

BT-185

Bluetooth Module

Hardware and Driver Reference

PEGATRON

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NOTE: Information in this document is subject to change after this document is made available.

INTRODUCTION

SCOPE

The purpose of this specification is to document the requirements for Bluetooth 2.1 + EDR, it is USB standard interface for use in laptop.

ACRONYMS AND DEFINITIONS

Acronym	Description
GFSK	Gaussian Frequency Shift Keying
8DPSK	8 phase Differential Phase Shift Keying
$\pi/4$ DQPSK	$\pi/4$ rotated Differential Quaternary Phase Shift Keying
USB	Universal Serial Bus or Upper Side Band (depending on context)
BER	Bit Error Rate. Used to measure the quality of a link
dBm	Decibels relative to 1mW
EDR	Enhanced Data Rate

GENERAL FEATURES

- Network Standard Bluetooth 2.1 + EDR
- Chipset BROADCOM BCM2046
- Host interface USB Interface
- Out Power Class 2 (max +4dBm)
- Data Rate 1, 2, 3Mbps
- Modulation GFSK; Pi/4DQPSK(2Mbps); 8DPSK(3Mbps)
- Operating Frequency 2402 ~ 2480 MHz
- Operating Channel CH1 ~ CH79
- Antenna Connectors PIFA antenna or RF connector
- Coverage 1m~10m(depending on environment)
- Sensitivity Typical : 90dBm
- Driver Support OS Windows 2000, Windows XP and Windows Vista

INTRODUCTION

ANTENNA SPECIFICATION

There are two types of antenna. One is builtin, and the other one is to use conductive connector to connect with the external antenna. The table shown below is the specification of builtin antenna.

- Antenna Length 15.74±1.574mm
- Operating Frequency 2.4GHz
- Antenna Type Planar invertedF antenna (PIFA)
- Polariation Type Linear
- Type of Radiation Omnidirectional
- Peak Gain Max 2.62 dBi
- Impedance 50 Ohm
- V.S.W.R. Max 2.0:1

REGULATORY REQUIREMENTS

- USA • EU • Taiwan • Canada • Japan

RELIABILITY REQUIREMENTS

Humidity Test	Description
Operation Mode:	Relative Humidity:20-90% Temperature: 25-50 Duration: 3 days
Non-operation Mode:	Relative Humidity: 20-90% Temperature: 25-60 Duration: 4 days

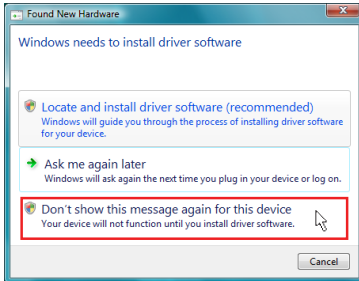
PACKING

The packaging material is customized by customers; the standard packaging contents are:

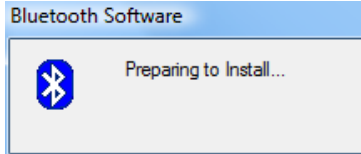
- Bluetooth USB module (x1)
- ESD BAG (x1)
- Bulk pack carton (500 in 1)

DRIVER INSTALLATION

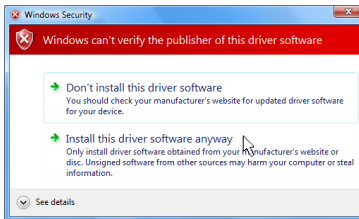
DRIVER INSTALLATION STEPS



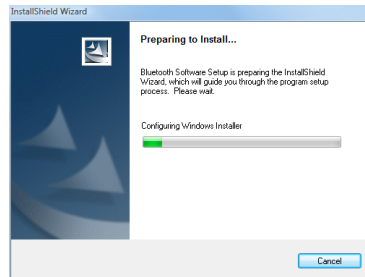
Install the device (if not already installed). When entering Windows for the first time, the device should be detected. Select **“Don't show...”**



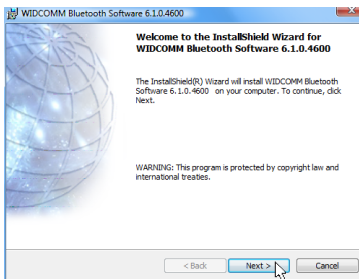
Double-click the driver setup file.



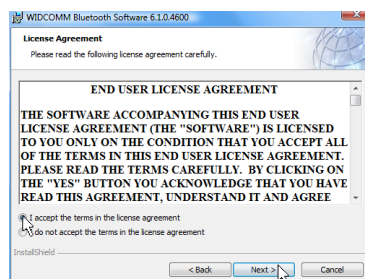
Select **“Install this driver...”**.



The installation wizard will prepare to install.



