MU54G (MS-6865)
Wireless 11g
miniUSB 2.0 Adapter

User's Guide

FCC Caution

1. The 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.
2. FCC RF Radiation Exposure Statement: The equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.
3. This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
4. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

FCC Statement

This device is intended only for OEM integrators under the following

1. The antenna must be installed such that 20 cm is maintained between antenna and users, and
2. The transmitter module may not be co-located with any other transmitter or antenna.

As long as 2 conditions above are met, further transmitter test will not required. However, the OEM integrator is still responsible for testing end-product for any additional compliance requirements required with module installed (for example, digital device emissions, PC peripheral requirements, etc.).

Important Note

In the event that these conditions can not be example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid the FCC ID can not be used on the final product. In these circumstances, OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

End Product Labeling

This transmitter module is authorized only for use in device where antenna may be installed such that 20 cm may be maintained between antenna and users (for example access points, routers, wireless ADSL and similar equipment). The final end product must be labeled in a area with the following: "Contains TX FCC ID: I4L-MS6865".

Manual Information for End Users

The end user must not have manual instructions to remove or install device. The user manual for end users must include the following information in a prominent location: "IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna 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 operating in conjunction with any other antenna or transmitter." as a result of e-mail transmission."

Important Safety Precautions

Always read and follow these basic safety precautions carefully when handling any piece of electronic component.

1. Keep this *User's Guide* for future reference.
2. Keep this equipment away from humidity.
3. Lay this equipment on a reliable flat surface before setting it up.
4. The openings on the enclosure are for air convection hence protects the equipment from overheating.
5. All cautions and warnings on the equipment should be noted.
6. Never pour any liquid into the opening that could damage or cause electrical shock.
7. If any of the following situations arises, get the equipment checked by a service personnel:
   - Liquid has penetrated into the equipment
   - The equipment has been exposed to moisture
   - The equipment has not work well or you can not get it work according to User's Manual
   - The equipment has dropped and damaged
   - If the equipment has obvious sign of breakage
8. DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT UNCONDITIONED, STORAGE TEMPERATURE ABOVE 60°C OR BELOW -20°C, IT MAY DAMAGE THE EQUIPMENT.

① Introduction

MSI MU54G (MS-6865) is a miniUSB 2.0 type adapter and suitable to be embedded in a notebook or PC system. Its auto-fallback data rate and zero-config features provide a transparent and easy-configured wireless connectivity for end users as connecting to the LAN backbone.

Compliant with IEEE802.11g, MSI MU54G is a high-efficiency wireless adapter for wireless networking at home, in office or in public places. The data rate can be up to 54 Mbps and auto-negotiated to 48, 36, 24, 18, 12, 9, 6Mbps (IEEE 802.11g), or 11, 5.5, 2, 1Mbps (IEEE802.11b).

With MU54G, you can roam between conference room and office without being disconnected the LAN cables; in addition, sharing files and printers can be easy tasks.

MU54G is available to Microsoft Windows operating systems (Windows® XP/2000/ME/98SE) and can be integrated into networking with either **Ad-hoc mode** (computer-to-computer, without an Access Point) or **Infrastructure mode** (computer-to-access point, an Access Point is required).

○ **Ad-hoc Mode :** An Ad-hoc network is a local area network or
other small network, especially one with wireless or temporary
plug-in connections, in which some of the network devices are
part of the network only for the duration of a communications
session. Users in the network can share files, print to a shared
printer, and access the Internet with a shared modem. In this
kind of network, new devices can be quickly added; however,
users can only communicate with other wireless LAN comput-
ers that are in this wireless LAN workgroup, and are within
range.

MU54G

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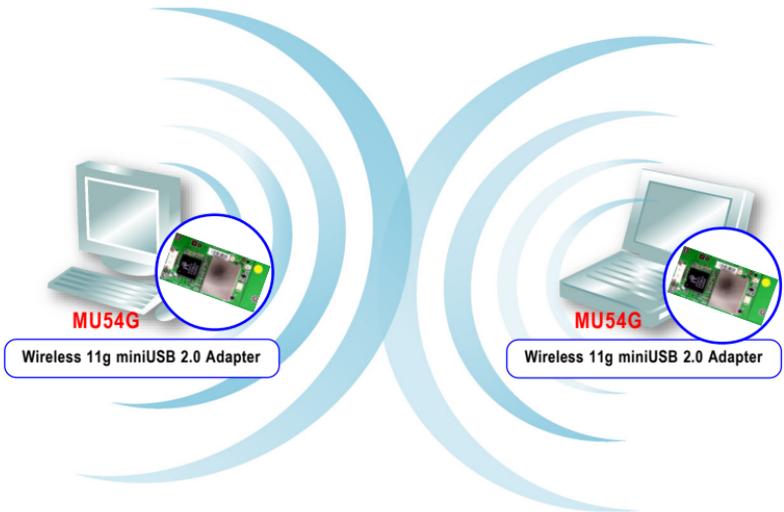
❑ **Infrastructure Mode :** The difference between Infrastructure network and Ad-hoc network is that the former one includes an Access Point. In an Infrastructure network, the Access Point can manage the bandwidth to maximize bandwidth utilization. Additionally, the Access Point enables users on a wireless LAN to access an existing wired network, allowing wireless users to take advantage of the wired networks resources, such as Internet, email, file transfer, and printer sharing. The scale and range of the Infrastructure networking are larger and wider than that of the Ad-hoc networking.

- ❑ Data rate up to 54Mbps bandwidth.

- ❑ Compliant with 802.11g (2.4GHz).

- ❑ Compliant with 802.11b (2.4GHz).

- ❑ 802.1x, 64/128-bit WEP and WPA to Ensure Privacy.

