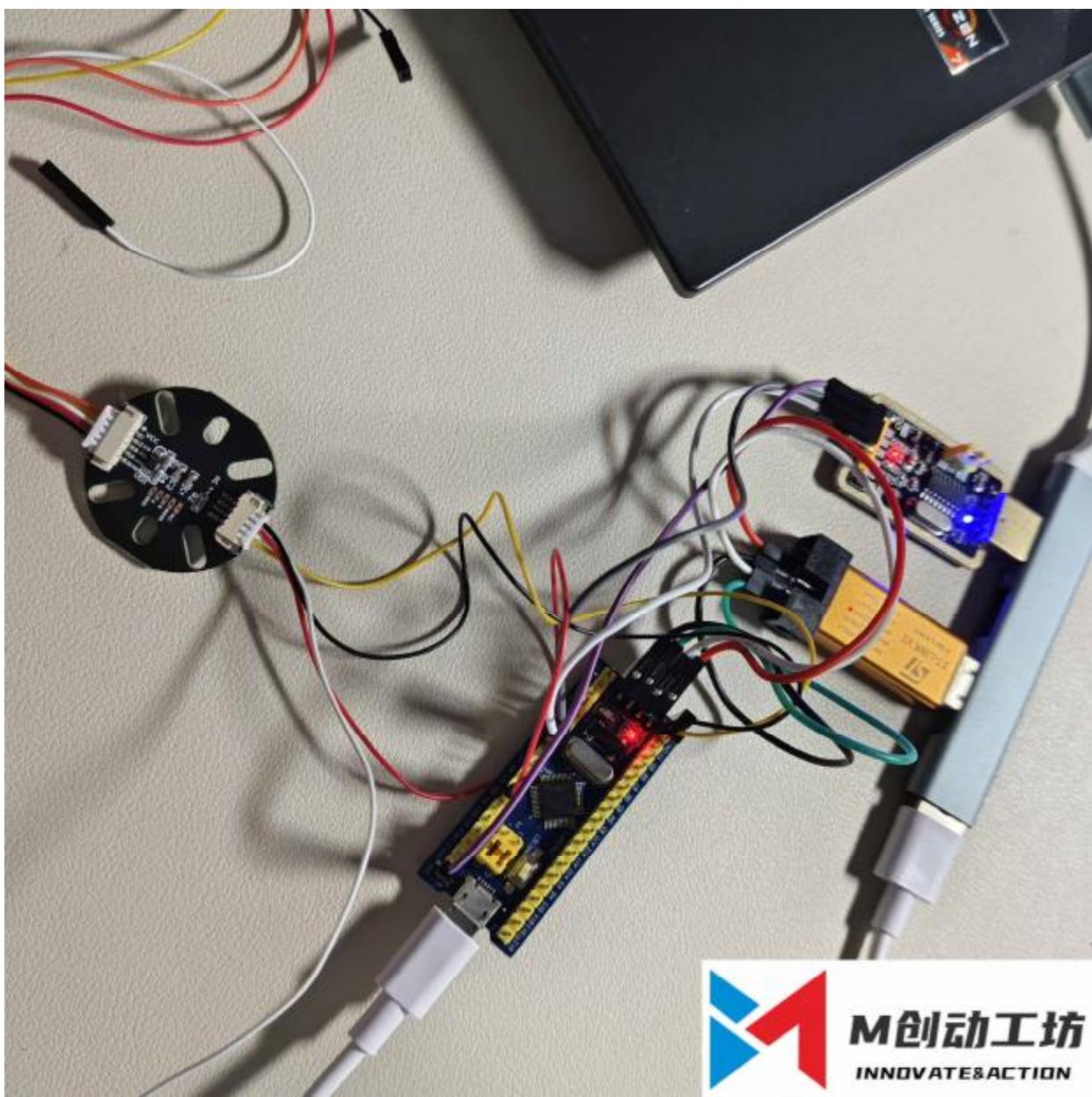


STM32 读取 MT6701 磁编码器 (PWM)

M 创动工坊提供 mcdgf.taobao.com

一、硬件准备



STM32 核心板, MT6701 磁编码器带线 (M 创动工坊提供), ST-link, USB 线等

二、软件准备

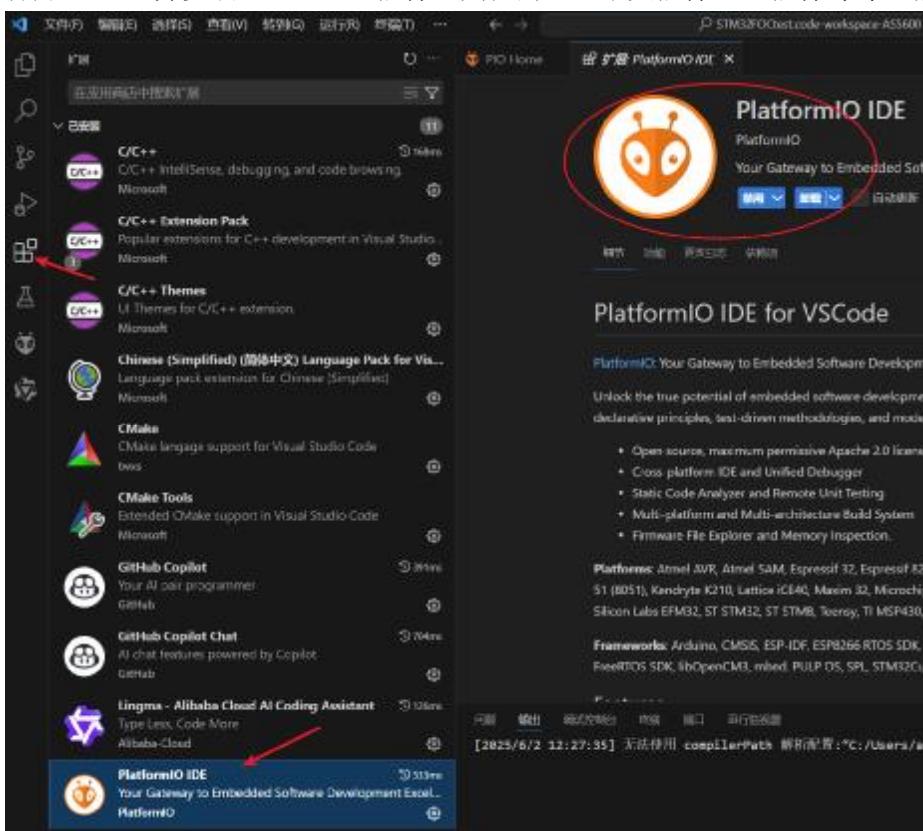
1. 安装微软的 Vscode, 网上很多教程, 且有说明书



安装好 stlink 驱动



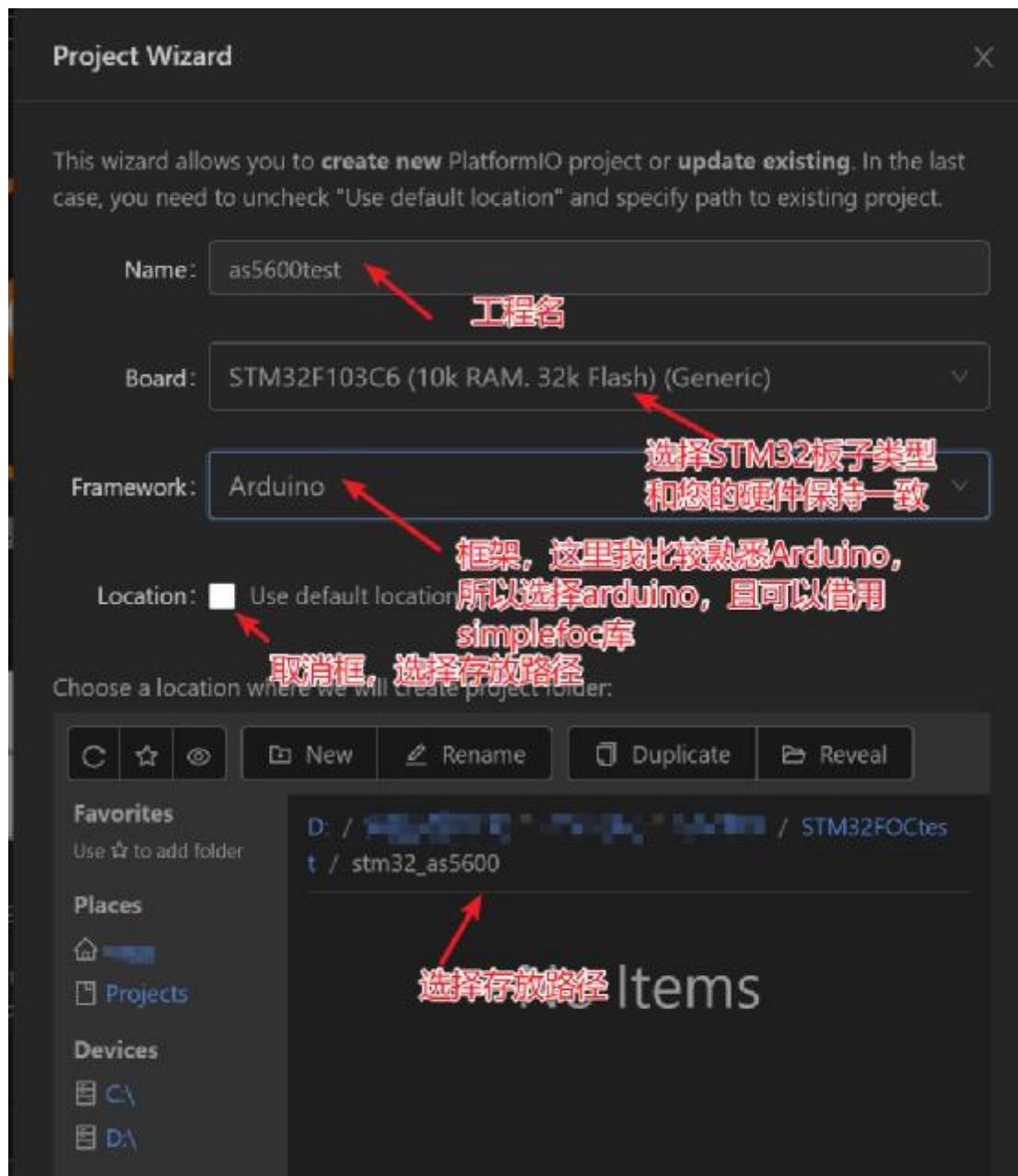
2. 打开 vscode 并安装 PlatformIO 插件。其他的一些中文插件、AI 插件等等，根据需要安装



3. 打开插件，新建工程



4. 重要的设置



5. Ini 文件设置, 这是关键

platformio.ini

```

platformio.ini
1 ; PlatformIO Project Configuration File
2 ;
3 ; Build options: build flags, source filter
4 ; Upload options: custom upload port, speed and extra flags
5 ; Library options: dependencies, extra library storages
6 ; Advanced options: extra scripting
7 ;
8 ; Please visit documentation for the other options and examples
9 ; https://docs.platformio.org/page/projectconf.html
10
11 [env:genericSTM32F103C6]
12 platform = ststm32
13 board = genericSTM32F103C6
14 framework = arduino
15

```

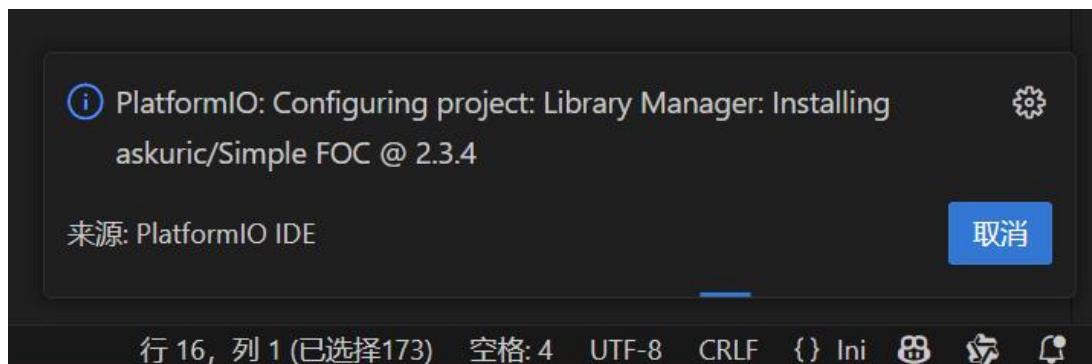
Ini文件设置

The screenshot shows the PlatformIO IDE interface. On the left is the Project Explorer with a folder named 'ASS5600TEST' containing '.pio', '.vscode', 'include', 'lib', 'src', 'test', '.gitignore', and 'platformio.ini'. The right pane is titled 'platformio.ini' and displays the configuration file content. A red box highlights the 'lib_deps' section, which includes the line 'askuric/Simple FOC@ 2.3.4'. To the right of the code editor, there are three numbered steps: 1. 将SimpleFOC库, 2. 定义板子, 3. 定义使用stlink协议。 The code editor has a status bar at the bottom with the text 'as5600test'.

```
platformio.ini
1 ; PlatformIO Project Configuration file
2 ;
3 ; Build options: build flags, source filter
4 ; Upload options: custom upload port, speed and extra flags
5 ; Library options: dependencies, extra library storages
6 ; Advanced options: extra scripting
7 ;
8 ; Please visit documentation for the other options and examples
9 ; https://docs.platformio.org/page/projectconf.html
10
11 [env:genericSTM32F103C6]
12 platform = ststm32
13 board = genericSTM32F103C6
14 framework = arduino
15
16 lib_deps =
17     askuric/Simple FOC@ 2.3.4
18 board_build.mcu = stm32f103c6t6
19 board_upload.maximum_size = 32768
20 upload_protocol = stlink
21 debug_tool = stlink
22 build_flags = -Os
23
```

```
lib_deps =
askuric/Simple FOC@ 2.3.4
board_build.mcu = stm32f103c6t6
board_upload.maximum_size = 32768
upload_protocol = stlink
debug_tool = stlink
build_flags = -Os
```

写好后，记得点保存，就开始自动下载库，右下角



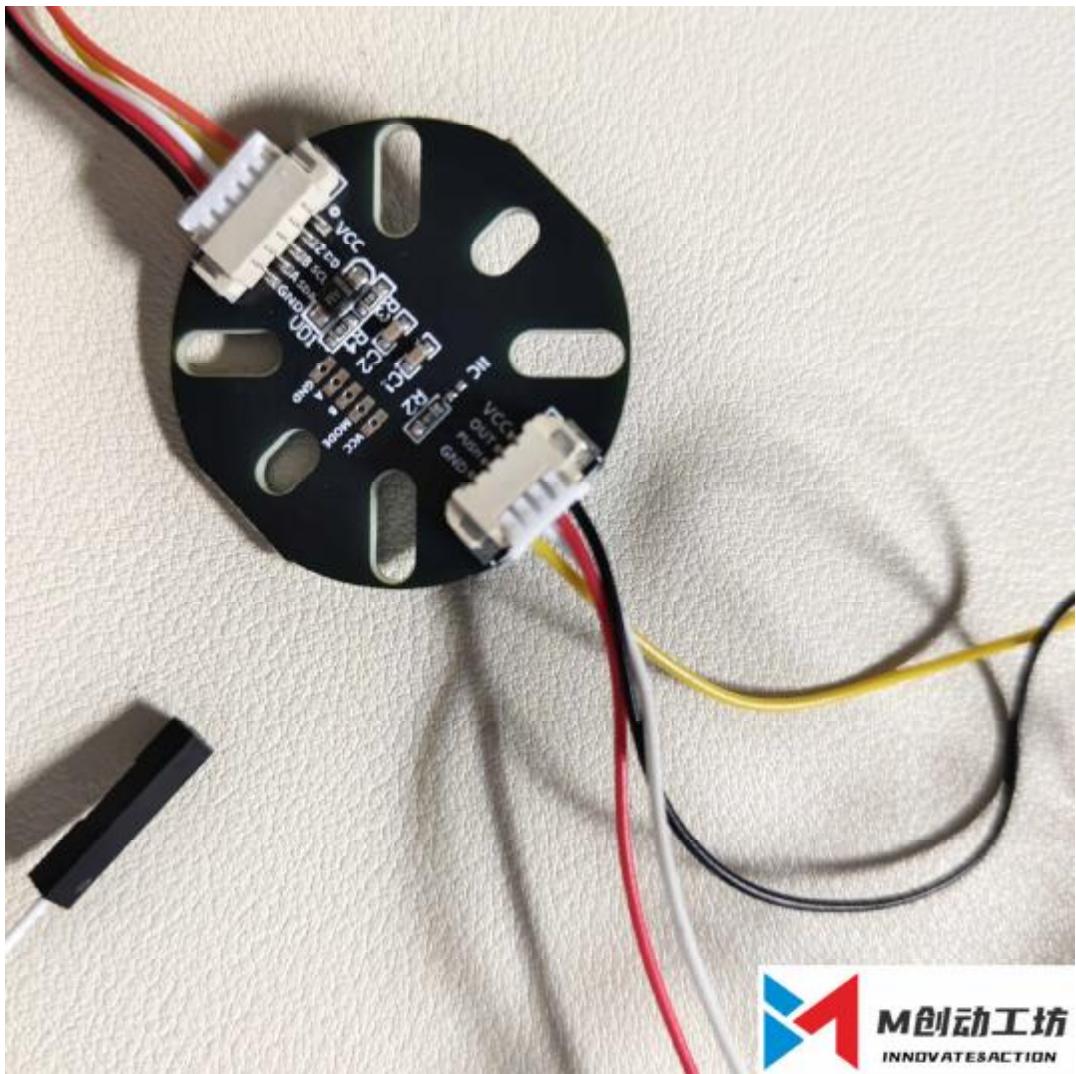
设置到这里就结束了。

三、接线

根据程序定义，接线

编码器与 STM32 接线：

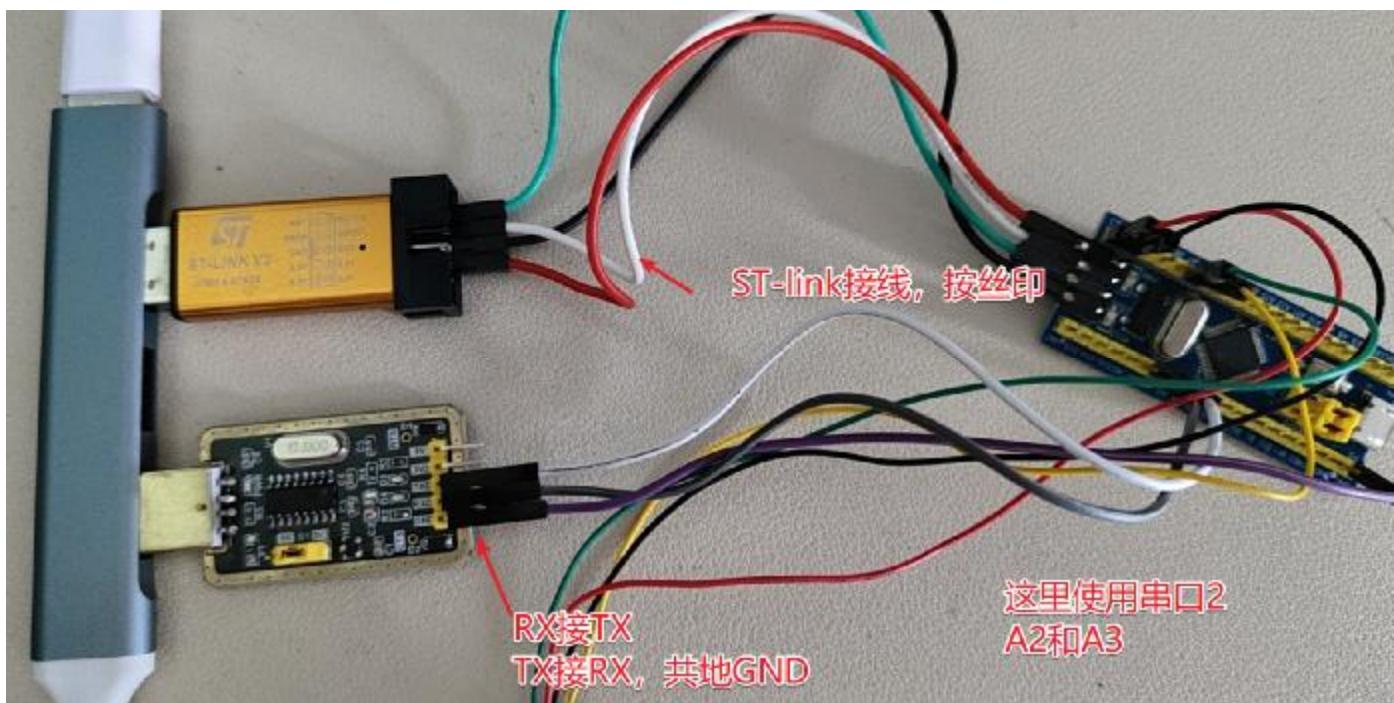
1. 编码器的 OUT 接 STM32 板子的 B0
2. 编码器的 VCC 接 3V3
3. 编码器的 GND 接 GND
4. PUSH 不接



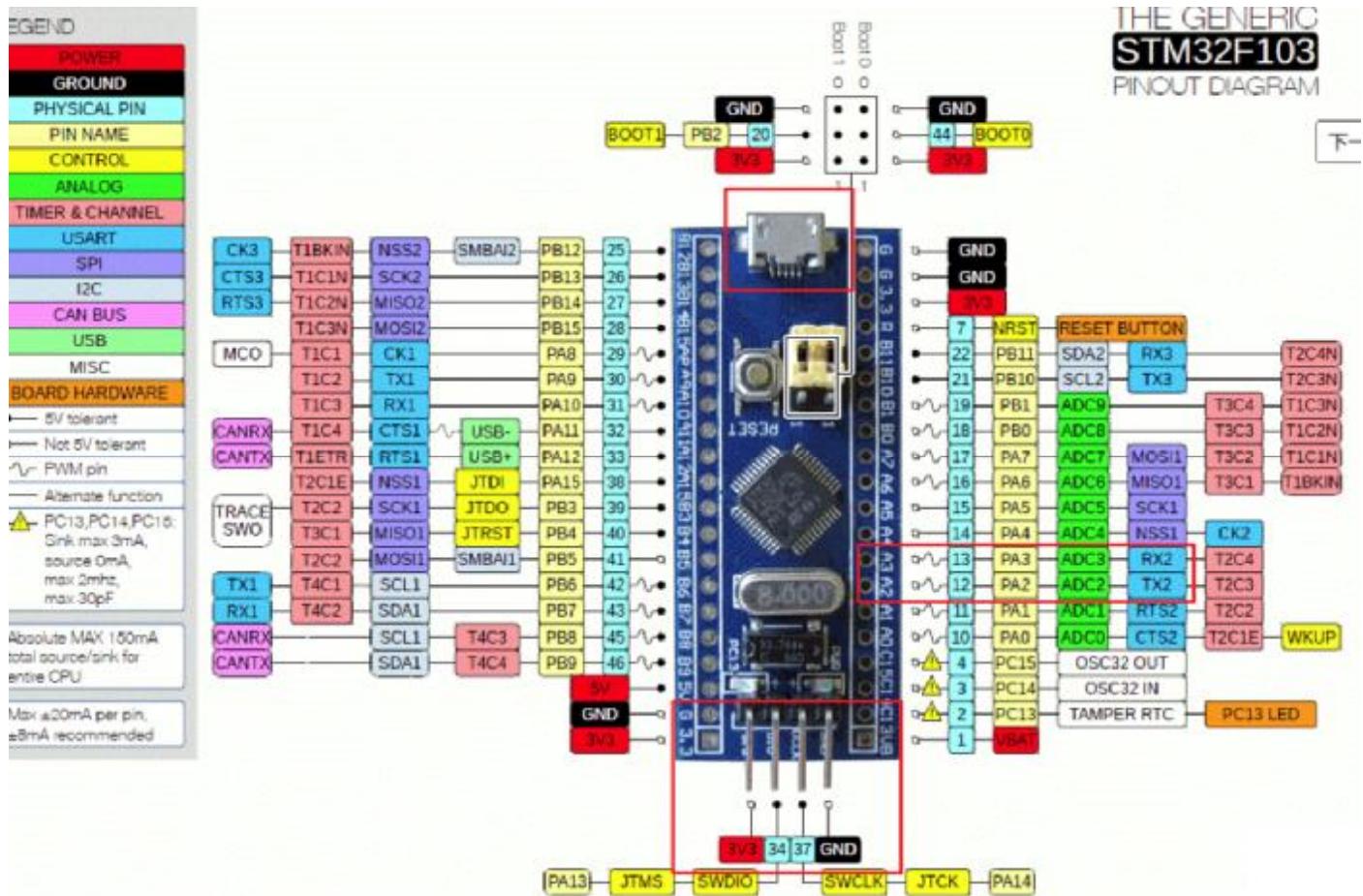
STM32 与 ST-Link 接线

按 STM32 和 ST-link 的丝印接即可

STM32 与 USB 转串口模块接线



THE GENERIC STM32F103 PINOUT DIAGRAM



这里使用串口 2，详见程序内定义。

USB 供电，microUSB 接口。

到此，线已接完。

四、编程

1. 开始编程

打开默认是这样的

```

src > main.cpp > ...
1 #include <Arduino.h>
2
3 // put function declarations here:
4 int myFunction(int, int);
5
6 void setup() {
7     // put your setup code here, to run once:
8     int result = myFunction(2, 3);
9 }
10
11 void loop() {
12     // put your main code here, to run repeatedly:
13 }
14
15 // put function definitions here:
16
17 int myFunction(int x, int y) {
18     return x + y;
19 }

```

2. 按 arduino 格式，写入以下代码，代码就不做注释了，可以直接复制粘贴到 AI，如 DEEPSEEK 上，让它帮忙逐行解析。

```
#include <Arduino.h>
```

```

#include <HardwareSerial.h>
#include <SimpleFOC.h>

// 确保使用支持中断的引脚（如 PA0, PA1, PB0, PB1 等）
MagneticSensorPWM sensor = MagneticSensorPWM(PB0, 4, 1024); // 替换 PB0 为实际连接引脚

void doPWM() { sensor.handlePWM(); }

void setup() {
    Serial2.begin(115200); // 默认使用 PA2(TX)/PA3(RX)

    // 初始化磁传感器
    sensor.init();

    // 关键修改：配置引脚模式并附加中断
    pinMode(PB0, INPUT_PULLUP); // 显式配置上拉输入
    sensor.enableInterrupt(doPWM); // 附加中断处理函数

    Serial2.println("Sensor ready");
    delay(1000);
}

void loop() {
    sensor.update();
    Serial2.print(sensor.getAngle());
    Serial2.print("\t");
    Serial2.println(sensor.getVelocity());
    delay(1); // 短暂延迟确保稳定性
}

```

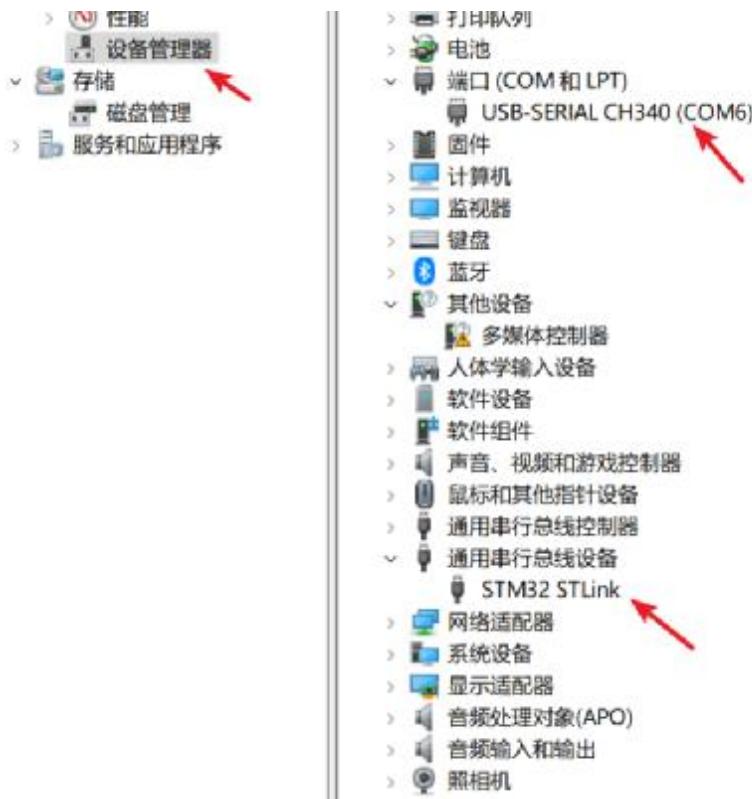
五、实现

1. 编译烧录

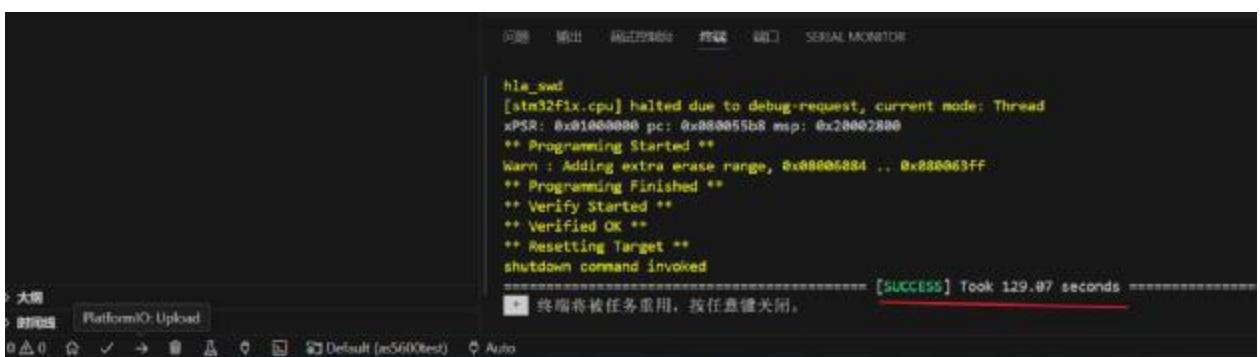


2. 插上 USB, 开始烧录

确定驱动安装正确，设备管理器中，可以看到这两个。



3. 烧录成功



4. 打开串口监视



到此，测试结束！本文档主要针对 M 创动工坊淘宝店提供硬件,mcdgf.taobao.com

STM32 读取 AS5600, STM32 读取 MT6701 的 ABZ, STM32 读取 MT6701 的 PWM, 三篇