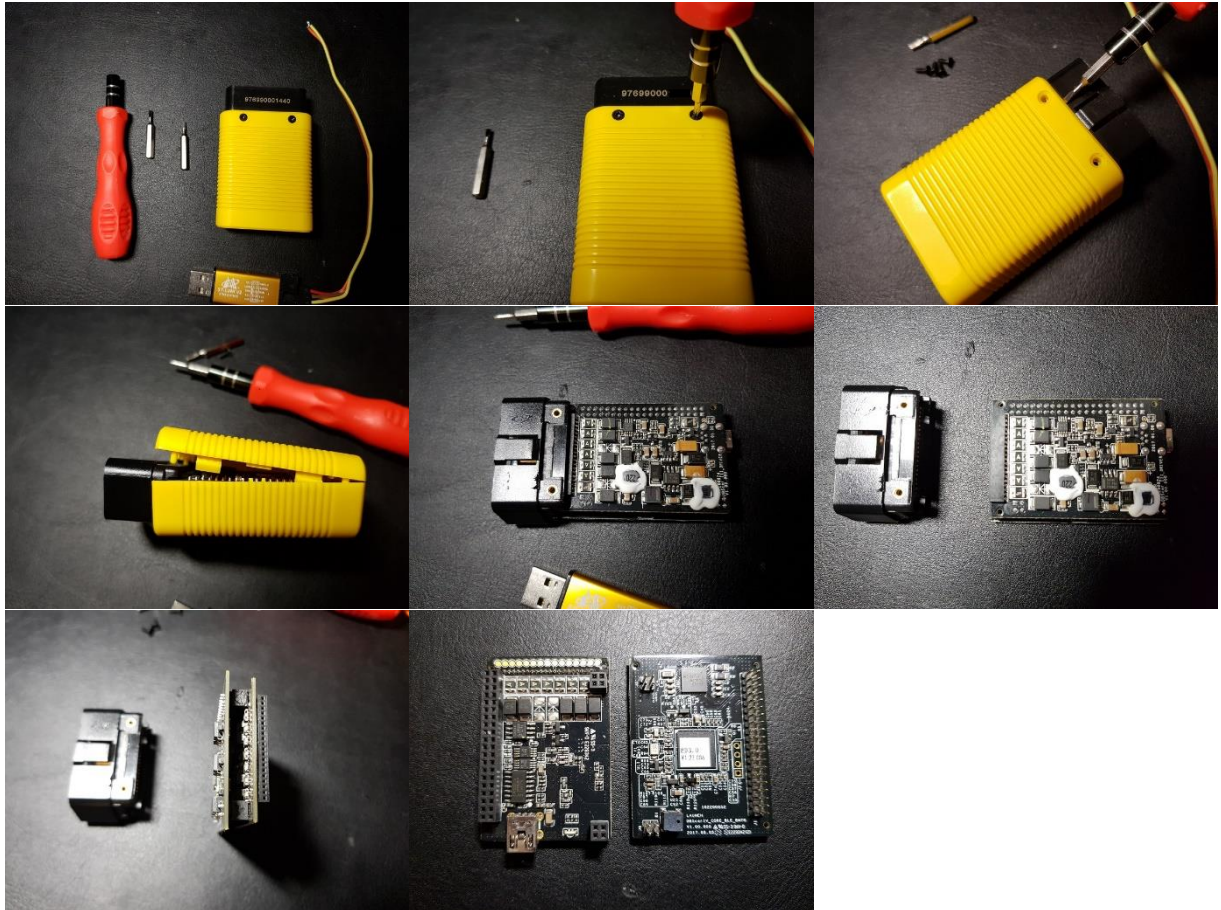
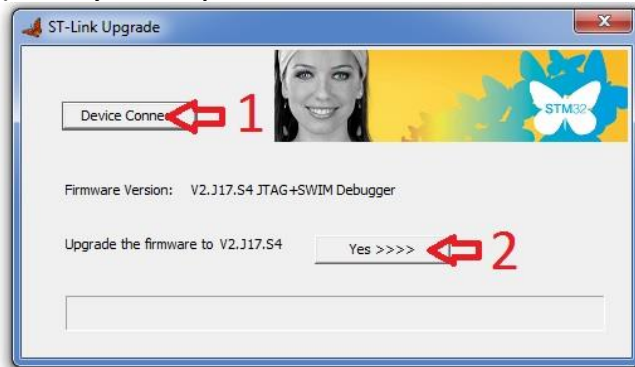


## Disassembly:



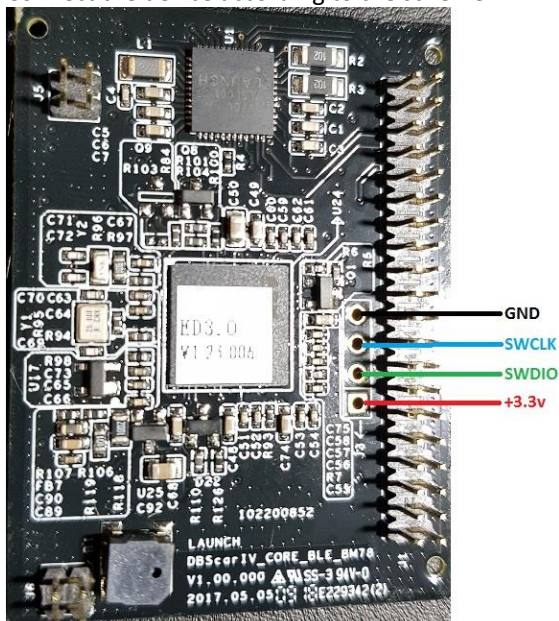
## Preparation of software:

1. Install the program **STM32 ST-LINK Utility v4.1.0 setup.exe**
2. At the first connection, run the program **ST-LinkUpgrade.exe** and update the firmware of the programmer  
(You only need to perform it once, in the future it will not be necessary)



