Coretronic

# WB01 User Manual

## WiFi 11a/b/g/n/ac 2T2R and BT4.0 Module

RISE

Responsibility Innovation Superiority Entrepreneurship

# Agenda

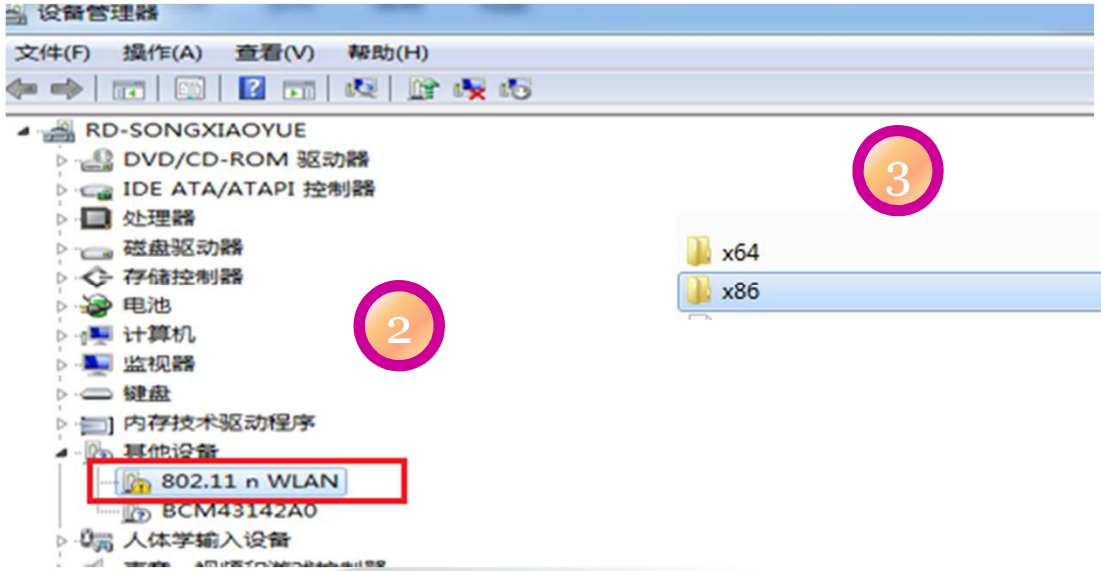
- SOP- How to install WiFi  Driver
- SOP - How to WiFi Tool
- SOP- How to install USB BT Tool and Driver
  - **Update USB driver:**
    - Update USB driver_Method_A
    - Update USB driver_Method_B
  - **BT Tool in WCN Combo Tool:**
    - COM and Download patch
- SOP - How to use BT Tool
  - BT Tool:
    1. **Setting** page for Bluetooth Test-Mode
    2. **RF Test** page for BR & EDR TX-Mode
    3. **BLE Test mode** page for LE TX/RX-Mode
    4. **Non-signaling RX Test** page for BR & EDR RX-Mode
    5. **TX tone Test** page for BR/EDR/LE continuous TX-Mode

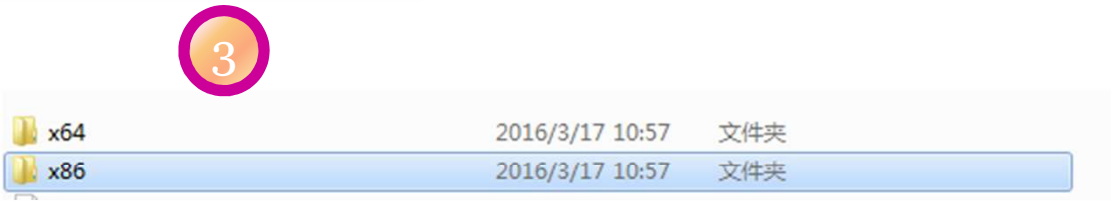
# SOP-
# How to install WiFi Driver

(Only support win XP & win7)

# Update WiFi driver

1. Insert the WIFI module。
2. Select “WLAN” device to install WIFI driver.
3. If there is any driver needed, please choose the folder mentioned by step3. (Skip the BT Hardware Installtion, the BT driver and WIFI driver should better be installed separately.)
4. The Installation is complete.

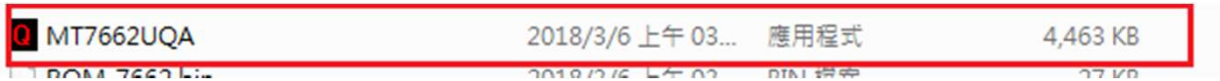


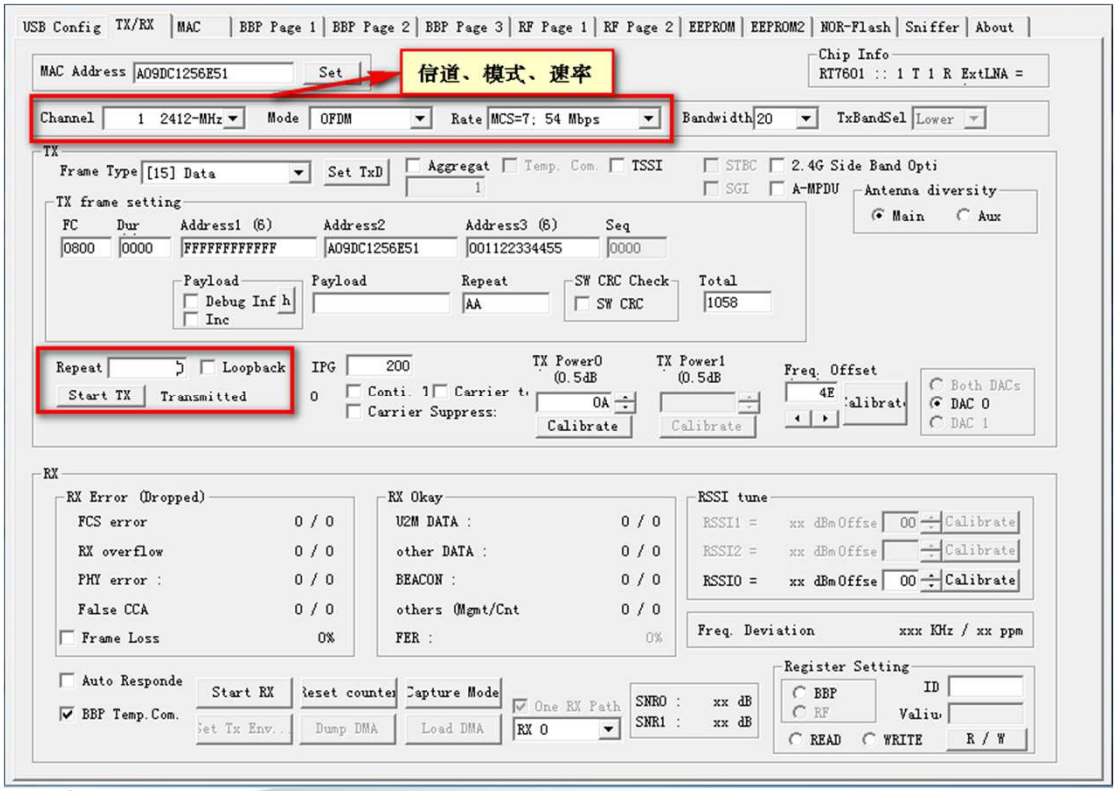
# SOP - How to use WiFi Tool

# WiFi Tool

1. Click the icon




2. Enter the following interface
3. Select the Channel / Rate / Bandwidth .
   According to the setup outline in red, click the start TX.(Repeat change to “0”)

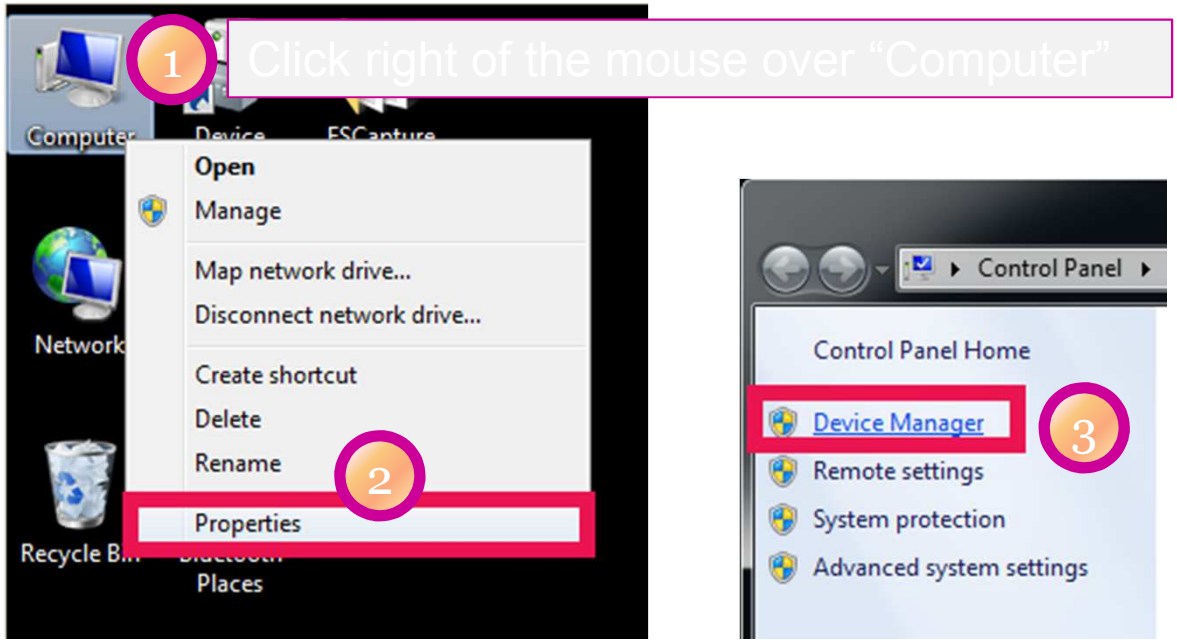


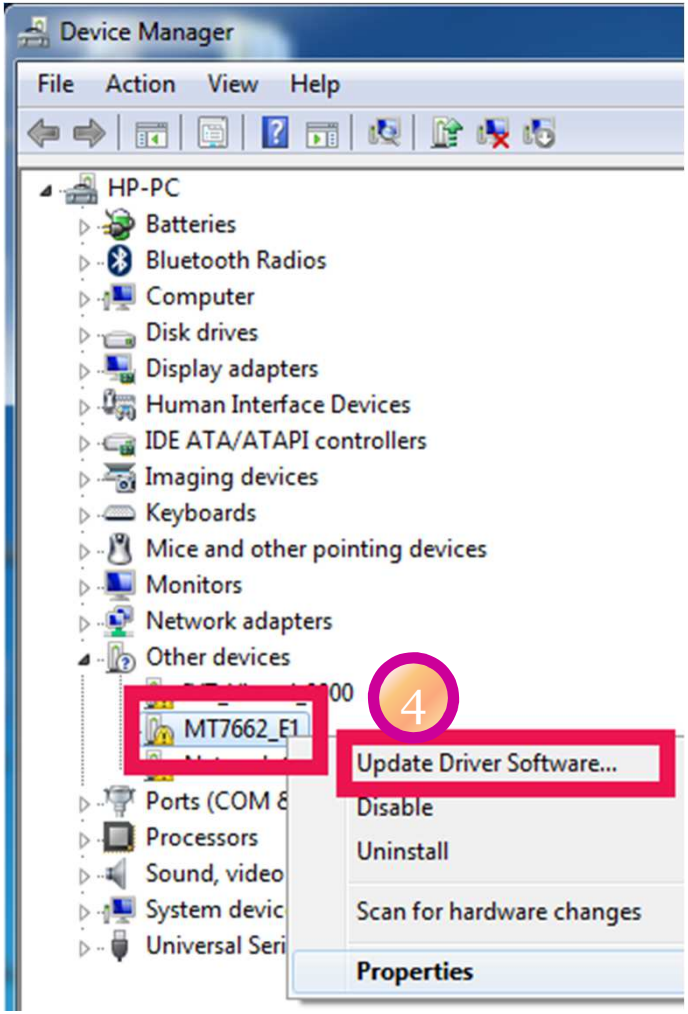
# SOP-
# How to install USB BT Tool and Driver

(Only support win7 32 bit)

