

安装Keil开发环境

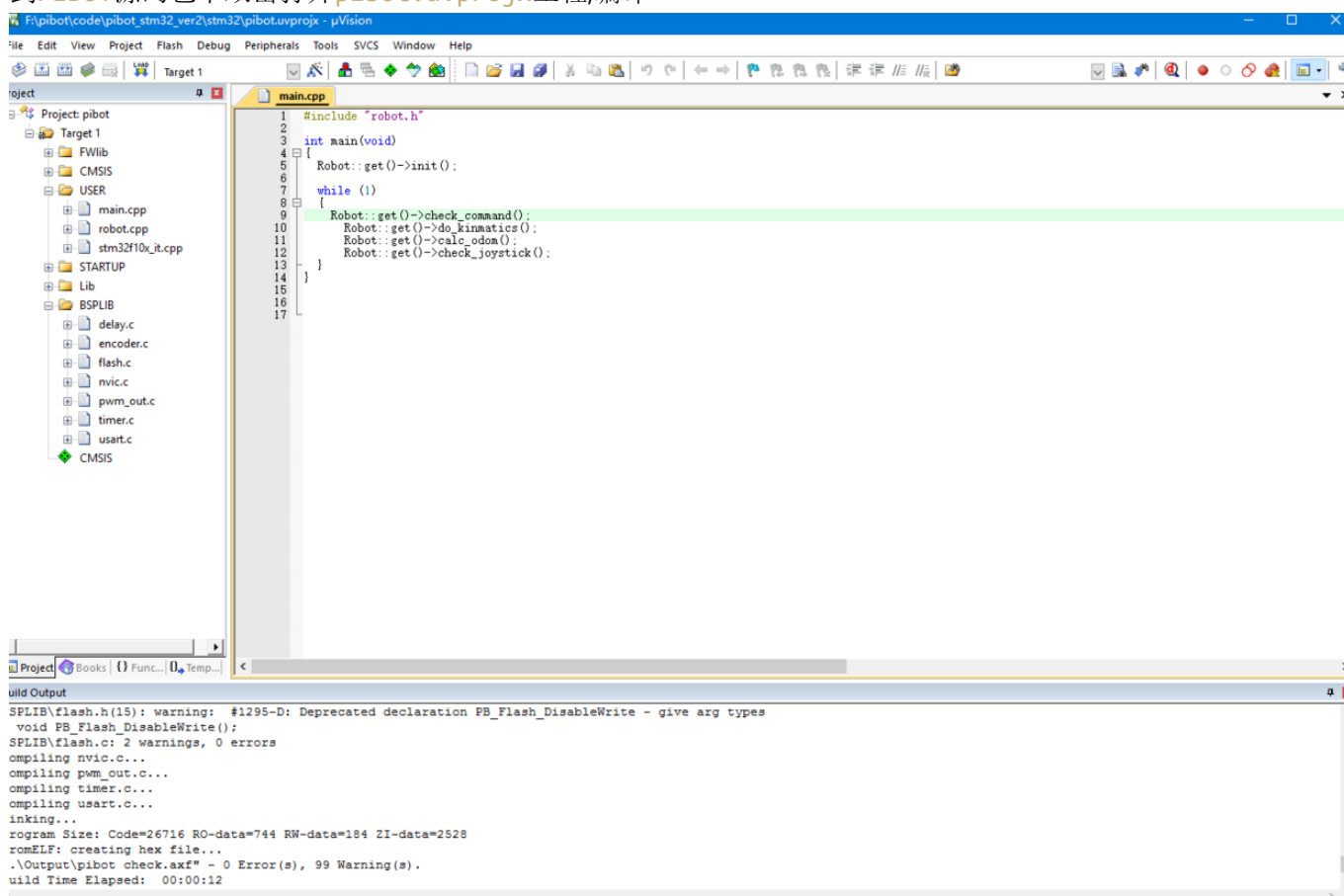
piBOT docs/software/MDK520目录提供了Keil5的安装包MDK520.EXE，安装过程不再赘述

