User's Manual
ASUS WL-159G
USB2.0 WLAN Slim Module

Version1.1

2004/11/04

Contents

Notices

Federal Communications Commission Statement

This device complies with FCC Rules Part 15. Operation is subject to the following

• This device may not cause harmful interference, and

• 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 Federal Communications Commission (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! You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Reprinted from the Code of Federal Regulations #47, part 15.193, 1993. Washington DC: Office of the Federal Register, National Archives and Records Administration, U.S. Government Printing Office.

Safety statements

Regulatory Information/Disclaimers

Installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution of the connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

CAUTION! 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. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

Safety Information

In order to maintain compliance with the FCC RF exposure guidelines, this equipment should be installed and operated with minimum distance **[20cm]** between the radiator and your body. Use only with supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations.

CAUTION! Any changes or modifications not expressly approved in this manual could void your authorization to use this device.

MPE Statement

Your device contains a low power transmitter. When device is transmitted it sends out Radio Frequency (RF) signal.

FCC Radio Frequency Exposure

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65C and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247(b)(4) addressing RF Exposure from radio frequency devices. The radiation output power of this Wireless LAN device is far below the FCC radio frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation – as a mobile or portable device but use in a body-worn way is strictly prohibit. When using this device, a certain separation distance between antenna and nearby persons has to be kept to ensure RF exposure compliance. In order to comply with the RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than [20cm].

RF Exposure

The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

About this guide

This user guide contains the information you your ASUS USB Wireless LAN Module.

Network setup

The ASUS USB Wireless LAN Adapter may be used in both Ad-hoc and Infrastructure network types. The following sections describe the device functions in these network types.

Ad-hoc network

In an Ad-hoc network type, the device connects to another wireless LAN adapter in a wireless network. No access point (AP) is present in this wireless environment.

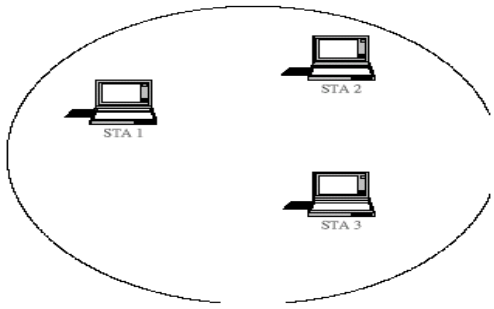


圖 2-1 點對點無線區域網路

Determine your network settings before installing the device to avail all its features. The following network settings are recommended.

Infrastructure network

In an Infrastructure network, the wireless network is centered on an access point (AP) that provides a central link for wireless clients to communicate with each other or with a wired network.

