SMART HOME

Home Automation System

User Manual for

CC2530

by Tranquillum

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1. Introduction

1.1 Scope of the Document

The purpose of this document is to help the users to install and use the CC2530 part of the Smarthome Project which is developed by Tranquillum Group.

1.2 Contact Us

If you have any questions or comments about the project, you can send us an e-mail to

tranquillum.group@gmail.com

2. Usage

2.1 Programs Needed to Install CC2530

In order to build CC2530 with the project's source codes, you need to install these products

- IAR Embedded Workbench
- SmartRF Flash Programmer

First program is the tool that programs the boards and second program provides the drivers for the boards in Windows environment.

2.2 How to Program

2.2.1 Starting and Opening a Workspace

After installing these programs and downloading the source code from the project's web page, extract the source code related to CC2530. Run IAR Embedded Workbench, open →workspace as shown in the Figure 1:
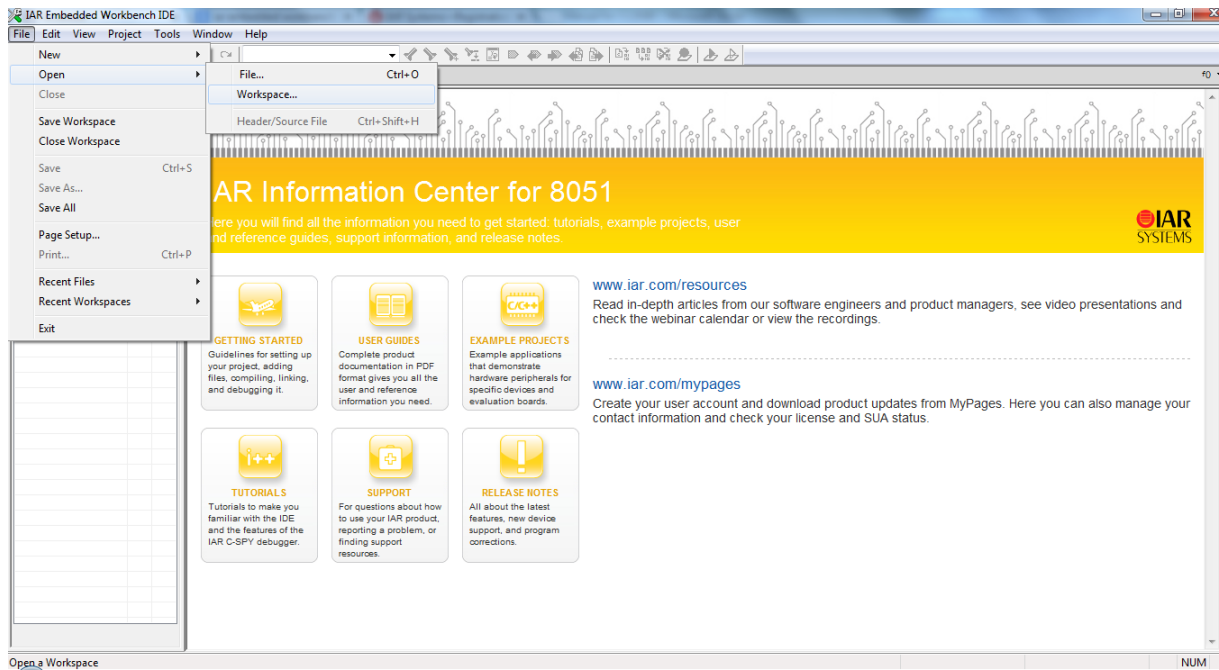
Figure 1: Open a Workspace

