TECOM

WL5041 Router User Manual

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Package Contents

The package you have received should contain the following items:

- **Wireless LAN Router**
- **User's Manual**
- **Quick Installation Guide**

Chapter

1

Installing Your Router

In this chapter, you'll learn how to connect your router.

System Requirements

- One or more PCs (desktop or notebook) with Ethernet interface
- Broadband Internet access
- Ethernet cables
- Wireless interface (if planning to utilize wireless functions)

Installation Instructions

TO CONNECT THE ROUTER HARDWARE:

1. Make sure all equipment is turned off, including the router, your PC(s), and your cable or DSL modem (if applicable).
2. Connect the **WAN port** on the router to your cable modem, DSL modem, Ethernet Server, or hub.
3. Connect one or more client PCs to the **LAN port(s)**.
4. Connect the power adapter (5VDC, 1.2A) to the **power jack** on the router. Then, plug the power cable into an outlet.
5. Turn on your PC(s).

Chapter

2

Preparing Your Network

In this chapter, you'll learn what to do before configuring your router.

Before you can configure your router, you need to set up all the computers on your network for TCP/IP networking. You also need to know certain information from your ISP.

Configuring Windows for IP Networking

You need to configure each computer in your network for TCP/IP networking. If you plan to use the DHCP feature (recommended), you should configure each computer to receive an IP address automatically. See the procedure below for instructions.

If you don't plan to use DHCP, you'll need to manually assign an IP address to each computer. Refer to your Windows documentation for instructions on how to do this.

TO CONFIGURE WINDOWS TO RECEIVE DYNAMIC IP ADRESSES:

1. Click **Start**, then choose **Settings** -> **Network and Dial-up Connections** -> [**name of your ISP connection**].

   A Status dialog box will appear:

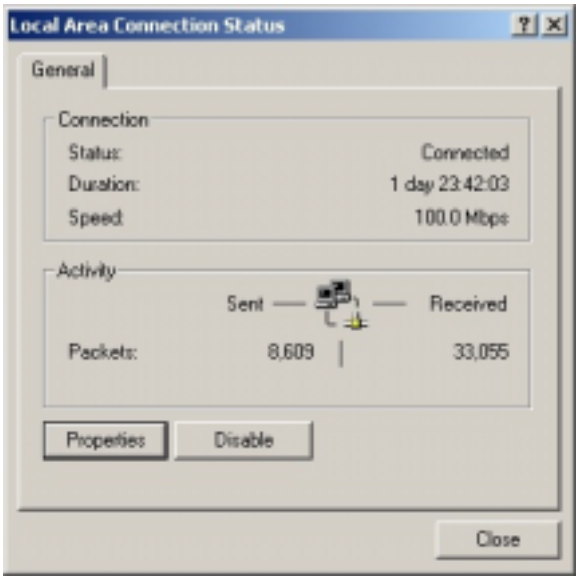

Figure 1. ISP Connection Status Dialog Box

2. Click **Properties**.

   A Properties dialog box will appear:

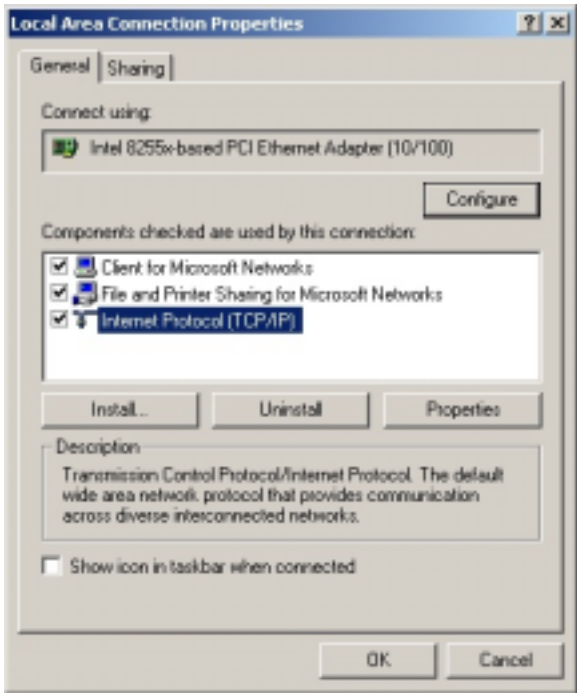

Figure 2. ISP Connection Properties Dialog Box

3. Click **Internet Protocol (TCP/IP)**, then click **Properties**.

A TCP/IP Properties dialog box will appear:

