(Realtek RTL8821CE)

Combo NGFF Type2230 Module User's Manual

Preliminary Version

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ENVIRONMENTAL

Operating

Operating Temperature:	0℃ to +70 ℃
Relative Humidity:	5-90% (non-condensing)

Storage

Temperature:	-40℃ to +80°C (non-operating)
Relevant Humidity:	5-95% (non-condensing)

MTBF caculation

Over 150,000hours

Warning

Federal Communication 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 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.

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.

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.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

Operations in the 5.15-5.25GHz band are restricted to indoor usage only.
IEEE 802.11b or 802.11g operation of this product in the U.S.A. is firmware-limited to channels 1 through 13.

This device is intended only for OEM integrators under the following conditions:
1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and
2) This device and its antenna(s) must not be co-located with any other transmitters except in accordance
with FCC multi-transmitter product procedures. Referring to the multi-transmitter policy, multiple-transmitter(s) and module(s) can be operated simultaneously without C2P.
3) For all products market in US, OEM has to limit the operation channels in CH1 to CH13 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of 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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX2-RTL8821CE ". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.

Manual Information To the End User

This module is intended for OEM integrator. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is integrated.

Additional testing and certification may be necessary when multiple modules are used.

Industry Canada Statement

This device complies with Industry Canada license-exempt RSS standard(s).

. 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

French translation:

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes

: (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

(The user manual of transmitter devices equipped with detachable antennas shall contain the following information in a conspicuous location:)

This device has been designed to operate with an antenna having a maximum gain of 5 dBi. Antenna having a higher gain is strictly prohibited per regulations of Industry Canada. The required antenna impedance is 50 ohms.

CAN ICES-3 (B)/NMB-3(B)

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

French translation:

(Le manuel d'utilisation de dispositifs émetteurs équipés d'antennes amovibles doit contenir les informations suivantes dans un endroit bien en vue:)

Ce dispositif a été conçu pour fonctionner avec une antenne ayant un gain maximum de 5 dBi. Une antenne à gain plus élevé est strictement interdite par les règlements d'Industrie Canada. L'impédance d'antenne requise est de 50 ohms.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peutfonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pourl'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectriqueà l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que lapuissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire àl'établissement d'une communication satisfaisante.

IMPORTANT NOTE:

IC Radiation Exposure Statement:

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

French translation:

NOTE IMPORTANTE: (Pour l'utilisation de dispositifs mobiles)
Déclaration d'exposition aux radiations:
Cet équipement est conforme aux limites d'exposition aux rayonnements IC RSS-102 établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Caution: (DFS band usage-full bands)

(i) the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

(ii) the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall comply with the e.i.r.p. limit; and

(iii) the maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate.

(iv) Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

(v) Dynamic Frequency Selection (DFS) for devices operating in the bands 5250- 5350

MHz, 5470-5600 MHz and 5650-5725 MHz

French translation:

Avertissement:

Le guide d'utilisation des dispositifs pour réseaux locaux doit inclure des instructions précises sur les restrictions susmentionnées, notamment :

(i) les dispositifs fonctionnant dans la bande 5 150-5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

(ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5 250-5 350 MHz et 5 470-5 725 MHz doit se conformer à la limite de p.i.r.e.;

(iii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5 725-5 825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

(iv) De plus, les utilisateurs devraient aussi être avisés que les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5 250-5 350 MHz et 5 650-5 850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

(v) Sélection dynamique de fréquences (DFS) pour les dispositifs fonctionnant dans les bandes 5250-5350 MHz, 5470-5600 MHz et 5650-5725 MHz.

This device is intended only for OEM integrators under the following conditions:

1) The antenna must be installed such that 20 cm is maintained between the antenna and users, and

2) This device and its antenna(s) must not be co-located with any other transmitters except in accordance with IC multi-transmitter product procedures. Referring to the multi-transmitter policy, multiple-transmitter(s) and module(s) can be operated simultaneously without reassessment permissive change.

3) For all products market in Canada, OEM has to limit the operation channels in CH1 to CH13 for 2.4G band by supplied firmware programming tool. OEM shall not supply any tool or info to the end-user regarding to Regulatory Domain change.

As long as 3 conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

The device could automatically discontinue transmission in case of absence of information to transmit, or operational failure. Note that this is not intended to prohibit transmission of control or signaling information or the use of repetitive codes where required by the technology.

French translation :

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)

1) L'antenne doit être installée de telle sorte qu'une distance de 20 cm est respectée entre l'antenne et les utilisateurs, et
2) Cet appareil et son antenne (s) ne doit pas être co-localisés ou fonctionnement en association avec une autre antenne ou transmetteur.

3) Pour tous les produits vendus au Canada, OEM doit limiter les fréquences de fonctionnement CH1 à CH13 pour bandes de fréquences 2.4G grâce aux outils de microprogrammation fournis. OEM ne doit pas fournir d'outil ou d'informations à l'utilisateur final en ce qui concerne le changement de réglementation de domaine.

Tant que les 3 conditions ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours

responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

Le dispositif pourrait automatiquement cesser d'émettre en cas d'absence d'informations à transmettre, ou une défaillance opérationnelle. Notez que ce n'est pas l'intention d'interdire la transmission des informations de contrôle ou de signalisation ou l'utilisation de codes répétitifs lorsque requis par la technologie.

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

French translation:

NOTE IMPORTANTE:
Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

End Product Labeling

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: “Contains IC: 6317A-RTL8821CE ”.

