



Firmware Upload Guide



Disclaimer



Wrong connection or bad manipulation could damage your module. Warranty does not support fault coming from the user while upgrading a new firmware on a shakmat module. However, if you are very careful and follow all the steps below meticulously, everything will be fine.

Requirements

- Shakmat Serial Programmer or any FTDI FT232 programmer.
- Bended piece of metal or 3 pins 2.54mm male header with a jumper.
- A computer
- USB Cable
- STM32 Cube Programmer software

Firmware versions



Two firmwares are available for the Bard Quartet. They are labelled v1.0 and v 1.1. Bard Quartets with batch number A12 or higher already comes with the v1.1 firmware installed

If unsure whether your Bard Quartet has the latest firmware installed, press the ARPG and μ TUNE buttons simultaneously; both buttons should blink alternatively.

1

Download the latest module firmware & STM32 software at shakmat.com/support

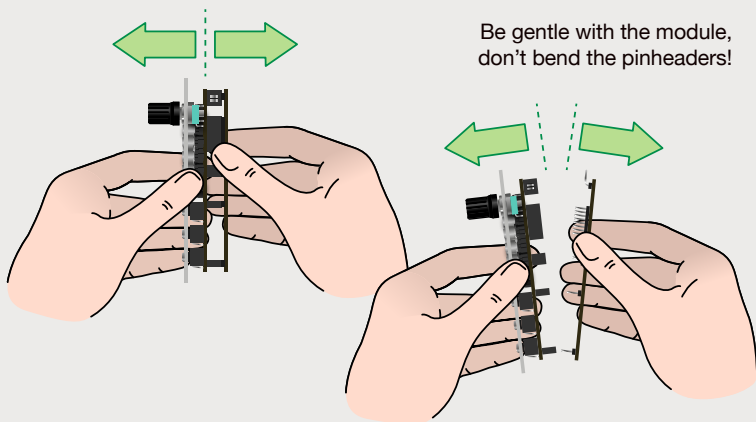
2

Unzip the file and install the STM32 Cube Programmer

Unzip the downloaded file and install STM32 Cube Programmer on your computer. The software is available for Windows 32 & 64 bits, as well as Mac and Linux. Please note that STM32 Cube Programmer and all attached pieces of software are the properties of their rightful owners. Read the STM Microelectronics SLA0048 Software license agreement for more informations.

3

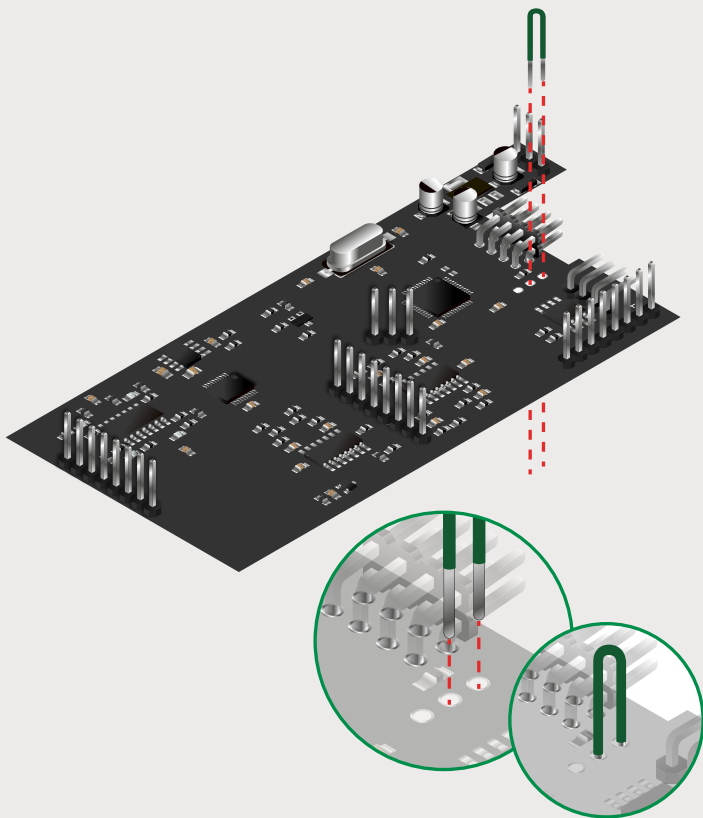
Carefully remove the back PCB of your Bard Quartet.



4a

Set the Bard in programming mode with the provided wire

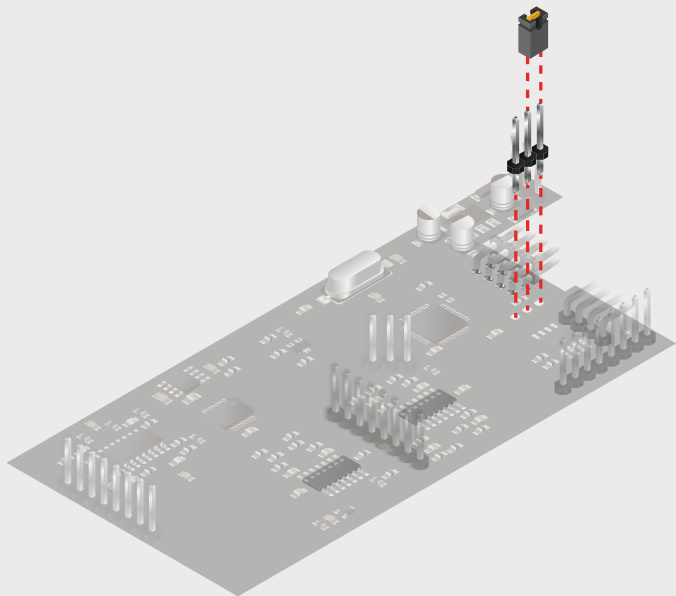
Set your Bard Quartet in programming mode by placing the provided metal wire inside the holes on the PCB.



4b

Set the Bard in programming mode with the provided header & jumper

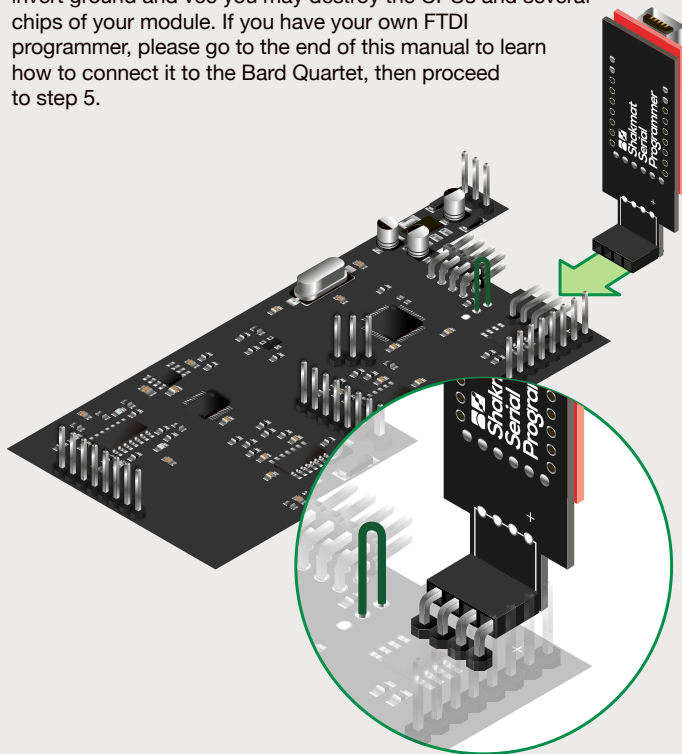
Optionally, you can solder the provided 3 pins male header and place the jumper on it. Depending on the production batch, your Bard Quartet may already have the male header soldered.



5

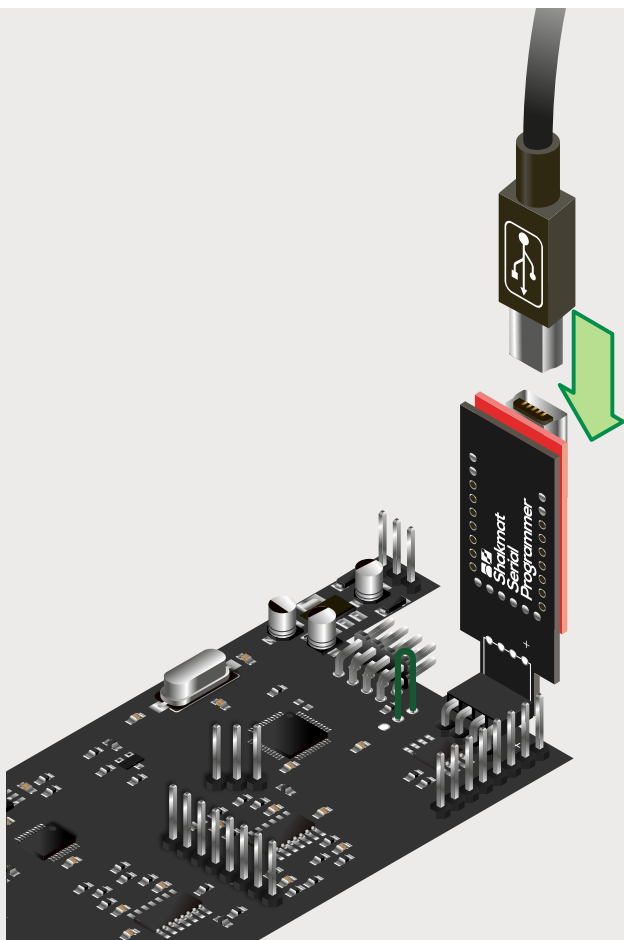
Connect the PCB and Shakmat Serial Programmer

Caution, for this step the USB cable should not be connected. Place the PCB flat on your table (components and headers side up) and connect the Serial Programmer to your Bard Quartet, push it on the header as far as possible. Make sure the connection and orientations are as follow, if you invert ground and vcc you may destroy the CPUs and several chips of your module. If you have your own FTDI programmer, please go to the end of this manual to learn how to connect it to the Bard Quartet, then proceed to step 5.



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Connect the USB cable
to the Serial Programmer



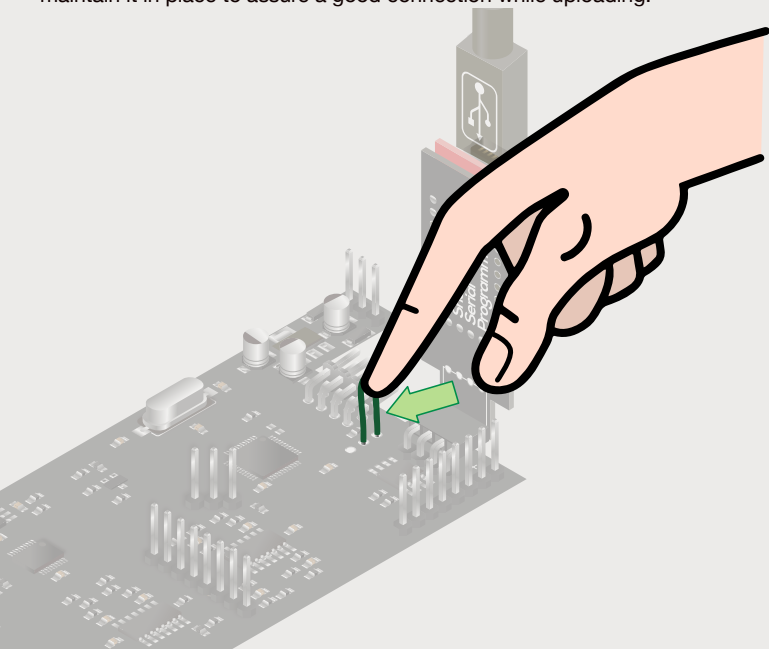
7

On your computer,
open STM32 Cube Programmer

8

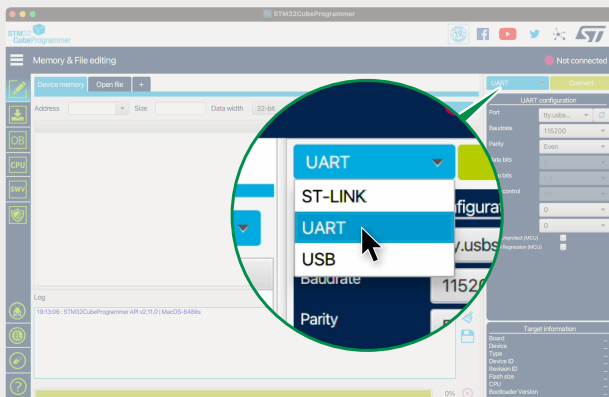
Connect the USB cable
to your computer

Connect the USB cable to your computer. The red LED on the Serial Programmer will light up and two green LEDs will shortly blink. If no LED is on remove the USB cable and double check your connections, then restart from point 4. If you are using the provided metal wire, you may have to maintain it in place to assure a good connection while uploading.



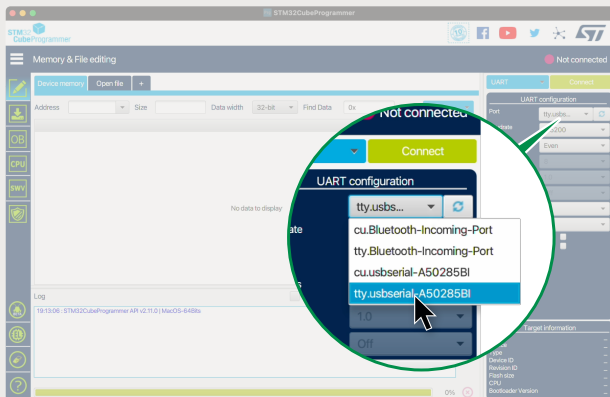
9

Choose UART as upload method in the top right corner

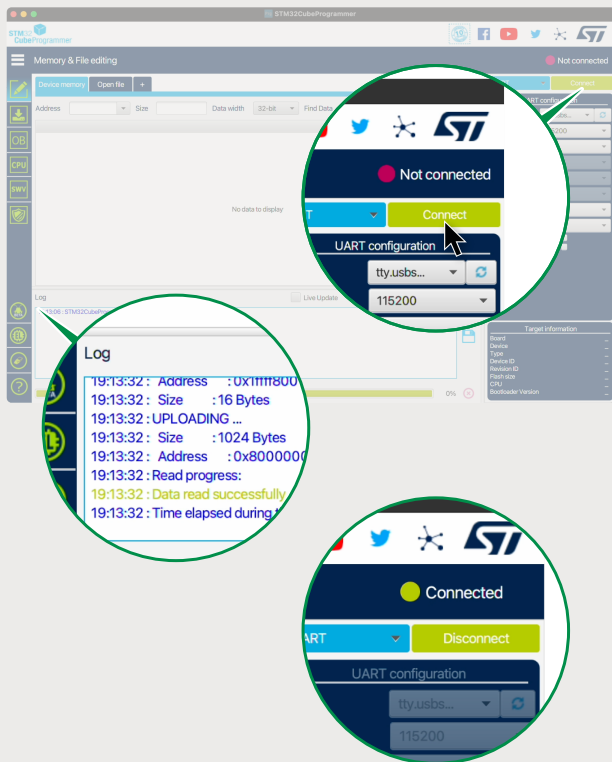


Select the port to the Serial Programmer

Depending on your computer and OS, the Serial Programmer may appear with various names. On Mac it will show as `tty.usbserial-A50285BI`, on PC it may simply be named «COM» followed by a number (eg: `COM6..7...`).

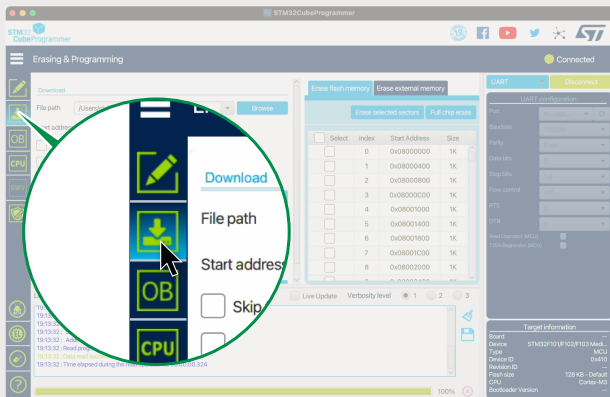


Click “connect”, connections log will appear at the bottom of the window and the software will confirm the board is connected.



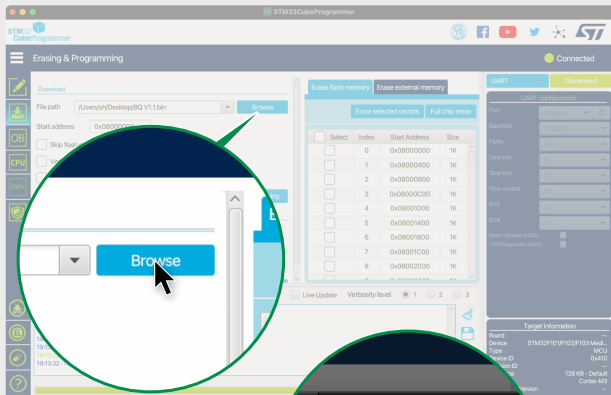
12

Select the Erasing & Programming tab in the icon bar to the left



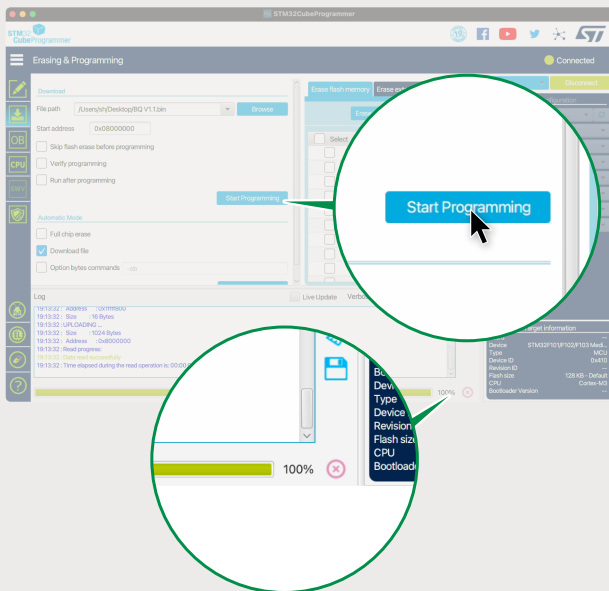
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Click browse and select the firmware .BIN file to be uploaded



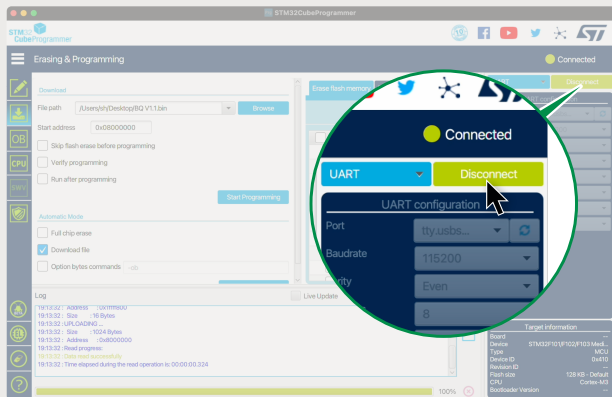
Click *Start programming* to launch the upload process

A progress bar gives the percentage of code uploaded, wait to the end. If something goes wrong, disconnect the USB cable from your computer, close STM32 Cube Programmer, and repeat the process from step 4.



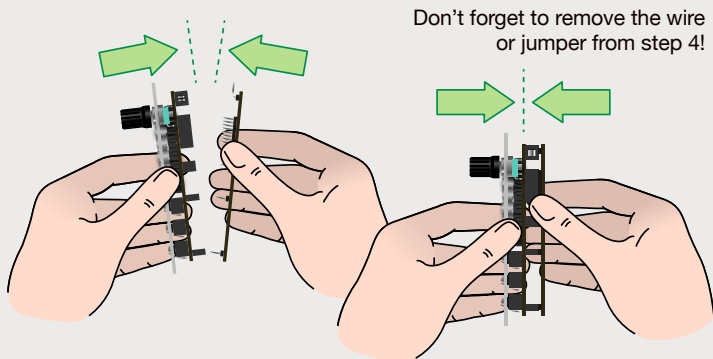
15

Click Disconnect



16

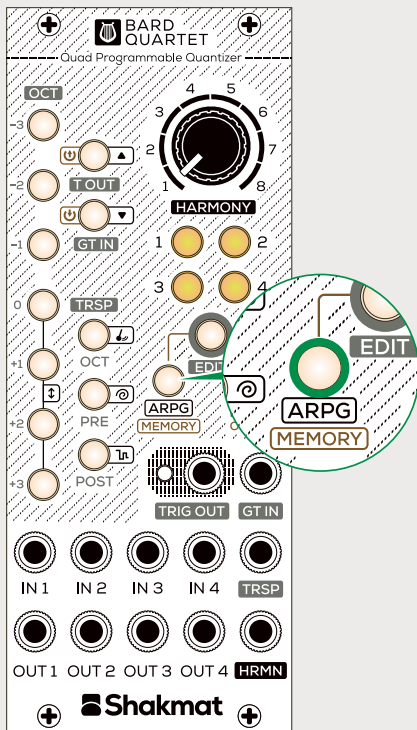
Disconnect everything and mount the PCB back on your module



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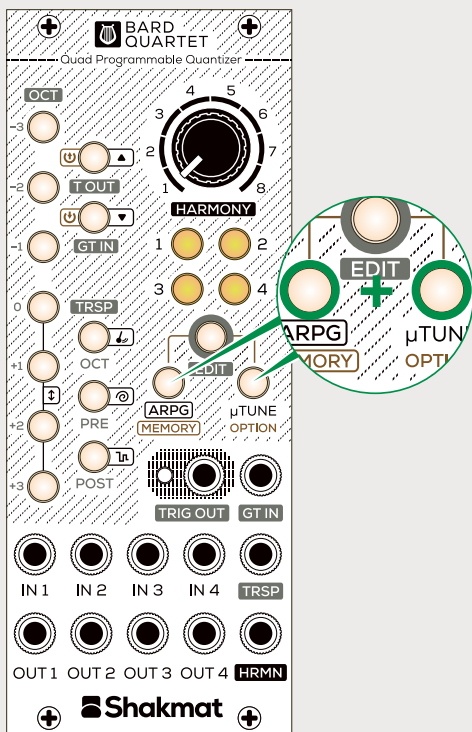
Proceed to the factory reset of your Bard Quartet

Plug your Bard Quartet back in your system. Press & hold the ARPG button while powering up the system. The Bard Quartet will indicate the reset procedure by a circular blinking pattern on the channel buttons. Press the μ TUNE button to confirm, all LEDs will briefly blink and the module will then start normally.



Force memory flags (for firmware v.1.1.1 and higher)

Turn your system back off. Hold the ARPG & μ TUNE buttons while powering the system back on. The Bard Quartet keyboard buttons will blink and the channels buttons will have a circular blinking pattern. Press the Edit button to confirm, and the module will then start normally.





For the pro user with any FT232 Programmer

It is possible to upload firmware to your Bard Quartet without using the Shakmat Serial Programmer. If you have an FTDI FT232RL programmer at hand, use 4 pin to 4 pin female cables to connect the programmer to the Bard Quartet header. Follow the connection diagram below then follow the regular procedure from step 4.

