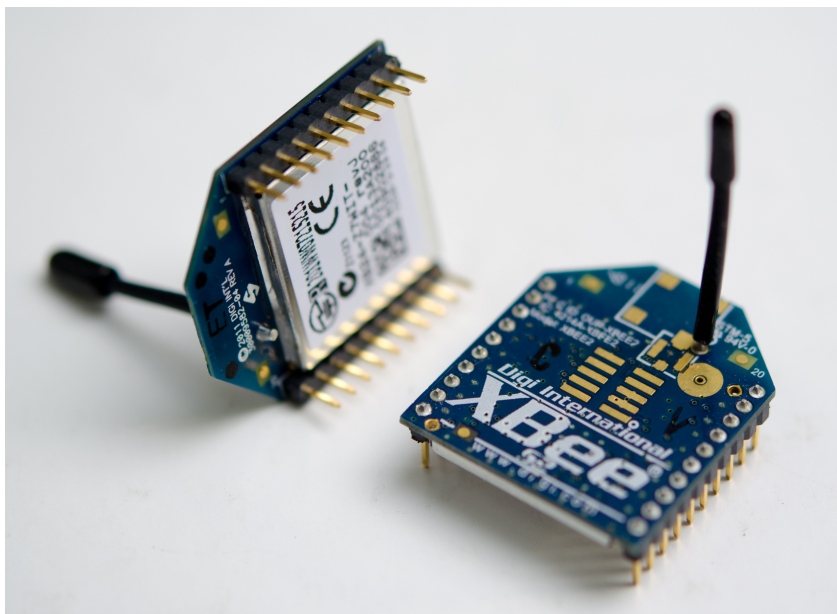**2016**

Configuring Zig-Bee modules for Point-to-Point Communication using XCTU

*Author: Gurudatta Palankar*

Version: 1.0

Introduction

ZigBee is an IEEE 802.15.4-based specification for a suite of high-level communication protocols used to create personal area networks with small, low-power digital radios. This is the XBee Series 2 from Digi International improves on the power output and data protocol. Series 2 modules allow you to create complex mesh networks based on the XBee ZB ZigBee