French translation:

Plaque signalétique du produit final
Ce module émetteur est autorisé uniquement pour une utilisation dans un dispositif où l'antenne peut être installée de telle sorte qu'une distance de 20cm peut être maintenue entre l'antenne et les utilisateurs. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: 6317A-RTL8821CE".

Manual Information To the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

The end user has to also be informed that any changes or modifications not expressly
approved by the manufacturer could void the user's authority to operate this equipment.
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.

French translation:

Manuel d'information à l'utilisateur final
L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.
Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

For indoor use only.
Pour une utilisation en intérieur uniquement

This radio transmitter (IC: 6317A-RTL8821CE) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (IC: 6317A-RTL8821CE) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

The maximum antenna gain permitted for devices in the band 5725-5850 MHz shall be such that the equipment still complies with the e.i.r.p. limits specified for point-to-point and non-point-to-point operation as appropriate.

le gain maximal d' antenne permis (pour les dispositifs utilisant la bande 5725-5850 MHz)

doit se conformer à la limite de p.i.r.e. spécifiée pour l' exploitation point à point et non point à point, selon le cas.

Any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following "Contains IC: 6317A-RTL8821CE".

The Host Model Number (HMN) must be indicated at any location on the exterior of the end product or product packaging or product literature which shall be available with the end product or online.

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	
					2.4GHz	5GHz
1	LYNwave	ALA110-222050-300011	PIFA Antenna	IPEX MHF4	3.5	5
2	PSA	RFDPA171320EMLB301	Dipole Antenna	IPEX MHF4	3.14	5

NCC 警語

經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

本模組於取得認證後將依規定於模組本體標示審合格籤，並要求平台上標示「本產品內含射頻模組：ID編號」

Japan Statement

Host system must be labeled with "Contains MIC ID:xxxxxx “, MIC ID displayed on label.
5GHz band (W52, W53): Indoor use only.

Korea Statement

B 급기기 (가정용 방송통신기자재)	이 기기는 가정용(B 급) 전자파적합기기로서 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.

Installing the Wireless PCIe NGFF2230 module

Hardware

Installing PCIe NGFF2230 module to PCIe NGFF2230 connector and connect two external Wi-Fi antennas on I-PEX connectors.

Un-installing the Wireless PCIe NGFF2230 module

Hardware

Remove 2 external Wi-Fi Antennas from the Wireless PCIe NGFF2230 module board and remove the Wireless PCIe NGFF2230 module board from PCIe NGFF2230 connector port

Installing the Wireless PCIe NGFF2230 module

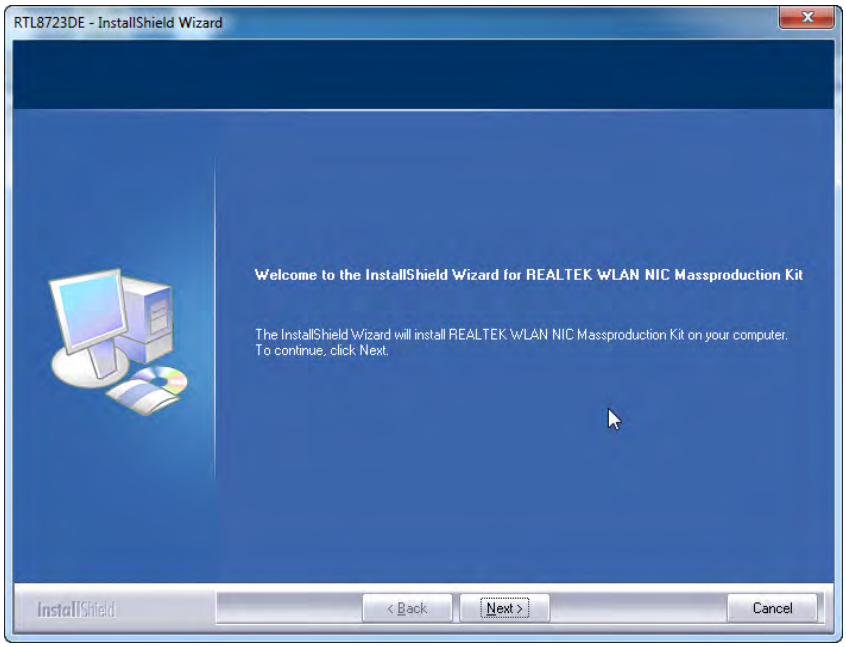
Software

Before you proceed with the installation, please notice following descriptions.

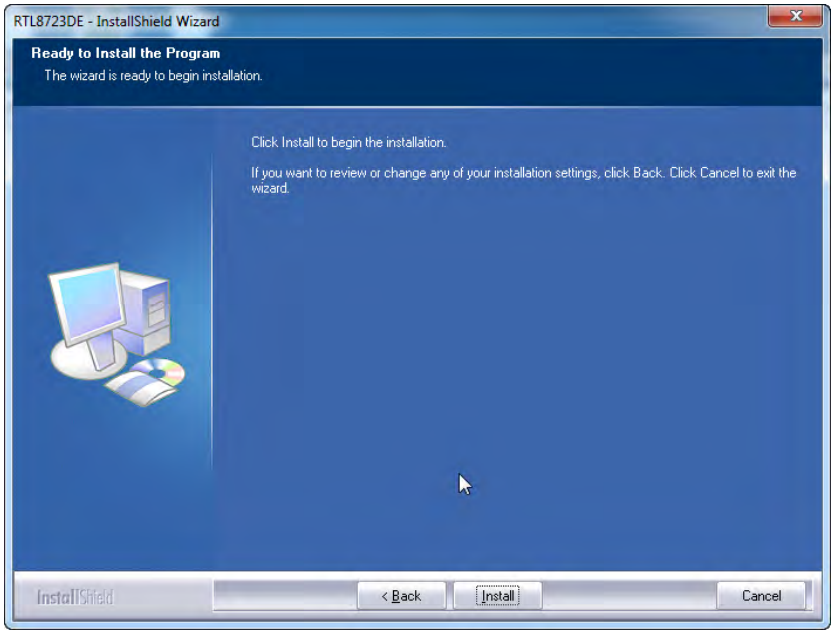
Note1: The following installation was operated under Windows 7.

