

## TN256

# Updating Radio Firmware in the RCM4510W Development Kit

This document describes the steps that customers who purchased the RCM4510W Development Kit will have to follow in order to update the radio firmware on both the RCM4510W and the Digi XBee USB device.

Initially, the RCM4510W Development Kit came with the XBee radio, version 1x18 and the Zigbee library from Dynamic C 10.11. These same kits will soon come with FCC-approved XBee radios and the ZigBee library from Dynamic C 10.21. The RCM4510W Development Kit will still be shipping with the preview cores and Dynamic C 10.11 for some time.

Due to radio firmware changes, the Dynamic C 10.21 ZigBee library is not fully backwards compatible with the XBee radio, version 1x18. In other words, if you have the RCM4510W Development Kit with the old XBee radio and Dynamic C 10.11 and you want to upgrade to Dynamic C 10.21, you will have to upgrade the radio firmware on the RCM4510W and the Digi XBee USB device.

## The RCM4510W

To update the radio firmware on the RCM4510W, take the following actions:

- Open Dynamic C 10.21, open `\Samples\RCM4500W\ModemFWLoad.c`. By default, the sample program `ModemFWLoad.c`:
  - programs the RCM4510W as a ZigBee end device
  - assumes you want to upgrade to the latest available firmware library
- If the above defaults are acceptable, compile and run `ModemFWLoad.c`.
- Otherwise, read the instructions at the top of the sample program and make the necessary changes in the code.

Please note that even if you use the defaults, it is sensible to read the instructions at the top of the sample program.

## The Digi XBee USB

To update the radio firmware on the Digi XBee USB device you must use the X-CTU utility, which must first be installed. To install the X-CTU utility, browse to your Dynamic C folder and run the program \Utilities\XCTU\setup\_x-ctu.exe. When the setup program completes, run the utility program X-CTU.exe after noting the PANID, NI and other parameters that you will want to restore later. Then take the following actions:

- Connect the Digi XBee USB to a free USB port in your PC.

- Run the program X-CTU.exe. You will see a dialog box similar to the one shown here.

- Check the “Enable API” option and select the serial port that the device is connected to.

- Click the Test/Query button

- If you have the previous RCM4500W Development Kit you should see that the communication with the modem succeeds and that the modem firmware version is 1118

- Go to the Modem Configuration Tab.

- Click the Download new versions buttons.

- You can update the firmware via web or file. Choose “File” and browse to your Dynamic C folder; go to the Utilities\X-CTU\ModemFW subfolder.

- The RCM4510W Development Kit uses the Digi XBee USB device as the coordinator of the ZigBee network. Coordinator software is in a file that ends with ...11xx.zip.

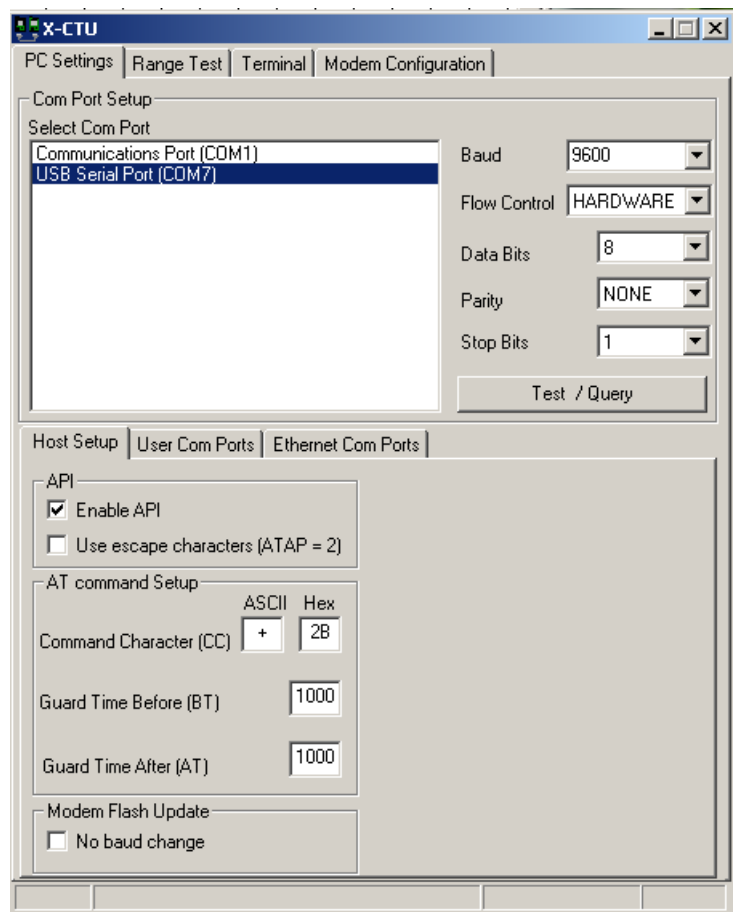
- Choose the XB24-B\_ZigBee\_1121.zip file and click Open.

- The X-CTU utility will display an Update Summary box. Click OK and then click Done.

- Click the Read Button.

- Now, select XB24-B as the Modem type; select ZIGBEE COORDINATOR API as the Function Set and 1121 as the Version.

- Then click Write.



The new firmware will be sent to the radio in the Digi XBee USB device. When the process is complete set the PANID, NI and other parameters to the values you were using before the firmware was upgraded.

You are now ready to use Dynamic C 10.21 with the RCM4500W Development Kit.