LIGHTNING
Semiconductor

LN882H Keil ARMCC开发环境搭建指导

Revision 1.0

October 11, 2021

Declaration

THIS DOCUMENTATION IS THE ORIGINAL WORK AND COPYRIGHTED PROPERTY OF LIGHTNING SEMICONDUCTOR (“LIGHTNING SEMI”). REPRODUCTION IN WHOLE OR IN PART MUST OBTAIN THE WRITTEN APPROVAL OF LIGHTNING SEMI AND GIVE CLEAR ACKNOWLEDGEMENT TO THE COPYRIGHT OWNER.

THE INFORMATION FURNISHED BY LIGHTNING SEMI IS BELIEVED TO BE ACCURATE AND RELIABLE. LIGHTNING SEMI RESERVES THE RIGHT TO MAKE CHANGES IN CIRCUIT DESIGN AND/OR SPECIFICATIONS AT ANY TIME WITHOUT NOTICE. LIGHTNING SEMI DOES NOT ASSUME ANY RESPONSIBILITY AND LIABILITY FOR ITS USE. NOR FOR ANY INFRINGEMENTS OF PATENTS OR OTHER RIGHTS OF THE THIRD PARTIES WHICH MAY RESULT FROM ITS USE. NO LICENSE IS GRANTED BY IMPLICATION OR OTHERWISE UNDER ANY PATENT OR PATENT RIGHTS OF LIGHTNING SEMI. THIS DATASHEET NEITHER STATES NOR IMPLIES WARRANTY OF ANY KIND, INCLUDING FITNESS FOR ANY PARTICULARAPPLICATION.

THIRD PARTY LICENCES MAY BE REQUIRED TO IMPLEMENT THE SOLUTION/PRODUCT. CUSTOMERS SHALL BE SOLELY RESPONSIBLE TO OBTAIN ALL APPROPRIATELY REQUIRED THIRD PARTY LICENCES. LIGHTNING SEMI SHALL NOT BE LIABLE FOR ANY LICENCE FEE OR ROYALTY DUE IN RESPECT OF ANY REQUIRED THIRD PARTY LICENCE. LIGHTNING SEMI SHALL HAVE NO WARRANTY, INDEMNITY OR OTHER OBLIGATIONS WITH RESPECT TO MATTERS COVERED UNDER ANY REQUIRED THIRD PARTY LICENCE.

目录

一、 软件工具安装---------- 3 -
1. 获取 Keil MDK 安装包， ---------- 3 -
2. 配置 Keil 的 ARMCC 环境变量---------- 3 -
3. 安装 python3---------- 3 -
二、 Keil project 配置说明---------- 5 -
1. Device 选择 ARMCM4_FP(Cortex-M4F)---------- 5 -
2. Debug 配置 J-Link 调试器---------- 6 -
3. Utilities 配置烧录工具---------- 6 -
Command：---------- 7 -
Arguments：---------- 7 -
三、 EVK 硬件接线图---------- 7 -
四、 编译---------- 8 -
五、 烧录---------- 9 -
六、 调试---------- 10 -

