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# **[MG2475-RDK] Getting Started**

**(No. ASW1008)  
V0.96**

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## REVISION HISTORY

Version	Date	Description
VER.0.91	2015.05.12	▪ The Beta version release.
VER.0.92	2015.05.15	▪ Images font modified.
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VER.0.96	2015.06.03	▪ Fix Typo.

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# 1. INTRODUCTION

MG2475-RDK (Remote Controller Development Kit) is the development kit based on MG2475 which is an SOC chip including RF transceiver and 8051 micro controller, by RadioPulse.

This document explains how to start with MG2475-RDK.

Additionally, this document includes like below;

- How to install CP210X driver
- How to download the firmware using RadioPulse Device Programmer
- How to use Remote Controller Simulator.

## 2. REFERENCE

[R1] ADT0007-Remote Controller-Simulator User's Guide\_V1 0.pdf

[R2] ADT0002-Device Programmer MD User's Guide\_En\_V2 2.pdf

### 3. DEFINITIONS

- MG2475: 2.4GHz RF Transceiver Chip in SoC type developed by RadioPulse, applied to ZigBee, IEEE802.15.4-2003, 2006.
- MG2475-Dongle: 'RF to USB Bridge Controller' module in USB dongle type which is connected to Host. It connects RF communication and USB communication.
- RDB: Remote controller Development Board.
- LM2475-C: Chip antenna type module for MG2470 RDK.
- MG2470-EVB(Evaluation Board): a PC interface board of LM2475-EM. This board makes it possible to download user programs to LM2475-EM or connect LM2475-EM to host programs in PC system.
- LM2475-EM(Evaluation Module): 2.4GHz ZigBee Module embedded with MG2475. It is applied to ZigBee 200X, IEEE802.15.4.
- CP210x Device Driver: Device Driver Program to connect MG2470B-RDB / MG2470-EVB to PC by USB cable. In installation procedure of Device Programmer MD, CP210x Device Driver installation is automatically questioned. A user can install it then.
- Target: The receiver which is connected with Remote Controller Simulator.
- Controller : Remote Controller
- Device Programmer MD: a PC GUI program for firmware downloading provided by RadioPulse. It is used to update the firmware for LM2475-C and MG2475-Dongle.
- MG2470-GS-MPU6150: 6-axis Motion Tracking Module(3-axis gyroscope, 3-axis accelerometer)
- MG2470-TP-TC30Q: Touch pad module embedded with 8bit MCU(TC30Q) including touch sensor of Coreriver

## 4. Kit Contents



- Remote Controller Development Board (MG2470B-RDB) with MG2475 Chip antenna type module(LM2475-C) and Touch pad module (MG2470-TP-TC30Q)
- Remote Controller Development Board (MG2470B-RDB) with MG2475 Chip antenna type module(LM2475-C) and Gyro Sensor module (Mg2470-GS-MPU6150)
- MG2470 evaluation Board(MG2470-EVB) with MG2475 evaluation module(LM2475-EM) and +2dBi Antenna
- MG2475-Dongle x 2
- MG2475-RCU
- MG2475 ZigBee Single Chip x 25
- USB ISP Downloader and cable for MG2475-Dongle x 2
- USB Cables  
(USB 2.0 Cable (A-B) x 1, MINI USB 2.0 Cable (USB 2.0 A/M To Mini USB 5PIN) x2)
- Software CD

**Note:** Provide Gyro hardware, but Gyro software and LIB not included.  
Please contact the sales division for information of Gyro software and LIB.



## 5. Quick start guide

### 5.1. MG2475-Dongle(Target) to RDB(Controller)

MG2475-Dongle and RDB firmware are already downloaded.

Each firmware file is like below;

- **MG2475-Dongle** : MG2475\_RdkTarget\_DONGLE.hex  
■ in [Package CD\0. Getting Started Manual\Firmware\]
- **RDB** : MG2475\_RdkController.hex  
■ in [Package CD\0. Getting Started Manual\Firmware\]

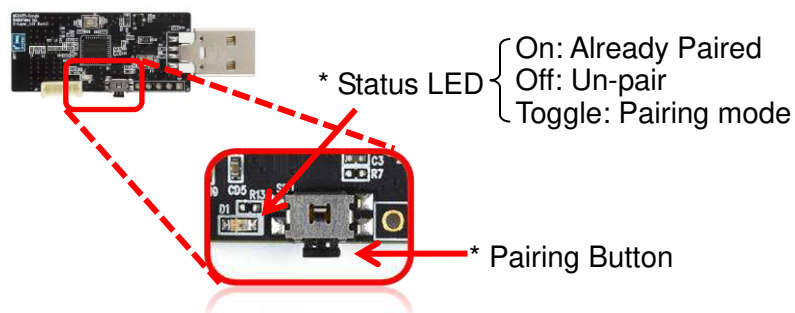
#### 5.1.1. Usage of MG2475-Dongle

##### Install MG2475-Dongle



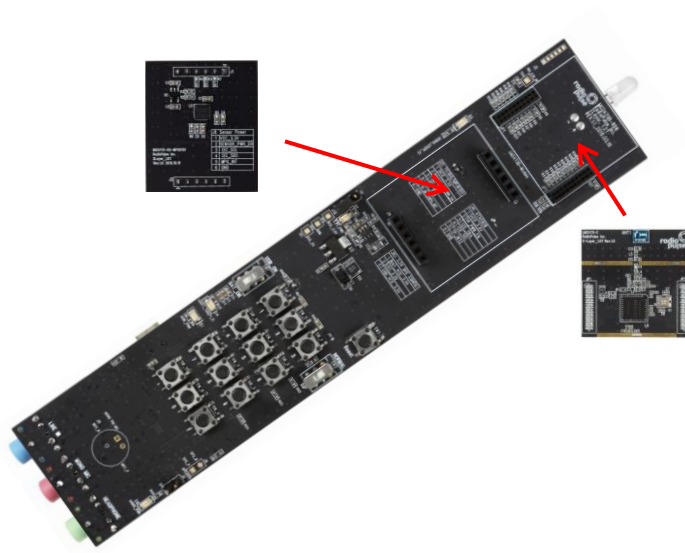
##### Enter the pairing mode

\*\* Pairing mode will remain 30 seconds.