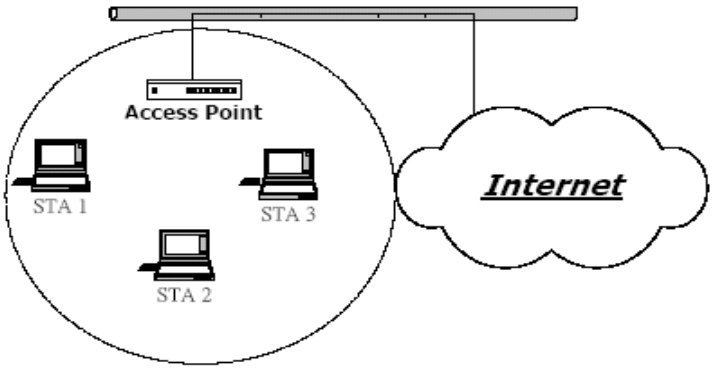


圖 2-2 架構式無線區域網路

System requirements

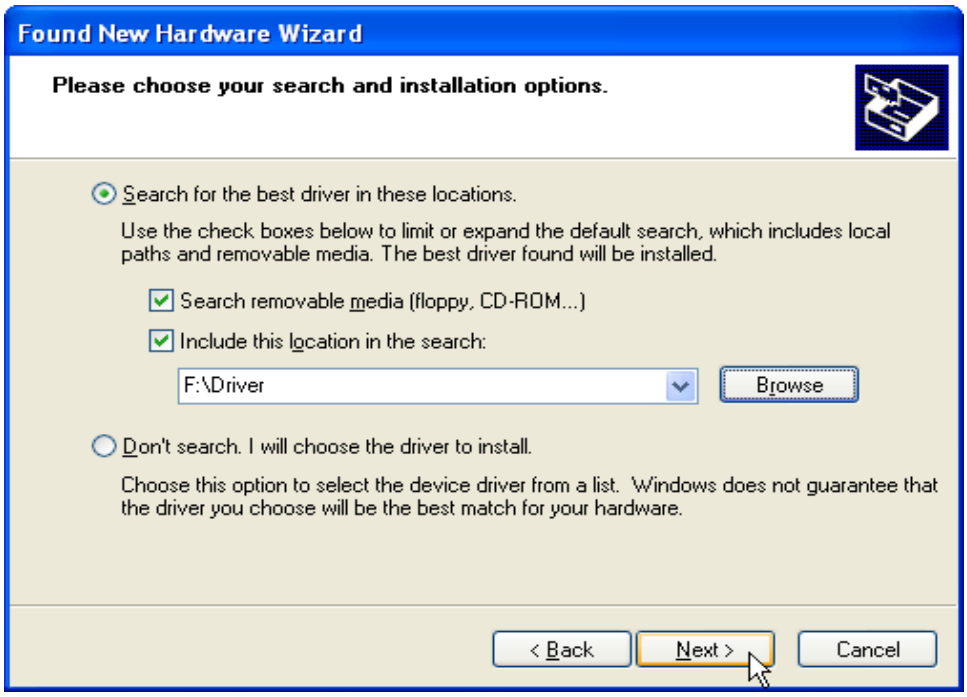
Before installing the ASUS USB Wireless LAN Adapter, make sure that your system meets the following requirements:

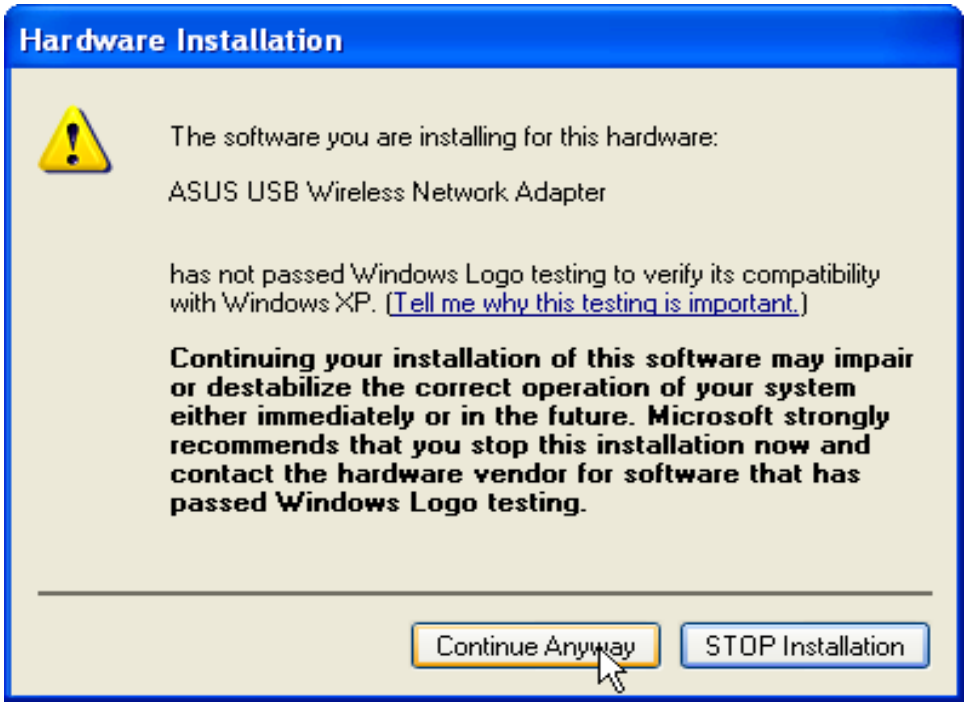
- Intel® Pentium® 4 or AMD K7/K8 system
- Minimum 64MB system memory
- Windows® 98SE/ME/2000/XP operating system
- Optical drive (for software installation)
- An available USB port (USB 2.0 recommended because USB 1.1 cannot achieve maximum wireless performance)