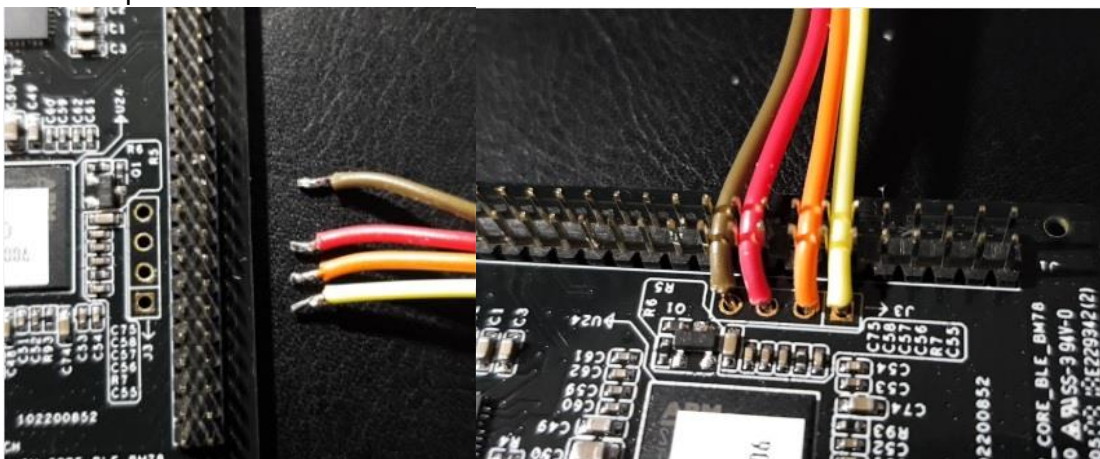
## Preparing the device:

Connect the device according to the scheme:

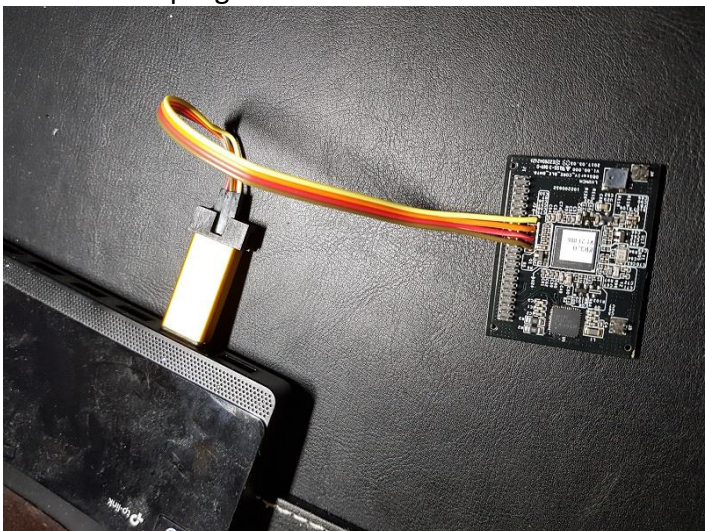


You can connect the device without using soldering.

For example:



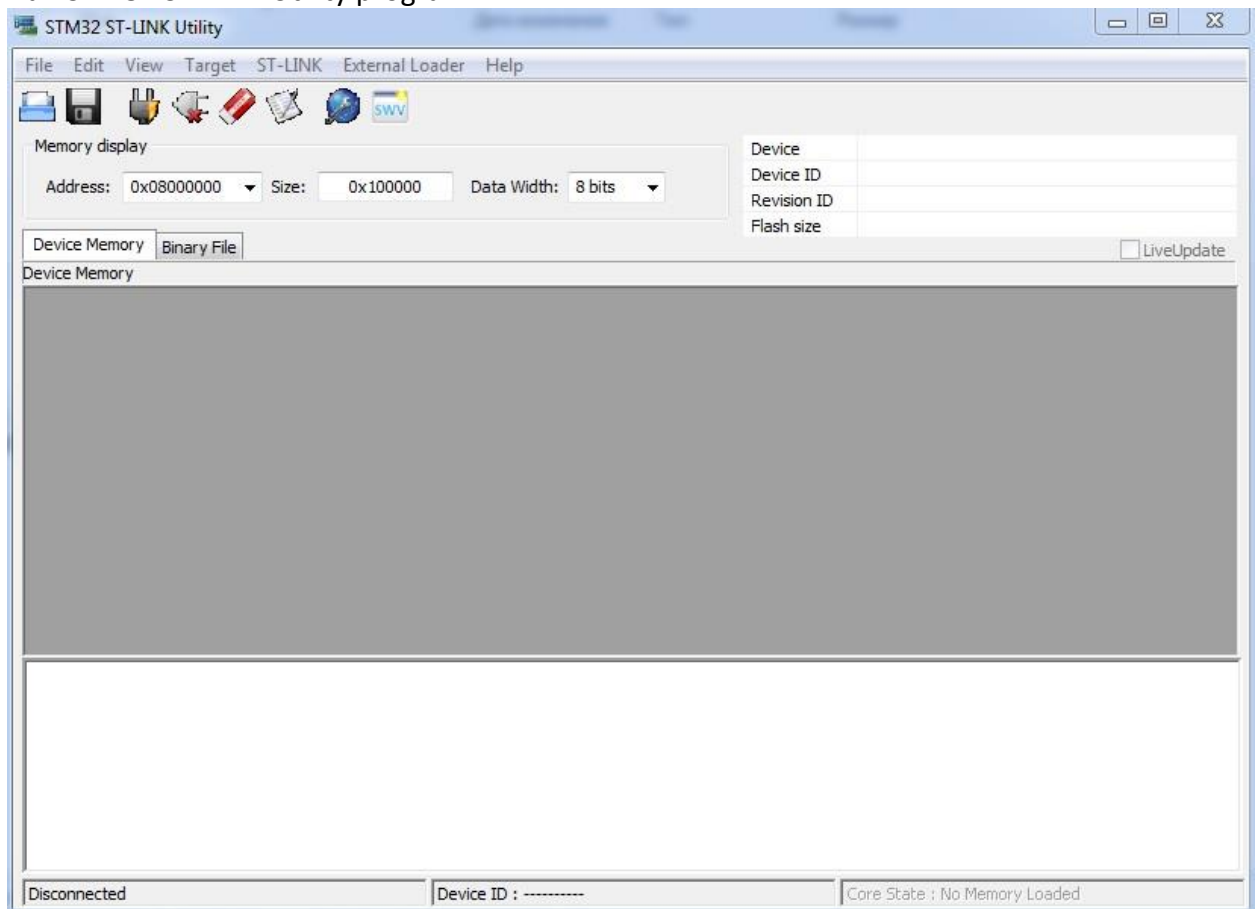
Connect the programmer to PC.