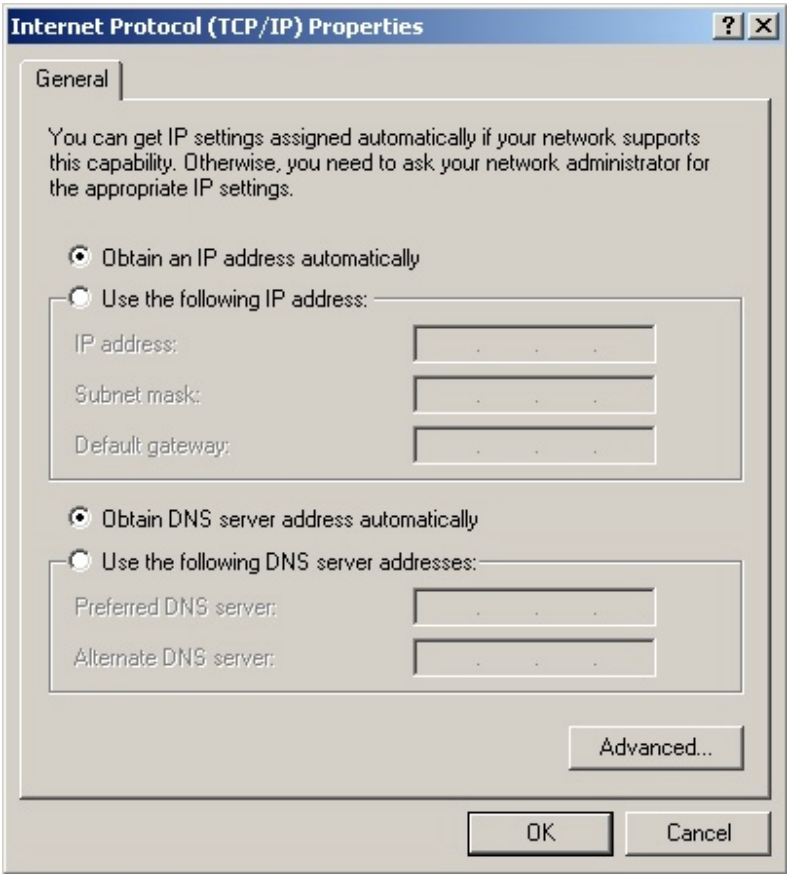

Figure 3. TCP/IP Properties Dialog Box

4. Click **Obtain an IP address automatically** and **Obtain DNS server address automatically**.

5. Click **OK**. You may need to restart your computer.

Note

This procedure applies to Windows 2000 operating systems only. For Windows 95/98/ME, Windows NT, or Windows XP, consult your Windows documentation.

Collecting ISP Information

You will need to find out some information from your ISP before you can configure your router, such as:

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

Call your ISP if you're not sure of the answers to these questions.

Chapter

3

Basic Functions

Basic administrative functions include Setup.

The WL5040 Router comes with a web-based tool that you can use to set up and customize the router settings. You can access this tool from any computer on your network.

> Note
>
> For best results, use Microsoft Internet Explorer version 5.0 or later.

TO OPEN THE WEB-BASED ADMIN TOOL:

1. Open a browser on your PC.
2. Type http://192.168.62.1 in the **Address** field:

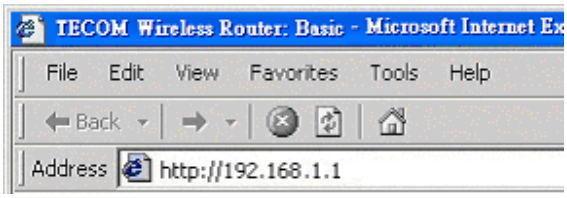

Figure 4. Web Address for Admin Tool

A logon dialog box will appear:

Figure 5. Username/Password Dialog Box

3. Let **User Name** field (empty). Then, type a **Password** and click **OK**. The default password is **admin**.

   The WL5040 Router Admin Tool will appear.

Note

The web-based Admin Tool will log you out after a certain period of idle time. If this happens, you will need to re-enter your username and password.

Basic

The Basic screen allows you to configure the basic operation of the router.

Although most users will be able to accept the default settings, every Internet Service Provider (ISP) is different. Check with your ISP if you're not sure which settings they require.

The Basic screen is shown in the figure below.

Figure 6. Basic Screen

Note

The graphics shown in this manual may differ slightly from your router's screens. The images that appear here are provided as examples only.

