Clock Configuration

Configure the clock as external with 72MHz

USART Configuration

Configure in Asynchronous mode and enable global interruptions

USART1 Mode and Configuration

Mode

Mode	Asynchronous ⌄
Hardware Flow Control (RS232)	Disable ⌄

Configuration

Reset Configuration

✓ NVIC Settings	✓ DMA Settings	✓ GPIO Settings
✓ Parameter Settings		✓ User Constants

NVIC Interrupt Table	Enabled	Preemption Priority	Sub Priority
DMA1 channel4 global interrupt	☑	0	0
DMA1 channel5 global interrupt	☑	0	0
USART1 global interrupt	☑	0	0

Configure parameters as you need, in this case it is used 115200 baudrate with 8 bits and no parity, configure data direction to receive and transmit.

Configure RX DMA in circular mode, TX DMA in normal mode, increment memory address with peripheral and memory data width as byte in both.

DMA Request	Channel	Direction	Priority
USART1_RX	DMA1 Channel 5	Peripheral To Memory	Low
USART1_TX	DMA1 Channel 4	Memory To Peripheral	Low

Add　Delete

DMA Request Settings

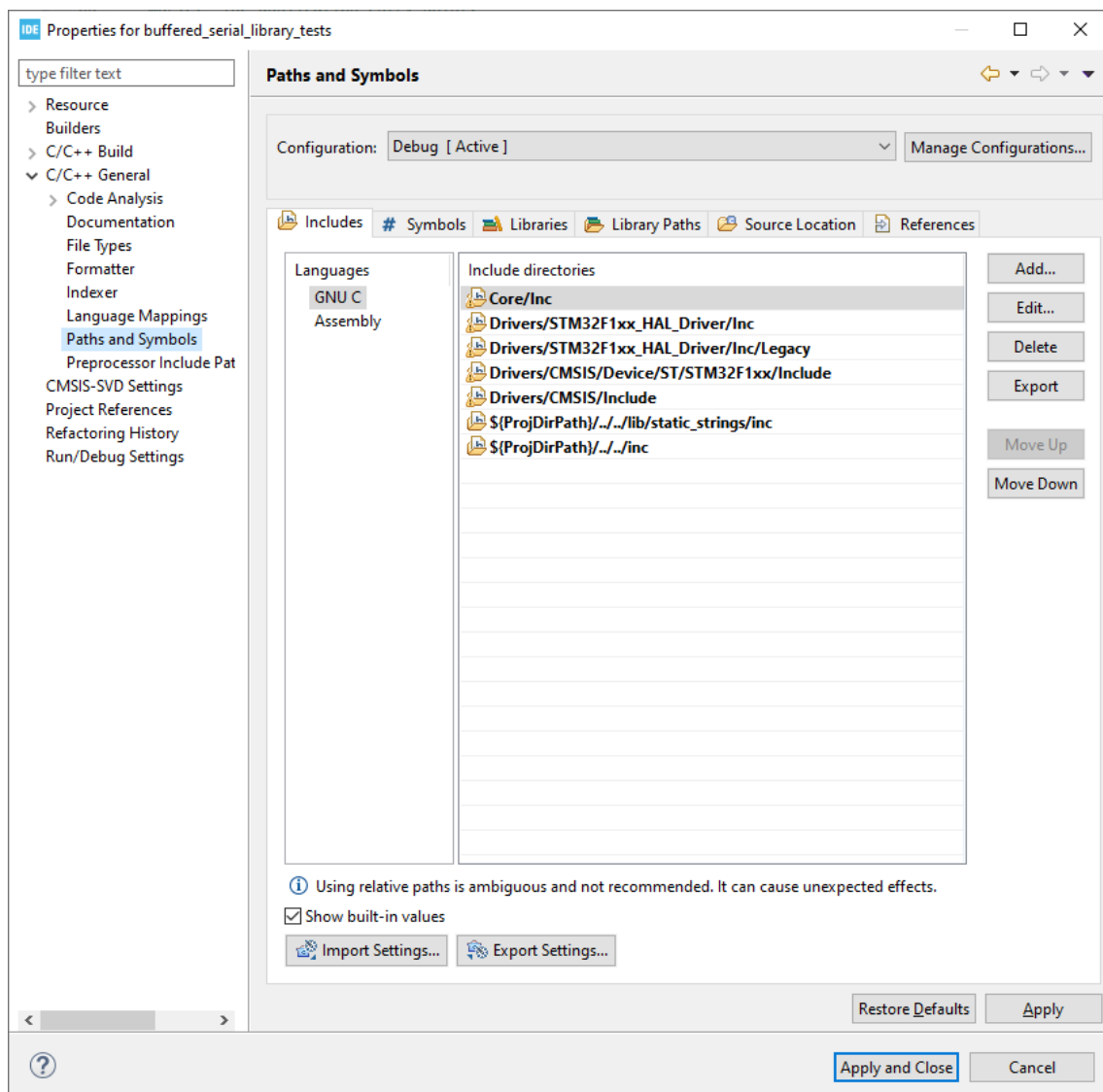|		Peripheral	Memory
Mode	Normal	Increment Address ☐	☑
	Data Width	Byte	Byte

