

Program download and simulation

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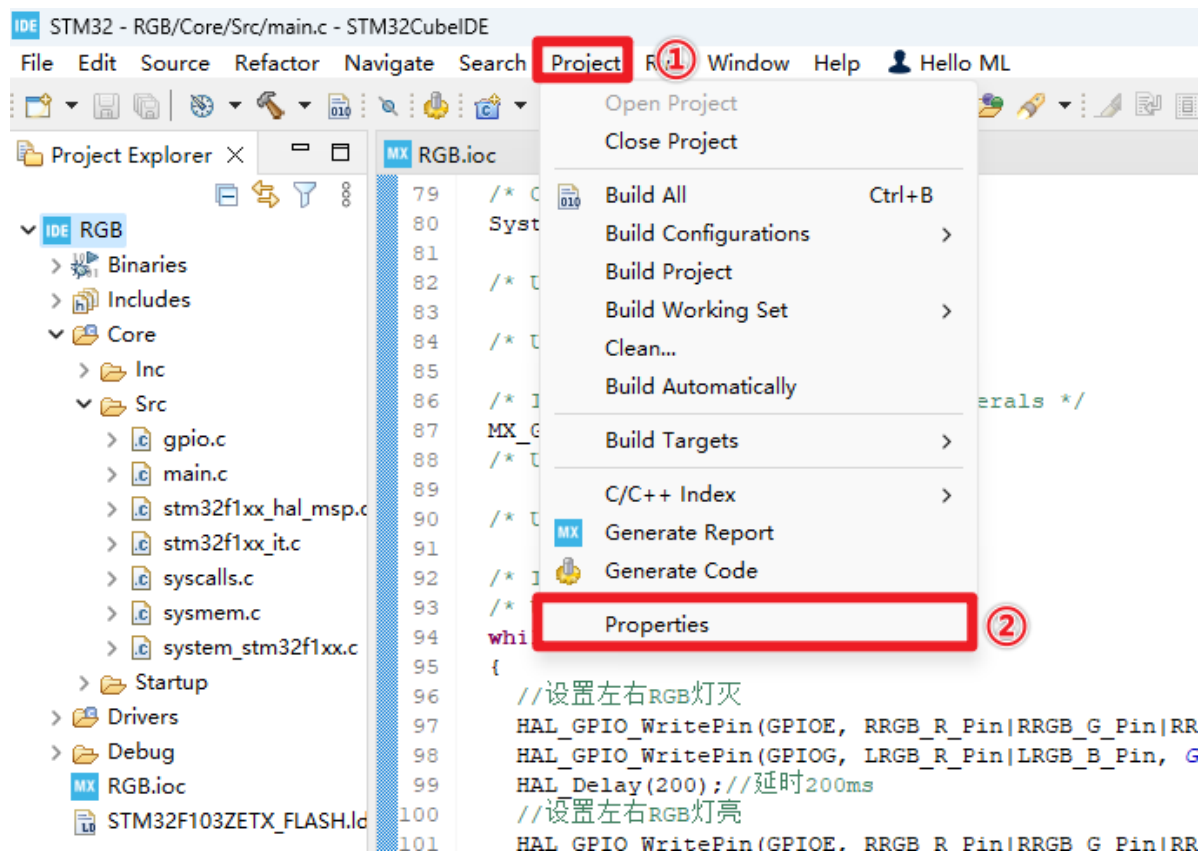
1、FlyMCU: Program download

FlyMCU software can download the compiled program code (hex file) to the target MCU chip through the serial port.