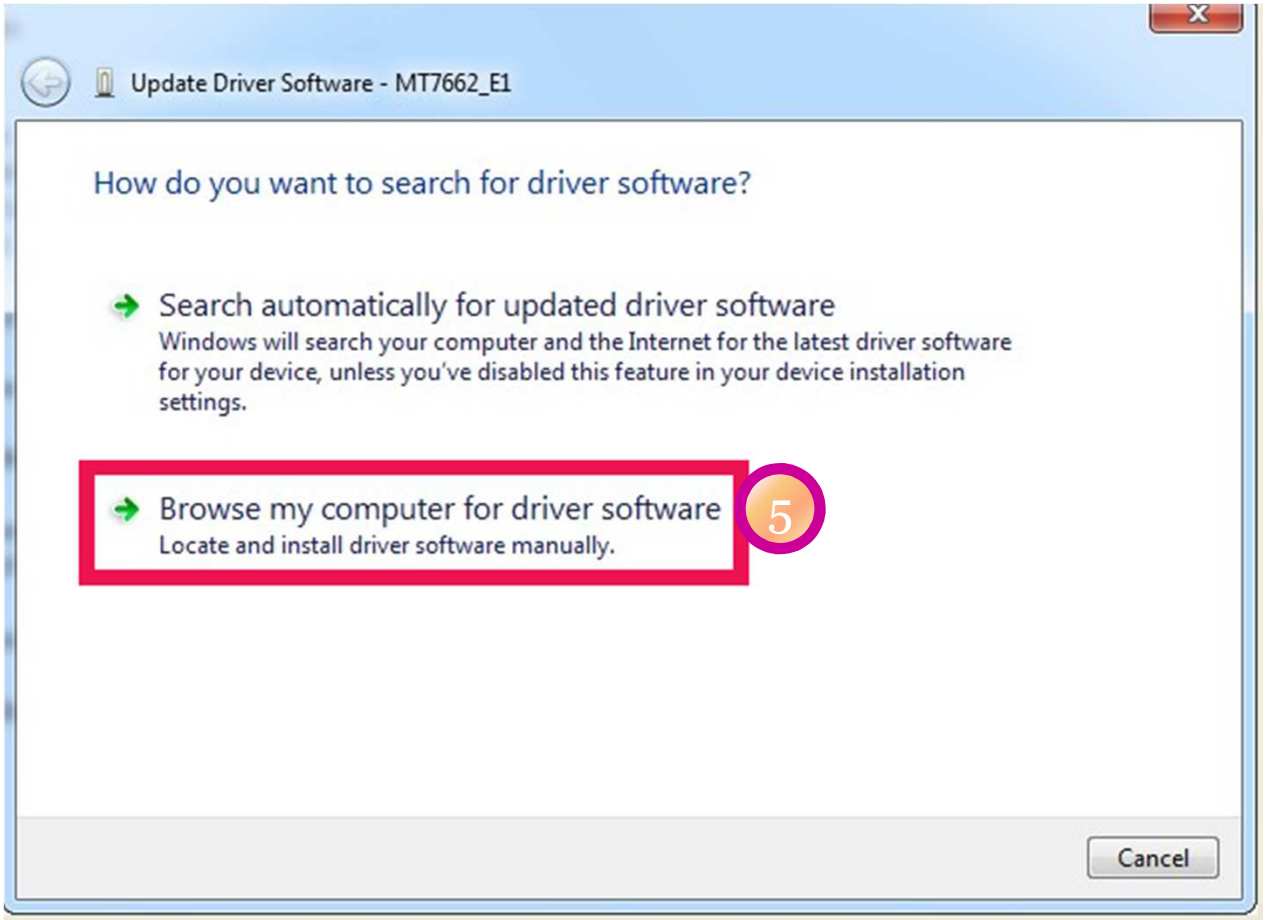
# Update USB driver

1. Plug in the USB DUT
2. Go to the “Device Manager”
3. Select “BT” device to install BT driver.

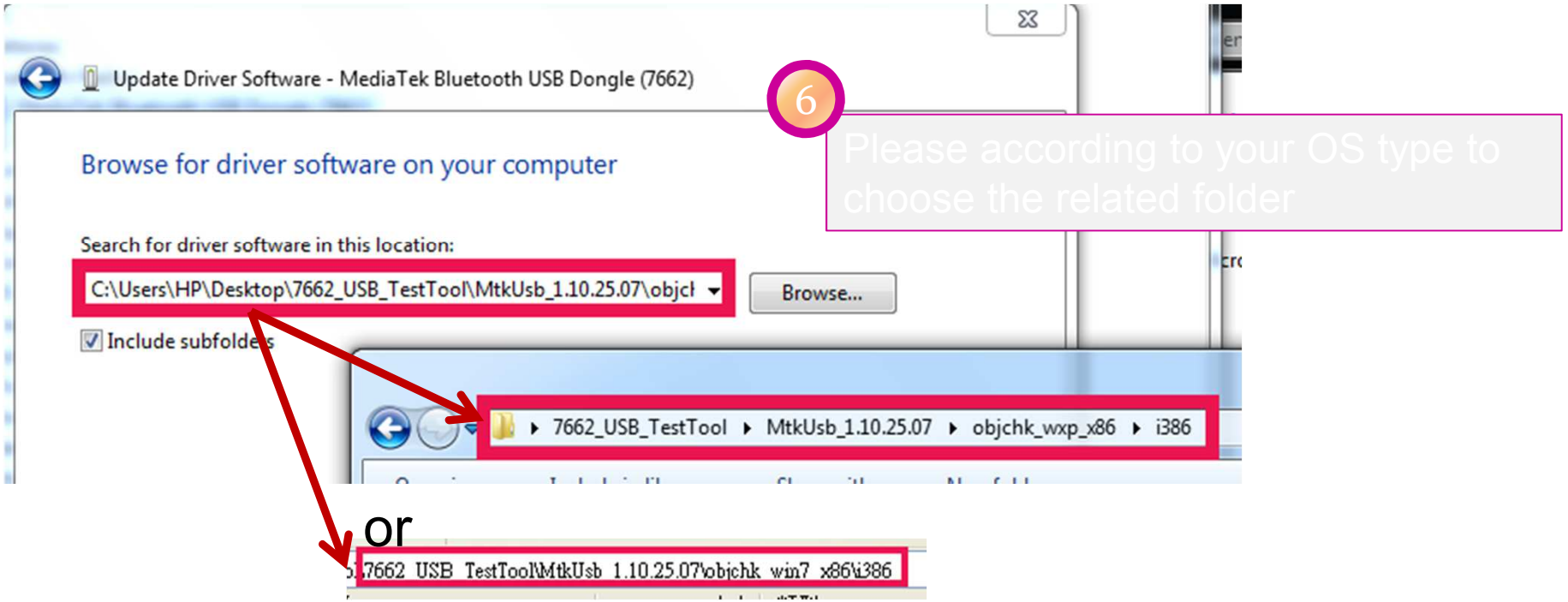


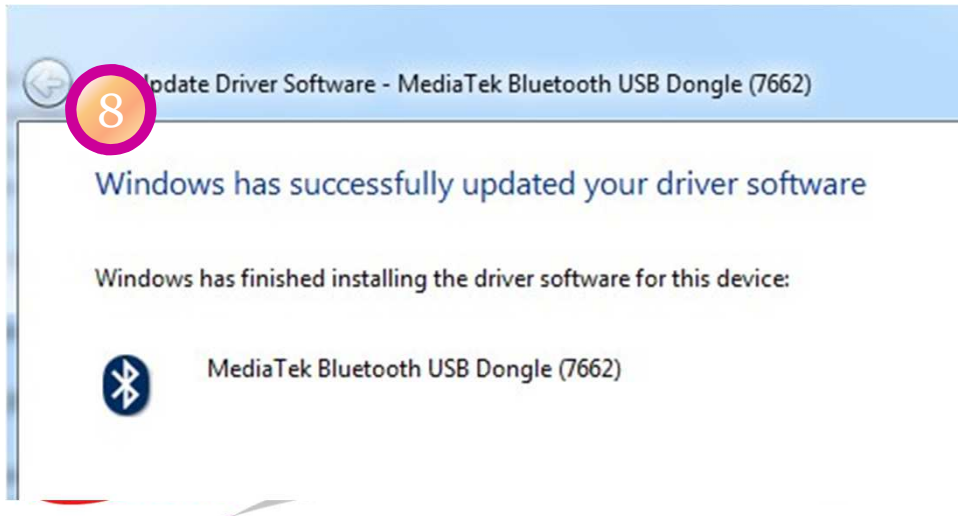
# Update USB driver (Cont.)