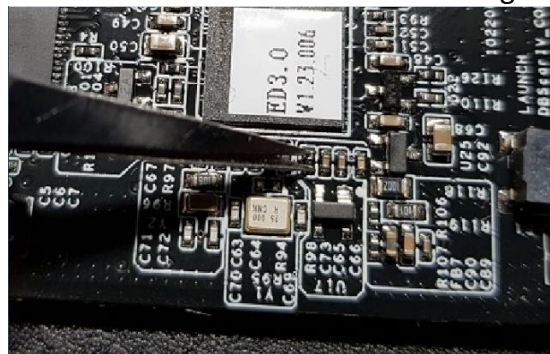
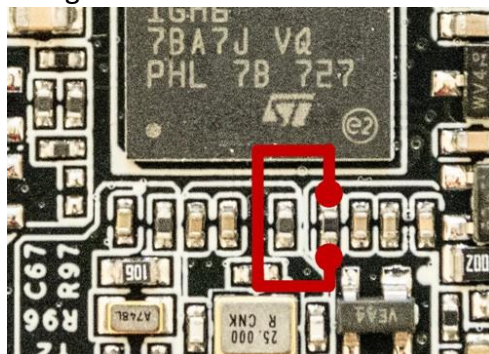


## Programming:

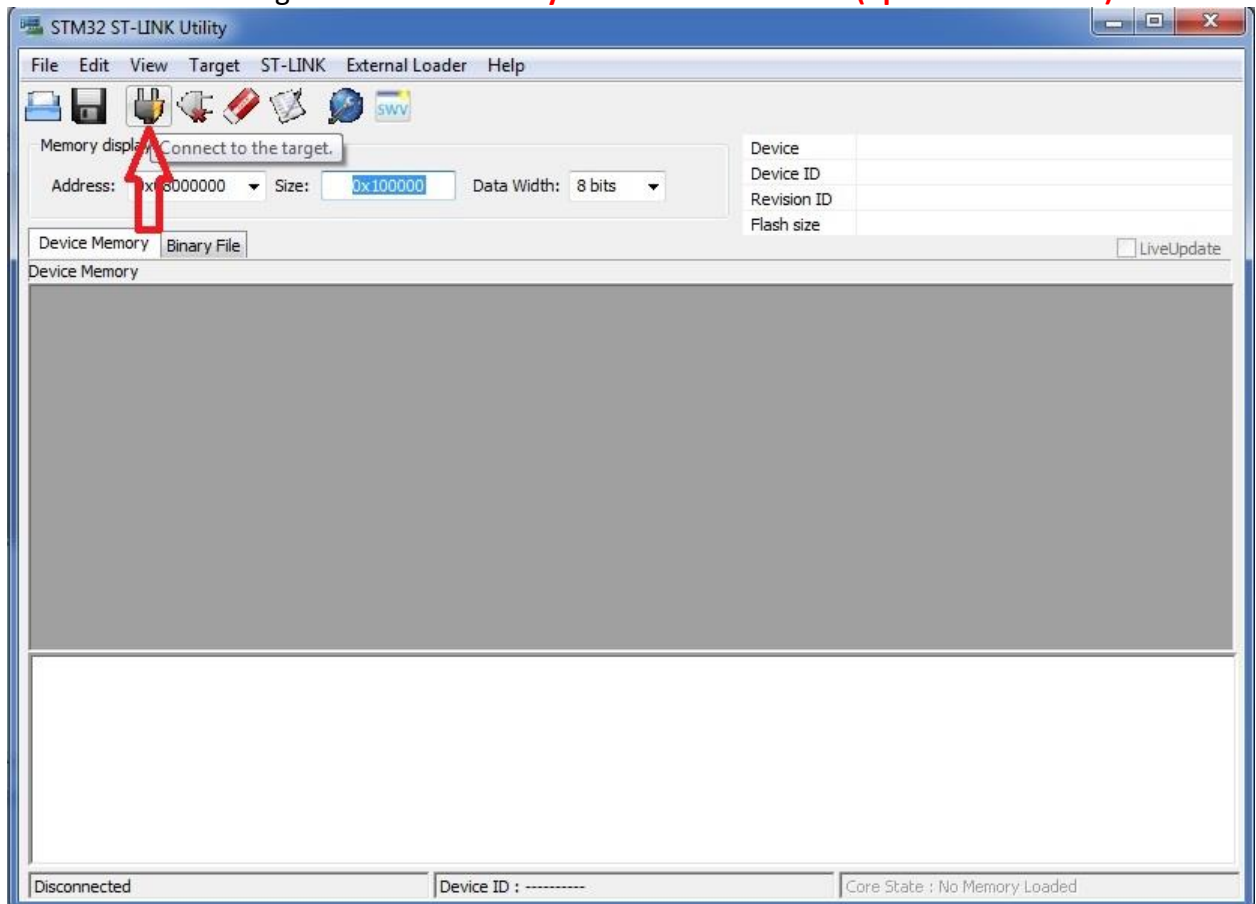
Run STM32 ST-LINK Utility program



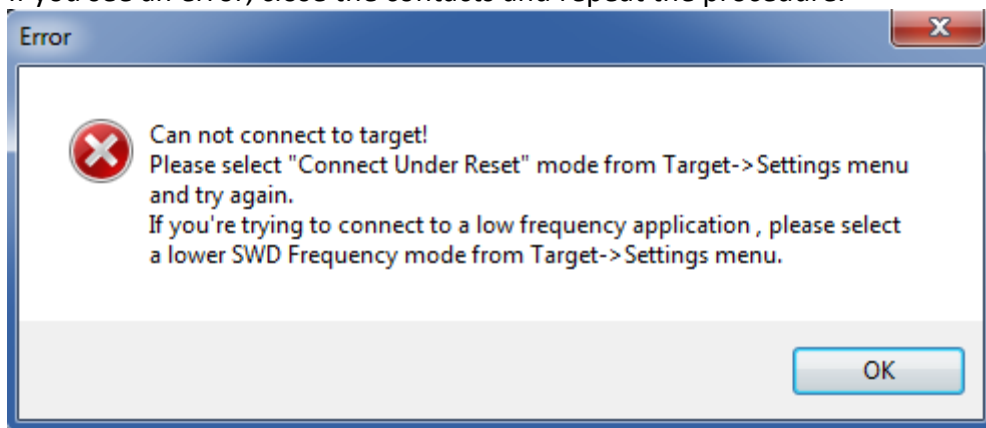
Using tweezers or another suitable thing, short the contacts as shown in the diagram:



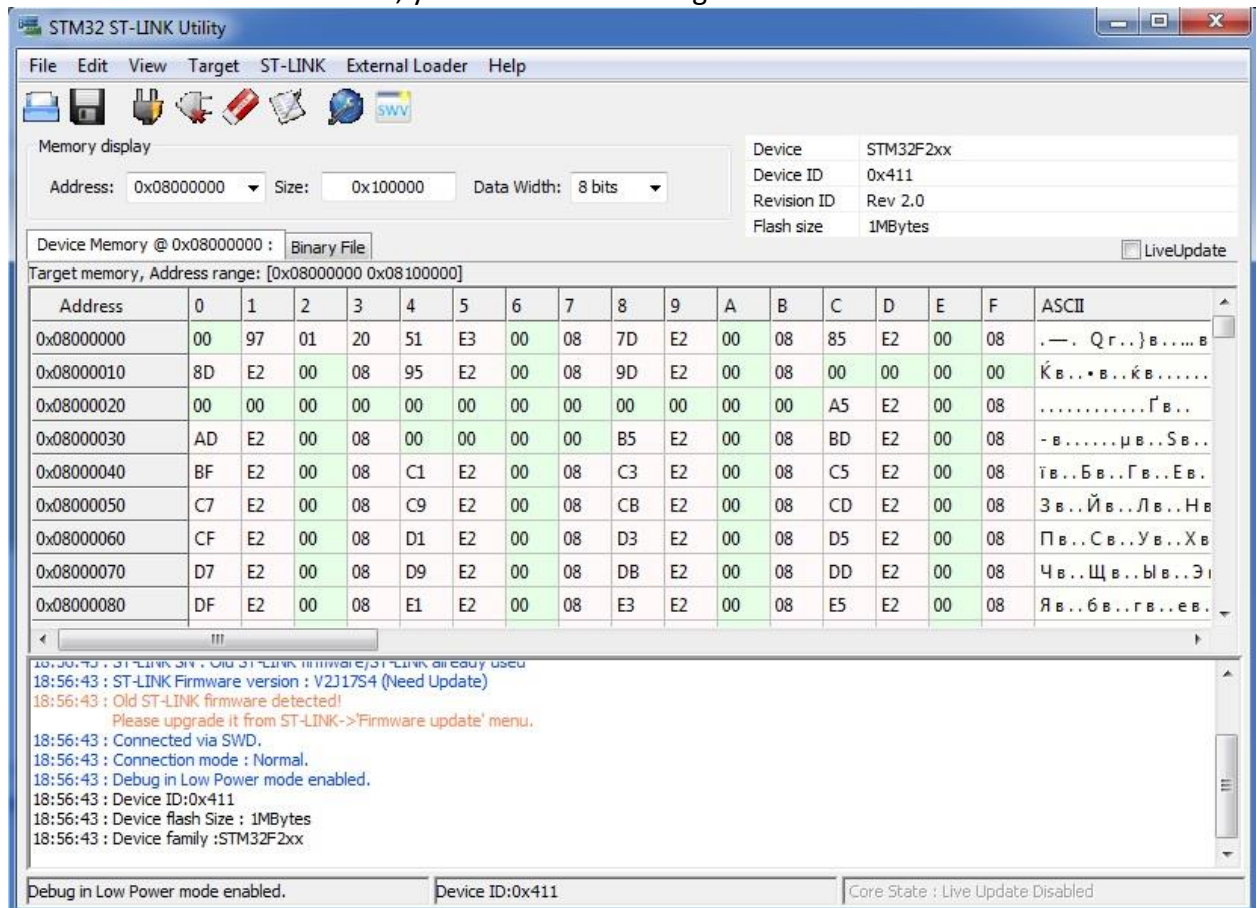
Click "Connect to target" and **immediately remove the tweezers (open the contacts)**:



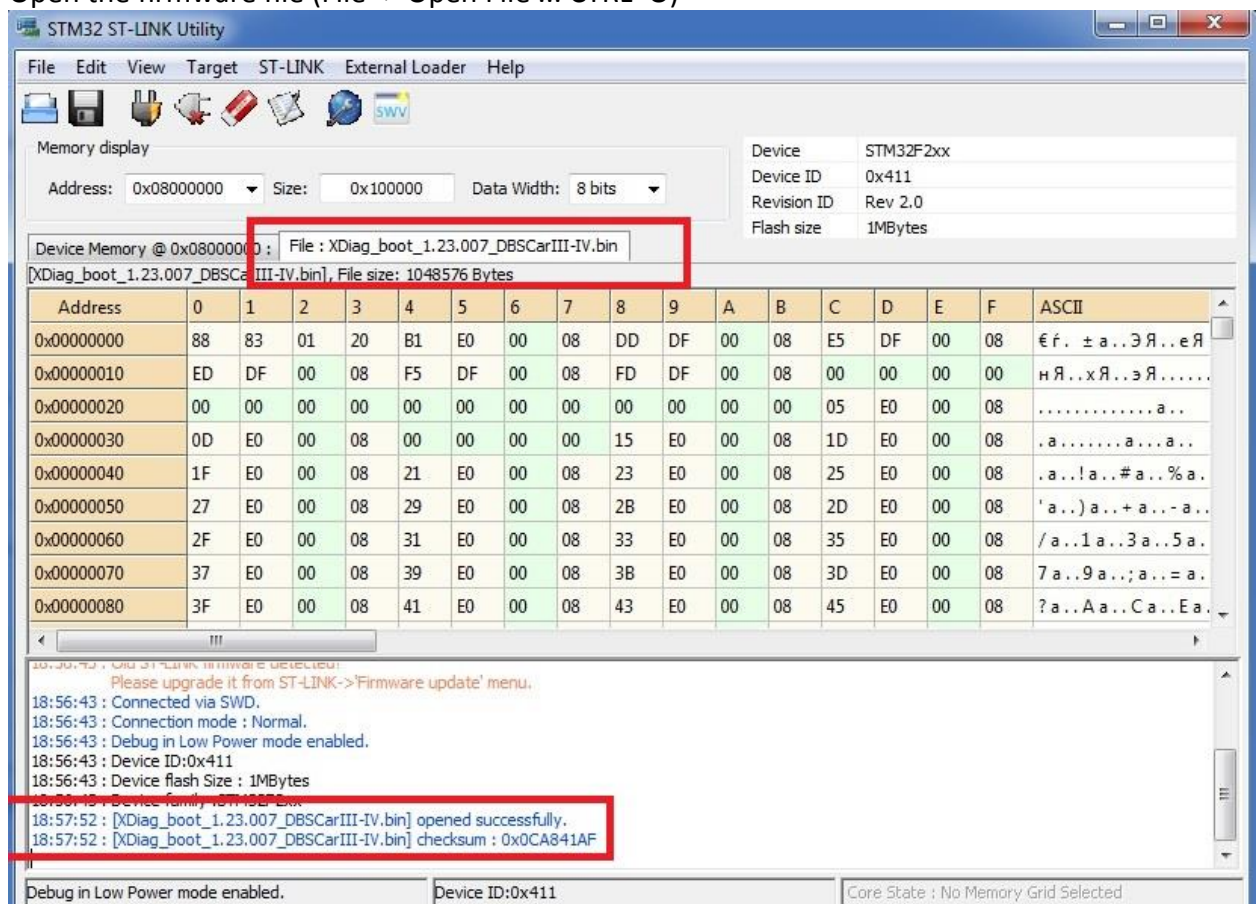
If you see an error, close the contacts and repeat the procedure.



