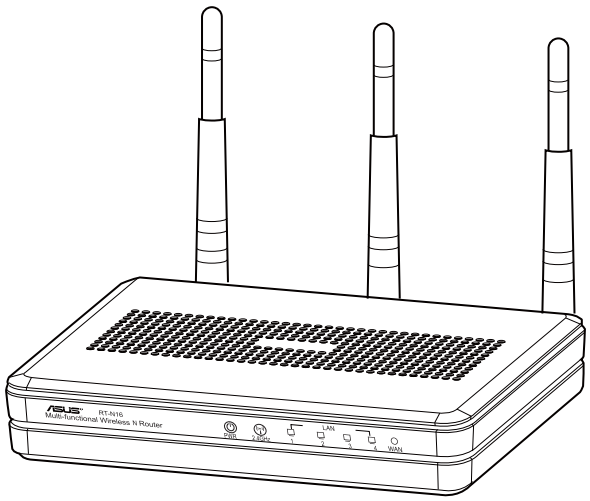
RT-N16
Multi-functional Gigabit Wireless N Router



User Manual

E4484
First Edition V1
April 2009

Table of contents

Table of contents

About this guide

This user guide contains information that you need to install and configure the ASUS Wireless Router.

How this guide is organized

This guide contains the following parts:

- **Chapter 1: Knowing your wireless router**

  This chapter provides information on the package contents, system requirements, hardware features, and LED indicators of the ASUS Wireless Router.

- **Chapter 2: Setting up the hardware**
  This chapter provides instructions on setting up, accessing, and configuring the ASUS Wireless Router.

- **Chapter 3: Configuring the network clients**
  This chapter provides instructions on setting up the clients in your network to work with your ASUS Wireless Router.

- **Chapter 4: Configuring via the web GUI**
  This chapter provides instructions on configuring the ASUS Wireless Router using its web graphics user interface (web GUI).

- **Chapter 5: Installing the utilities**
  This chapter provides information on the utilities that are available from the support CD.

- **Chapter 6: Troubleshooting**
  This chapter provides you with a troubleshooting guide for solving common problems you may encounter when using the ASUS Wireless Router.

- **Appendices**
  This chapter provides you with the regulatory Notices and Safety Statements.

Conventions used in this guide

WARNING: Information to prevent injury to yourself when trying to complete a task.

CAUTION: Information to prevent damage to the components when trying to complete a task.

IMPORTANT: Instructions that you MUST follow to complete a task.

NOTE: Tips and additional information to aid in completing a task.

1 Knowing your wireless router

Package contents

Check the following items in your ASUS Wireless Router package.

- ☑ RT-N16 Wireless Router
- ☑ Power adapter
- ☑ Support CD (manual, utilities)
- ☑ RJ45 cable
- ☑ Quick Start Guide

Note: If any of the items is damaged or missing, contact your retailer.

System requirements

Before installing the ASUS Wireless Router, ensure that your system/network meets the following requirements:

- An Ethernet RJ-45 port (10Base-T/100Base-TX/1000Base-TX)
- At least one IEEE 802.11b/g/n device with wireless capability
- An installed TCP/IP and Internet browser

Before you proceed

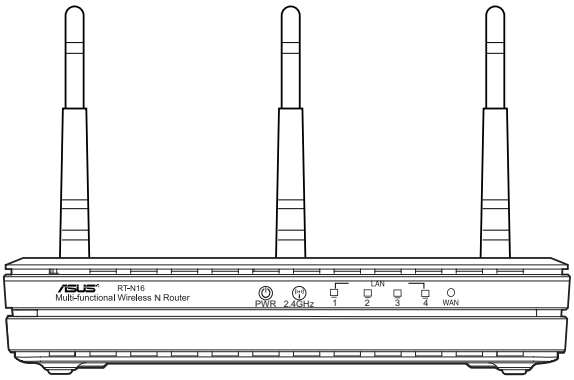
Take note of the following guidelines before installing the ASUS Wireless Router:

- The length of the Ethernet cable that connects the device to the network (hub, ADSL/cable modem, router, wall patch) must not exceed 100 meters.
- Place the device on a flat, stable surface as far from the ground as possible.
- Keep the device clear from metal obstructions and away from direct sunlight.
- Keep the device away from transformers, heavy-duty motors, fluorescent lights, microwave ovens, refrigerators, and other industrial equipment to prevent signal loss.
- Install the device in a central area to provide ideal coverage for all wireless mobile devices.

- Install the device at least 20cms from a person to insure that the product is operated in accordance with the RF Guidelines for Human Exposure adopted by the Federal Communications Commission.

Hardware features

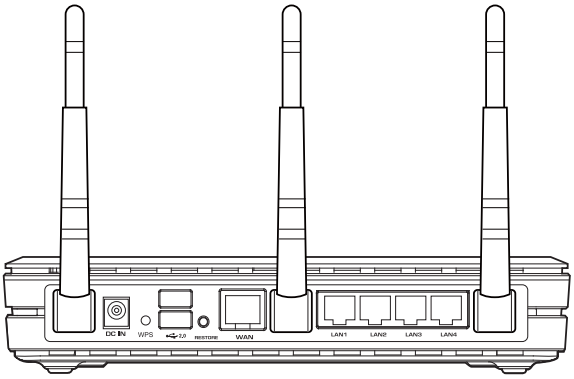
Front panel



Status indicators

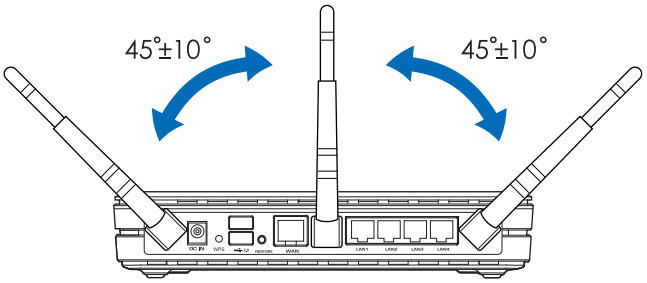
LED	Status	Indication
(Power)	Off	No power
	On	System ready
	Flashing-slow	Rescue mode
	Flashing-quick	WPS processing
(Wireless Network)	Off	No power
	On	Wireless system ready
	Flashing	Transmitting or receiving data (wireless)
LAN 1-4 (Local Area Network)	Off	No power or no physical connection
	On	Has physical connection to an Ethernet network
	Flashing	Transmitting or receiving data (through Ethernet cable)
WAN (Wide Area Network)	Off	No power or no physical connection
	On	Has physical connection to an Ethernet network
	Flashing	Transmitting or receiving data (through Ethernet cable)

Rear panel

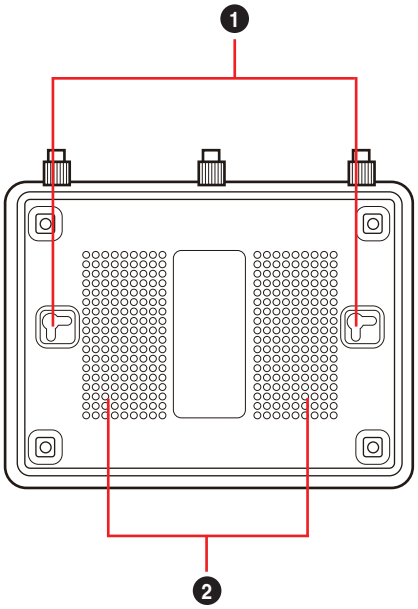


Label	Description
WPS	This button launches the WPS wizard.
RESTORE	This button restores the system to its factory default settings.
WAN	Connect an RJ-45 Ethernet cable to this port to establish WAN connection.
LAN1-LAN4	Connect RJ-45 Ethernet cables to these ports to establish LAN connection.
2.0 (USB 2.0)	Insert USB 2.0 devices such as USB hard disks and USB flash drives (at least 2GB capacity) into these ports.
DC IN	Insert the AC adapter into this port to connect your router to a power source.

To avoid signal interference among the three antennas, we recommend that you orient them as the following illustration shows:



Bottom panel



Item	Description
1	**Mounting hooks** Use the mounting hooks to mount your router on concrete or wooden surfaces using two roundhead screws.
2	**Air vents** These vents provide ventilation to your router.

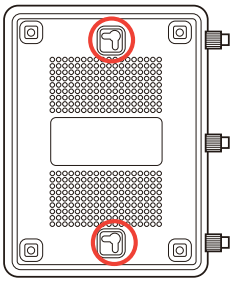
Note: For details on mounting your router on a wall or ceiling, refer to the section **Mounting options** on the next page of this user manual.