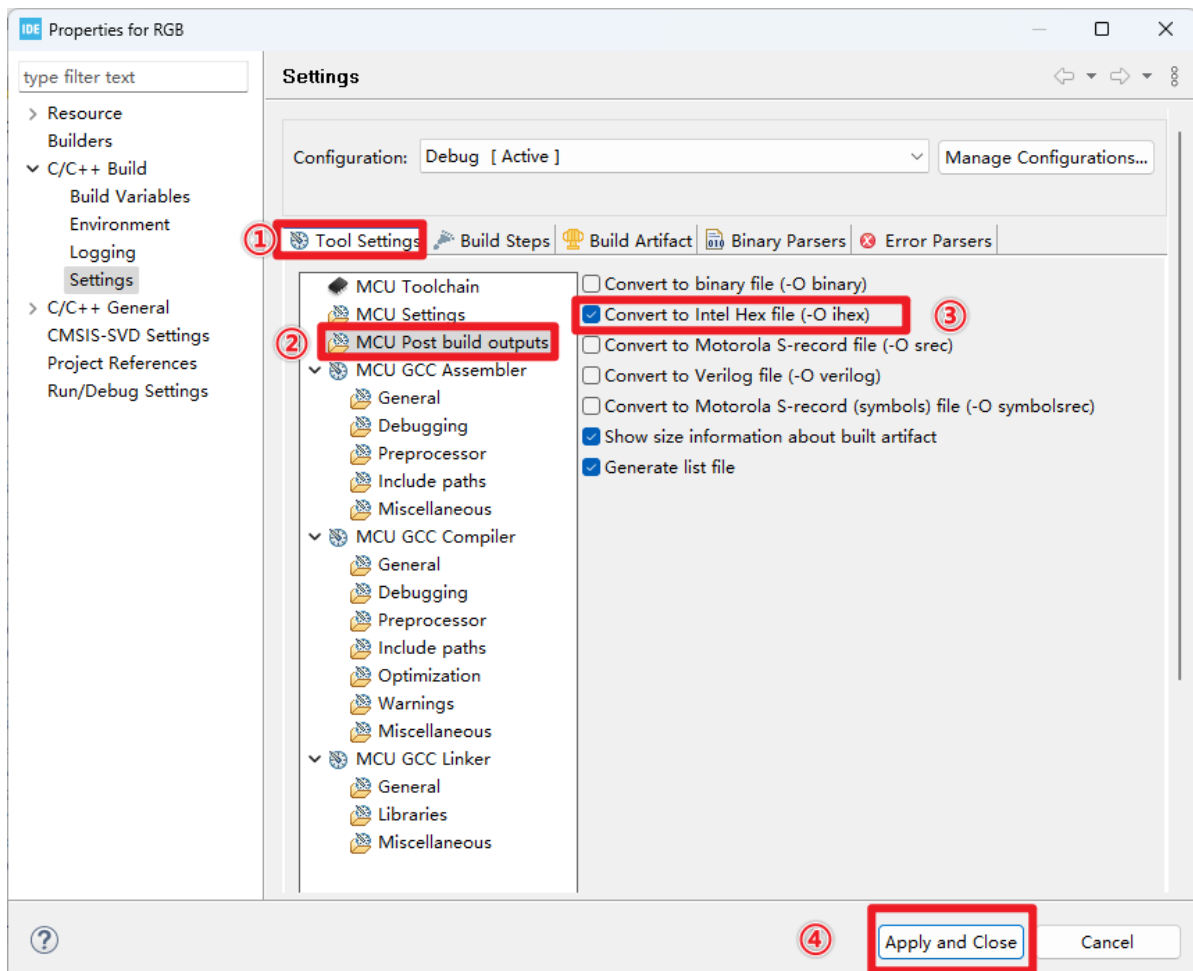
1.1、Generate.hex files

Using STM32CubeIDE will not generate.hex files by default,You need to check the appropriate option.