If the connection is successful, you will see something like:

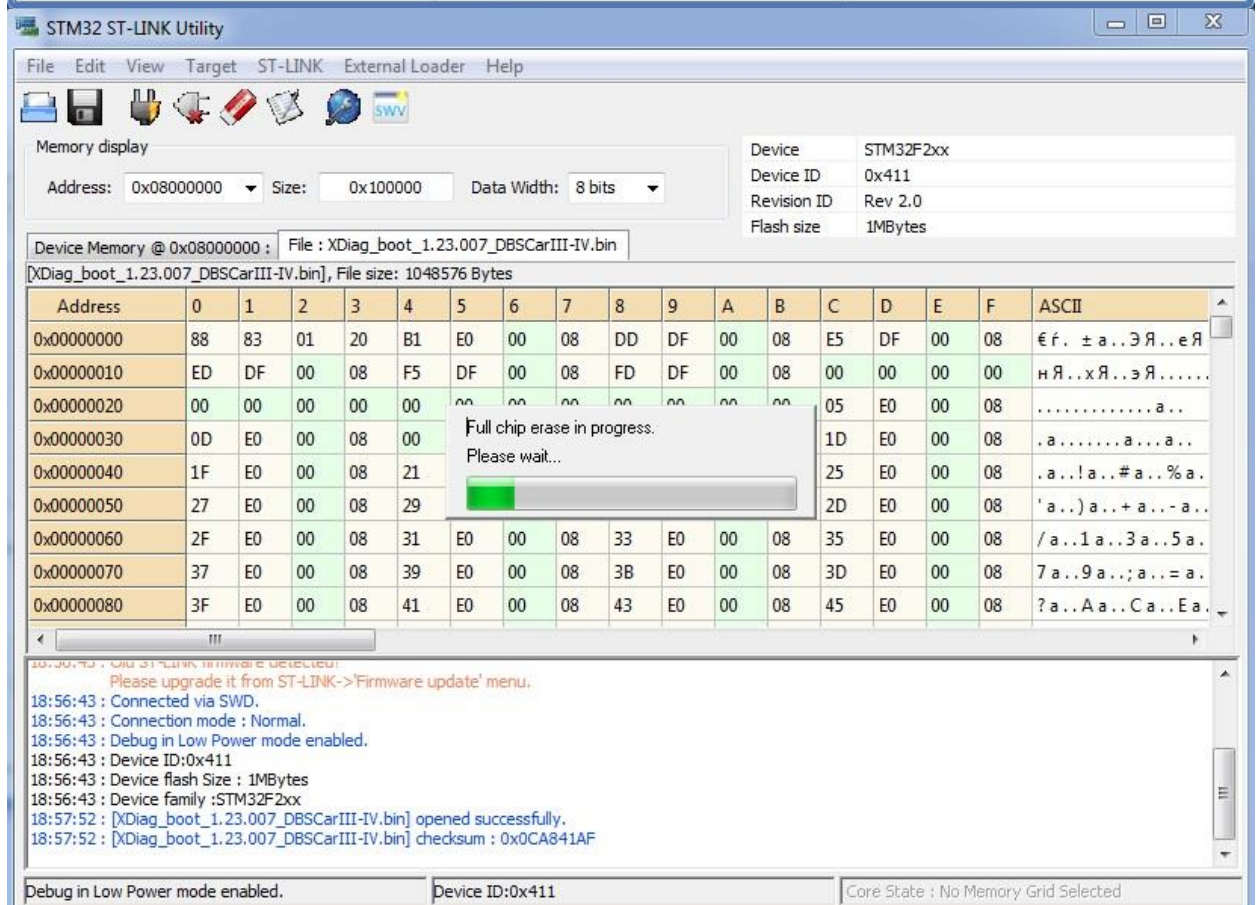
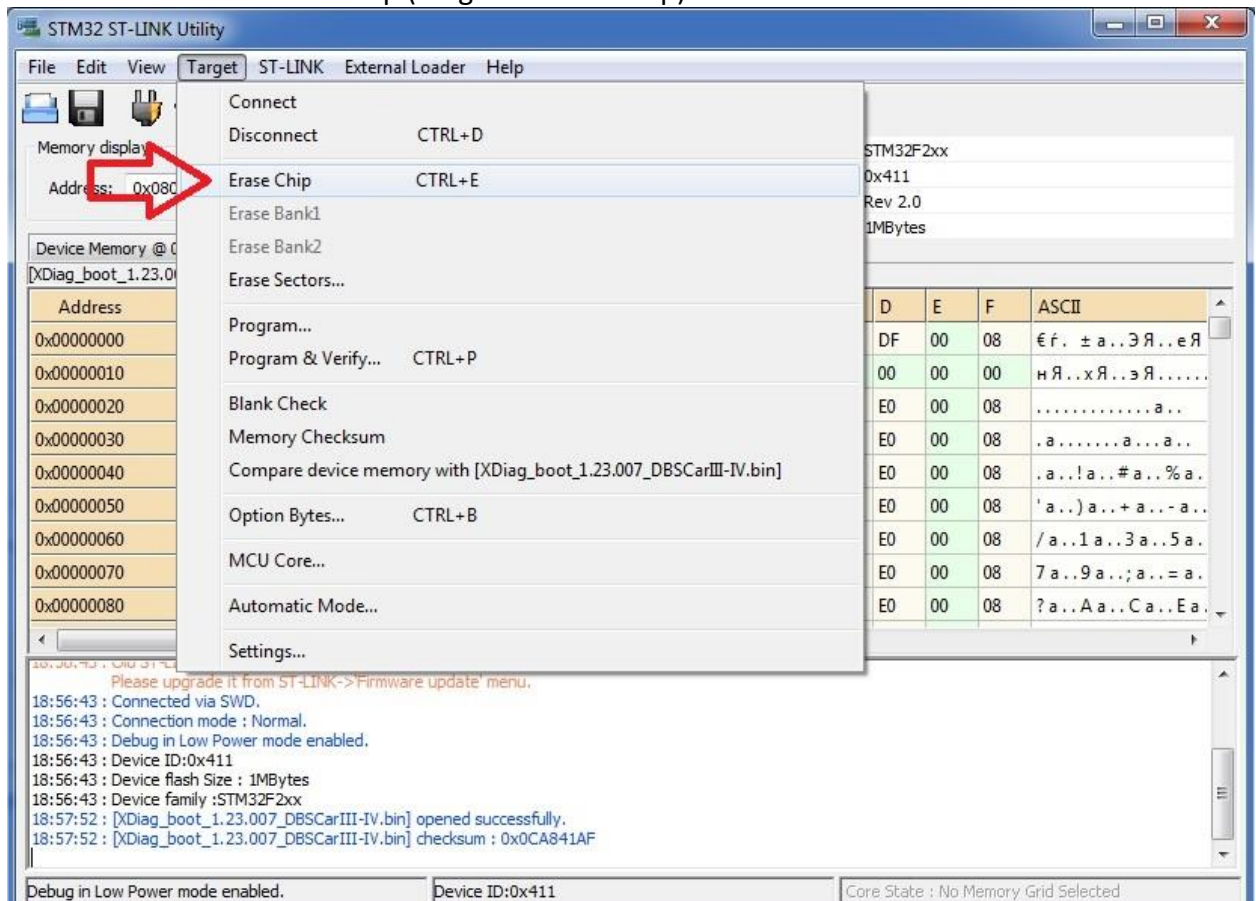


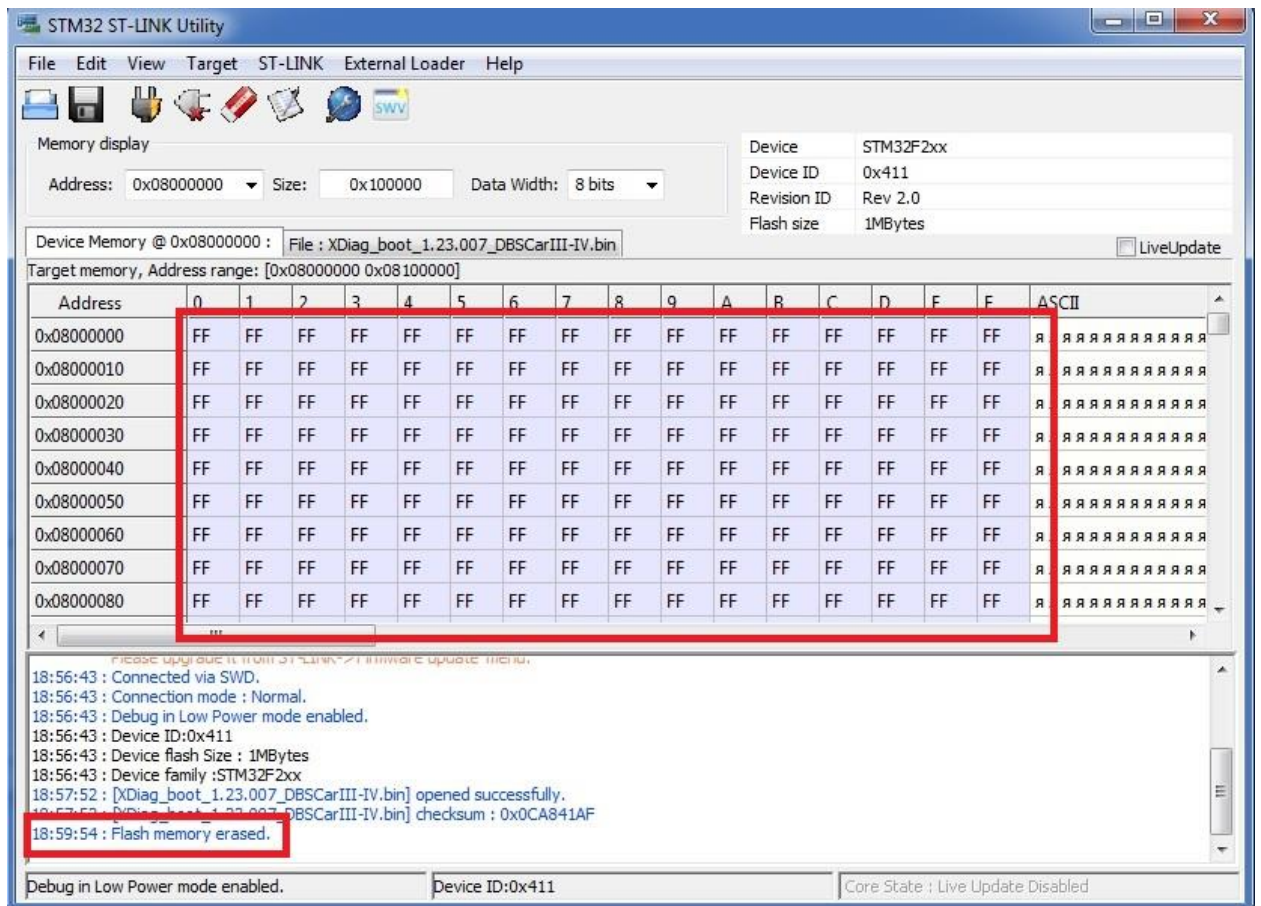
Open the firmware file (File -> Open File ... CTRL+O)