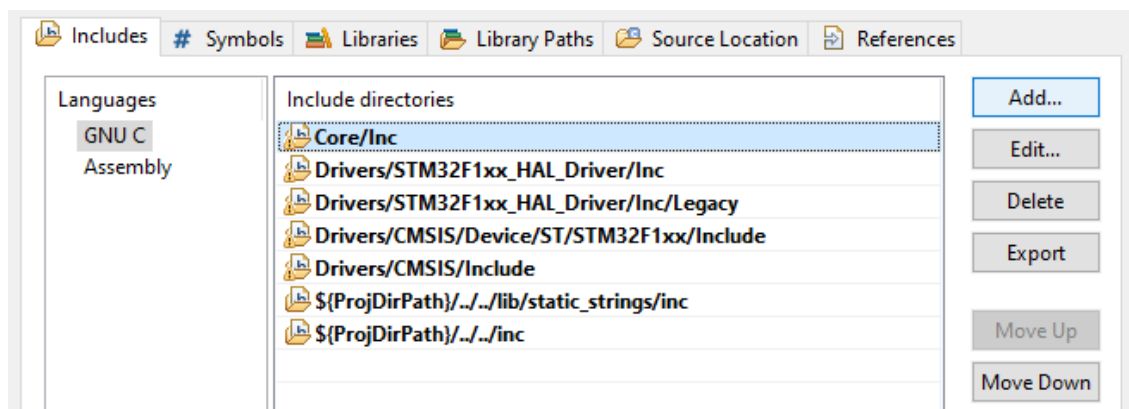Finally save the file to generate code.

Add library to project

Right click on project and select properties
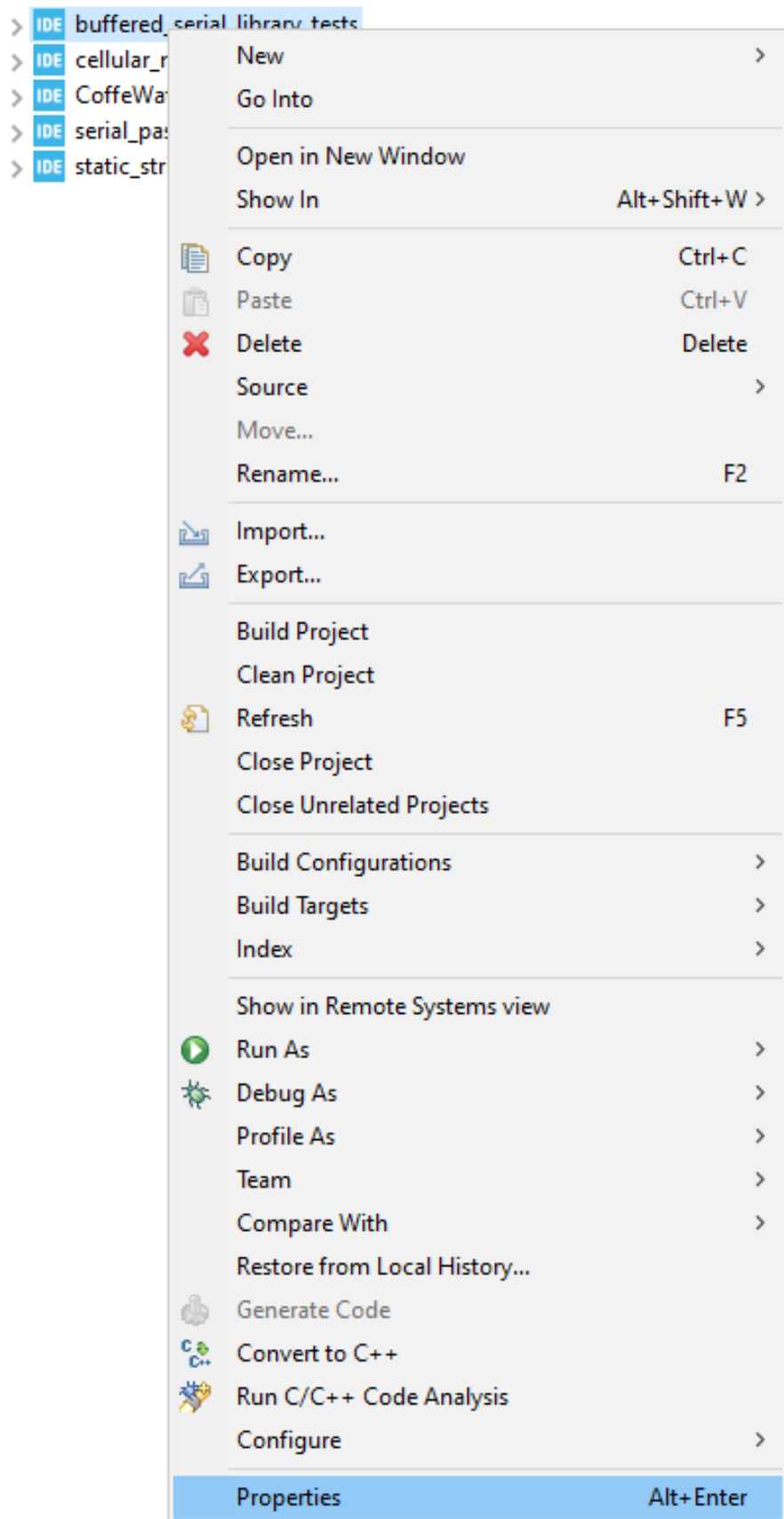
Go to C/C++ General and select Paths and Symbols