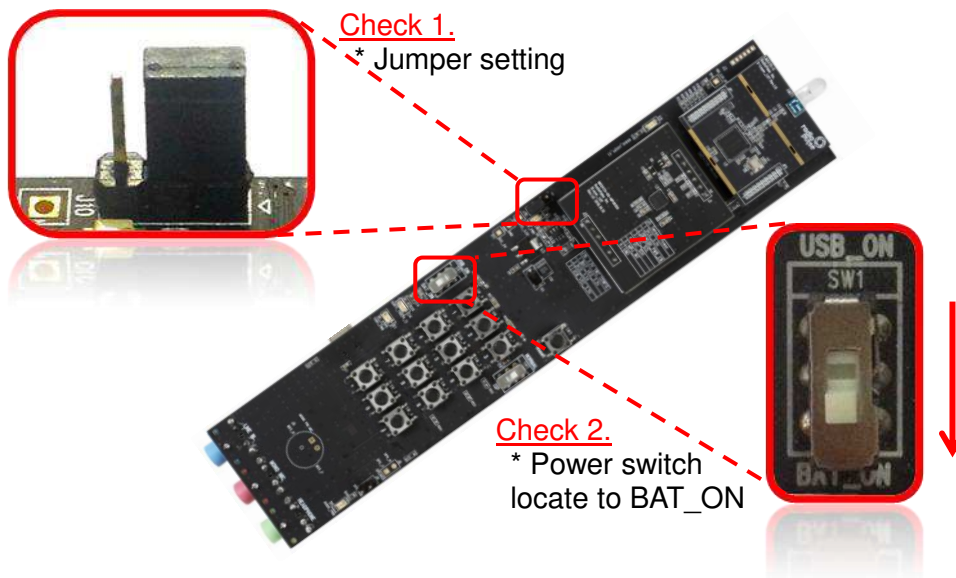
### 5.1.2. Usage of RDB

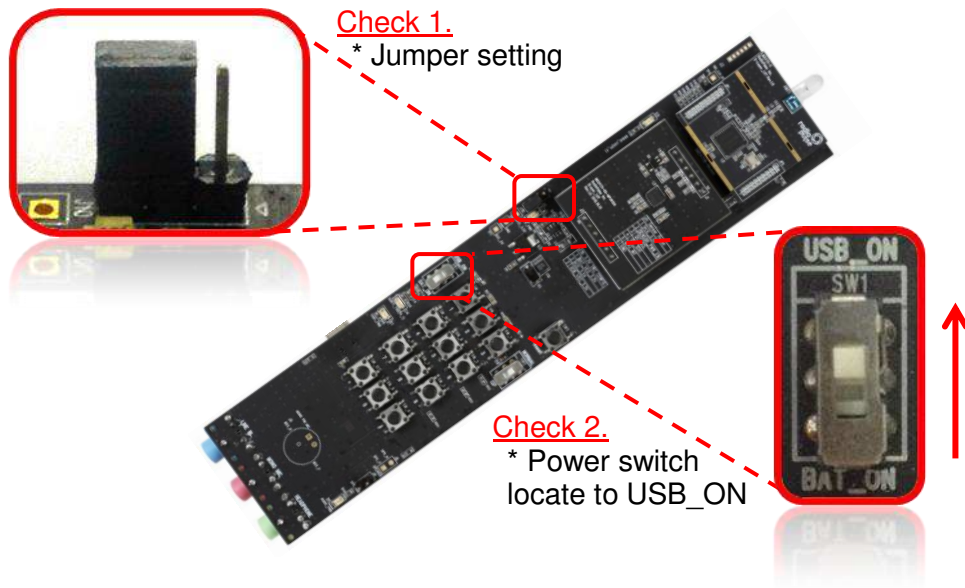
#### Install RDB: Modules



#### Install power in RDB: Battery or USB

##### Battery power

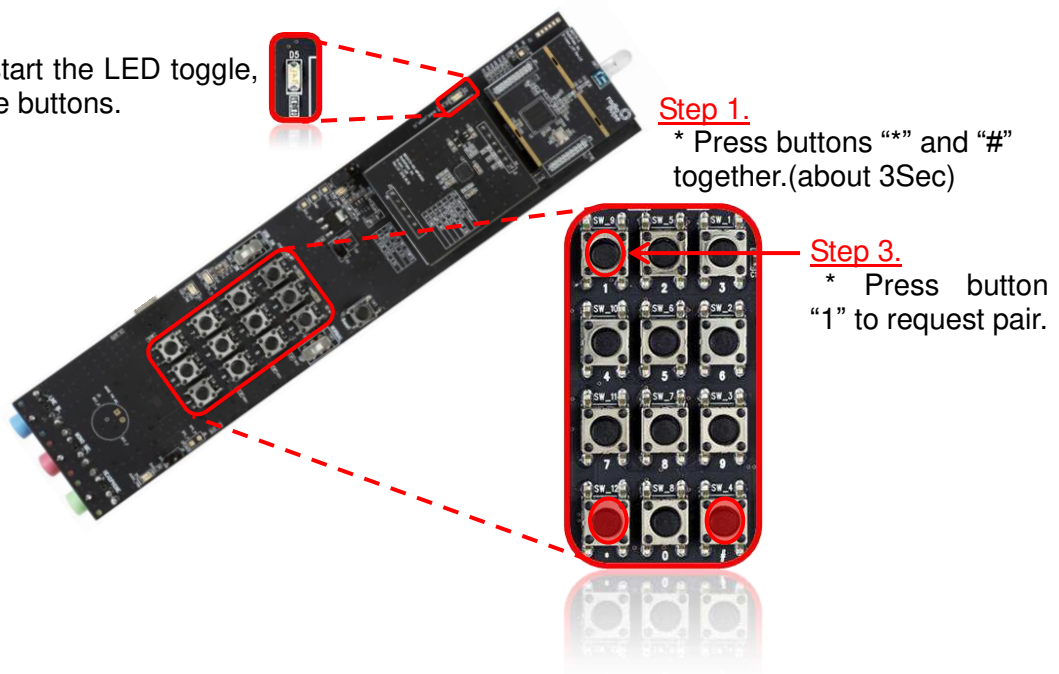


USB powerEnter the paring mode

\*\* Pairing mode will remain 30 seconds.

Step 2.

\* When start the LED toggle, release the buttons.



Operating: KEY

Open the “Notepad” and Press the buttons.

Operating: MOUSE

Move like the air mouse.