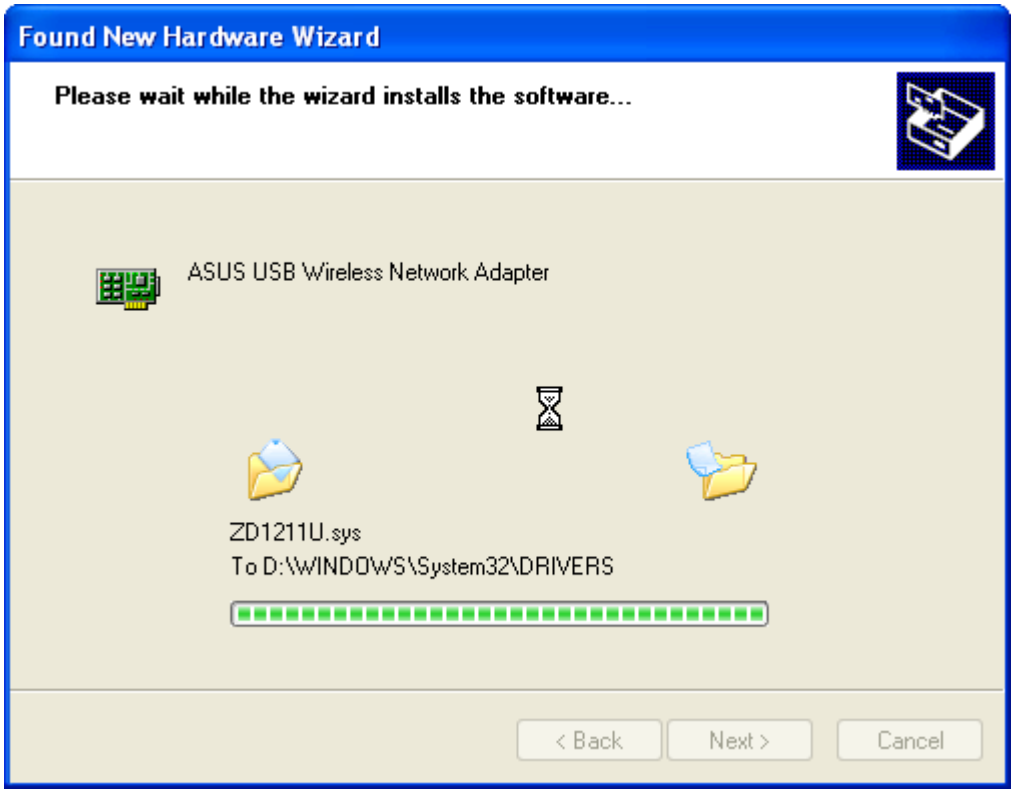
Installing the device drivers

To install the device driver in your computer:

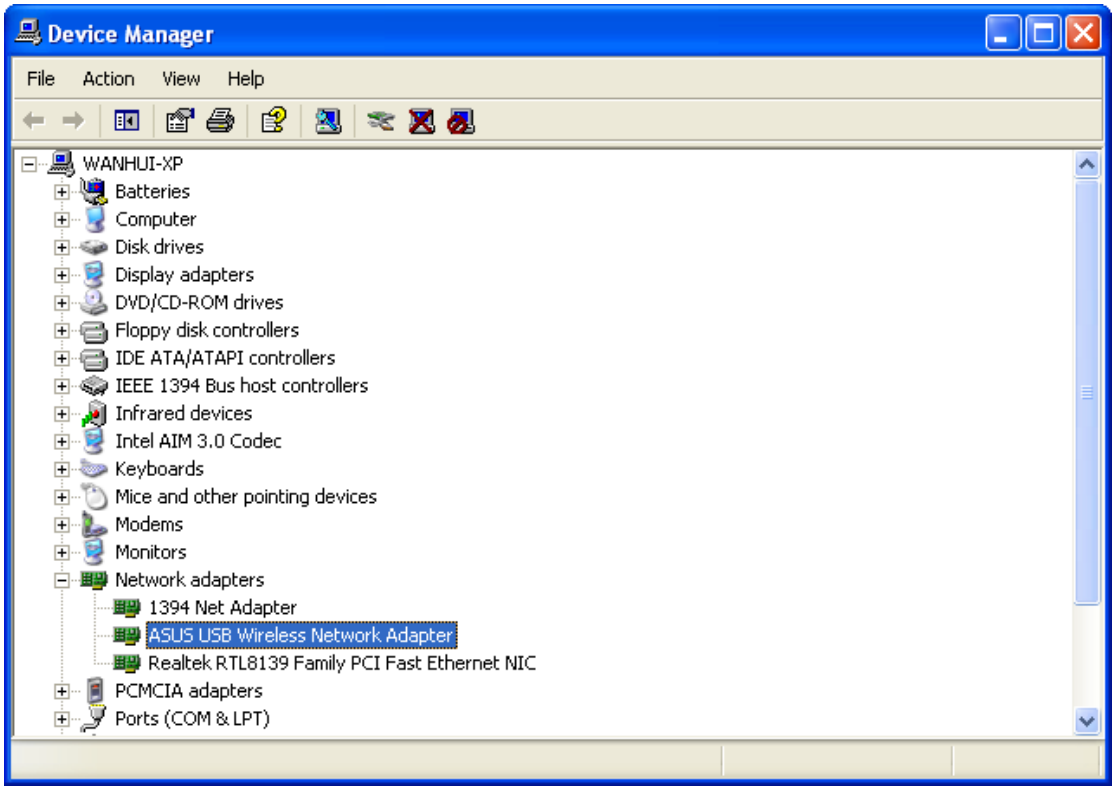
Insert the support CD to the optical drive and follow the following procedure.