mesh firmware. These modules allow a very reliable and simple communication between microcontrollers, computers, systems, really anything with a serial port! Point to point and multi-point networks are supported.
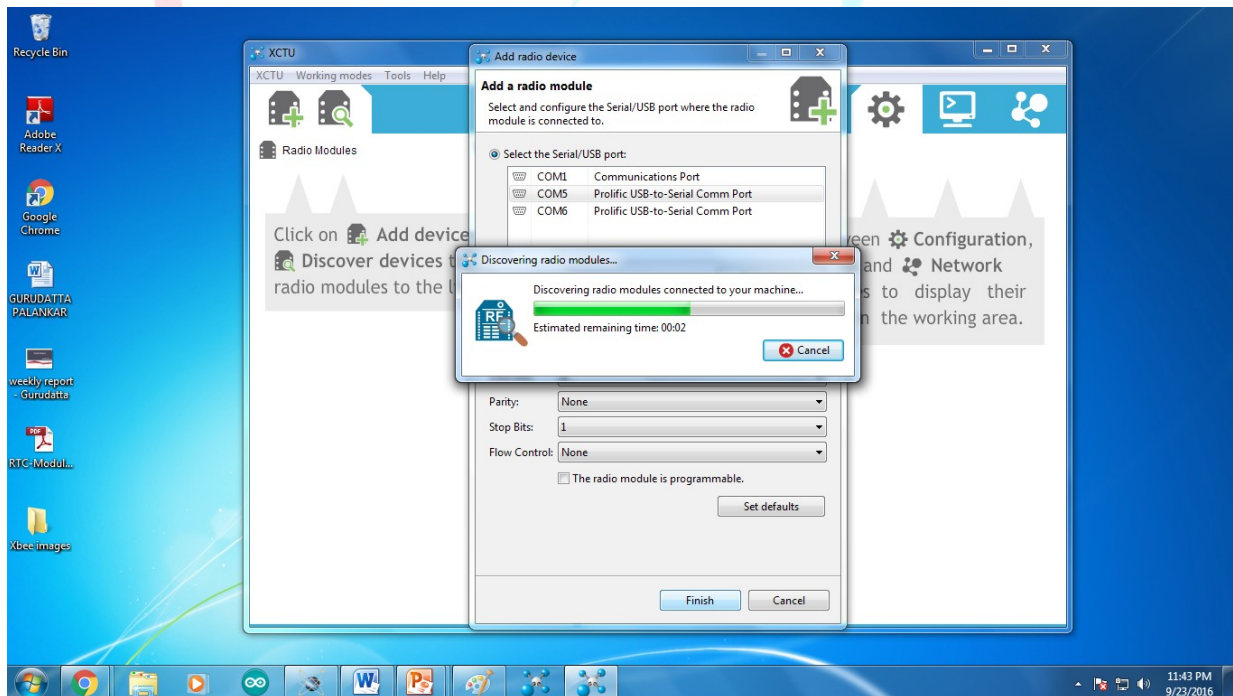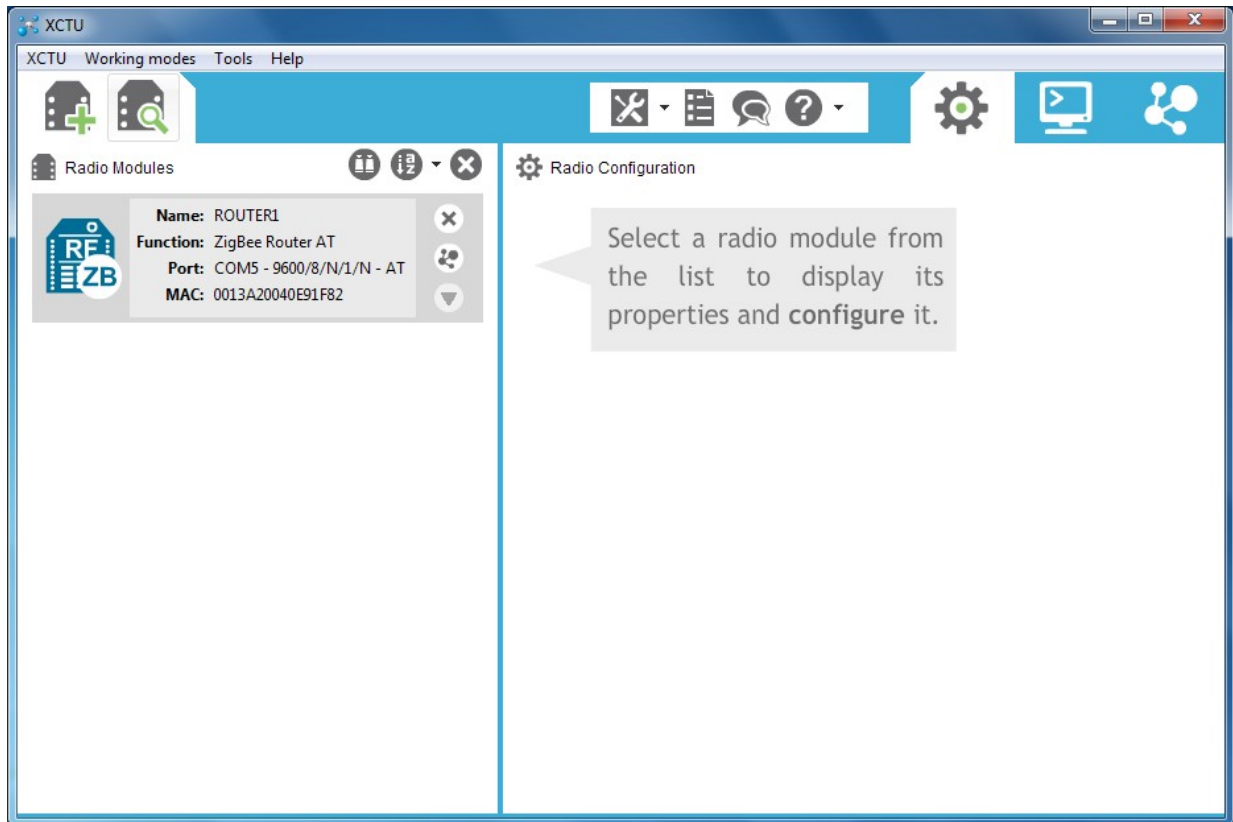
Step 1: Open XCTU Software
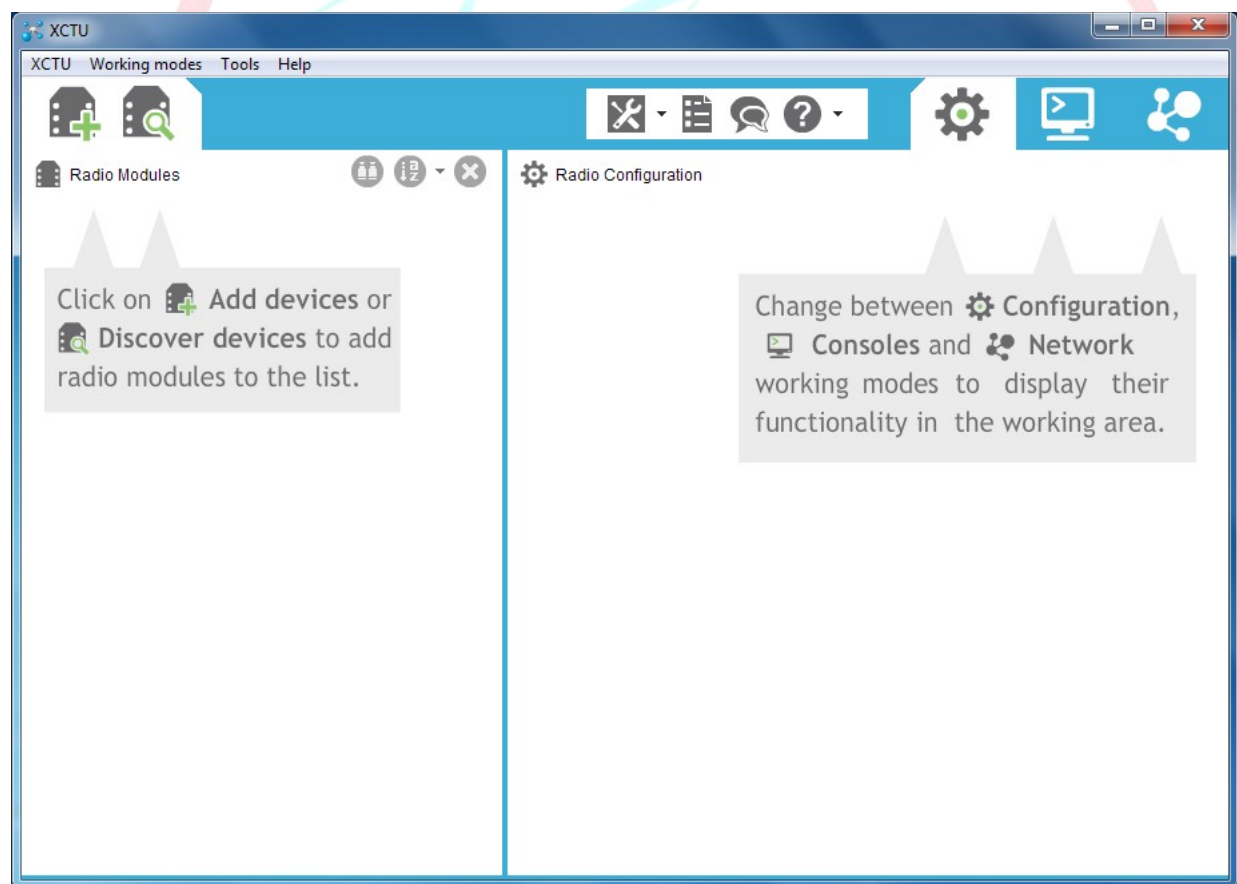
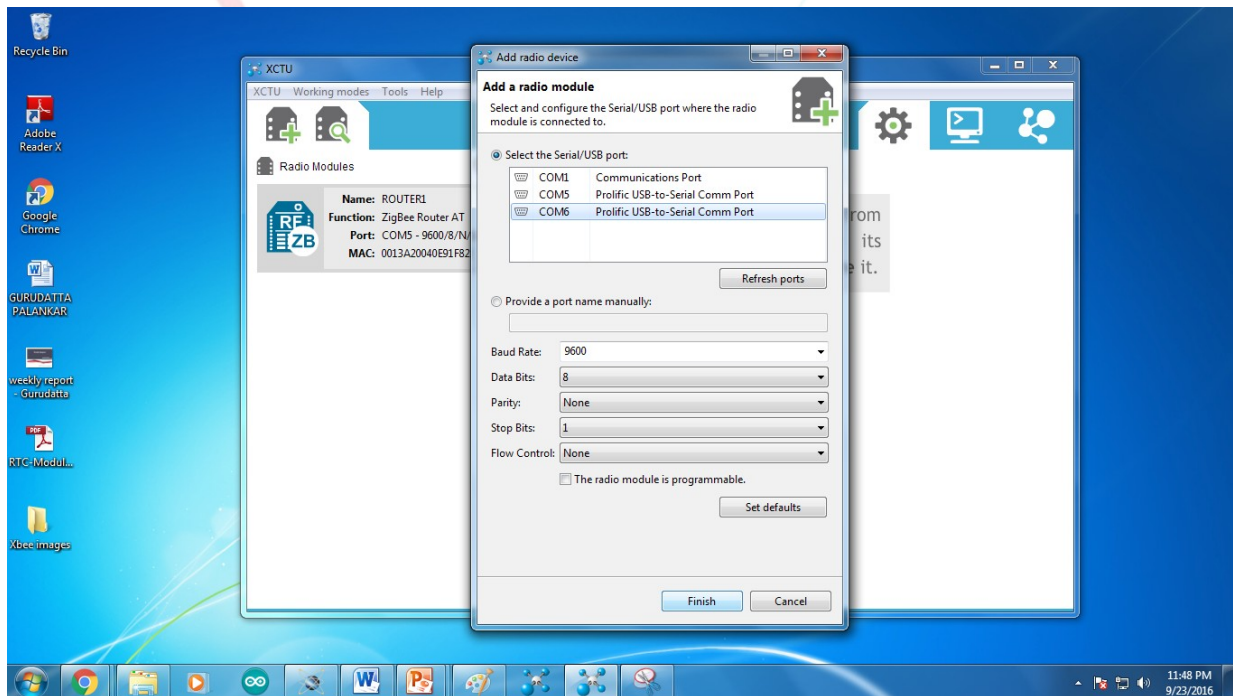## Step 2 : Click on Add devices...
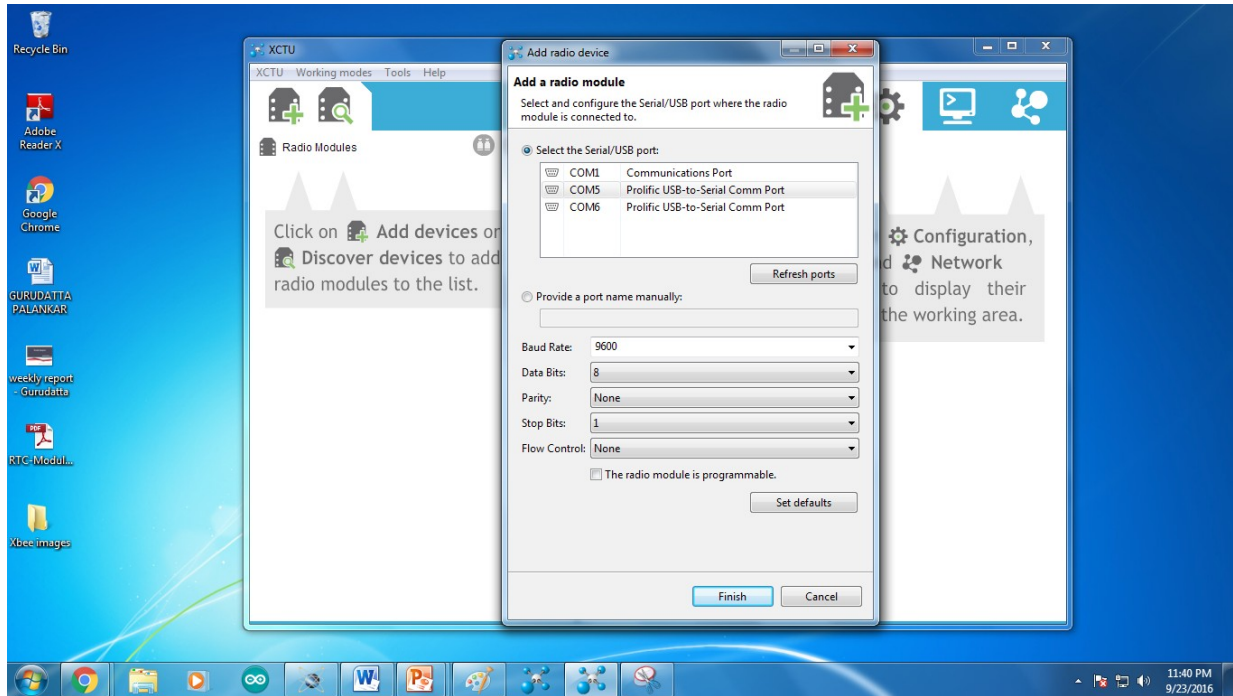
## Step 3: Select Communication port (COM5) of one ZigBee