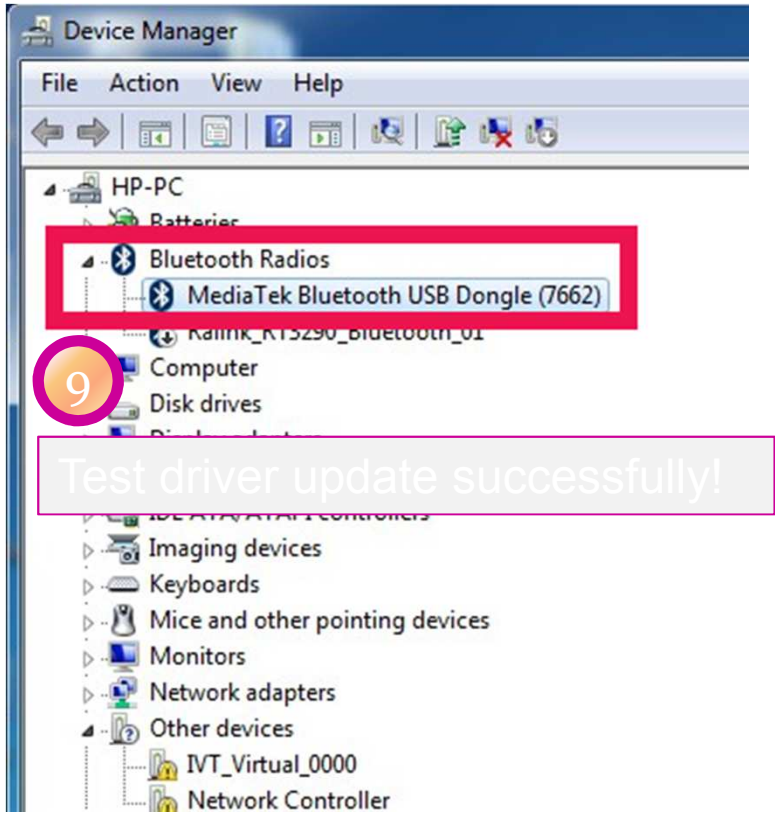


# Update USB driver_Method_A

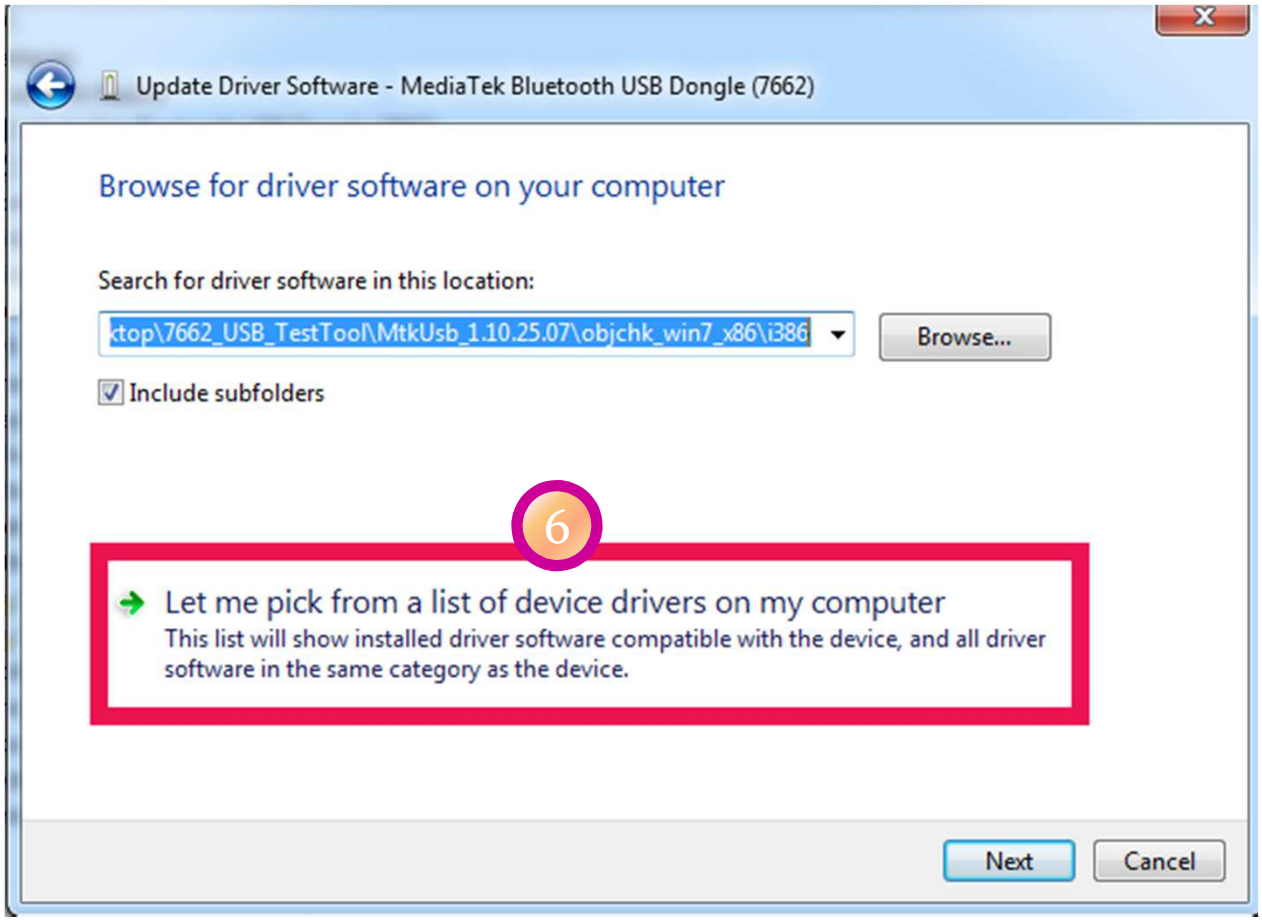


# Update USB driver_Method_A (cont.)

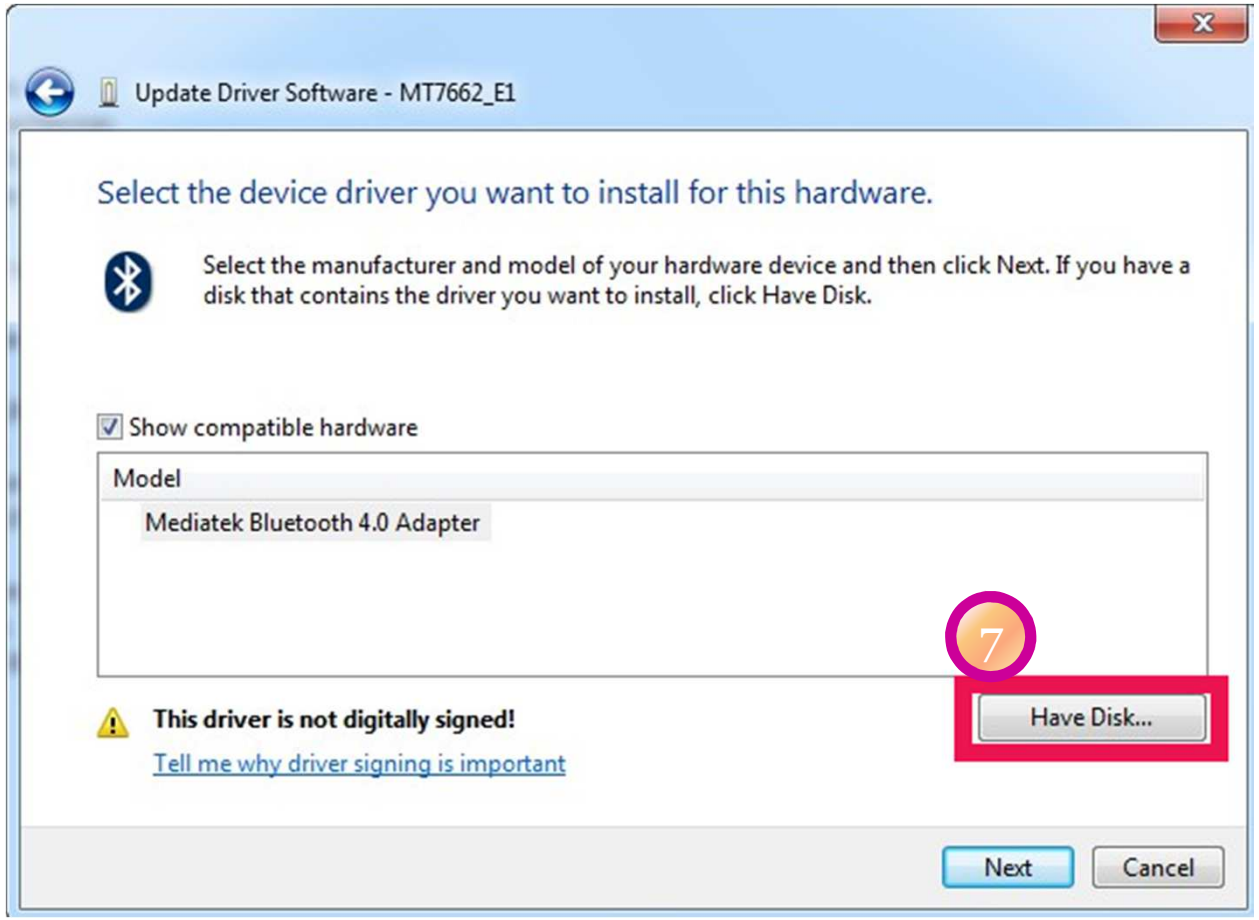


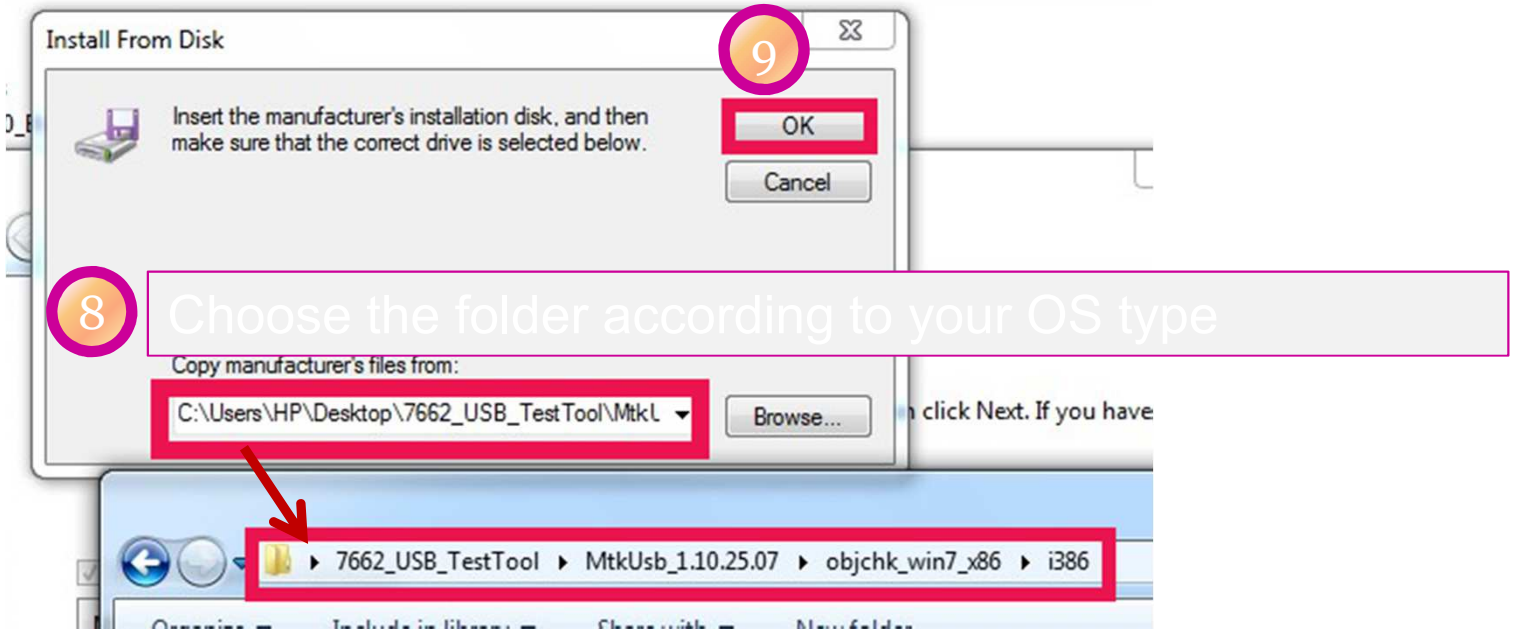
# Update USB driver_Method_B

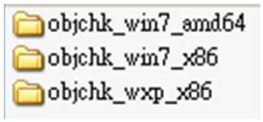


# Update USB driver_Method_B (Cont.)

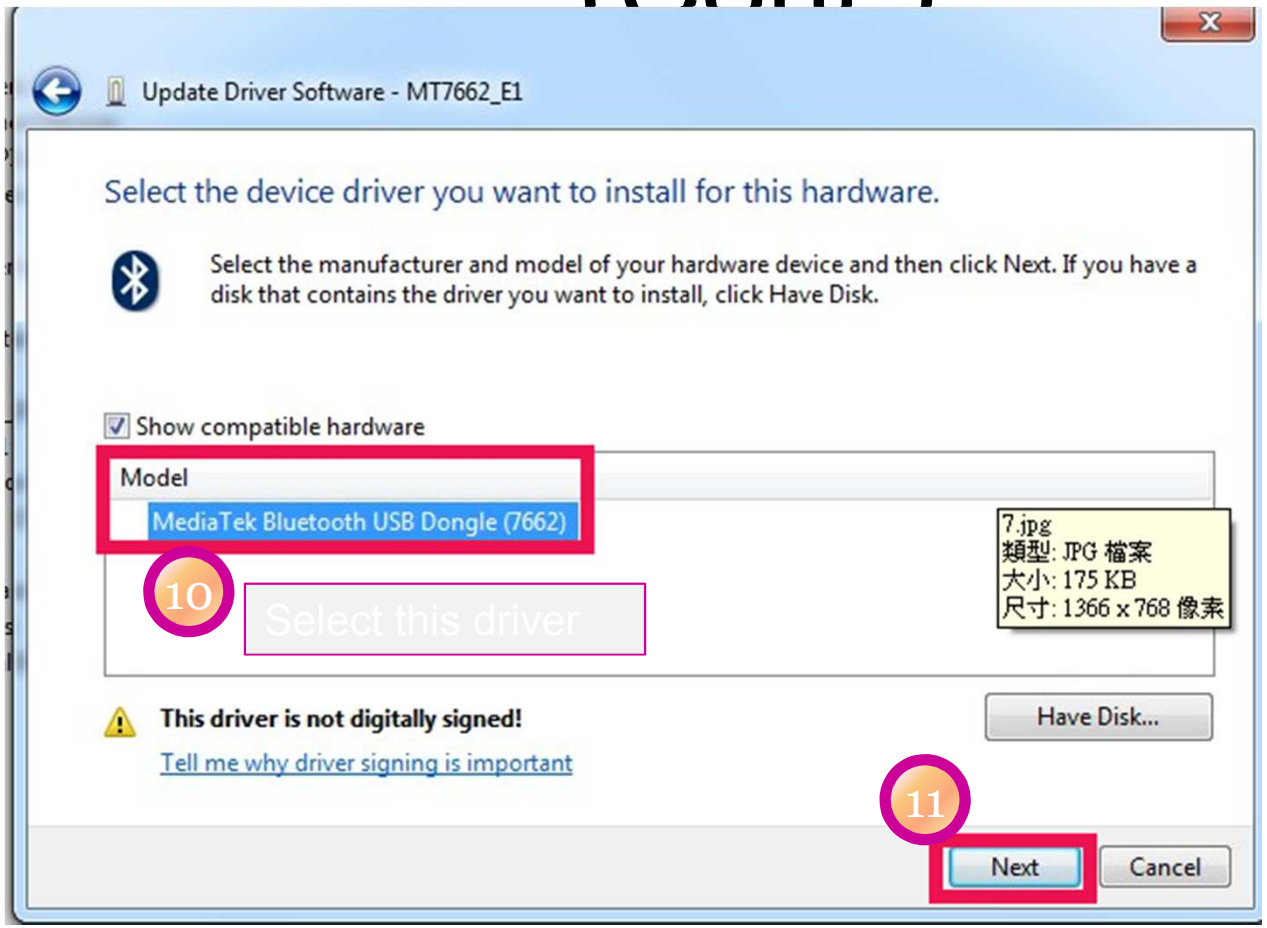


# Update USB driver_Method_B (Cont.)

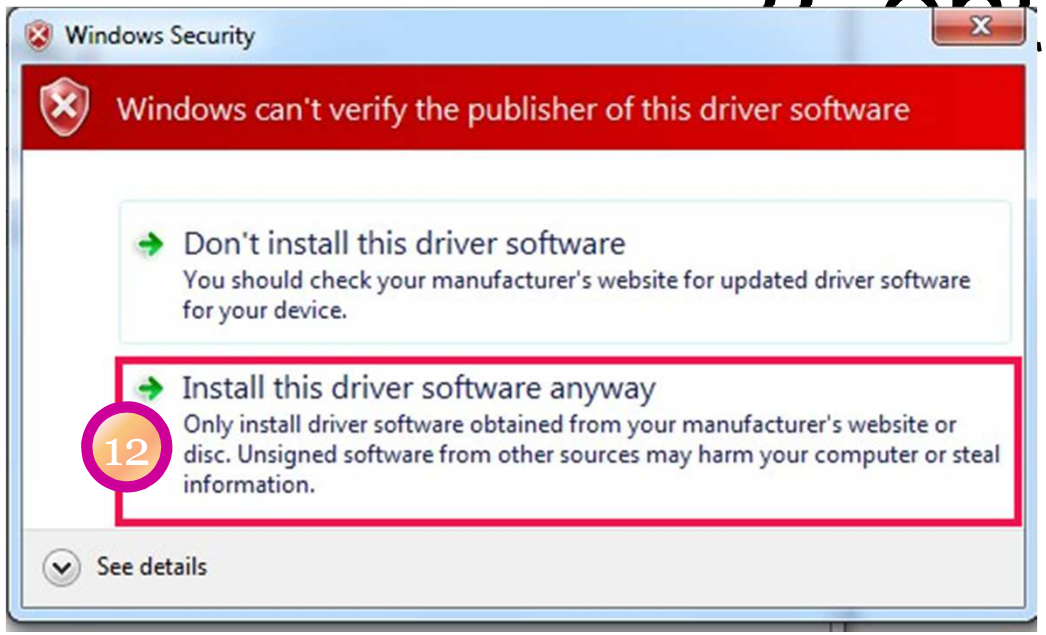


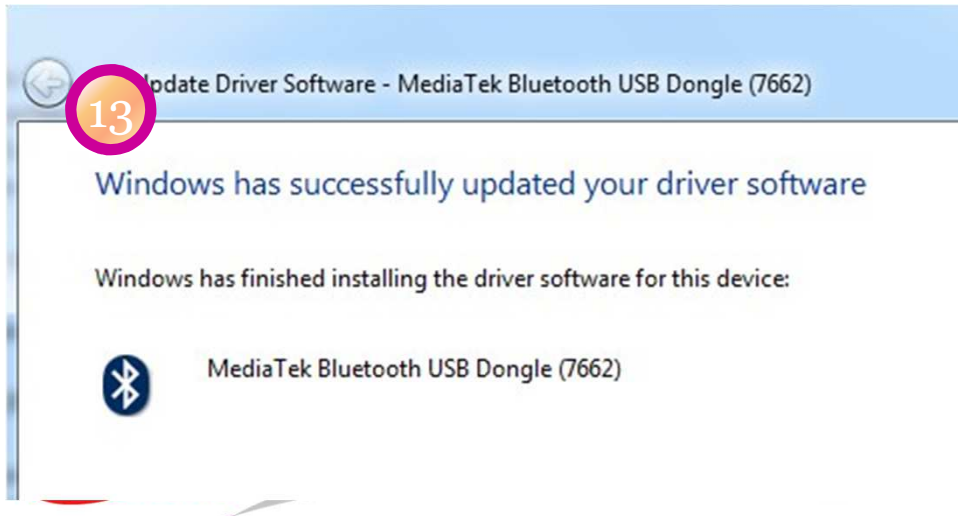



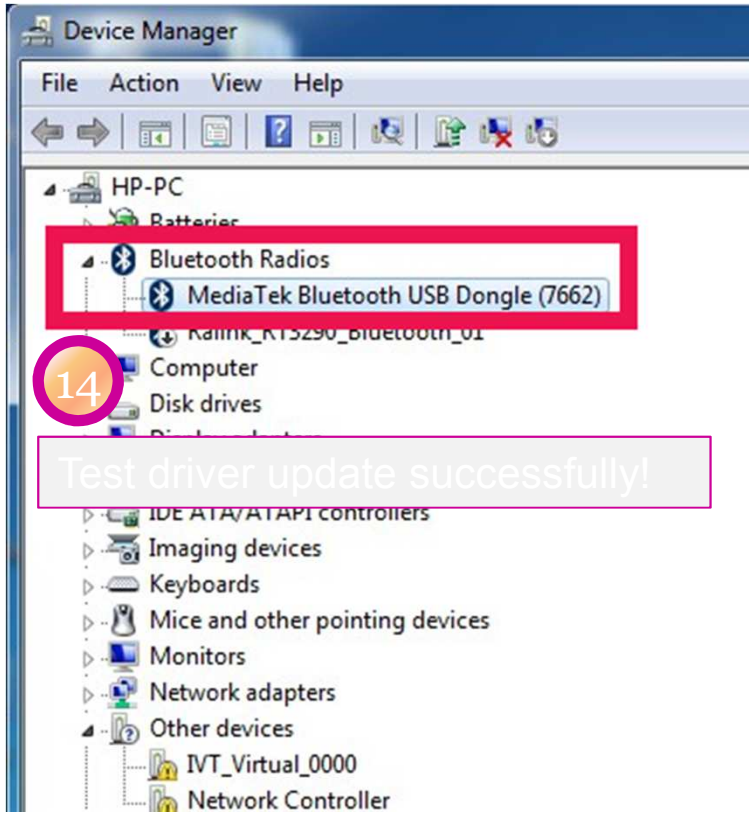
