8   Firmware update

This section describes how to update the various firmware of the FDM-DUO. The latest firmware versions are available here: http://sdr.eladit.com/FDM-DUO/Firmware Releases/.

TO FACILITATE THE PROCEDURE, PLEASE UPDATE THE USER INTERFACE (UI) FIRMWARE AFTER DOING THE OTHERS FIRMWARE UPDATES

8.1   RX and TX firmware update

To update the RX and TX firmware, you must remove the FDM-DUO top cover. Remove the four screws in the FDM-DUO chassis bottom as shown in the figure below.
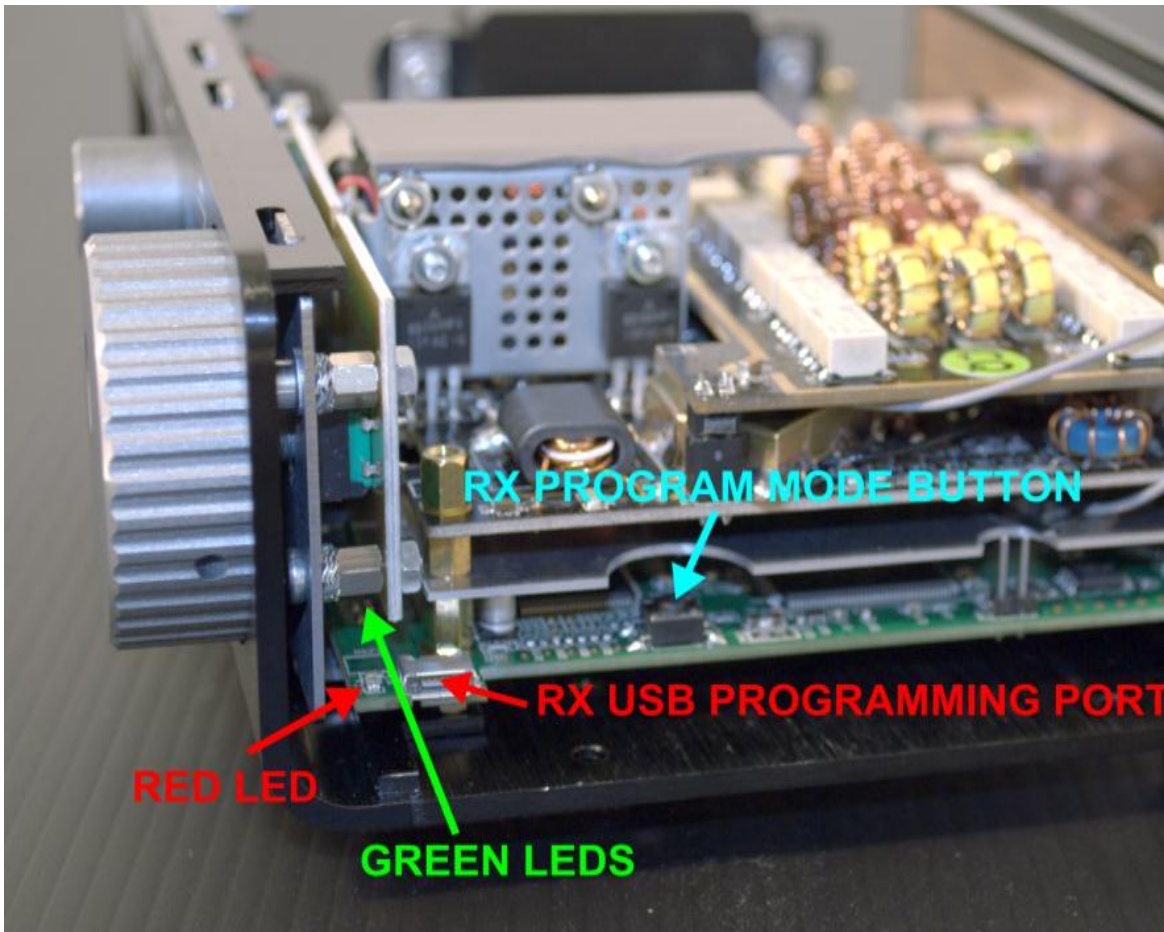

Then remove the top cover of the FDM-DUO

8.1.1   RX firmware update

First of all, download the latest version of the RX firmware. Unzip the archive and copy the file "*fdmduorx.bin*" in the USB flash drive provided with the FDM-DUO. If the file already exists, replace it.