***Step 4: We will be able to see one ZigBee module added...***

***Step 5: Similarly, select COM port (COM6) of another ZigBee***

Step 6: Now, we'll be able to see two ZigBee radio modules added. Double click on any one of the ZigBee to configure it. In ZigBee Personal Area Network (PAN) there must be one Co-ordinator which initiates network formation.
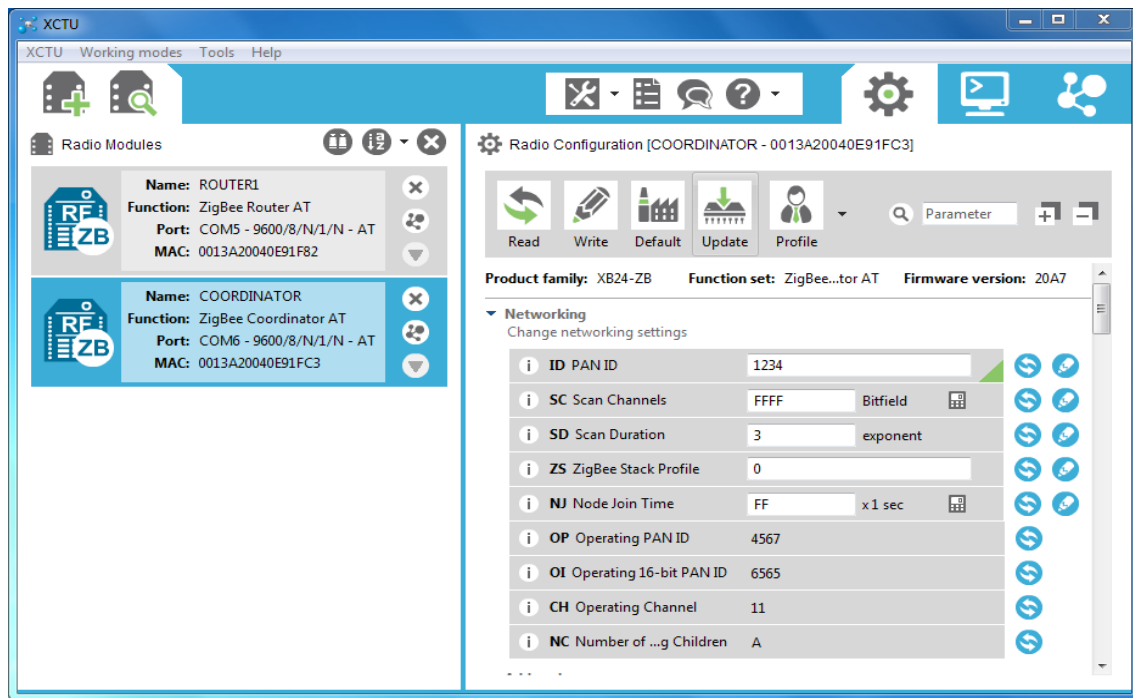
Step 7: Set PAN ID to any number from 0000 to FFFF. It is a unique number of a single ZigBee Personal Area Number (PAN).
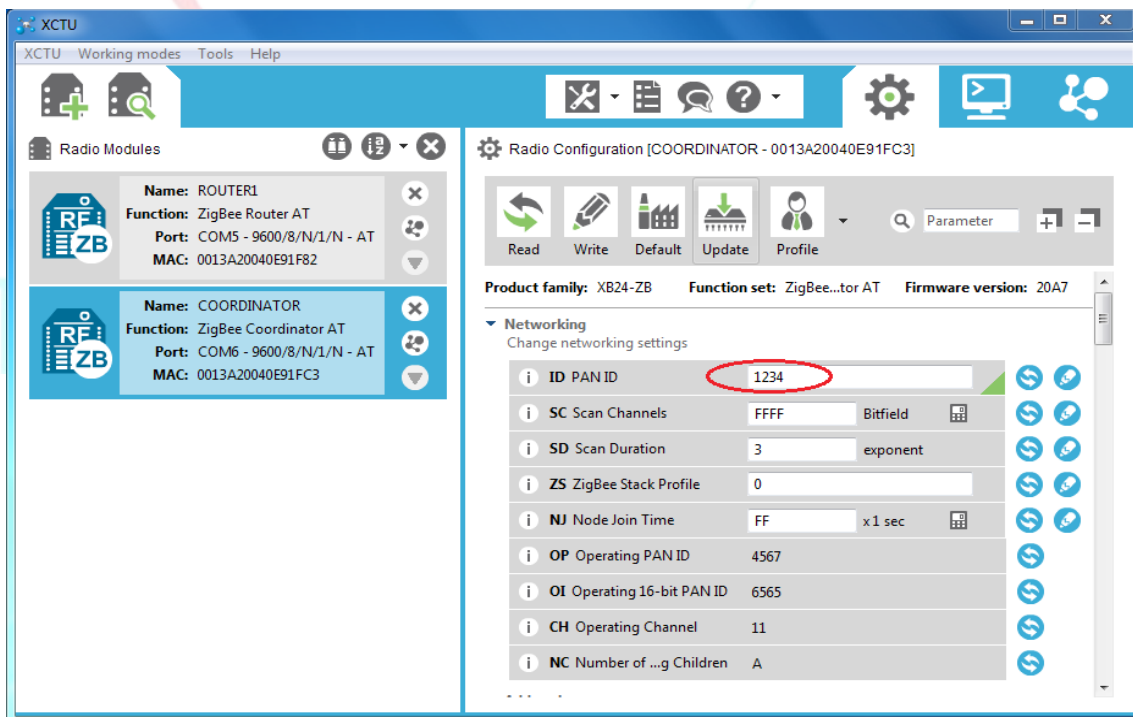
Step 8: Copy MAC address of one ZigBee module as a Destination Address of the other ZigBee module and vice-versa. That is copy Serial Number High (SH) and Serial Number Low (SL) of one ZigBee to Destination Address High (DH) and Destination Address Low (DL) of the other respectively.
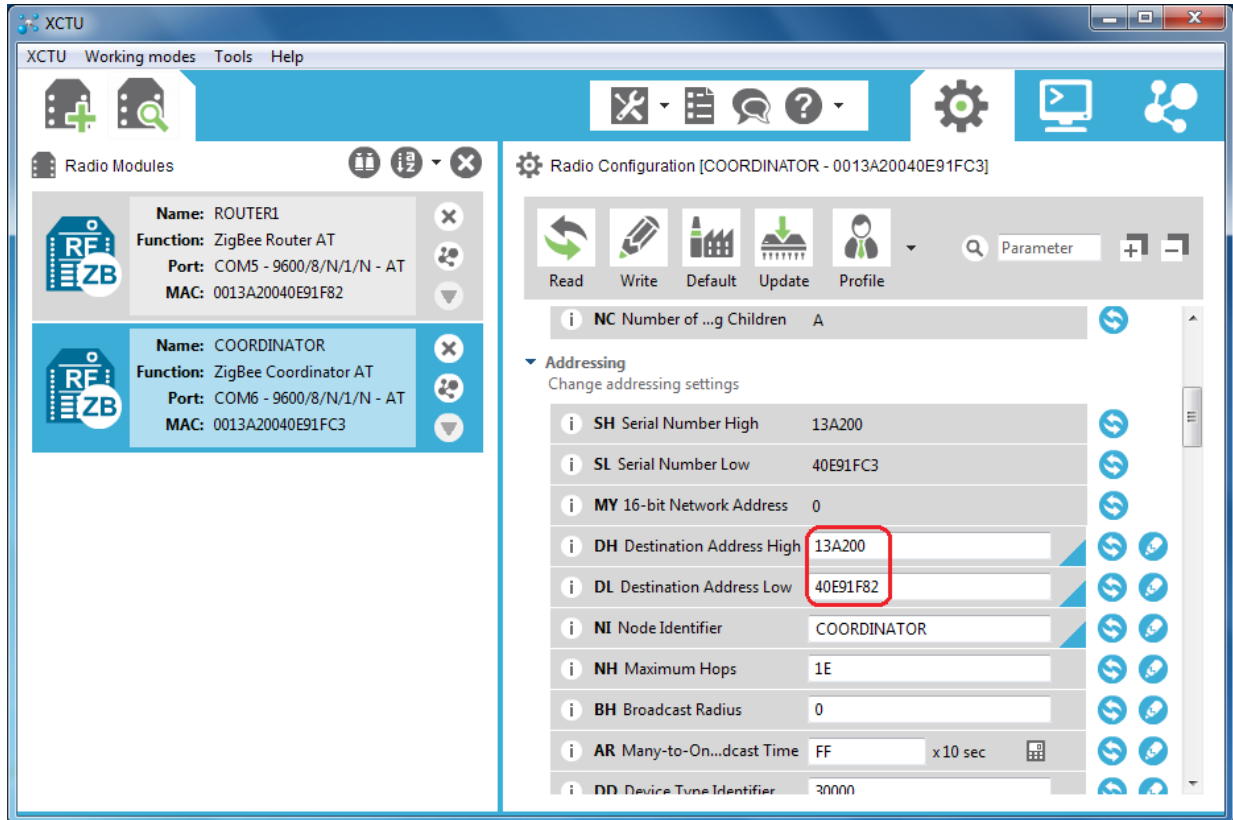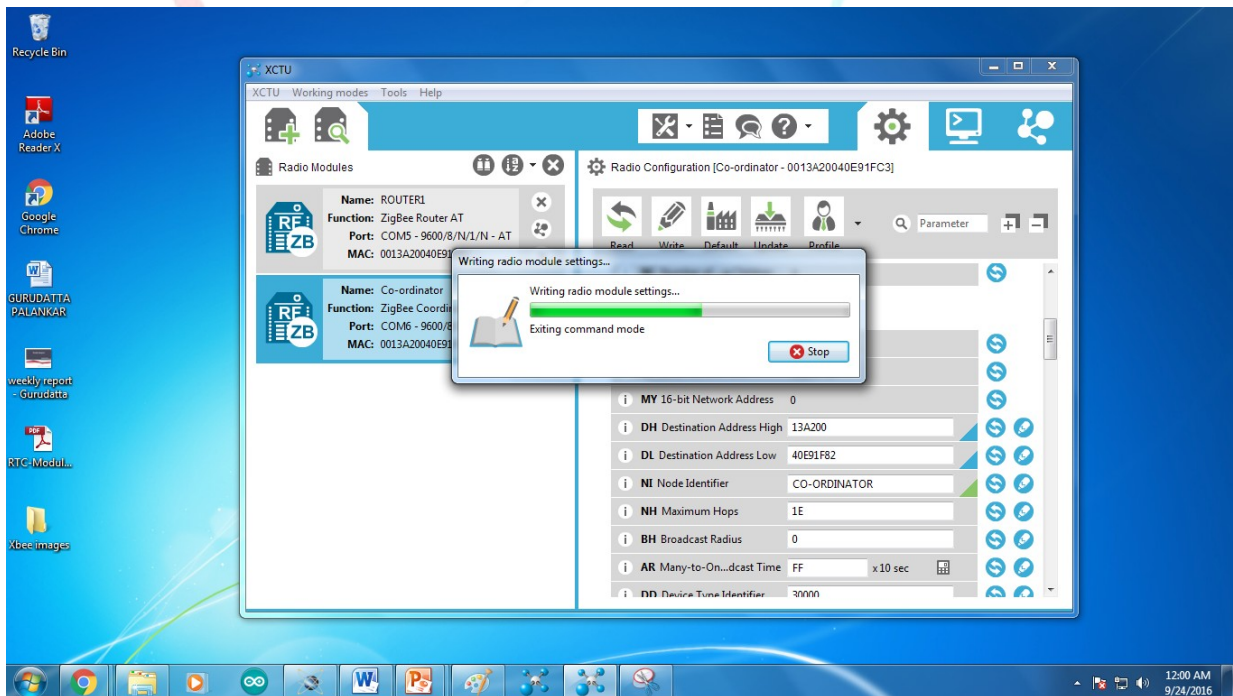
Step 9: We can name a particular ZigBee node by filling name in a Node Identifier (NI) field. Click on Write to update the settings.
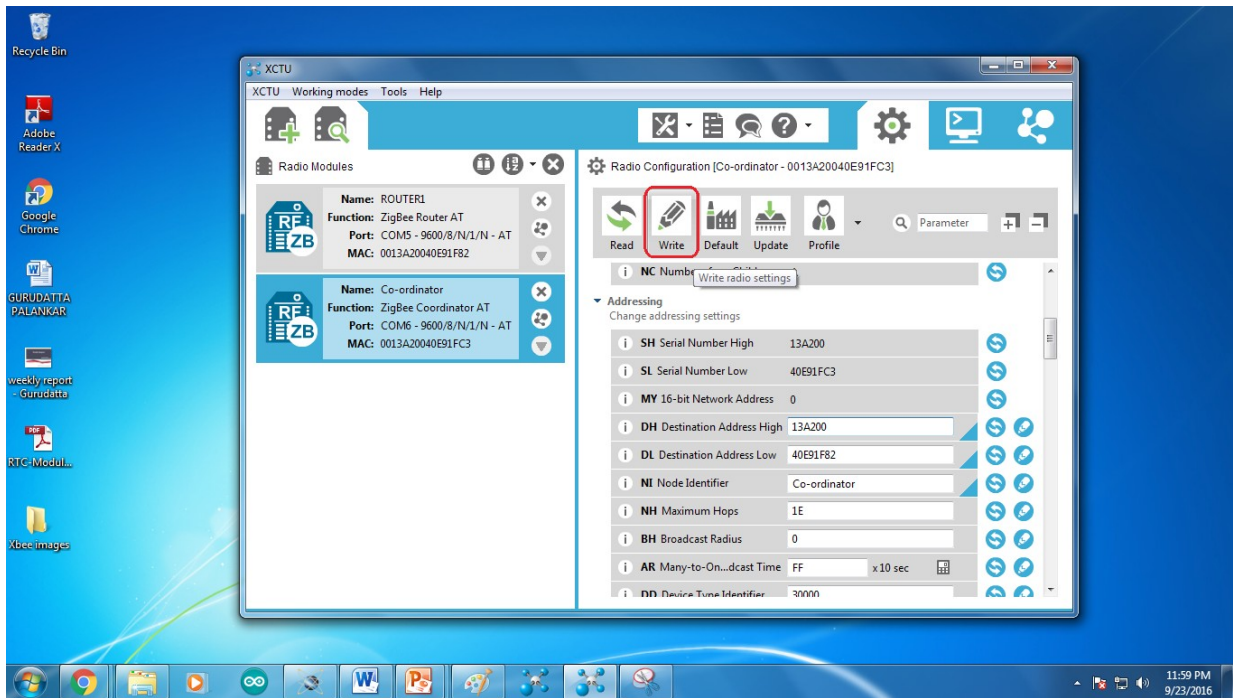
*Step 10: It will take some time to write the settings...*