TO CONFIGURE SETUP PARAMETERS:

1. **LAN MAC Address:** Shows the MAC Address (also known as the Ethernet address) of the LAN interface.

2. Review the **LAN IP Address** information and change if necessary.

   These two fields show the **Device IP Address** and **Subnet Mask** as seen by others on your Local Area Network (LAN). Most users will not need to change these values (default IP is 192.168.1.1, subnet mask is 255.255.255.0) .

   Note

   If you change the LAN IP Address with the DHCP server running, you'll need to restart your client machines. If you change the LAN IP Address without the DHCP server running, you'll need to manually reconfigure your clients' IP addresses.

3. **LAN DHCP Server:** Enable DHCP functionality on LAN.

Note

If you don't enable DHCP on your router, you'll need to manually configure an IP address for each computer on your network.

4. Setup the **LAN DHCP Starting IP Address** and **Ending IP Address**.

I. Make sure there is not already a DHCP server running on your network.

II. Make sure that each computer on your network is configured to receive an IP address automatically.

III. On the DHCP screen, click **Enable**.

IV. Type the **LAN DHCP Starting IP Address**. The address you specify will be the first IP address that can be assigned to a computer on the network.

V. Type the **LAN DHCP Ending IP Address**. The address you specify will be the last IP address that can be assigned.

Example

If you choose 192.168.1.51 as the starting address and 192.168.1.100 as the ending address, the DHCP server will assign addresses to network clients that are between 192.168.1.51 and 192.168.1.100.

5.**LAN Spanning Tree Protocol:** Enables the use of the Ethernet 802.1d Spanning Tree Protocol to eliminate bridging loops across the LAN interfaces**WAN Setting:**

The second part of the Basic screen is the configuration of WAN. The figure is as the following.

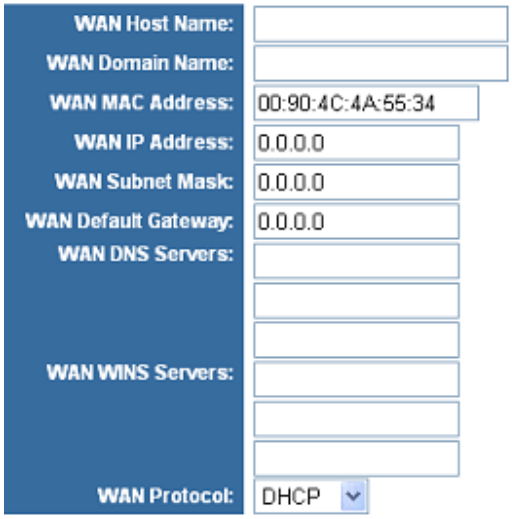

Figure 7. Basic Screen (2)

1. **WAN Host Name:** Some ISPs require that a host name be provided when requesting an IP address through DHCP Server.

2. **WAN Domain Name:** Sets the domain name to be provided to LAN clients who request an IP address through DHCP Server.

3. **WAN MAC Address:** Some ISPs need that a specific MAC address be used. Also known as MAC address cloning this feature allows you to set the MAC address of the WAN interface.

4. **WAN IP Address:** Sets the IP address of the WAN interface.

5. **WAN Subnet Mask:** Sets the IP mask of the WAN interface.

6. **WAN Default Gateway:** Sets the IP address of the default gateway on the WAN.

7. **WAN DNS Servers:** Sets the IP address of the DNS Servers to use for resolving host names.

8. **WAN WINS Servers:** Sets the IP address of the DNS Servers to use for resolving NetBIOS names.

9. **WAN Protocol:** Sets the method to use to obtain an IP address for the WAN interface.

PPPoE and Routing Setting:

PPPoE (Point-to-Point Protocol over Ethernet) is a protocol used by many ADSL Internet Service Providers. Roaring Penguin has a free client for Linux, NetBSD and Solaris systems to connect to PPPoE service providers. The setting screen is shown as the figure below.

Figure 8. Basic Screen (3)

1. **PPPoE Username:** Sets the username to use when authenticating with a PPPoE server.

2. **PPPoE Password:** Sets the password to use when authenticating with a PPPoE server.

3. **PPPoE Keep Alive:** Sets whether the PPPoE link should be automatically restored if it is lost. This setting has no effect if **PPPoE Connect on Demand** is **Enable**.

4. **PPPoE Connect on Demand:** Sets whether the PPPoE link should be automatically disconnected if no traffic has been observed for the period specified by **PPPoE Max Idle Time**.