The file *"fdmduorx.bin"* must be in the root of the USB flash drive. For example : *"E:\fdmduorx.bin"*.

Connect the provided USB flash drive to the FDM-DUO "RX USB PROGRAMMING PORT" using the provided micro-USB adapter. See the picture below. Connect the power supply, keep pressed the "RX PROGRAM MODE BUTTON" and power up the FDM-DUO.

- Keep pressed the "RX PROGRAM MODE BUTTON" until the "RED LED" turns on.
- Release the "RX PROGRAM MODE BUTTON".
- Wait until the "RED LED" turns off.
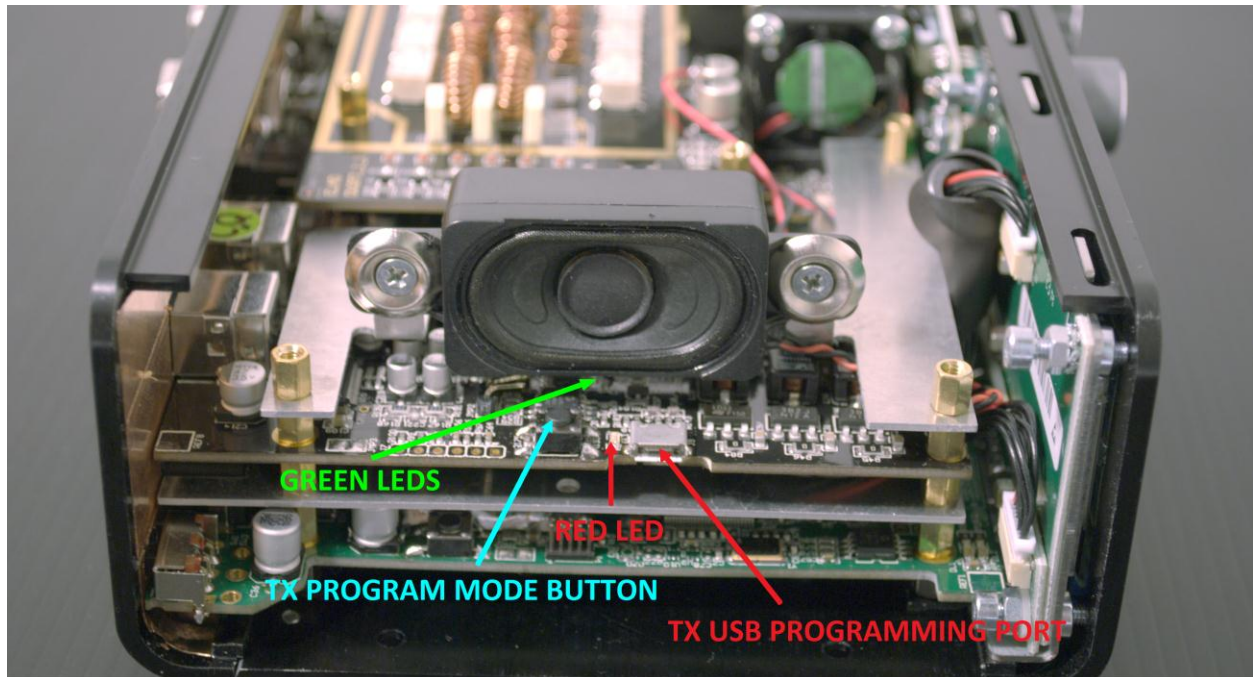- Turn off the FDM-DUO, disconnect the USB flash drive and power up the FDM-DUO.

If during the firmware update the "GREEN LEDS" are blinking together quickly, it means that the update process ended not successfully. In this case contact the ELAD technical assistance.

8.1.2   TX firmware update

First of all, download the latest version of the TX firmware. Unzip the archive and copy the file *"fdmduotx.bin"* in the USB flash drive provided with the FDM-DUO. If the file already exists, replace it.

The file *"fdmduotx.bin"* must be in the root of the USB flash drive. For example : *"E:\fdmduotx.bin"*.