Note2: If you have installed the WLAN driver & utility before, please uninstall the old version first.

A. Execute the “setup.exe”, Click “Next” to process the installation

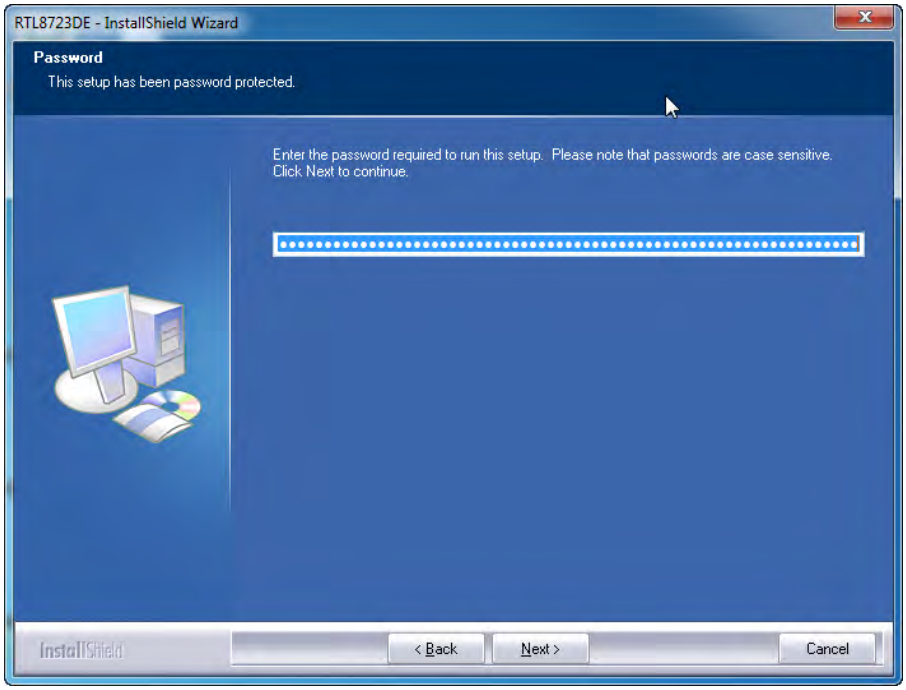


B. Click “Install” to process the installation

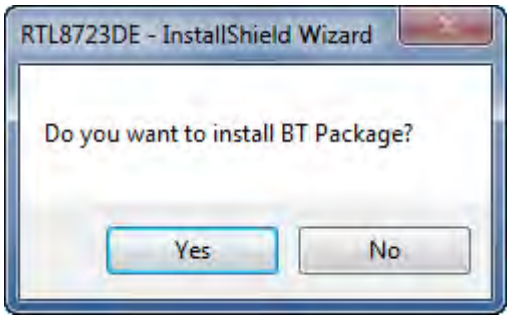


C. Click Install this driver software anyway

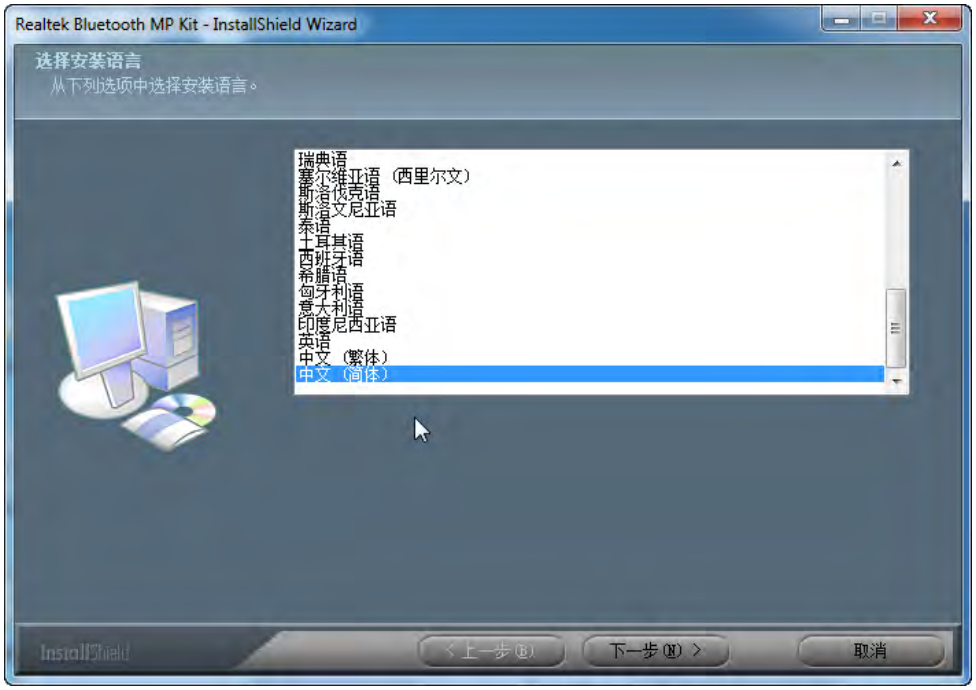
D. After step “C” please press Next button.