Mounting options

Out of the box, the ASUS Wireless Router is designed to sit on a raised flat surface like a file cabinet or book shelf. The unit may also be converted for mounting to a wall or ceiling.

To mount the ASUS Wireless Router:

1. Look on the underside for the two mounting hooks.
2. Mark two upper holes in a flat surface.
3. Tighten two screws until only 1/4" is showing.
4. Latch the hooks of the ASUS Wireless Router onto the screws.



Note: Re-adjust the screws if you cannot latch the ASUS Wireless Router onto the screws or if it is too loose.

2 Setting up the hardware

Setting up the wireless router

The ASUS Wireless Router meets various working scenarios with proper configurations. You may need to change the wireless router's default settings so as to meet the requirements in your wireless environment. It also provides you with WPS, a utility that enables you to easily set up a secure wireless network.

Notes:

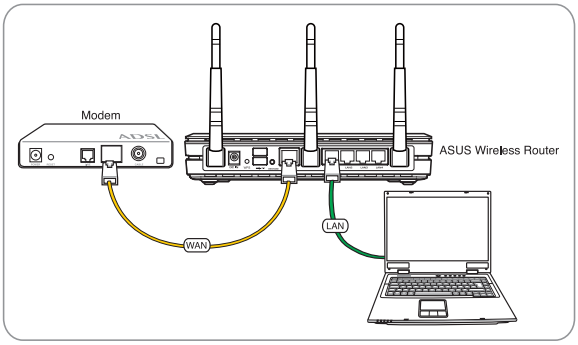
- We recommend that you use wired connection for initial configuration to avoid possible setup problems due to wireless uncertainty.
- For more details on WPS, refer to the section **WPS** in Chapter 5 of this user manual.

Setting up a wired connection

The ASUS Wireless Router is supplied with an Ethernet cable in the package. The wireless router has integrated auto-crossover function, so use either straight-through or crossover cable for wired connection.

To set up the wired connection:

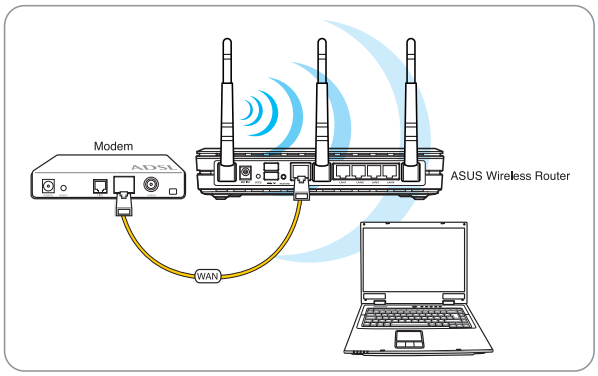
1. Turn on your router and the modem.
2. Using an Ethernet cable, connect the router's WAN port to the modem.
3. Using another Ethernet cable, connect the router's LAN port to your PC's LAN port.



Setting up a wireless connection

To set up a wireless connection:

1. Turn on your router and the modem.
2. Using an Ethernet cable, connect the modem to the router's WAN port.
3. Connect an IEEE 802.11b/g/n compatible WLAN card. Refer to your wireless adapter user manual for wireless connection procedures. By default, the SSID of ASUS Wireless Router is "ASUS" (in upper case), encryption is disabled and open system authentication is used.



Configuring the wireless router

The ASUS Wireless Router includes a web graphics user interface (web GUI) that allows you to configure the wireless router using your web browser on your computer.

Using the web GUI

If your PC connects to the router using a cable, launch your web browser and the login page of the router's web GUI automatically launches.

If your PC connects to the router wirelessly, you have to select the network first.

To select the network:

1. Click **Start** > **Control Panel** > **Network Connections** > **Wireless Network Connection**.

2. Select a network from the **Choose a wireless network** window. Wait for it to connect.

Note: By default, the SSID of wireless router is **ASUS**. Connect to this default SSID.

3. After establishing a wireless connection, launch a web browser.

Notes:

- You may also manually key in the router's default IP address (**192.168.1.1**) to launch the router's web interface.
- For more details on configuring your wireless router using the web GUI, refer to **Chapter 4: Configuring via the web GUI**.

3 Configuring the network clients

Accessing the wireless router

Setting an IP address for wired or wireless client

To access the ASUS Wireless Router, you must have the correct TCP/IP settings on your wired or wireless clients. Ensure that the clients' IP addresses are within the same subnet as the ASUS Wireless Router.

By default, the ASUS Wireless Router integrates the DHCP server function, which automatically assigns IP addresses to the clients in your network.

But in some instances, you may want to manually assign static IP addresses on some of the clients or computers in your network rather than automatically getting IP addresses from your wireless router.

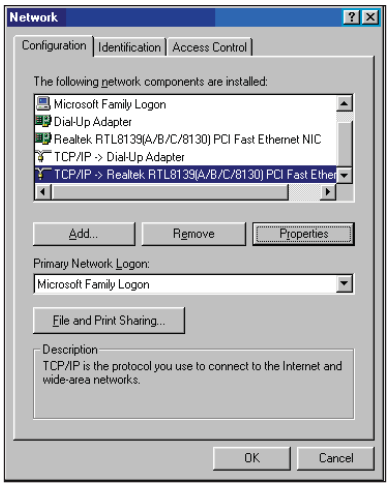
Follow the instructions below that correspond to the operating system installed on your client or computer.

Note: If you want to manually assign an IP address to your client, we recommend that you use the following settings:

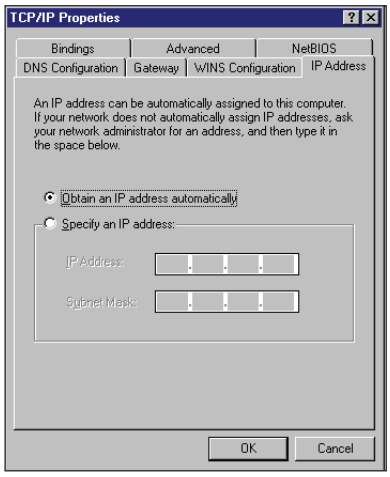
- **IP address**: 192.168.1.xxx (xxx can be any number between 2 and 254. Ensure that the IP address is not used by another device)
- **Subnet Mask**: 255.255.255.0 (same as the ASUS Wireless Router)
- **Gateway**: 192.168.1.1 (IP address of the ASUS Wireless Router)
- **DNS**: 192.168.1.1 (ASUS Wireless Router) or assign a known DNS server in your network

Windows® 9x/ME

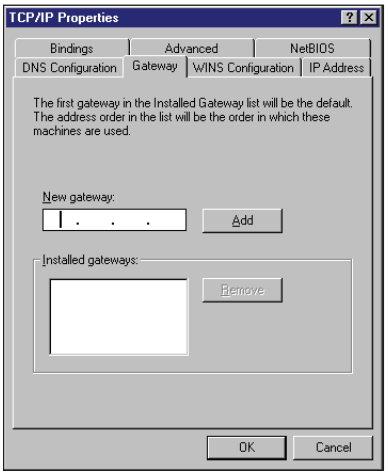
1. Click **Start** > **Control Panel** > **Network** to display the Network setup window.
2. Select **TCP/IP** then click **Properties**.



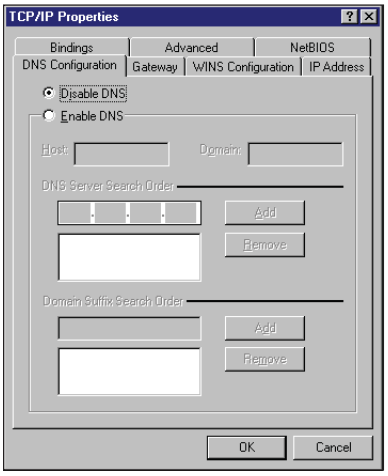
3. If you want your computer to automatically obtain an IP address, click **Obtain an IP address automatically** then click OK. Otherwise, click **Specify an IP address**, then key in the **IP address** and **Subnet Mask**.



4. Select the **Gateway** tab, and key in **New gateway** then click **Add**.

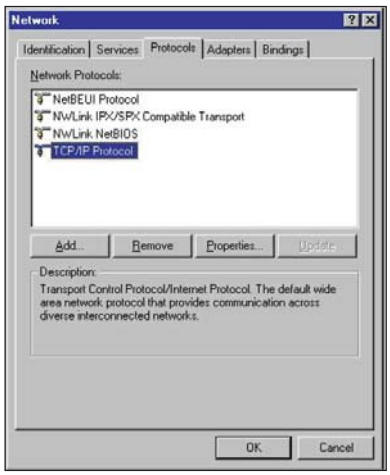


5. Select the **DNS configuration** tab and click **Enable DNS**. Key in **Host**, **Domain**, and **DNS Server Search Order**, then click **Add**.
6. Click **OK**.