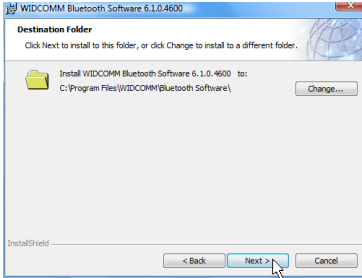
Click **Next** to continue.



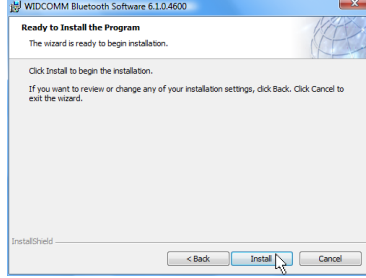
Read the agreement. Select **“I accept...”** and click **Next**.

DRIVER INSTALLATION

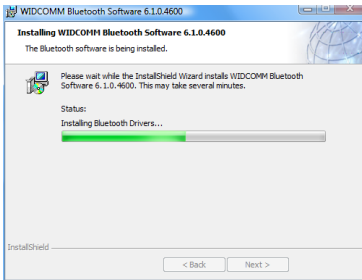
DRIVER INSTALLATION STEPS



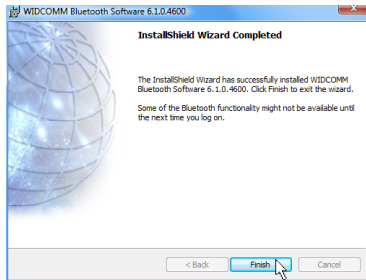
Click **Next** to install in the default folder or change it.



Click **Install** to continue.



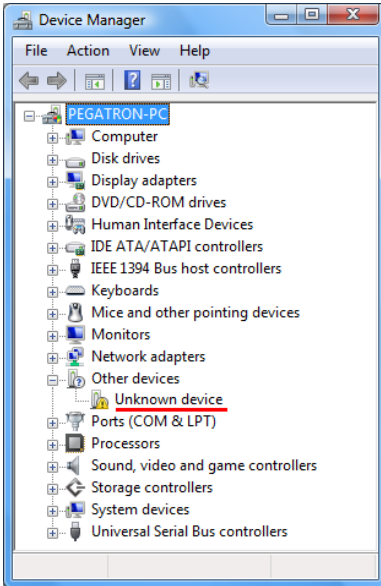
Drivers will begin installing.



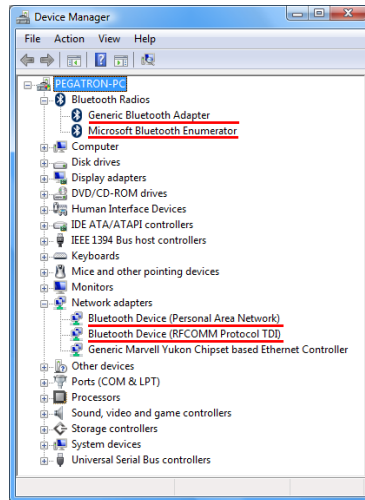
After installing, click **Finish** to exit.

DRIVER INSTALLATION

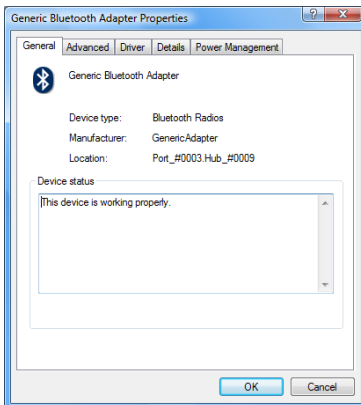
DEVICE AND DRIVER DETAILS



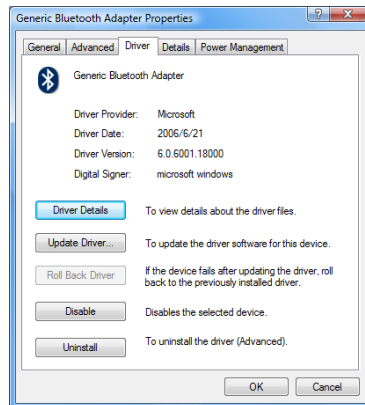
Before driver installation, the device may show as “**Unknown device**” under “Other devices”.



After driver installation, the wireless module shows as “**Generic Bluetooth Adapter**”. Other Windows supporting functions will also be added.



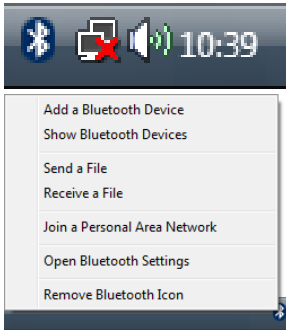
Detailed device info.



Detailed driver info.

