

# XBee firmware upgrade tutorial

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**Important:** Changing or upgrading the XBee firmware is a delicate process that may harm permanently the XBee module. Only advanced users should use this application. Libelium supplies the XBee transceivers with the desired firmware version (802.15.4, ZigBee, 868, 900, DigiMesh 2.4GHz) and is not responsible for the XBee modules damage when changing or upgrading firmware. For more information read the “General Conditions of Sale and Use of Libelium” document in [technical service section](#).

This guide shows the main steps to upgrade XBee firmware, using an XBee 802.15.4 PRO OEM module. If another XBee module wants to be upgraded, the process is similar but selecting the appropriate firmware version.

To upgrade XBee firmwares, X-CTU application needs to be used. This software allows to change the firmware version and some other features. It only runs on Windows and it has been developed by Digi. Please, check the X-CTU introduction tutorial in order to learn how to use it.

## 1 – Communicating with the module

1.1 – Once we have connected the module and selected the serial port used, X-CTU will start reading module information.

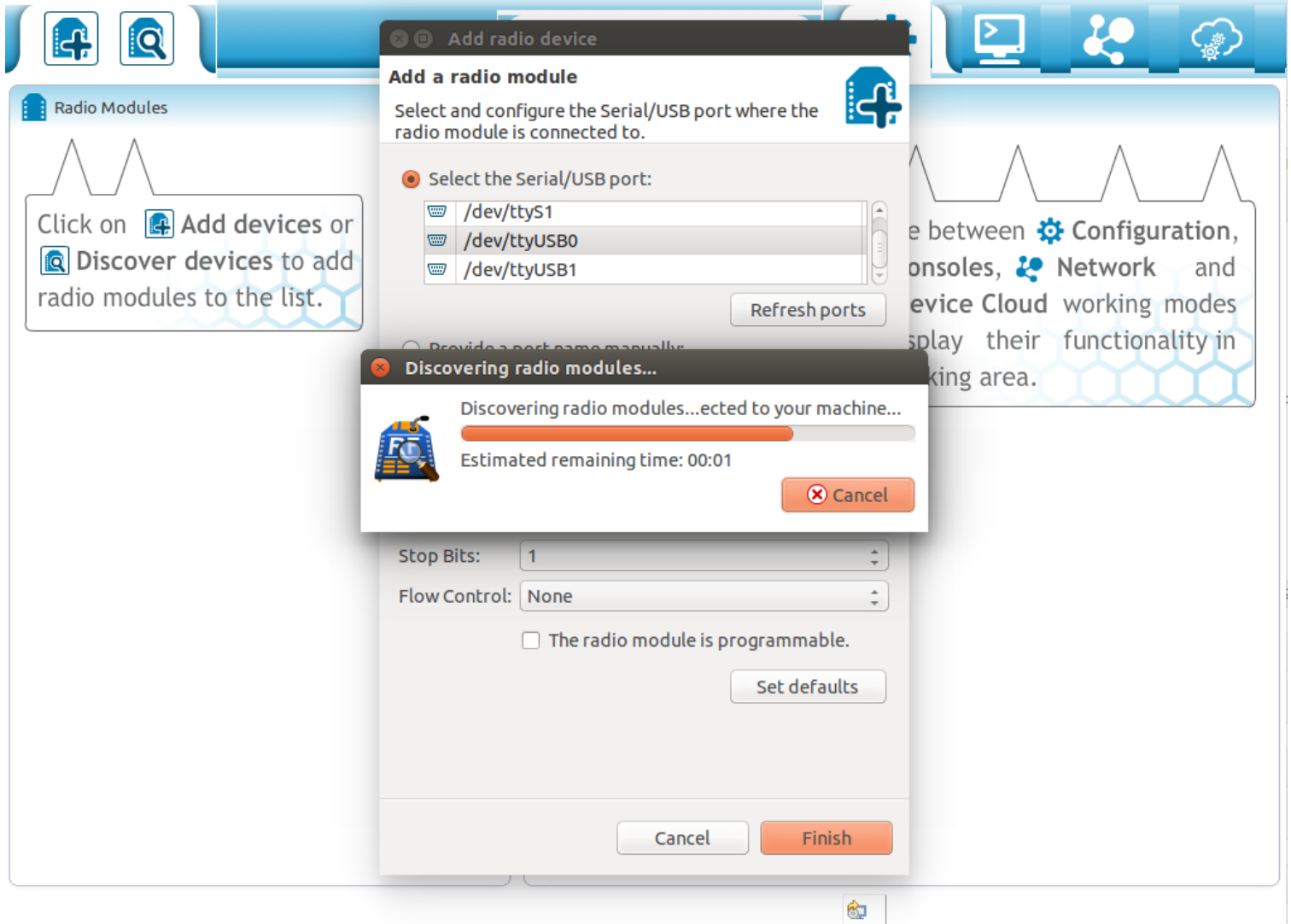


Figure 1

1.2 – When the module is ready to be used by the X-CTU software, the whole parameter set of the module will be shown in the “Raido Configuration” frame.