E. Please click “YES” to install BT package.



F. Please click “下一步”to continue.

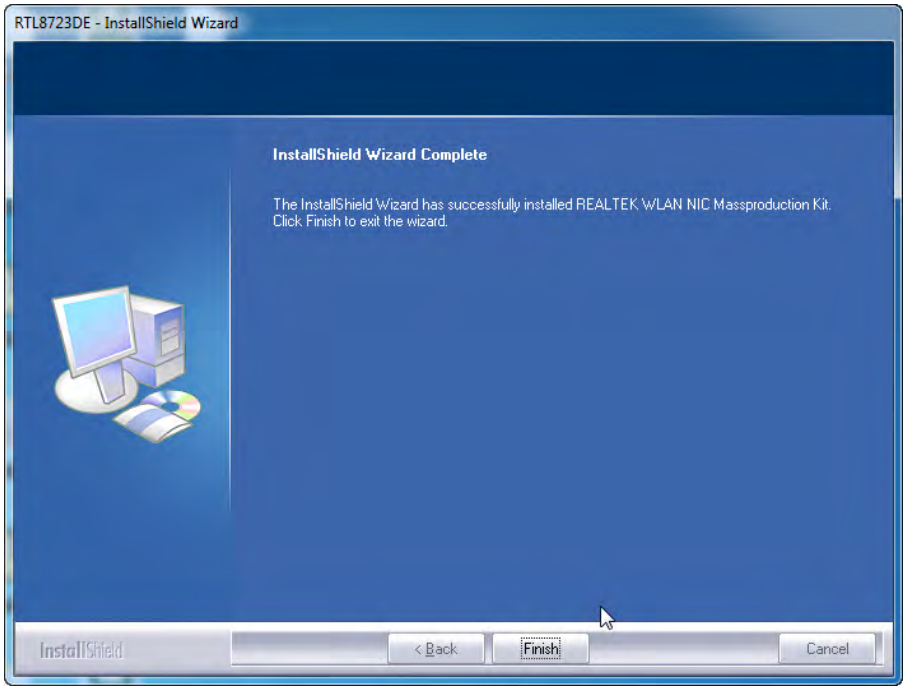


G. Please click “下一步”to continue.

H. Please click “安装”to start installation.

I. Please click “完成”to finish the installation.

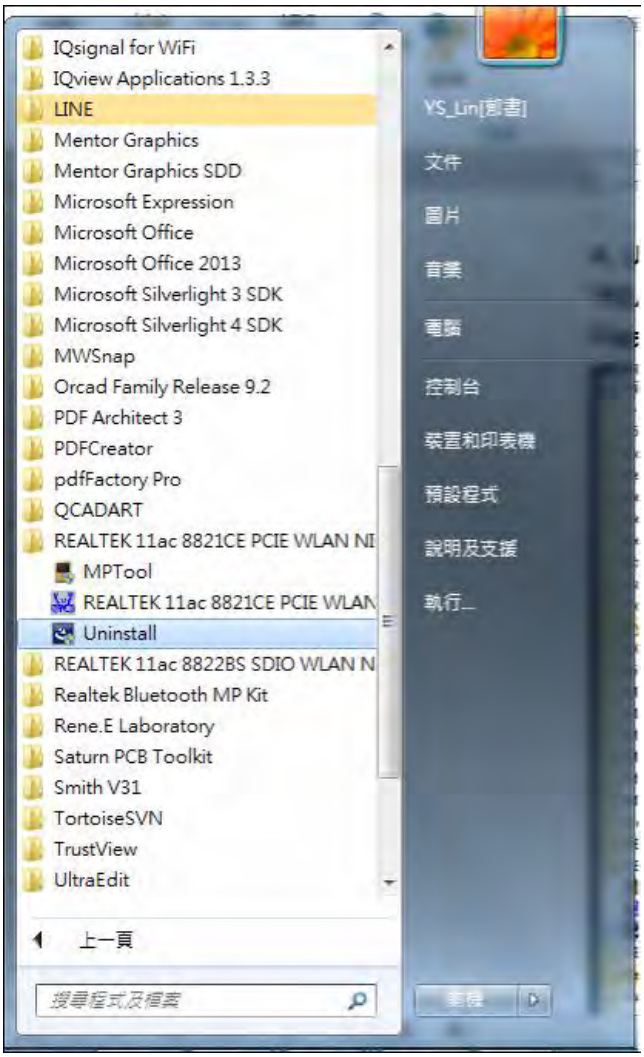
J. Press Finish button to complete the install process



Un-installing the Wireless PCIe NGFF2230 module

Software

A. Uninstall the RTL8821CE WLAN Driver from “Start”→ “All Programs”→ “REALTEK 11ac 8821CE PCIE WLAN NIC Massproduction kit”
Please click “Uninstall” to remove RTL8821CE WLAN driver.