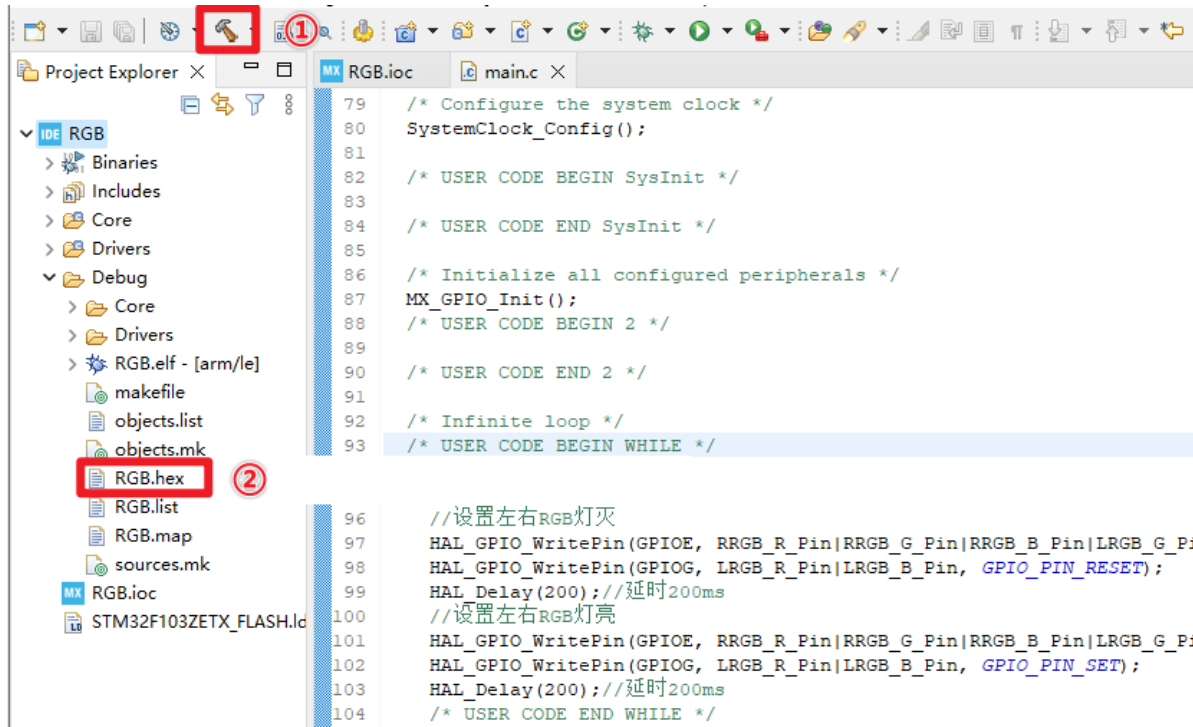
- Properties



- Check the appropriate options



• compilation



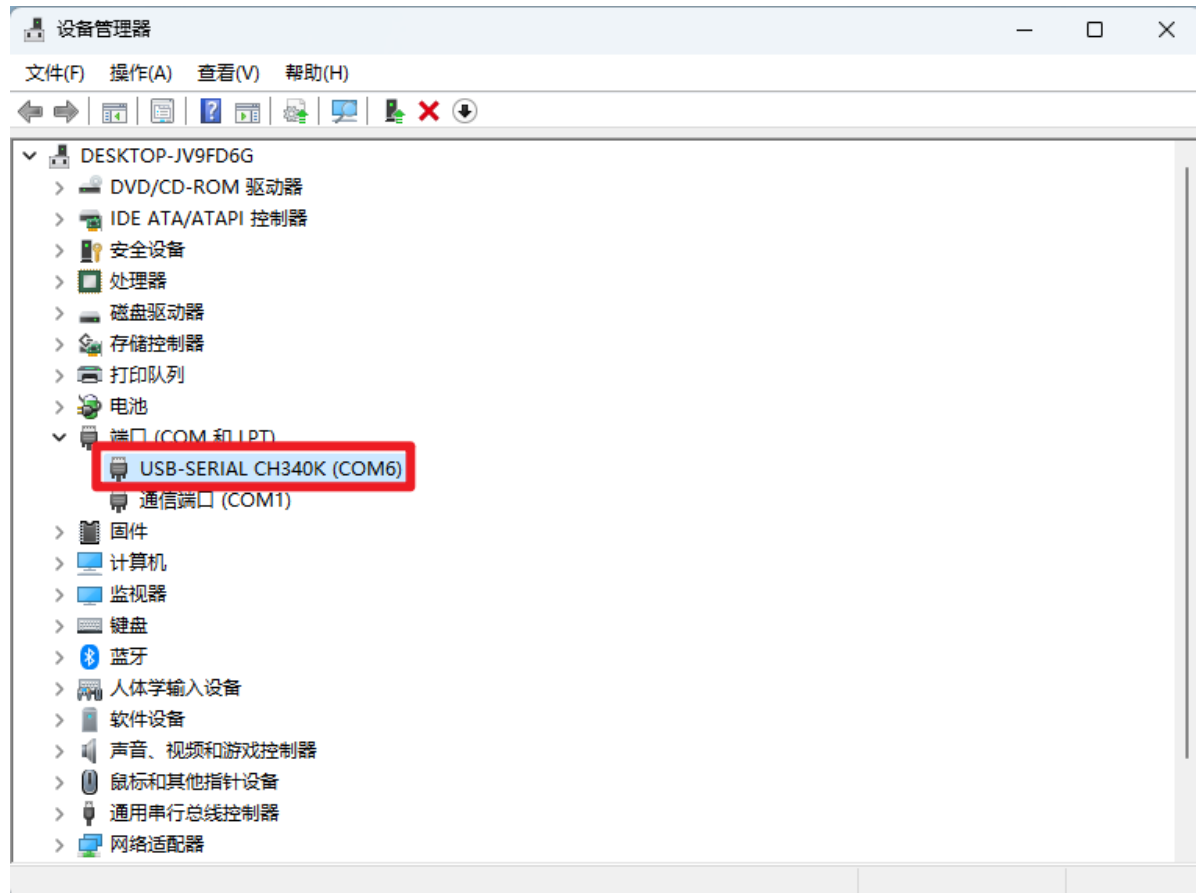
.hex file location: Debug folder of the project file

1.2、Downloading the program

Using the data line can be through the development board Type-C interface burning program;