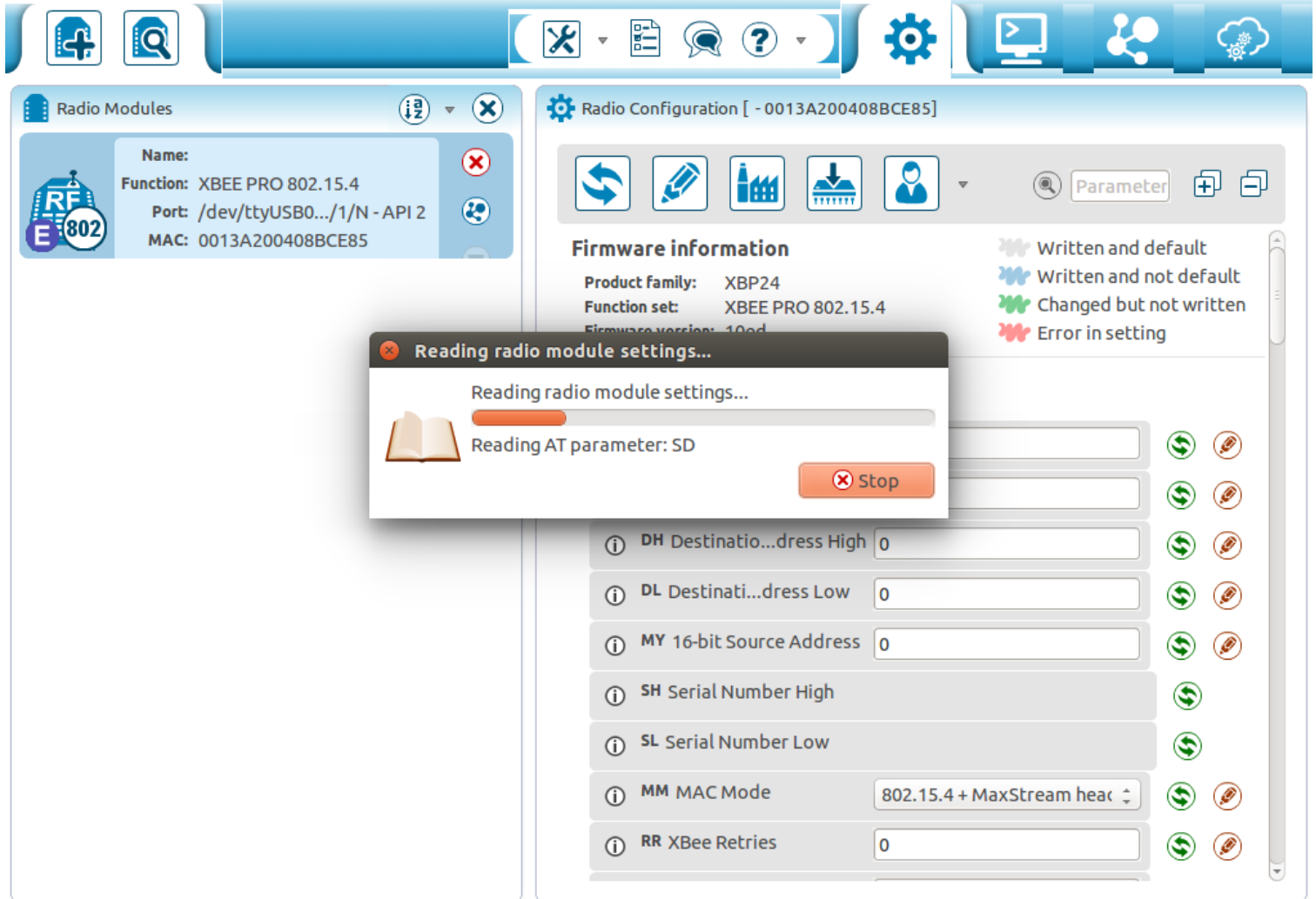


Figure 2

## 2 – Changing the firmware to DigiMesh

2.1 – Once we have been able to read the parameters from the XBee module, we can change the firmware version to DigiMesh. Press the “Update firmware” to start the process.