Step 11: Click on Update to update the firmware. Here we'll update the module either as Co-ordinator, Router or End device. There'll be only one Co-ordinator per ZigBee PAN. Routers and End devices can be multiple.
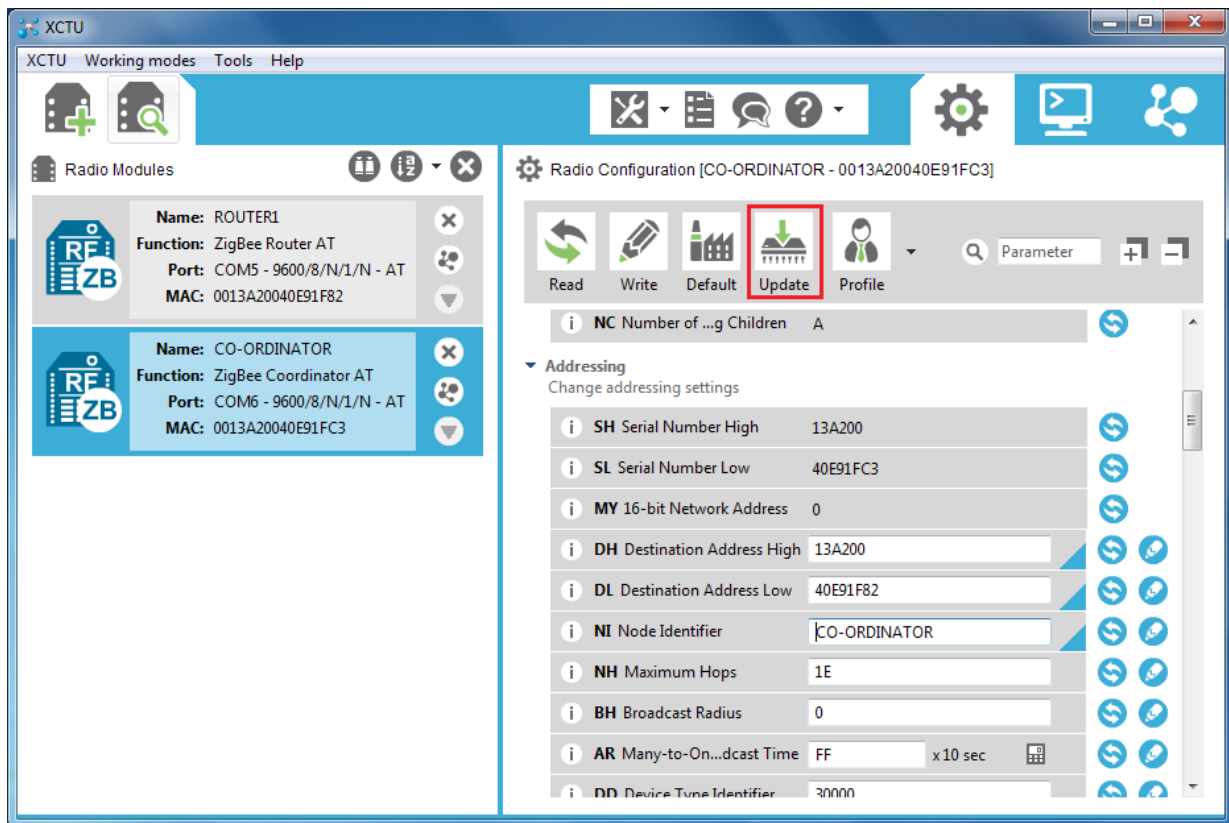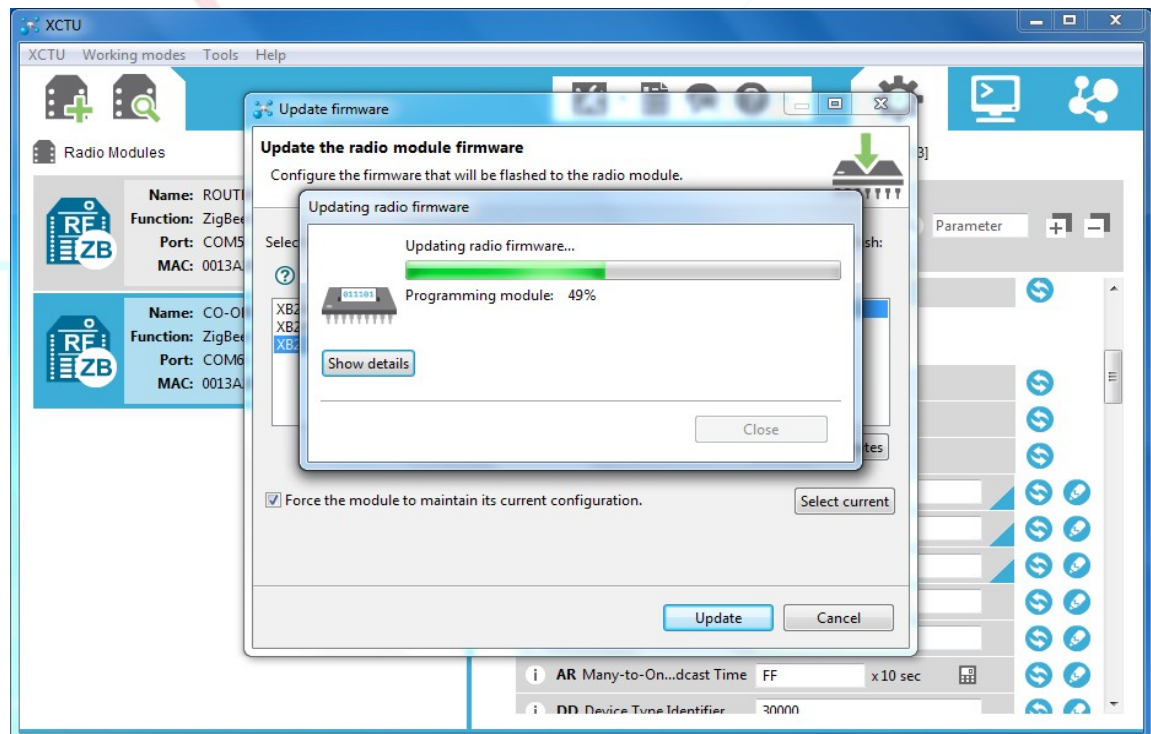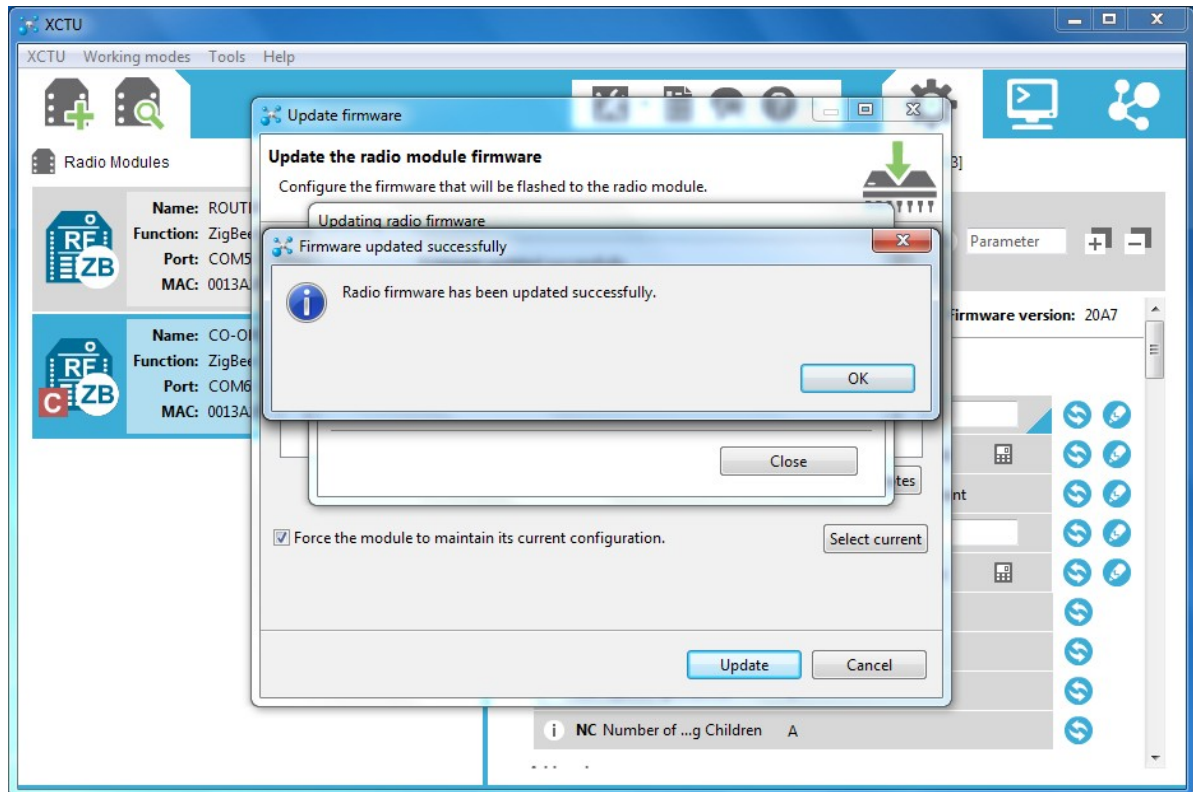
Step 12: Select product family (here we have selected XB24-ZB because we are using Digi International X-Bee S2 module), Select Function Set (ZigBee Co-ordinator AT), and Firmware version.
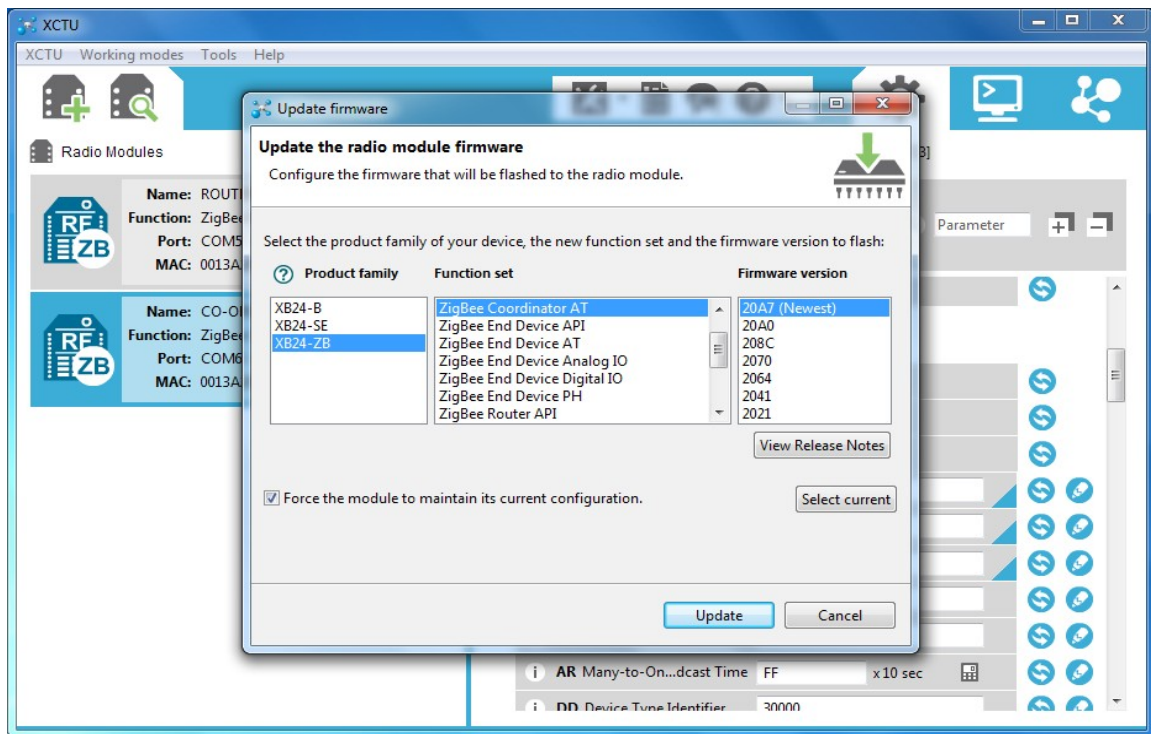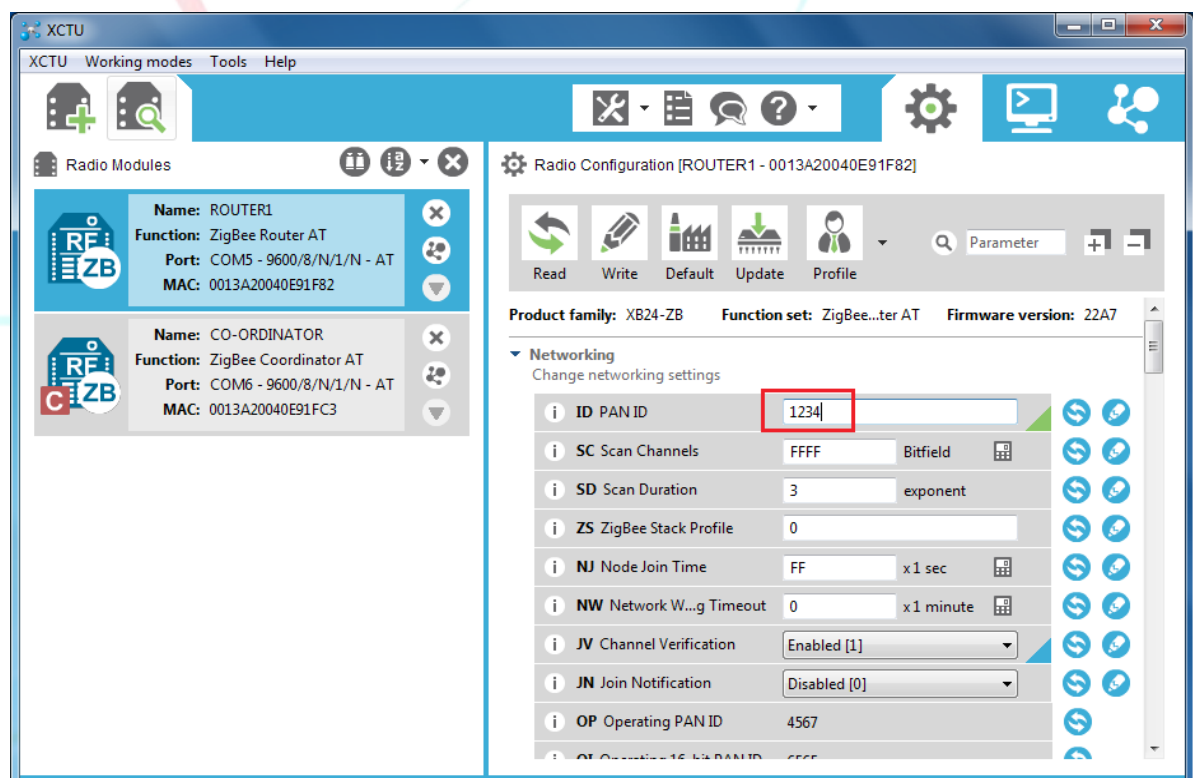