# Update USB driver_Method_B (Cont.)



# Update USB driver_Method_B (Cont.)

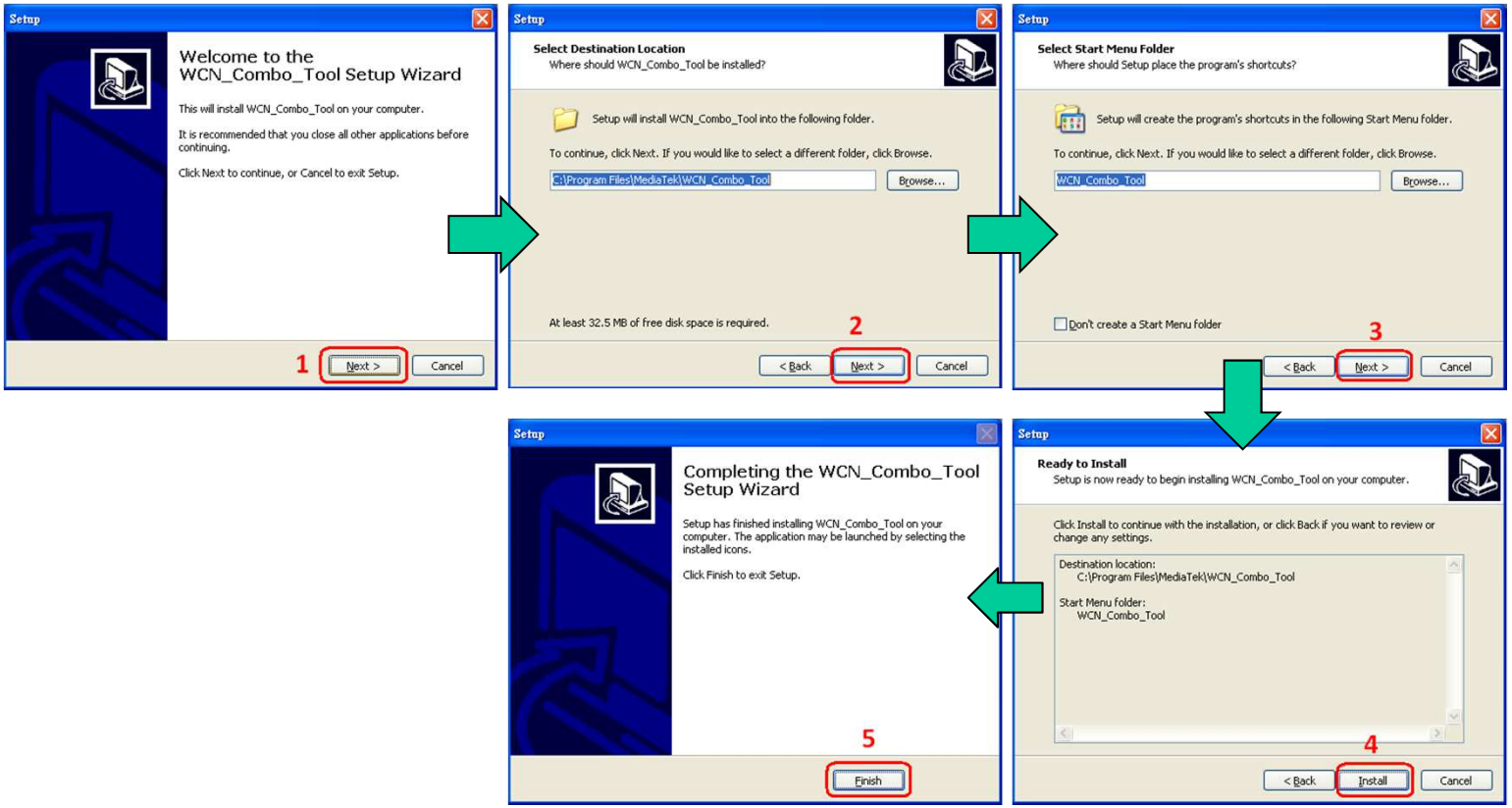


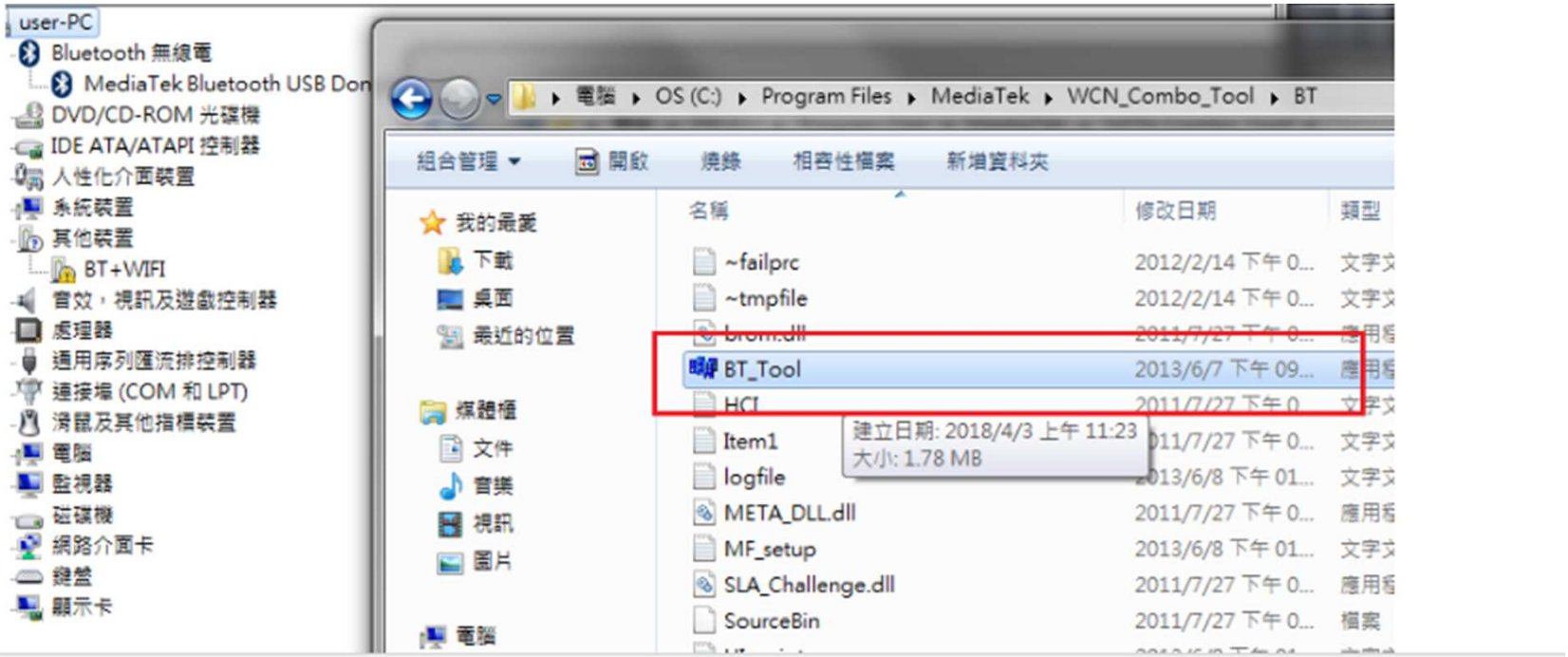
# WCN Combo Tool

- Install BT tool: WCN_Combo_Tool_Setup.exe



# SOP - How to use BT Tool

# Installation“WCN_Combo_Tool_Setup_customer”, Click “BT_Tool.exe”



# BT Tool in WCN Combo Tool

- BT Tool:
  1. **Setting** page for Bluetooth Test-Mode
  2. **RF Test** page for BR & EDR TX-Mode
  3. **BLE Test mode** page for LE TX/RX-Mode
  4. **Non-signaling RX Test** page for BR & EDR RX-Mode
  5. **TX tone Test** page for BR/EDR/LE continuous TX-Mode