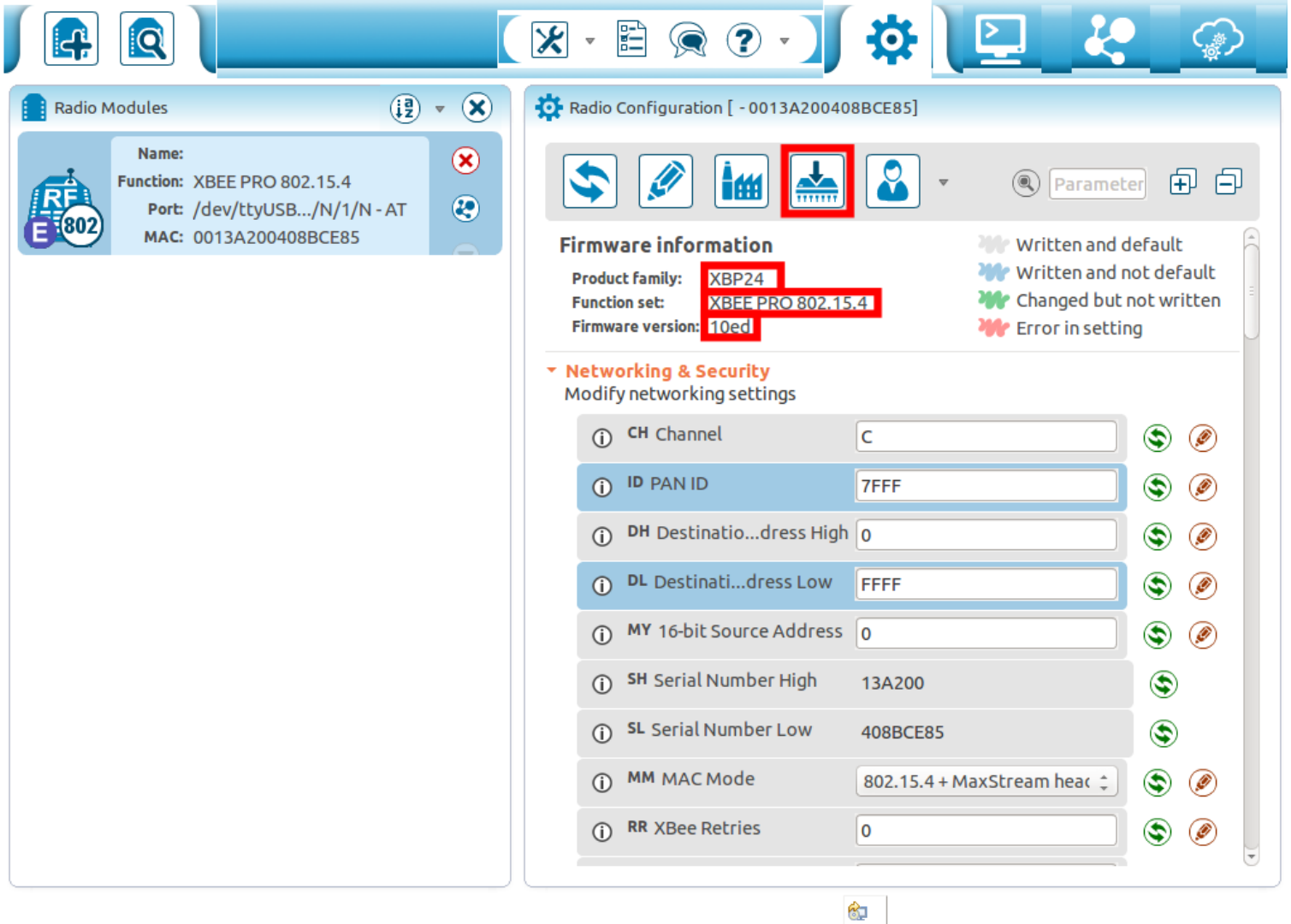


Figure 3

2.2 – After pressing 'Update firmware' button, a window with the module's firmwares will pop up .