5. **PPPoE Max Idle Time:** Sets the number of seconds to wait before disconnecting the PPPoE link if **PPPoE Connect on Demand** is **Enable**.

6. **PPPoE MRU:** Sets the maximum number of bytes that the PPPoE interface will receive in a single Ethernet frame.**PPPoE MTU:** Sets the maximum number of bytes that the PPPoE interface will transmit in a single Ethernet frame. Make sure the value is **1400** or smaller than **1400. Router Username:** Sets the username for access to these

configuration pages. Leave this field and **Router Password** blank to disable access control. **Router Password:** Sets the password for access to these configuration pages. Leave this field and **Router Username** blank to disable access control.**Router WAN Port:** Sets the WAN port to use the remote access to these configuration pages. Leave this field blank to disable remote access.**Router Mode: Router Mode** is default. If you select **Access Point Mode** that is disabling **LAN DHCP Server**, **LAN Spanning Tree Protocol**, and **WAN Protocol**. **Firewall:** Sets whether the firewall should be disabled. Connections form the WAN are allowed if the **Firewall** is disabled.

> **Note**
>
> If your ISP has provided the DHCP functionality, you should select the Router Mode. The capability of Access Point Mode is similar to the single Hub, and doesn't support the DHCP function.

The other relative setting:

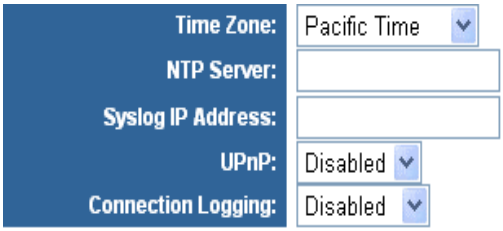

Figure 9. Basic Screen (4)

1. **Time Zone:** Sets the **Time Zone** of this locale.
2. **NTP Server:** Sets the IP address of the **NTP Server** to use for time synchronization.
3. **Syslog IP Address:** System log message will be sent to this IP address.
4. **UPnP :** Sets whether UniversalPlug and Play (UPnP) is enabled.
5. **Connection Logging:** Sets which connections through the router should be logged. Selecting Denied enables logging of denied connections. Selecting Accepted enables logging of accepted connections. Select Both enables logging of both denied and accepted connections.

Status

The Status screen is a read-only display that gives you information about your router. The data displayed may change depending on your current configuration.

The Status screen is shown in the figure below.

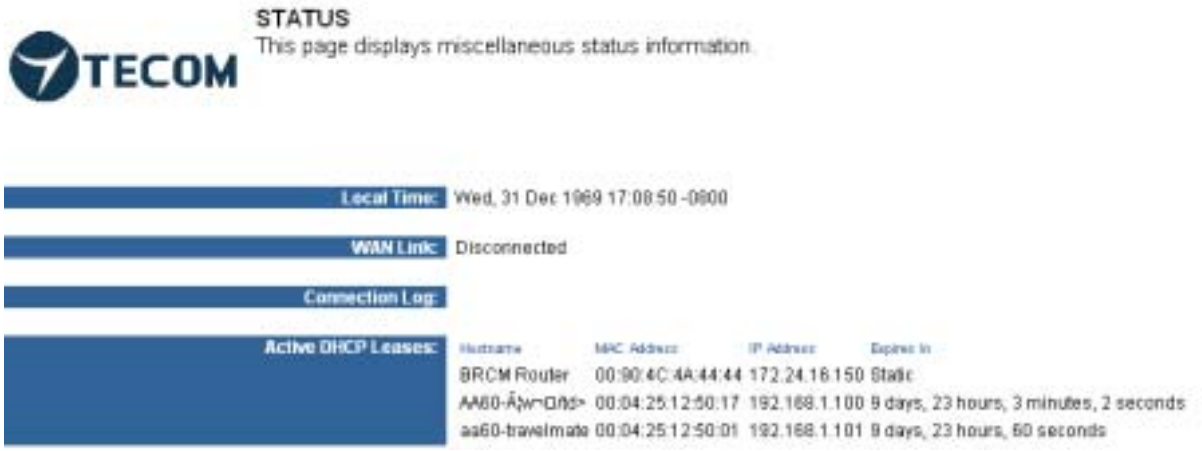

Figure 10. Status Screen

The displayed data may include:

- **Local Time:** Shows the local time as kept by the router.
- **WAN Link:**Shows the state of the WAN link.
- **Connection Log:** Shows a log of recent connection attempts.
- **Active DHCP Leases:** Active DHCP leases since last reboot.