*Step 13: Updating radio module firmware takes some time...*

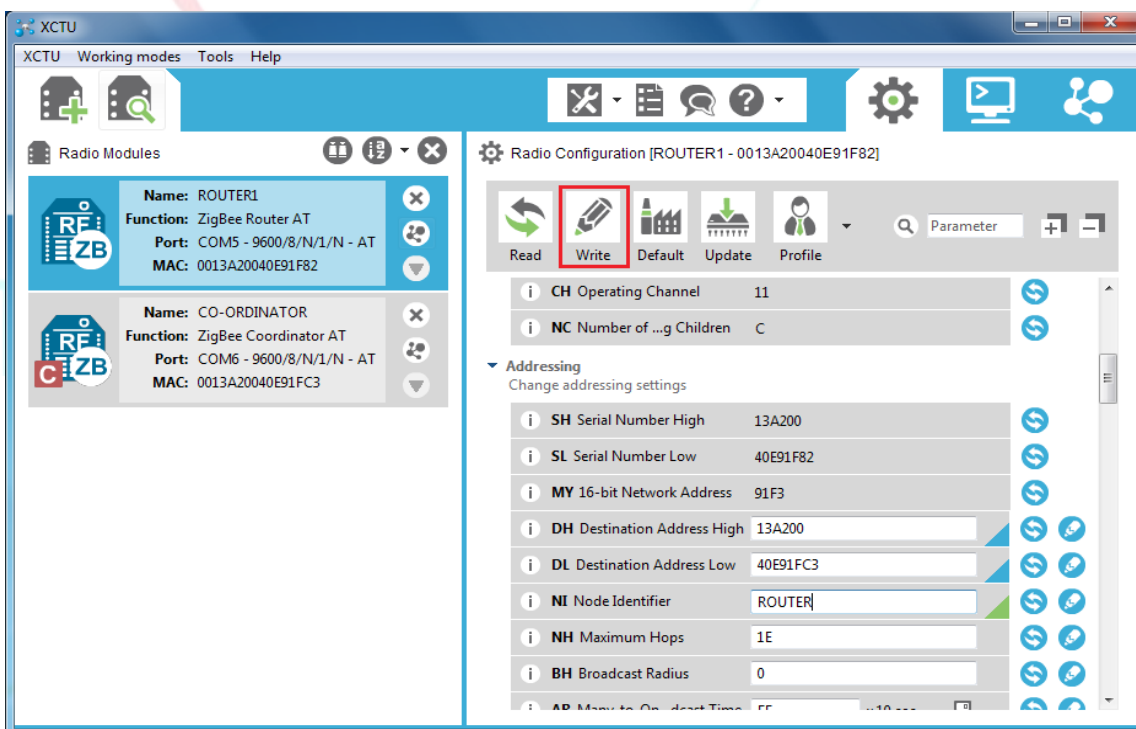***Step 14: This shows the radio firmware has been successfully updated.***

