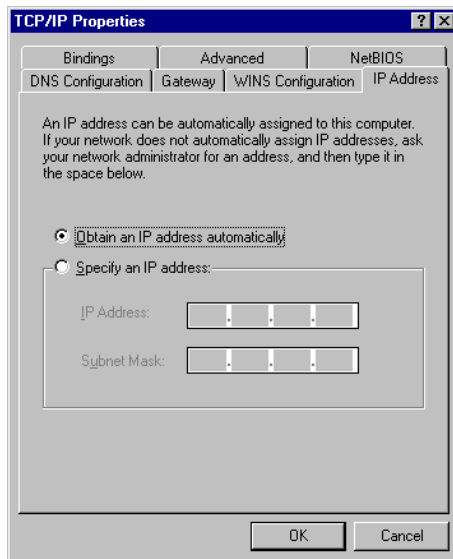
Configure PC to get IP address from DHCP

If your ADSL Router operates as a DHCP server for the client PCs on the LAN, you should configure the client PCs to obtain a dynamic IP address. Please follow the previous section to install TCP/IP component. Only that you do not need to specify an IP address when configuring TCP/IP properties.

The following section describe the procedures for CPEs to get IP address:

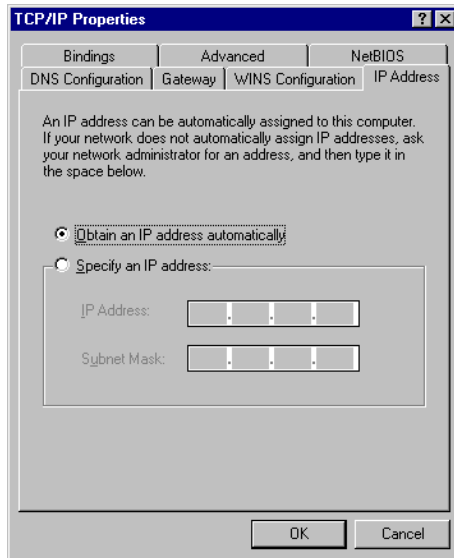
For Windows 98

On the **IP Address** tab, select **Obtain an IP address automatically**. Then click **OK**.



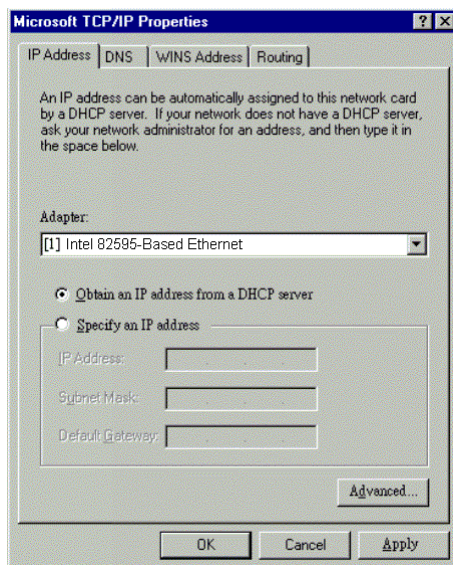
For Windows ME

On the **IP Address** tab, select **Obtain an IP address automatically**. Then click **OK**.

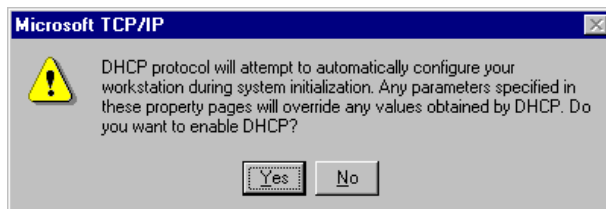


For Windows NT

On the **IP Address** tab, click on the drop-down arrow of **Adapter** to select required adapter. Enable **Obtain an IP address from a DHCP server** and then click **OK**.

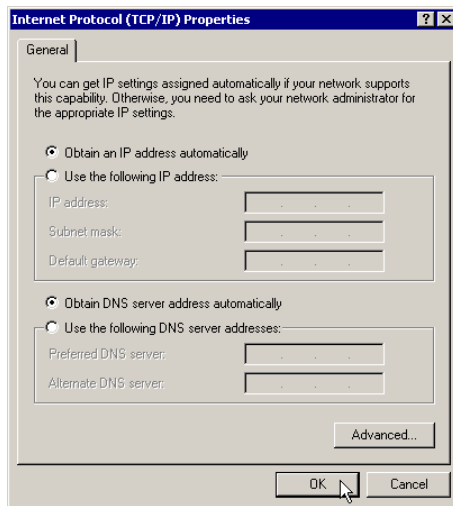


When prompted with the message below, click **Yes** to continue.



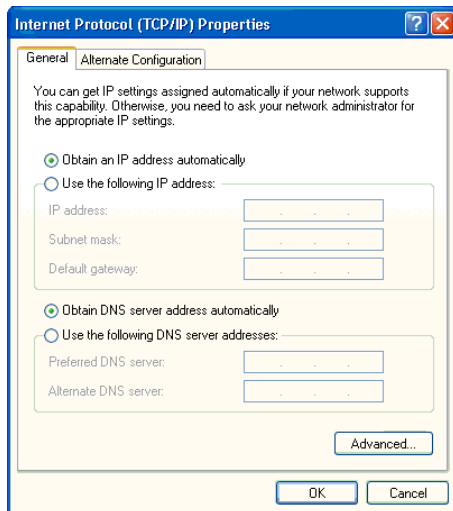
For Windows 2000

Enable **Obtain an IP address automatically** and then click **OK**.



For Windows XP

On the **IP Address** tab, select **Obtain an IP address automatically**. Then click **OK**.

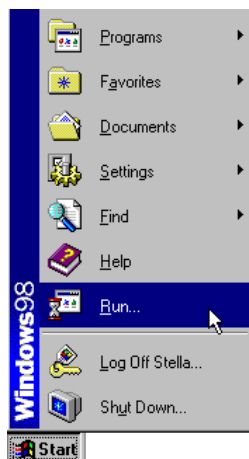


Renew IP Address on Client PC

There is a chance that your PC does not renew its IP address after the ADSL Router is on line and the PC can not access the Internet. Please follow the procedures below to renew PC's IP address.

For Windows 98

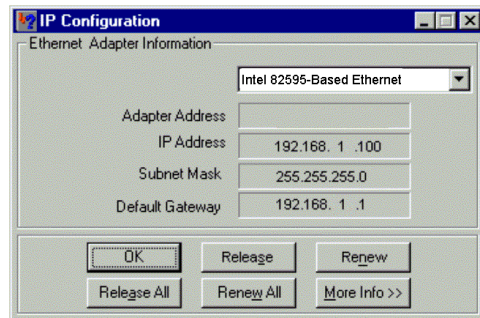
1. Select **Run** from the **Start** menu.