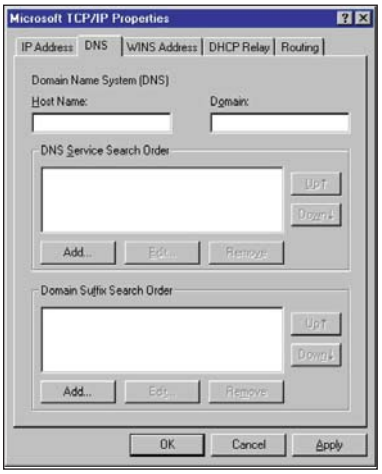
Windows® NT4.0

1. Go to **Control Panel** > **Network** to display the Network setup window then select the **Protocols** tab.
2. Select **TCP/IP Protocol** from the Network Protocols list then click **Properties**.



3. From the IP Address tab of the Microsoft TCP/IP Properties window, you can:
   - Select the type of network adapter installed in your system.
   - Set the router to assign IP address automatically.
   - Manually set up the IP address, subnet mask, and default gateway.

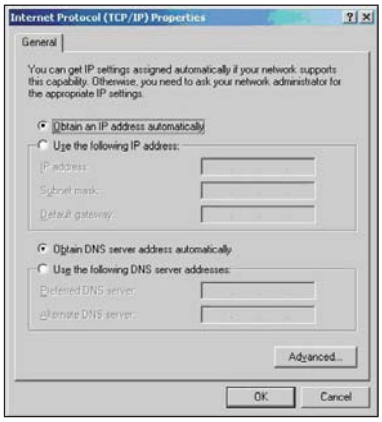
4. Select the **DNS** tab then click **Add** under the **DNS Service Search Order** and key in DNS.



Windows® 2000

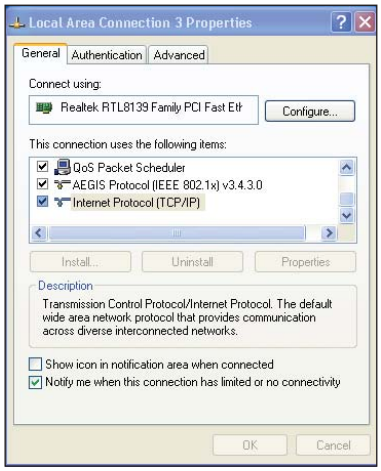
1. Click **Start** > **Control Panel** > **Network and Dial-up Connection**. Right-click **Local Area Connection** then click **Properties**.

2. Select **Internet Protocol (TCP/IP)**, then click **Properties**.
3. Select **Obtain an IP address automatically** if you want the IP settings to be assigned automatically. Otherwise, select **Use the following IP address**: and key in **IP address**, **Subnet mask**, and **Default gateway**.
4. Select **Obtain an IP address automatically** if you want the DNS server settings to be assigned automatically. Otherwise, select **Use the following DNS server address**: and key in the **Preferred** and **Alternate DNS server**.
5. Click **OK** when done.

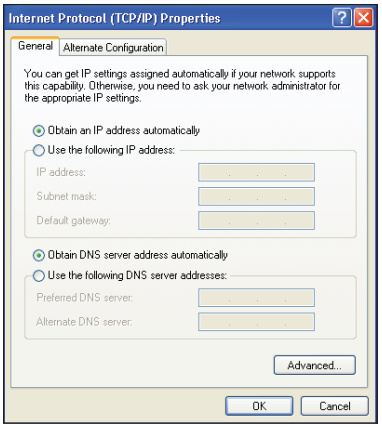


Windows® XP

1. Click **Start** > **Control Panel** > **Network Connection**. Right-click **Local Area Connection** then select Properties.

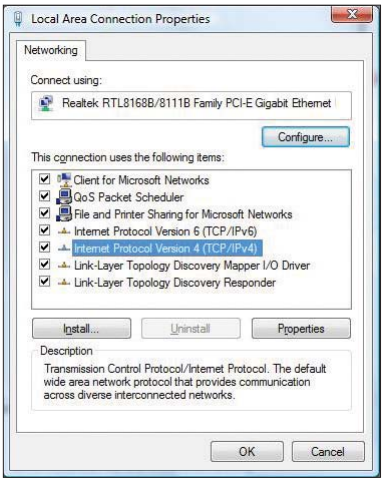


2. Select **Internet Protocol (TCP/IP)**, then click **Properties**.
3. Select **Obtain an IP address automatically** if you want the IP settings to be assigned automatically. Otherwise, select **Use the following IP address**: and key in **IP address**, **Subnet mask**, and **Default gateway**.
4. Select **Obtain DNS server address automatically** if you want the DNS server settings to be assigned automatically. Otherwise, select **Use the following DNS server addresses**: and key in the **Preferred and Alternate DNS server**.
5. Click **OK** when done.

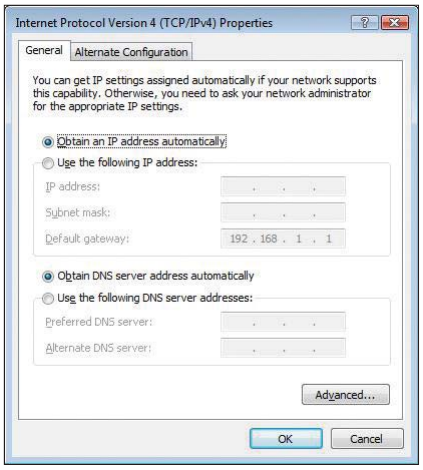


Windows® Vista

1. Go to **Start** > **Control Panel** > **Network and Internet** > **Network and Sharing Center**. Click **View status > Properties** > **Continue**.



2. Select **Internet Protocol Version 4 (TCP/IPv4)**, then click **Properties**.
3. Select **Obtain an IP address automatically** if you want the IP settings to be assigned automatically. Otherwise, select **Use the following IP address:** and key in **IP address** and **Subnet mask**.
4. Select **Obtain DNS server address automatically** if you want the DNS server settings to be assigned automatically. Otherwise, select **Use the following DNS server addresses:** and key in the **Preferred and Alternate DNS server**.
5. Click **OK** when done.



4 Configuring via the web GUI

Configuring via the web GUI

The router's web graphics user interface (web GUI) allows you to configure these features: **Network Map**, **UPnP Media Server**, **AiDisk**, and **EZQoS Bandwidth Management**.

To configure via the web GUI:

1. After setting up a wired or wireless connection, launch a web browser. The login page automatically launches.

Note: You may also manually key in the router's default IP address (**192.168.1.1**) to launch the router's web interface.

2. On the login page, key in the default user name (**admin**) and password (**admin**).

3. From the main page, click the navigation menu or links to configure the various features of the ASUS Wireless Router.

Using the Network Map

Network Map allows you to view the status and configure the connection settings of the Internet, system, and clients in your network. It enables you to quickly set up your Wide Area Network (WAN) using the Quick Internet Setup (QIS) feature, or to quickly set up your Local Area Network (LAN) using the WPS utility.

Note: For more details on **WPS**, refer to the section **WPS Wizard** in Chapter 5 of this user manual.

To view the status or configure the settings, click any of these icons displayed on the main page:

Icon	Description
	**Internet status** Click this icon to display information on the Internet connection status, WAN IP address, DNS, connection type, and gateway address. From the Internet status screen, use the Quick Internet Setup (QIS) feature to quickly set up your WAN. Note: For more details on the QIS feature, refer to the section **Setting up WAN using the Quick Internet Setup (QIS)** on the next page.
	**System status** Click this icon to display information on the SSID, authentication method, WEP encryption, LAN IP, PIN code, MAC address, or turn the wireless radio on/off. Launch the WPS function from the System status screen.

Icon	Description
	**Client status** Click this icon to display information about the clients or computers in the network, and allows you to block/unblock a client.
	**USB disk status** Click this icon to display information about the USB disk connected to the wireless router.
	**USB printer status** Click this icon to display information about the USB printer connected to the wireless router.

Setting up WAN using the Quick Internet Setup (QIS)

The Quick Internet Setup (QIS) function automatically detects the Internet connection type. It guides you in setting up your WAN when encountering special Internet connection types.

To set up your WAN using QIS:

1. Under **Internet status**, click **GO** in the **QIS** field.

2. Select your connection type from these types of ISP services: **Dynamic IP**, **PPPoE**, **PPTP**, **L2TP**, and **Static IP**.
3. Click **Apply all settings** to save the settings.