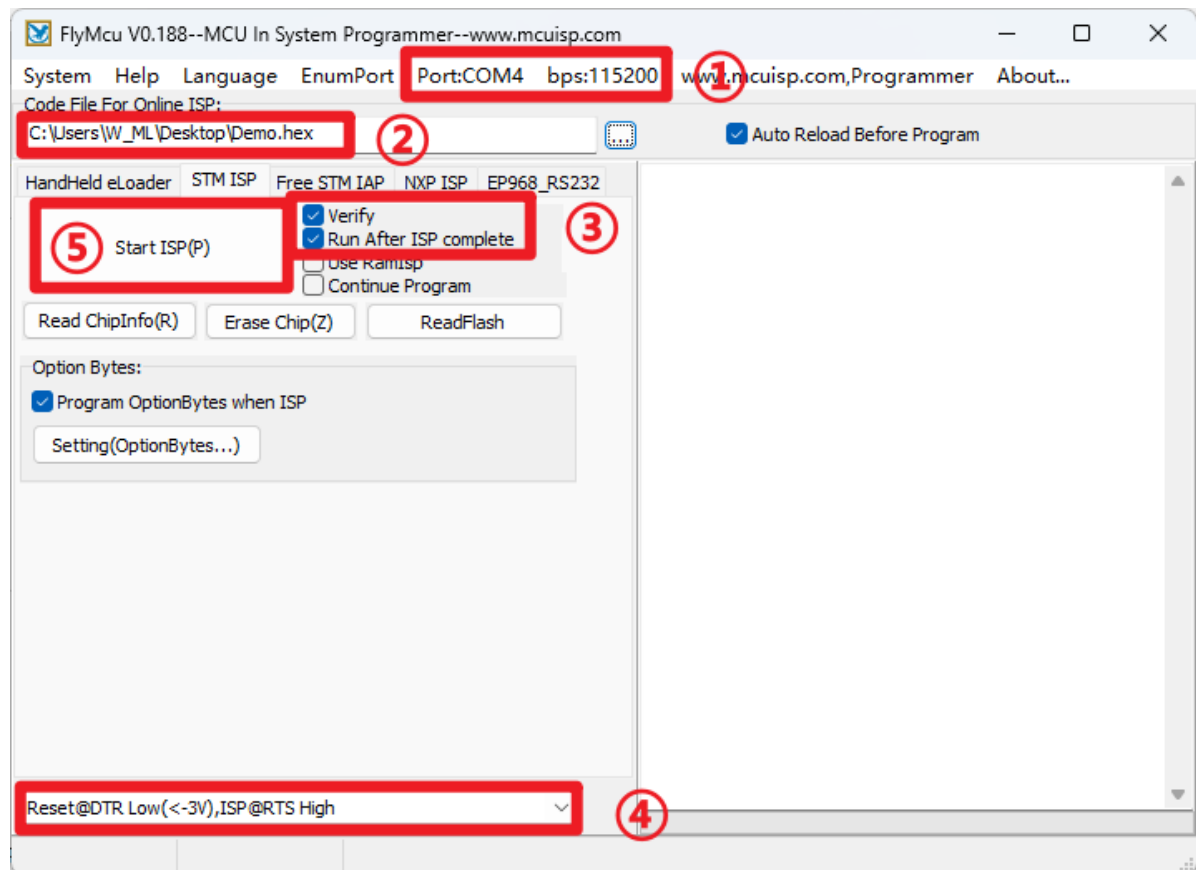
After connecting the computer with Type-C data cable, you can check the serial port number of the corresponding device in the device manager: port.

- **Device Manager**



- **Flymcu**

BootLoader options: DTR low reset, RTS high reset into BootLoader



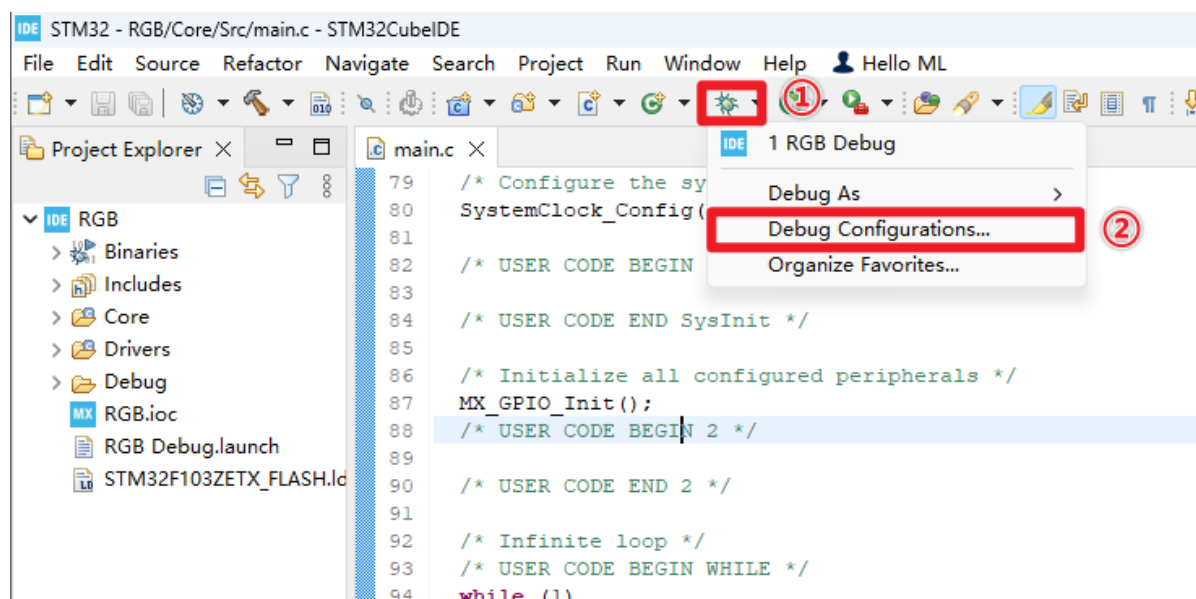
1.3、Running the program

After downloading the program successfully, press the RESET button of the development board to observe whether the phenomenon of the development board is normal.