In includes click Add.

Add the path of the folder with the header files and click OK. I use a relative path with the environment variable ProjDirPath, the variable can be placed with the Variables… button. I suggest to use relative paths and create a parent project folder with a lib folder and a the STM32CubeIDE project.
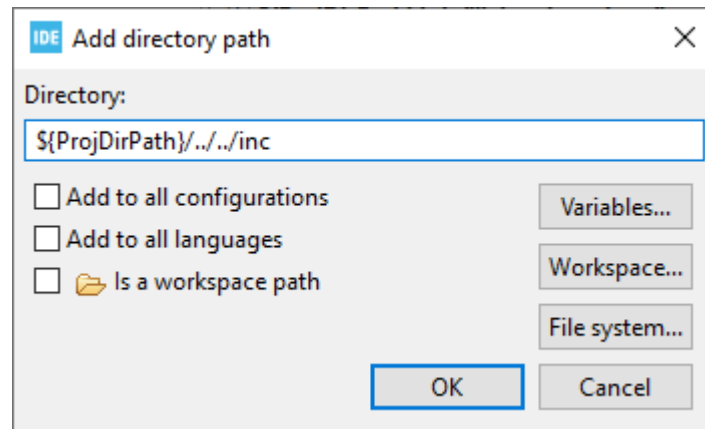
Go to Sources Location and select Link Folder.
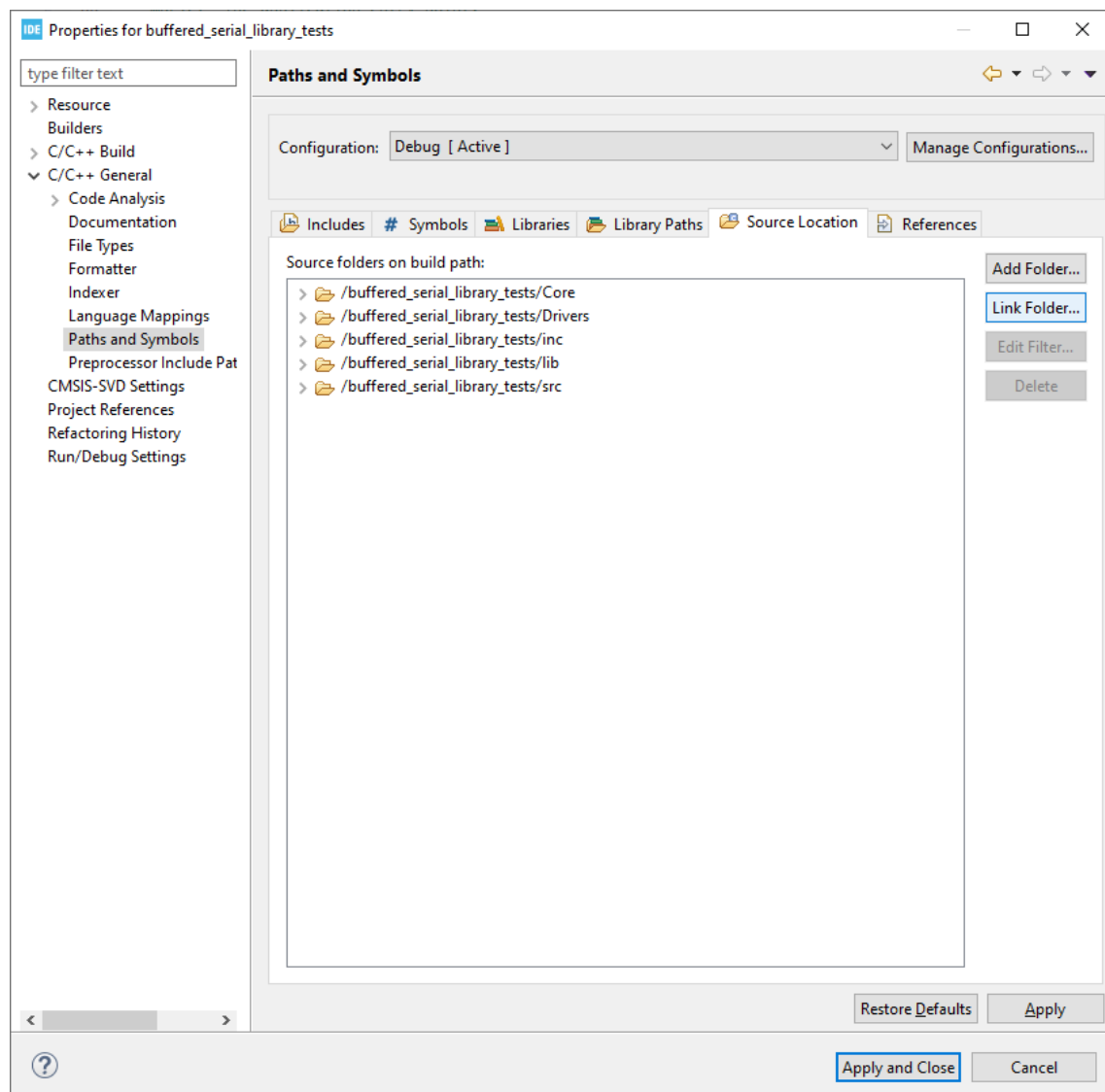