- ❑ Site survey, automatically detects wireless access point and single strength.

- ❑ Real-time monitors the quality of signal by easy-read icon.

- ❑ Up to 400M operating range.

>>> 1.4 Specifications

FREQUENCY BAND
802.11b/g Radio: 2.4 GHz
      USA – FCC 2412 ~ 2462MHz (Ch 1 ~ Ch 11)
      Canada – IC 2412 ~ 2462MHz (Ch 1 ~ Ch 11)
      Europe – ETSI 2412 ~ 2472MHz (Ch 1 ~ Ch 13)
      France 2457 ~ 2472MHz (Ch 10 ~ Ch 13)

DATA RATES & MODULATION TYPE
IEEE 802.11b/g (auto-fallback):
      CCK: 11, 5.5Mbps
      DQPSK: 2Mbps
      DBPSK: 1Mbps
      OFDM: 6, 9, 12, 18, 24, 36, 48 and 54Mbps

STANDARD
      IEEE802.11
      IEEE802.11b
      IEEE802.11g

FREQUENCY
      2.4 ~ 2.4835 GHz

WIRELESS RADIO TYPE
      DSSS (Direct Sequence Spread Spectrum) with ACK
      OFDM

SENSITIVITY
      $\leqq$ -82dBm@11Mbps (ERP-DSSS/CCK)
      $\leqq$ -65dBm@54Mbps (ERP-OFDM)

OUTPUT POWER
      16 dBm ± 1 dB (802.11b)
      14 dBm ± 1 dB (802.11g)

POWER CONSUMPTION
2.25W, max

OPERATING ENVIRONMENT
Temperature: 0 ~ 60˚C with AGC
Humidity: 10 ~ 90%, non-condensing

CERTIFICATION
EMI: FCC, certificated
WHQL: 2000 & XP certificated
Pre-WiFi: 11b/g

>>> 1.5 System Requirements

Before installing MU54G, your PC should meet the following items:

- One desktop/notebook PC with an available MiniPCI slot.

- Windows® 98SE/ME/2000/XP operating system.

- Minimum 5MB free disk space for installing the driver and utilities.

- One CD-ROM drive, double speed or higher.

>>> 1.6 Package Contents
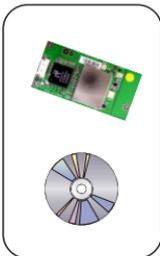
Unpack the package and check all the items carefully. If any item contained is damaged or missing, please contact your local dealer as soon as possible. Also, keep the box and packing materials in case you need to ship the unit in the future. The package should contain the following items:

- One Wireless 11g miniUSB 2.0 Adapter - MU54G.

- One Installation CD-ROM including drivers, utilities, and the manual files.

② Hardware Installation

>>> 2.1 Product View

WLAN 11g antenna connectors
Connect to external antennas for enhanced data transmission and reception. The external antennas are well designed on the desktop or notebook computers.
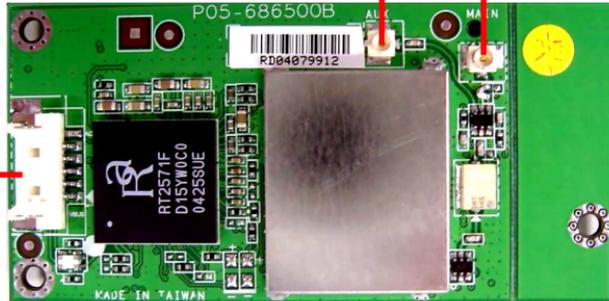
USB Connector
Connect to your mainboard using the provided USB cable.

To install your MU54G, simply connect one end of the USB cable to the USB connector on MU54G, and the other end to the USB connector locaed on your mainboard.
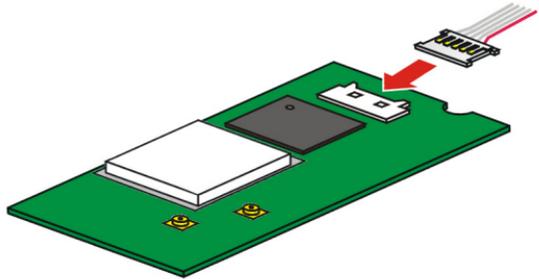
③ Software Installation

This chapter describes the procedures of installing the driver and utility. Follow the instruction step by step to finish the installation. If you use Windows® 98SE/ME, please prepare the Windows® Setup CD at hand before installing the driver; because the system will ask you to insert the Setup CD to copy files during the installation.

Please **NOTE** that your MU54G should be installed into your computer before installing the driver and utility. Then, the operating system will detect a new device and start to configure the new device. Click *Cancel* here to start installation from the InstallShield Wizard.

Click

STEP 1 Insert the software CD into your CD-ROM drive, and the Setup program should launch automatically.

If the Autorun program doesn't launch automatically, click **Start** at the taskbar and select **Run...**. Type *E:\setup.exe* (where *E* is your CD-drive) in the Open box and click *OK* to launch the Setup program manually.

The main screen of Setup program will appear as below.

STEP 2 The welcome screen of InstallShield Wizard appears. Click *Next*.

Read and accept the License Agreement; then, click *Next*.

In the following window, enter the user's information (*User Name, Organization*) in the respective fields; then, click *Next*.

STEP 3 Click *Install* and the program will copy the necessary files to the system. The progress indicator shows the installing status.

If you use Windows 98SE/ME, you may be asked to insert the Windows Setup CD during the installation. Please insert the Setup CD by the on-screen instruction to continue the installation.

STEP 4 Click *Finish* when the installation is completed. The **MSI Wireless LAN** icon will appear in the status area.

MSI Wireless LAN icon