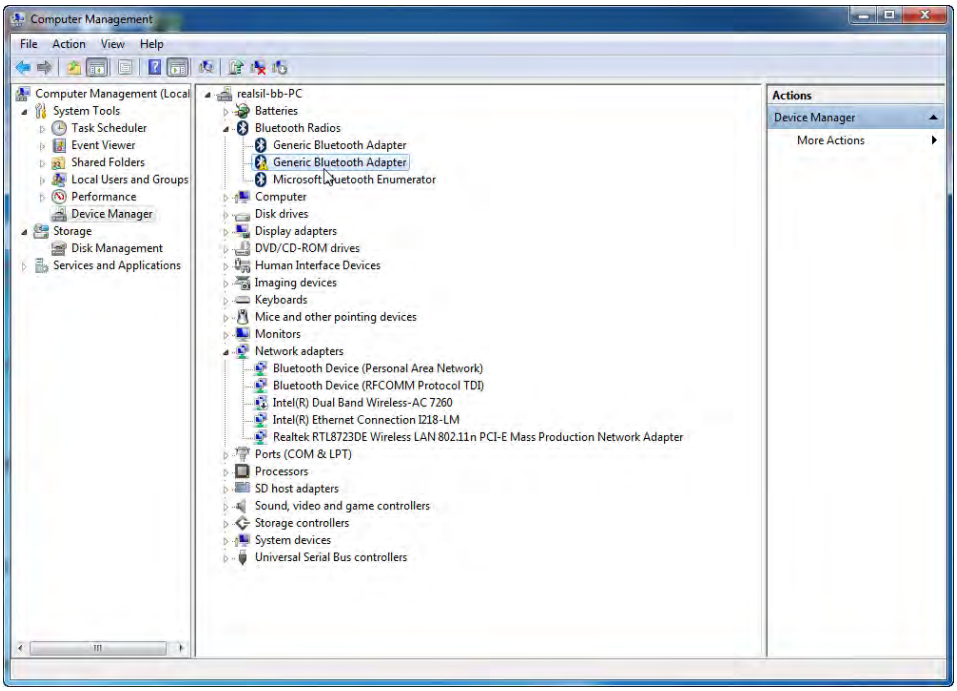


Installing the Bluetooth USB Module

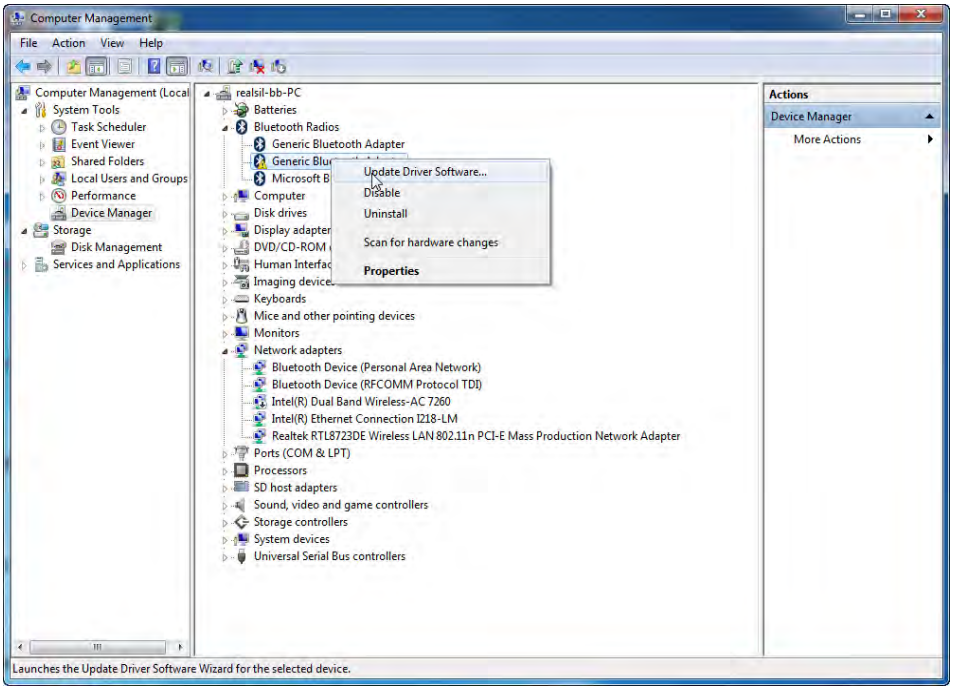
Software

A. Insert the NGFF2230 card into system connector.

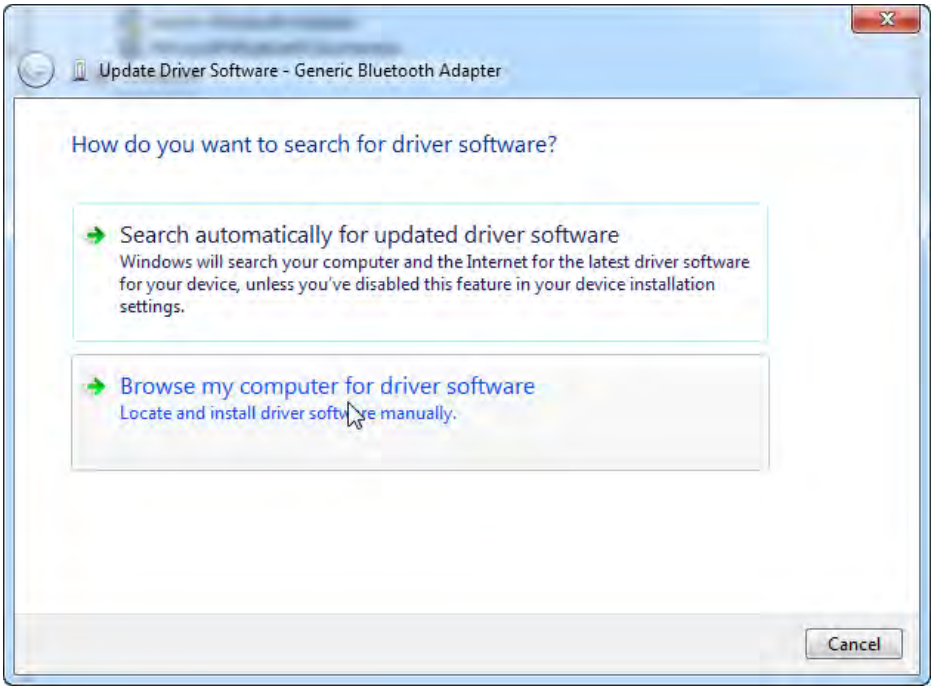
B. Boot on system then the “Geniric Bluttooth Adapter” device will show up in device manager.



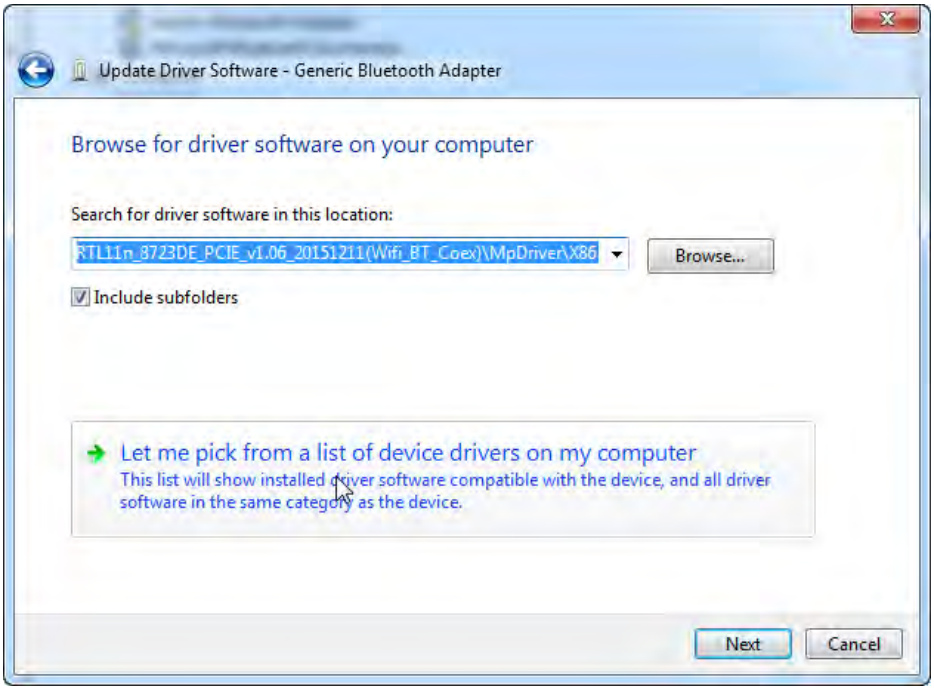
C. Click right button on “RT Bluetooth Radio” and select “Update Driver”.



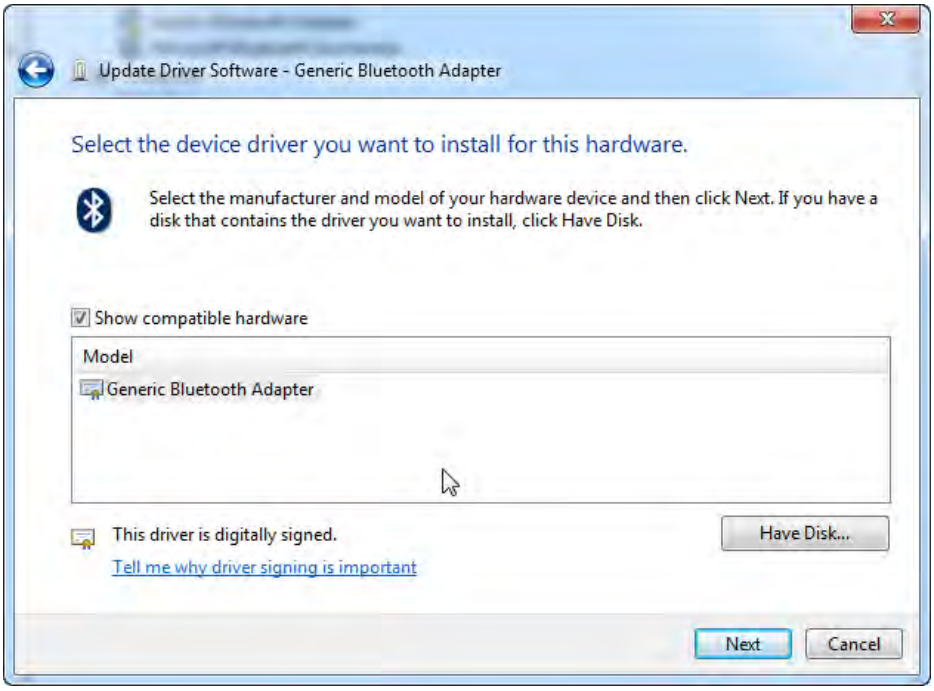
D. After select “Update Driver Software ” then the Hardware Update Wizard will pop up, please select “Browse my computer for driver software” and press Next button.