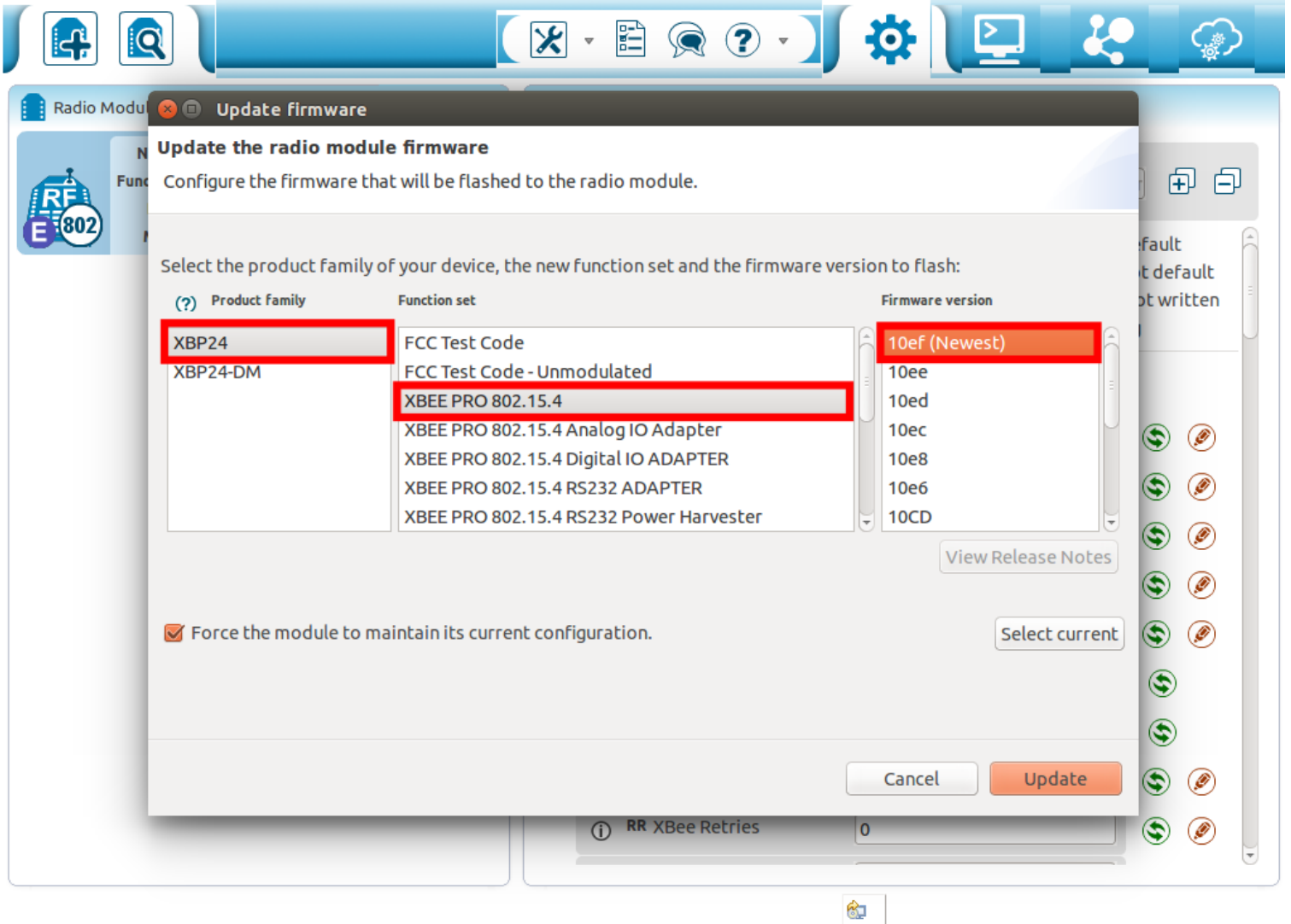


Figure 4

2.3 – When the firmware has been selected, click on the “Update” button.