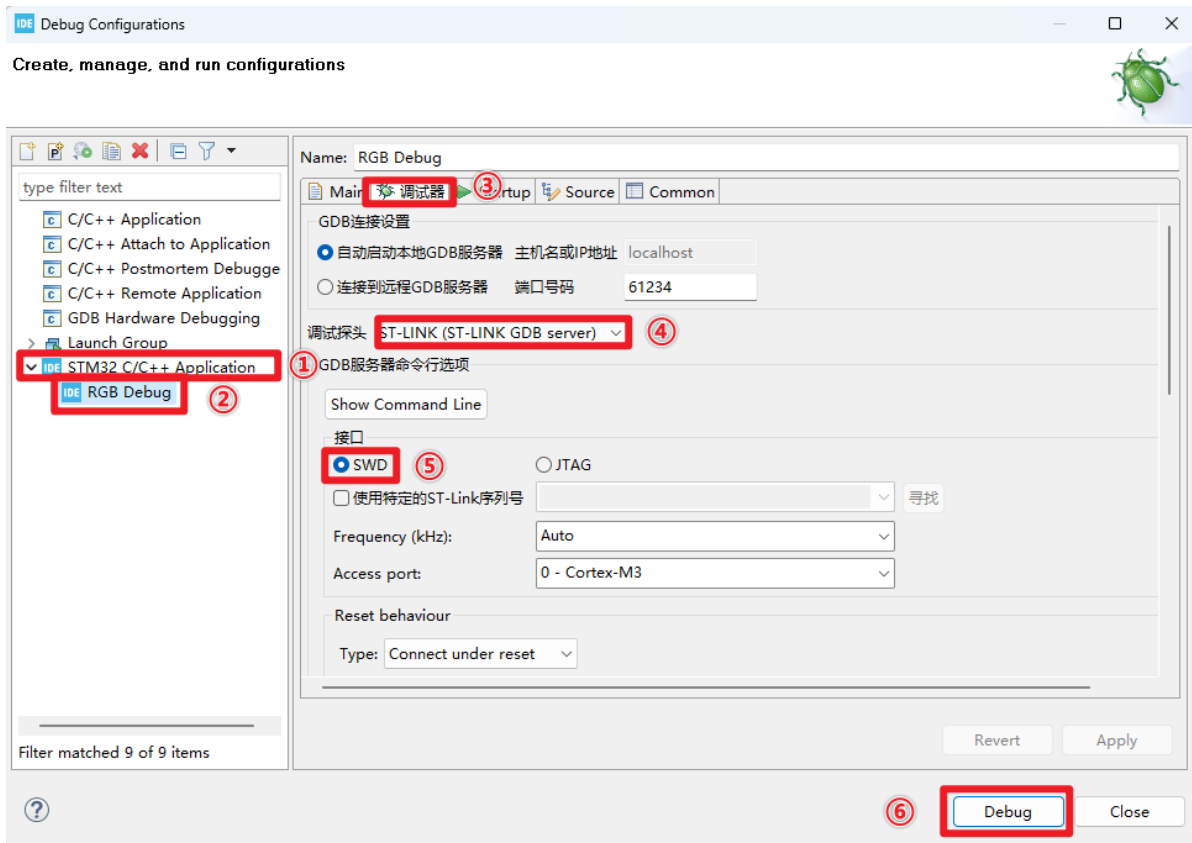
2、ST-Link: Program download and simulation

To download a program using ST-Link, you need to check and set the debugger to ST-Link.