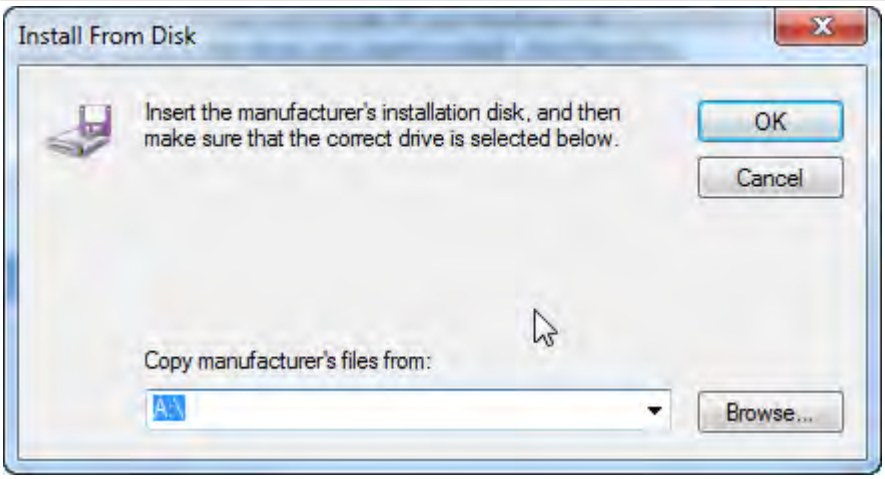
E. After step “D” please Select “Let me pick from a list of device drivers on my computer ”.

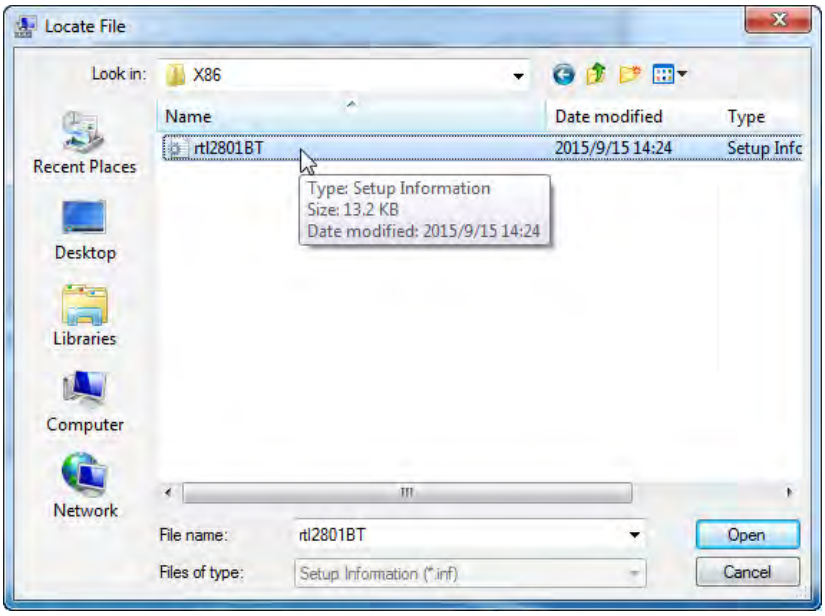


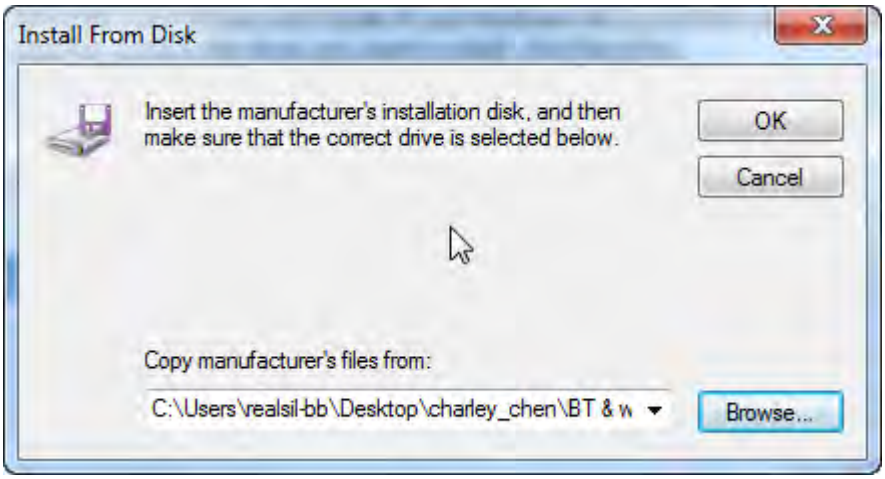
F. Finish step “E” then select “Have Disk..”

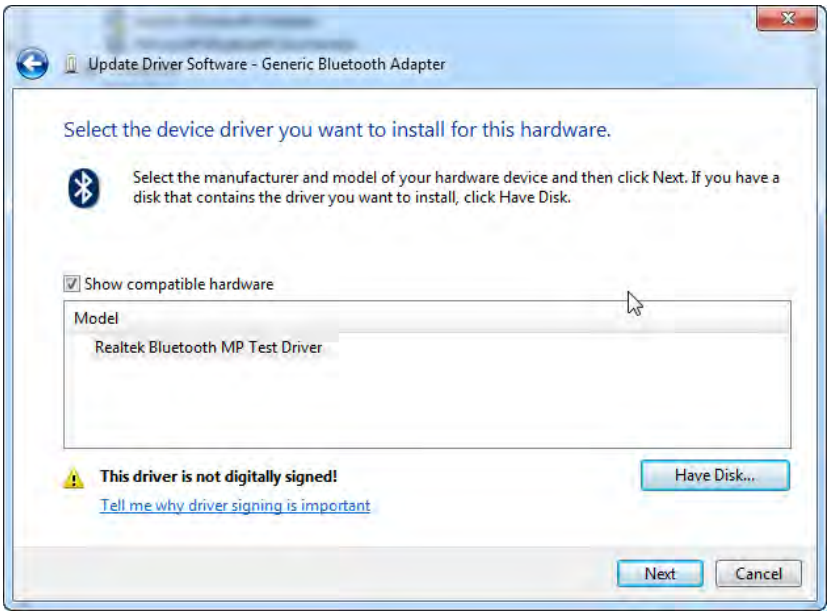


G. Now select browse to find the driver for device and press Next button.(The driver’s locate is the same with WiFi driver)