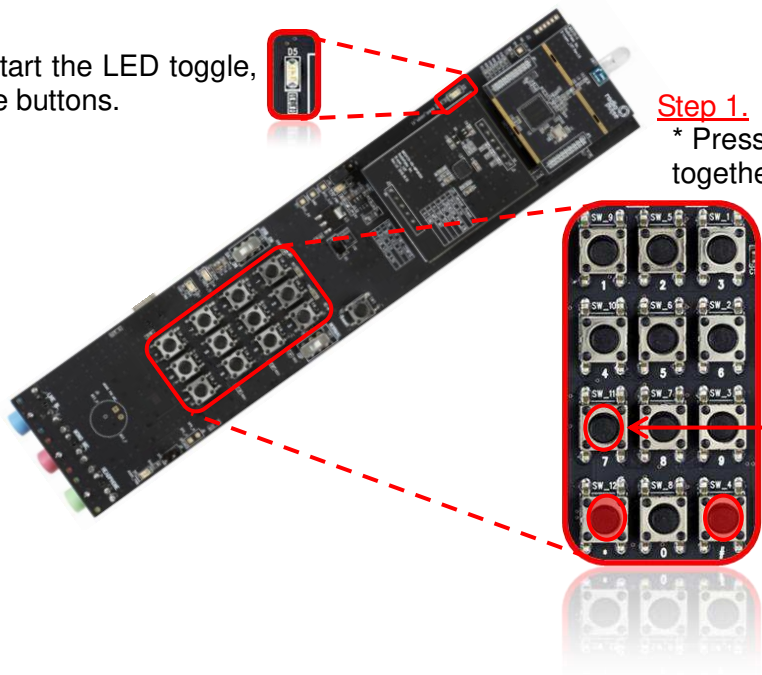


Operating: VOICE

Enter the "Voice" mode.

Step 2.

\* When start the LED toggle, release the buttons.



Step 1.

\* Press buttons "\*" and "#" together.(about 3Sec)

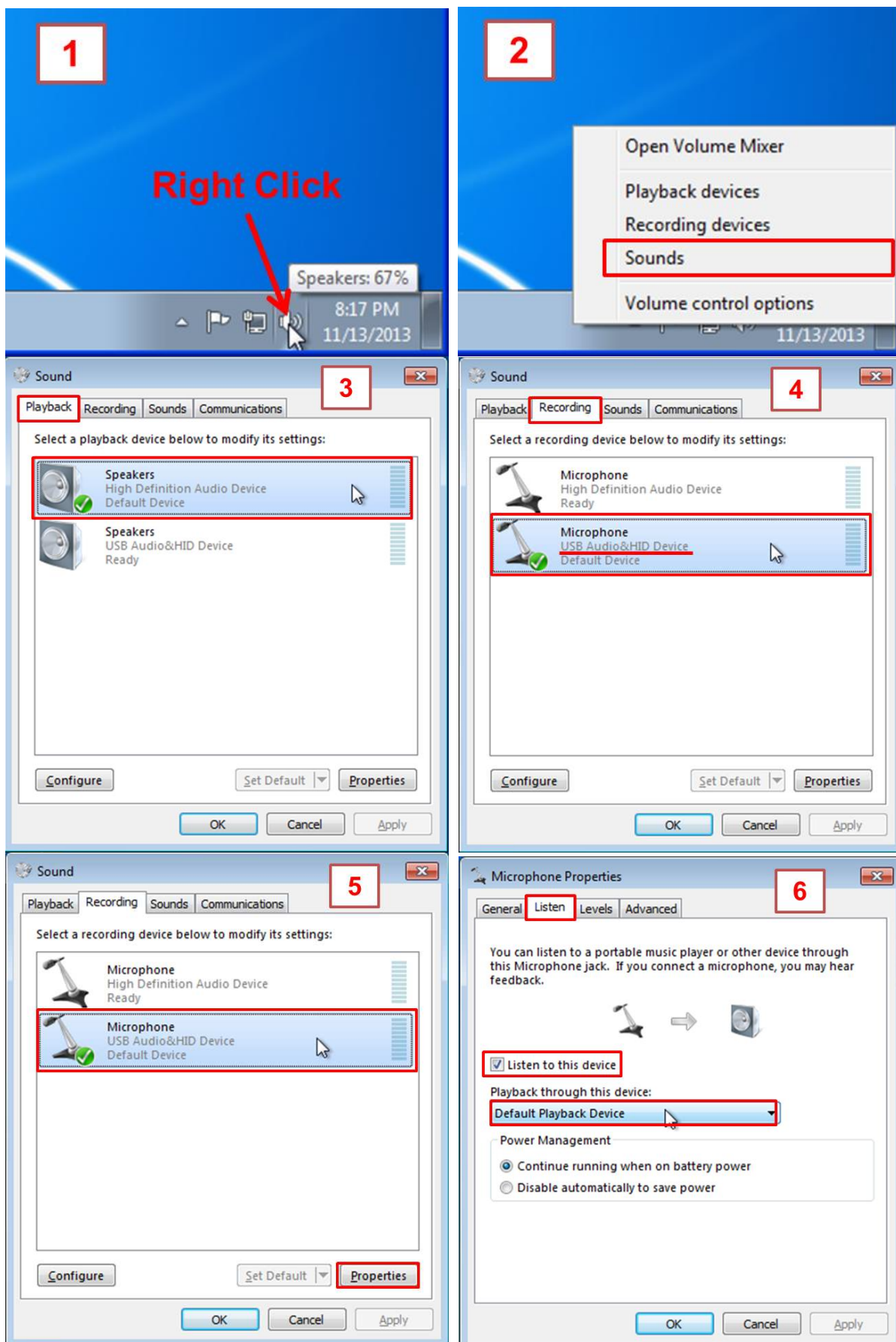
Step 3.

\* Press button "7" to request voice.

Use the "Voice"



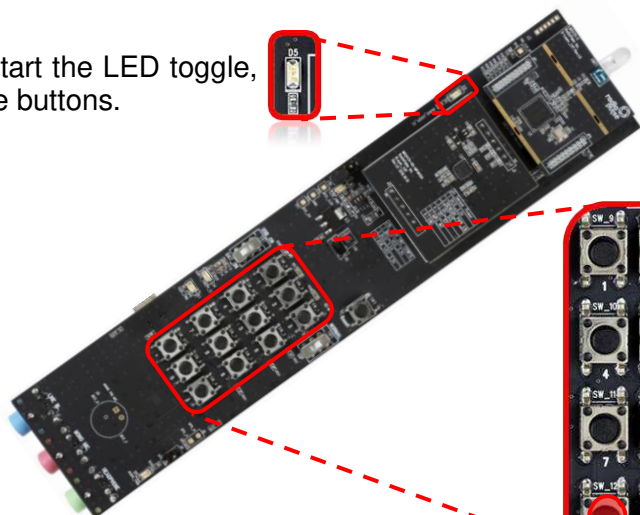
PC setting.