# How to use BT Tool

- BT Tool:
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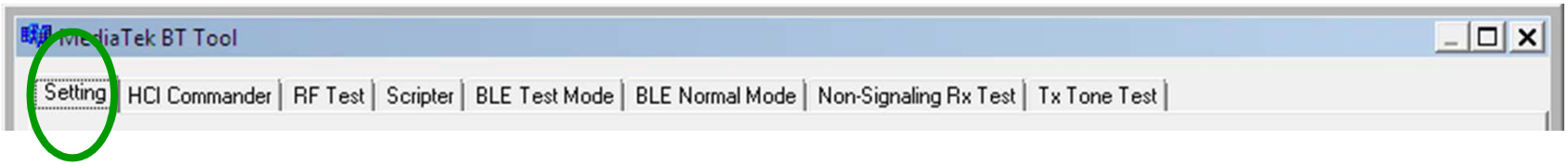
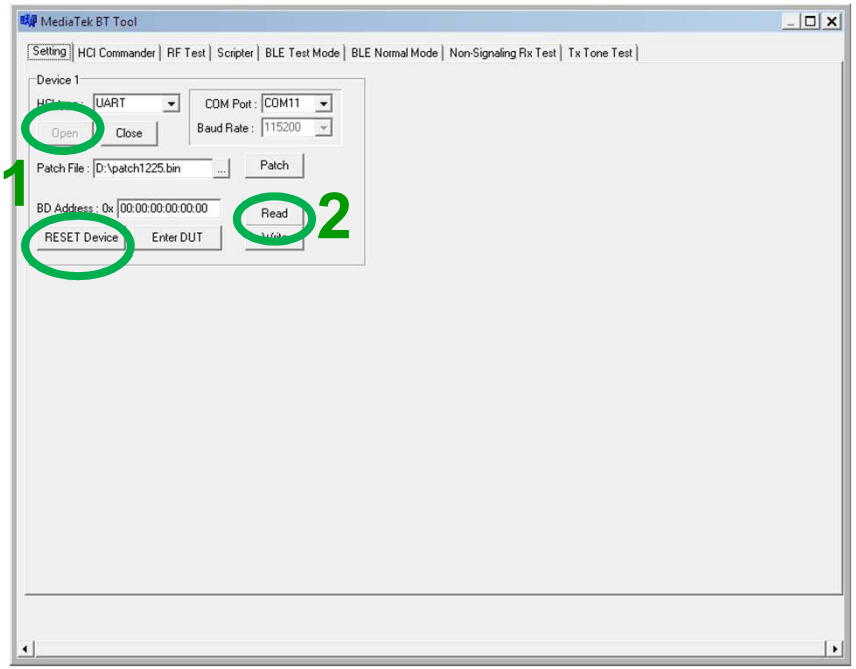
  5. **TX tone Test** page for BR/EDR/LE continuous TX-Mode

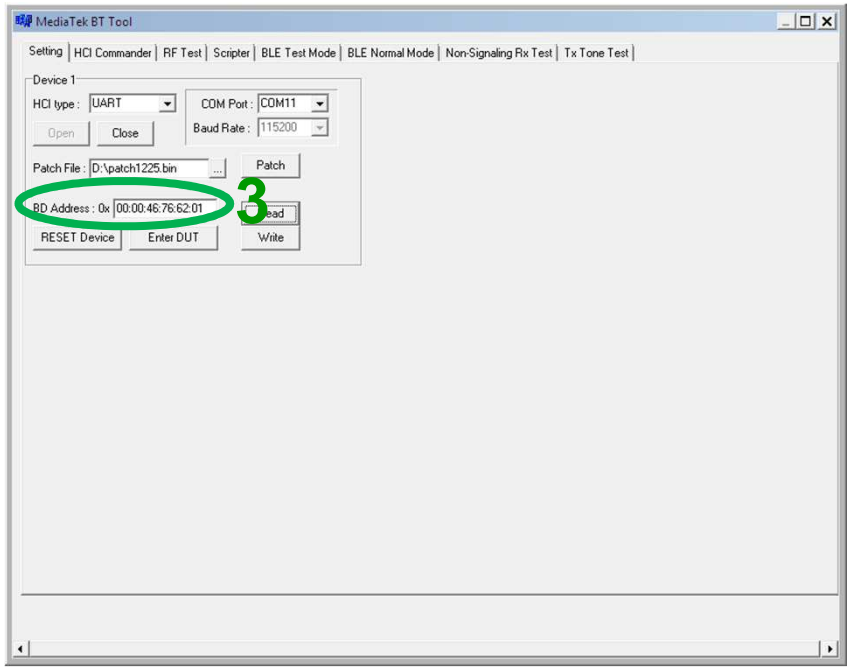
- Open / Close COM
- Read BD Address
- **Enter Test Mode**



# Read BD Address

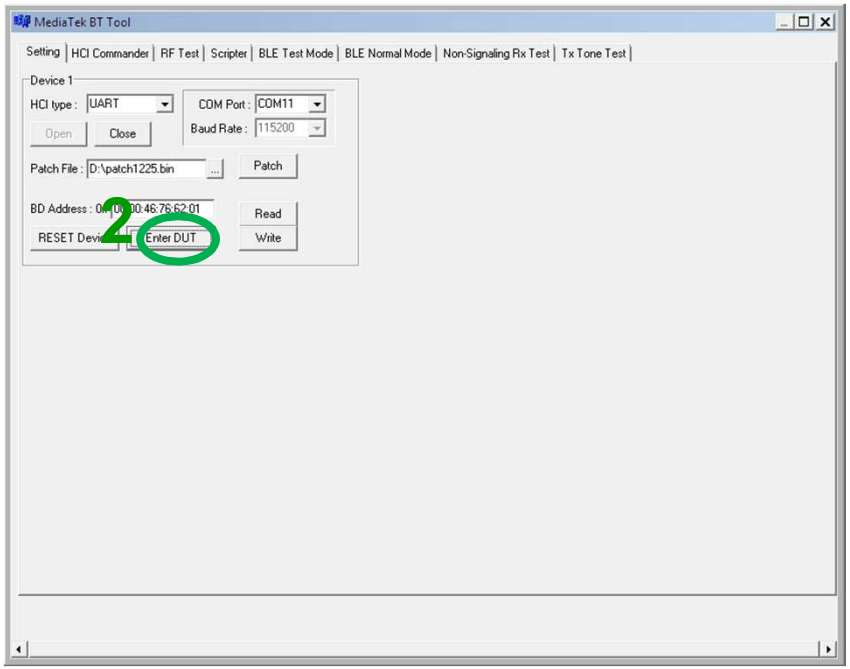
1. Ensure BT COM port is opened and “RESET Device” button is clicked.
2. Click “**Read**” button.
3. BD Address is updated



# Enter Test Mode

1. Ensure BT COM port is opened and “RESET Device” button is clicked.
2. Click “**Enter DUT**” button to allow DUT to enter test mode.
3. The connection between DUT and test set (ex: CBT) could be established under test mode.



# Agenda

- BT Tool:
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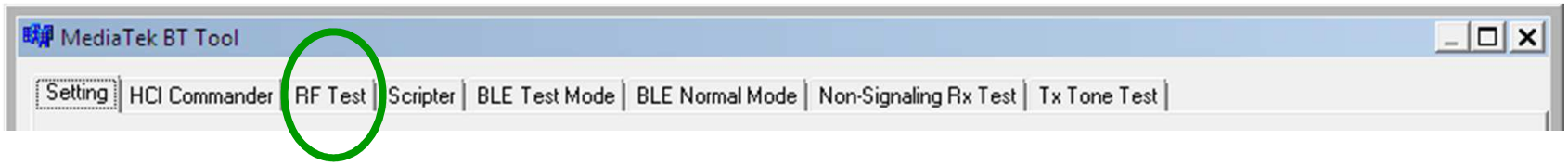
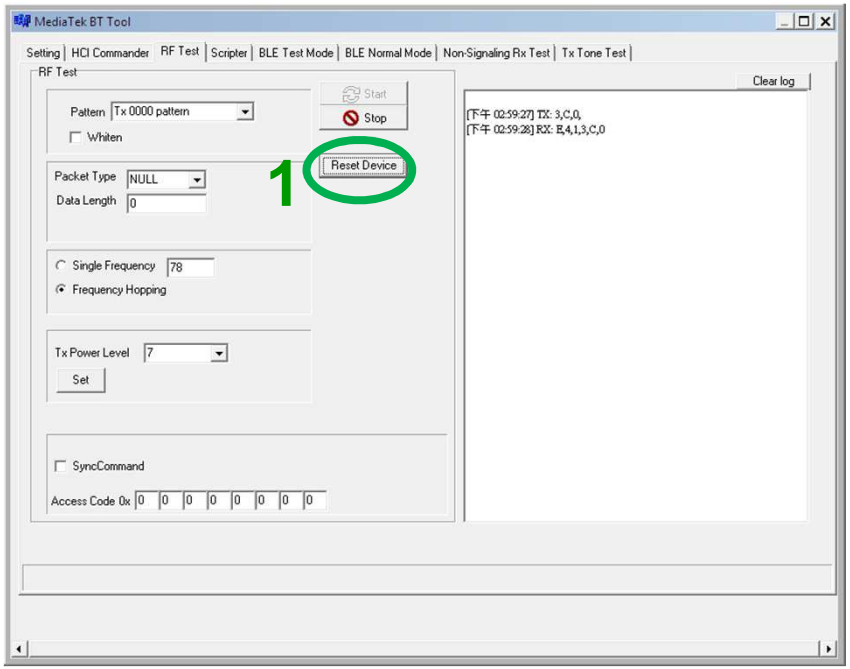


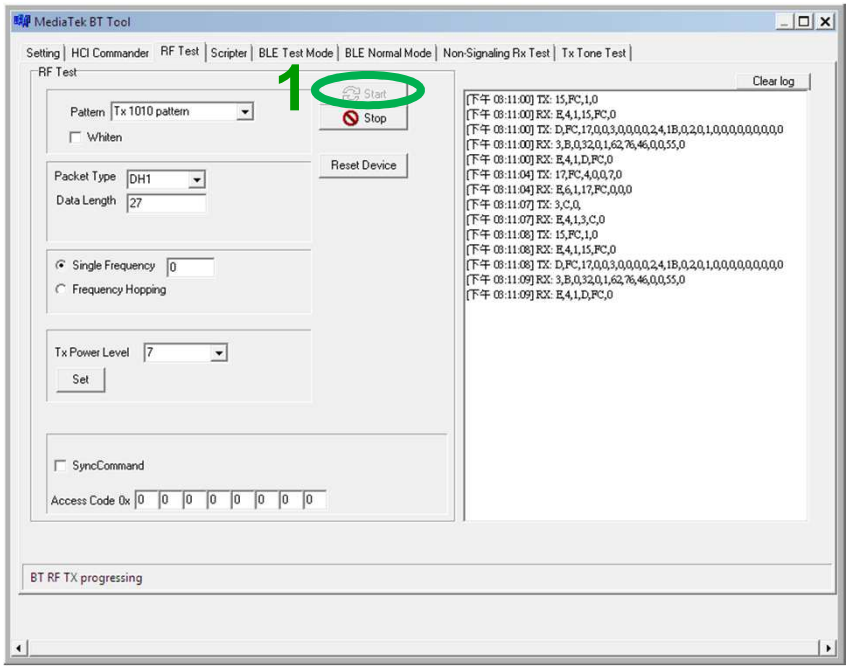
# Reset Device

1. Ensure BT COM port is opened and “RESET Device” button is clicked.
2. Click “**Reset Device**” button to Reset DUT.
3. HCI RX event is responded (RX: 0E 04 01 03 0C 00)