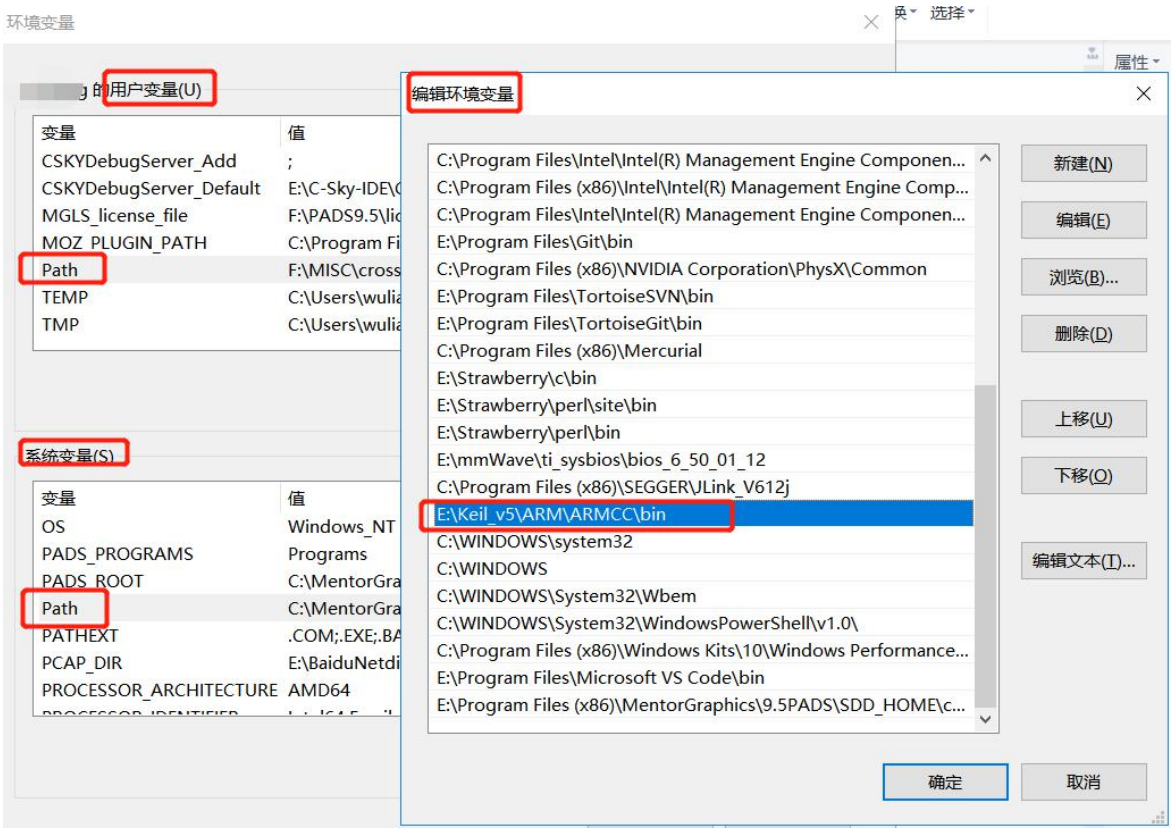
一、软件工具安装

1. 获取Keil MDK 安装包，

正常安装即可，推荐使用keil-MDK 5.18版本，与原厂SDK的开发环境保持一致，以避免IDE环境带来的额外问题。

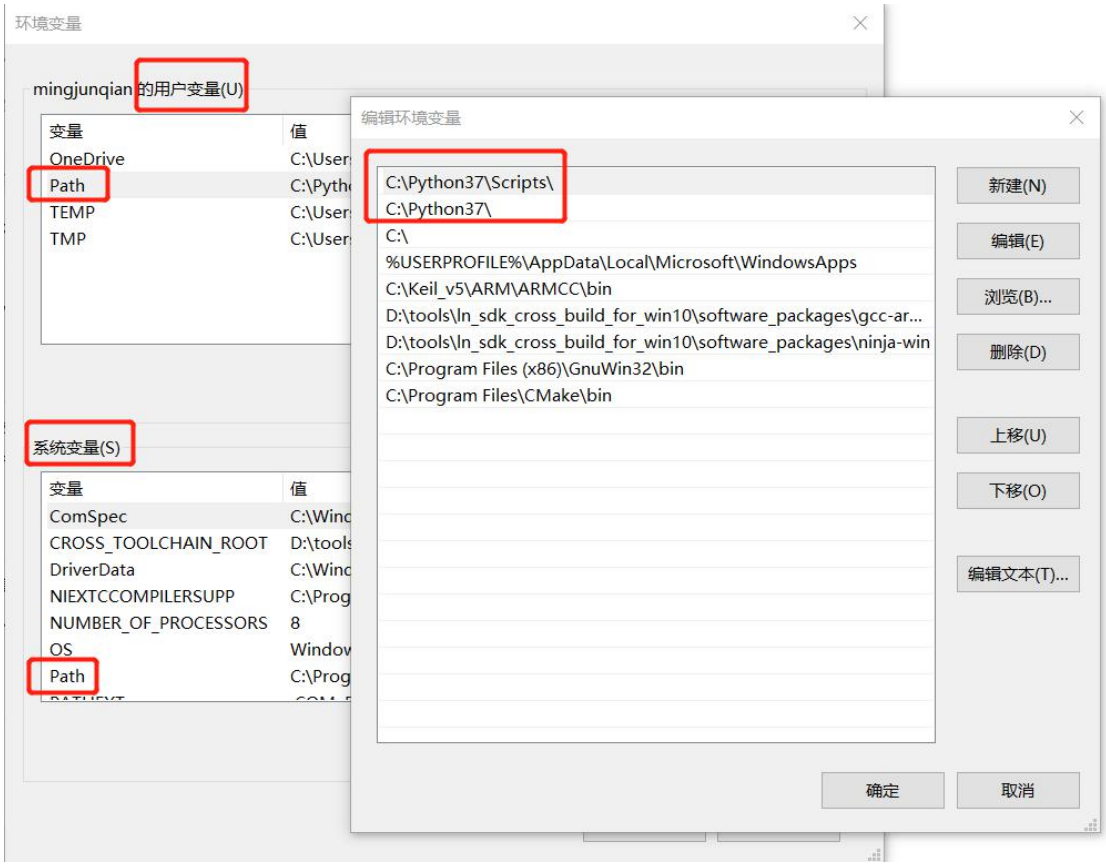
2. 配置Keil的ARMCC环境变量