Exit the "Voice" mode.

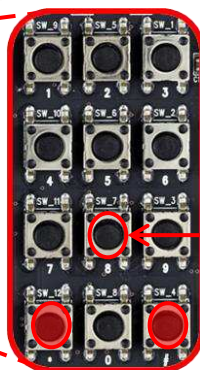
Step 2.

\* When start the LED toggle, release the buttons.



Step 1.

\* Press buttons "\*" and "#" together.(about 3Sec)



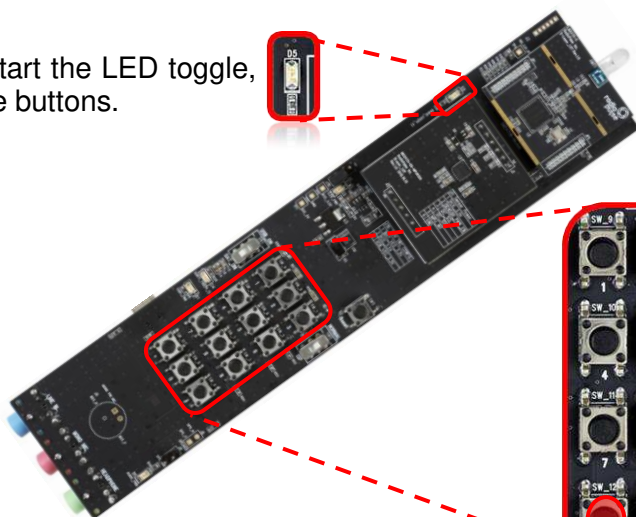
Step 3.

\* Press button "8" to exit voice.

Un-pair

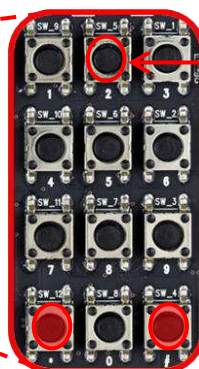
Step 2.

\* When start the LED toggle, release the buttons.



Step 1.

\* Press buttons "\*" and "#" together.(about 3Sec)



Step 3.

\* Press button "2" to un-pair.

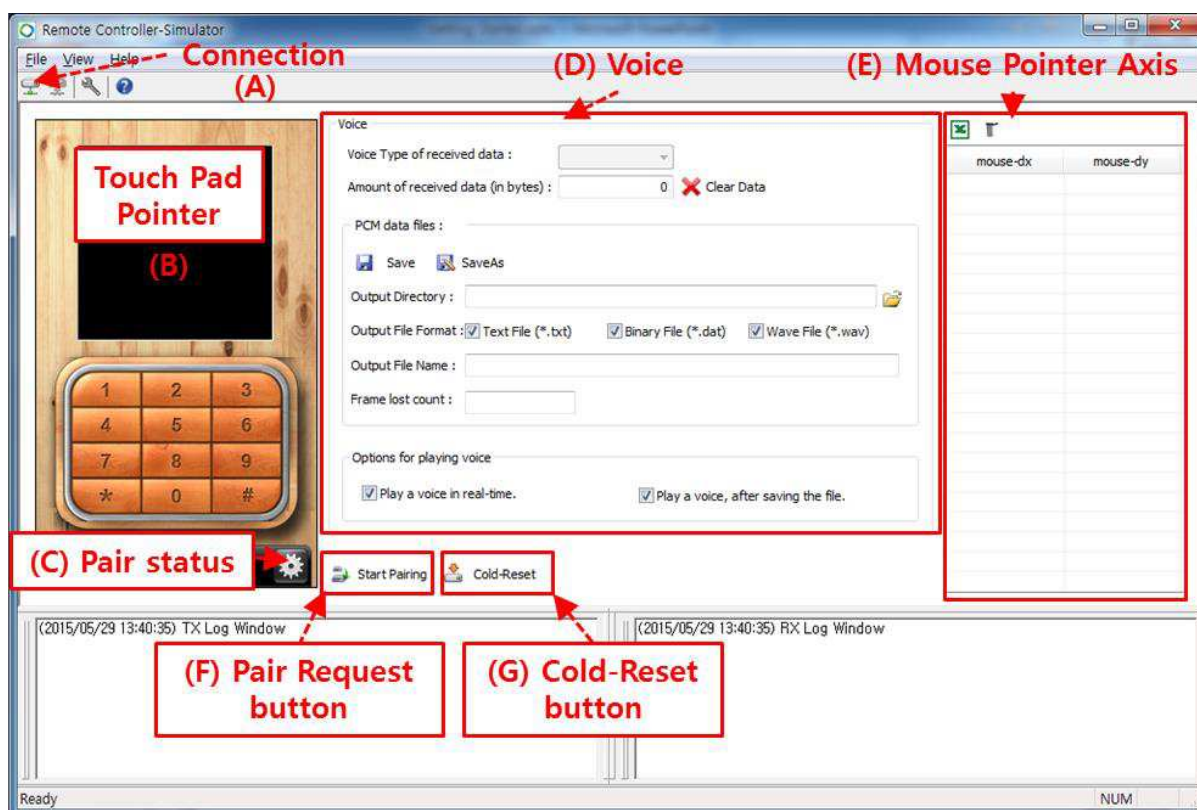
## 5.2. MG2470-EVB(Target) to RDB(Controller) : Operating with RC-Simulator

Each firmware file is like below;

- **MG2470-EVB** : MG2475\_RdkTarget\_SIM.hex
  - in [Package CD\0. Getting Started Manual\Firmware\]
- **RDB** : MG2475\_RdkController.hex
  - in [Package CD\0. Getting Started Manual\Firmware\]