Filters

If no filters are enabled, all traffic will be blocked.

Use the Filters screen to create and apply filters that can selectively allow traffic to pass in and out of your network. Your router comes with several filters predefined for you.

> Warning
>
> Overwriting the factory default filters may result in your network clients not being able to access the internet. When you define new filters, we recommend that you choose an empty row.

The Filters screen is shown in the figure below.

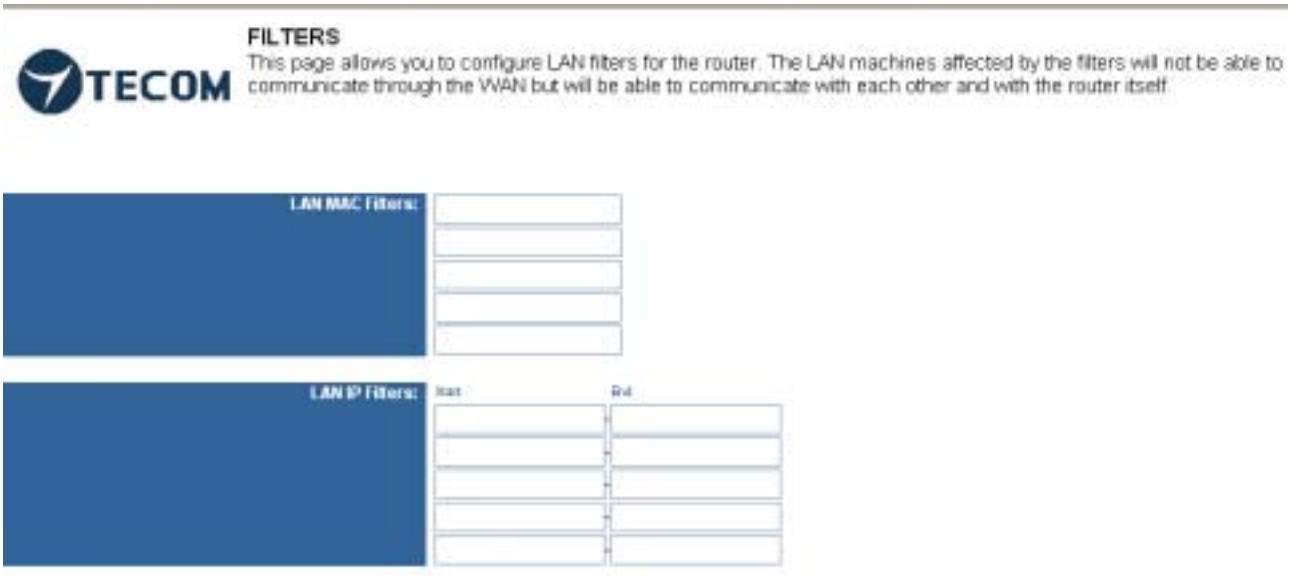

Figure 11. Filter Screen (1)

1. **LAN MAC Filters:** Filter packets from LAN machines with the specified MAC addresses.

2. **LAN IP Filters:** Filter packets from LAN machines with IP addresses in the specified ranges.

3. **LAN TCP Port Filters:** Filter packets destined to TCP ports in the specified ranges from LAN machines with the specified IP addresses.

4. **LAN UDP Port Filters:** Filter packets destined to UDP ports in the specified ranges from LAN machines with the specified IP addresses.

Figure 12. Filter Screen (2)

Routing

Routing is the act of moving information across an internetwork from a source to a destination. Along the way, at least one intermediate node typically is encountered. Routing is often contrasted with bridging, which might seem to accomplish precisely the same thing to the casual observer. The primary difference between the two is that bridging occurs at Layer 2 (the link layer) of the OSI reference model, whereas routing occurs at Layer 3 (the network layer). This distinction provides routing and bridging with different information to use in the process of moving information from source to destination, so the two functions accomplish their tasks in different ways. The Routing screen is shown in the figure below.