Step 15: Similarly, perform same steps for the other module. Write the same PAN ID.
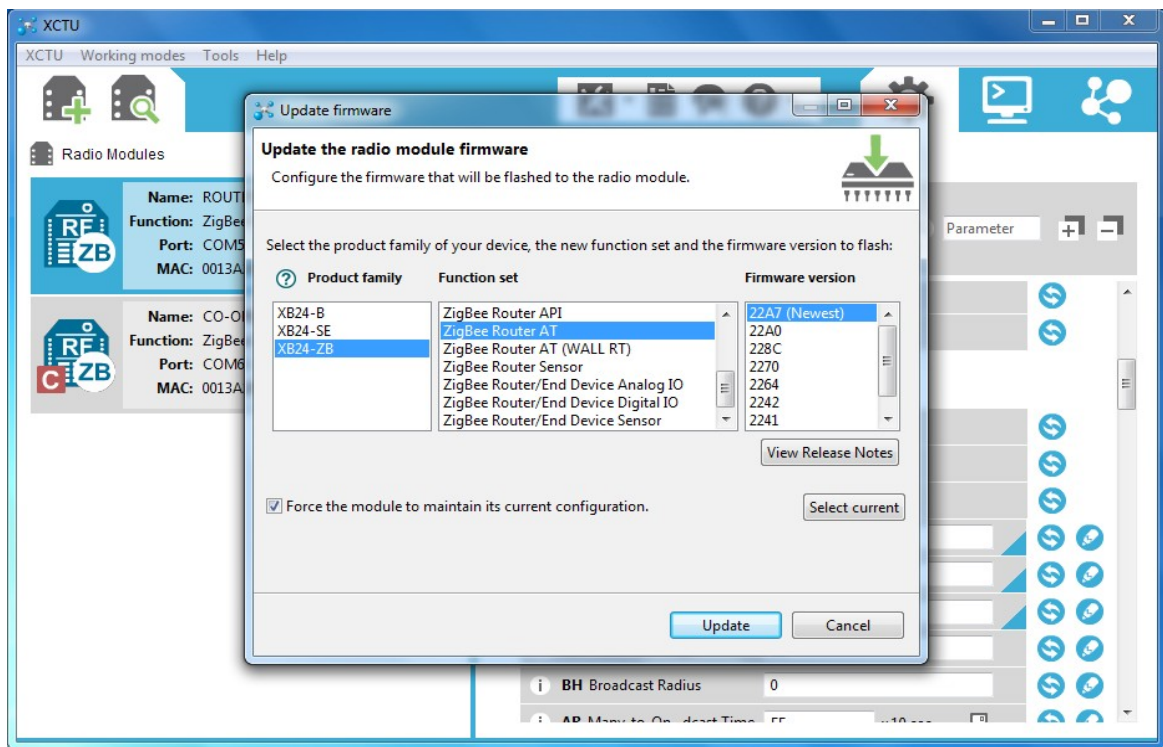
Step 16: Now, Copy Serial Number High (SH) and Serial Number Low (SL) of Co-ordinator ZigBee to Destination Address High (DH) and Destination Address Low (DL) respectively.
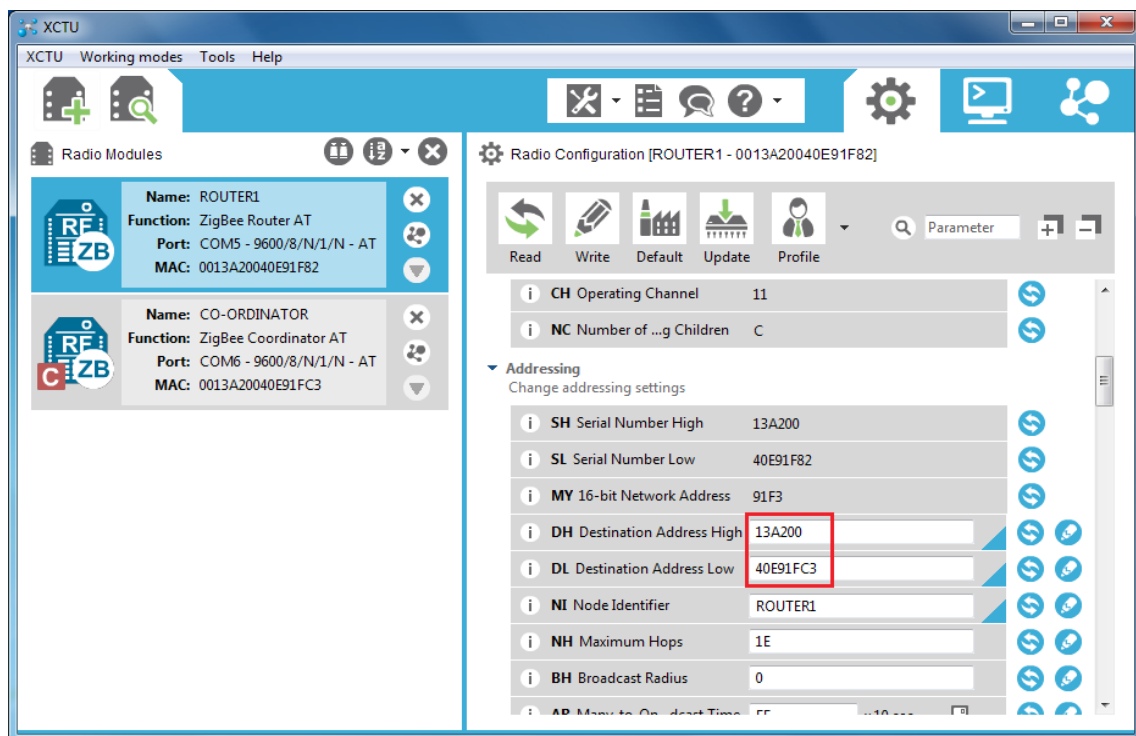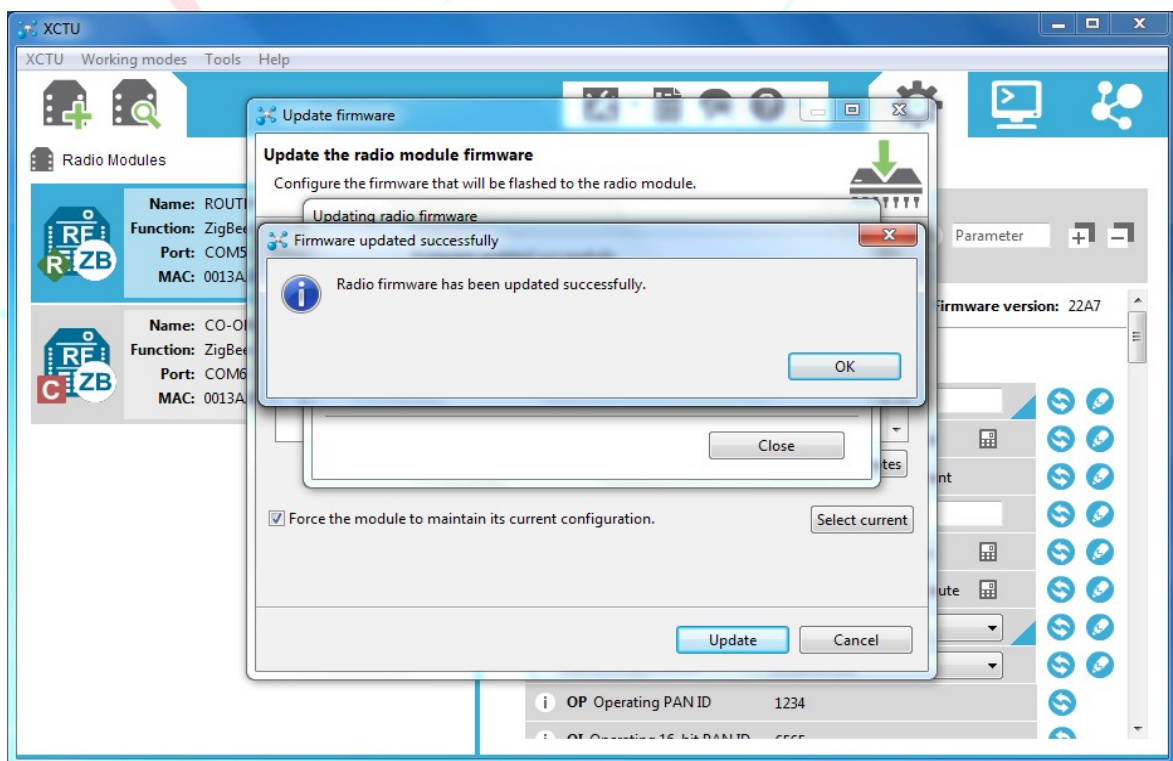