2. Type **winipcfg** in the dialog box and the click **OK**.

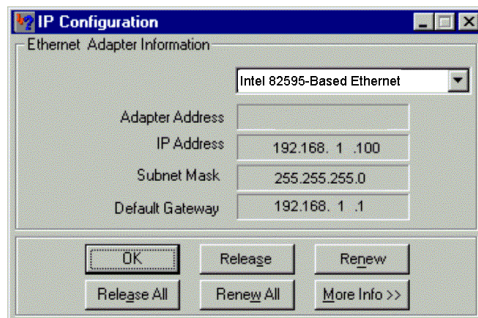


3. When the figure below appears, click Release and then Renew to get an IP address.



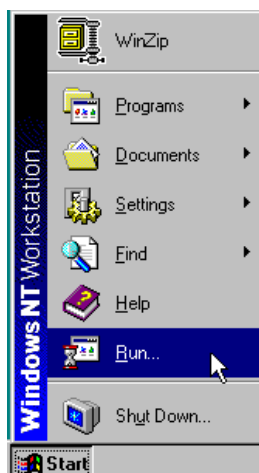
For Windows ME

1. Select **Run** from the **Start** menu.
2. Type **winipcfg** in the dialog box and the click **OK**.
3. When the figure below appears, click **Release** and then **Renew** to get an IP address.



For Windows NT

1. Select **Run** from the **Start** menu.



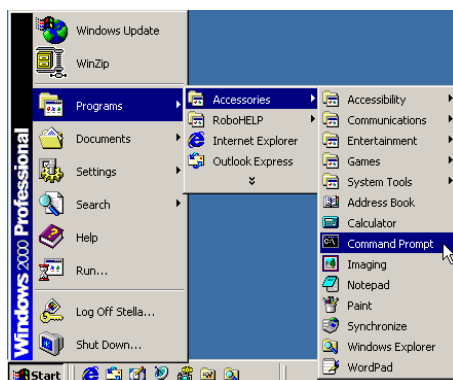
2. Type **cmd** in the dialog box and the click **OK**.



3. Type **ipconfig** at prompt. Then you will see the IP information from DHCP server.
4. If you want to get a new IP address, type **ipconfig /release** to release the previous IP address and then type **ipconfig /renew** to get a new one.

For Windows 2000

1. From the **Start** menu, point to **Programs, Accessories** and then click **Command Prompt**.



2. Type **ipconfig** at prompt. Then you will see the IP information from DHCP server.
3. If you want to get a new IP address, type **ipconfig /release** to release the previous IP address and then type **ipconfig /renew** to get a new one.

For Windows XP

1. From the **Start** menu, point to **Programs, Accessories** and then click **Command Prompt**.
2. Type **ipconfig** at prompt. Then you will see the IP information from DHCP server.
3. If you want to get a new IP address, type **ipconfig /release** to release the previous IP address and then type **ipconfig /renew** to get a new one.

Chapter 5: Web Configuration

Using the Web-Based Manager

Once your host PC is properly configured as described in previous chapters, please proceed as follows:

1. Start your web browser and type the private IP address of the Wireless Broadband Router in the URL field: **192.168.1.1**.
2. After connecting to the device, you will be prompted to enter password. By default, it is **admin**.

A screenshot of a web-based login form titled "LOGIN PASSWORD". It features a label "Password:" followed by a text input field. Below the input field are two buttons: "LOGIN" and "CANCEL".

If the login is successfully, the main web page appears. From now on the Wireless Broadband Router acts as a web server sending HTML pages/forms on your request. Please fill out these pages/forms and apply them to the Wireless Broadband Router.

Outline of Web Manager

The home page is composed of two areas:

Setup Wizard: It guides you to set WAN Type, WAN Settings, and WLAN for the Wireless Broadband Router.

Advanced Setup: Includes advanced settings for System, WAN, LAN, WLAN, NAT, Firewall, and Routing.



For Setup Wizard and Advanced Setup page, there are two buttons that you have to know.

Home: It allows you to go back to the home page of this web configuration page.

Logout: It allows you to exit web configuration page and makes you get into with another user.

To Have the New Settings Take Effect

The Wireless Broadband Router uses Apply button to enable new settings. That's to say, when the **Apply** button is clicked, your customizations take effect at the same time.

Setup Wizard

Now you are getting onto the web page for proceeding setting up for your router. To configure your Wireless Broadband Router in easy way, please press **Setup Wizard**.

There are five items that you have to take notice, **WAN Type**, **WAN Setting**, **WLAN Settings** and **DNS**. These setting will be executed one after one. That's, after you finish setting WAN Type, you can press Next button to get into next page. The whole setting is done after finished DNS setting.

WAN Type

Some types for WAN connection are provided here. Specify a Cable modem, Fixed-IP xDSL and Dial-Up xDSL(PPPoE) as the WAN connection type. Next pages will be changed slightly according to the connection type you choose here. It allows you to specify how the WAN port of the router connects to your service provider's server. Please choose your connection mode by clicking on the radio button as required by your service provider. The default setting is PPPoE.

PPPoE: PPP over Ethernet is a protocol for connecting remote hosts to the Internet over an always-on connection by simulating a dial-up connection. With PPPoE the client does not set a static IP address, instead an IP address is assigned dynamically whenever the client access to the Internet. For detailed settings please refer to advanced "WAN Setting".

1. WAN Type

Specify the WAN connection type required by your Internet Service Provider. Specify a Cable modem, Fixed-IP xDSL, or PPPoE xDSL.

☐ Cable Modem

A Cable modem requires minimal configuration. When you have set up an account with your Cable provider, the Cable modem will automatically configure itself, so you probably do not need to enter anything more. However, if there is a Domain Name System (DNS) server that you would rather use, you need to specify the IP address.

☐ Fixed-IP xDSL

Some xDSL Internet Service Providers may assign a fixed IP address for your router. If you have been provided with this information, choose this option and enter the assigned IP address, subnet mask, gateway IP and DNS IP addresses for your router.

☐ Dial-Up xDSL(PPPoE)

If you connect to the Internet using an xDSL Modem and your ISP has provided you with a password, and Service Name, then your ISP uses PPPoE. You must choose this option and enter the required information.



WAN Setting

The WAN setting differs according to different WAN Type that you choose. After you type all the necessary information on this web page, please click **Next** button to get into next page.

For Cable Modem, the settings will be:

Cable Modem

Host Name

MAC Address - - - - -



Host Name:

Type in your host name.

MAC Address:

Type in the MAC address.

Clone MAC Address:

Makes each set of MAC Address to be the same.

For Fixed-IP xDSL, the settings will be:**Fixed-IP xDSL**

IP address assigned by your ISP	. . .
Subnet Mask	. . .
ISP Gateway Address	. . .

Enter the IP address, subnet mask, and gateway provided to you by your ISP in the appropriate fields.

**IP address assigned by your ISP:**

Type in the fixed IP address if your service provider has assigned a fixed permanent IP address.

Subnet Mask:

Type in the Subnet Mask address that your service provider assigned for you.

ISP Gateway Address:

Type in the gateway address that your service provider assigned for you.