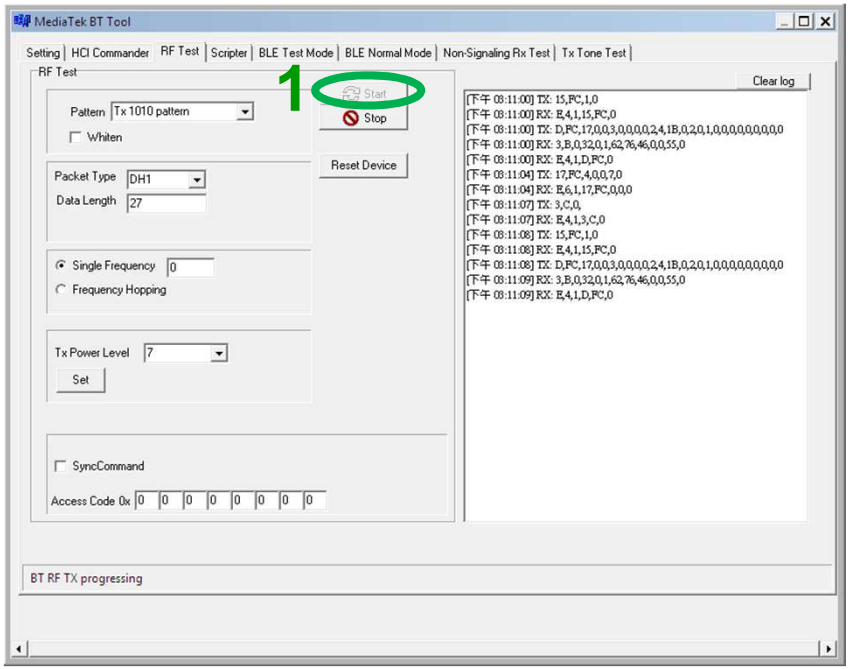
# BR & EDR TX Mode

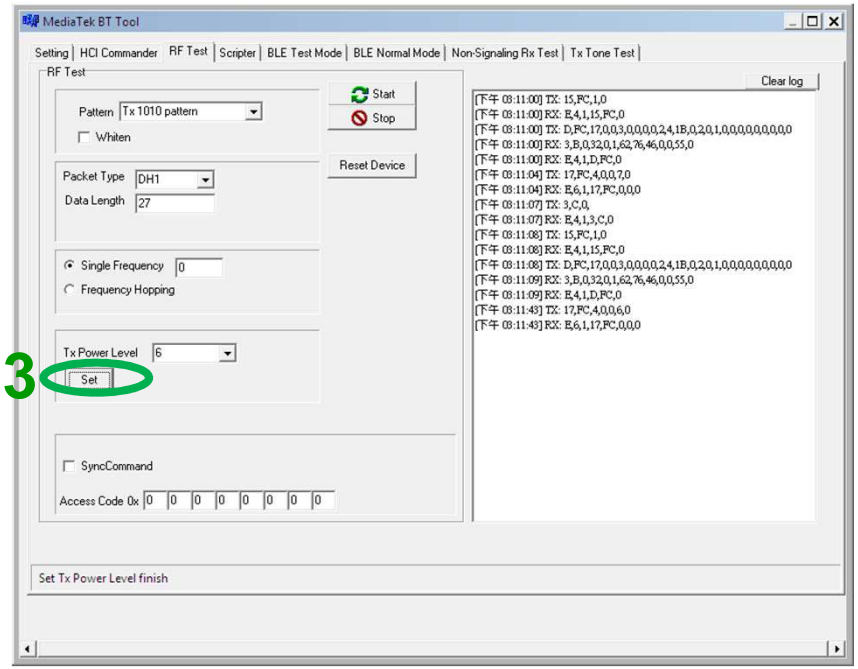
1. Ensure BT COM port is opened and “RESET Device” button is clicked.
2. Set pattern type, packet type, and signal Frequency. And then Click “**Start**” button.
3. Check Tx power of DUT by test set (ex: CBT).
4. Click “**Stop**” button to end test.



# Tx Power Control

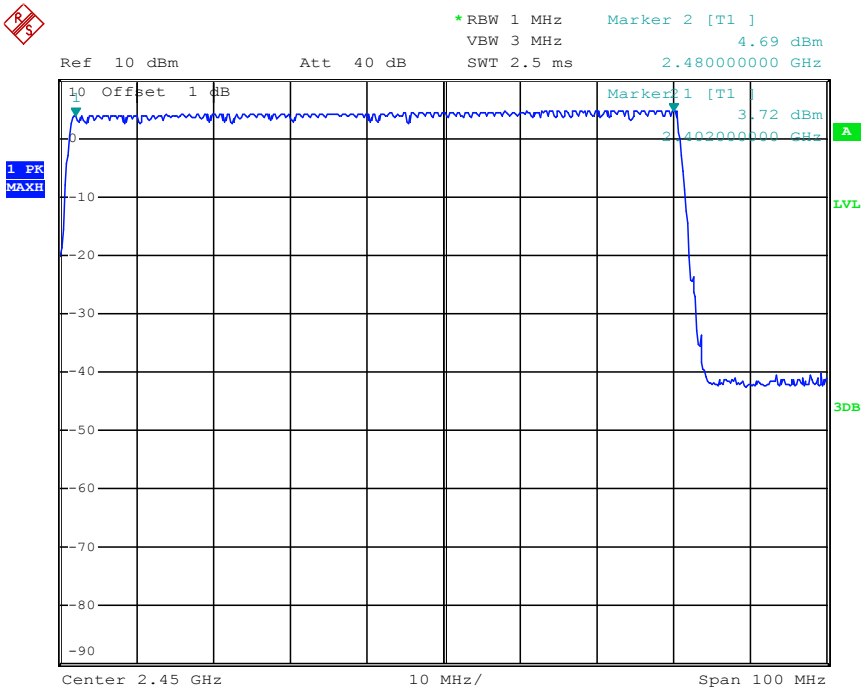
1. Ensure BT COM port is opened and “RESET Device” button is clicked.
2. Set pattern type, packet type, and signal Frequency. And then Click “**Start**” button.
3. Check Tx power of DUT by BT test set (ex: CBT).
4. Select “**Tx Power Level**” to 6~0, and then see if TX power is correspondly changed.



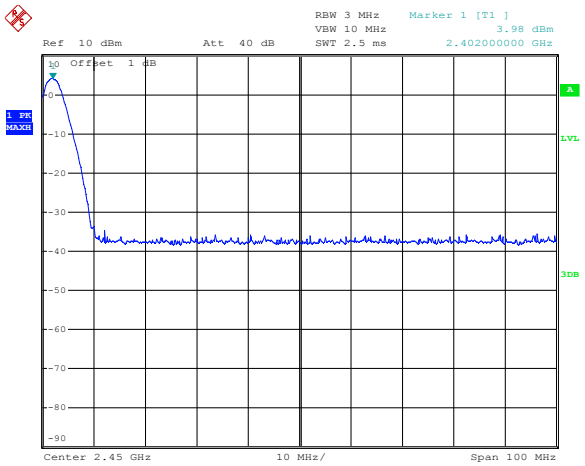
# Hopping

- Select “**Frequency Hopping**”, and then see if TX signal is present on spectrum analyzer correctly.

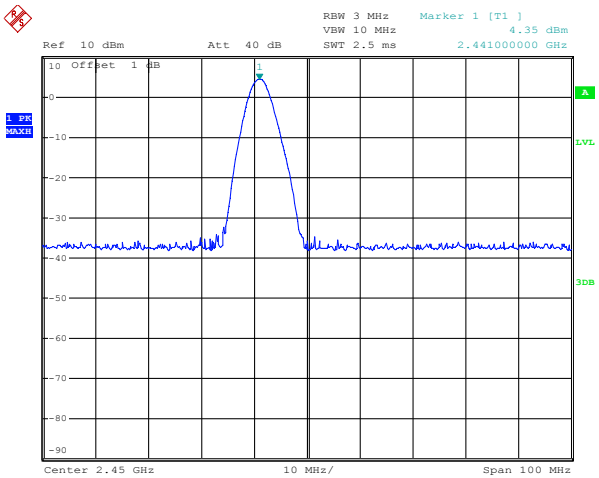


# Single Frequency

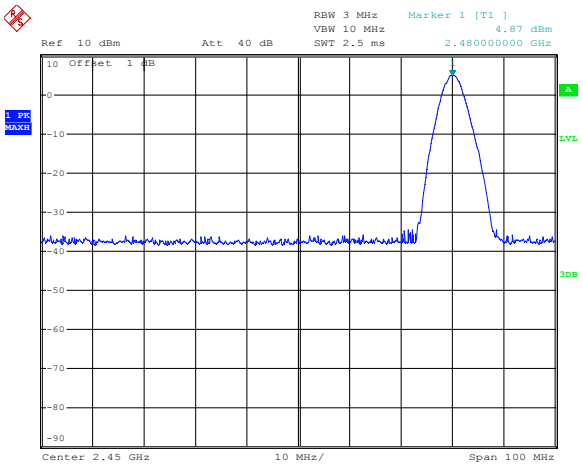
Select “**Single Frequency**”, and then change the channel number (00~78) ,TX signal is present on spectrum analyzer correspondingly.




0ch



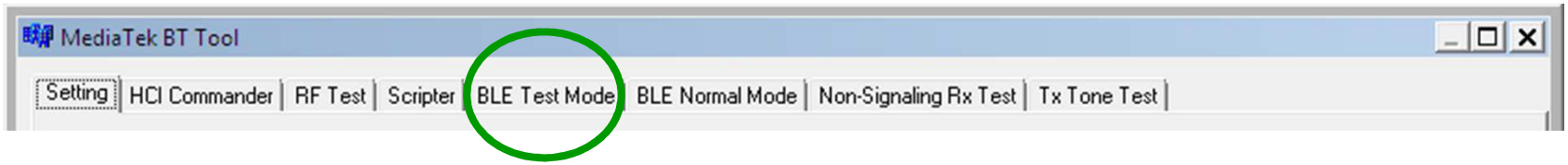

39ch




78ch

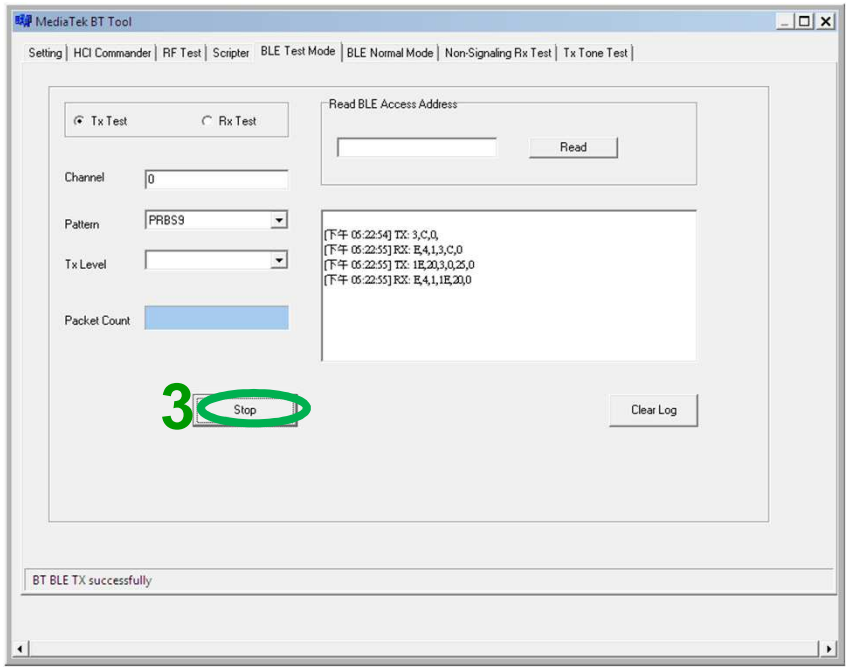
# Agenda

- BT Tool:
  1. **Setting** page for Bluetooth Test-Mode
  2. **RF Test** page for BR & EDR TX-Mode
  3. **BLE Test mode** page for LE TX/RX-Mode
  4. **Non-signaling RX Test** page for BR & EDR RX-Mode
  5. **TX tone Test** page for BR/EDR/LE continuous TX-Mode