2.2.2 Opening Project Workspace

Secondly, select the project in Texas Instruments → ZStack-CC2530-2.5.1a → Projects → zstack → Utilities → SerialApp as shown in the Figure 2:
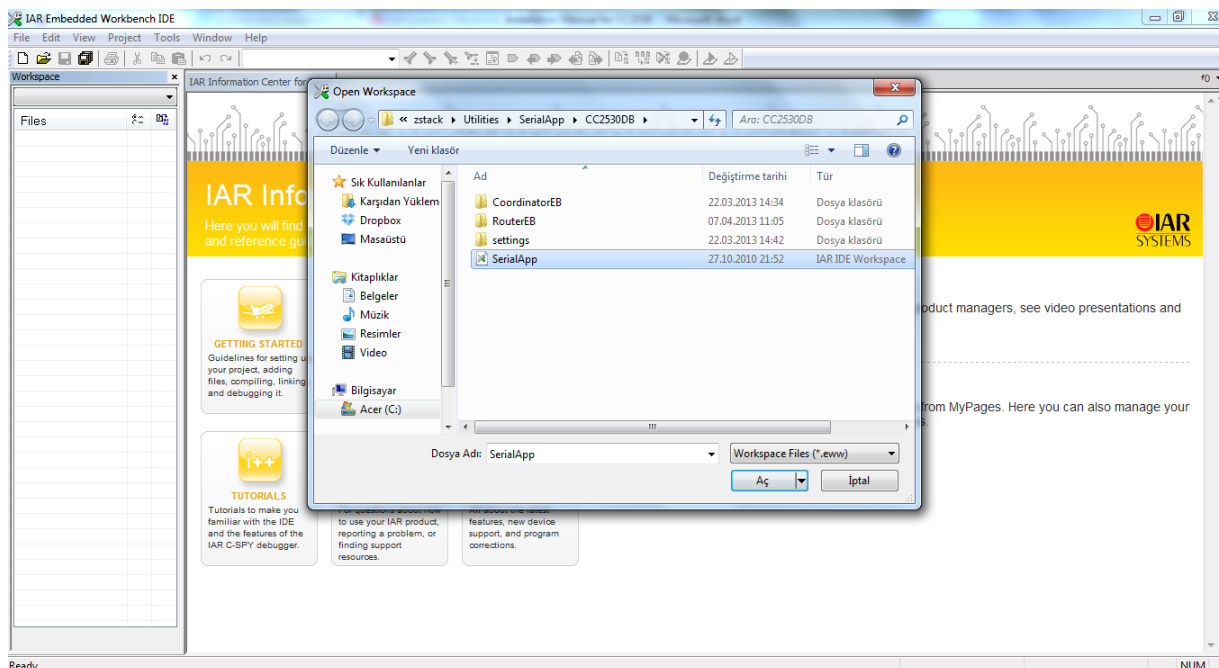

Figure 2: Select a Workspace

2.2.3 Selecting Device Type

After opening the project, select the device type as Coordinator or Router shown in the Figure 3:
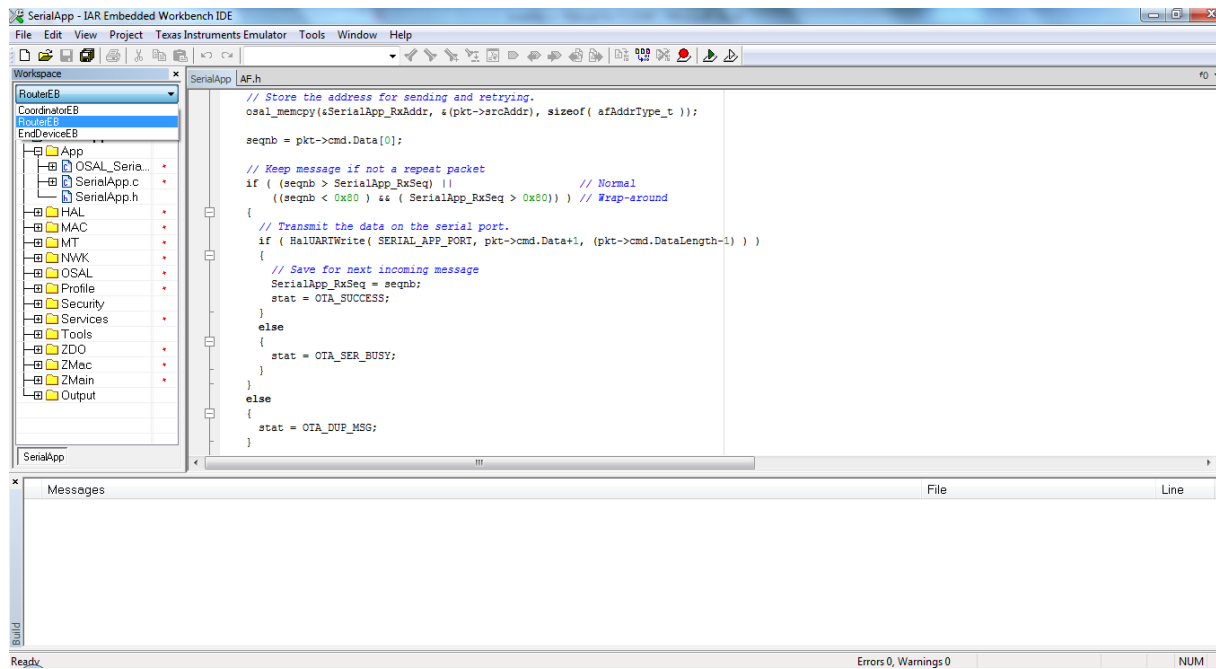