For PPPoE xDSL, the settings will be:**Dial-Up xDSL(PPPoE)**

User Name	
Password	
Please retype your password	
Service Name	
MTU (1400-1492)	
Dial on Demand	☐ Enabled minutes (Maximum Idle Time)

Enter the User Name and Password required by your ISP in the appropriate fields. If your ISP has provided you with a Service Name, enter it in the Service Name field, otherwise, leave it blank.

**User Name:**

Type in the user name to access the remote server or your service provider.

Password:

Type in the password to access the remote server or your service provider.

Please retype your password:

Type your password again for confirmation.

Service Name:

Enter the name of your PPPoE service.

MTU (1400-1492):

Enter the maximum transmission rate for the data transferring. The default setting is 1492.

Dial on Demand:

Check on this item to make the system reconnect automatically after disconnected by unknown reason.

Maximum Idle Time:

This value specifies the idle minutes that elapse before the Home Route automatically disconnects the PPP session. If no traffic is passing through during the span of time you specified, the PPP session is terminated.

WLAN Settings

This section shows you how to configure the wireless LAN setting.

The "Wireless LAN Settings" page allows you to quickly set up your Wireless LAN. Simply key in your SSID and pick up your preferred channel, then, hit the "Next" button. Your Wireless LAN is on the go. If you would also like to have your WEP Encryption running, depends on your need, please check either "64-bit" or "128-bit" radio button and the more detailed WEP setting page will be brought up for your inputs.

Wireless SSID	
Channel	Channel 1 [2412 MHz]
WEP Encryption Mode	☐ Disable ☒ 64 bits ☐ 128 bits



Wireless SSID (Service Set Identity): A name that uniquely identifies a domain. All clients that want to communicate with the Wireless Broadband Router must have the same SSID as it.

Channel: The frequency in which the radio links are about to be established. Usually the clients will scan the whole operable channels and then select the desired communications channel automatically. Here provided 14 types of channel.

WEP Encryption Mode: To enable WEP encryption function, select your encryption length as 64-bit or 128-bit. Either 64-bit or 128-bit WEP keys can be generated from user-defined characters or manual entry.

Authentication Algorithm: The Router supports two authentication types: **Open System** and **Shared key**. This should be considered with the WEP(Wired Equivalent Privacy) mechanism.

64-bit WEP keys

Wireless SSID		
Channel	Channel 1 [2412 MHz]	
Authentication Algorithm	☐ Open Key ☒ Shared Key	
WEP Encryption Mode	☒ 64-bit	
WEP Encryption Key Mode	☒ ASCII ☐ HEX	
Encryption Key Length	64-Bit	
Key #1	ASCII	HEX
Key #2	ASCII	HEX
Key #3	ASCII	HEX
Key #4	ASCII	HEX
Default TX Key	Key 1	



128-bit WEP keys

Wireless SSID

Channel

Authentication Algorithm ☐ Open Key ☒ Shared Key

WEP Encryption Mode ☒ 128-bit

WEP Encryption Key Mode ☒ ASCII ☐ HEX

Encryption Key Length **128-Bit**

Key #1 ASCII HEX

Key #2 ASCII HEX

Key #3 ASCII HEX

Key #4 ASCII HEX

Default TX Key



Wired Equivalent Privacy Mechanism

The privacy security function can enhance wireless media security by encryption technology. All wireless clients must set the same encryption key to maintain the tightened communication with the ADSL Router properly. The Authenticate Algorithm options are:

When the wired Equivalent Privacy Mechanism is Turns off. Using Open-key as authentication algorithm, you are running the risk of allowing some unauthorized wireless LAN cards that have the capability of eavesdropping your SSID to associate itself to the device.

Turns on encryption. Wired Equivalent Privacy Mechanism is Turns on. You should select the encryption key length as 64- or 128- bit key. Then enter the encryption key in Key Entry fields.

Note: When Wired Equivalent Privacy Mechanism is enabled, the wireless client must be configured with exactly the same encryption level (64 or 128-bit) and encryption key as identified in the ADSL Router, so that access to the unit is allowed.

DNS

On this page you can choose to disable or enable DNS function. To enable DNS, simply enter the value for Primary and Secondary DNS address and click **Finish**.

A Domain Name system (DNS) server is like an index of IP addresses and Web addresses. If you type a Web address into you browser, such as www.askey.com, a DNS server will find that name in its index and find the matching IP address : 211.21.189.106. Most ISPs provide a DNS server for speed and convenience. Since your Service Provider many connect to the Internet with dynamic IP settings, it is likely that the DNS server IP addresses are also provided dynamically. However, if there is a DNS server that you would rather use, you need to specify the IP address below.

Primary DNS address

Secondary DNS address



Primary DNS address: Type in the DNS address that you get from your service provider.

Secondary DNS address: Type in the secondary DNS address that you get from your service provider.

Click **Finish** button to quit the setup page.

Advanced Setup

Click on Advanced Setup to get into the Advanced Setup screen for further configuration.

Advanced Setup

The router supports advanced functions like hacker attack detection, client filtering, virtual servers, special application access, and a virtual DMZ host.

Askey recommends you keep the default settings.

System

The System page includes all the configuration tools for the router such as Administrator, Firmware Upgrade, Configuration Tools, Status, System Log, and Reset.

Administrator Settings

This setting allows you to set for password and activate the remote management.

Administrator Settings

Password Settings

Set a password to restrict management access to the router. If you want to manage the router from a remote location (outside of the local network), you must also specify the IP address of the remote PC.

Current Password
Password
Re-type password (3-12 Characters)
Idle Time Out Min (Idle Time =0 : No Time Out)

Remote Management

Discard PING from WAN side ☐
Allow to Scan Security Port (113) ☐
Enable Http remote Access ☐
Enable Telnet remote Access ☐



- Current Password:** Type in the password that you use for login.
- Password:** Type another new password if you don't want to use current one.
- Re-type password:** Type the new password again for confirmation.
- Idle Time Out:** Type the idle minutes that elapse before the device disconnected automatically.
- Discard PING from WAN side:** Check this box can discard PING from WAN side.
- Allow to San Security Port(113):** Check this box for scanning security port.
- Enable Http remote Access:** Check the box and type in the IP address for http remote access that is assigned by your service provider.

Enable Telnet remote Access: Check the box and type in the IP address for Telnet remote access that is assigned by your service provider.

Firmware Update

The Wireless Broadband Router supports the upgrading by using web page. The original configuration will still exist and not reset to the factory defaults.

Firmware Update

Askey Computer Corp. may create new firmware for your router to improve functionality and performance.

[Click here to check for an upgrade on Askey's website.](#)

Enter the path and name of the upgrade file then click the APPLY button below. You will be prompted to confirm the upgrade.

Current Firmware Version: V 1.0
Firmware Date: 2001/03/13



To transfer the firmware file, follow the steps below:

1. Enter the name and the path of the firmware upgrade file onto the input box or use the Browse button to locate the file.
2. Click **Apply**.

Note:

1. Do not interrupt the upgrade process otherwise it might cause damage to your Router.

Configuration Tools

This page provides you some tools of configuration for your wireless broadband router.