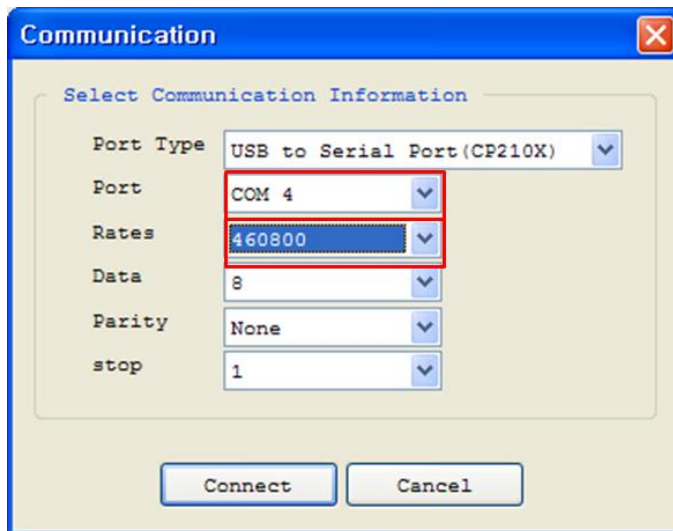
### 5.2.1. Usage of Remote Controller-Simulator

- Install **RCS Setup Vx.xx.exe** file to PC
  - in [Package CD\3. Development Tool and Drivers\RadioPulse Remote-Controller Simulator\Remote Controller-Simulator 1.10](see also [R1])



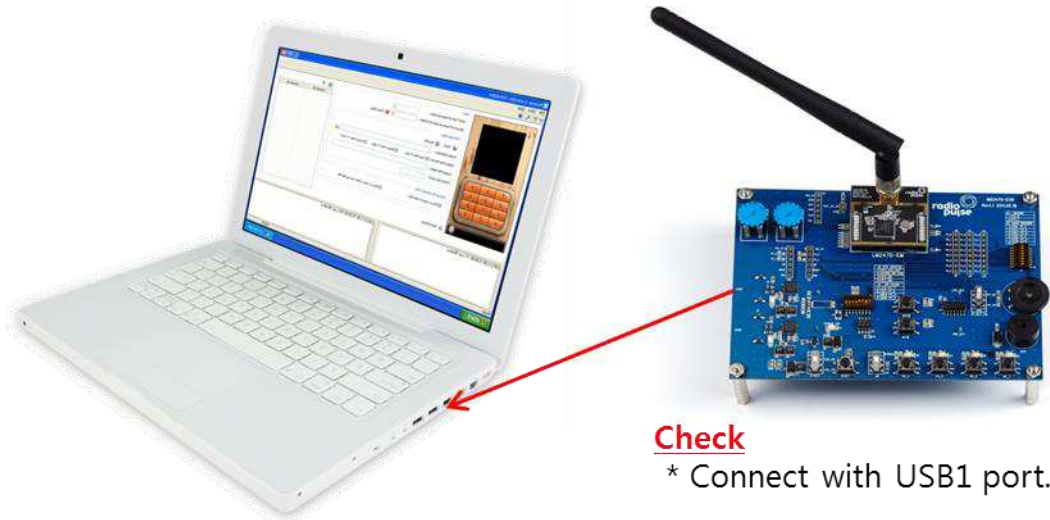
- (A) Connection button.  
 a) Port : Target's COM port  
 b) Rates : 460,800



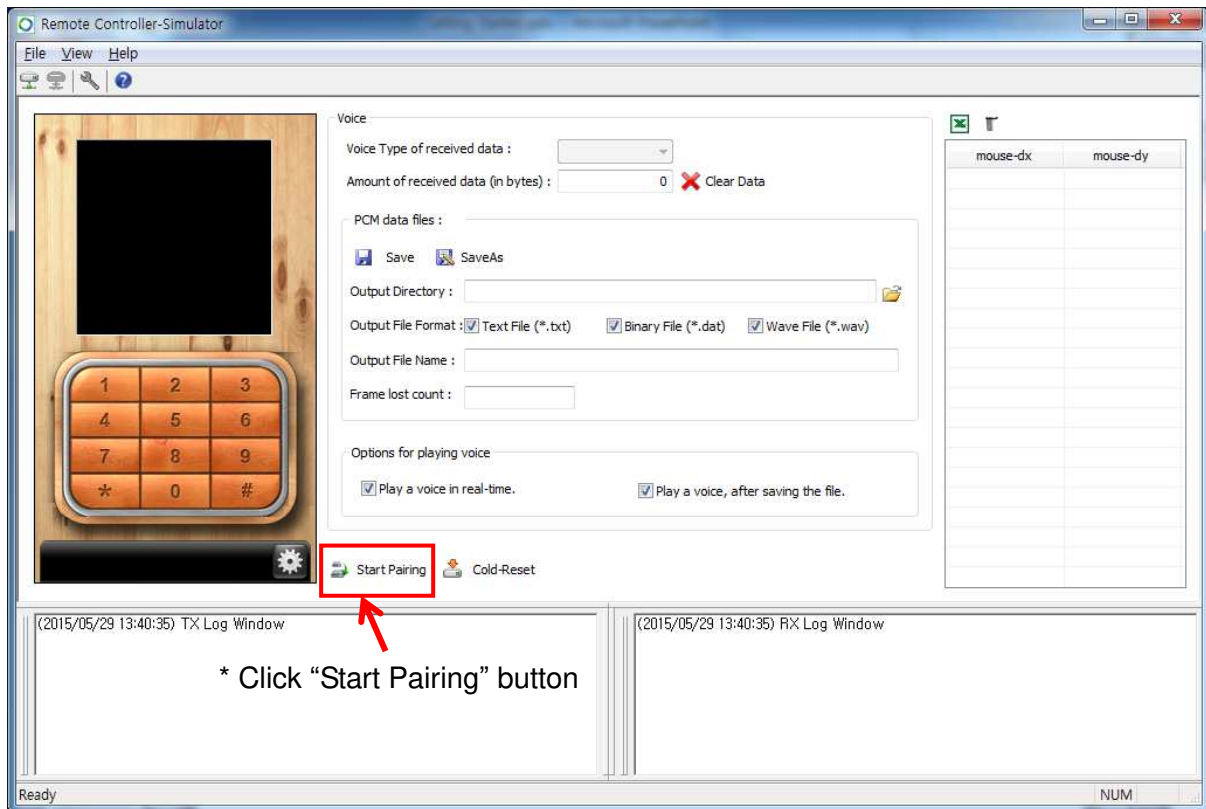


- (B) Touch Pad pointer position
- (C) Pair status indicator.
- (D) Handle the received voice data
- (E) Mouse position information window.
- (F) Pair Request button.
- (G) Cold-Reset button.