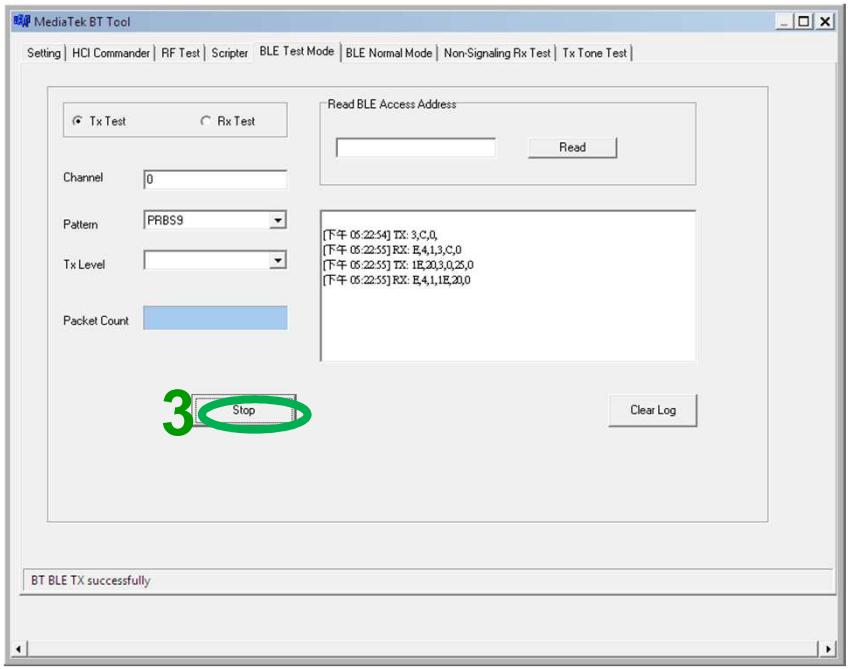
# BLE Test Mode - TX

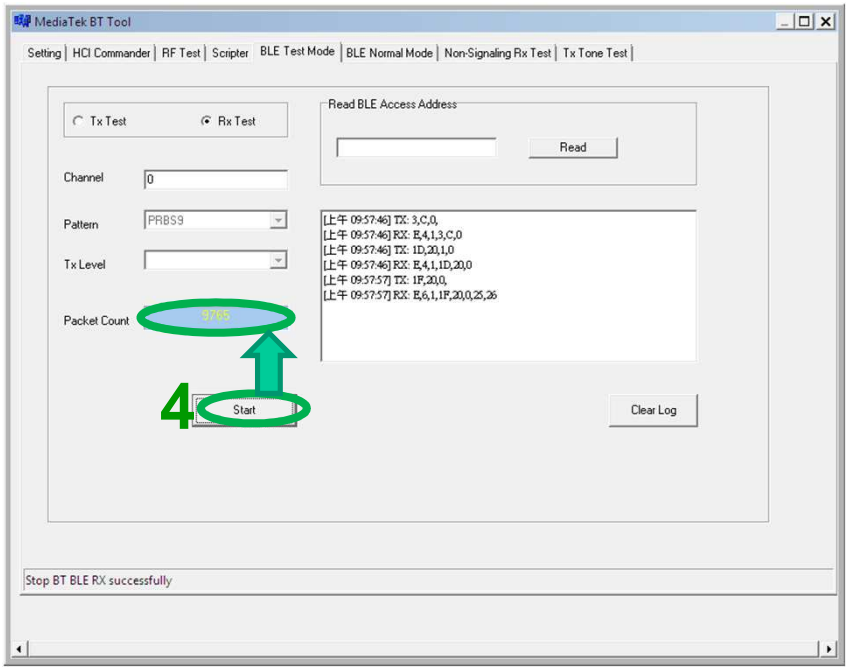
1. Ensure BT COM port is opened and “RESET Device” button is clicked.
2. Set RF channel and Pattern type on CBT to analyze DUT TX performance.
3. Select TX frequency (00~39) and Tx pattern. Then click “**Start**” button.
4. TX signal is present on CBT correspondingly.
5. Click “**Stop**” button to end LE TX test.



# BLE Test Mode - RX

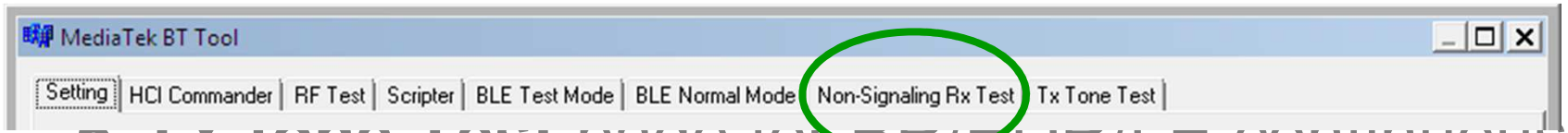
1. Ensure BT COM port is opened and “RESET Device” button is clicked.
2. Set Rx Level, RF channel, and Pattern Type on CBT. Then Turn on generator.
3. Select RX frequency (00~39) and Rx pattern. Then click “**Start**” button.
4. Click “**Stop**” button. PER result are shown in below.



# Agenda

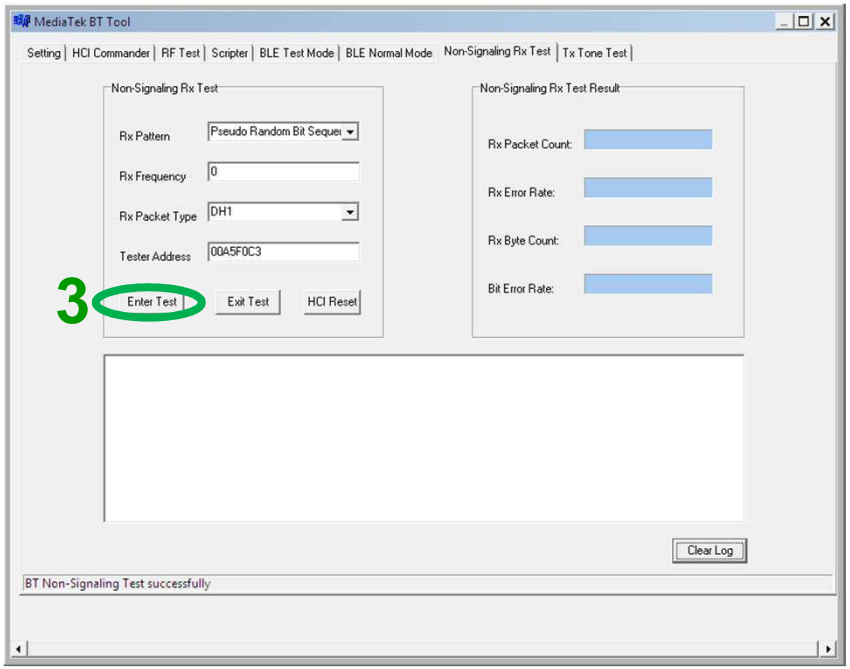
- BT Tool:
  1. **Setting** page for Bluetooth Test-Mode
  2. **RF Test** page for BR & EDR TX-Mode
  3. **BLE Test mode** page for LE TX/RX-Mode
  4. **Non-signaling RX Test** page for BR & EDR

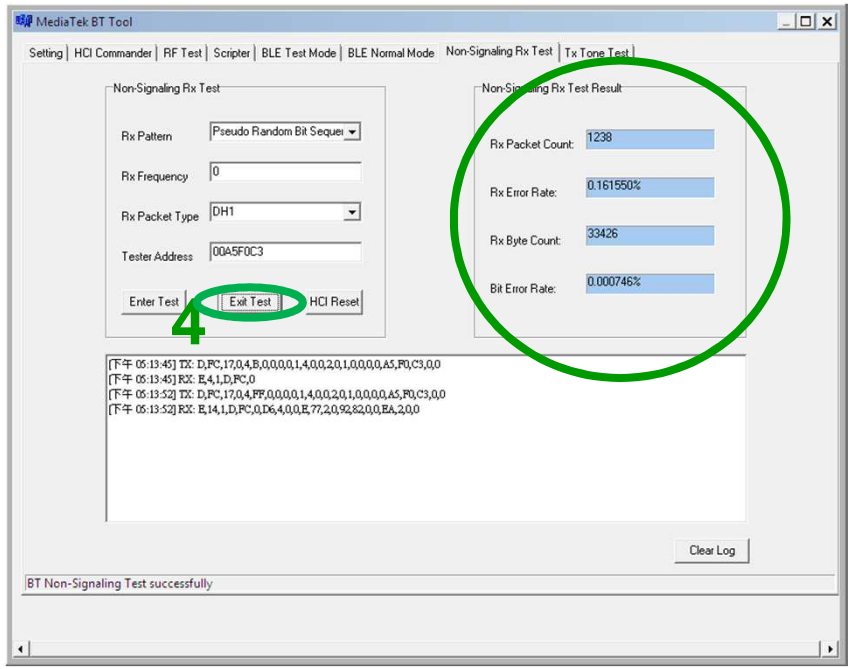



  5. **TX tone Test** page for BR/EDR/LE continuous TX-Mode

# Non-Signaling RX Test

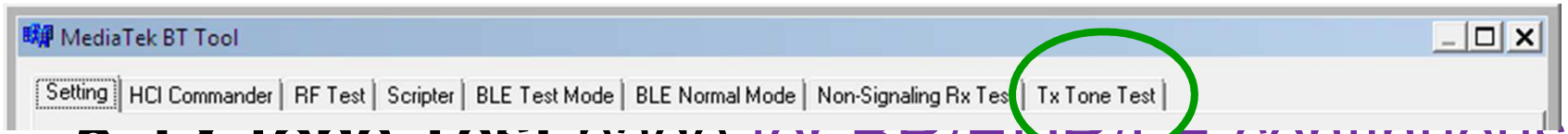
1. Ensure BT COM port is opened and “RESET Device” button is clicked.
2. Set Rx Level, RF channel, Packet Type, Pattern Type, and BD address (ex: 000000A5F0C3) on CBT. **Then Turn on generator.**
3. Select Rx pattern, RX frequency (00~78), Packet Type, and Tester Address (ex: 000000A5F0C3, please fill “00A5F0C3”). Then click “**Enter Test**” button.
4. Click “**End Test**” button. PER/BER result are shown in right side.



# Agenda

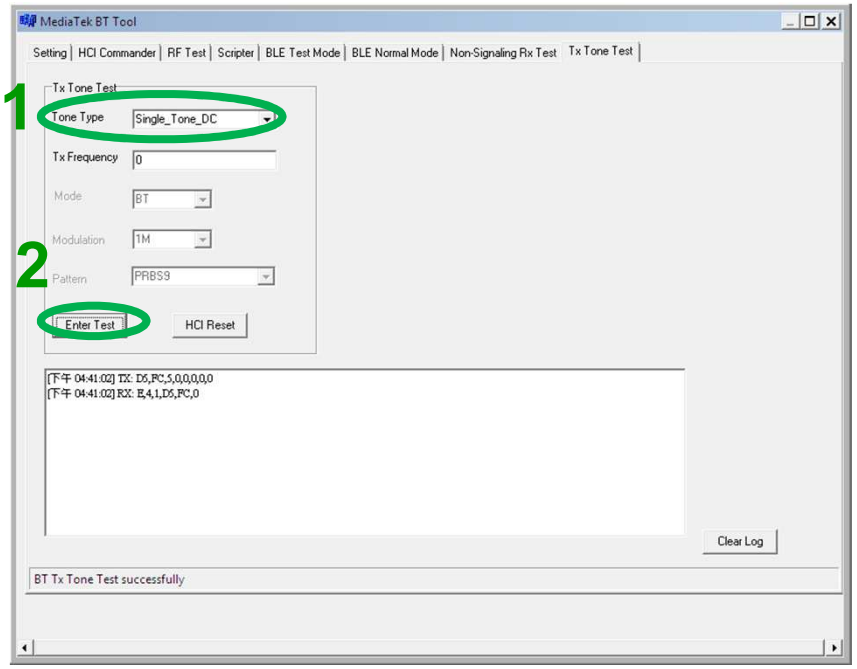
- BT Tool:
  1. **Setting** page for Bluetooth Te
  2. **RF Test** page for BR & EDR T
  3. **BLE Test mode** page for LE TX/RX-Mode
  4. **Non-signaling RX Test** page for BR & EDR