完成安装后需要继续安装Keil.STM32F1xx_DFP.2.2.0.pack

编译与烧写

编译

到PIBOT源码包中双击打开piBOT.uvprojx工程,编译

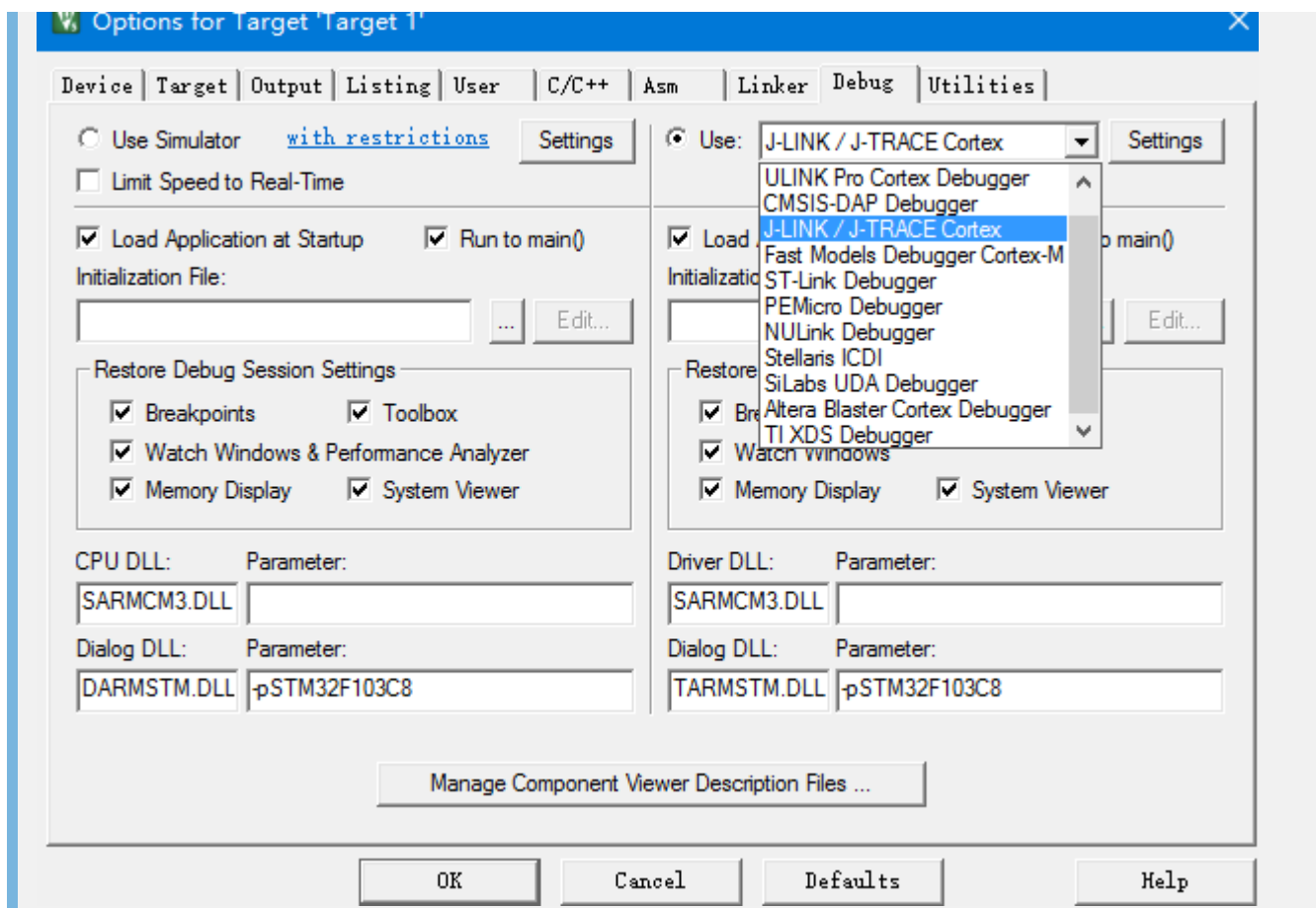


```
1 #include "robot.h"
2
3 int main(void)
4 {
5     Robot::get()->init();
6
7     while (1)
8     {
9         Robot::get()->check_command();
10        Robot::get()->do_kinematics();
11        Robot::get()->calc_odom();
12        Robot::get()->check_joystick();
13    }
14 }
15
16
17
```