Using the router as a UPnP Media Server

Your wireless router enables UPnP (Universal Plug and Play) devices, such as an Xbox device, to access multimedia files in your USB disk.

To use your router as a UPnP Server:

Note: Before you use the UPnP Media Server function, install a wireless card on your UPnP device.

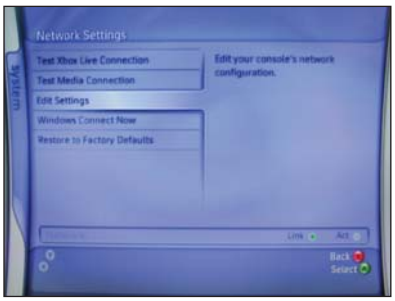
1. Click **UPnP Media Server** from the navigation menu at the left side of your screen.

2. Select **Enabled**. Your wireless router is now ready to share the media files stored in the USB hard disk.

Playing media files on Xbox 360

To play media files on Xbox 360:

1. Launch Xbox360 and enter **System > Edit Settings** to set up the wireless network connection.

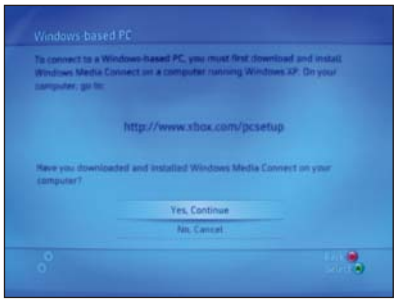


2. Set **IP Settings** to **Automatic** and ensure that your Xbox360 gets a valid IP address.

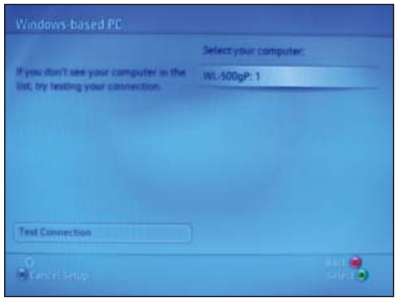
3. To play music from the USB hard disk, select **Media** > **Music**.

4. Select **Computer**.

5. Select **Yes, continue** when prompted to install **Window Media Connect** on your PC.



6. Xbox360 automatically searches for the wireless router. Select the wireless router to establish the connection.



Using AiDisk

AiDisk allows you to set up an FTP server and share the content of a USB disk to the clients in your network.

Note: Before using AiDisk, ensure that you have inserted a USB disk into the USB port of your wireless router.

To use AiDisk:

1. Click **AiDisk** from the navigation menu at the left side of your screen.

2. From the **Welcome to AiDisk wizard** screen, click **Go**.

3. Select the access rights that you want to assign to the clients accessing your shared data.

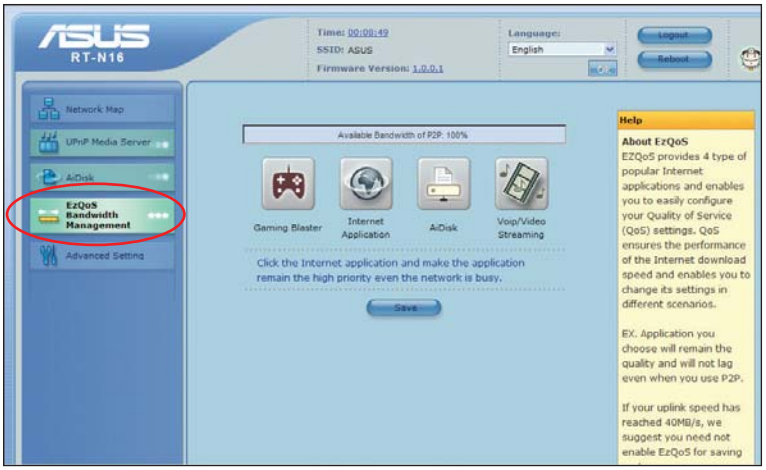
4. If you want to create your own domain name for your FTP site via the ASUS DDNS services, select **I will use the service and accept the Terms of service**. Otherwise, select **Skip ASUS DDNS setting**. Click **Next** to finish the set up.
5. When done, click **Finish**.
6. To access the FTP site that you created, launch a web browser and key in the ftp link (**ftp://<domain name>**).

Managing EzQoS bandwidth

EzQoS Bandwidth Management enables you to set the bandwidth priority and manage the network traffic.

To set up the bandwidth priority:

1. Click **EzQoS Bandwidth Management** from the navigation menu at the left side of your screen.



2. Click each of these four applications to set the bandwidth priority:

Icon	Description
	**Gaming Blaster** The router handles gaming traffic at first priority.
	**Internet Application** The router handles the e-mail, web browsing and other Internet applications traffic at first priority.
	**AiDisk** The router handles at first priority the traffic of downloading/ uploading data to/from the FTP server.
	**Voip/Video Streaming** The router handles the audio/video traffic at first priority.

3. Click **Save** to save the configuration settings.

Upgrading the firmware

Note: Download the latest firmware from the ASUS website at **http://www.asus.com**

To upgrade the firmware:

1. Click **Advanced Setting** from the navigation menu at the left side of your screen.

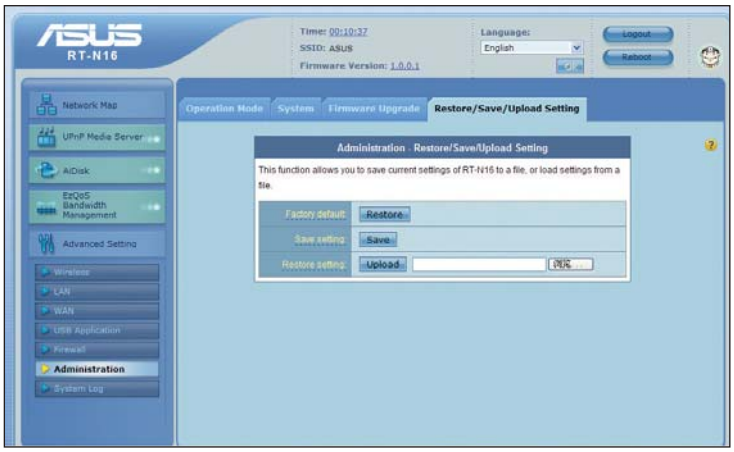
2. Under the **Administration** menu, click **Firmware Upgrade**.
3. In the **New Firmware File** field, click **Browse** to locate the new firmware on your computer.
4. Click **Upload**. The uploading process takes about three minutes.

Note: If the upgrade process fails, the wireless router automatically enters the emergency or failure mode and the power LED indicator at the front panel flashes slowly. To recover or restore the system, use the Firmware Restoration utility. For more details on this utility, refer to the section **Firmware Restoration** on Chapter 5 of this user manual.

Restoring/Saving/Uploading settings

To restore/save/upload the settings:

1. Click **Advanced Setting** from the navigation menu at the left side of your screen.
2. Under the **Administration** menu, click **Restore/Save/Upload Setting**.



3. Select the tasks that you want to do:
   - To restore to the default factory settings, click **Restore**, and click **OK** in the confirmation message.
   - To save the current system settings, click **Save**, and click **Save** in the file download window to save the system file in your preferred path.
   - To restore previous system settings, click **Browse** to locate the system file that you want to restore, then click **Upload**.

Using the USB application

The ASUS Wireless Router provides two USB 2.0 ports for connecting USB devices such as a USB storage device and USB printer, to allow you to monitor the working environment, share files, and printer with clients in your network.

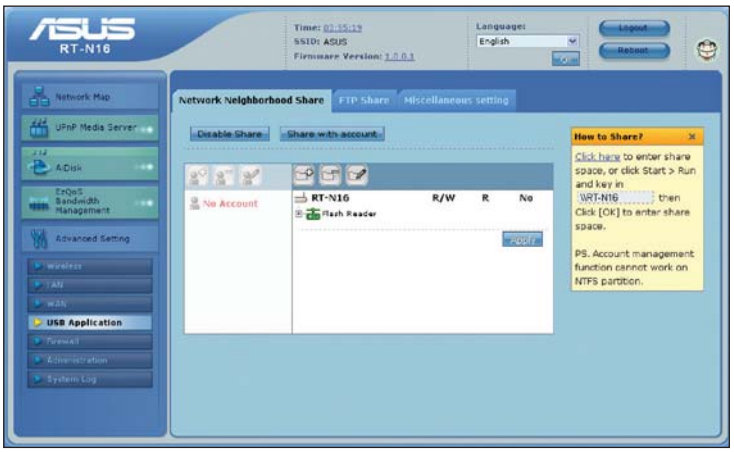
Note: To use this feature, you need to plug a USB storage device, such as a USB hard disk or USB flash drive, to the USB 2.0 port on the rear panel of your wireless router. Ensure that the USB storage device is formatted and partitioned properly. Refer to the ASUS website at www.asus.com for the HD file system supporting table.