Connect the provided USB flash drive to the FDM-DUO "TX USB PROGRAMMING PORT" using the provided micro-USB adapter. See the picture below. Connect the power supply, keep pressed the "TX PROGRAM MODE BUTTON" and power up the FDM-DUO.

- Keep pressed the "TX PROGRAM MODE BUTTON" until the "RED LED" turns on.
- Release the "TX PROGRAM MODE BUTTON".
- Wait until the "RED LED" turns off.
- Turn off the FDM-DUO, disconnect the USB flash drive and power up the FDM-DUO.

If during the firmware update the "GREEN LEDS" are blinking together quickly, it means that the update process ended not successfully. In this case contact the ELAD technical assistance.

8.2   USB interface firmware update

Download the latest version of the USB interface firmware here :
http://sdr.eladit.com/FDM-DUO/Firmware Releases/USB Interface Firmware/index.php?lang=EN.

Before starting the firmware update, disable all anti-virus programs to avoid any inconvenience.

Turn on the FDM-DUO and connect the USB RX connector to a USB 2.0 port of your computer. Unzip the archive, launch the executable file inside and follow the instructions to update the firmware.

Do not disconnect the USB cable and do not turn off the FDM-DUO.

Once the update is completed, turn off and on the FDM-DUO.

8.3   FPGA firmware update

Download the latest version of the FPGA firmware.

Before starting the firmware update, disable all anti-virus programs to avoid any inconvenience.

Turn on the FDM-DUO and connect the USB RX connector to a USB 2.0 port of your computer. Unzip the archive, launch the executable file inside and follow the instructions to update the firmware.

Do not disconnect the USB cable and do not turn off the FDM-DUO.

Once the update is completed, turn off and on the FDM-DUO.

8.4   User interface (UI) firmware update

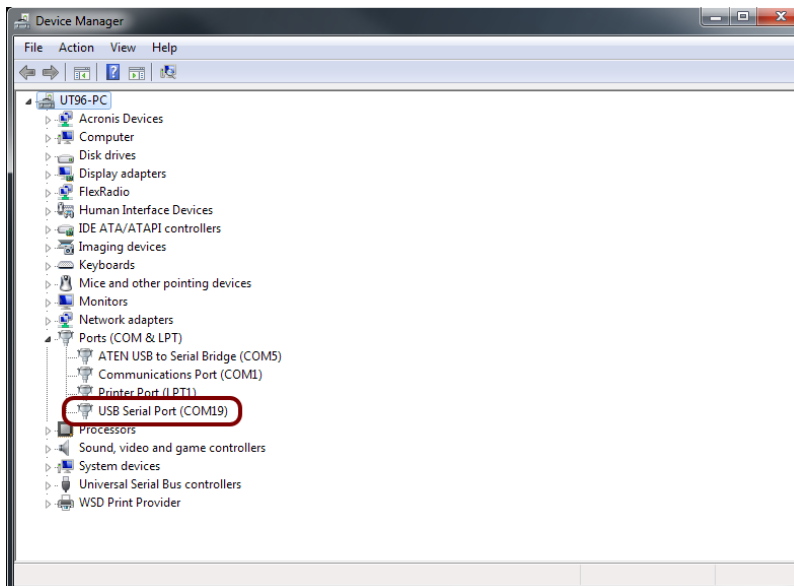Download the latest version of the user interface firmware.

Before starting the firmware update, it is recommended to disable all antivirus programs in order to avoid any inconvenience.

In order to update the user interface firmware, you need to install the Flash Magic software. This program is available here: http://www.flashmagictool.com/

Turn on the FDM-DUO and connect the CAT USB port to a USB 2.0 port of your computer. Follow the steps below to enable the user interface reprogramming mode :

- Press the MENU F5 key, turn the E2 knob to go to the menu 80 (SERVICE), press E2 to enter in the menu,
- turn E2 to display "ON" and press E2 to confirm,
- turn E2 to go to the menu 82 (UI Update), press E2 to enter in the menu,
- turn E2 to display "YES" and press E2 to confirm.

Then you need to identify the CAT USB port number. Open the windows "Device Manager" and expand the "Ports (COM &LPT)" node. The CAT USB port is listed as "USB Serial Port".