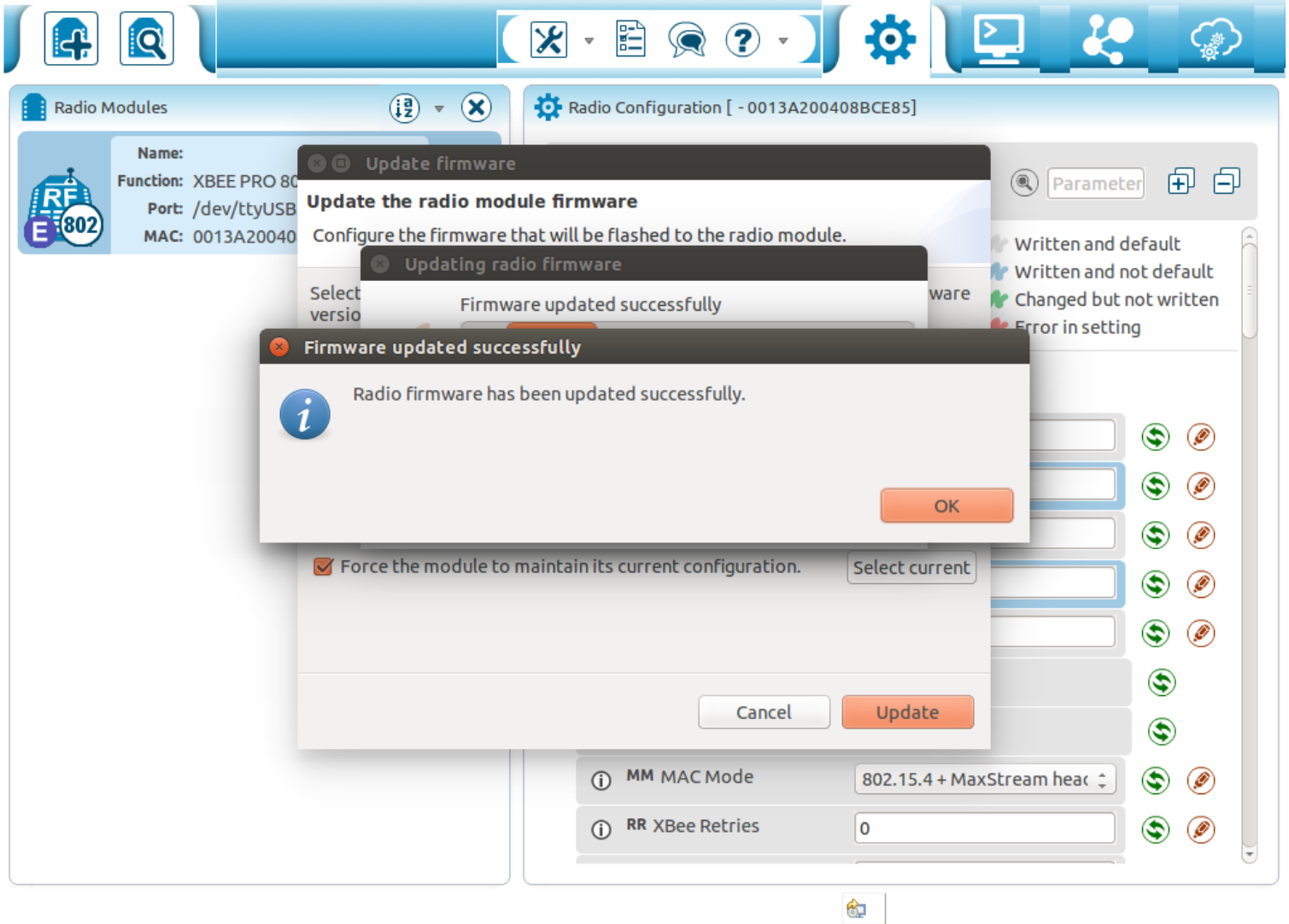


Figure 5

2.4 – Once the upgrading has been completed successfully, X-CTU will read automatically the information from the module, so we can see the parameters read from the XBee module with the new firmware version.