#### Install MG2470-EVB+LM2475-EM



## Pairing



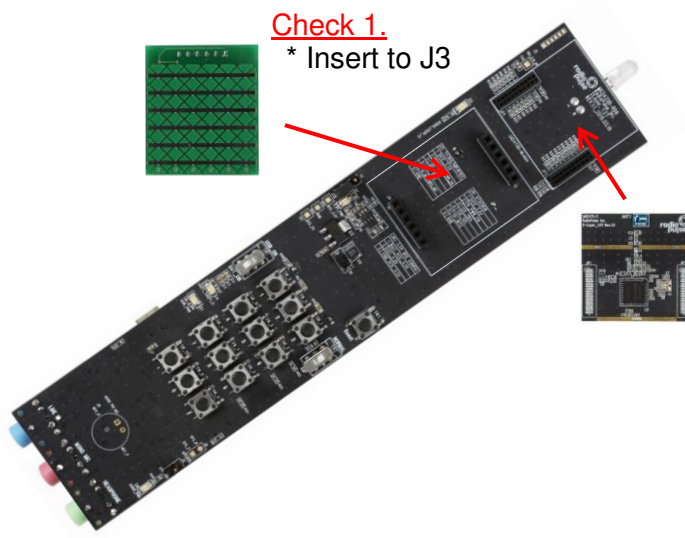
### Pairing Success

When the pairing is completed, the pair status image of Remote-controller simulator is changed as below;