2.1、Debug configuration



- ST-Link → SWD



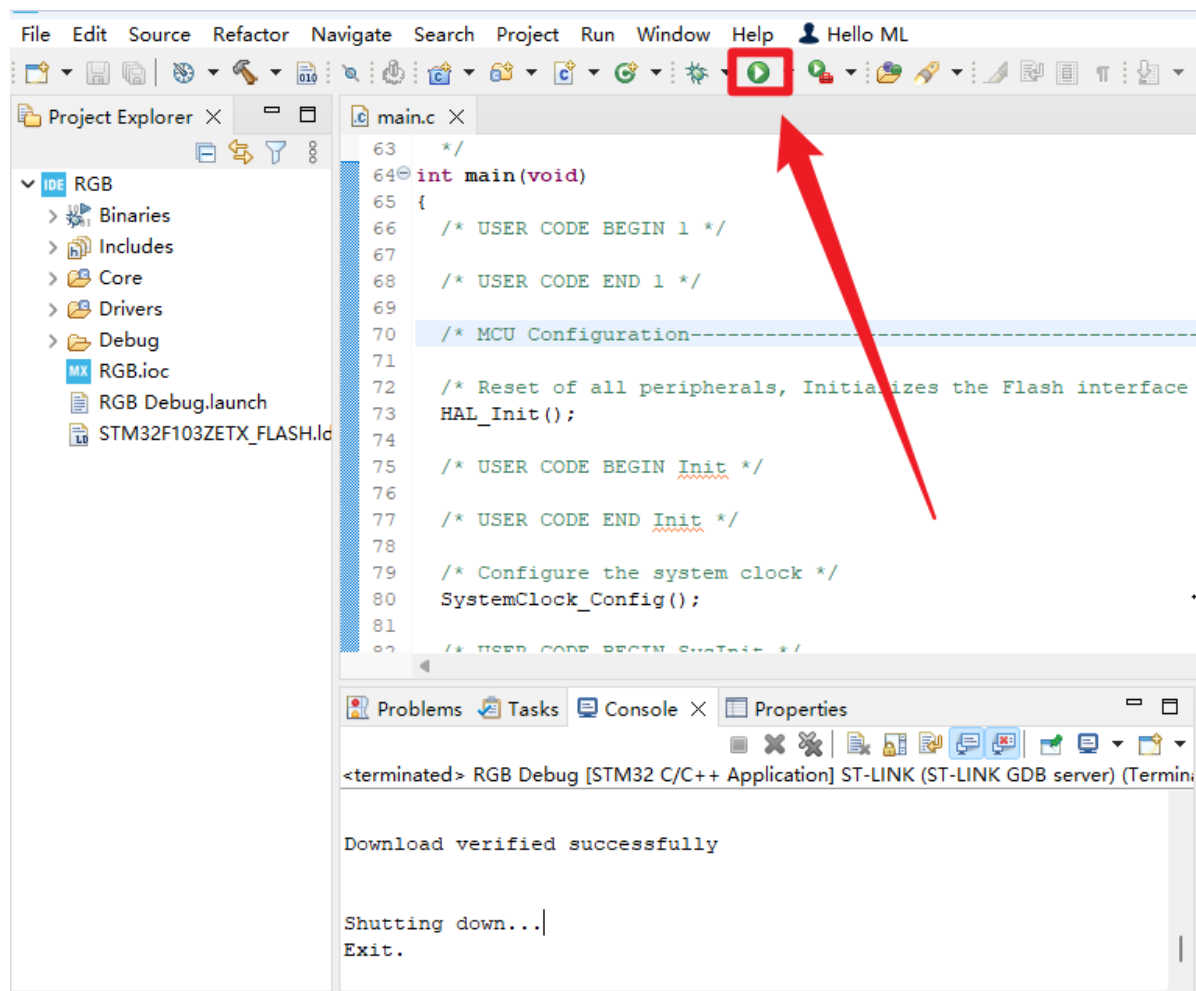
• Hardware wiring

Before using ST-Link to download programs, you need to use four mother-to-mother dupont wires to connect the ST-Link to the development board, and the ST-Link is connected to the computer through a USB interface.

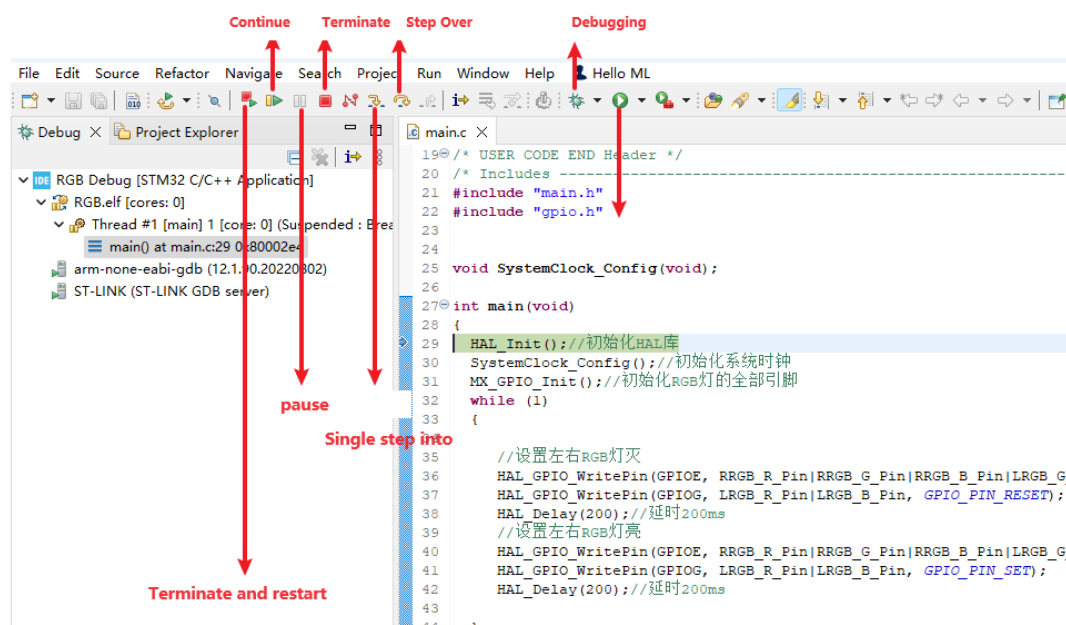
ST-Link	The SWD interface of the board
3.3V	3V3
SWCLK	SWCLK
SWDIO	SWDIO
GND	GND