Figure 3: Select the Device Type

2.2.4 Programming the Devices

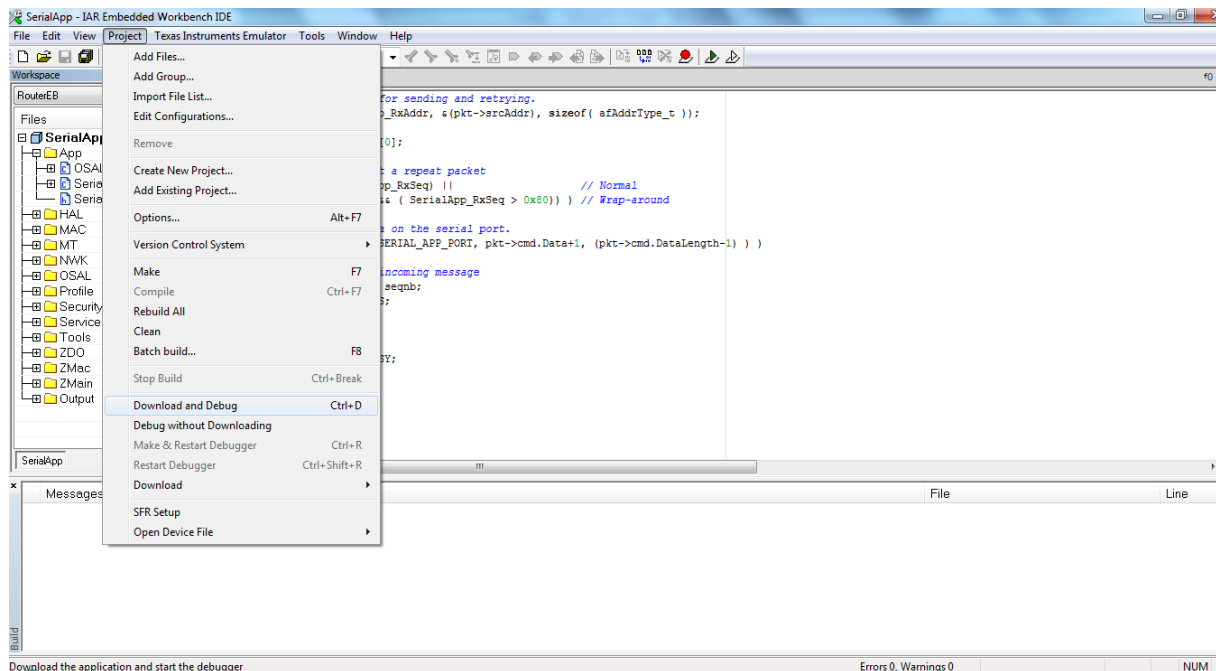Lastly, go Project → Download and Debug in order to program the board as shown in the Figure 4:

Figure 4: Program the Device

3. Usage

3.1 Getting Ready and Power the Devices

After programming the devices, you should connect the coordinator to the controller box via serial cable. Then you should turn on the coordinator first and router accordingly as shown below.
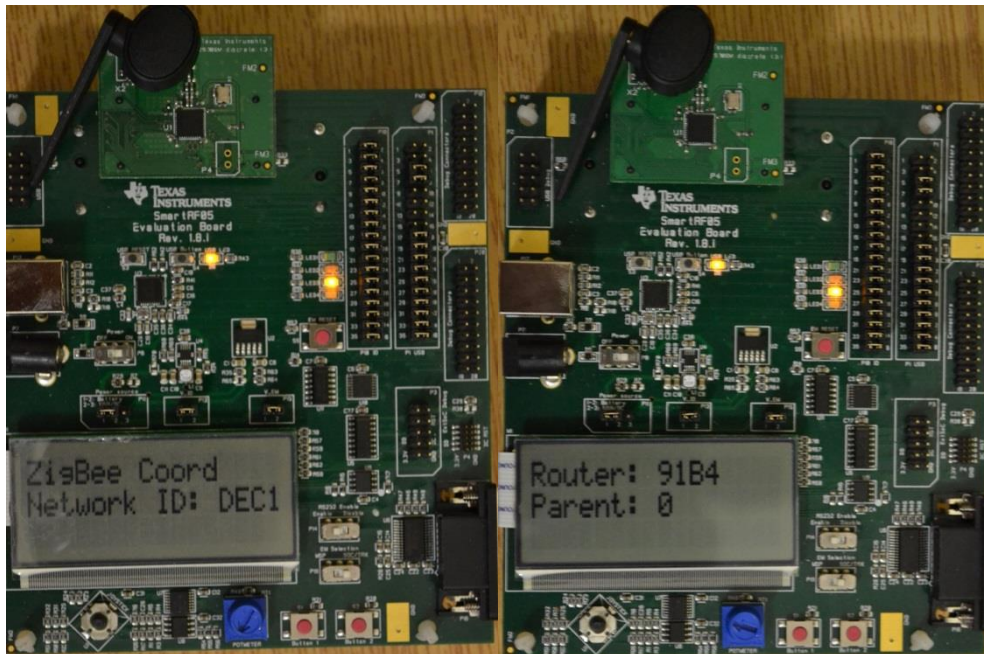

Figure 5: Start View of Devices

3.2 Matching Router and Coordinator

In order to achieve communication between devices, they should be matched first. In order to do that; you should press shift and push the joystick button up while you are looking at the device as shown in the figure both in coordinator and router.
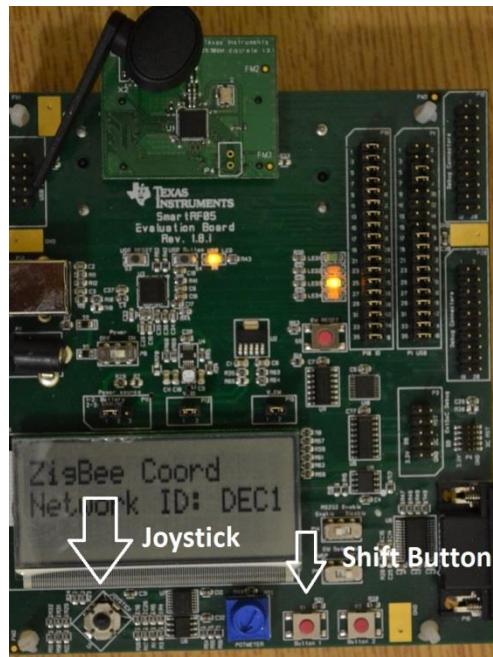
Figure 6: Button Types

In order to start the simulation, you need to press shift and push the joystick button right while you are looking at the device as shown in the figure in router. Now, they are ready for the commands both from board and user interface. It should look like this if everything went normally:

Figure 7: Ready for Usage

1.3 Controlling the Device using Joystick

There are 5 different moves you can do using joystick.

Pressing Joystick Button: This will change status of the device to ON/OFF

Pushing Joystick Up: It will decrease the temperature of the fridge.

Pushing Joystick Down: It will increase the temperature of the fridge.

Pushing Joystick Right: It will decrease the temperature of the freezer.

Pushing Joystick Left: It will increase the temperature of the freezer.