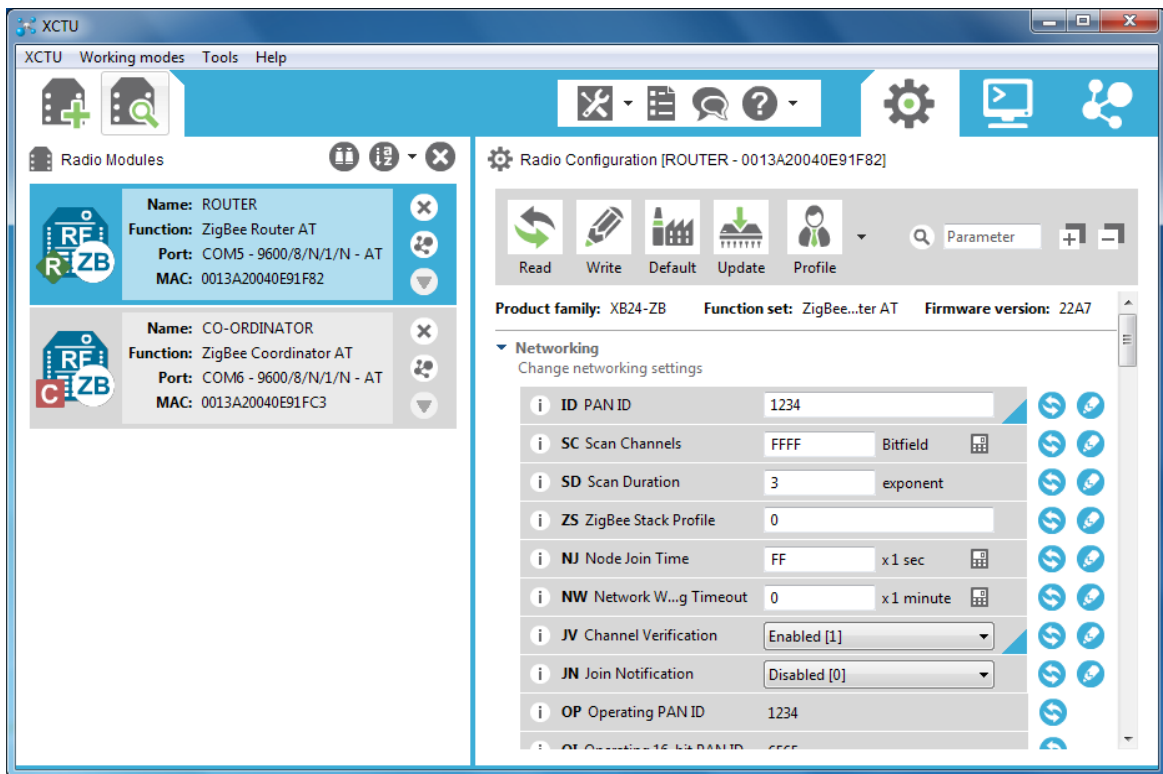***Step 17: Click on Write to update the settings.***

Step 18: Update the Radio Firmware for this module. Select the Function set as ZigBee Router AT and select the newest firmware version.
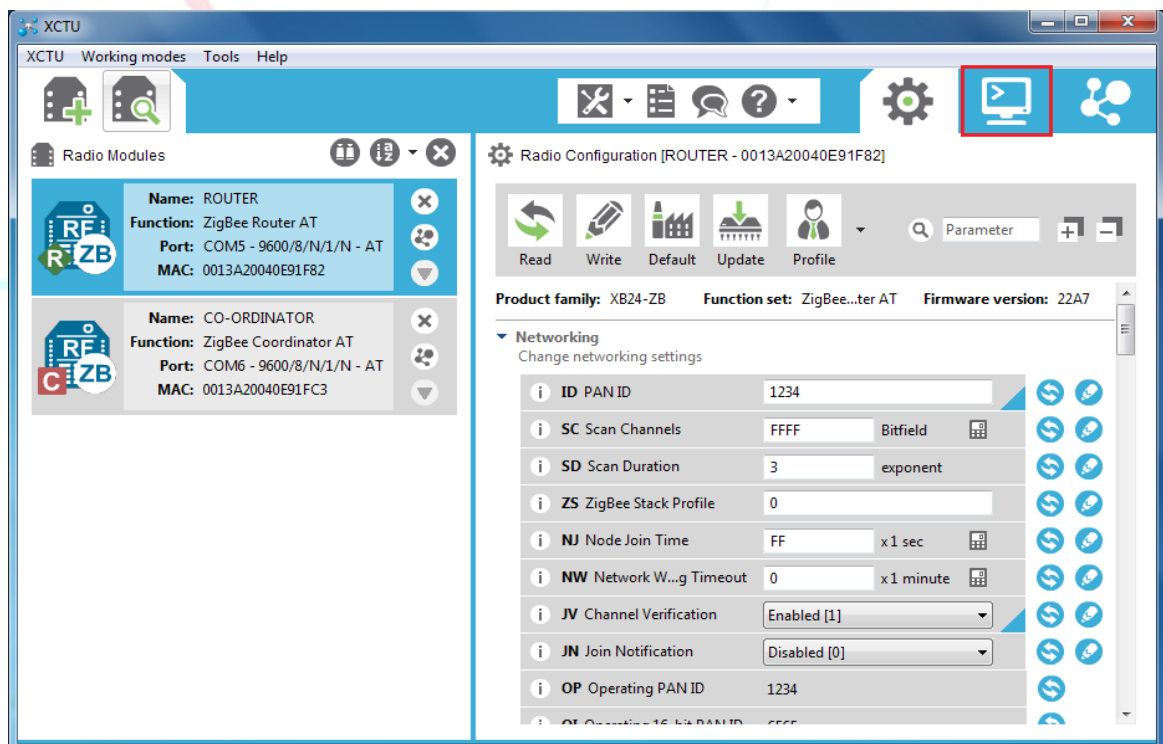

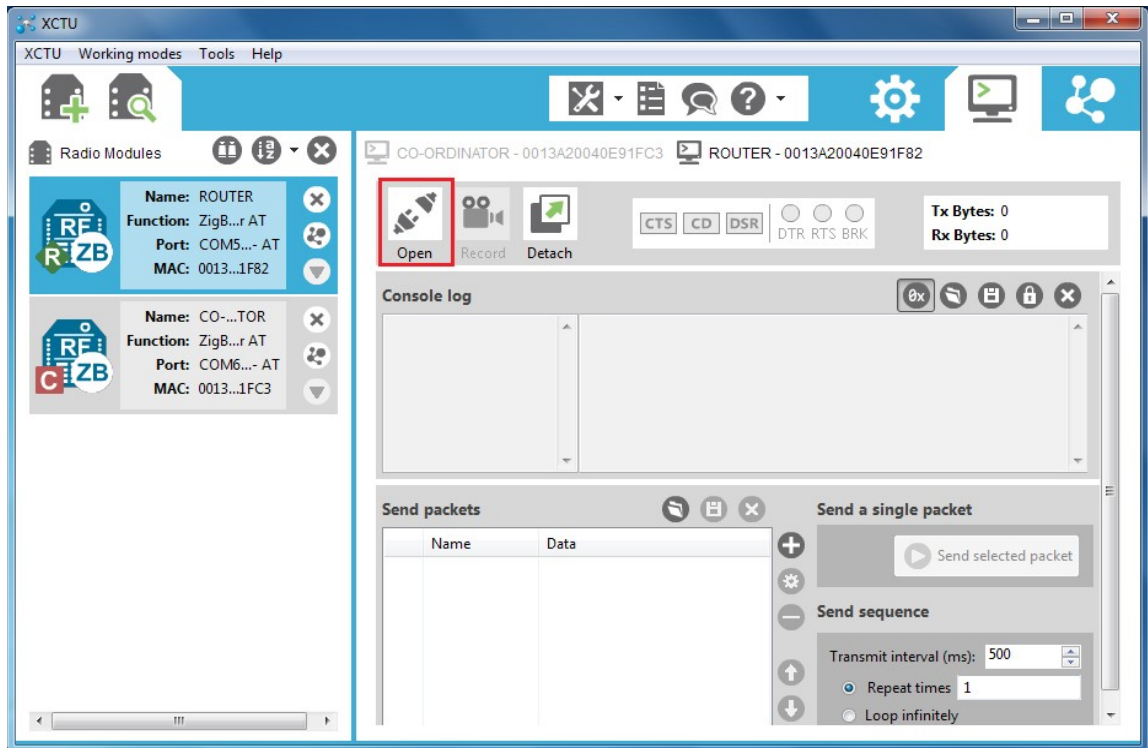***Step 19: This shows the radio firmware has been successfully updated.***

Step 20: Now we can see here, one ZigBee module is configured as Co-ordinator while the other is configured as Router.
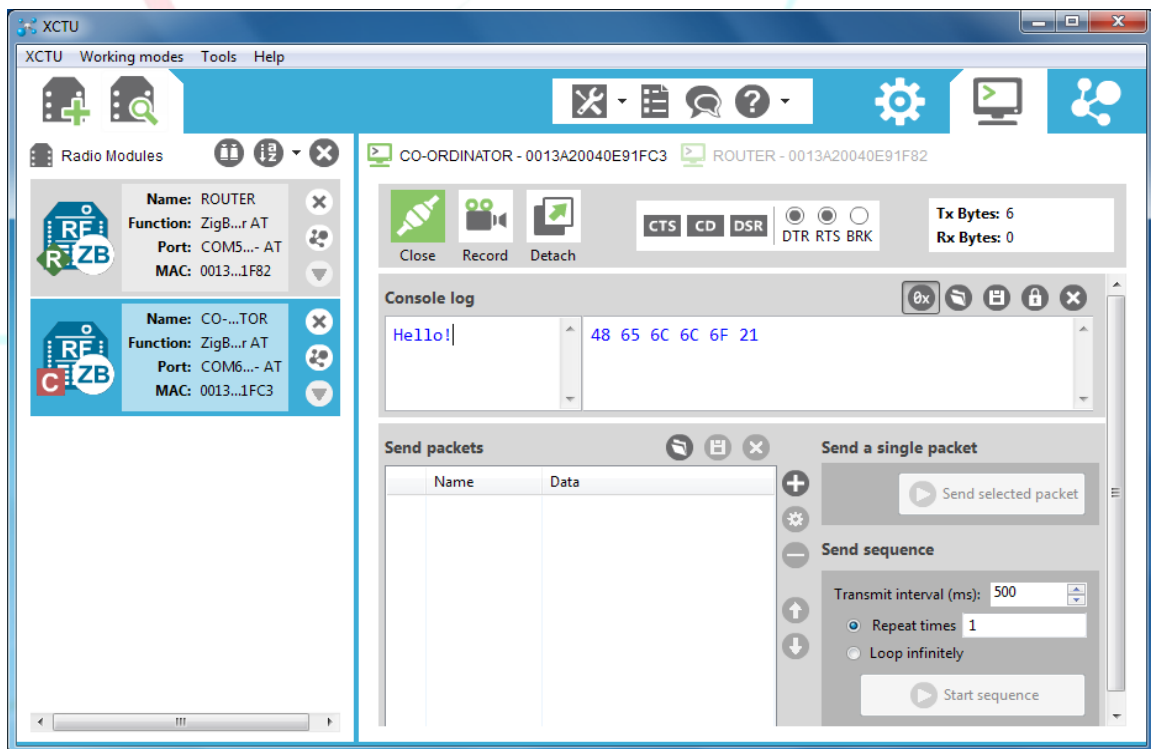