DRIVER INSTALLATION

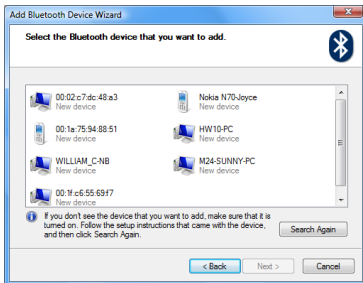
BLUETOOTH CONNECTIONS



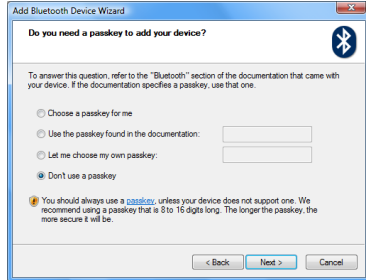
Click the bluetooth icon on the taskbar to bring up a menu of commands.



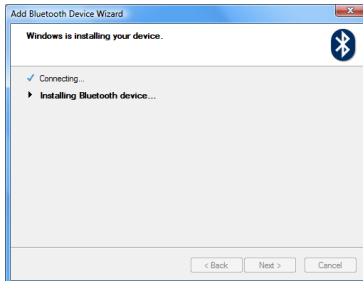
Select "Add a Bluetooth Device".



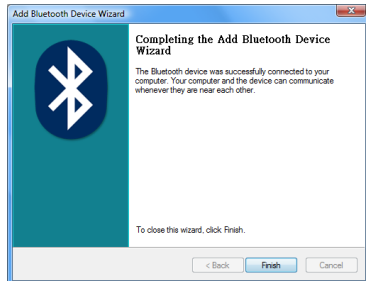
Select a device.



Use a passkey if necessary.

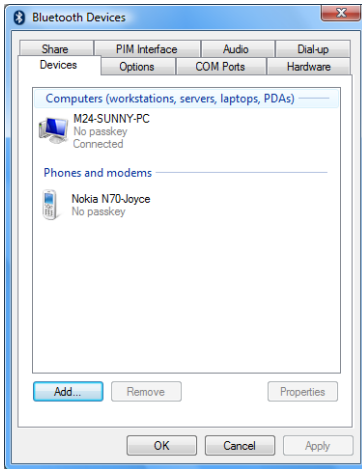


The Bluetooth device will be added.

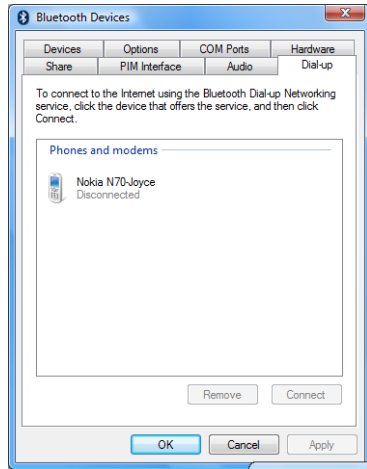


Click **Finish** when done.

BLUETOOTH CONNECTIONS



Devices will be categorized into Computers, Phones and modems, etc.



You can use a phone or modem device for Internet dial-up connections.

SAFETY STATEMENTS

Federal Communications Commission Statement

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

- 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.

WARNING! The use of a shielded-type power cord is required in order to meet FCC emission limits and to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used. Use only shielded cables to connect I/O devices to this equipment. 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.)

FCC Radio Frequency Interference Requirements

This device is restricted to INDOOR USE due to its operation in the 2.402 to 2.480GHz frequency range. FCC requires this product to be used indoors for the frequency range 2.402 to 2.480GHz to reduce the potential for harmful interference to co-channel of the Mobile Satellite Systems. High power radars are allocated as primary user of the 2.402 to 2.480GHz bands. These radar stations can cause interference with and / or damage this device.

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

SAFETY STATEMENTS

FCC Radio Frequency (RF) Exposure Caution Statement

This equipment complies with FCC RF exposure limits set forth for an uncontrolled environment. To maintain compliance with FCC RF exposure compliance requirements, please follow operation instructions in the user's manual. This equipment is for operation within indoor frequency ranges and is restricted to indoor environments only.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. "The manufacturer declares that this device is limited to Channels in the frequency by specified firmware controlled in the USA."

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

Protection requirements for health and safety - Article 3.1a

The protection of the health and the safety of the user and any other person, including the objectives with respect to safety requirements contained in Directive 73/23/EEC, but with no voltage limit applying.

Protection requirements for electromagnetic compatibility (EMC) - Article 3.1b

The protection requirements with respect to electromagnetic compatibility contained in Directive 89/336/EEC.

Effective use of the radio spectrum - Article 3.2

Radio equipment shall be so constructed that it effectively uses the spectrum allocated to terrestrial/space radio communication and orbital resources so as to avoid harmful interference.

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.

Hereby the [[manufacturer's name](#)], declares that this [[product's name and model number](#)] is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
