V11

WirelessBuilder Wireless Broadband Router
Share Your Broadband Internet Connection

User's Guide

ZIO®
Millennium Network Frontier

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Chapter 1 Introduction

1.1 Welcome

Congratulations on purchasing this Wireless Broadband Router. This Wireless Broadband Router is a cost-effective IP Sharing Router that enables multiple users to share the Internet through an ADSL or cable modem. Simply configure your Internet connection settings in the Wireless Broadband Router and plug your PC to the LAN port and you're ready to share files and access the Internet. As your network grows, you can connect another hub or switch to the router's LAN ports, allowing you to easily expand your network. The Wireless Broadband Router is embedded with an IEEE 802.11g/b access point that allows you to build up a wireless LAN. With the support of new emerged 802.11g standard, the access point provides data transfer of up to 54Mbps, up to 5 times faster than 802.11b, it is backwards compatible with existing 802.11b infrastructure while migrating to the new screaming fast 802.11g.The Wireless Broadband Router provides a total solution for the Small and Medium-sized Business (SMB) and the Small Office/Home Office (SOHO) markets, giving you an instant network today, and the
flexibility to handle tomorrow's expansion and speed.

1.2 About This Guide

This User Manual contains information on how to install and configure your Wireless Broadband Router to get your network started accessing the Internet. It will guide you through the correct configuration steps to get your device up and running.

Note and Caution in this manual are highlighted with graphics as below to indicate important information.

Contains related information corresponds to a topic.

Necessary steps, actions, or messages that should not be ignored.

1.3 Copyright statement

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, whether electronic, mechanical, photocopying, recording, or otherwise without the prior writing of the publisher.

Chapter 2 Designing Your Wireless Network

2.1 System Requirements

- Cable/ADSL modem and an Internet access account for Internet connection
- One computer with 10/100Base-T Ethernet card and TCP/IP protocol installed for initial setup
- Internet Explorer 5.0 or higher for Web configuration
- 802.11g or 802.11b compliant wireless adapters (for wireless connection)

Figure 1 below shows a typical setup for a Local Area Network (LAN).

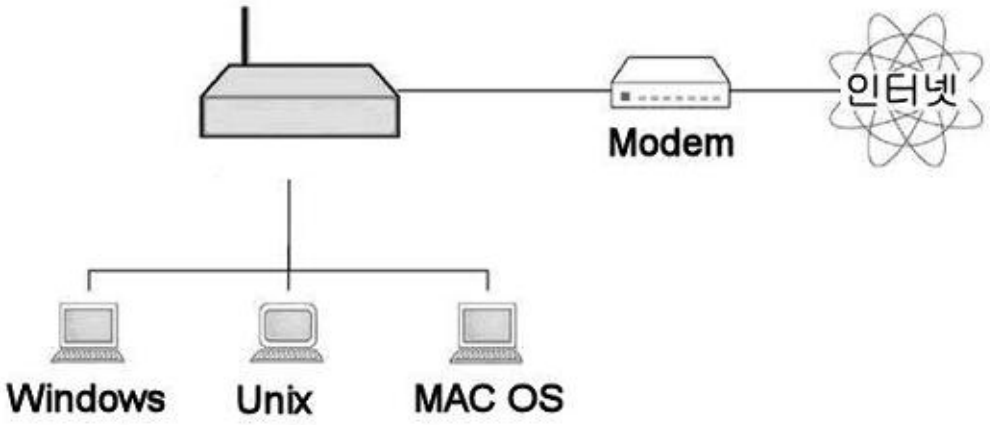

Figure 1 Local Area Network

Chapter 3 Getting to Know the Wireless-G Broadband Router

The following sections describe the physical characteristics of your router.

3.1 Back Panel

The following illustration shows the Wireless Broadband Router back panel:

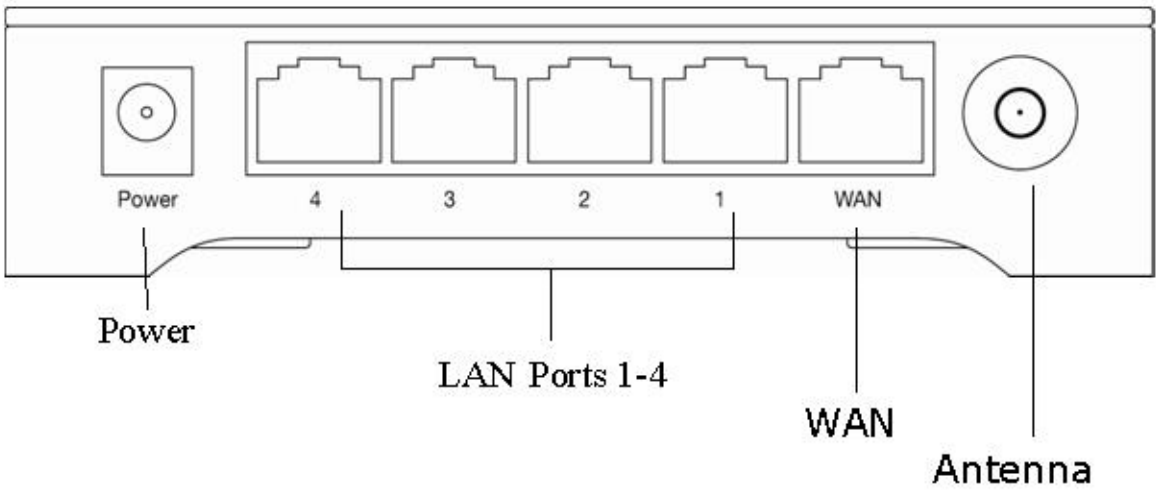

Figure 2 back panel

Power: The receptacle where you plug in the power adapter.

LAN Ports 1-4: These four ports connect the router to your LAN or home network using Ethernet cables. This enables communication among clients, such as PCs, on the network. The LAN ports support either 10-BASE-T or 100-BASE-T transmission speeds as well as straight-through and crossover Ethernet cables. Any of these four ports can also serve as an uplink port to other network devices, such as another router or switch, which allows you to extend your network.

WAN: Connect your modem to your router using this port with your supplied

Ethernet cable. This is the only port you can use for this procedure. This enables your router to access the Internet. The port supports 10/100 Mbps as well as straight-through and crossover Ethernet cables.

Antenna: The antenna used for wireless connections. You are able to rotate the antenna to gain the best signal reception.

If the router experiences trouble connecting to the Internet, briefly press and release the Reset button to reset the router. To reset the router to the factory defaults, press and hold the Reset button for more than five seconds. This clears the router's user settings, including User ID, Password, IP Address, and Subnet mask. (Warning: your original configurations will be replaced with the factory default settings)

3.2 LED Description

The following illustration shows the Wireless Broadband Router front panel:

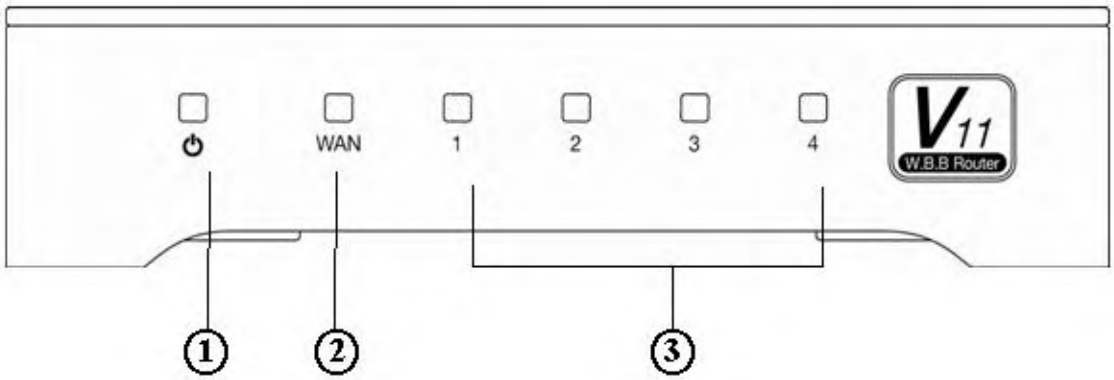

Figure 3 front panel

Number	LED	Light Status	Description
1	PWR	ON	This indicator lights green when the Wireless Router is receiving power; otherwise, it is off.
2	WAN	ON	WAN is connected
		Off	No WAN connection
		Flashing	WAN port has Activity (ACT), data being sent
3	LAN(1-4)	ON	WAN is connected

Off	No WAN connection
Flashing	WAN port has Activity (ACT), data being sent

Chapter 4 hardware connection

Begin by finding a good place to set up your wireless broadband. Some things to consider:

- Keep the access point as central in your work area as possible. Signal strength and speed fall off with distance.
- Higher is often better. For instance, set it up on the top shelf of a bookcase rather than the bottom one, if possible.

4.1 Connecting the Wireless Broadband Router

Prior to connecting the hardware, make sure to power off your Ethernet device, Cable/ADSL modem and Wireless Broadband Router. Then follow the steps below to connect the related devices.

Step 1: Connecting your computer to the LAN port.

Attach one end of the Ethernet cable with RJ-45 connector to your hub, switch or a computer's Ethernet port, and the other end to one of the LAN ports of your Wireless Broadband Router.

Step 2: Connecting Cable/ADSL Modem to the WAN port.

Connect the Ethernet cable attaching to your Cable/ADSL modem to the WAN port of your Wireless Broadband Router.

Step 3: Connecting the power adapter.

Connect the single DC output connector of the power adapter to the power jack on the side of the Wireless Broadband Router. Then plug the Power Adapter into an AC outlet,

Step 4: Power on the following devices in this order: Cable/ADSL modem, Router, and PCs.

Chapter 5 Configuring Local PC to Access the Wireless Router

You can manage the Wireless Broadband Router through the Web browser-based configuration utility. To configure the device via Web browser, at least one properly configured computer must be connected to the device via Ethernet or wireless network. The Wireless Broadband Router is configured with the default IP address of 192.168.10.1 and subnet mask of 255.255.255.0 and its DHCP server is enabled by default. Before setting up the Router, make sure your PCs are configured to obtain an IP (or TCP/IP) address automatically from the Router by the steps below.

5.1 Setting up TCP/IP

5.1.1 Windows 98/Me

Step 1: Go to Start → Settings → Control Panel.
Step 2: Find and double-click the Network icon. The Network dialog box appears.
Step 3: Click the Configuration label and ensure that you have network card.
Step 4: Select TCP/IP. If TCP/IP appears more than once, please select the item that has an arrow "→" pointing to the network card installed on your computer. DO NOT choose the instance of TCP/IP with the words "Dial Up Adapter" beside it.
Step 5: Click Properties. The TCP/IP Properties dialog box appears.
Step 6: Ensure the Obtain IP Address Automatically is checked.
Step 7: From the WINS Configuration dialog box, Ensure that Disable WINS Resolution is checked.
Step 8: From the Gateway dialog box, remove all entries from the Installed gateways by selecting them and clicking Remove.
Step 9: From the DNS Configuration dialog box, remove all entries from the DNS Server Search Order box by selecting them and clicking Remove. Remove all entries from the Domain Suffix Search Order box by selecting them and clicking Remove. Click Disable DNS.
Step 10: Click OK, back to Network Configuration dialog box
Step 11: Click OK, if prompted to restart, click YES.

5.1.2 Windows 2000

Please follow the steps below to setup your computer:

Step 1: Go to Start → Settings → Control Panel

Figure 4

Step 2: Double click the icon Network and Dial-up Connections
Step 3: Highlight the icon Local Area Connection, right click your mouse, Click Properties

Figure 5

Step 4: Highlight Internet Protocol (TCP/IP), then press Properties

button

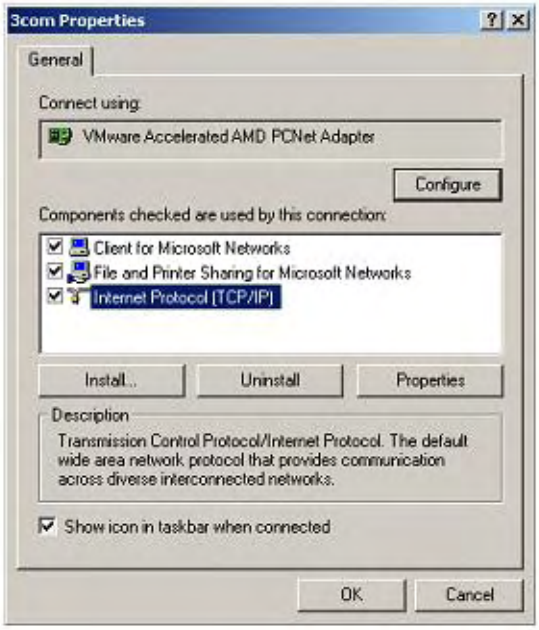

Figure 6

Step 5: Choose Obtain an IP address automatically and Obtain DNS Server Address automatically, and then press OK to close the Internet Protocol (TCP/IP) Properties window.

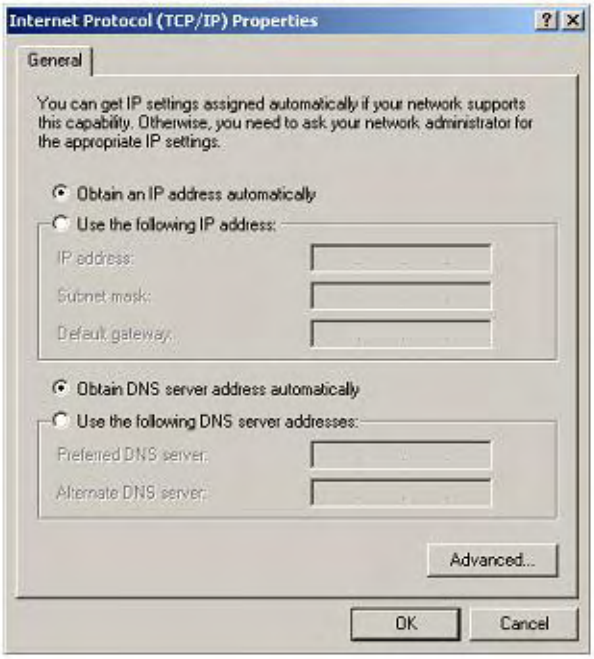

Figure 7

Step 6: Press OK to close the Local Area Connection Properties window

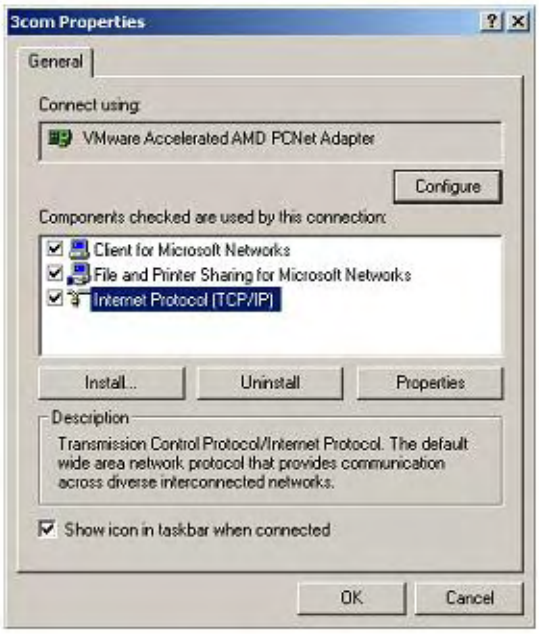

Figure 8

5.1.3 Windows XP

Please follow the steps below to setup your computer:
Step 1: Go to Start → Settings → Control Panel
Step 2: Click Network and Internet Connections

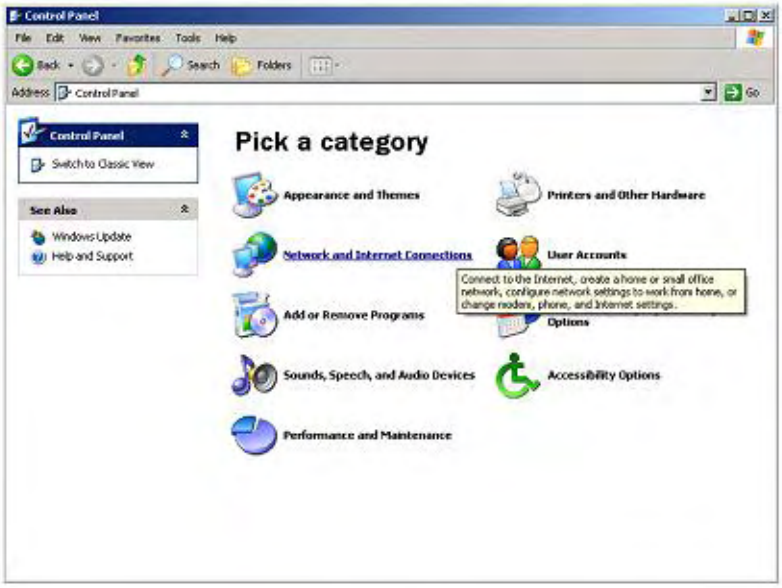

Figure 9

Step 3: Click Network Connections

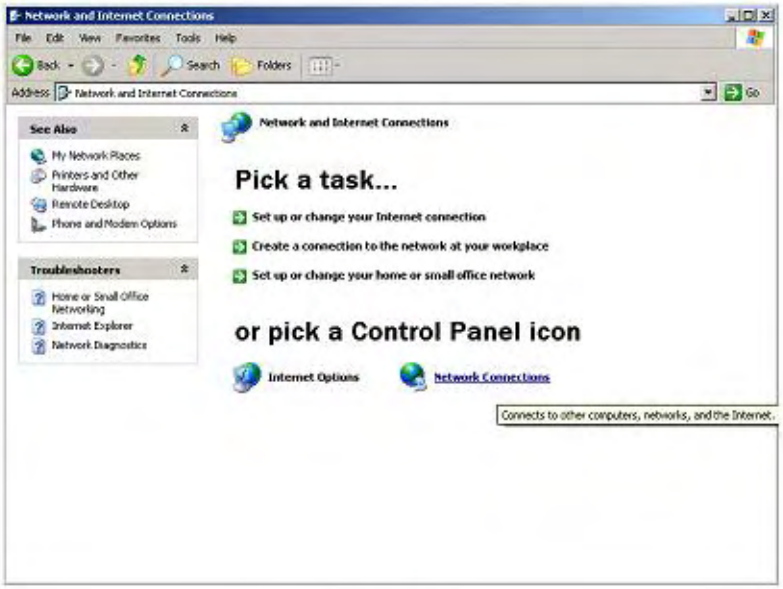

Figure 10

Step 4: Highlight the icon Local Area Connection, right click your mouse, Click Properties

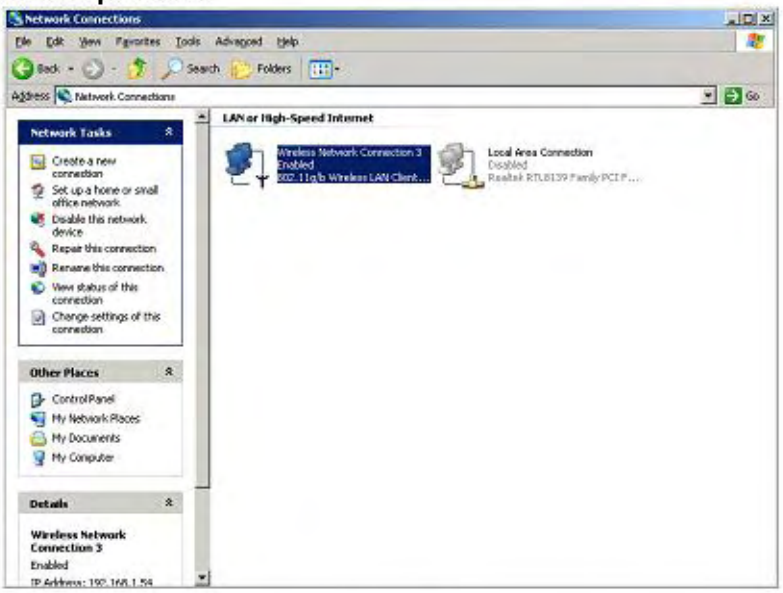

Figure 11

Step 5: Highlight Internet Protocol (TCP/IP), then press Properties button

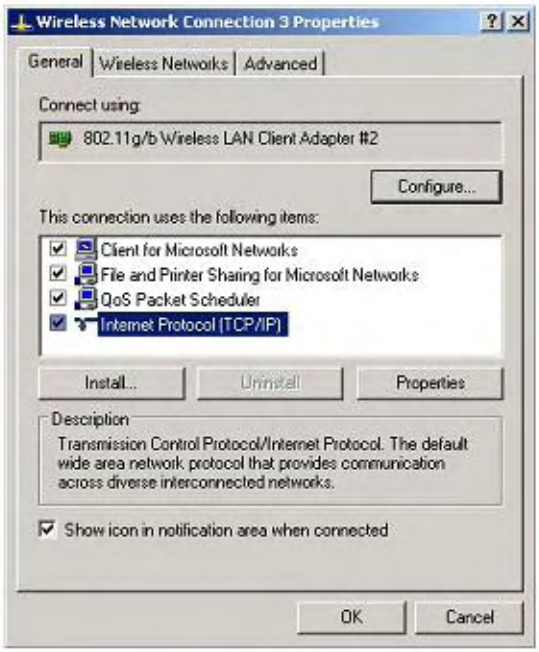

Figure 12

Step 6: Choose Obtain an IP address automatically and Obtain DNS Server address automatically, and then press OK to close the Internet Protocol (TCP/IP) Properties window

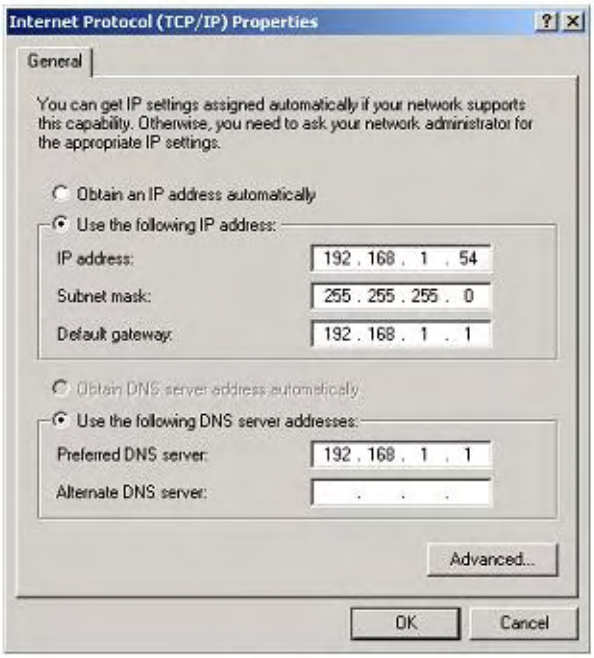

Figure 13

Step 7: Press OK to close the Local Area Connection Properties window

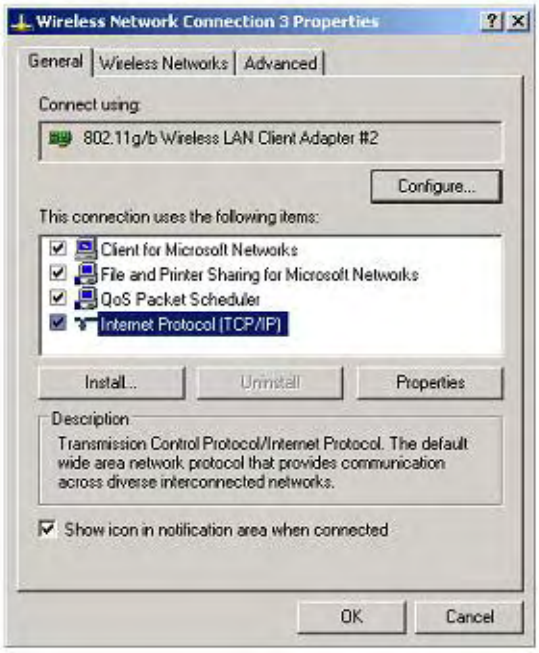

Figure 14

5.2 Additional Settings for Wireless Client

If you chose to access the router via a wireless client, also verify the following:
Step 1: Make sure your PC is equipped with 802.11g or 802.11b wireless adapter and has appropriate WLAN card driver/utility and TCP/IP installed.
Step 2: Set the wireless adapter to use appropriate TCP/IP settings as described in previous section.
Step 3: Launch the wireless adapter's provided utility and verify that your wireless client is configured with these settings:

- Operation Mode: Infrastructure
- SSID: default
- Authentication: Disabled
- Encryption: Off
- Radio Band: 802.11B/G

If you only finished the wireless settings and didn't configure the wireless adapter's TCP/IP settings, even your link status indicates a successful connection with the AP. This connection applies to the "physical" network layer only. Your wireless adapter cannot communicate with the AP. Make sure to set the TCP/IP properties as described in this previous section.

5.3 Checking PC's IP and Connection with the Router

After configuring the TCP/IP protocol, use the ping command to verify if the computer can communicate with the Router. To execute the ping command, open the DOS window and PING the IP address of the Wireless Broadband Router at the DOS prompt:

- For Windows 98/Me: Start -> Run. Type **"command"** and click OK.
- For Windows 2000/XP: Start -> Run. Type **"cmd"** and click OK.

At the DOS prompt, type the following command:
If the Command window returns something similar to the following:

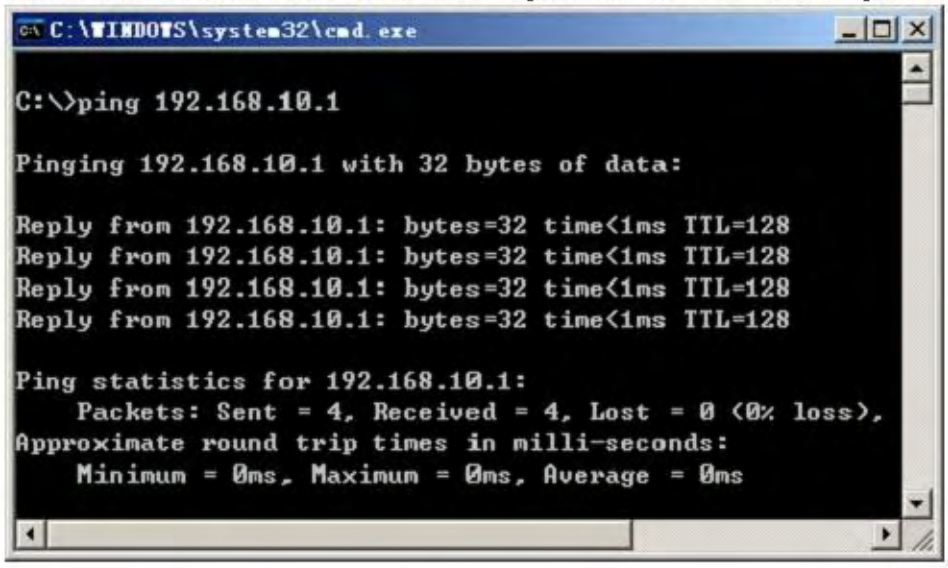

Figure 15

Then the connection between the router and your computer has been successfully established.
If the computer fails to connect to the router, the Command window will return the following:

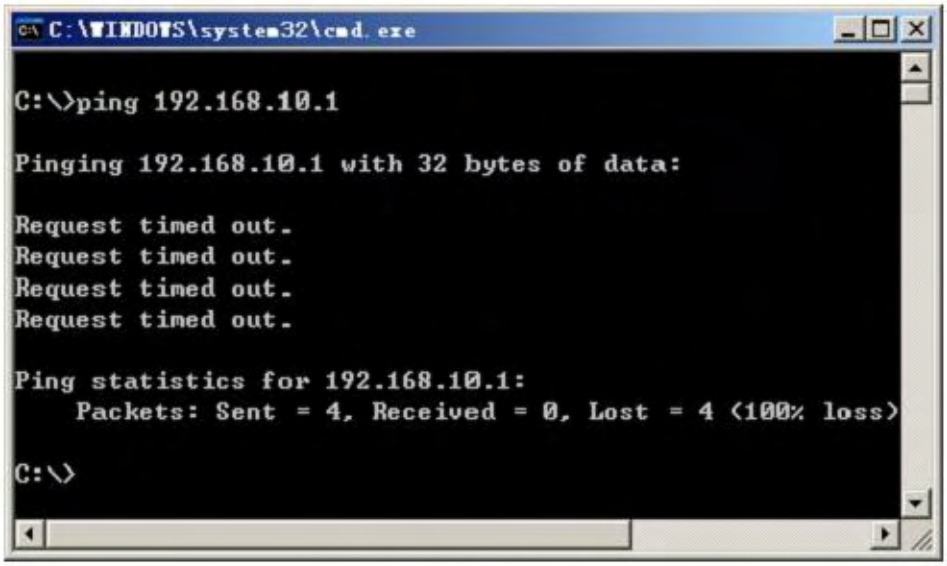

Figure 16

Verify your computer's network settings are correct and check the cable connection between the router and the computer.

Chapter 6 Web Configuration

6.1 Logging In

In order to make the whole network operate successfully, it is necessary to configure the Wireless Router through your computer has a WEB browser installed. Please follow up the steps listed below.
Step 1: Start your Web browser and type **http://192.168.10.1** in the Address field. This address is the default private IP of your router.

Figure 17

If the router's LAN port has been changed with new IP address, enter the new IP address instead.

Step 2: After Pressing Enter, you will be able to see the Wireless Broadband Router's web-based configuration utility. From now on the Wireless Broadband Router acts as a Web server sending HTML pages/forms at your request. You can click the menu options at the left to start the configuration task.

Don't forget to change the Password in configuration's Authentication to ensure the security. When first configuring your router, it is recommended that you have an Ethernet cable connected to the router. Performing the INITIAL configuration using a wireless connection is not secure and is not recommended. After you have finished the initial configuration of the router, your connection will be secure and you can safely use either a wired or wireless connection.

In the home page of the Wireless Router, the left navigation bar shows the main

options to configure the system. In the right navigation screen is the summary of system status for viewing the configurations. You can usually get context sensitive help by clicking on the Help link at the top right of the page.

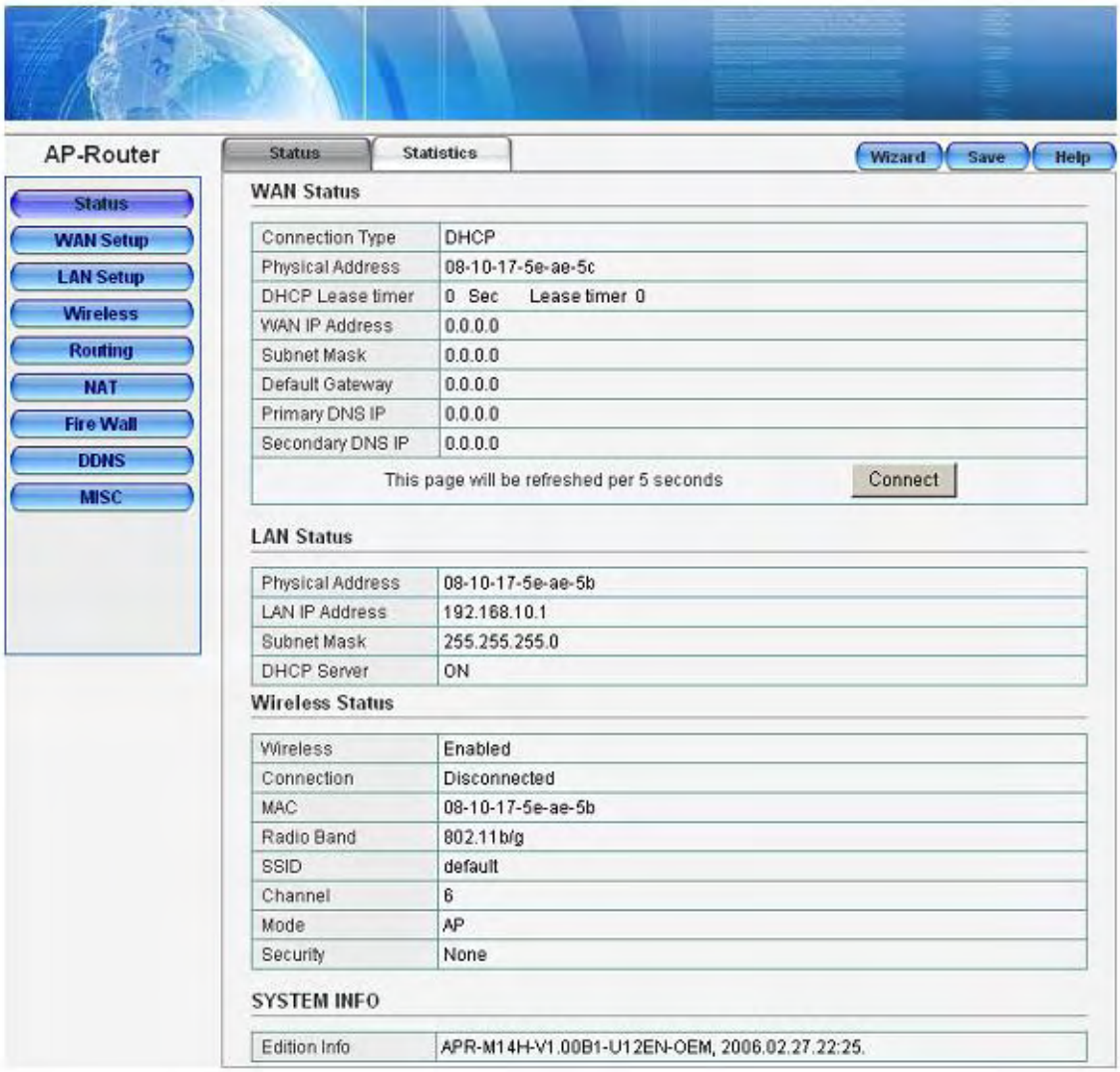

Figure 18

To apply any settings you've altered on any page, click the Save button. Otherwise you change settings would be lost after the Router reboot.

6.2 Quick Setup Wizard

The Quick Setup section is designed to get you using the broadband router as quickly as possible. In the Quick Setup you are required to fill in only the

information necessary to access the Internet.
Step 1: Click on the Wizard in the HOME page, you should see the screen below then click on "Start".

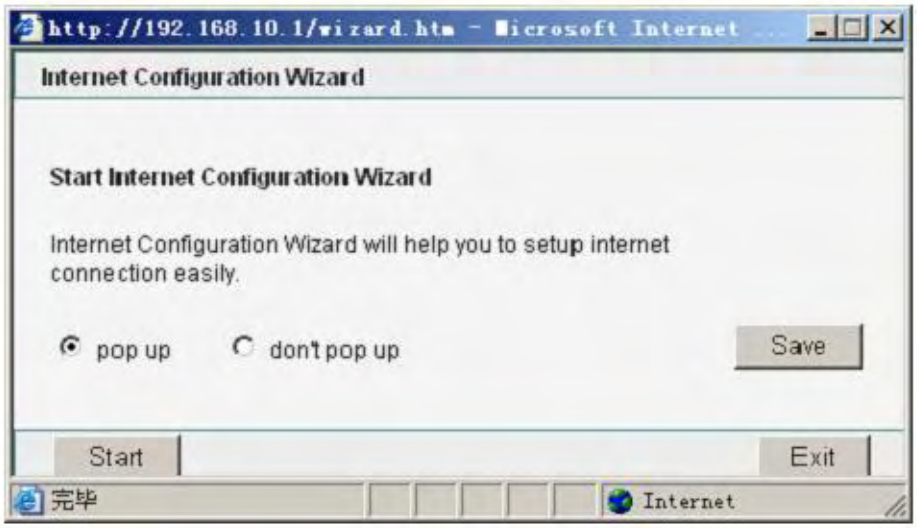

Figure 19

Step 2: Select your Internet connection type and then input the configurations needed to connect to your Internet Service Provider (ISP)

Figure 20

For Dynamic IP Address

- Choose DHCP if your ISP will automatically give you an IP address. And then click on "Next".

For PPPoE

- Select PPPoE if your ISP requires the PPPoE protocol to connect you to the

Internet. Your ISP should provide all the information required in this section.

- Enter the User Name and Password provided by your ISP for the PPPoE connection then click on "Next".

Figure 21

For Static IP

- Select Static IP if your ISP has given you a specific IP address for you to use. Your ISP should provide all the information required in this section.
- Fill the blank input box with the values which are supplied from your ISP And then click on "Next".

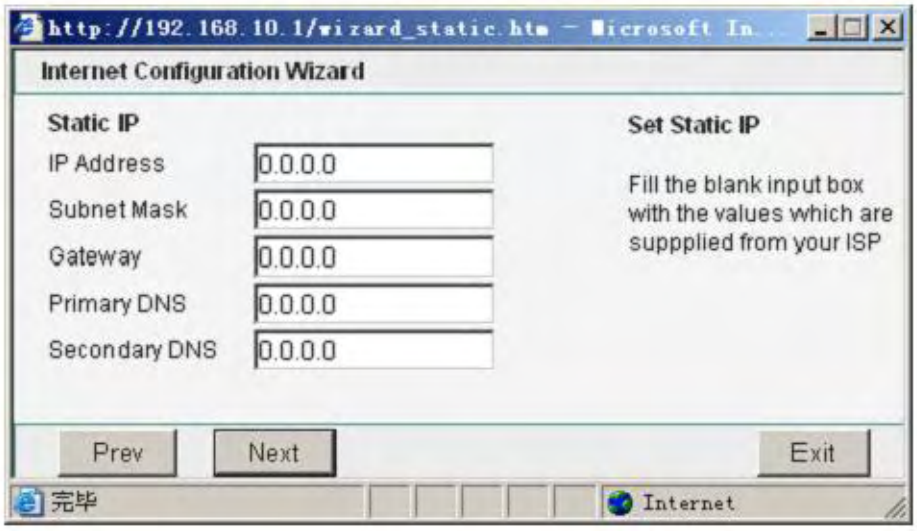

Figure 22

- Click "Apply" to save these settings with the Router. The System will apply

the new settings and start rebooting right away.

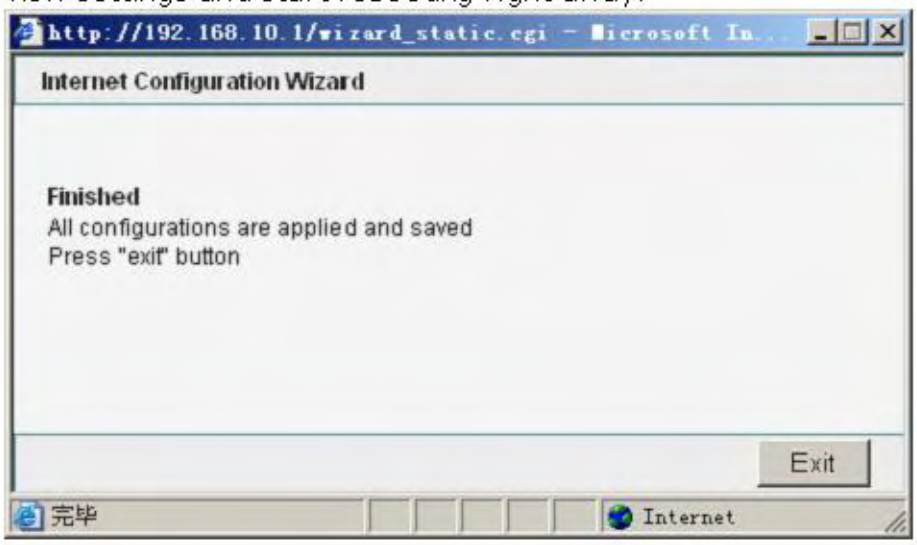

Figure 23

- After reboot, the Wireless Router will enable these settings with the Router.

6.3 Status

6.3.1 System Status

This page shows most of the basic configuration parameters of the Router. It is the first page shown after login.