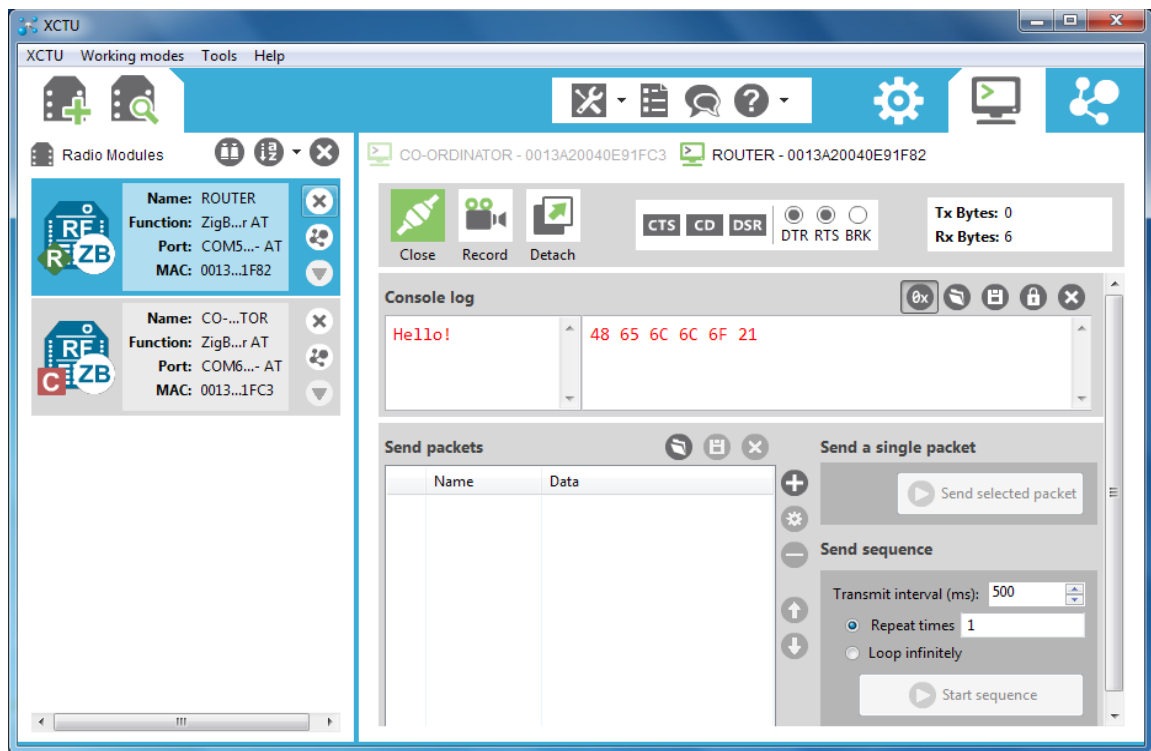***Step 21: Now, click on Terminal...***

Step 22: Click on Open Console log. Similarly, Open Console log of the Co-ordinator.
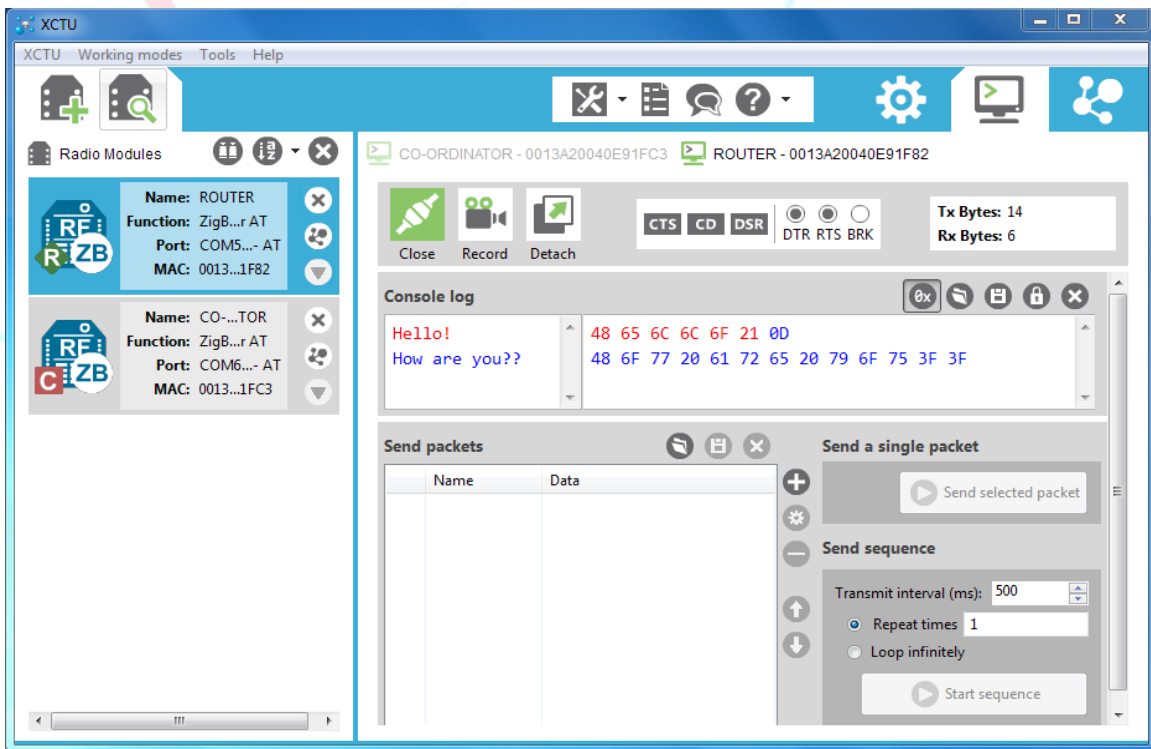

Step 23: Now, we can send a string of characters from one ZigBee module (Co-ordinator) to the other (Router).
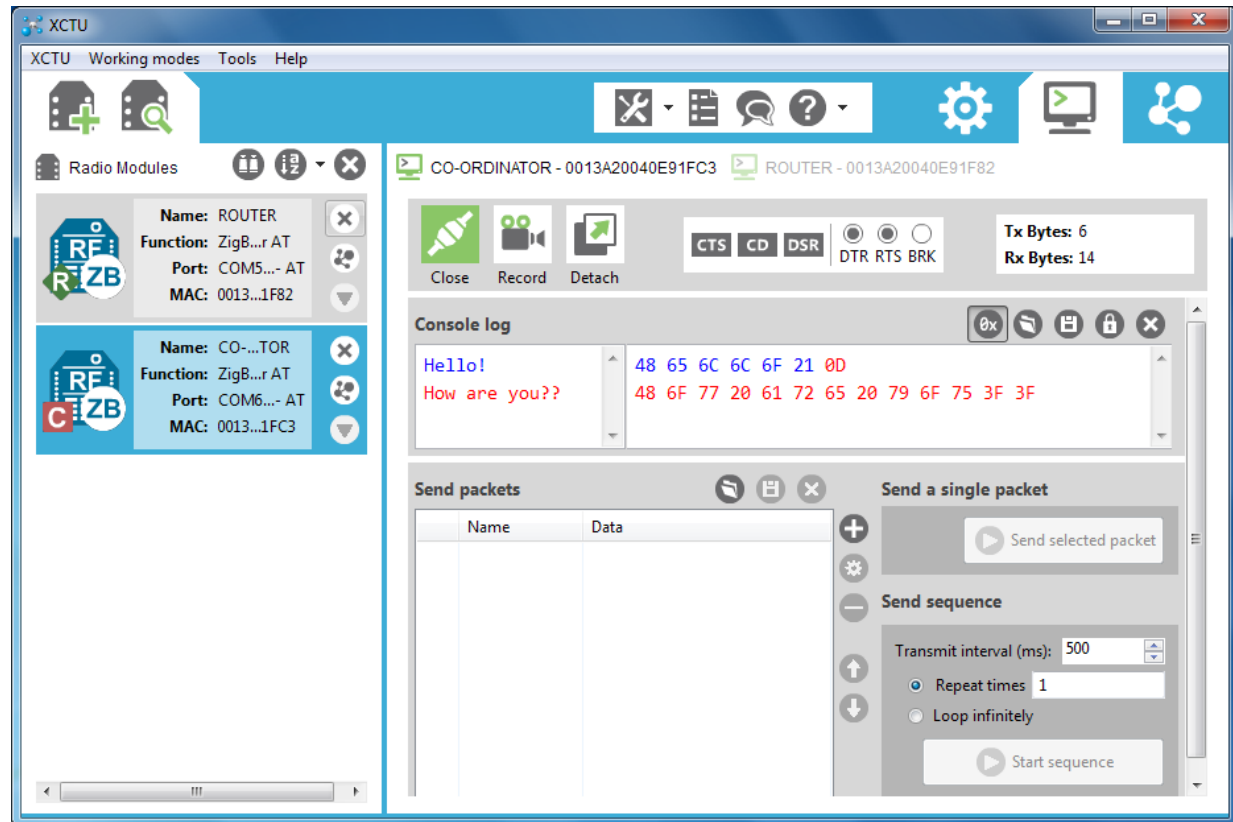
Step 24: Here we are able to see received string of characters from the other module (Co-ordinator)

Step 25: Similarly sending string of characters from Router to Co-ordinator.

Step 26: Received string of characters from Router.