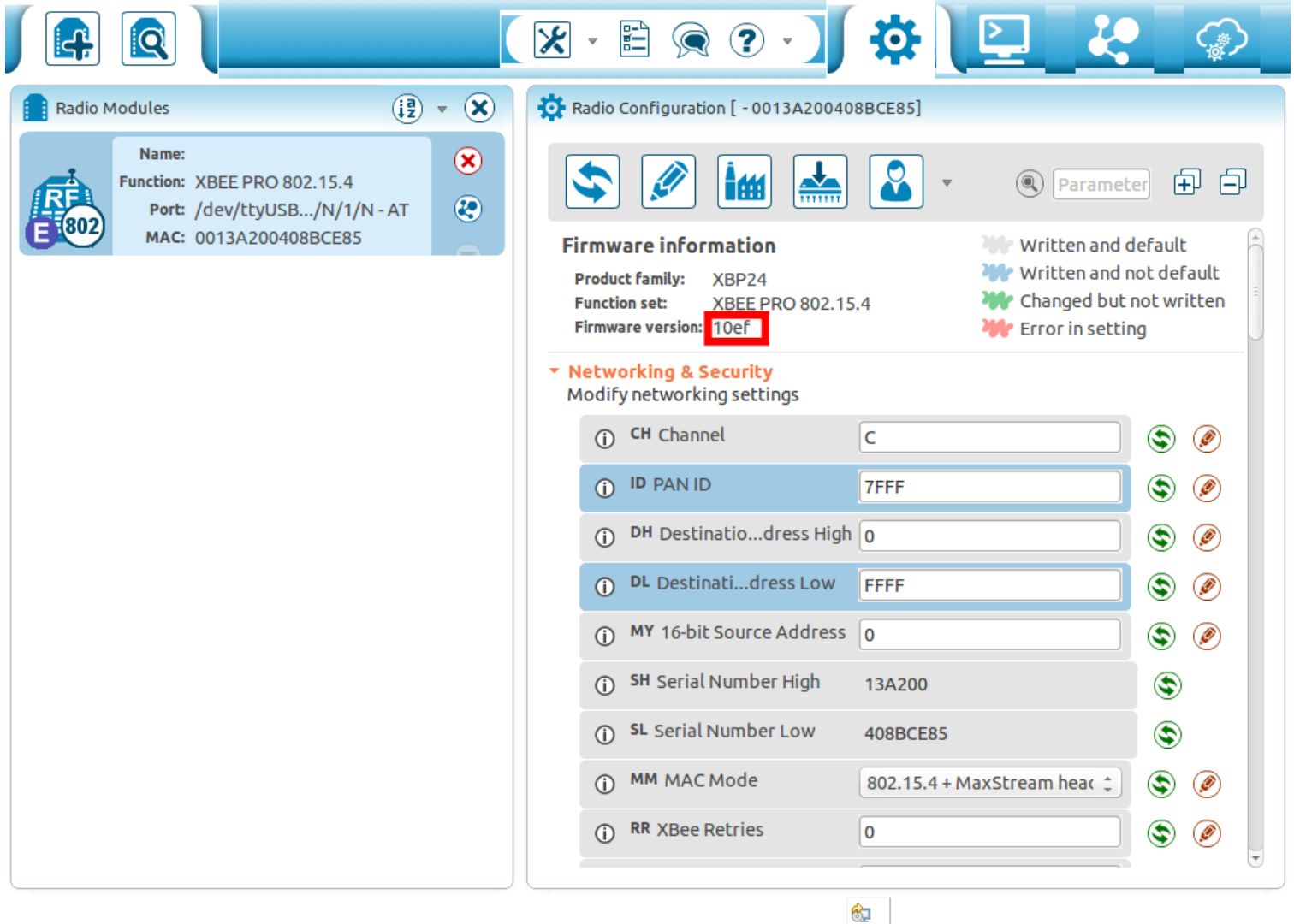


Figure 6

### 3 – Reset required

Sometimes while reading the module, upgrading or changing firmware version, a reset is needed to complete the process. We can see the message that will be shown when this reset is required.