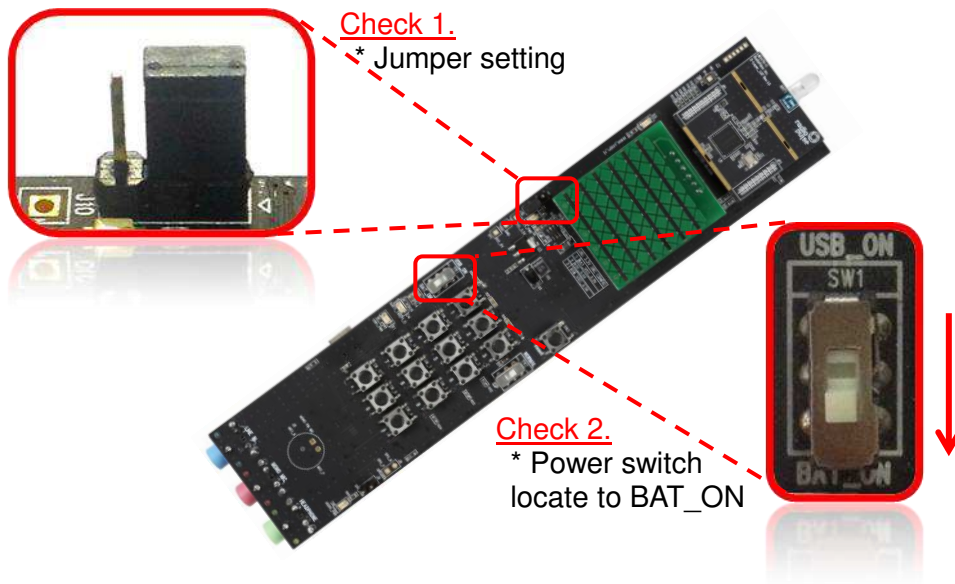
### 5.2.2. Usage of RDB

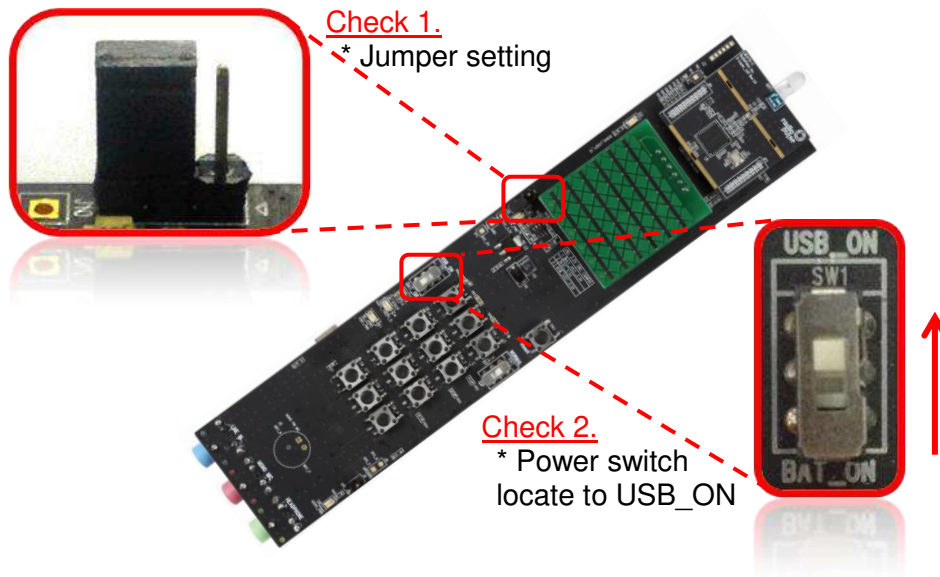
#### Install RDB: Modules



#### Install power in RDB: Battery or USB

##### Battery power

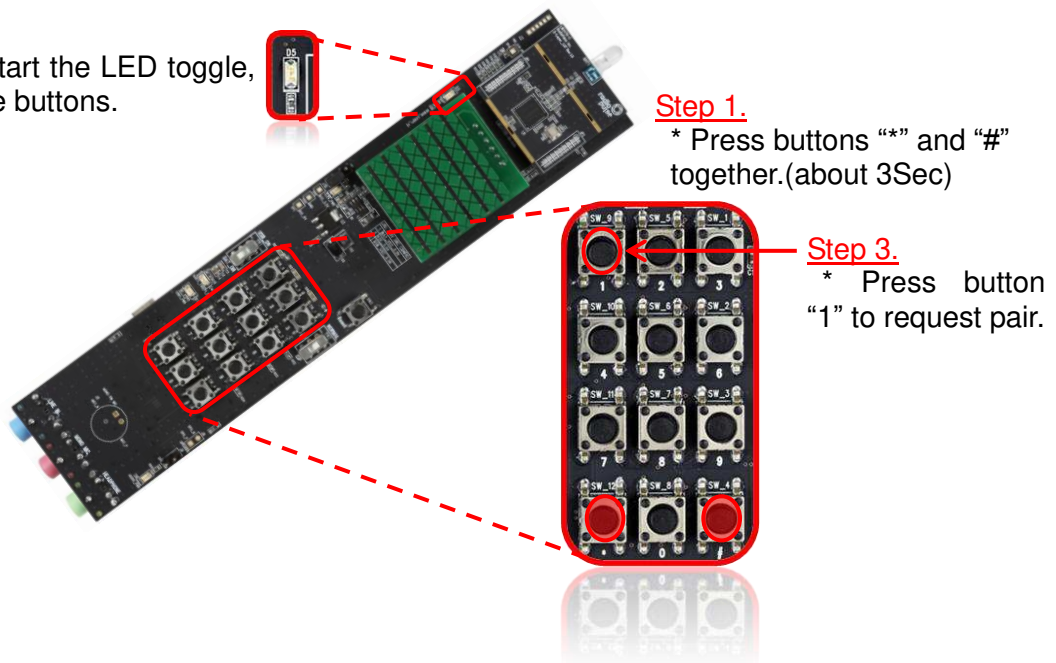


USB powerEnter the paring mode

\*\* Pairing mode will remain 30 seconds.

Step 2.

\* When start the LED toggle, release the buttons.



### 5.3. MG2475-Dongle(Target) to RCU(Controller)

MG2475-Dongle and RCU firmware are already downloaded.

Each firmware file is like below;

- **MG2475-Dongle** : MG2475\_RdkTarget\_DONGLE.hex  
    ■ in [Package CD\0. Getting Started Manual\Firmware\]
- **RCU** : Firmware is not provided.

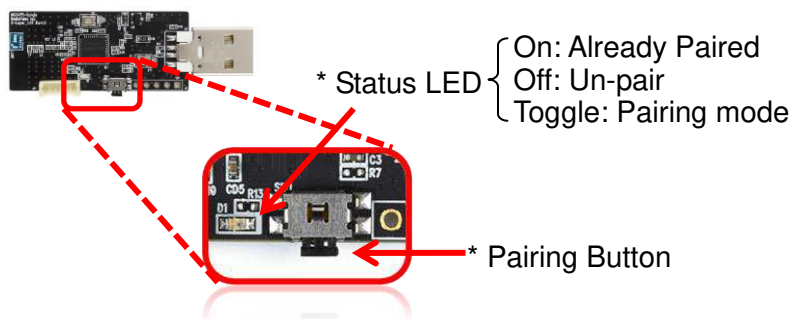
#### 5.3.1. Usage of MG2475-Dongle

##### Install MG2475-Dongle



##### Enter the pairing mode

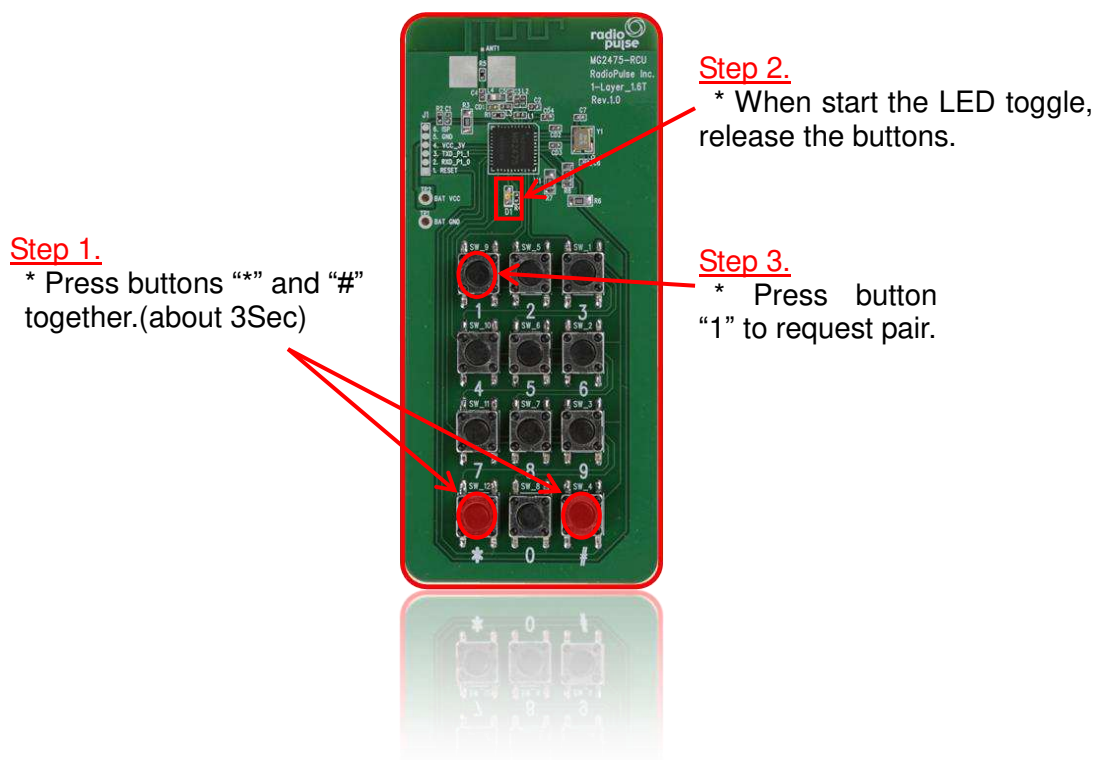
**\*\* Pairing mode will remain 30 seconds.**



### 5.3.2. Usage of RCU

#### Enter the pairing mode

- \* Before using RCU, the user must attach the battery (alkaline AA \* 2) to the RCU.
- \*\* Pairing mode will remain 30 seconds.



#### Operating: KEY

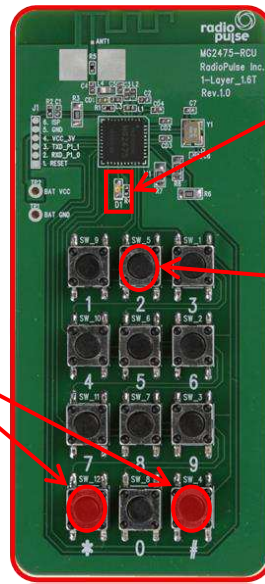
Open the “Notepad” and Press the buttons.



## Un-pair

### Step 1.

\* Press buttons "\*" and "#"  
together.(about 3Sec)



### Step 2.

\* When start the LED toggle,  
release the buttons.

### Step 3.

\* Press button  
"2" to un-pair.