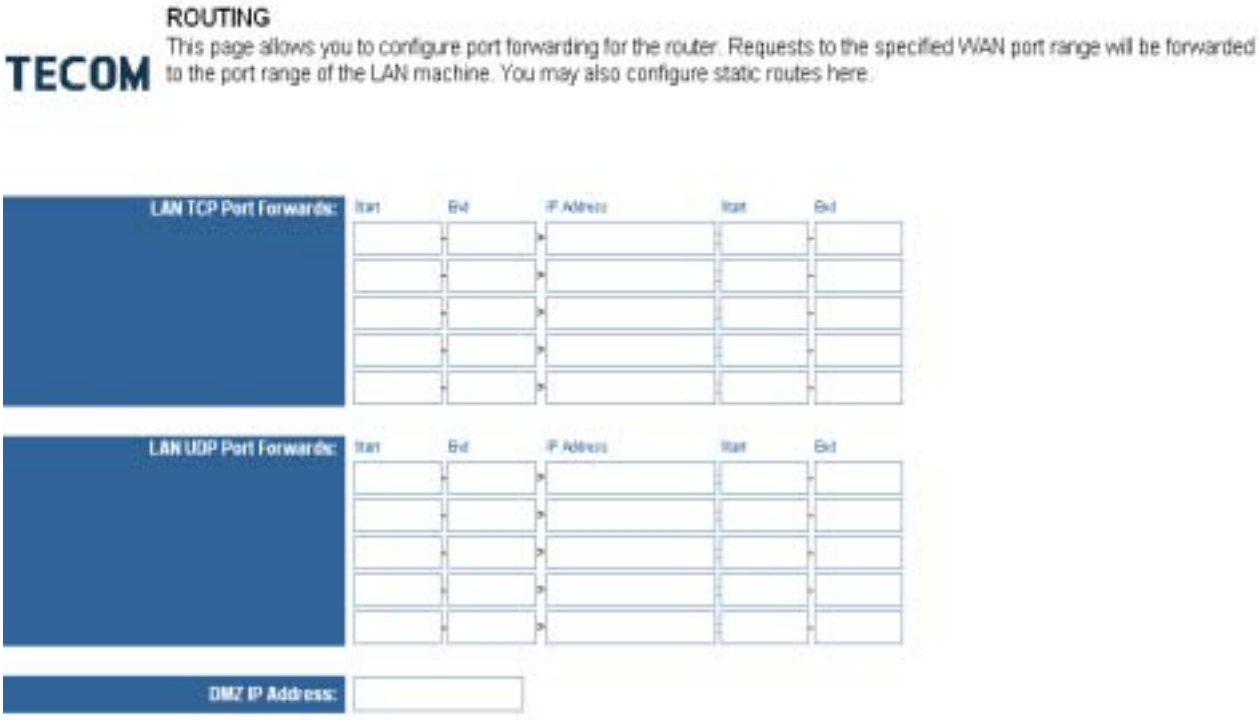

Figure 13. Routing Screen (1)

1. **LAN TCP Port Forwards:** Forward packets destined to TCP ports in the first range to the LAN machine with the specified IP address. You may optionally specify a second range (the ranges may not overlap and must be the same size).

2. **LAN UDP Forwards:** Forward packets destined to UDP ports in the first range to the LAN machine with the specified IP address. You may optionally specify a second range (the ranges may not overlap and must be the same size).

3. **DMZ IP Address:** Forward all other incoming WAN packets to the LAN machine with the specified IP address.

4. **Static Routes:** Set up static routes to the given networks.

Figure 14. Routing Screen (2)

Wireless

Use the Wireless screen to configure your router for wireless access.

The Wireless screen is shown in the figure below.

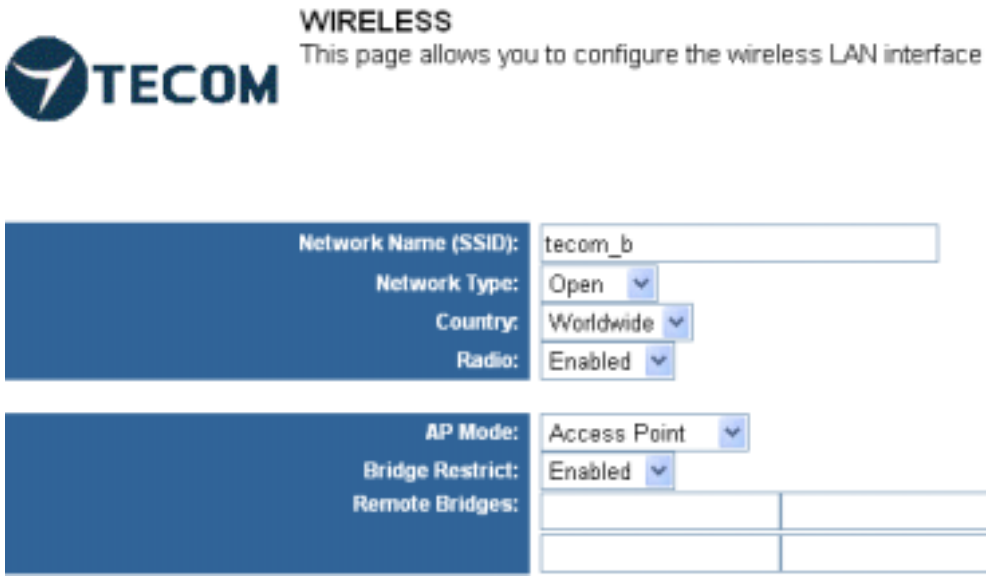

Figure 15. Wireless Screen (1)