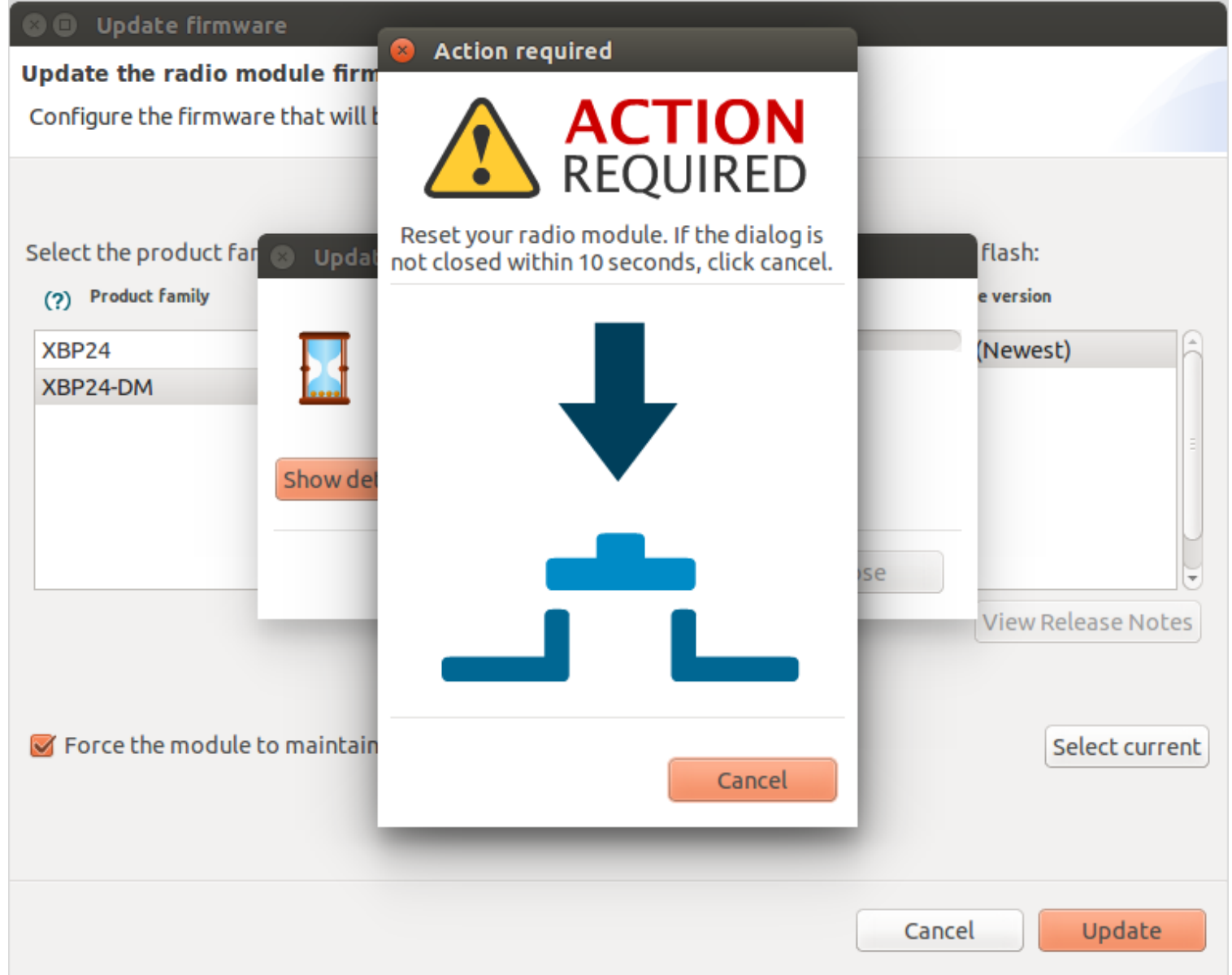


Figure 7

To reset the XBee module, Wasmote Gateway provides a button to reset XBees. This button has to be pressed for 2-3 seconds and then release it. After doing it, this window should disappear and the process should go on.

## 4 – Problems while changing firmware

4.1 -During some upgradings, XBee modules get into a state that they look like if they were damaged. However, there is a recovery process from this state. If the reset button on the gateway does not work, click on the "Cancel" button from the "Action required" window. After clicking on cancel a new window titled "Device not found" will pop up.



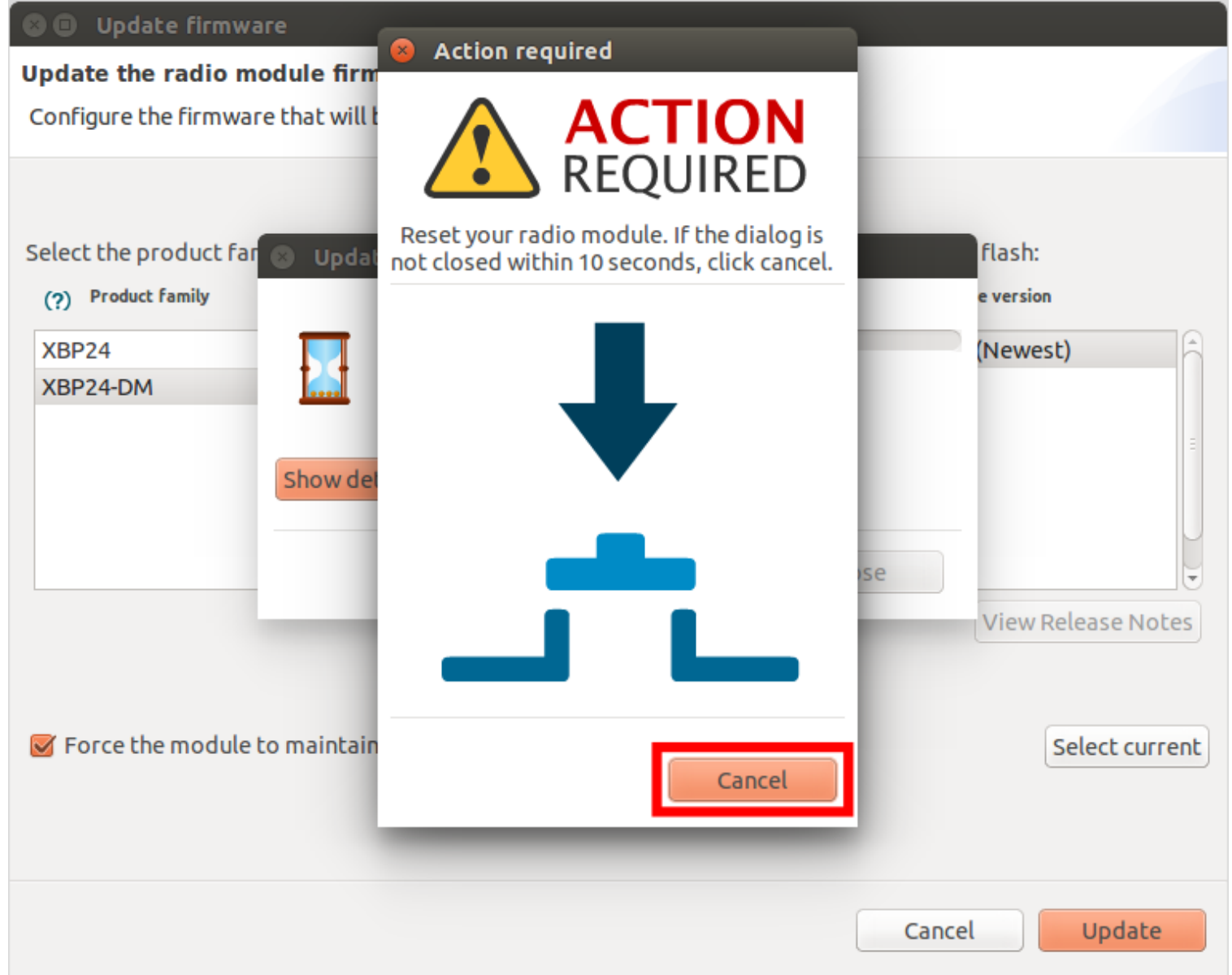


Figure 8

4.2 – Press the “Recovery” button in the new window.