## Appendix A. Firmware download.

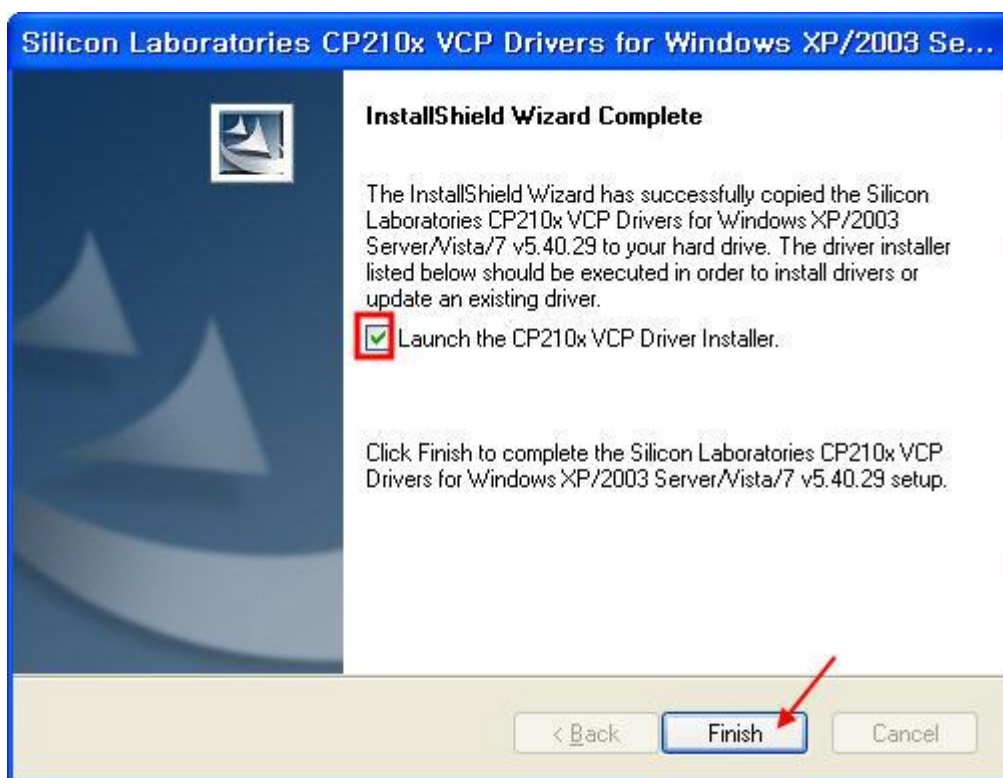
### CP210X DRIVER INSTALLATION

The CP210x on EVB is USB-to-UART controller. The driver for CP210x should be installed first, because it makes a PC to recognize the EVB.

The following is the installation step.

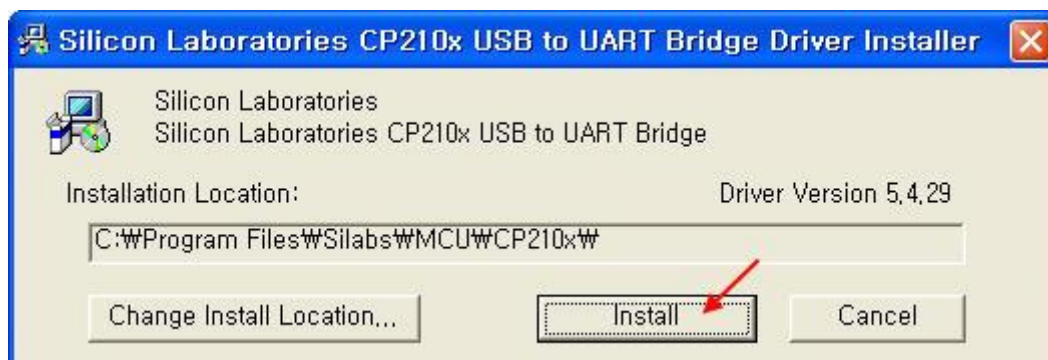
(A) Execute CP210X\_VCP\_Win\_XP\_S2K3\_Vista\_7.exe to install CP210x VCP drivers.

(B) At the final step of installation, check “Launch the CP210x VCP Driver Installer” and press “Finish”.



If it is not checked, it can be reinstalled later by executing “C:\SiLabs\MCU\CP210x\Windows...Vista\_7\CP210xVCPInstaller.exe”.

(C) Press “Install”. The “CP210x USB to UART Bridge Driver” is installed on the PC.





(D) If the driver is not installed, it can be installed manually when CP210x is connected to the PC. The driver is located in “C:\Program Files\Silabs\MCU\CP210x” folder.

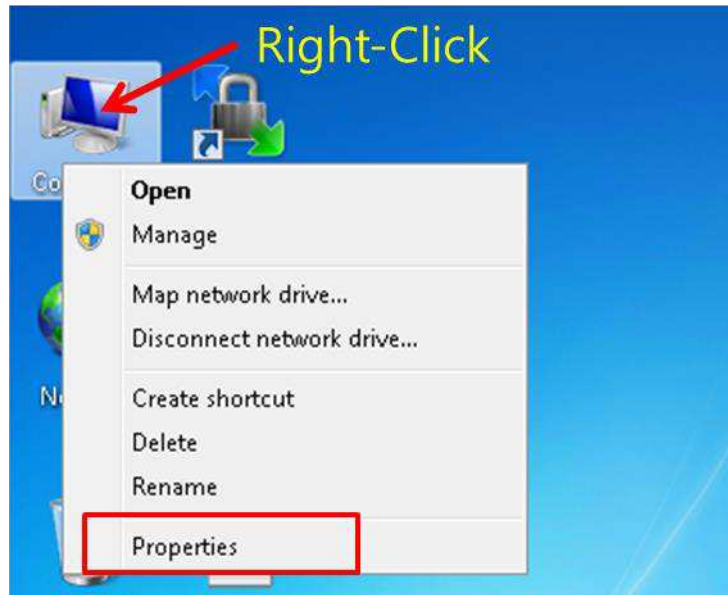
**NOTICE**

For other OS, the driver is available from [www.silabs.com](http://www.silabs.com)

## CHECK COM PORT

Connect MG2470B-RDB to PC using “**USB Receptacle Mini B 5pin**” port of MG2470B-RDB. Set the power switch to “USB\_ON”. Then, The PC recognizes MG2470B-RDB as COM port. The number of COM port is checked as follows.

(A) Right-click on “My Computer” icon and select “Properties”.



(B) Select “Hardware” tab.