In this case the CAT USB port number is COM19.

Run Flash Magic and set the following parameters.

In the "Step 1 – Communication" section:
- Select LPC1766,
- COM Port: the CAT USB COM port,
- Baud Rate: 230400,
- Interface: None (ISP).
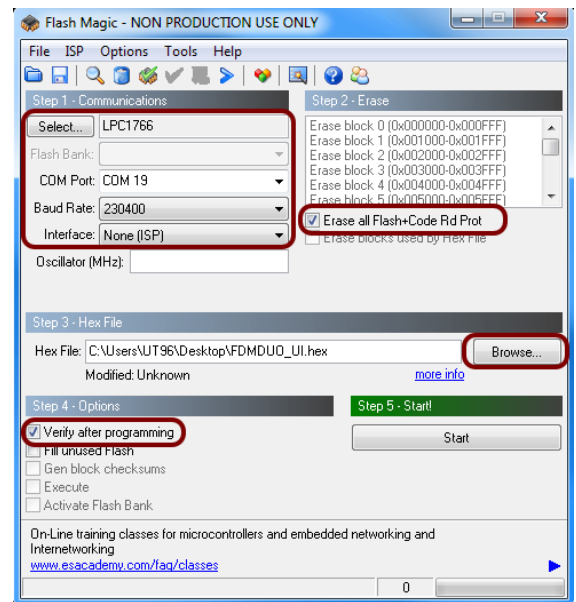
In the "Step 2 – Erase" section:
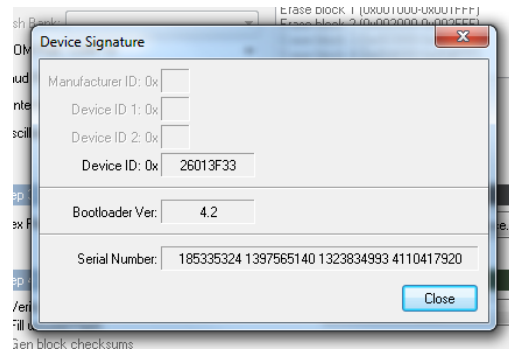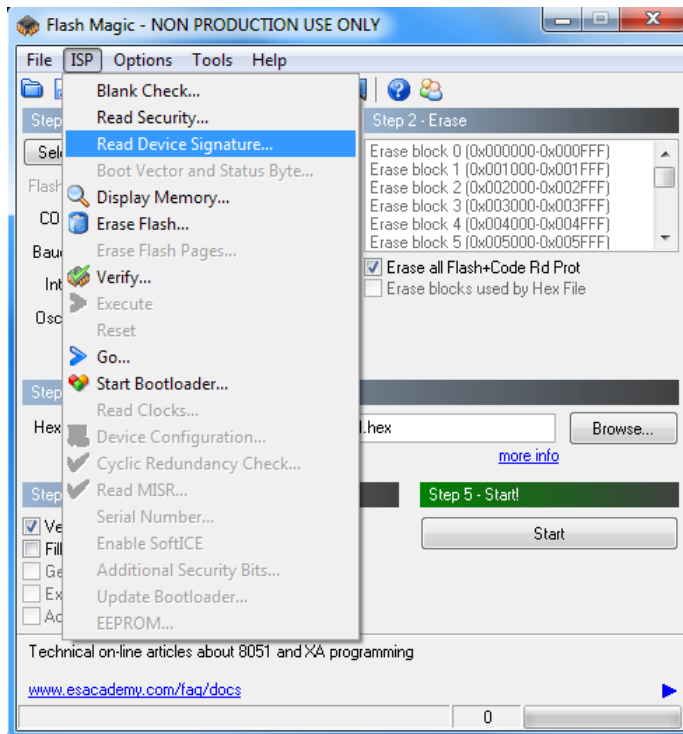- Check "Erase all Flash+Code Rd Prot".

In the "Step 3 – Hex File" section:
- Click on Browse and select the update ".hex" file.