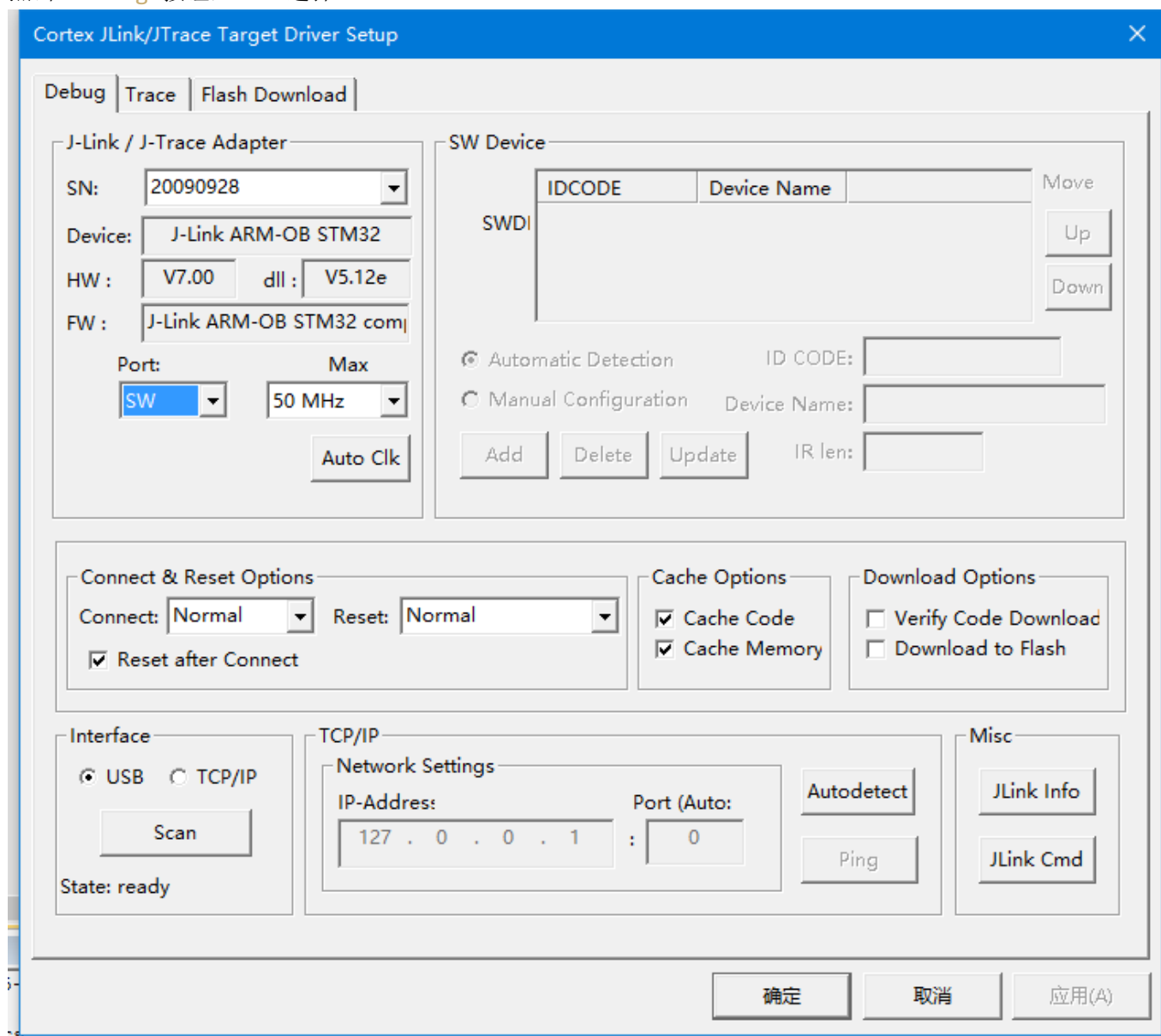
```
uild Output
SPLIB\flash.h(15): warning: #1295-D: Deprecated declaration PB_Flash_DisableWrite - give arg types
void PB_Flash_DisableWrite():
SPLIB\flash.c: 2 warnings, 0 errors
compiling nvic.c...
compiling pwm_out.c...
compiling timer.c...
compiling usart.c...
inking...
rogram Size: Code=26716 RO-data=744 RW-data=184 ZI-data=2528
romELF: creating hex file...
.\Output\piBOT check.axf" - 0 Error(s), 99 Warning(s).
uild Time Elapsed: 00:00:12
```

烧写程序

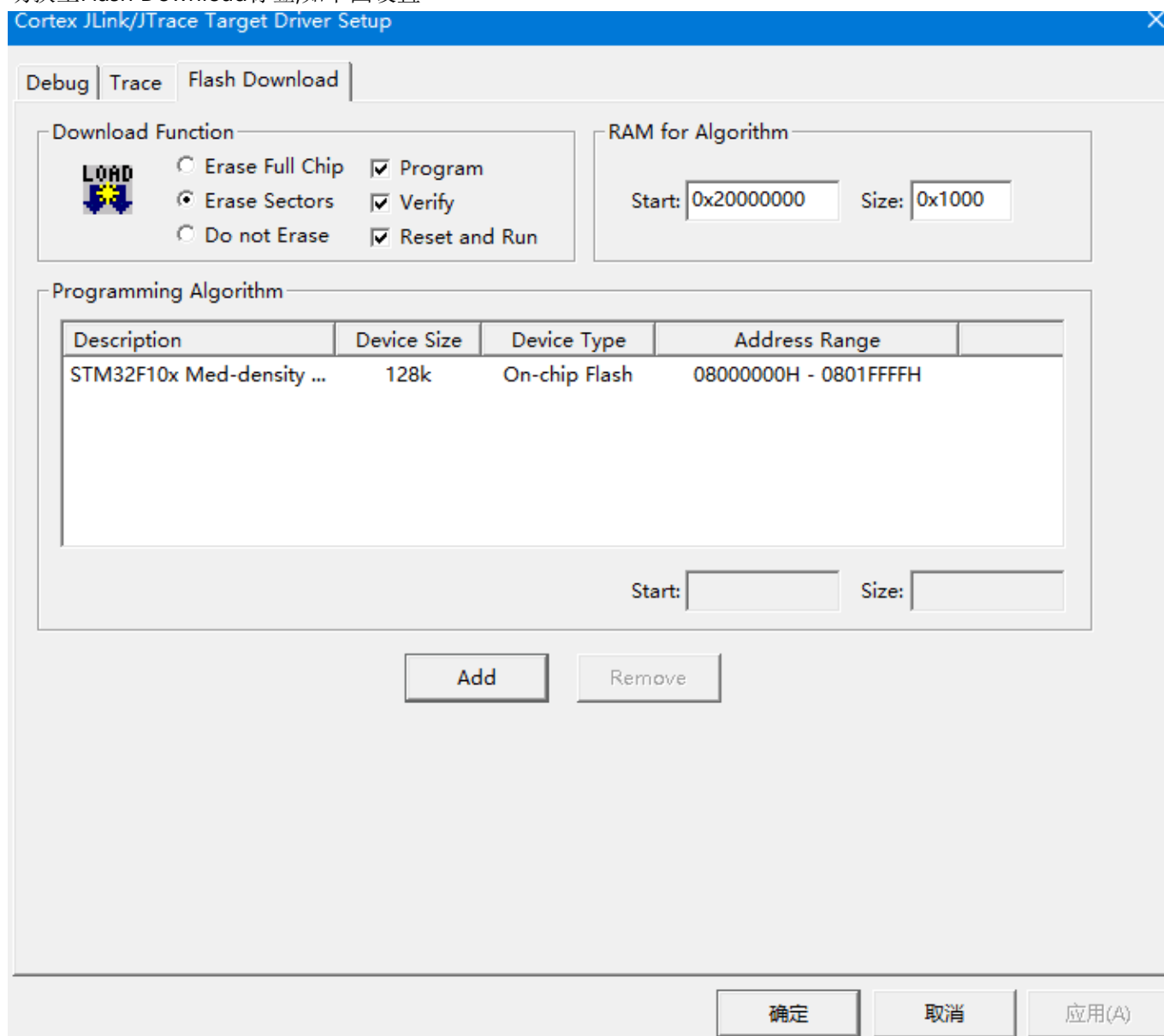
这里我们使用JLink烧写程序，连接JLink至开发板，开发板上电这里的JLink只需要连接GND SWDIO SWCLK三根线 打开工程选项，切换至Debug标签，选择JLink



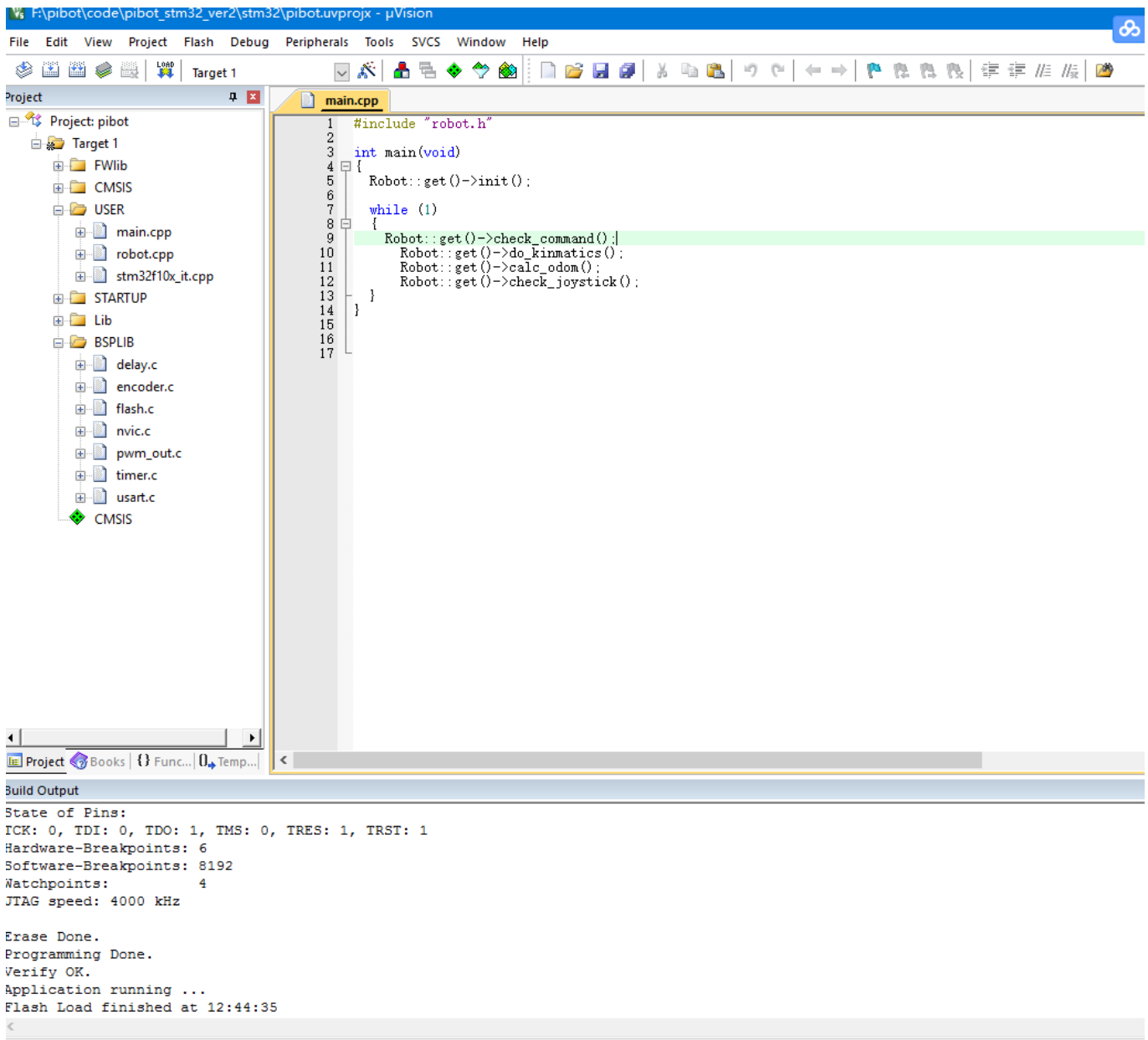
点击Settings按钮，Port选择SW



切换至Flash Download标签,如下图设置



保存后即可烧写程序



The screenshot displays the Keil uVision IDE interface. The main window shows the source code for `main.cpp` in the `Project: pibot` workspace. The code includes the `robot.h` header and defines the `main` function, which calls `Robot::get()->init()` and enters a `while (1)` loop containing `Robot::get()->check_command()`, `Robot::get()->do_kinematics()`, `Robot::get()->calc_odom()`, and `Robot::get()->check_joystick()`.

The `Project` window on the left shows the project structure, including folders like `FWLib`, `CMSIS`, `USER`, `STARTUP`, `Lib`, and `BSPLIB`, along with various source files such as `main.cpp`, `robot.cpp`, `stm32f10x_it.cpp`, `delay.c`, `encoder.c`, `flash.c`, `nvic.c`, `pwm_out.c`, `timer.c`, `usart.c`, and `CMSIS`.

The `Build Output` window at the bottom shows the following output:

```
State of Pins:
ICK: 0, TDI: 0, TDO: 1, TMS: 0, TRES: 1, TRST: 1
Hardware-Breakpoints: 6
Software-Breakpoints: 8192
Watchpoints: 4
JTAG speed: 4000 kHz

Erase Done.
Programming Done.
Verify OK.
Application running ...
Flash Load finished at 12:44:35
```

同时可以看到程序运行指示灯在闪烁表示程序在正常运行了