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[MG2475-RDK] Getting Started

(No. ASW1008) V0.96

REVISION HISTORY

Version	Date	Description	
VER.0.91	2015.05.12	The Beta version release.	
VER.0.92	2015.05.15	Images font modified.	
VER.0.93	2015.05.21	 Contents link modified. 	
VER.0.94	2015.05.29	 HEX file name modified. 	
VER.0.95	2015.05.29	 RCS image modified. 	
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 power



Enter the paring mode

** Pairing mode will remain 30 seconds.



Operating: KEY

Open the "Notepad" and Press the buttons.



Operating: MOUSE

Move like the air mouse.



Operating: VOICE

Enter the "Voice" mode.



Use the "Voice"



PC setting.

1	2
Right Click	Open Volume Mixer Playback devices Recording devices
Speakers: 67% 8:17 PM 11/13/2013	Volume control options 11/13/2013
Sound Playback Recording Sounds Communications Select a playback device below to modify its settings: Speakers High Definition Audio Device Default Device Speakers USB Audio&HID Device Ready	Sound 4 Playback Recording Sounds Communications Select a recording device below to modify its settings: Microphone High Definition Audio Device Ready Microphone USB Audio&HID Device Default Device
<u>C</u> onfigure <u>Set Default</u> <u>Properties</u> OK <u>Cancel</u> <u>Apply</u>	Configure Set Default V Properties
Sound 5 Playback Recording Sounds Communications Select a recording device below to modify its settings: Microphone High Definition Audio Device Ready Microphone USB Audio&HID Device Default Device	Microphone Properties General Listen Levels Advanced You can listen to a portable music player or other device through this Microphone jack. If you connect a microphone, you may hear feedback. We will be avoid the service of t
Configure Set Default Properties OK Cancel Apply	OK Cancel Apply

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<u>Un-pair</u>



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 [<u>R1</u>])

D Remote Controller-Simulator Elle View Hele Connection (A)	n (D) Voice (E)) Mouse Pointer Axis
Touch Pad Pointer (6) 1 2 1 2 4 5 5 6 7 8 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * 0 * * * 0 * * * * * * * * * * * * * * * * * * * *	Voice Voice Type of received data : Amount of received data : O Clear Data PCM data files : Save SaveAs Output Directory : Output File Format : Frame lost count : Frame lost count : Options for playing voice (G) Cold-Reset Dutttoon	W
teady		NUM

(A) Connection button.

- a) Port : Target's COM port
- b) Rates : 460,800

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Port Type	USB to Ser	ial Port (CP21)	0X) 🗸
Port	COM 4	~	
Rates	460800	~	
Data	8	~	
Parity	None	~	
stop	1	~	

- (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

O Remote Controller-Simulator	
Eile View Help	
Voice	×T
Voice Type of received data : Amount of received data (in bytes) : O Clear Data PCM data files : Save SaveAs Output Directory : Output File Format : Text File (*.txt) Ø Binary File (*.dat) Ø Wave File (*.wav) Output File Name : Frame lost count : Frame lost count : Options for playing voice Ø Play a voice, after saving the file.	mouse-dx mouse-dy
Start Pairing Gold-Reset	
(2015/05/29 13:40:35) TX Log Window * Click "Start Pairing" button	
Ready	NUM

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 power



Enter the paring mode

** Pairing mode will remain 30 seconds.



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 paring mode

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



Operating: KEY

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Open the "Notepad" and Press the buttons.



<u>Un-pair</u>





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".

Silicon Laboratories CP210x VCP Drivers for Windows XP/2003 Se		
	InstallShield Wizard Complete The InstallShield Wizard has successfully copied the Silicon Laboratories CP210x VCP Drivers for Windows XP/2003 Server/Vista/7 v5.40.29 to your hard drive. The driver installer listed below should be executed in order to install drivers or update an existing driver. Image: Launch the CP210x VCP Driver Installer. Click Finish to complete the Silicon Laboratories CP210x VCP Drivers for Windows XP/2003 Server/Vista/7 v5.40.29 setup.	
< Back Finish Cancel		

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.

🚜 Silicon Laboratories CP210x USB to UART Bridge Driver Installer 🛛 🔀				
*	Silicon Laboratories Silicon Laboratories CP210x L	JSB to UART Bridge		
Installation Location: Driver Version 5,4,29				
C:₩Program Files₩Silabs₩MCU₩CP210x₩				
Ch	ange Install Location	Install Cancel		

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(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.

<u>NOTICE</u>

For other OS, the driver is available from <u>www.silabs.com</u>

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.