In the "Step 4 – Options" section:
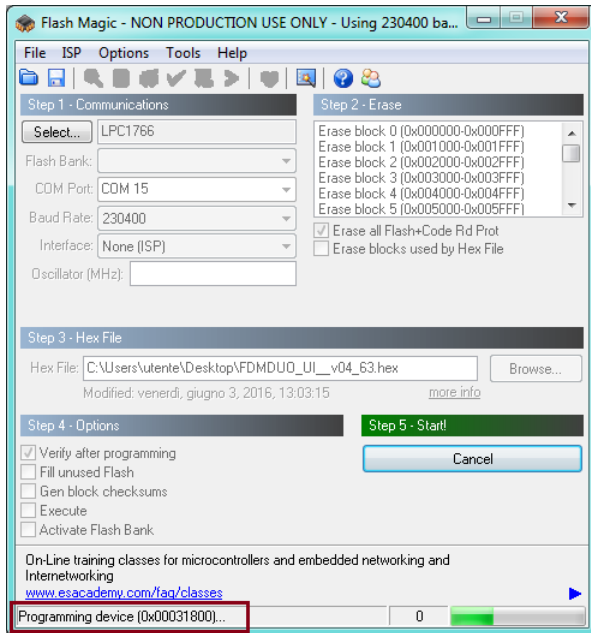- Check "Verify after programming.

Check the communication with the FDM-DUO clicking on "ISP" and then on "Read Device Signature". If the communication with the FDM-DUO is working, a new window with some device information is opened.
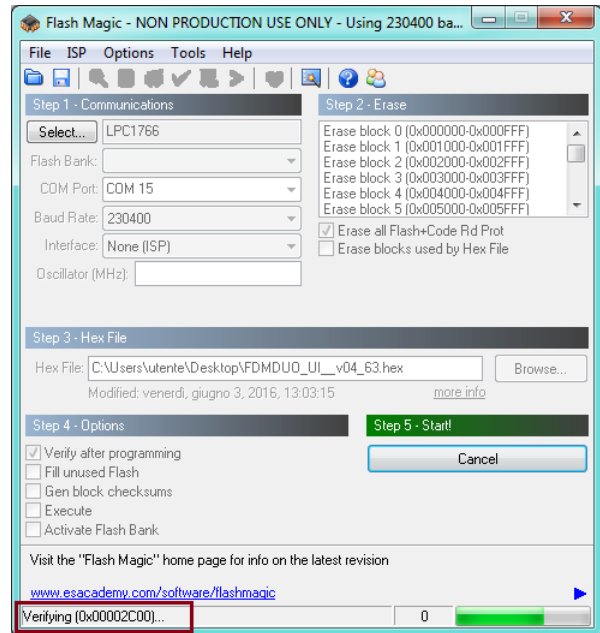
If the communication is working it is possible to proceed with the firmware update. Click on "close" on the "Device Signature" window. In the Flash Magic main window, click on "Start" to begin the programming.
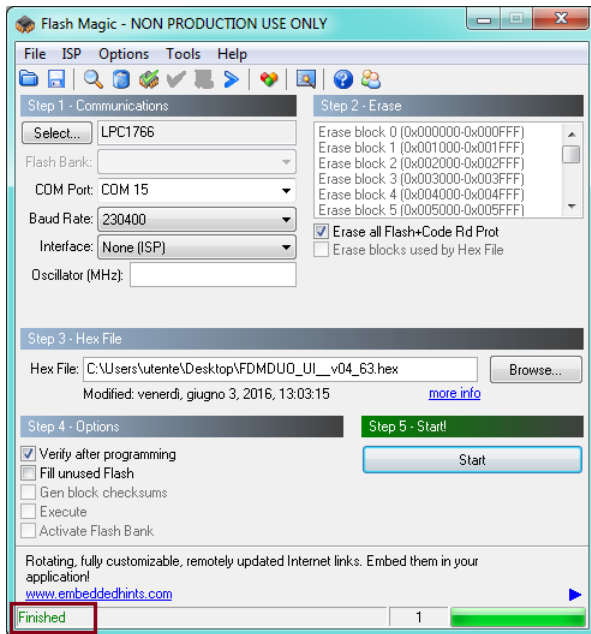
Flash Magic will now proceed to program the firmware.

Then, Flash Magic performs the programming verification.

Wait until the end of the process, it should result like the picture bellow.

Then turn off and on the FDM-DUO.

If some problems occur during the firmware update procedure, please contact the ELAD technical assistance.