1. **Network Name (SSID):** Sets the Network Name (also known as SSID) of this network.
2. **Network Type:** Selecting Closed hides the network from active scans. Selecting Open reveals the network to active scans.
3. **Country:** Restricts the channel set based on country requirements.
4. **Radio:** Enables or disables the wireless radio.
5. **AP Mode:** Selecting Wireless Bridge disables access point functionality. Only wireless bridge (also known as Wireless Distribution System or WDS) functionality will be available. Selecting

Access Point enables access point functionality. Wireless bridge functionality will still be available and wireless stations will be able to associate to the AP.

6. **Bridge Restrict:** Selecting Disabled disables wireless bridge restriction. Any wireless bridge (including the ones listed in Remote Bridges) will be granted access. Selecting Enabled enables wireless bridge restriction. Only those bridges listed in Remote Bridges will be granted access.

7. **Remote Bridges:** Enter the wireless MAC addresses of any remote bridges that should be part of the wireless distribution system (WDS)

WEP: WEP, short for Wired Equivalent Privacy, is a protocol for wireless LANs or local area networks. This WEP is defined in the 802.11 Standard. WEP is designed so security levels are maintained at the same level as the wired LAN. WEP's aim is to provide security by encrypting data over radio waves. WEP protects data as it's transmitted from one end point to another. WEP is used at the two lowest layers, the data link and physical layer. WEP is designed to make up for the inherent security in wireless transmission as compared to wired transmission. The WEP setting screen is as the following.

Figure 16. Wireless Screen (2)

1. **Data Encryption (WEP):** Selecting Off disables WEP data encryption. Selecting On or Restricted enables WEP data encryption and requires that a valid network key be set and selected. In Restricted mode, unencrypted packets are dropped.

2. **Network Authentication:** Sets the authentication method. Shared Key requires that a valid network key be set and selected.

3. **Network Key 1-4:** Enter 5 ASCII characters or 10 hexadecimal digits for a 64-bit key. Enter 13 ASCII characters or 26 hexadecimal digits for a 128-bit key.

4. **Current Network Key:** Selects which network key is used for encrypting outbound data and/or authenticating clients.

Note

Although 128 Bit encryption uses a more secure encryption algorithm, it can slow down your network's data transmission rates.

MAC Restrict Mode and other advanced setting:

The configure screen as below.

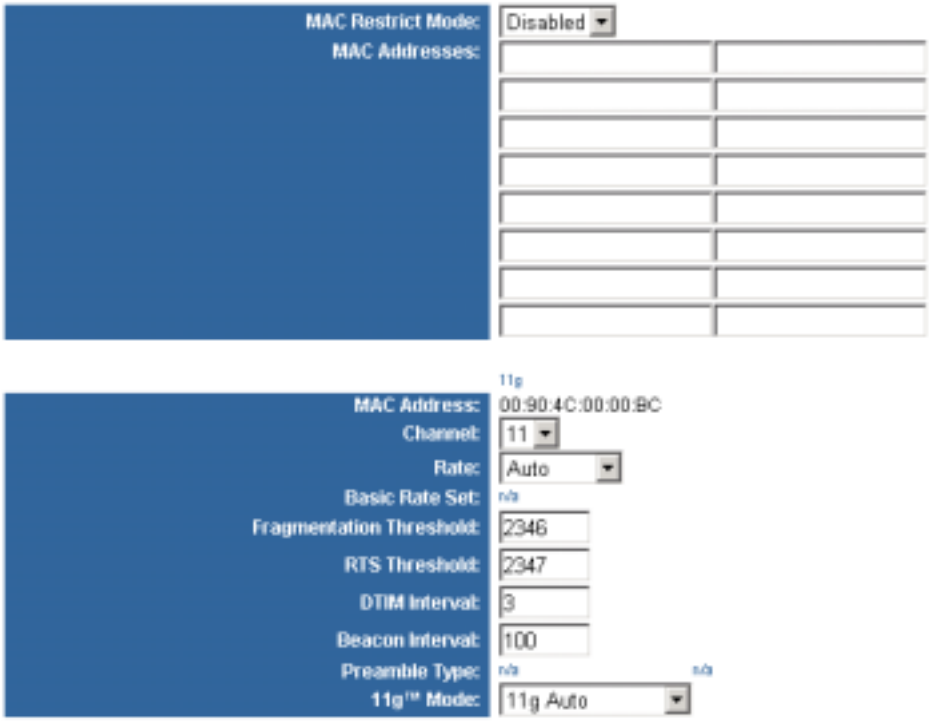

Figure 17. Wireless Screen (3)