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
F:\Driver
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel


Hardware Installation
The software you are installing for this hardware:
ASUS USB Wireless Network Adapter
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation


Found New Hardware Wizard
Please wait while the wizard installs the software...
ASUS USB Wireless Network Adapter
ZD1211U.sys
To D:\WINDOWS\System32\DRIVERS
< Back
Next >
Cancel


Found New Hardware Wizard
Completing the Found New Hardware Wizard
The wizard has finished installing the software for:
ASUS USB Wireless Network Adapter
Click Finish to close the wizard.
< Back
Finish
Cancel


Device Manager
File
Action
View
Help
WANHUI-XP
Batteries
Computer
Disk drives
Display adapters
DVD/CD-ROM drives
Floppy disk controllers
IDE ATA/ATAPI controllers
IEEE 1394 Bus host controllers
Infrared devices
Intel AIM 3.0 Codec
Keyboards
Mice and other pointing devices
Modems
Monitors
Network adapters
1394 Net Adapter
ASUS USB Wireless Network Adapter
Realtek RTL8139 Family PCI Fast Ethernet NIC
PCMCIA adapters
Ports (COM & LPT)

WL-159g specification summary

Network Standard	IEEE 802.11g, backward compatible with 802.11b device
Size	71.4mm L* 13.3 mm W* 8 mm H(± 0.2)
Host interface dimension	USB 2.0 like 7 pin connector
Antenna	There are 2 manufacture options: a. One onboard chip antenna & one U.FL to connect external antenna b. 2 U.FL connectors to 2 external antennas Note: This option must be define before place order
Data Rate	802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps 802.11b:1, 2, 5.5, 11Mbps
Modulation	OFDM, CCK (11Mbps, 5.5Mbps), DQPSK (2Mbps), DBPSK (1Mbps)
Technology	OFDM and DSSS
Network Architecture Types	Infrastructure and ad-hoc
Operating Frequency	2.412-2.462 GHz (N. America); 2.412-2.484 GHz (Japan); 2.412-2.472 GHz (Europe ETSI)
Operating Channels	N. America: CH1~CH11 Worldwide: CH1~CH13 Japan: CH1~CH14 (802.11b) and CH1~CH13 (802.11g)
RF Output Power	15dBm@54Mbps;16dBm@48Mbps;20dBm@11Mbps
Receiver Sensitivity	PER< 8% @ length=1024 octets (at nominal temp. range) 11Mbps: -86~--87 dBm; 54 Mbps: -68 ~ -70 dBm;
Power Consumption	TX power consumption:300mA@54Mbps; 400mA@11Mbps RX power consumption :200mA
WEP	40/128-bit WEP; each includes 4 user-defined keys Support WPA (under WinXP SP1 later) Integrate hardware security engine: WEP64, WEP128, WEP256, AES-CCM, TKIP
Windows XP Compatibility	Native support for all built-in WLAN functions, like Zeroconfig, Media Sense and 802.1x
Support OS	Windows 98SE , ME, 2000, XP
Storage Temperature	-40~ 70℃

Humidity (non-condensing)	5~95%
Emissions	ETS 300 328 and ETS 300 826; CE Mark; FCC Part 15C, Section 15.247
Weight	4 g
Warranty	Two-year limited warranty

Trade Name	Model No.	Antenna Description	Antenna Type	Antenna Gain	Final test
SmartAnt	SAA04-05032E	Portable Panel Directional Antenna	Connector (Panel Directional)	6dBi	✓
YAGEO	CAN4313374012521B CAN4313374022521B	Dual Band Antenna	Connector	1.3dBi	✓
MAG LAYERS	LTA-5824-2G4H2-A1	SMD Antenna	Soldered on PCB	2dBi	✓
YAGEO	CAN4313382012501B	Multi Band Antenna	Connector	0.37dBi	