Creating a user account

You need to create user accounts before you can share the files or data in the USB storage device.

To create a user account:

1. Click **Advanced Setting** > **USB Application** from the navigation menu at the left side of your screen.
2. Click **Share with account**, and click **OK** to enable the sharing feature.
3. Click the Add account icon.

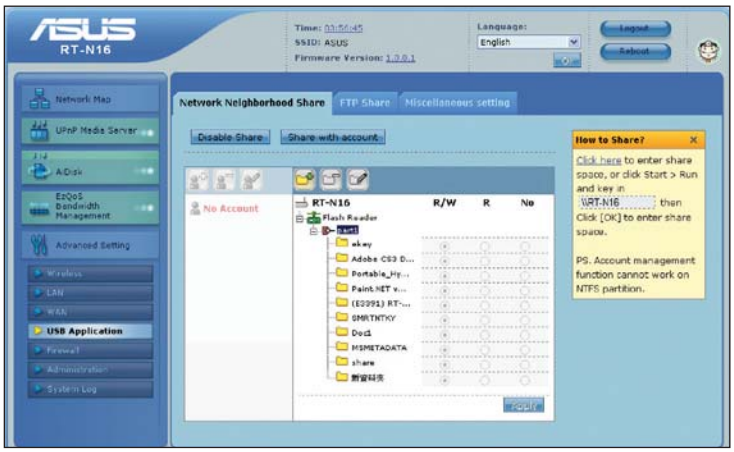


4. In the **Account** and **Password** fields, key in the name and password of the client/computer in your network. Retype the password to confirm. Click **Add** to add the account to the list.

Assigning access rights

To assign access rights:

1. Click **Advanced Setting** > **USB Application** from the navigation menu at the left side of your screen.
2. Select the account that you want to assign access rights to.



3. From the list of file folders, select the type of access rights that you want to assign for specific file folders:
   - **R/W**: Select this option to assign read/write access for a specific file folder.
   - **R**: Select this option to assign read only access for a specific file folder.
   - **No**: Select this option if you do not want to share a specific file folder.
4. Click **Apply** to apply the changes.
5. From the **Miscellaneous setting** tab, set the Work Group to **WORKGROUP** to enable all computers within **WORKGROUP** to access the wireless router's USB storage device.
6. Launch **My Network Place** from a computer connected to the wireless router. Click **view work group computers**, you can see the wireless router in the **Workgroup** category. All files on the USB storage device are now shared to computers in your network.

Setting up an FTP site

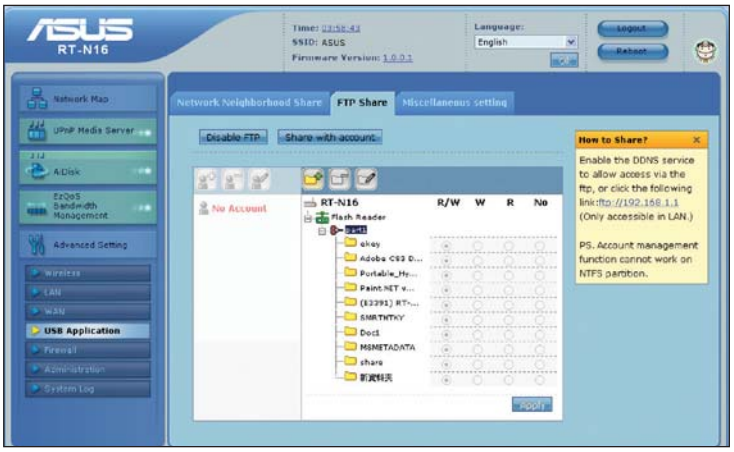
The ASUS Wireless Router enables you to share files from your USB storage device with computers in LAN or through the Internet.

Notes:

- To use this feature, you need to insert a USB storage device, such as a USB hard disk or USB flash drive, to the USB2.0 port on the rear panel of your wireless router. Ensure that the USB storage device is formatted and partitioned properly. Refer to the ASUS website at www.asus com for the HD file system supporting table.
- To access the FTP, you may either enable the DDNS service or key in the ftp link **ftp://192.168.1.1** from any computer in LAN.

To set up an FTP site:

1. Click **Advanced Setting** > **USB Application** from the navigation menu at the left side of your screen.
2. From the **FTP Share** tab, select the account that you want to assign access rights to.



3. From the list of file folders, select the type of access rights that you want to assign for specific file folders:
   - **R/W**: Select this option to assign read/write access for a specific file folder.
   - **W**: Select this option to assign write only access for a specific file folder.
   - **R**: Select this option to assign read only access for a specific file folder.
   - **No**: Select this option if you do not want to share a specific file folder.
4. Click **Apply** to apply the changes.
5. From any LAN computer, key in **ftp://192.168.1.1** on a web browser.

Connecting a USB printer

Connect a compatible USB printer to the USB 2.0 port of the ASUS Wireless Router and share the USB printer with your LAN clients.

Note: Visit the ASUS Website at http://www.asus.com for compatible printer vendor and models.

To connect a USB printer:

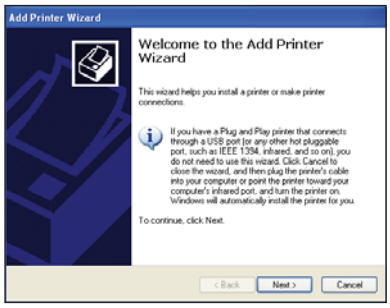
1. Plug your USB printer to the USB 2.0 port on the rear panel of the wireless router.
2. Install the printer driver for your computer's operating system.

Note: Refer to the section below to install the printer on Windows® XP.

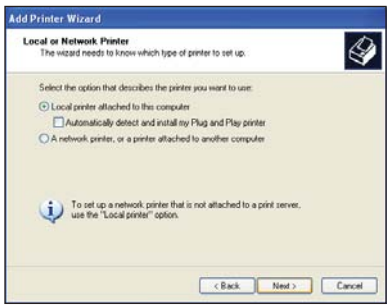
Installing the printer on Windows® XP

To install the printer on Windows® XP:

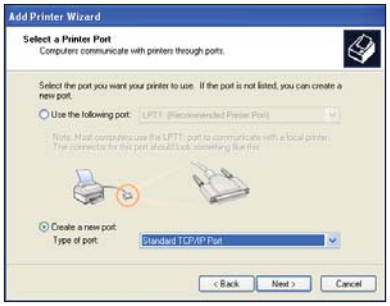
1. Run the Add Printer Wizard from **Start** > **Printers and Faxes** > **Add a printer**.



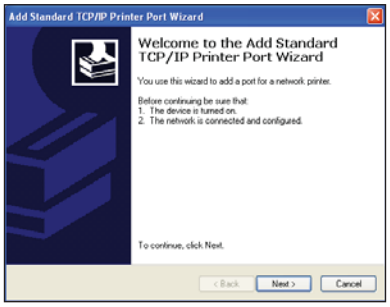
2. Select **Local printer attached to this computer** and click **Next**.



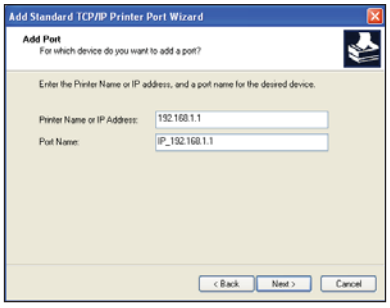
3. Select **Create a new port** and set Type of port to **Standard TCP/IP Port**, then click **Next**.



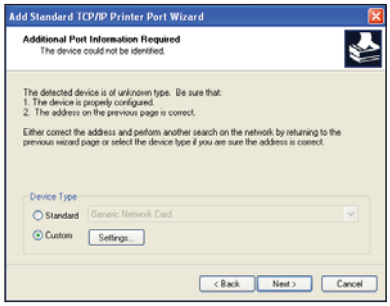
4. Click **Next** to set up the TCP/IP port for accessing the network printer.



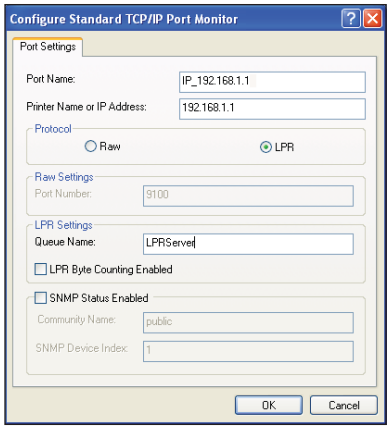
5. Key in the IP address of the wireless router in the **Printer Name of IP Address** field and click **Next**.



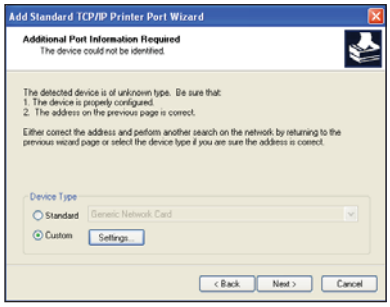
6. Select **Custom** and click **Settings...**



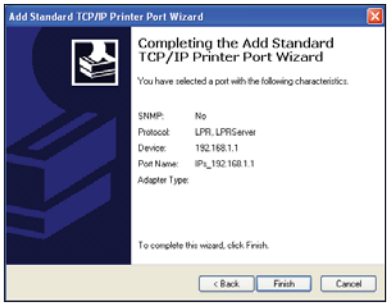
7. Set **Protocol** to **LPR** and type **LPRServer** in **Queue Name** field. Click **Next** to continue.



8. Press **Next** to finish the standard TCP/IP port setting.

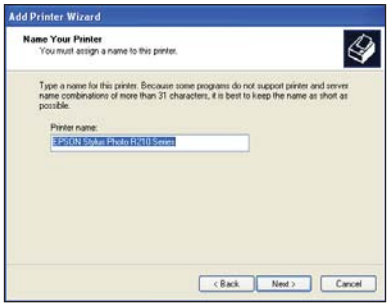


9. Press **Finish** to complete the settings and return to the Add Printer Wizard.



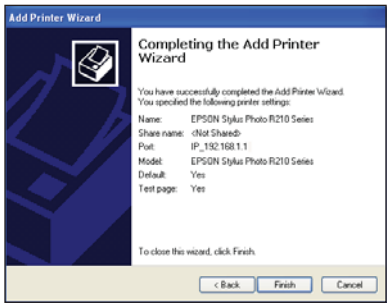
10. Install printer driver from the vendor-model list. If your printer is not in the list, click **Have Disk** to manually assign the location of driver.

11. Click **Next** to accept the default name for the printer.



12. Select **Yes** to print a test page. Click **Next** to print.

13. The installation is complete. Click **Finish** to quit the Add Printer Wizard.



14. After connecting your USB printer and installing the printer driver, you can now see the printer name and status on the wireless router's web GUI.

Note: If you have already installed the printer locally on your computer, right click the printer icon and select **Property** > **Port** tab to add a standard TCP/IP port. Click **Add Port** then select **Standard TCP/IP Port** and click **New Port** button. Refer to steps 5-8 for setting procedures.

Note: If you use Windows® 98 or ME which does not support Standard TCP/IP port, you need to use Remote Port which is supported by the ASUS Wireless Router.

5 Installing the utilities

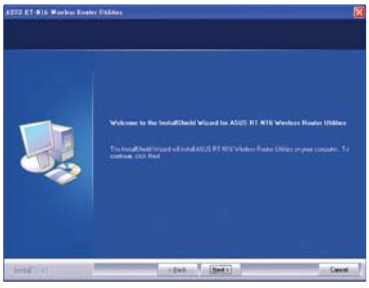
Installing the utilities

The support CD contains the utilities for configuring the ASUS Wireless Router. To install the ASUS WLAN Utilities in Microsoft® Windows, insert the support CD in the CD drive. If Autorun is disabled, run **setup.exe** from the root directory of the support CD.

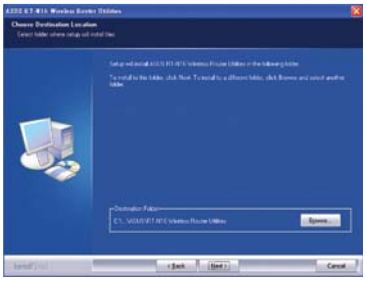
To install the utilities:

1. Click **Install...Utilities**.

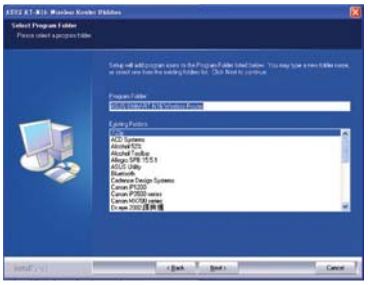
2. Click **Next.**



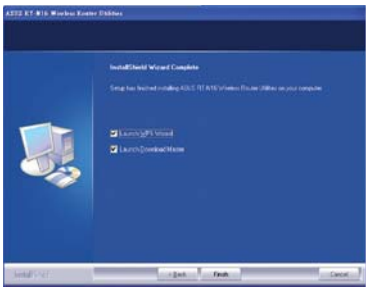
3. Click **Next** to accept the default destination folder or click **Browse** to specify another path.



4. Click **Next** to accept the default program folder or enter another name.



5. Click **Finish** when setup is completed.

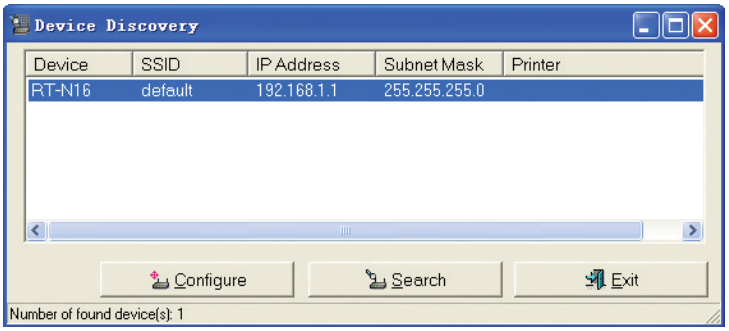


Device Discovery

Device Discovery is an ASUS WLAN utility that detects an ASUS wireless router device, and enables you to configure the device.

To launch the Device Discovery utility:

- From your computer's desktop, click **Start** > **All Programs** > **ASUS Utility** > **RT-N16 Wireless Router** > **Device Discovery**.

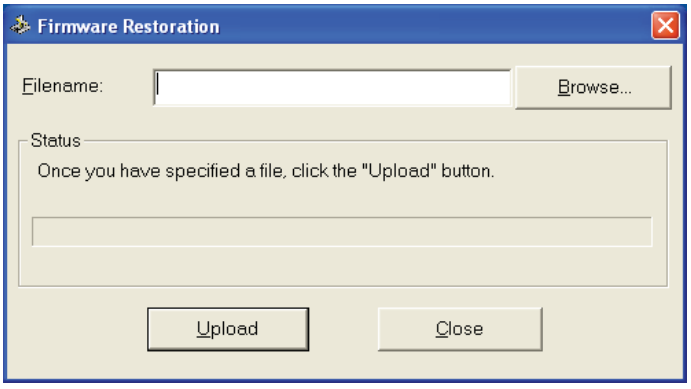


Firmware Restoration

Firmware Restoration is a utility that searches for an ASUS Wireless Router that failed during its firmware upgrading process, then restores or re-uploads the firmware that you specify. The process takes about three to four minutes.

To launch the Firmware Restoration utility:

- From your computer's desktop, click **Start** > **All Programs** > **ASUS Utility** > **Firmware Restoration**.



Note: This is not a firmware upgrade utility and cannot be used on a working ASUS Wireless Router. Normal firmware upgrades must be done through the web interface. Refer to **Chapter 4: Configuring via the web GUI** for more details.

WPS Wizard

WPS (Wi-Fi Protected Setup) allows you to set up a secure and protected wireless network easily.

Using WPS Wizard

- Ensure that you use a wireless LAN card/adapter with WPS function.
- Windows® operating systems and wireless LAN cards/adapters that support WPS:

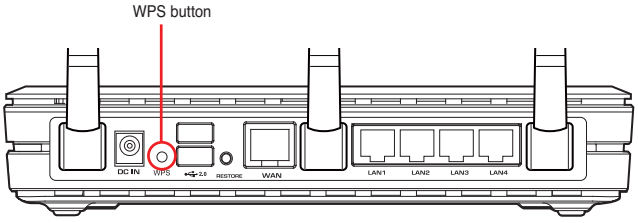
OS Support	Wireless Adapter Support
Vista 32/64	Intel wireless LAN card
	ASUS 167gv2 driver v3.0.6.0 or later
	ASUS 160N/130N driver v2.0.0.0 or later
XP SP2	Intel wireless LAN card
	ASUS 167gv2 driver v1.2.2.0 or later
	ASUS 160N/130N driver v1.0.4.0 or later
XP SP1 and 2000	ASUS LAN card with ASUS WLAN Utility
	ASUS 167gv2 driver v1.2.2.0 or later
	ASUS 160N/130N driver v1.0.4.0 or later

To use WPS Wizard:

1. Follow the onscreen instructions to set up your hardware. When done, click **Next**.

Note: Use the WPS Wizard with one wireless client at a time. If the wireless client cannot discover the wireless router, shorten the distance between the client and the router.