1. **MAC Restrict Mode:** Selects whether clients with the specified MAC address are allowed or denied wireless access.

2. **MAC Addresses:** Allows or denies wireless access to clients with the specified MAC addresses. Leave all entries blank to allow access to any client.

3. **802.11g ->MAC Address:** Shows the MAC address (also known as Ethernet address) of the wireless interface.

4. **Channel:** Selects a particular channel on which to operate.

5. **Rate:** Forces the transmission rate for the AP to a particular speed.

6. **Basic Rate Set:** Selects the basic rates that wireless clients must support. Selects the basic rates that wireless clients must support.

7. **Fragmentation Threshold:** Sets the fragmentation threshold.

8. **RTS Threshold:** Sets the RTS threshold.

9. **DTIM Interval:** Sets the wakeup interval for clients in power-save mode.

10. **Beacon Interval:** Sets the beacon interval for the AP.

11. **Preamble Type:** Sets whether short or long preambles are used. Short preambles improve throughput but all clients in the wireless network must support this capability if selected.

12. **11g Mode:** Set the mode to 11g Auto for the widest compatibility. Set the mode to 11g Performance for the fastest performance among 11g certified equipment. Set the mode to 11g LRS if you are experiencing difficulty with legacy 802.11b equipment.

Firmware

You can use this page to download the firmware. As the following.

Figure 18. Firmware Screen

1. **Firmware Version:** Displays the current version of Firmware.
2. **New Firmware:** Selects the new firmware to upload to the router. The following steps will tell you how to upgrade.

    A. Download a firmware image file from the router website and save it to your hard drive. Make sure to write down the file location.

    B. Type the filename and path location directly into the **New Firmware** field, or click **Browse…** to launch the **Choose file** dialog box:

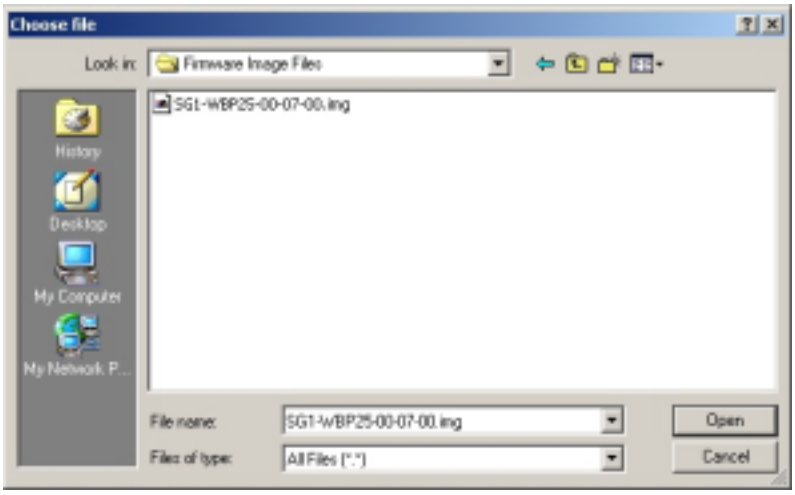

Figure 19. Choose File Dialog Box for Firmware Upgrade

C. Locate the firmware you downloaded and click **Open**.

Click **Upgrade**. The firmware of the device will be upgraded.

> Warning
>
> Upgrading the firmware takes serveral seconds. Don't power down the router while the firmware upgrade operation is in progress.

Technical Support

If you are still experiencing problems after reading Product User's Guide, you may either contact our technical support at: support@tecom.com.tw. OR, simply click our URL address www.tecomproduct.com to go to our company website and check the latest version and other information about the product and/or software.

Notice: The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC INFORMATION

The Federal Communication Commission Radio Frequency Interference Statement includes the following paragraph:

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

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

The user should not modify or change this equipment without written approval form TECOM CO., LTD .Modification could void authority to use this equipment.

RF Exposure Statement:
The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter