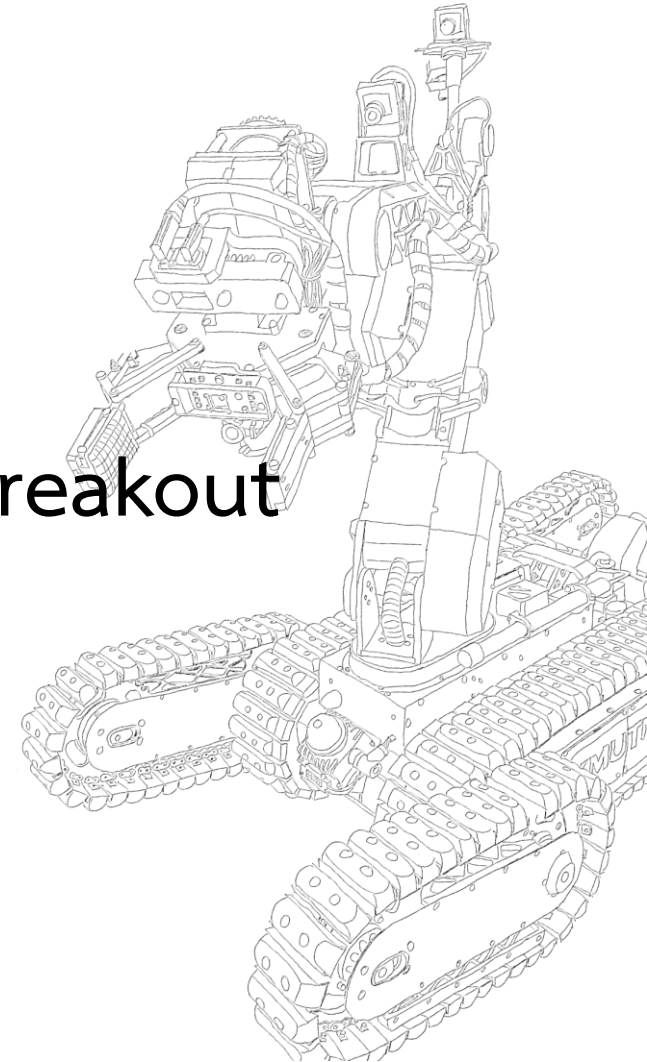
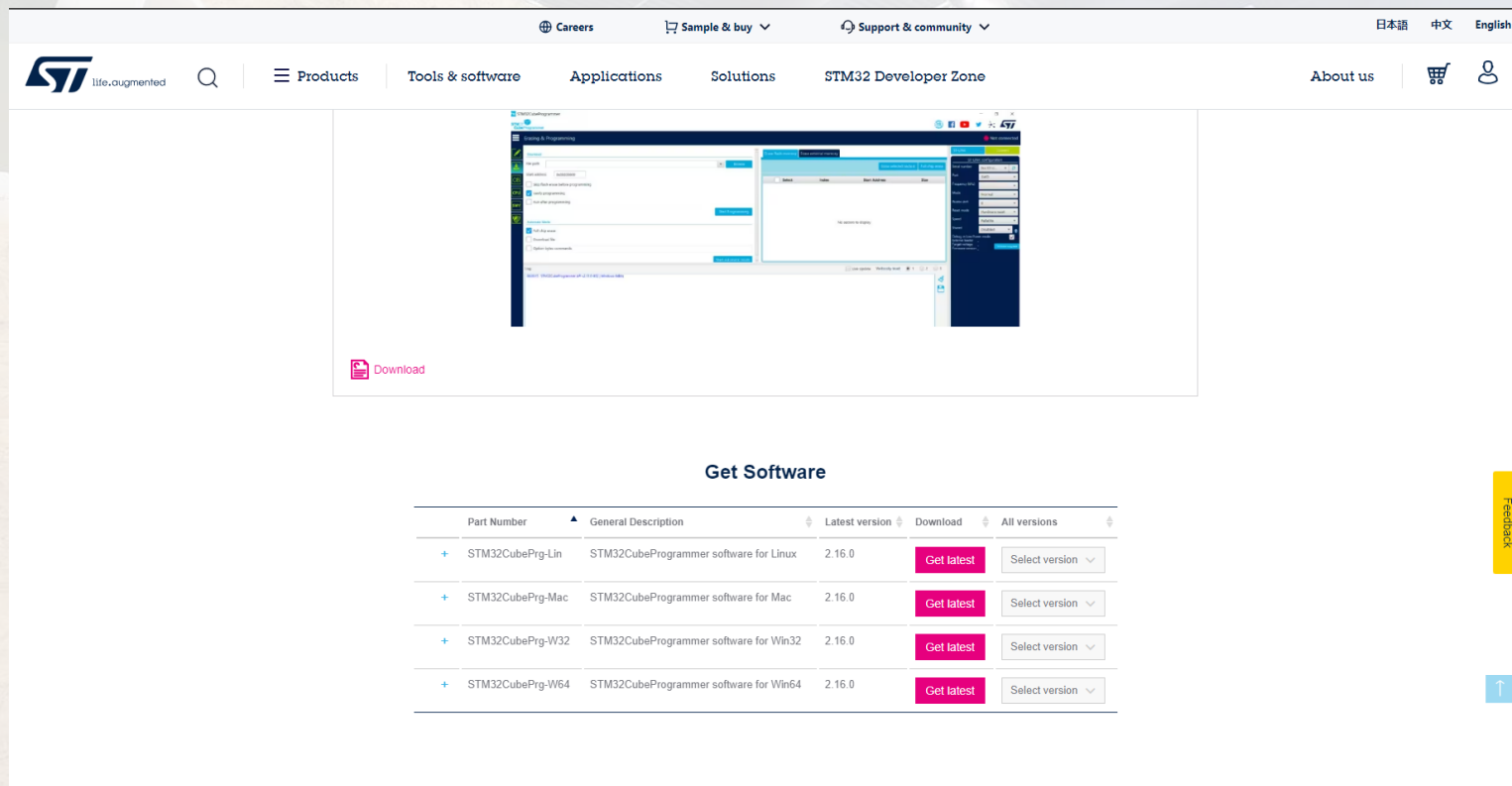




The step to upgrade firmware of RMRC Breakout



Download and install STM32CubeProgrammer

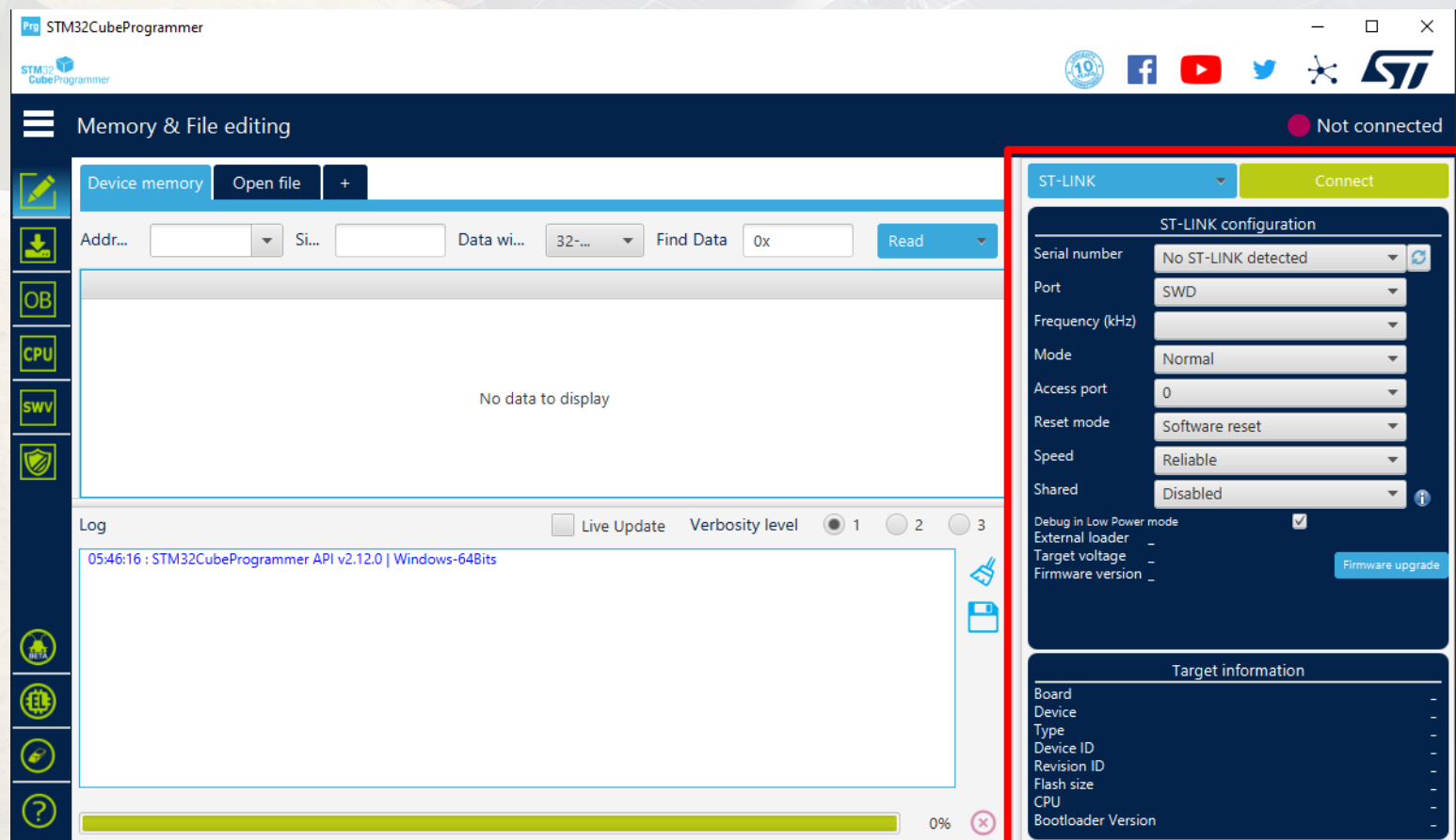


The screenshot shows the STMicroelectronics website's STM32 Developer Zone. The main navigation bar includes links for Careers, Sample & buy, Support & community, and language options (日本語, 中文, English). The secondary navigation bar lists Products, Tools & software, Applications, Solutions, and STM32 Developer Zone. The main content area features a large image of the STM32CubeProgrammer software interface and a prominent red 'Download' button. Below this, a 'Get Software' section contains a table with download links for different operating systems.

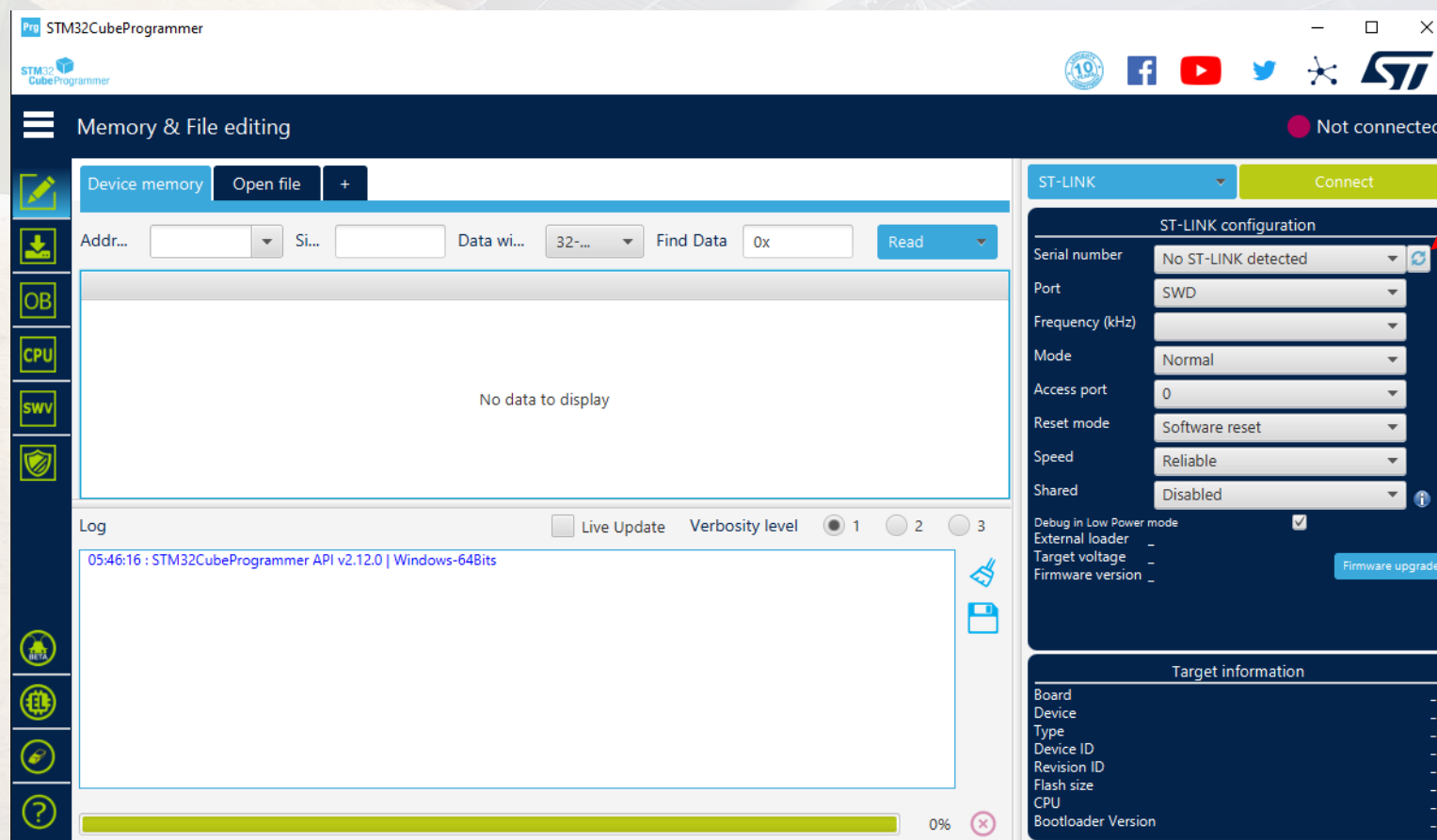
Part Number	General Description	Latest version	Download	All versions
STM32CubePrg-Lin	STM32CubeProgrammer software for Linux	2.16.0	Get latest	Select version
STM32CubePrg-Mac	STM32CubeProgrammer software for Mac	2.16.0	Get latest	Select version
STM32CubePrg-W32	STM32CubeProgrammer software for Win32	2.16.0	Get latest	Select version
STM32CubePrg-W64	STM32CubeProgrammer software for Win64	2.16.0	Get latest	Select version

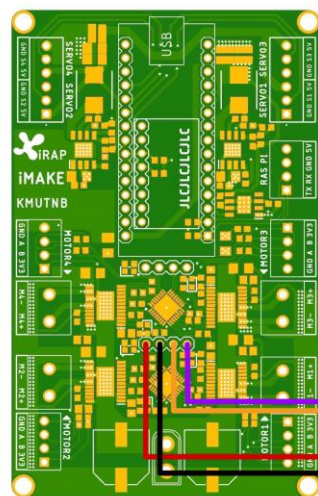
<https://www.st.com/en/development-tools/stm32cubeprog.html>

Open and setting program



Connect ST-Link to computer and board then refresh device





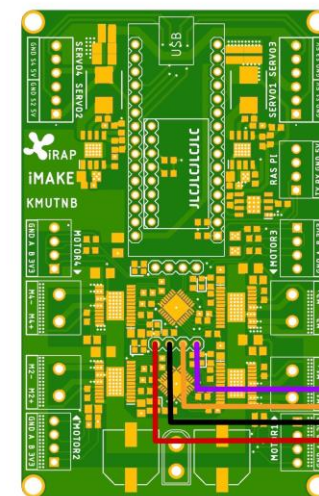
3.3V | GND | SWCLK | SWDIO

JTAG/SWD Interface Definon

SWD & JTAG		Interface	
VTref/Inpu	VTref/Inpu	1 • 2	NC
Not used	nTRST	3 • 4	GND
Not used	TDI	5 • 6	GND
SWDIO	TMS	7 • 8	GND
SWCLK	TCK	9 • 10	GND
Not used	RTCK	11 • 12	GND
SWO	TDO	13 • 14	GND*
RESET	RESET	15 • 16	GND*
Not used	DBGQ	17 • 18	GND*
3V-Supply	3V-Supply	19 • 20	GND*



ST-Link/V2

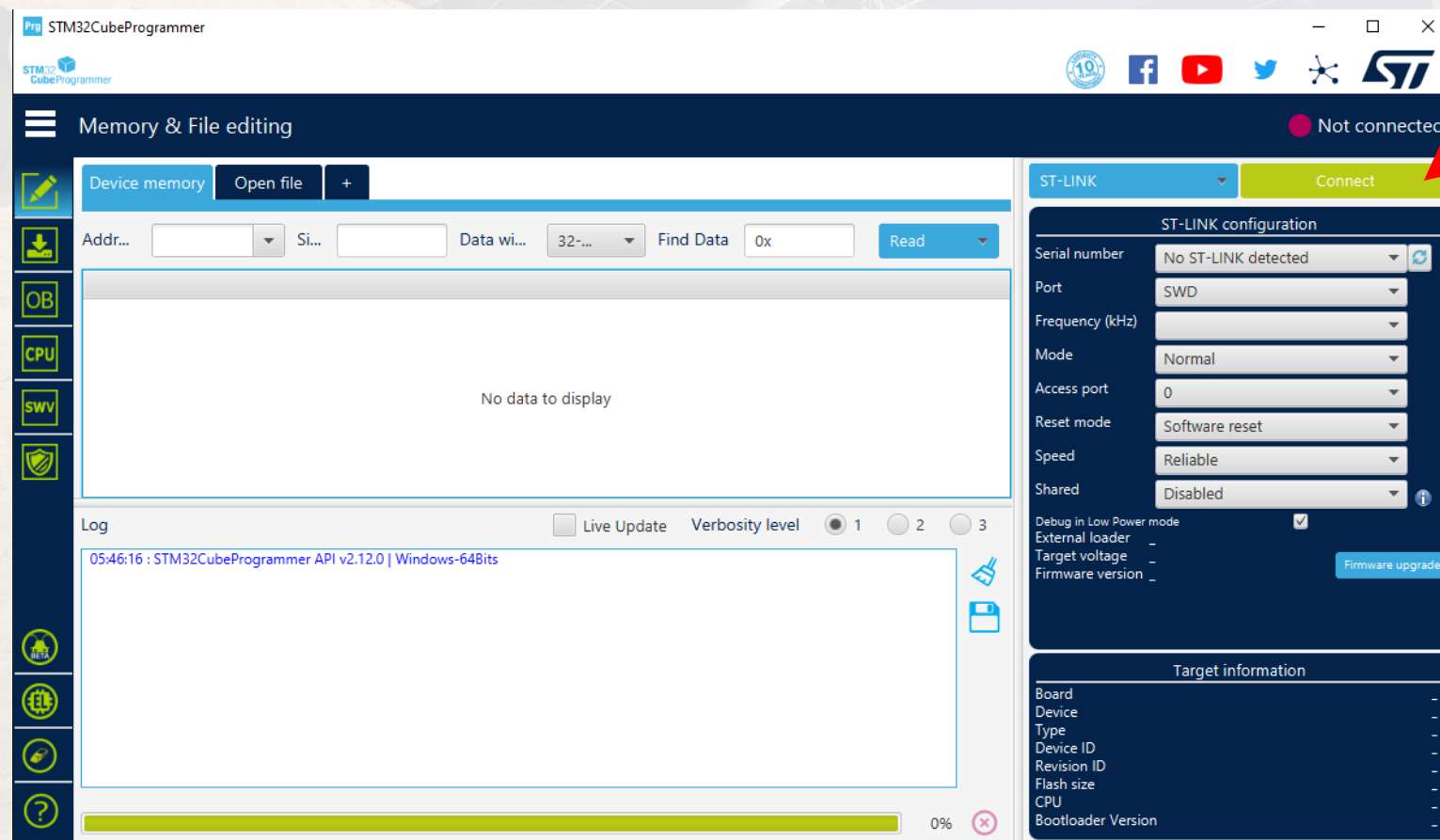


3.3V | GND | SWCLK | SWDIO



ST-Link/V3

Connect board to STM32CubeProgrammer



Click Erasing & Programming tab

STM32CubeProgrammer

Memory & File editing

Device memory Open file +

Addr... 0x08000000 Si... 0x400 Data wi... 32... Find Data 0x Read

Address	0	4	8	C	ASCII
0x08000000	2001C000	080024F1	080023E5	080023EB	.A. ñ\$. â#.. ë#..
0x08000010	080023F1	080023F7	080023FD	00000000	ñ#.. ÷#.. ý#.....
0x08000020	00000000	00000000	00000000	08002403\$. ..
0x08000030	08002411	00000000	0800241F	0800242D	.\$.....\$. -\$. ..
0x08000040	08002541	08002541	08002541	08002541	A%.. A%.. A%.. A%..
0x08000050	08002541	08002541	08002541	08002541	A%.. A%.. A%.. A%..
0x08000060	08002541	08002439	08002541	08002449	A%.. 9\$. A%.. I\$. ..

Log

15:25:39 : Debug in Low Power mode is not supported for this device.
 15:25:39 : UPLOADING OPTION BYTES DATA ...
 15:25:39 : Bank : 0x00
 15:25:39 : Address : 0x40022020
 15:25:39 : Size : 84 Bytes
 15:25:39 : UPLOADING ...
 15:25:39 : Size : 1024 Bytes
 15:25:39 : Address : 0x08000000
 15:25:39 : Read progress:
 15:25:39 : Data read successfully
 15:25:39 : Time elapsed during the read operation is: 00:00:00.007

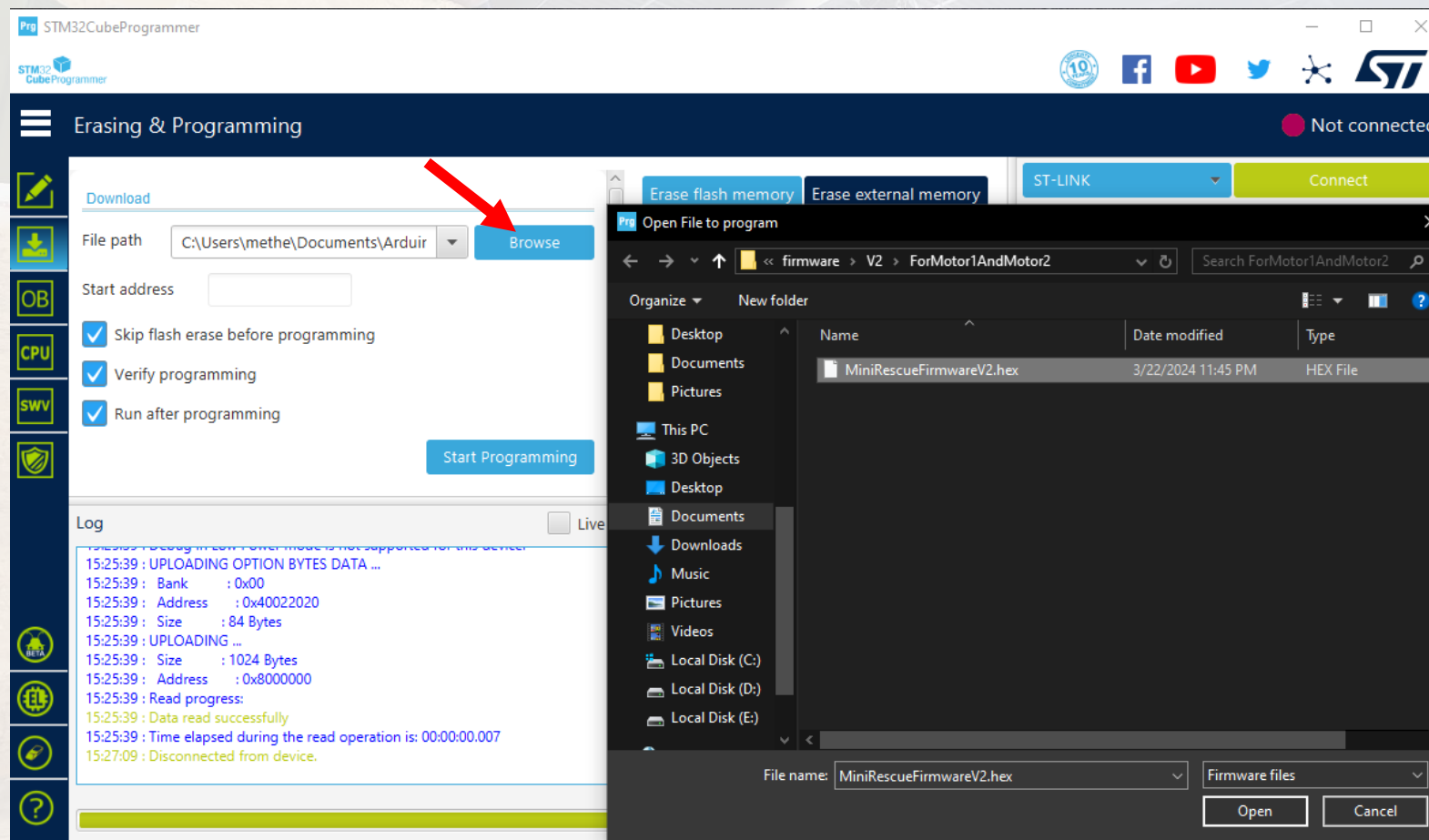
ST-LINK configuration

Serial number 55FF6C0649845550405119...
 Port SWD
 Frequency (kHz) 4000
 Mode Normal
 Access port 0
 Reset mode Software reset
 Speed Reliable
 Shared Disabled

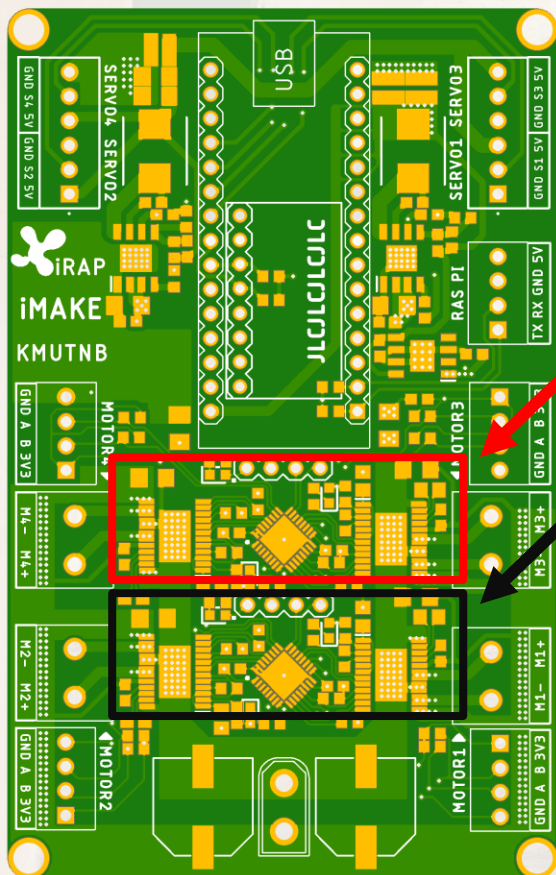
Target information

Board --
 Device STM32G491xC/E
 Type MCU
 Device ID 0x479
 Revision ID Rev Z
 Flash size 256 KB
 CPU Cortex-M4
 Bootloader Version 0xD2

Click Browse and select firmware in folder iRAP_RMRCBreakoutV2



C:\Users\YourComputerName\Documents\Arduino\libraries\iRAP_RMRCBreakoutV2\firmware\V2\ForMotor1AndMotor2

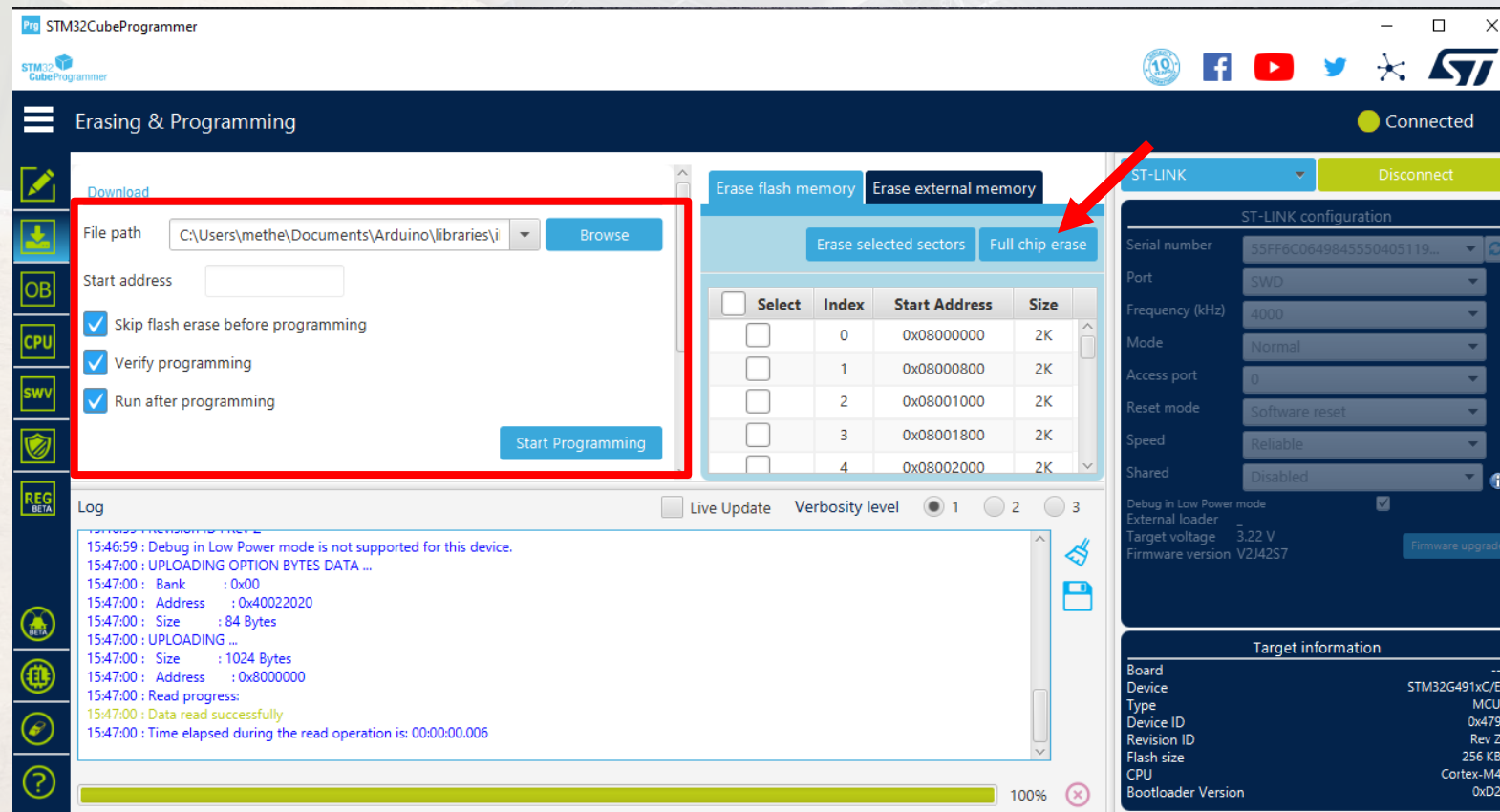


ForMotor3AndMotor4

ForMotor3AndMotor4

iRAP_RMRCBreakoutV2 > firmware > V2			
Search V2			
Name	Date modified	Type	Size
ForMotor1AndMotor2	3/22/2024 11:47 PM	File folder	
ForMotor3AndMotor4	3/22/2024 11:48 PM	File folder	

Setting program and click Full chip erase



The screenshot shows the STM32CubeProgrammer interface with the 'Erasing & Programming' tab selected. The 'Download' section is highlighted with a red box, and the 'Full chip erase' button is indicated by a red arrow.

Download Section:

- File path: C:\Users\methe\Documents\Arduino\libraries\i
- Start address:
- ☒ Skip flash erase before programming
- ☒ Verify programming
- ☒ Run after programming
- Start Programming

Erase flash memory / Erase external memory:

- Erase selected sectors
- Full chip erase

Select	Index	Start Address	Size
<input type="checkbox"/>	0	0x08000000	2K
<input type="checkbox"/>	1	0x08000800	2K
<input type="checkbox"/>	2	0x08001000	2K
<input type="checkbox"/>	3	0x08001800	2K
<input type="checkbox"/>	4	0x08002000	2K

Log:

```

15:46:59 : Debug in Low Power mode is not supported for this device.
15:47:00 : UPLOADING OPTION BYTES DATA ...
15:47:00 : Bank : 0x00
15:47:00 : Address : 0x40022020
15:47:00 : Size : 84 Bytes
15:47:00 : UPLOADING ...
15:47:00 : Size : 1024 Bytes
15:47:00 : Address : 0x80000000
15:47:00 : Read progress:
15:47:00 : Data read successfully
15:47:00 : Time elapsed during the read operation is: 00:00:00.006
  
```

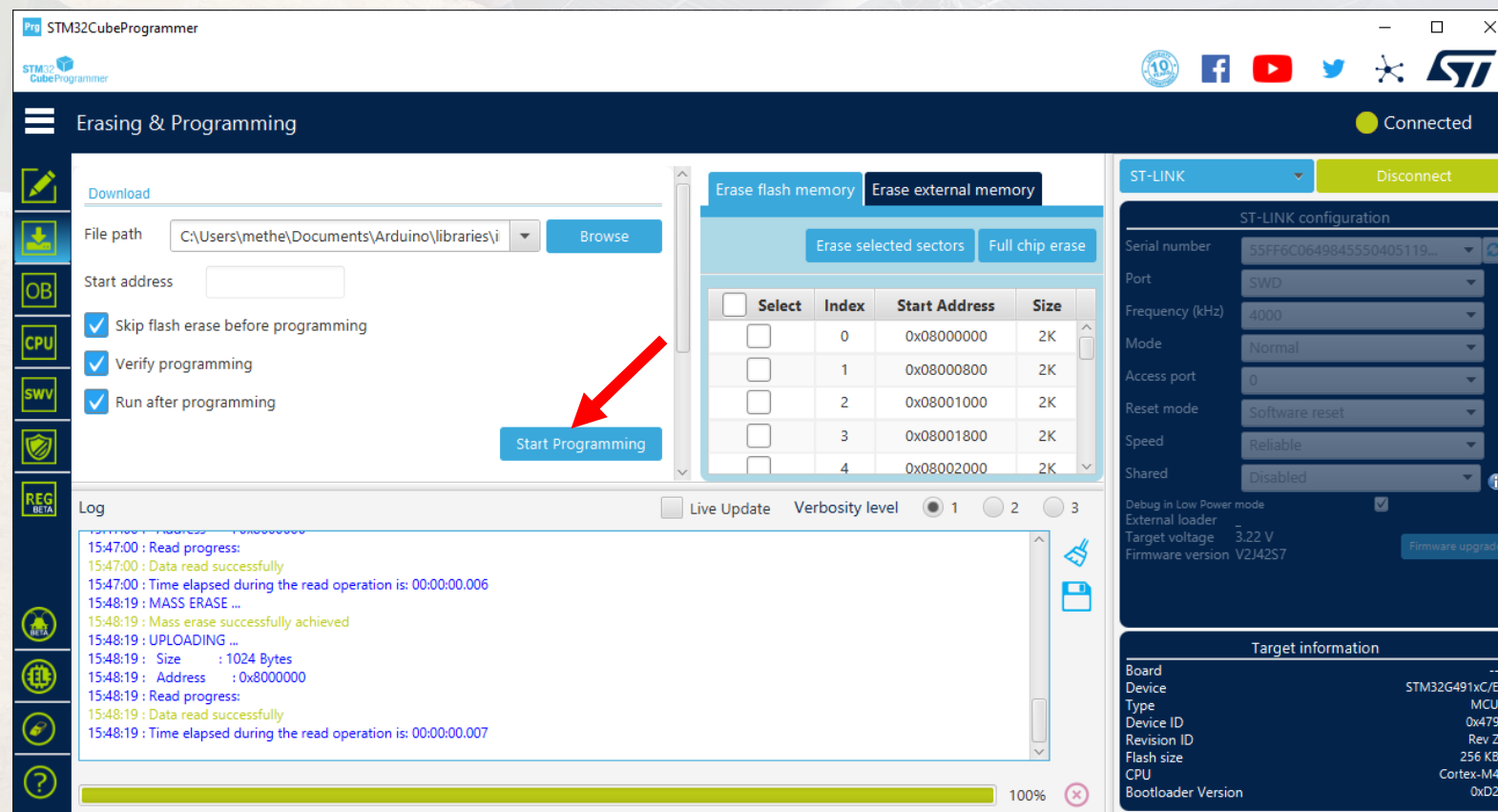
ST-LINK configuration:

- Serial number: 55FF6C0649845550405119...
- Port: SWD
- Frequency (kHz): 4000
- Mode: Normal
- Access port: 0
- Reset mode: Software reset
- Speed: Reliable
- Shared: Disabled
- Debug in Low Power mode: ☒
- External loader:
- Target voltage: 3.22 V
- Firmware version: V2J4257
- Firmware upgrade

Target information:

- Board:
- Device: STM32G491xC/E
- Type: MCU
- Device ID: 0x479
- Revision ID: Rev Z
- Flash size: 256 KB
- CPU: Cortex-M4
- Bootloader Version: 0xD2

Click Start Programming



The screenshot shows the STM32CubeProgrammer software interface. The 'Erasing & Programming' tab is active. The 'Download' section shows a file path and a 'Start Programming' button, which is highlighted with a red arrow. The 'Erase flash memory' section shows a table of sectors to be erased.

Select	Index	Start Address	Size
<input type="checkbox"/>	0	0x08000000	2K
<input type="checkbox"/>	1	0x08000800	2K
<input type="checkbox"/>	2	0x08001000	2K
<input type="checkbox"/>	3	0x08001800	2K
<input type="checkbox"/>	4	0x08002000	2K

The 'Log' section shows the following messages:

```

15:47:00 : Read progress:
15:47:00 : Data read successfully
15:47:00 : Time elapsed during the read operation is: 00:00:00.006
15:48:19 : MASS ERASE ...
15:48:19 : Mass erase successfully achieved
15:48:19 : UPLOADING ...
15:48:19 : Size : 1024 Bytes
15:48:19 : Address : 0x8000000
15:48:19 : Read progress:
15:48:19 : Data read successfully
15:48:19 : Time elapsed during the read operation is: 00:00:00.007
  
```

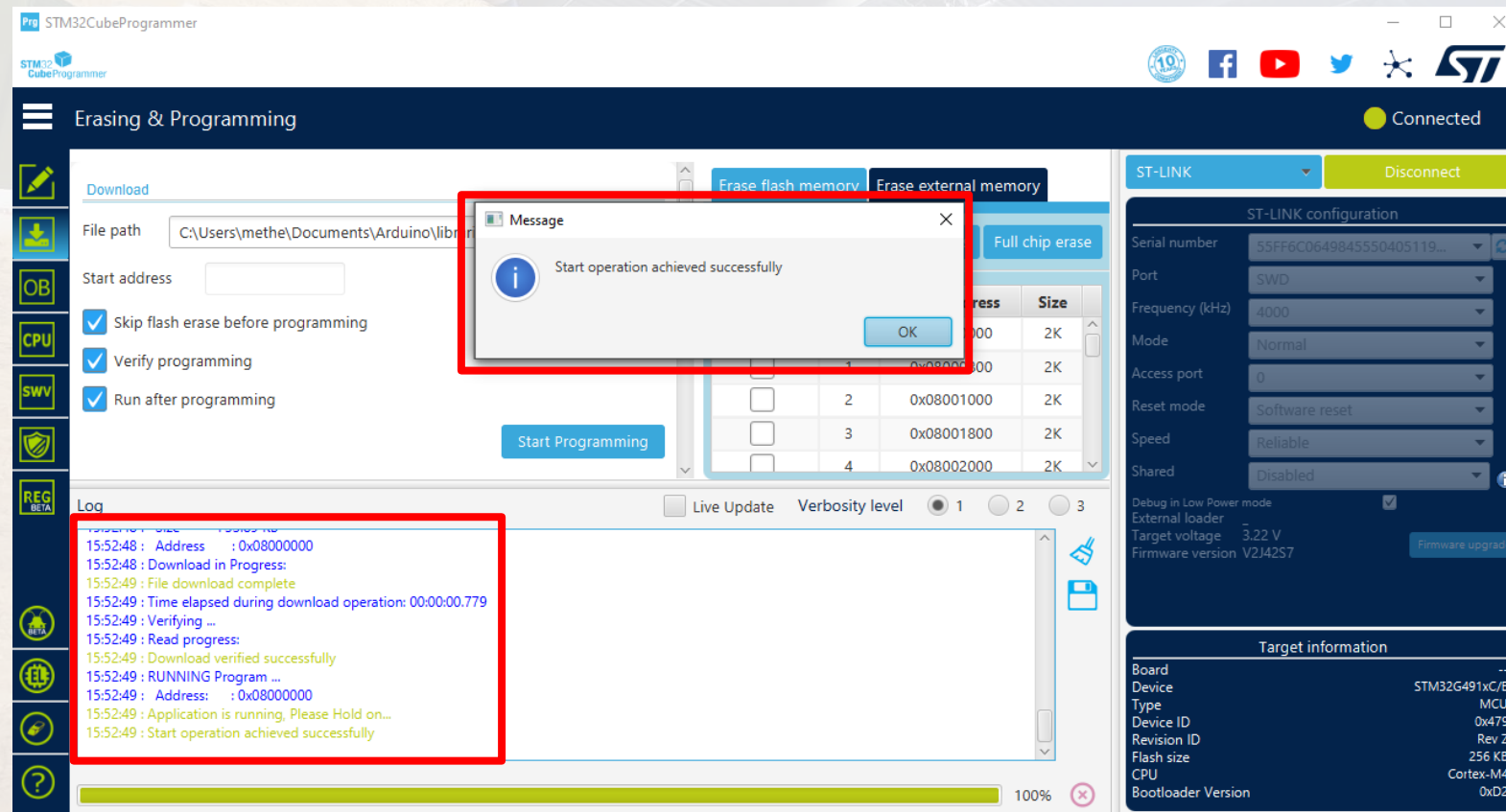
The 'ST-LINK' section shows the following configuration:

- Serial number: 55FF6C0649845550405119...
- Port: SWD
- Frequency (kHz): 4000
- Mode: Normal
- Access port: 0
- Reset mode: Software reset
- Speed: Reliable
- Shared: Disabled
- Debug in Low Power mode: ☒
- External loader: ☒
- Target voltage: 3.22 V
- Firmware version: V2J4257

The 'Target information' section shows the following details:

- Board: --
- Device: STM32G491xC/E
- Type: MCU
- Device ID: 0x479
- Revision ID: Rev Z
- Flash size: 256 KB
- CPU: Cortex-M4
- Bootloader Version: 0xD2

Upgrade Finish



The screenshot shows the STM32CubeProgrammer interface with the 'Erasing & Programming' tab selected. A 'Message' dialog box is displayed in the center, indicating 'Start operation achieved successfully'. The 'Log' window at the bottom shows the following messages:

```

15:52:48 : Address : 0x08000000
15:52:48 : Download in Progress:
15:52:49 : File download complete
15:52:49 : Time elapsed during download operation: 00:00:00.779
15:52:49 : Verifying ...
15:52:49 : Read progress:
15:52:49 : Download verified successfully
15:52:49 : RUNNING Program ...
15:52:49 : Address : 0x08000000
15:52:49 : Application is running, Please Hold on...
15:52:49 : Start operation achieved successfully
  
```

The 'ST-LINK' configuration panel on the right shows the following settings:

- Serial number: 55FF6C0649845550405119...
- Port: SWD
- Frequency (kHz): 4000
- Mode: Normal
- Access port: 0
- Reset mode: Software reset
- Speed: Reliable
- Shared: Disabled
- Debug in Low Power mode: ☒
- External loader: ☐
- Target voltage: 3.22 V
- Firmware version: V2J4257

The 'Target information' panel on the right shows the following details:

- Board: --
- Device: STM32G491xC/E
- Type: MCU
- Device ID: 0x479
- Revision ID: Rev Z
- Flash size: 256 KB
- CPU: Cortex-M4
- Bootloader Version: 0xD2