Configuration Tools

Use the "Backup Settings" tool to save the router's current configuration to a file named "config.bin" on your PC. You can then use the "Restore Settings" tool to restore the saved configuration of the router. Alternately, you can use the "Restore to Factory Defaults" tool to force the router to perform reset and restore the original factory settings.

- ☒ Restore Factory Default Configuration
- ☐ Backup Settings / Restore settings



Restore Factory Default Configuration: You can use the **Restore to Factory Defaults** tool to force the router performing reset and restore the original factory settings. If you choose this item, the page will guide you to next page for clicking **Restore** button to execute the settings.

Restore Factory Default

To restore the factory default settings of the router, click on the "Restore" button. You will be asked to confirm your decision.

Restore...



Backup Settings/Restore settings: Allows you to backup settings or restored saved settings. Choose this button and click **Apply**, you will be guide to next page as below.

Configuration Tools

Backup Settings

Please press the "Backup Settings" button to save the configuration data to your PC

Backup Settings

Restore Settings

Enter the path and name of the backup file then press the "Restore Settings" button below. You will be prompted to confirm the backup restoration.

Browse..

Restore Settings



Backup Settings button allows you to save the router's current configuration to a file named **config.bin** on your PC. **Restore Settings** tool allows you to restore the saved configuration of the router by entering the path and the name of the file and click the **Restore Settings** button.

Status

This page shows the basic information of your Wireless Broadband Router including the software version, WAN MAC address, LAN MAC address, Wireless LAN MAC address etc. It provides a general overview of your Wireless Broadband Router.

Status

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

INTERNET

Cable/DSL	DISCONNECTED
WAN IP	10.2.5.111
Subnet Mask	255.255.0.0
Gateway	0.0.0.0
DNS	0.0.0.0
Secondary DNS	0.0.0.0
Connection Type	Dynamic IP

Release

Renew

GATEWAY

IP Address	192.168.2.1
Subnet Mask	255.255.255.0
DHCP Server	Enabled

WIRELESS

SSID	RTW026
Channel	Channel 9 [2454 MHZ]
WEP Encryption	64-bits
WEP Authentication	Open Key

INFORMATION

Up time	1 days 2 hours 3 minutes 4 seconds
Connected Clients	2
Runtime Code Version	V0.1
Boot Code Version	V0.1
LAN MAC Address	00-00-00-00-00-00
WLAN MAC Address	00-00-00-00-00-01
WAN MAC Address	00-00-00-00-00-02
Serial Number	000000000000



System Log

System Log your service provider lays a running record of your router, including information, warning and error log. The information provided here is useful in working with your service provider or system administrators when troubleshooting.

System Log

View any event that have been happened on the router.

Log File

Level	Time	Event	History
	24	User logined from 10.1.1.3	No
	22	User Logout	No
	19	User logined from 10.1.1.3	No
	11	The WAN interface get IP address 10.3.1.43 from remote DHCP Server	No

Download

Clear

Refresh



Download: Download the log file information.

Clear: Erase current log files information.

Refresh: Renew current log files information.

Reset Wireless Broadband Router

This page allows you to restart your router for invoking new configuration. After restarting, you should wait for several seconds to let the system come up. When restarting the system, your browser session will be disconnected. Please wait until the device finish restarting.

Reset Router

In the event that the router stops responding correctly or in some way stops functioning, you can perform a reset. Your settings will not be changed. To perform the reset, click on the "Reset" button below. You will be asked to confirm your decision. The reset will be complete when the power light stops blinking.

Reset



WAN

The Broadband Wireless Router provides three WAN connections: Dynamic IP Address, Static IP Address and PPPoE. Each connection you have to do specific configuration, otherwise you cannot access into Internet properly. Please choose the one you want to connect and click **APPLY**.

WAN

The router can be connected to your service provider in any of the following ways:

- ☒ Dynamic IP Address Obtain an IP address automatically from your service provider.
- ☐ Static IP Address Uses a static IP address. Your service provider gives a static IP address to access Internet services.
- ☐ PPPoE PPP over Ethernet is a common connection method used for xDSL
- ☐ Bridge WAN Working as a bridge device

Dynamic IP Address

This connection will obtain an IP address automatically from your service provider.

The Host Name is optional, but may be required by some Service Provider's. The default MAC address is set to the WAN's physical interface on the router. If required by your service provider, use the **Clone MAC Address** button to copy the MAC address of the Network Interface Card installed in your PC and replace the WAN MAC address with this MAC address. The BigPond login is optional, commonly used in Australia. If your service provider need you to do the BigPond login, please enable it and fill the user name, password and the server name.

Dynamic IP

The Host Name is optional, but may be required by some Service Provider's. The default MAC address is set to the WAN's physical interface on the router. If required by your Service Provider, use the "Clone MAC Address" button to copy the MAC address of the Network Interface Card installed in your PC and replace the WAN MAC address with this MAC address.

Host Name	
MAC Address	- - - - -
	Clone MAC Address

Host Name: Enter the name of your host.

MAC Address: Enter the MAC address that you get from your service provider.

Static IP Address

This page allows you to use a static IP address. Your service provider gives a static IP address to access Internet services. If your service provider has assigned a fixed IP address, enter the assigned IP Address, Subnet Mask and your service provider Gateway Address provided.

Static IP

If your Service Provider has assigned a fixed IP address, enter the assigned IP Address, Subnet Mask and ISP Gateway Address provided.

IP address assigned by your ISP	. . .
Subnet Mask	. . .
ISP Gateway Address	. . .

Does ISP provide more IP addresses ☐ Yes

IP address assigned by your ISP: Type in the fixed IP address if your service provider has assigned a fixed permanent IP address.

Subnet Mask: Type in the subnet mask that you get from your service provider.

ISP Gateway Address: Type in the gateway address that you get from your service provider.

Does ISP provide more IP addresses: If your service provider gives you more than one IP address, please check **Yes** box here.

PPPoE

PPP over Ethernet is a protocol for connecting remote hosts to the Internet over an always-on connection by simulating a dial-up connection.

Enter the PPPoE user name and password assigned by your service provider. The Service Name is normally optional, may be required by some service providers. Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the defined Maximum Idle Time, then it will be dropped. You can enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again.

PPPoE

Enter the PPPoE user name and password assigned by your Service Provider. The Service Name is normally optional, by may be required by some service providers. Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the defined Maximum Idle Time, then it will be dropped. You can enable the Dial on Demand option to automatically re-establish the connection as soon as you attempt to access the Internet again.

If your Internet Service Provider requires the use of PPPoE, enter the information below.

User Name	
Password	
Please retype your password	
Service Name	
MTU (1400-1492)	
Dial-on-Demand	☐ Enabled minutes (Maximum Idle Time)



User Name: Type in the user name to access the remote server or your service provider.

Password: Type in the password to access the remote server or your service provider.

Please retype your password: Type your password again for confirmation.

Service Name: Enter the name of your PPPoE service.

MTU (1400-1492): Enter the maximum transmission rate for the data transferring. The default setting is 1492

Maximum Idle Time: This value specifies the idle minutes that elapse before the Router automatically disconnects the PPP session. If no traffic is passing through during the span of time your specified, the PPP session is terminated.

DNS

A Domain Name system (DNS) server is like an index of IP addresses and Web addresses. If you type a Web address into you browser, a DNS server will find that name in its index and find the matching IP address.

Most ISPs provide a DNS server for speed and convenience. Since your Service Provider may connect to the Internet with dynamic IP settings, it is likely that the DNS server IP addresses are also provided dynamically. However, if there is a DNS server that you would rather use, you need to specify the IP address below.

DNS

A Domain Name system (DNS) server is like an index of IP addresses and Web addresses. If you type a Web address into you browser, such as www.askey.com, a DNS server will find that name in its index and find the matching IP address : 211.21.189.106.

Most ISPs provide a DNS server for speed and convenience. Since your Service Provider many connect to the Internet with dynamic IP settings, it is likely that the DNS server IP addresses are also provided dynamically. However, if there is a DNS server that you would rather use, you need to specify the IP address below.

Domain Name Server (DNS) Address				
Secondary DNS Address (optional)				

Domain Name Server (DNS) Address: Type in the DNS address that you get from your service provider.

Secondary DNS Address (optional): Type in the secondary DNS address that you get from your service provider.

Bridge

The router acts like a 5-port switch on this mode for transmitting the packets between LAN and WAN interface.

Bridge Mode

WAN will run in bridge mode. The DHCP server still can serve the DHCP request. If you do not need it, you can disable the DHCP server function in the seting LAN page.

LAN

LAN Settings

This setting allows you to define the IP address over the LAN interface.

LAN Settings

You can enable DHCP to dynamically allocate IP addresses to your client PCs.

IP Address	. . .
Subnet Mask	255.255.255.0
The Gateway acts as DHCP Server	☒ Enable
IP Pool Starting Address	192.168.2.
IP Pool Ending Address	192.168.2.
Lease Time	Forever v
Local Domain Name	(optional)



IP Address: Allows you to specify the private IP address on the device's LAN interface. By default, the IP address and subnet mask is **192.168.1.1** and **255.255.255.0**. It is recommended NOT to change the default settings.

Note: If you have changed the LAN IP address for the router, you have to renew or reassign the LAN IP for client's PC. Otherwise, the client's PC will not be able to access the router.

Subnet Mask: Type in the subnet mask address that you get from your service provider.

The Gateway acts as DHCP Server: Check Enable to make gateway be able to act as DHCP server.

IP Pool Starting Address: Make the IP address you enter here to be the starting point.

IP Pool Ending Address: Make the IP address you enter here to be the ending point.

Lease Time: Specify the time that a network device can lease a private IP address before the Wireless Broadband Router reassigning the IP address. By default, it is 1 day/ 0 hour/ 0 minutes.

Local Domain Name: You can check the **Report this host as the DNS server** box to use this host as the default DNS. Or you can uncheck the box and manually set up the DNS IP address in the **Primary/Secondary DNS IP address** fields. The DNS server addresses will be passed to the DHCP clients along with the IP addresses. The DHCP clients use the DNS to map a domain name to its corresponding IP address and vice versa.

DHCP Client List

DHCP Client List shows the IP address, host name and MAC address of the clients which connected to the Barricade.

DHCP Client List

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

Host Name	IP Address	MAC Address	Static
test1	192.168.1.2	00-D0-59-26-8B-A1	☒
simon_notebook	192.168.1.3	00-D0-59-26-8B-A2	☐
kuo	192.168.1.4	00-D0-59-26-8B-A3	☐



WLAN

Wireless LAN Settings

This page shows you how to configure the wireless LAN setting.

WLAN is short for Wireless Local Area Network. To get the wireless broadband router quick working for your wireless LAN, basically, you must have your wireless SSID and your preferred channel set up. If the network security is your great concern, you can enable the WEP Encryption functionality and type in your encryption key for set-ups in appropriate fields.

Wireless LAN Settings

Wireless SSID

Channel

Channel 1 [2412 MHz]

WEP Encryption Mode

☐ Disable ☒ 64 bits ☐ 128 bits

Authentication Algorithm

☐ Open Key ☒ Shared Key

WEP Encryption Key Mode

☒ ASCII ☐ HEX

Encryption Key Length 64-Bit

Key #1

ASCII ***** HEX *****

Key #2

ASCII ***** HEX *****

Key #3

ASCII ***** HEX *****

Key #4

ASCII ***** HEX *****

Encryption Key Length 128-Bit

Key #1

ASCII ***** HEX *****

Key #2

ASCII ***** HEX *****

Key #3

ASCII ***** HEX *****

Key #4

ASCII ***** HEX *****

Default TX Key

Key 1



Wireless SSID (Service Set Identity): A name that uniquely identifies a wireless domain. All wireless clients that want to communicate with the ADSL Router must have the same SSID as it.

Desired Channel: The frequency in which the radio links are about to be established. Select channel that you

want. Usually the wireless clients will scan the whole operable channels and then select the desired communications channel automatically.

WEP Encryption Key Mode: Select ASCII or Hex as the calculation standard.

If using HEX format, the utility converts two entered characters into its corresponding ASCII code and vice versa. Note that when using **HEX** format, only digits 0-9 and letters A-F are allowed. Valid key length for each encryption type is as below:

	HEX Format	ASCII Format
64 Bit	10 hexadecimal digits	5 ASCII characters
128 Bit	26 hexadecimal digits	13 ASCII characters

Authentication Algorithm: Choose Open Key or Shared Key as the Authentication Type.

Default TX Key: Select one WEP key from the four keys to encrypt the data you transmit.

Wired Equivalent Privacy Mechanism

The privacy security function can enhance wireless media security by encryption technology. All wireless clients must set the same encryption key to maintain the tightened communication with the ADSL Router properly. The Authenticate Algorithm options are:

When the wired Equivalent Privacy Mechanism is Turns off. Using Open-key as authentication algorithm, you are running the risk of allowing some unauthorized wireless LAN cards that have the capability of eavesdropping your SSID to associate itself to the device.

Turns on encryption. Wired Equivalent Privacy Mechanism is Turns on. You should select the **encryption key length** as 64- or 128-bit key. Then enter the encryption key in Key Entry fields.

Note: When Wired Equivalent Privacy Mechanism is enabled, the wireless client must be configured with exactly the same encryption level (64 or 128-bit) and encryption key as identified in the Router, so that access to the unit is allowed.

WLAN MAC Control

To block certain wireless client PC accessing your wireless network based on the MAC address, you can use WLAN MAC Control page to do it.

WLAN MAC Control

You can block certain Wireless client PCs accessing the Wireless network based on MAC addresses.

Wireless MAC Address Control : ☒

Allow unspecified Wireless MAC address connect to network. ☒

MAC Address Control List

Policy	MAC Address	
☒ Allow ☐ Deny		<< Add
☒ Allow ☐ Deny	0010B508F274	Delete
☒ Allow ☐ Deny	0210A508F3CC	Delete
☒ Allow ☐ Deny	57A65F708F4E	Delete



Policy: “Allow” means to allow the MAC address for the wireless device listed below to be connected to your router (AP). “Deny” means the MAC address for the wireless device listed below cannot be connected to your router (AP).

MAC Address: Type in the MAC Address.

Add and Delete: Click Add to add a new MAC address on the list. Click Delete to remove the MAC address that you do want to.

NAT

NAT allows multiple users at your local site to access the Internet through a single public IP address or multiple public IP addresses. NAT can also prevent hacker attacks by mapping local addresses to public addresses for key services such as the Web or FTP.

NAT Settings

Network Address Translation (NAT) allows multiple users at your local site to access the Internet through a single public IP address or multiple public IP addresses. NAT can also prevent hacker attacks by mapping local addresses to public addresses for key services such as the Web or FTP.

☒ Enable

☐ Disable



Virtual Server

This page shows all virtual server rules configured in your ADSL Router.

The Router implements NAT to let your entire local network appear as a single machine to the Internet. The typical situation is that you have local servers for different services and you want to make them publicly accessible. With NAT applied, it will translate the internal IP addresses of these servers to a single IP address that is unique on the Internet. NAT function not only eliminates the need for multiple public IP addresses but also provides a measure of security for your LAN.

When the router receives an incoming IP packet requesting for access to your local server, the router will recognize the service type according to the port number in this packet (e.g., port 80 indicates HTTP service and port 21 indicates FTP service). By specifying the port number, you tell the router which service should be forwarded to the local IP address you specify.

After you setting the virtual server you should modify the filter rule whichever port and service you set on virtual server. Because the firewall has protect the route by filter rule so that you should update the filter rule after you set up virtual server.

Virtual Server

You can configure the 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 servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the router redirects the external service request to the appropriate server (located at another internal IP address).

	Server IP	Mapping Ports	Enabled
1.	192. 168. 2.		☐
2.	192. 168. 2.		☐
3.	192. 168. 2.		☐
4.	192. 168. 2.		☐
5.	192. 168. 2.		☐
6.	192. 168. 2.		☐
7.	192. 168. 2.		☐
8.	192. 168. 2.		☐
9.	192. 168. 2.		☐
10.	192. 168. 2.		☐



- Server IP:** Specify the server IP address.
- Mapping Ports:** Enter the mapping port for the IP address.

IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the router redirects the external service request to the appropriate server (located at another internal IP address).

NAT Link Table

The table list below shows the status for current internet connection links information.

NAT Link Table

View all the internet connection links information. The informations include Source IP, Port, Destination Ip, Port, Alias IP, Port, and Connect Type.

Source IP	Port	Destination Ip	Port	Alias IP	Port	Type
192.168.1.2	1024	1.1.1.1	80	1.1.2.3	5869	TCP
192.168.1.6	2048	112.11.1.2	21	1.1.2.3	6949	TCP
192.168.1.24	11024	210.124.238.56	51	1.1.2.3	3418	UDP
192.168.1.2	10224	1.1.1.1	23	1.1.2.3	5123	TCP

Refresh

Firewall

This page is used to set the firewall for your system. Please choose one from the provided items and click Apply to enable it.

MAC Control

You can block certain client PCs accessing the Internet based on MAC addresses.

MAC Address Control: Enable the MAC address control by checking the box.

Allow unspecified MAC address connect to Internet: Make unspecified MAC address to connect to the Internet with any difficulty, please check this box.

MAC Control

You can block certain client PCs accessing the Internet based on MAC addresses.

MAC Address Control : ☒

Allow unspecified MAC address connect to Internet. ☒

MAC Address Control List

Allow Connect to Internet	MAC Address	
☒		<< Add
☒	0010B508F274	Delete
☒	0210A508F3CC	Delete
☒	57A65F708F4E	Delete



DMZ(Demilitarized Zone)

A DMZ (De-Militarized Zone) separates an external network from directly referencing an internal network. With DMZ configuration, a DMZ host acts as a neutral zone between the private network and the outside network. For example, if you have a host providing online games or videoconferencing applications which are incompatible through NAT, you can specify its IP address here and then click **Apply** button.

DMZ(Demilitarized Zone)

If you have a local client PC that cannot run an Internet application properly from behind the NAT firewall, you can open the client up to unrestricted two-way Internet access by defining a virtual DMZ Host.

Enable ☐

IP Address of Virtual DMZ Host 192.168.123.



Enable: Enable the DMZ function.

IP Address of Virtual DMZ Host: Type in the last IP address.

Routing

For multiple routers that installed on your network, please configure each unit's routing functions for proper using.

Static Routing

This setting allows different IP domain users to access the Internet through this device.

Static Routing

The static routing function determines the path that data follows over your network before and after it passes through your router. You can use static routing to allow different IP domain users to access the Internet through this device.

Destination : . . .

Subnet Mask : . . .

Gateway : . . .

Destination	Subnet Mask	Gateway	
10.10.1.0	255.255.255.0	10.1.1.1	Delete
211.21.189.0	255.255.255.0	192.168.1.1	Delete
100.100.100.0	255.255.255.0	10.1.1.1	Delete

This page shows all the routing rules of data packets going through your Wireless Broadband Router if it runs in routing mode. Under normal circumstances, the router has adequate routing information after it has been configured for Internet access, and you don't need to configure additional static routes. Unless your network is unusual case such as multiple routers or multiple IP subnets and you must configure static routes.

For example, if the circumstances below apply to your network:

- You have another subnet network in your network.
- Your another network is 10.1.1.x.

Then you need to create a static route. You should enter the destination IP address 10.3.1.x and gateway IP address 192.168.1.1 to commit the setting.

At the first time you have to configure your router, you will find a default route created with your service provider as the gateway, and the second static route was created to your local network for all 192.168.1.1 addresses.

Destination LAN IP: Type in the destination LAN IP address.

Subnet Mask: Type in the subnet mask of the destination IP address that your service provider gives you.

Gateway: Type in the gateway address.

Dynamic Routing

Routing Information Protocol (RIP) is utilized as a means of exchanging routing information between routers. It helps the routers to determine optimal routes. This page allows you to enable/disable this function.

Dynamic Routing

The dynamic routing feature of the router can be used to allow the router to automatically adjust to physical changes in the network's layout. The router uses the dynamic RIP protocol. It determines the route that the network packets take based on the fewest number of hops between the source and the destination. The RIP protocol regularly broadcasts routing information to other routers on the network.

Dynamic Routing Disabled



Dynamic Routing: Make the router automatically adjusts to physical changes in the network's layout. The settings include RIP1,RIP Compatible and RIP2. By default, RIP is disabled with Disable selected. To disable RIP, just select Disable from the drop-down list.

Routing Table

This page shows a table about routing information, such as Destination LAN IP, Subnet Mask, Gateway, Metric, Interface and so on.

Routing Table

The Routing table allows you to see how many routings on your routing table and interface information.

Destination LAN IP	Subnet Mask	Gateway	Metric	Interface
0.0.0.0	0.0.0.0	192.168.0.1	0	WAN
192.168.0.0	255.255.255.0	192.168.0.6	0	WAN
192.168.1.0	255.255.255.0	192.168.1.1	0	LAN



- Destination LAN IP:** It shows the destination address of the network where data packets are to be sent.
- Subnet mask:** The subnet mask of the destination address.
- Gateway:** It shows the IP address of Gateway.
- Metric:** The number of the routers which connect to the destination.
- Interface:** The interface that access point use for routing.
- Refresh:** Click this button to refresh the routing information.

Chapter 6: Troubleshooting

If the suggested solutions in this section do not resolve your problem, contact your system administrator or Internet service provider.

Problems with LAN

PCs on the LAN can not get IP addresses from the Wireless Broadband Router.

The chances are that the interface used as DHCP server is modified and the client PCs do not renew IP addresses.

If your DHCP server is enabled on Private IP Address previously and you modify the interface to Public IP Address, the client PCs should renew IP addresses.

The PC on the LAN cannot access the Web page of the Wireless Broadband Router.

Check that your PC is on the same subnet with the Wireless Broadband Router.

The virtual server can't be access after setting virtual server.

Check the filter rule of the port that virtual server service setting for example, the virtual server service set FTP 21 you need update the filter rule of the ftp 21 **Direction** setting: Choose filter the packets that incoming action (In Bound) are **Allow** on the interface.

Can't access the Router's Web Configuration interface from a PC on your local network.

Make sure you are using the correct login information, the default password is **admin** (small letters).

Make sure your PC's IP address is on the same subnet as the router. If you are using the recommended addressing scheme, your PC's address should be in the range of 192.168.1.2 to 192.168.1.254.

Note:

1. If you use DHCP server and your PC's IP address is shown as 169.254.x.x: please renew the IP address and check the connection from the PC to the router.
 2. If you are using a wireless LAN card equipped PC, check that the SSID and WEP settings are the same for the router and PC.
 3. If your router's IP address has been changed and you don't know the current IP address, clear the router's configuration to factory defaults. This will set the router's IP address to 192.168.1.1.
-

Problems with WAN

If you router can't access the Internet.

- You should first determine whether the router is able to obtain a WAN IP address from the ISP. Or you have been assigned a static IP address.
- Check the IP address for the WAN port.
- If your ISP requires a login program as PPP over Ethernet (PPPoE), ensure the user name and password you enter are correctable.
- If your Broadband Wireless Router is set to routing mode and you use private IP addresses on the LAN, make sure Network Address Translation (NAT) is enabled.
- Your PC may not recognize any DNS server address. Check your DNS setting on the Broadband Wireless Router.

- Check the physical connection between the Wireless Broadband Router and the LAN.

At the DOS prompt, ping the IP address of the Wireless Broadband Router, e.g, ping 192.168.1.1. If the following response occurs:

```
Relay from 192.168.1.1 bytes=32 time=100ms TTL=253
```

Then the connection between the Wireless Broadband Router and the network is OK.

If you get a failed ping with the response of:

```
Request time out
```

Then the connection is fail. Check the cable between the Wireless Broadband Router and the network.

- Check the DNS setting of the Wireless Broadband Router.

At the DOS prompt, ping the IP address of the DNS provided by your ISP. For example, if your DNS IP is 168.95.1.1, then ping 168.95.1.1. If the following response occurs:

```
Relay from 168.65.1.1 bytes=32 time=100ms TTL=253
```

Then the connection to the DNS is OK.

If you get a failed ping with the response of:

```
Request time out
```

Then the DNS is not reachable. Check your DNS setting on the Wireless Broadband Router.

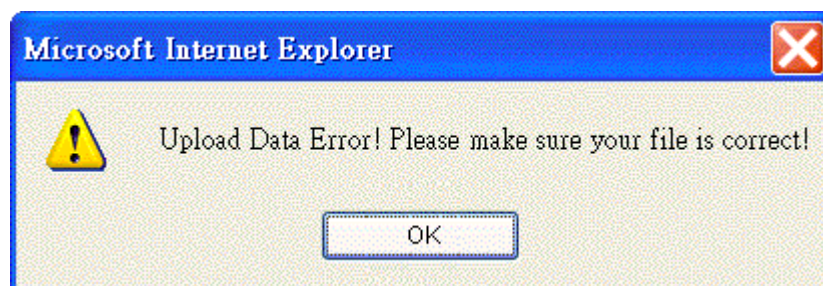
Problems with Upgrading

The following lists the error messages that you may see during upgrading and the action to take.

- **Error Message:** Upload Data Error ! Please make sure your file is correct!

Possible cause: The firmware file format is invalid.

Action: Check the file format is correct, otherwise download a firmware file with correct format.



- **Error:** The router shut down for some unknown reason and the web page got problem

Possible cause: The firmware might be damaged.

Action: Execute recovery firmware update. Simply type 192.168.0.1 on URL line to open the page. Choose the proper file and click Apply to execute the recovery process.

Recovery Firmware Update

The firmware may be damaged in some condition. Please upgrade the firmware again.
Enter the path and name of the upgrade file then click the APPLY button below. You will be prompted to confirm the upgrade.

File Path :

When the file is copied, a successful web page appears as follows. Now the router's firmware is upgraded. It

can be used again.

Upgrade Firmware Successfully

Your router has successfully been upgraded.

Please wait until the power light stops blinking.

Chapter 7: Glossary

Authentication and WEP Encryption

The absence of a physical connection between nodes makes the wireless links vulnerable to eavesdropping and information theft. To provide a certain level of security, the IEEE 802.11 standard has defined two types of authentication methods, open system and shared key. With open system authentication a wireless PC can join any network and receive any messages that are not encrypted. With shared key authentication, only those PCs that possess the correct authentication key can join the network. By default IEEE 802.11 wireless devices operate in an Open system network.

DHCP (Dynamic Host Configuration Protocol)

When operates as a DHCP server, the Wireless Broadband Router assign IP addresses to the client PCs on the LAN. The client PCs "leases" these Private IP addresses for a user-defined amount of time. After the lease time expires, the private IP address is made available for assigning to other network devices.

The DHCP IP address can be a single, fixed public IP address, an your service provider assigned public IP address, or a private IP address.

If you enable DHCP server on a private IP address, a public IP address will have to be assigned to the NAT IP address, and NAT has to be enabled so that the DHCP IP address can be translated into a public IP address. By this, the client PCs are able to access the Internet.

Infrastructure mode

A backbone to extend the service provided by network. This mode provides wireless connectivity to multiple wireless network devices within a fixed range or area of coverage, interacting with wireless nodes via an antenna.

LAN (Local Area Network) & WAN (Wide Area Network)

A LAN is a computer network limited to the immediate area, usually the same building or floor of a building. A WAN, on the other hand, is an outside connection to another network or the Internet.

The Ethernet side of the Wireless Broadband Router is called the LAN port. It is a twisted-pair Ethernet 10Base-T interface. A hub can be connected to the LAN port. More than one computers, such as server or printer, can be connected through this hub to the Wireless Broadband Router and composes a LAN.

The WAN port of the Wireless Broadband Router composes the WAN interface, which supports PPP or RFC 1483 connecting to another remote DSL device or cable modem.

MAC Address

Media Access Code Address. A unique, 48-bit number assigned to every network interface card by the manufacturer.

NAT (Network Address Translation) IP Address

NAT is an Internet standard that translates a private IP within one network to a public IP address, either a static or dynamic one. NAT provides a type of firewall by hiding internal IP addresses. It also enables a company to use more internal IP addresses.

If the IP addresses given by your your service provider are not enough for each PC on the LAN and the Wireless Broadband Router, you need to use NAT. With NAT, you make up a private IP network for the LAN and assign an IP address from that network to each PC. One of some public addresses is configured and mapped to a private workstation address when accesses are made through the gateway to a public network.

For example, the Wireless Broadband Router is assigned with the public IP address of 168.111.1.1. With NAT enabled, it creates a Virtual LAN. Each PC on the Virtual LAN is

assigned with a private IP address with default value of 192.168.1.2 to 192.168.1.254. These PCs are not accessible by the outside world but they can communicate with the outside world through the public IP 168.111.1.1.

Private IP Address

Private IP addresses are also LAN IP addresses, but are considered "illegal" IP addresses to the Internet. They are private to an enterprise while still permitting full network layer connectivity between all hosts inside an enterprise as well as all public hosts of different enterprises.

The Wireless Broadband Router uses private IP addresses by assigning them to the LAN that cannot be directly accessed by the Internet or remote server. To access the Internet, private network should have an agent to translate the private IP address to public IP address.

RIP (Routing Information Protocol)

RIP is a routing protocol that uses the distance-vector routing algorithms to calculate least-hops routes to a destination. It is used on the Internet and is common in the NetWare environment. It exchanges routing information with other routers. It includes V1, V2 and V1&V2, which controls the sending and receiving of RIP packets over Ethernet.

SSID

SSID is a thirty-two character(maximum) alphanumeric key identifying the wireless local area network.

Service Set Identity. A group name shared by all members of an IEEE 802.11b network. Only devices with the same SSID are allowed to establish connections. For the wireless devices in a network to communicate with each other, all device must be configured with the same SSID.

UDP (User Data gram Protocol)

UDP is a connectionless transport service that does not own the reliability services provided by TCP. UDP gives applications a direct interface with IP and the ability to address a particular application process running on a host via a port number without setting up a connection session.

Virtual Server

You can designate virtual servers, e.g., a FTP, web, telnet or mail server, on your local network and make them accessible to the outside world. A virtual server means that it is not a dedicated server -- that is, the entire computer is not dedicated to running on the public network but in the private network.

Appendix: Specifications

Software

Standards Compliance

- IEEE 802.11 / 802.11b Standard
- IEEE 802.3 / IEEE 802.3u Standard
- IEEE 802.1d MAC Bridges Standard

Wireless LAN Features

- Fully compliant with IEEE 802.11 / IEEE 802.11b DSSS devices
- Provide 11 / 5.5 / 2 / 1 Mbps wireless connectivity to the wireless clients
- Auto fallback data rate under noisy environment
- IEEE 802.11 Wireless Access Point function
- Distributed Coordination Function (DCF)
 - CSMA/CA
 - Backoff Procedure
 - NAV Management
 - ACK Procedure
 - Retransmission of unacknowledged frames
 - ◆ RTS/CTS Handshake
 - ◆ Duplicate Detection and Recovery
 - ◆ Beacon Generation
 - ◆ Probe Response
 - ◆ Fragmentation and Reassembly
 - ◆ Wired Equivalent Privacy Algorithm
 - ◆ Authentication Algorithm
 - ◆ Power Management
 - ◆ Short Preamble and Long Preamble
- Association / Re-association / De-association

Home Gateway Controller Features

- 1K MAC look-up table
- MAC security
- Auto-sense 10Base-T / 100Base-TX operation modes
- Wire speed reception and transmission for Ethernet Port

Upper Layer Applications

- DHCP Server
- DHCP Client
- HTTP Server
- PPP over Ethernet
- NAT (IP Sharing)
- DNS Proxy

- Virtual Server
- RIP v1&v2

Operation Modes

- 802.11/802.11b Access Point

Roaming

- Seamless roaming within the same IP subnet

Access Point Bridging Features

- Support self-learning transparent bridge specified in IEEE 802.1d between wired LAN and Wireless LAN
- Support up to 256 wireless MAC learning addresses
- Automatic Learning Process
- Forwarding Process
- Aging Function
- Filtering Database

Security Features

- Support ESSID network identification for security
- Support 64-bit and 128-bit WEP Data Encryption and Decryption
- Support Authentication: Open System, Shared Key
- Access Control by MAC Address

Configuration and Management

- Web-based browser configuration management.
- Using HTTP to upgrade firmware or configuration setting
- Support DHCP Client function to obtain an IP configuration from a DHCP Server
- Clear LED Indicators for real time monitor current network status

Hardware

Interface

- 2.4GHz RF interface for Wireless LAN connection
- Four switch ports for 10/100 Mbps Ethernet LAN connection

Radio Characteristics

- Frequency Band: 2.400 ~ 2.4835 GHz ISM Band (subject to local regulations)
- Spreading: Direct Sequence Spread Spectrum
- Modulation:
 - CCK: 11Mbps and 5.5Mbps
 - DQPSK: 2Mbps
 - DBPSK: 1Mbps
- Number of Channels:
 - 11 Channels (US, Canada)
 - 13 Channels (Europe)
 - 14 Channels (Japan)
- Data Rate:
 - 11Mbps / 5.5Mbps / 2Mbps / 1Mbps
- Antenna:
 - Dual antenna supporting diversity
- Transmit Power:
 - 17dBm (typical)

- Receiver Sensitivity: -82dBm @ FER < 8%

Regulatory Approvals and Compliance

- EMI/Immunity: FCC part 15 and Class B
- Safety: VCCI, TELEC, CE, UL/cUL

Power Requirement and Operation Environment Requirement

- Power Adaptor: Input 120/60 VAC; Output 12 VDC, 1A
- Ambient Temperature: Operating - 0°C to 40°C, Storage - -20°C to 70°C
- Relative Humidity: 20% to 90% (non-condensing)

Ethernet Interface

- 4 port 10/100 Integrated Switch with Physical Layer Transceivers
- Hardware based 10/100, full/half, flow control and auto negotiation

LED Indicators (from left to right in front panel)

- Power (Green)
- Diagnose (Green)
- 10Mbps / 100Mbps Ethernet Link (Green)
- WLAN(Green)
- WAN(Green)

Physical

- Dimensions: 152 mm (L) × 113 mm (W)
- Weight: 282g

Certification

- Wi-Fi Certified