Check "Link to folder in the file system" and select the folder where the library is and click OK. In my project I add the lib folder mentioned in the previous step, since I placed there all the libraries and it add the child folders and files, the sources and headers needed to run the project are added to the compiler and linker paths. You have to link all the folders with the sources and headers required.
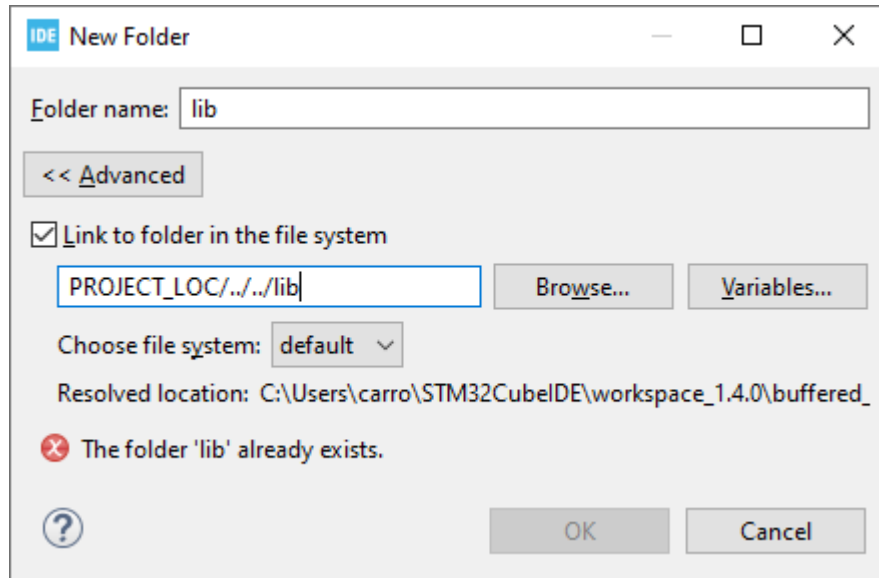
Click Apply and Close button and rebuild.