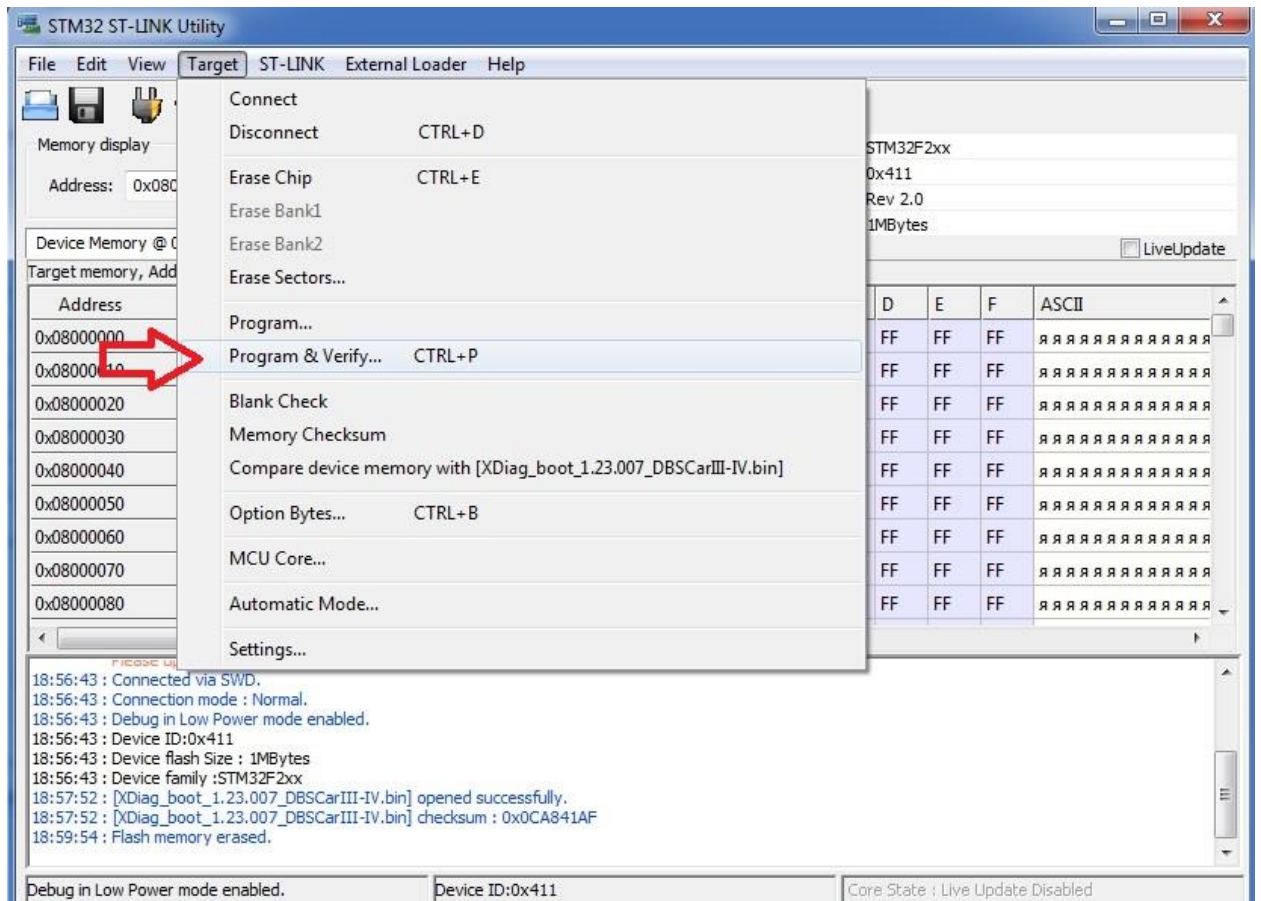
## Erase old firmware of the chip (Target -> Erase Chip)





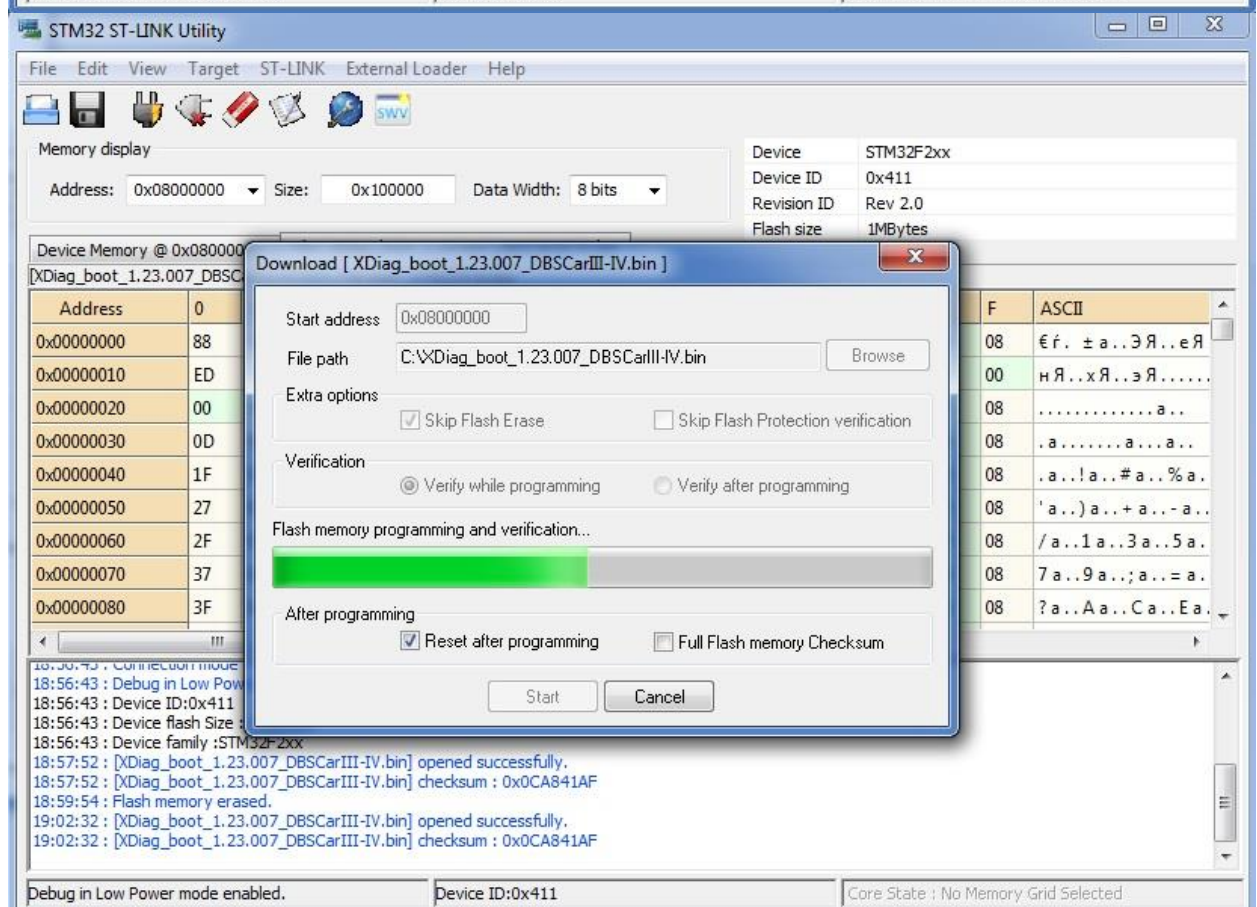
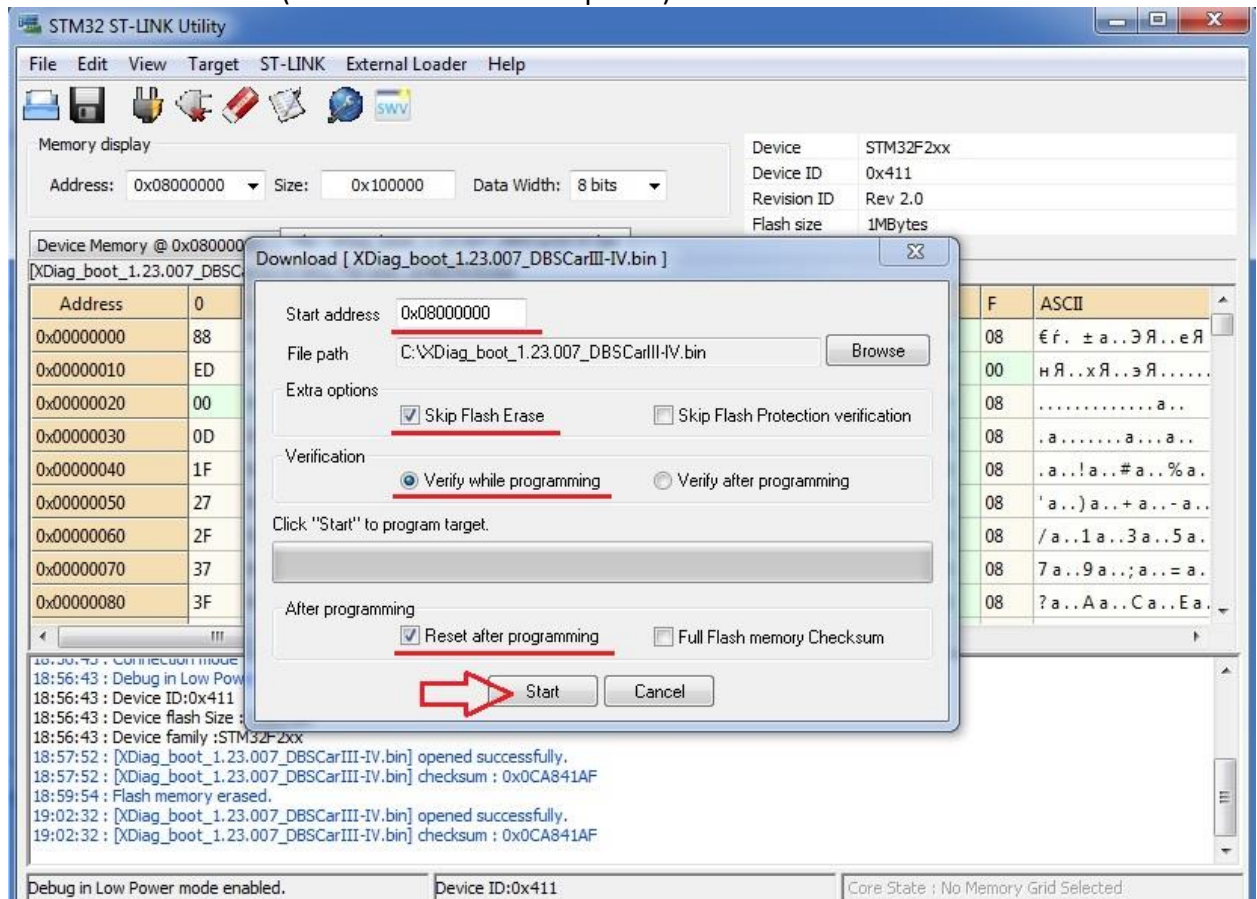
Program the chip (Program & Verify ... CTRL + P):