2.2、Program download

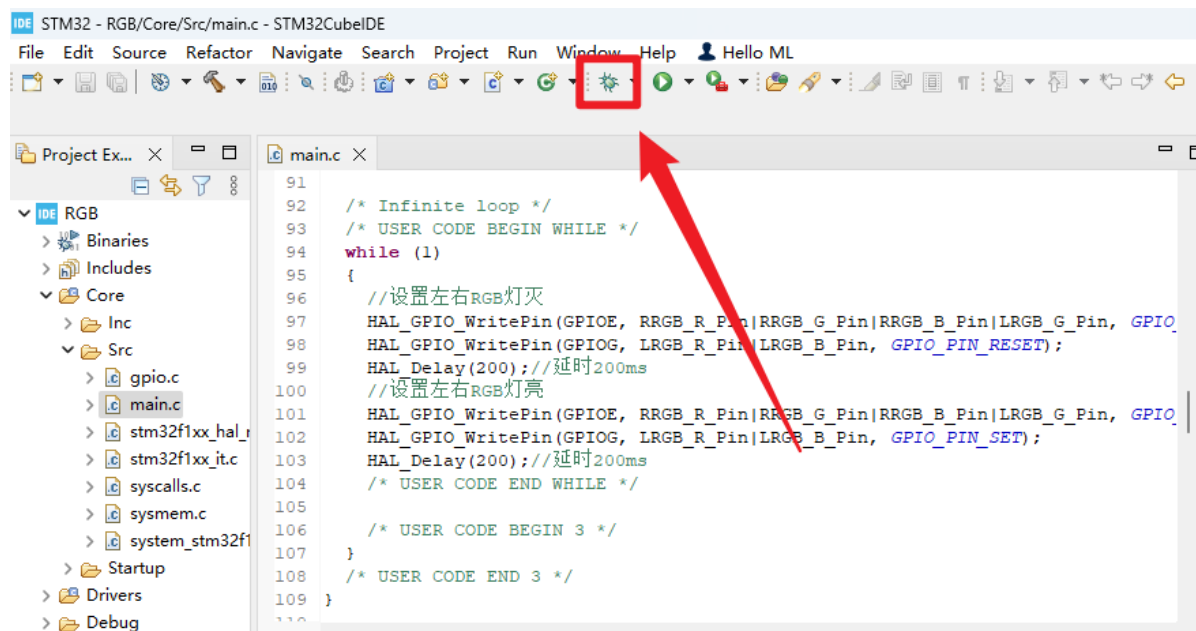
Click the Debug icon



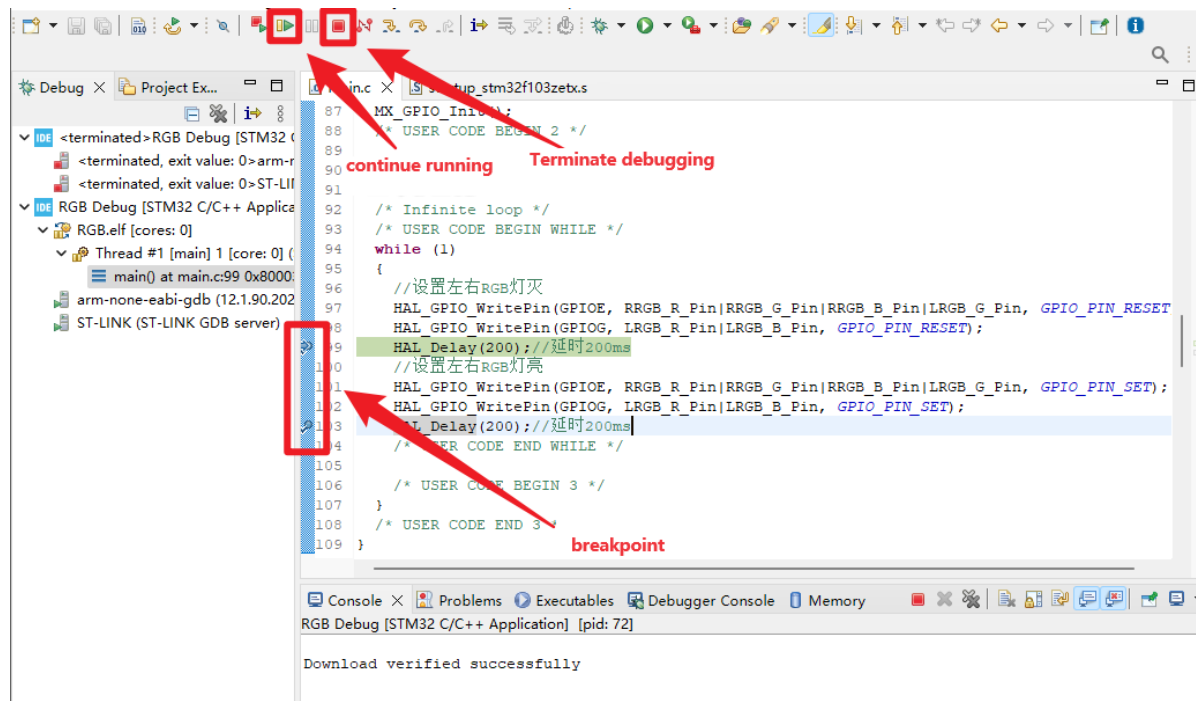
2.3、Program simulation



- **Debug:** Click on "Little Beetle"

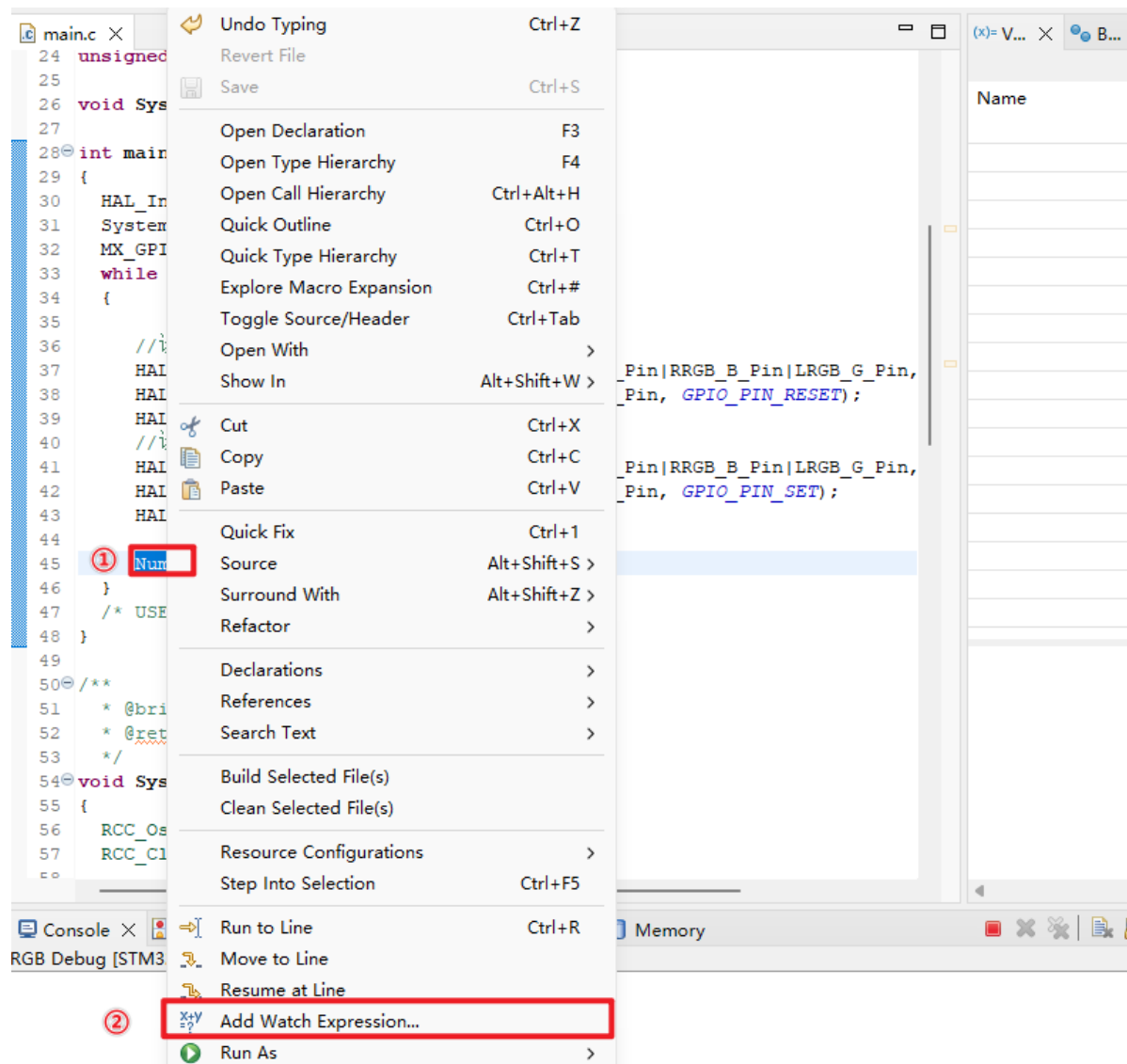


• Breakpoint debugging

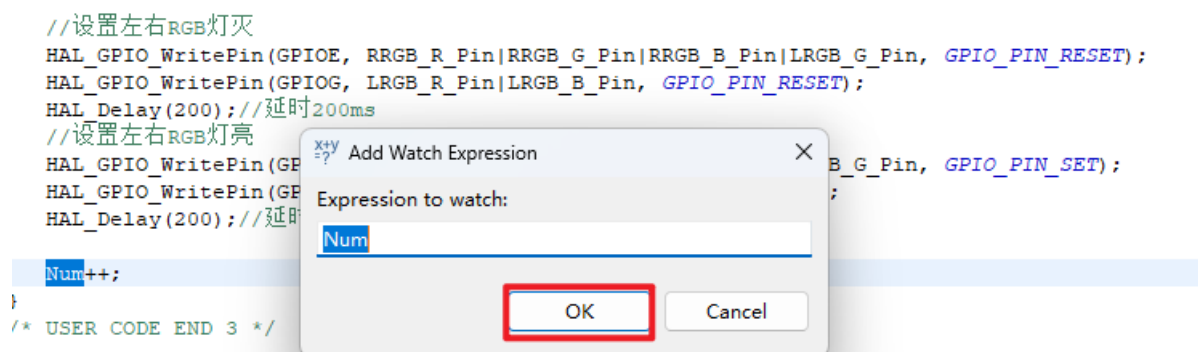


• Viewing variable values

In debug mode, select the Num variable you want to view (here's how to view the Num variable)



Variables can be added to the Expression window by right-clicking and selecting the appropriate option, or by manually entering the variable name



When the Num variable is added to the Express window, the value can be viewed in the Expression window, and the actual value of the variable is displayed only when the program is stopped

The live expression window allows you to view the changes of global variables in real time

(x)= Varia... Break... Expre... × 1010 0101 Regis... 现场表... SFRs		
Expression	Type	Value
(x)= Num	unsigned int	10
+ Add new expression		

Breakpoint: Double-click on the leftmost part of the current statement to show a blue breakpoint, where the program stops running

Keep running: When the program runs to the breakpoint position, you can use this button to continue running down

Terminate debugging: Exit program debugging