2. Push the WPS button at the rear panel of the wireless router for more than five seconds.

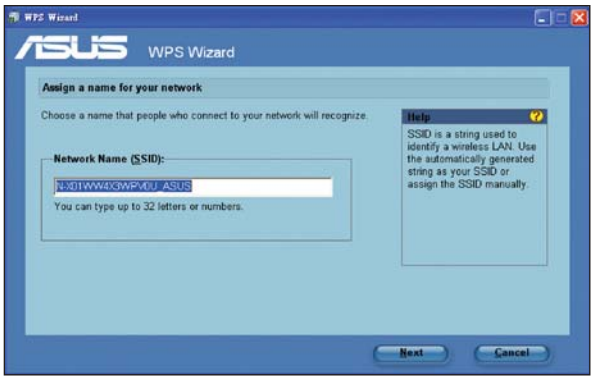


3. On the WPS Wizard, click **Next** to continue.

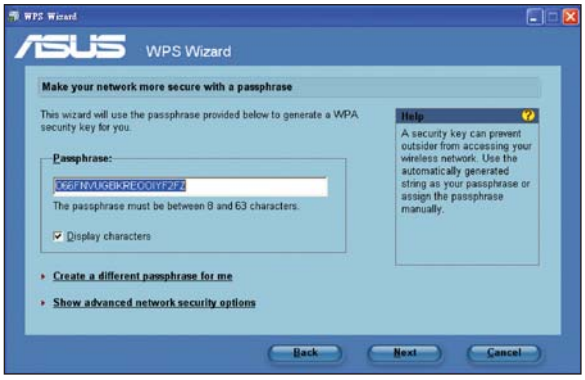
Notes:

- When running WPS, the Internet connection pauses briefly then reestablishes the connection.
- If the WPS button is pushed without running the WPS Wizard, the PWR indicator flashes and Internet connection pauses briefly and then reestablishes the connection.

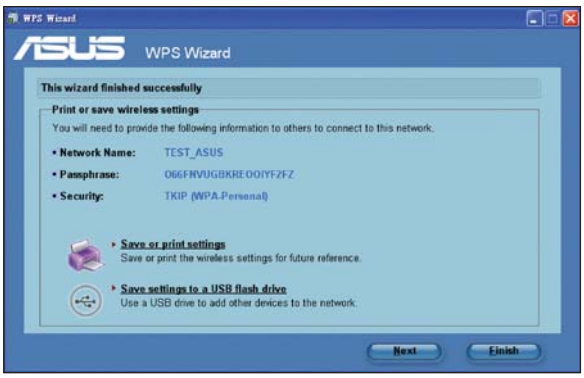
4. Assign a name to your network, then click **Next**.



5. Use the auto-generated passphrase as your network's security key or manually assign a passphrase containing between 8 and 63 characters. Click **Next**.

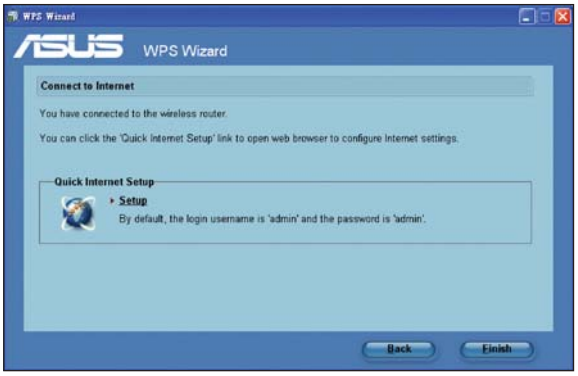


6. Installation is completed. Click **Save or print settings** for future reference or **Save settings to a USB flash drive** to add other devices to the network. Click **Next** to connect to the Internet.



Note: For more details on adding devices to the network using a USB flash drive, refer to the section **Adding network devices using a USB flash drive** on the next page.

7. You have connected to the wireless router. If you want to configure the Internet settings, click **Setup**. Click **Finish** to close the WPS Wizard.

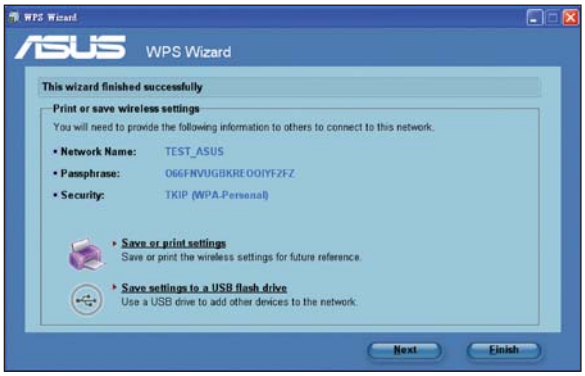


Adding network devices using a USB flash drive

With the WPS utility, you can add devices to your network using a USB flash drive.

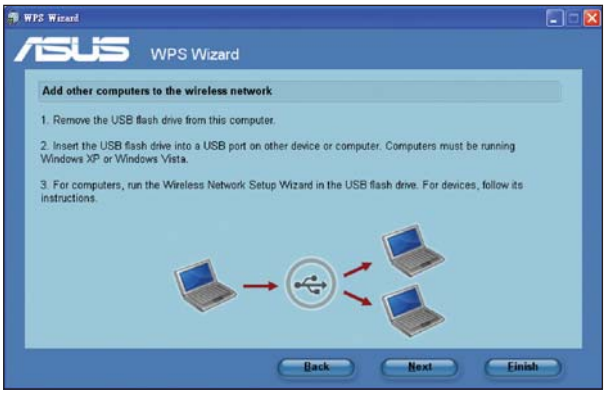
To add network devices using a USB flash drive:

1. In the WPS Wizard, click **Save settings to a USB flash drive**.
2. Plug a USB flash drive into the USB port on your computer, and then select the



drive from the dropdown list. When done, click **Next** to continue.

3. Remove the USB flash drive from this computer, and then plug to the computer that you want to add to the wireless network.



4. Locate the **SetupWireless.exe** from the USB drive, and double-click to run it. Click **Yes** to add the computer to the wireless network.

5. Click **OK** to exit the **Wireless Network Setup Wizard**.

Download Master

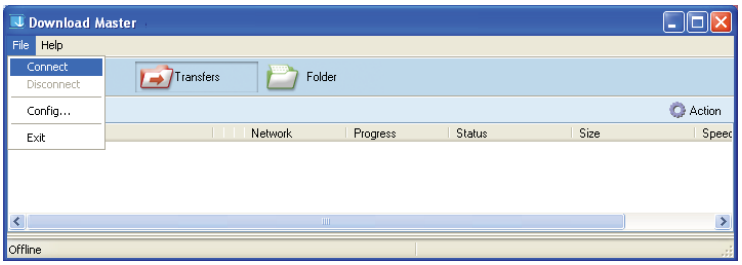
Download Master is a utility that allows you to organize your HTTP, FTP, and BT (BitTorrent) download tasks.

Using the Download Master

To use the Download Master:

Note: To use this feature, you need to plug a USB storage device, such as a USB hard disk or USB flash drive, to the USB 2.0 port on the rear panel of your wireless router. Ensure that the USB storage device is formatted and partitioned properly. Refer to the ASUS website at www.asus.com for the HD file system supporting table.

1. Launch the Download Master from **Start** > **All Programs** > **ASUS Utility** > **RT-N16 Wireless Router** > **Download Master**. Click **File** > **Connect** to connect to the wireless router.



2. Follow the instructions below to organize the download tasks that you want to perform.

HTTP download

To perform an HTTP download, do any of the following:

- Right-click the download link on the web page and select **Download using ASUS Download**.

- Right-click the download link on the web page and select **Properties**. Copy the download Address (URL).

  If you select **Download using ASUS Download**, you can see the download task is added to the **Transfer** list. The blue bars indicate the progress rate of the download tasks.