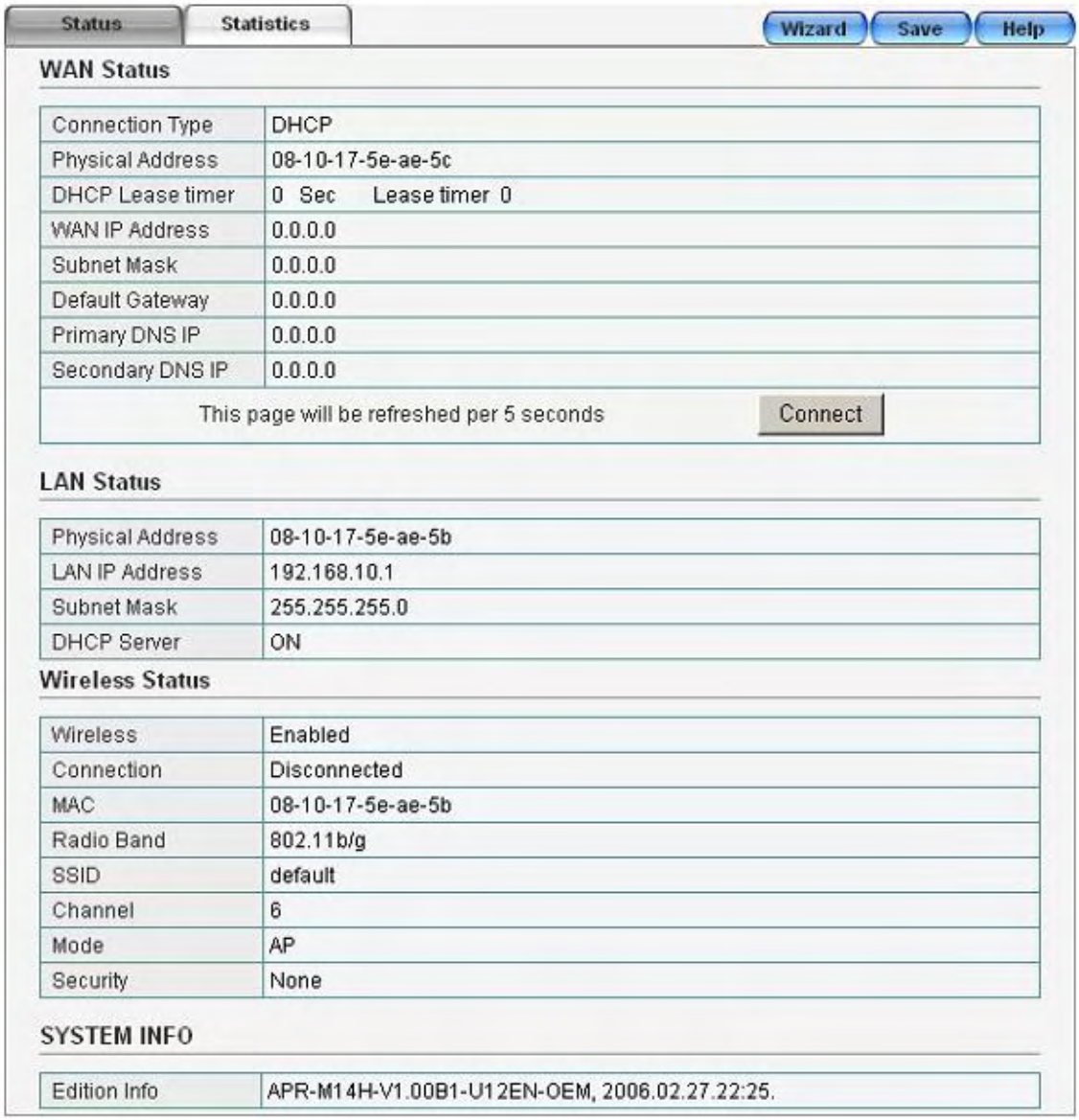

Figure 24

- WAN Status: This section shows the WAN interface parameters of the wireless router. This includes information such as: Connection type (DHCP, PPPoE or Static IP), The MAC address of LAN interface, IP/Subnet Mask, Default Gateway, Primary DNS, Backup DNS.
  PPPoE: In PPPoE mode, if you want to start a connection, click on the "Connect" button to open a PPPoE session.

WAN Status

Connection Type	PPPoE
Physical Address	08-10-17-5e-ae-5c
DHCP Lease timer	N/A
WAN IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
Primary DNS IP	0.0.0.0
Secondary DNS IP	0.0.0.0
This page will be refreshed per 5 seconds	Connect

Figure 25

To terminate the connection, click on the "Disconnect" button.

WAN Status

Connection Type	PPPoE
Physical Address	08-10-17-5e-ae-5c
DHCP Lease timer	N/A
WAN IP Address	222.212.199.236
Subnet Mask	255.255.255.255
Default Gateway	222.212.199.236
Primary DNS IP	61.139.2.69
Secondary DNS IP	202.98.96.68
This page will be refreshed per 5 seconds	Disconnect

Figure 26

DHCP: In DHCP mode, press "Disconnect" button to release IP address and press "Connect" button to renew IP address.

WAN Status

Connection Type	DHCP
Physical Address	08-10-17-5e-ae-5c
DHCP Lease timer	0 Sec Lease timer 0
WAN IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
Primary DNS IP	0.0.0.0
Secondary DNS IP	0.0.0.0
This page will be refreshed per 5 seconds	Connect

Figure 27

- LAN Status: This section shows the LAN interface parameters of the wireless router. This includes information such as: The MAC address of LAN interface, IP/Subnet Mask, DHCP Server (whether the DHCP Server is Enables or disables, and display address pool).

LAN Status

Physical Address	08-10-17-5e-ae-5b
LAN IP Address	192.168.10.1
Subnet Mask	255.255.255.0
DHCP Server	ON

Figure 28

- Wireless Status: This section shows the WLAN interface parameters of the wireless router. This includes information such as: Wireless (whether Wireless interface status is active), Connection (whether have active wireless stations that are connecting to the AP Router, And display number of them), The MAC address of WAN interface, Radio Band (The type of transmission protocol your wireless network uses), SSID, channel number, security.

Wireless Status

Wireless	Enabled
Connection	Disconnected
MAC	08-10-17-5e-ae-5b
Radio Band	802.11b/g
SSID	default
Channel	6
Mode	AP
Security	None

Figure 29

- System Information: This section shows the installed version of the firmware of the Wireless router. And company information.

SYSTEM INFO

Edition Info	APR-M14H-V1.00B1-U12EN-OEM, 2006.02.27.22:25.

Figure 30

6.3.2 Statistics

The statistics tab main contains several of the following items for you to monitor network traffic between interface of types external (WAN) and internal

(LAN and WLAN). And display System Run Time.

System Run Time

System Run Time	0 days 2 hours 8 minutes 33 seconds

Type	Current NAT	Transmit Accumulation Statistic				Rate (KB/s)	
		Received Packets	Received Bytes (K)	Sent Packets	Sent Bytes (K)	Upload	Download
TCP	0	0	0	0	0	0	0
UDP	0	0	0	0	0	0	0
ICMP	0	0	0	0	0	0	0
OTHER	0	0	0	0	0	0	0
TOTAL	0	0	0	0	0	0	0

Refresh

Figure 31

- System Run Time: Display System Run Time.
- Statistics: You can monitor current sent & received packets counters of wireless and Ethernet networks .To see the latest information, click "Refresh" button.

6.4 WAN Setup

Use the WAN Setup screen if you have already configured the Quick Setup Wizard section and you would like to change your Internet connection type. The WAN Settings screen allows to specify the type of WAN port connect you want to establish with your ISP. The WAN Setup offer the following selections for the router's WAN port, DHCP, PPPoE, Static IP. Select the appropriate connection mode for your ISP (Internet Service Provider).

6.4.1 Dynamic IP Address

The default setting for the router, DHCP is most commonly used for cable modem connections. There is no configuration necessary for this setting because the ISP automatically supplies the information. Choose this type while Cable mode is used.