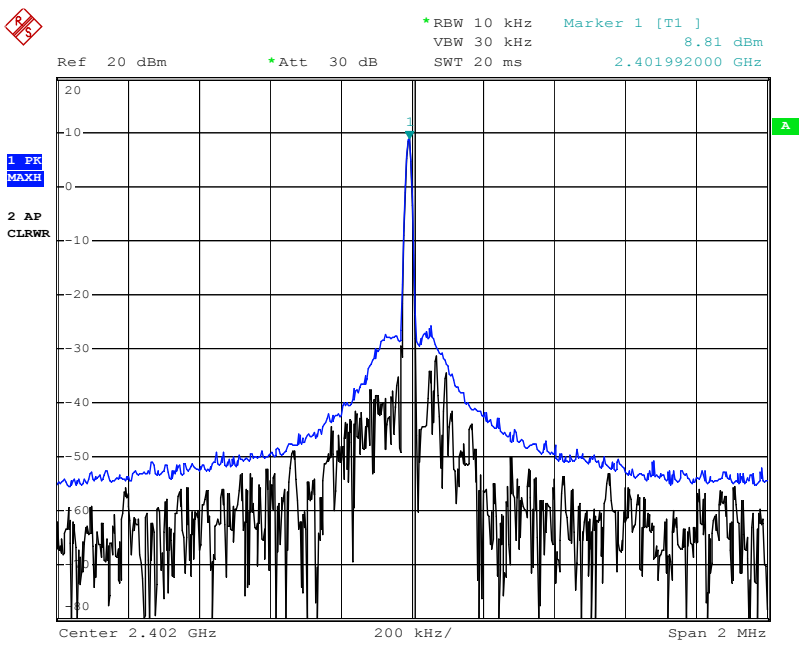



5. **Tx tone Test** page for BR/EDR/LE continuous TX-Mode

# Single Tone – CW tone TX (No modulated signal)

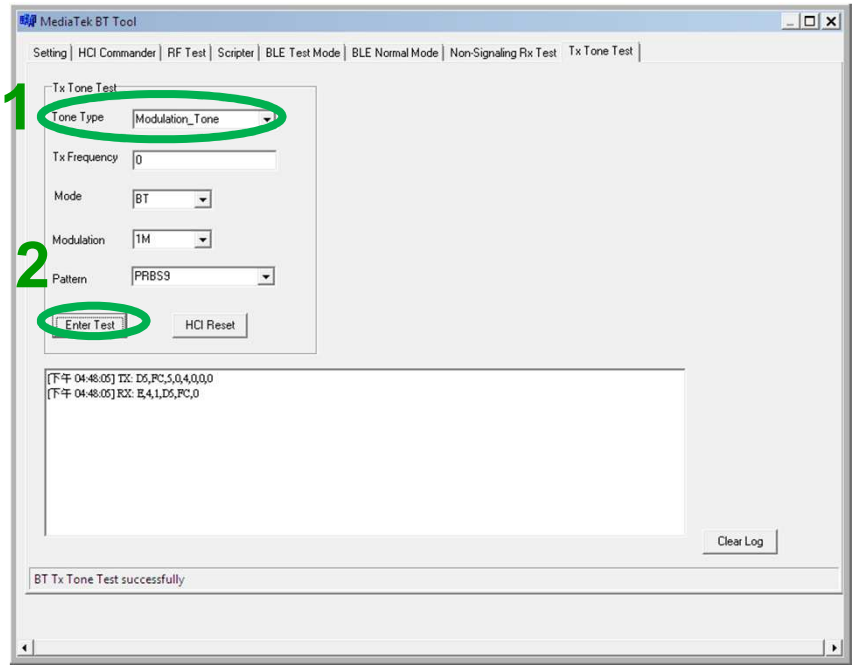
1. Ensure BT COM port is opened and “RESET Device” button is clicked.
2. Select Tone Type (ex: Single_Tone_DC), and then change the channel number (00~78)
3. Click “**Enter Test**” button. TX signal is present on spectrum analyzer correspondingly.
4. Click “**HCI Reset**” button to end test.

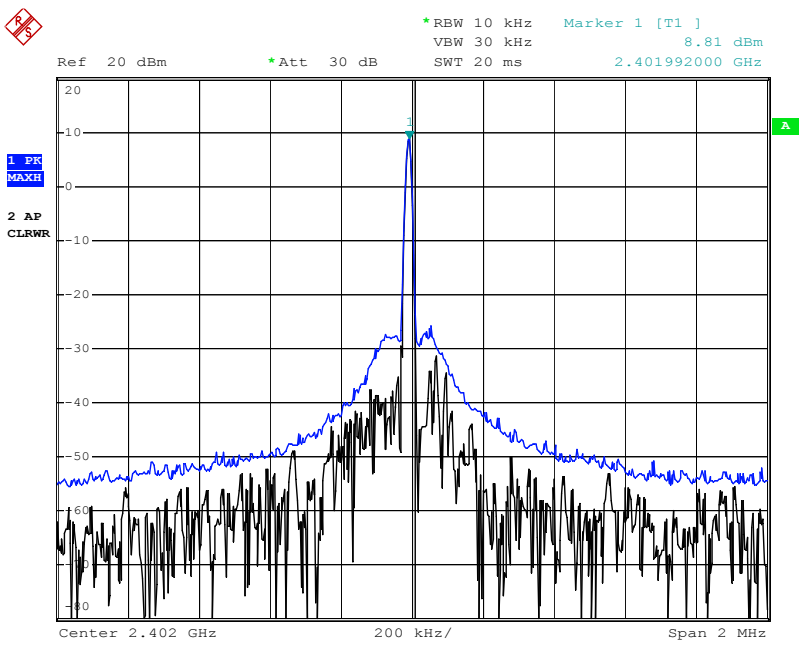


# Modulation Tone – Continuous mode TX

1. Ensure BT COM port is opened and “RESET Device” button is clicked.
2. Select “Modulation_Tone”, and then change the channel number (00~78). Choose mode (BT-GFSK/EDR or LE) and Modulation rate (1M/2M/3M)
3. Click “**Enter Test**” button. TX signal is present on spectrum analyzer correspondingly.
4. Click “**HCI Reset**” button to end test.

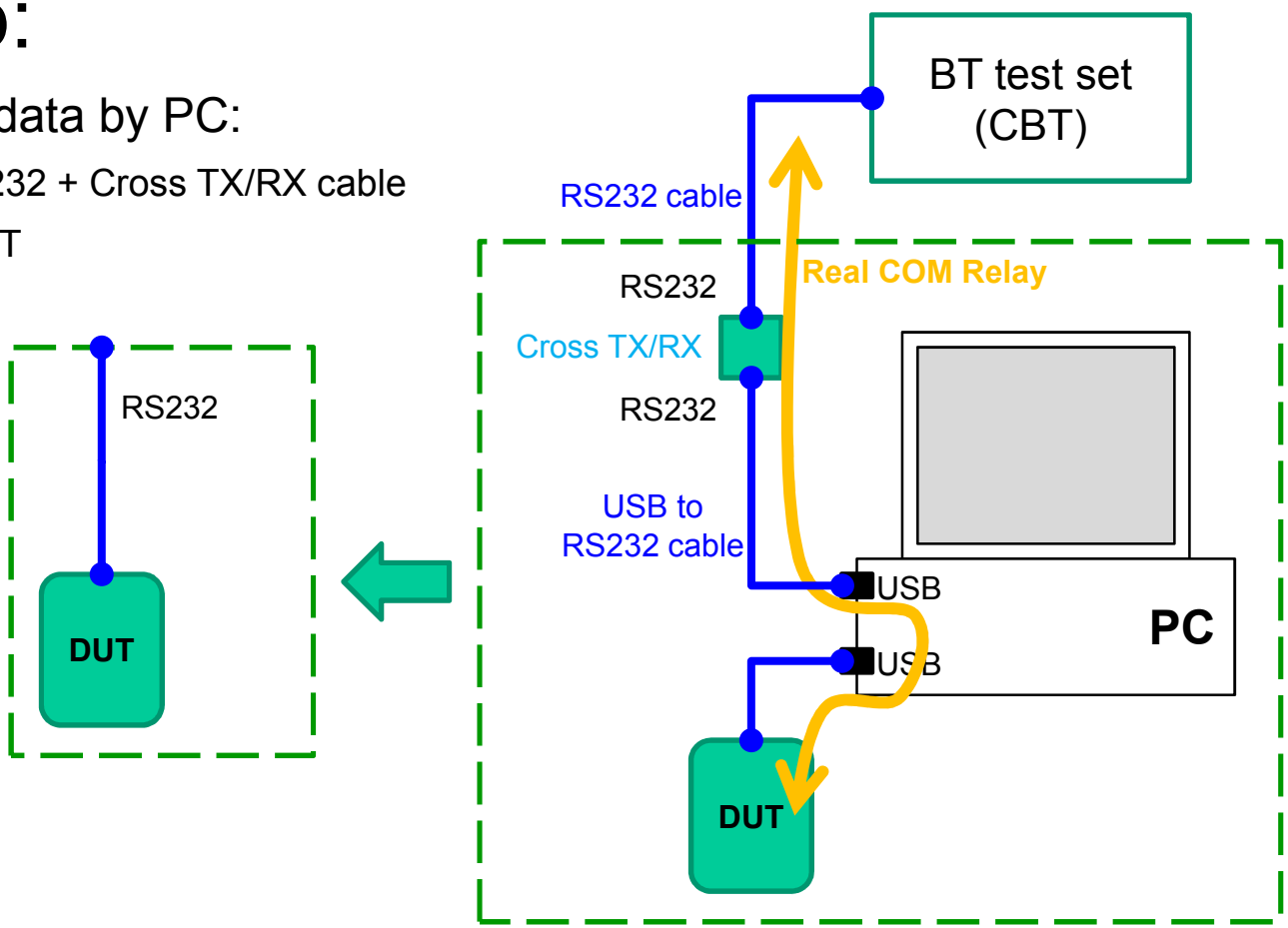


# Real COM Relay

# Real COM Relay (1/3)

- Test setup:
  - Relay RS232 data by PC:
    1. USB to RS232 + Cross TX/RX cable
    2. USB for DUT

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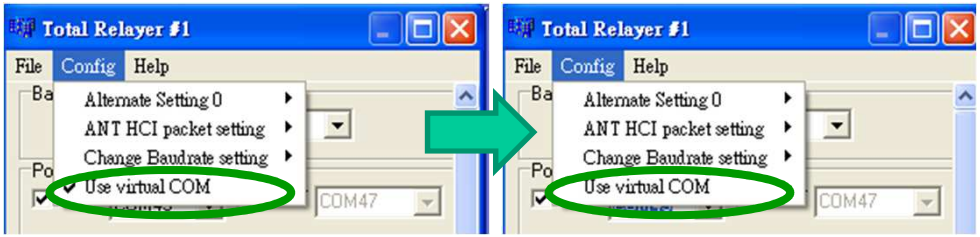
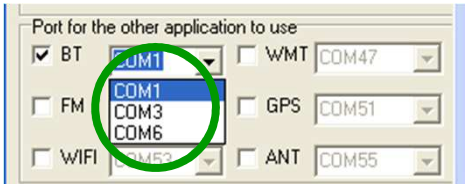
# Real COM Relay (2/3)

1. Ensure BT COM port is opened and “RESET Device” button is clicked.
2. Click “**Enter DUT**” button to allow DUT to enter test mode.
3. Close BT COM port. Click “Stop Relay”.
4. Click “Config → Use virtual COM”

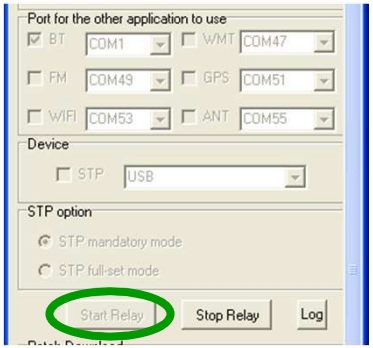



5. Select COM port of “USB to RS232 cable”
   for example: COM 1 for “USB to RS232 cable”, please choose “COM1”



# Real COM Relay (3/3)

1. Click “Start Relay” button for Real COM relay.



# NCC電信管制射頻器材警語

低功率電波輻射性電機管理辦法

- 第十二條 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。
- 第十四條 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。
- 使用此產品時應避免影響附近雷達系統之操作。
- 高增益指向性天線只得應用於固定式點對點系統。

模組認證：

1. 本模組於取得認證後將依規定於模組本體標示審驗合格標籤。
2. 系統廠商應於平台上標示「本產品內含射頻模組： XXXyyyLPDzzzz-x」字樣。

# Federal Communication Commission Interference Statement

- 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.

- 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.

- 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.

# Federal Communication Commission Interference Statement

- This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- Operations in the 5.15-5.25GHz band are restricted to indoor usage only.
- FOR MOBILE DEVICE USAGE (>20cm/low power)
- 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.

- 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 (if EUT is portable device, please delete this item)
  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 be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed

# Federal Communication Commission Interference Statement

- 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 FCC authorization is no longer considered valid and the FCC 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 FCC authorization.
- End Product Labeling
  FOR MOBILE DEVICE USAGE (>20cm/low power)
  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 FCC ID:SUZ-WB01”. The grantee's FCC ID can be used only when all FCC compliance requirements are met.
- 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.