! The firmware file we selected earlier!





Check the form data (it should be like in the photo) and click "Start":





After completing the programming, you should hear the sound of the device meaning that everything went well:

The screenshot shows the STM32 ST-LINK Utility window. The 'Memory display' section shows the target memory address range from 0x08000000 to 0x08100000. The device information panel on the right indicates the device is STM32F2xx, Device ID 0x411, Revision ID Rev 2.0, and Flash size 1MBytes. The 'LiveUpdate' checkbox is checked.

The 'Device Memory @ 0x08000000' section shows the file 'XDiag\_boot\_1.23.007\_DBSCarIII-IV.bin' loaded. Below this is a table of memory data:

Address	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	ASCII
0x08000000	88	83	01	20	B1	E0	00	08	DD	DF	00	08	E5	DF	00	08	€ í . ± a . . Э Я . . e Я
0x08000010	ED	DF	00	08	F5	DF	00	08	FD	DF	00	08	00	00	00	00	н Я . . x Я . . э Я . . . . .
0x08000020	00	00	00	00	00	00	00	00	00	00	00	00	05	E0	00	08	. . . . . a . .
0x08000030	0D	E0	00	08	00	00	00	00	15	E0	00	08	1D	E0	00	08	. a . . . . . a . . a . .
0x08000040	1F	E0	00	08	21	E0	00	08	23	E0	00	08	25	E0	00	08	. a . . ! a . . # a . . % a . .
0x08000050	27	E0	00	08	29	E0	00	08	2B	E0	00	08	2D	E0	00	08	' a . . ) a . . + a . . - a . .
0x08000060	2F	E0	00	08	31	E0	00	08	33	E0	00	08	35	E0	00	08	/ a . . 1 a . . 3 a . . 5 a . .
0x08000070	37	E0	00	08	39	E0	00	08	3B	E0	00	08	3D	E0	00	08	7 a . . 9 a . . ; a . . = a . .
0x08000080	3F	E0	00	08	41	E0	00	08	43	E0	00	08	45	E0	00	08	? a . . A a . . C a . . E a . .

The command log at the bottom shows the following messages:

```
18:50:43 : Device flash size : 1Mbytes
18:56:43 : Device family :STM32F2xx
18:57:52 : [XDiag_boot_1.23.007_DBSCarIII-IV.bin] opened successfully.
18:57:52 : [XDiag_boot_1.23.007_DBSCarIII-IV.bin] checksum : 0x0CA841AF
18:59:54 : Flash memory erased.
19:02:32 : [XDiag_boot_1.23.007_DBSCarIII-IV.bin] opened successfully.
19:02:32 : [XDiag_boot_1.23.007_DBSCarIII-IV.bin] checksum : 0x0CA841AF
19:03:56 : Memory programmed in 30s and 763ms.
19:03:56 : Verification...OK
19:03:56 : Programmed memory Checksum: 0x0CA841AF
```

The status bar at the bottom indicates 'Debug in Low Power mode enabled.', 'Device ID:0x411', and 'Core State : Live Update Disabled'.