Before you start this, make sure you have finished:

1. Viewed and followed every steps in “On board”, like install the Virtual machine, git, vagrant etc..
2. Google search: STM32CubeMX, download and install
3. Google search: STM32CubeProgrammer

Because the chip on the car we are going to use is STM32F767ZITx, in this document I will lead you to configure and generate a blank project using tool CubeMX.

You can find this blank project and use git tools from here, which is already canceled most functions we won’t need, and added most functions like queue, debug message etc.

Open the tool, click access to Board selector:

图形用户界面, 应用程序, 网站

描述已自动生成

Select the board we are going to use, double click the board:

图形用户界面

描述已自动生成

Select the functions you want to use, and setup everything. After that, you can see the pin on the right turns green. For me, I’m going to use ADC1, channel 4 to read the break pressure sensor.

图形用户界面, 日程表

描述已自动生成

For test, we use on board ST-link to send messages to computer, this use USART3, I set the Baud Rate to 230400. Don’t worry, the codes for sending messages is already in the project in git.

图形用户界面, 应用程序

描述已自动生成

For freeRTOS, you might want to add some Tasks, Queues, and Semaphores/mutexs here. Almost all the 32bits mcus run freeRTOS, so most codes are running in tasks. Remember, make sure you added some code can block the function like OSdelay, otherwise you will be blocked in this function.

图形用户界面

描述已自动生成

Fill the name, and location (**to your share folder from vagrant**), choose the toolchain to “Makefile”

图形用户界面, 文本, 应用程序, 电子邮件

描述已自动生成

Finally, click Generate CODE

图形用户界面, 应用程序

描述已自动生成

Compile:

For windows user,

Go to vagrant VM, open a terminal window, cd the directory, type “make”, if there is no error msg, go back to windows.

文本

描述已自动生成

For other users:

You will find the way. : )

Download:

电脑萤幕的截图

描述已自动生成

Bonus:

For windows users, recommend to use PuTTY to monitor the serial port.

Write your code between user code start, and user code end! Than the cubeMX won’t delete your code.

文本

描述已自动生成