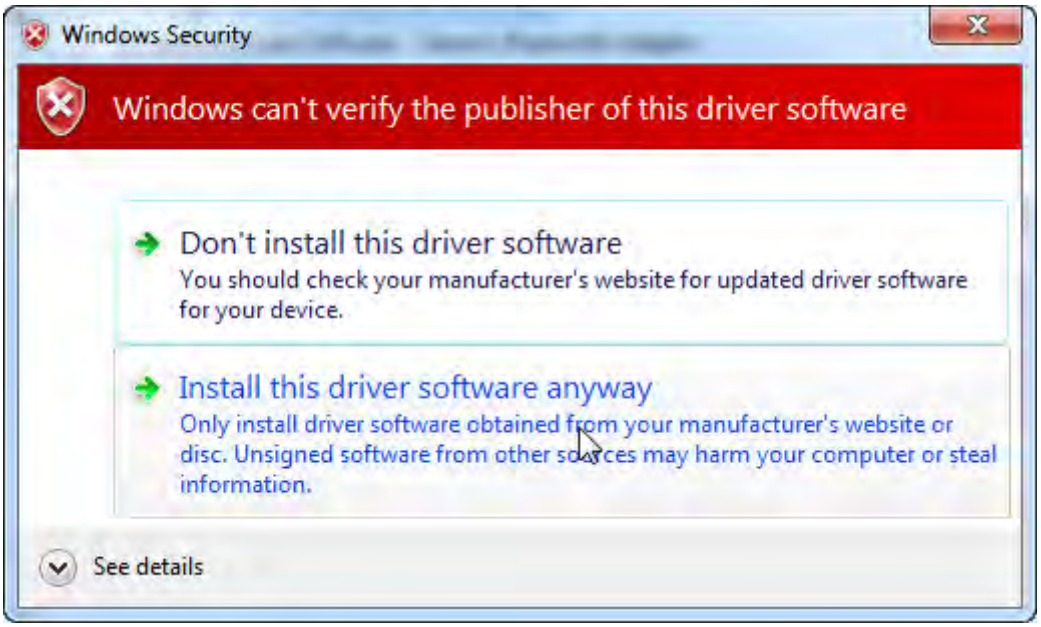

Install From Disk
Insert the manufacturer's installation disk, and then make sure that the correct drive is selected below.
OK
Cancel
Copy manufacturer's files from:
A:\
Browse...


Locate File
Look in:
X86
Name
Date modified
Type
rtl2801BT
2015/9/15 14:24
Setup Info
Type: Setup Information
Size: 13.2 KB
Date modified: 2015/9/15 14:24
Recent Places
Desktop
Libraries
Computer
Network
File name:
rtl2801BT
Files of type:
Setup Information (*.inf)
Open
Cancel

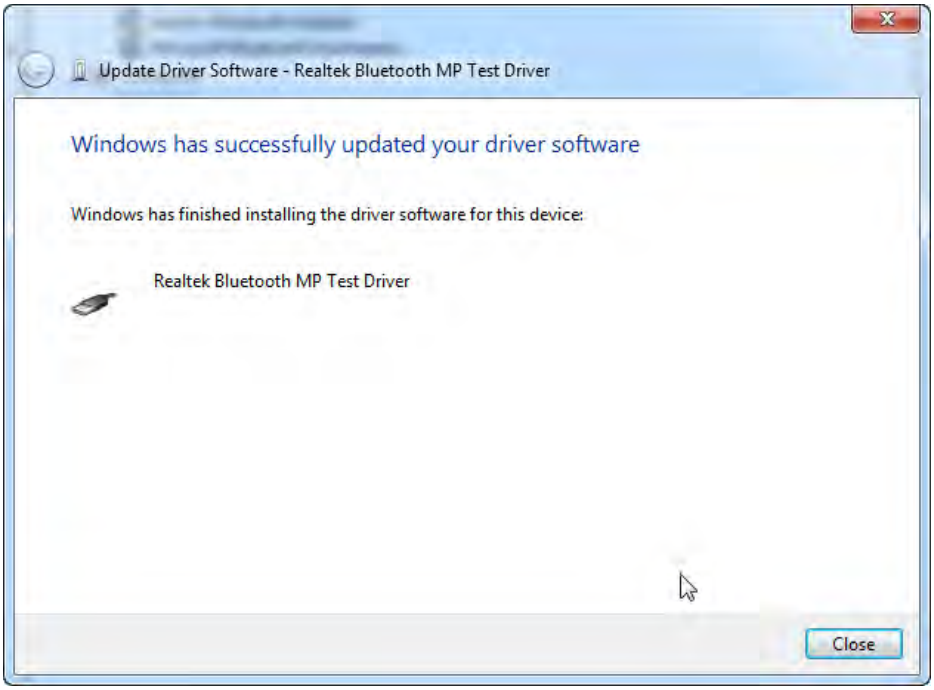

Install From Disk
Insert the manufacturer's installation disk, and then make sure that the correct drive is selected below.
OK
Cancel
Copy manufacturer's files from:
C:\Users\realsil-bb\Desktop\charley_chen\BT & w
Browse...



H. Then click “Install this driver software anyway” to continue.



I. Press close button to complete the install process and you can see the Driver will be show up in Device Manager.


Update Driver Software - Realtek Bluetooth MP Test Driver
Windows has successfully updated your driver software
Windows has finished installing the driver software for this device:
Realtek Bluetooth MP Test Driver
Close