

Digi XBee3 Cellular LTE-M Cellular Module Patch and Maintenance Release via EasyFlash Firmware Update

This document describes how to update the cellular modem firmware of the XBee3 Cellular LTE-M module using EasyFlash and the XBIB-CU-TH development board.

It applies to the XBee3 Cellular device containing the following cellular modem:

- u-blox SARA-R410M-02B

There are two .zip packages available to update the u-blox module via EasyFlash. You must contact Digi Technical Support to get both of these .zip packages.

- **Critical issue patch (required):** Version L0.0.00.00.05.06-A02.01 patch

This is a required patch to fix a critical issue as described here: [u-blox Memory Housekeeping Issue on XBee3 Cat M Cellular](#).

- **Maintenance release (recommended):** Version L0.0.00.00.05.08 maintenance release

Prerequisites

- Firmware requirements:
 - For the critical issue patch: XBee3 Cellular LTE-M with firmware 1140A or above
 - For the maintenance release: XBee3 Cellular LTE-M with firmware 11413 or above
- Valid SIM installed
- XBIB-CU-TH Development board
- XCTU-NG latest release version (6.4.3 or later)
- EasyFlash version 10.02
- USB 3.0 port (supports required current)
- USB-C cable
- USB-B micro cable
- Guides for installing EasyFlash 10.02 and required drivers:
 - SARA-R4 Firmware Update R2.pdf
 - SARA-R4 USB Driver Installation.pdf

Precautions

For best results:

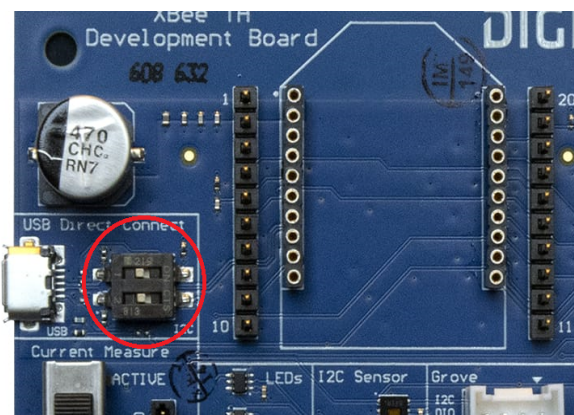
- The update operation should have exclusive access to the XBee. Disable any running MicroPython scripts or other communication to the module.

- Ensure solid uninterrupted power. Power loss during update may cause corrupted modem firmware.
- The EasyFlash update should be done with the radio at factory settings.
 - The radio's parameters as read through the graphical interface of the XCTU can be set to factory defaults and then written to the module. If a module is brand new, then this step is not needed since it will already be at these settings.

Step 1: Configure the XBIB-CU-TH board

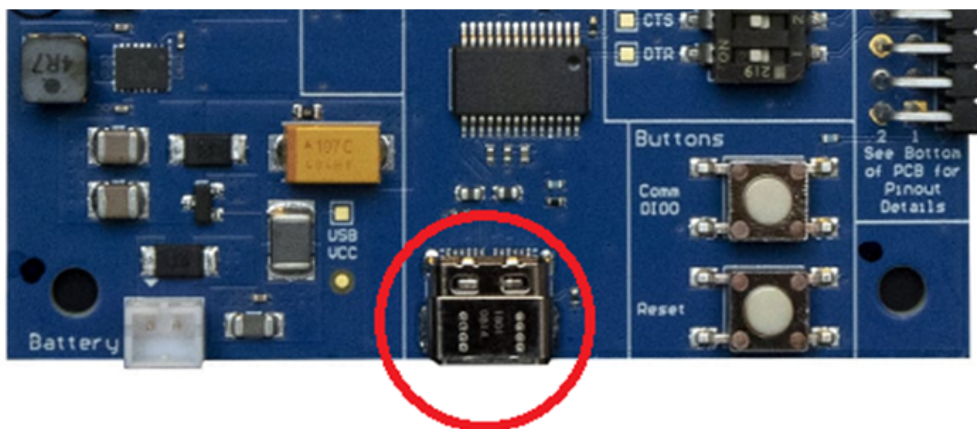
Enable the USB direct connect switches on XBIB-CU-TH development board. The switches must be switched to the left of the board, as shown below.

Note This procedure requires USB direct and therefore cannot be performed on the XBIB-U-DEV development board.



Step 2: Configure XBee3 Cellular LTE-M module.

1. Connect the USB Type-C cable to the USB 3.0 port on the bottom edge of the development board. The USB host must support USB 3.0, as this board requires the higher current supplied by USB 3.0.



2. Open XCTU and add the XBee3 Cellular device.



3. Click the **Configuration Working** mode button.
4. Scroll down to the **I/O Settings** section.
 - a. Find the **P1 DIO11** option.
 - b. Ensure that it is set to **USB direct 7**. Click the **Write** button to change the setting.