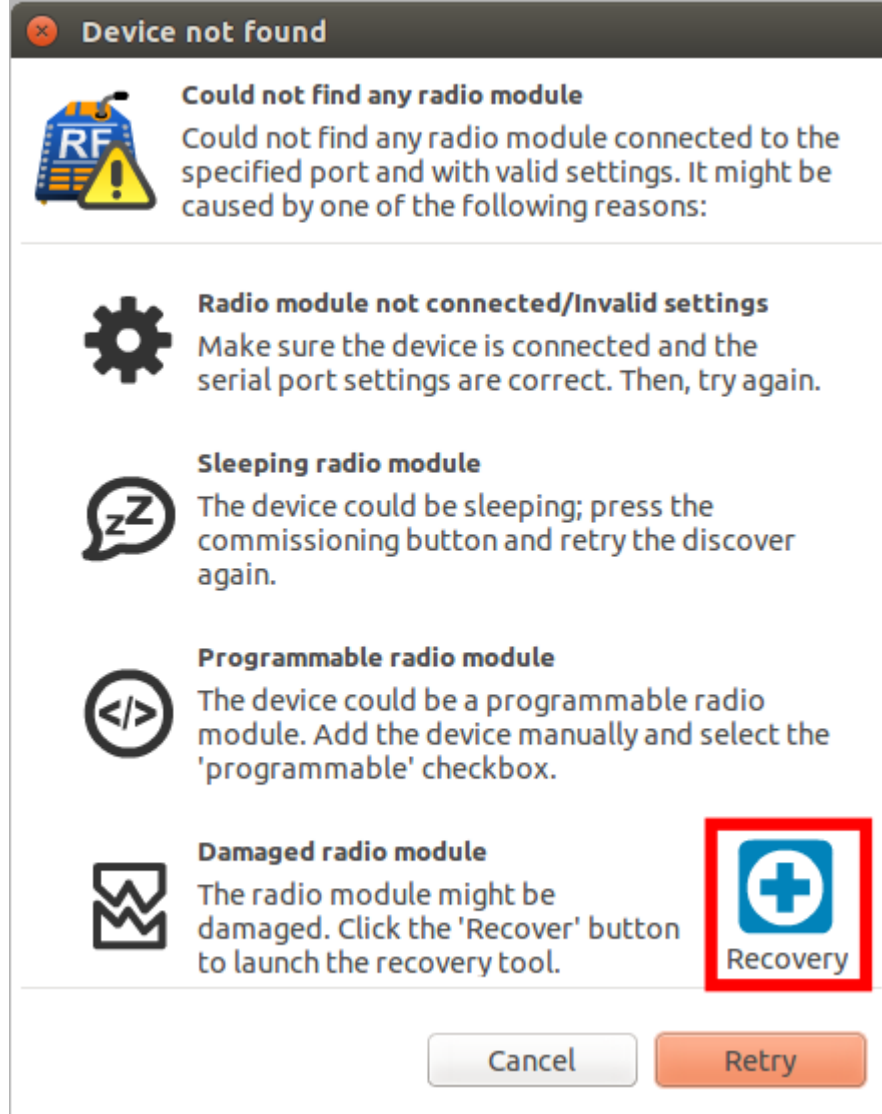


Figure 9


4.3 – Now select the desired firmware to upgrade into the module.

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Recover an radio module

Recover an radio module

Configure the port and firmware to recover the radio module.



Select the COM port containing the module to recover: /dev/tty ↕

Select the product family of your device, the new function set and the firmware version to flash:

(?) Product family	Function set	Firmware version
X24-009	FCC Test Code	10ef (New)
X24-019	FCC Test Code - Unmodulated	10ee
<b>XB24</b>	<b>XBEE 802.15.4</b>	10ed
XB24-B	XBEE 802.15.4 Analog IO Adapt	10ec
XB24-DM	XBEE 802.15.4 Digital IO ADAPT	10e8

View Release Notes

Close

**Recover**

Figure 10

4.4 – If it worked the rest of the process will be executed as usual.