If you copy the download address, click the **Assign** button in the utility. Paste the address into **Getting File From** box, select **HTTP** from **Options**, and click **Download** button to start.

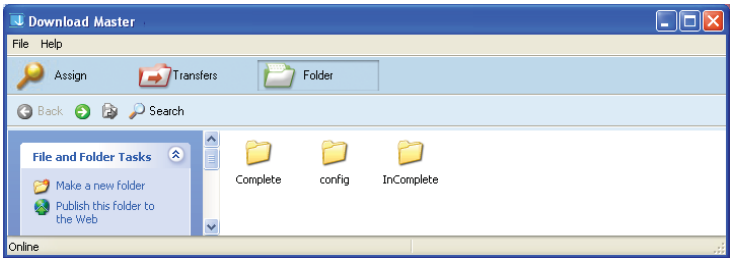
FTP download

Click the **Assign** button of the Download Master and select **FTP** in the **Options** field. Key in the FTP site address, Port number, User Name, Password. Click **Download** to start.

BT download

Save the BT seed on your computer. Click the **Assign** button of the Download Master and select **BT** in the **Options** field. Click **Browse** to locate the seed file and click **Download** to start.

3. Click the **Folder** button to view the download file. Open the **Complete** folder to view or copy the finished files to your local hard disk. The incomplete tasks are kept in the **InComplete** folder.



6 Troubleshooting

Troubleshooting

This troubleshooting guide provides solutions to some common problems that you may encounter while installing or using the ASUS Wireless Router. These problems require simple troubleshooting that you can perform by yourself. Contact the ASUS Technical Support if you encounter problems not mentioned in this chapter.

Problem	Action
I cannot access a web browser for configuring the router.	1. Launch a web browser, then click **Tools** > **Internet Options...** 2. Under **Temporary Internet files**, click **Delete Cookies...** and **Delete Files...**
The client cannot establish a wireless connection with the router.	**Out of Range:** • Put the router closer to the wireless client. • Try to change the channel settings. **Authentication:** • Use wired connection to connect to the router. • Check the wireless security settings. • Press the Restore button at the rear panel for more than five seconds. **Cannot find the router:** • Press the Restore button at the rear panel for more than five seconds. • Check the setting in the wireless adapter such as SSID and encryption settings.

Problem	Action
Cannot access the Internet via wireless LAN adapter	• Move the router closer to the wireless client. • Check whether the wireless adapter is connected to the correct wireless router. • Check whether the wireless channel in use conforms to the channels available in your country/ area. • Check the encryption settings. • Check if the ADSL or Cable connection is correct. • Retry using another Ethernet cable.
Internet is not accessible	• Check the status indicators on the ADSL modem and the wireless router. • Check if the WAN LED on the wireless router is ON. If the LED is not ON, change the cable and try again.
When ADSL Modem “Link” light is ON (not blinking), this means Internet Access is possible.	• Restart your computer. • Refer to the Quick Start Guide of the wireless router and re-configure the settings. • Check if the WAN LED on the wireless router is ON. • Check the wireless encryption settings. • Check if the computer can get the IP address (via both wired network and wireless network). • Ensure that your web browser is configured to use the local LAN, and is not configured to use a proxy server.

Problem	Action
If the ADSL “LINK” light blinks continuously or stays off, Internet access is not possible - the Router is unable to establish a connection with the ADSL network.	• Ensure that all your cables are all properly connected . • Disconnect the power cord from the ADSL or cable modem, wait a few minutes, then reconnect the cord. • If the ADSL light continues to blink or stays OFF, contact your ADSL service provider.
Network name or encryption keys are forgotten	• Try setting up the wired connection and configuring the wireless encryption again. • Press the Restore button at the rear panel of the wireless router for more than five seconds.
How to restore the system to its default settings	• Press the Restore button at the rear panel of the wireless router for more than five seconds. • Refer to the section **Firmware Restoration** in Chapter 5 of this user manual. The following are the factory default settings: **User Name:** admin **Password:** admin **Enable DHCP:** Yes (if WAN cable is plugged in) **IP address:** 192.168.1.1 **Domain Name:** (Blank) **Subnet Mask:** 255.255.255.0 **DNS Server 1:** 192.168.1.1 **DNS Server 2:** (Blank) **SSID:** ASUS

ASUS DDNS Service

WL-500gP V2 is the first model that supports the ASUS DDNS service. When exchanging devices at the service center, if you have registered the ASUS DDNS service and want to keep the original domain name, data transfer is a must. Visit your local service center for more information.

Notes:

If there is no activity in the domain - such as reconfiguring the router or accessing the registered domain name - within 90 days, the system automatically deletes the registered information.

If you encounter any problem or difficulty in using your device, contact the service center.

Frequently Asked Questions (FAQs)

1. Will the registered information be lost or registered by others?

If you have not updated the registered information in 90 days, the system automatically deletes the registered information and the domain name may be registered by others.

2. I did not register the ASUS DDNS for the router I bought six months ago. Can I still register it?

Yes, you can still register the ASUS DDNS service for your router. The DDNS service is embedded in your router, so you can register the ASUS DDNS service anytime. Before registering, click **Query** to check if the hostname has been registered or not. If not, the system registers the hostname automatically.

3. I have registered a domain name before and it has been working well until my friends told me that they could not access my domain name.

Check the following:

1. The internet is working well.
2. The DNS server is working well.
3. The last time you updated the domain name.

If there are still problems in accessing your domain name, contact the service center.

4. Can I register two domain names to separately access my http and ftp servers?

A. No, you cannot. You can only register one domain name for one router. Use port mapping to implement security in the network.

5. After restarting the router, why is it that I see different WAN IPs in MS DOS and in the router configuration page?

This is normal. The interval time between the ISP DNS server and ASUS DDNS results to different WAN IPs in MS DOS and in the router configuration page. Different ISPs may have different interval time for IP updating.

7. Is the ASUS DDNS service free, or is it just a trial version?

The ASUS DDNS service is a free and embedded service in some ASUS routers. Check your ASUS router if it supports the ASUS DDNS service.

Appendices

Notices

Federal Communications Commission Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

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

Prohibition of Co-location

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter

Safety Information

To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with minimum distance 20cm between the radiator and your body. Use on the supplied antenna.

Declaration of Conformity for R&TTE directive 1999/5/EC

Essential requirements – Article 3

Protection requirements for health and safety – Article 3.1a

Testing for electric safety according to EN 60950-1 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b

Testing for electromagnetic compatibility according to EN 301 489-1 and EN 301 489-17 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum – Article 3.2

Testing for radio test suites according to EN 300 328- 2 has been conducted. These are considered relevant and sufficient.

CE Mark Warning

This is a Class B product, in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

GNU General Public License

Licensing information

This product includes copyrighted third-party software licensed under the terms of the GNU General Public License. Please see The GNU General Public License for the exact terms and conditions of this license. We include a copy of the GPL with every CD shipped with our product. All future firmware updates will also be accompanied with their respective source code. Please visit our web site for updated information. Note that we do not offer direct support for the distribution.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

59 Temple Place, Suite 330, Boston, MA 02111-1307 USA

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

Terms & conditions for copying, distribution, & modification

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

   Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

   You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such

modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

   a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

   b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed

on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

   Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and “any later version”, you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission.

For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11 BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12 IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

ASUS Contact information

ASUSTeK COMPUTER INC. (Asia Pacific)

Address	15 Li-Te Road, Peitou, Taipei, Taiwan 11259
Website	www.asus.com.tw

Technical Support

Telephone	+886228943447
Support Fax	+886228907698
Software download	support.asus.com*

ASUS COMPUTER INTERNATIONAL (America)

Address	800 Corporate Way, Fremont, CA 94539, USA
Telephone	+15029550883
Fax	+15029338713
Website	usa.asus.com
Software download	support.asus.com*

ASUS COMPUTER GmbH (Germany and Austria)

Address	Harkort Str. 25, D40880 Ratingen, Germany
Telephone	+49210295990
Fax	+492102959911
Online contact	www.asus.com.de/sales

Technical Support

Telephone	+49210295990
Fax	+492102959911
Online support	www.asus.com.de/support
Website	www.asus.com.de/news

* Available on this site is an online Technical Inquiry Form that you can fill out to contact technical support.

FEDERAL COMMUNICATIONS COMMISSION
INTERFERENCE STATEMENT

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

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

CAUTION:

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

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

"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 ."

Canada Warning

"Industry Canada regulatory information Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.""The user is cautioned that this device should be used only as specified within this manual to meet RF exposure requirements. Use of this device in a manner inconsistent with this manual could lead to excessive RF exposure conditions."