P1 DIO11 USB direct [7]

5. Scroll to the **Network Settings** section.
 - a. Find the **DO Device Options** field.
 - b. Ensure that bit 2 is set. Click the **Write** button to change the setting.



DO Device Options 4 bitfield

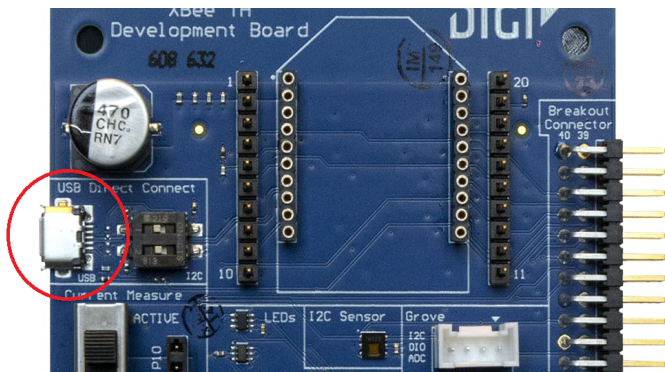
Bitfield calculator

	07	06	05	04	03	02	01	00
Byte 0:	0	0	0	0	0	1	0	0

Hex. value: 4

Step 3: Connect to Cellular Modem via USB Direct Access

Connect the USB micro-B cable to the **USB Direct Connect** port on the development board. If prompted, wait for the driver installation to complete.



Step 4: Flash the Cellular Module for the required critical issue patch

1. Contact Digi Tech Support for a .zip file that contains the required driver installation files and installation guides.
 - **Call:** 952-912-3444 or 877-912-3444
 - **Email:** tech.support@digi.com
2. Download the EasyFlash program and the firmware file.
 - a. Follow the instructions from Digi Tech Support to get the **u-blox_EasyFlash_10.02_SARA-R410M-02B_L0_0_00_00_05_06_A0201.zip** file.
 - b. Open the .zip file and download the files onto your computer. Make sure the files are all saved to the same location.
3. Install the SARA-R4 USB driver.
 - a. Before you begin, make sure that all Qualcomm tools are closed.
 - b. Open the **SARA-R4 USB Driver Installation.pdf** file that was included in the .zip file, and follow the driver installation instructions.
4. Ensure that the desired .dof firmware file (such as SARA-R410M-02B-L0_0_00_00_05_06_12-08-18.dof) is located in the same folder as the EasyFlash.exe.
5. Run the u-blox EasyFlash program on the PC with the **Run as administrator** privilege to ensure correct operation.

Note For more information about EasyFlash, refer to the **SARA-R4 Firmware Update R2.pdf** file that was included in the .zip file.

- a. From the **Product** list box, select that SARA-R4 option.
- b. From the **Port** list box, select the USB option.



- c. Click **Start**.

6. Reset the XBee Cellular module.
7. Wait for the update to complete.

Step 5: Flash the Cellular Module for the recommended maintenance release

1. Contact Digi Tech Support for a .zip file that contains the required driver installation files and installation guides.
 - **Call:** 952-912-3444 or 877-912-3444
 - **Email:** tech.support@digi.com
2. Download the EasyFlash program and the firmware file.
 - a. Follow the instructions from Digi Tech Support to get the **u-blox_EasyFlash_10.02_SARA-R410M-02B-01_IP**.zip file.
 - b. Open the .zip file and download the files onto your computer. Make sure the files are all saved to the same location.
3. Install the SARA-R4 USB driver.

Note If you have already installed the SARA-R4 USB driver while flashing the critical issue patch, you can skip this step.

- a. Before you begin, make sure that all Qualcomm tools are closed.
 - b. Open the **SARA-R4 USB Driver Installation.pdf** file that was included in the .zip file, and follow the driver installation instructions.
4. Ensure that the desired .dof firmware file (such as SARA-R410M-02B-L0_0_00_00_05_08.dof_updated.dof) is located in the same folder as the EasyFlash.exe.
5. Run the u-blox EasyFlash program on the PC with the **Run as administrator** privilege to ensure correct operation.

Note For more information about EasyFlash, refer to the **SARA-R4 Firmware Update R2.pdf** file that was included in the .zip file.

- a. From the **Product** list box, select that SARA-R4 option.
 - b. From the **Port** list box, select the USB option.



- c. Click **Start**.
6. Reset the XBee Cellular module.
7. Wait for the update to complete.

Step 6: Restore settings and reset the module

1. Open XCTU.



2. Click the **Configuration Working** mode button.
3. Scroll down to the **I/O Settings** section.
 - a. Find the **P1 DIO11** option.
 - b. Restore **P1** to the desired setting.
4. Scroll to the **Network Settings** section.
 - a. Find the **DO Device Options** field.
 - b. Restore **DO** to the desired setting.
5. Reset the module.