将Keil安装目录下的编译执行文件路径 E:\Keil_v5\ARM\ARMCC\bin 加入系统环境变量path和用户环境变量path中，如下图：



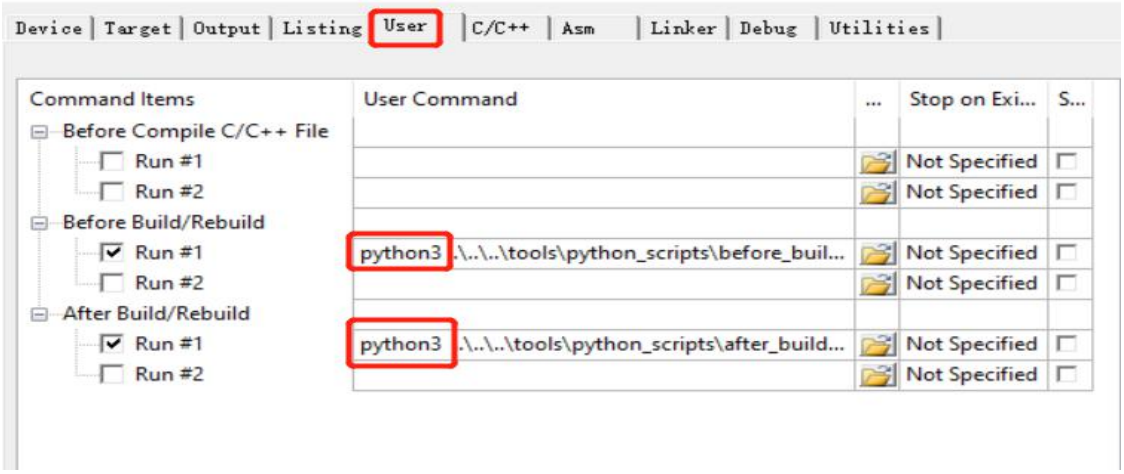
3. 安装 python3

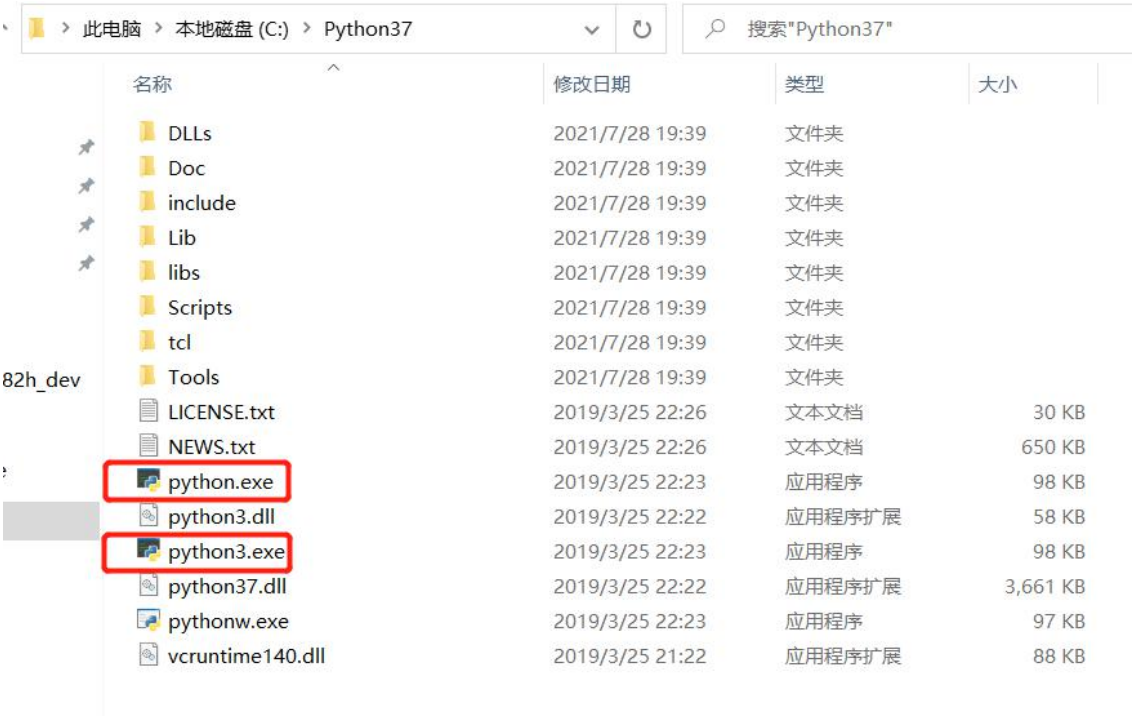
从官网下载并最新版本，安装完成后将python3安装路径添加在系统环境变量path以及用户环境变量path中，如下图：



备注说明：

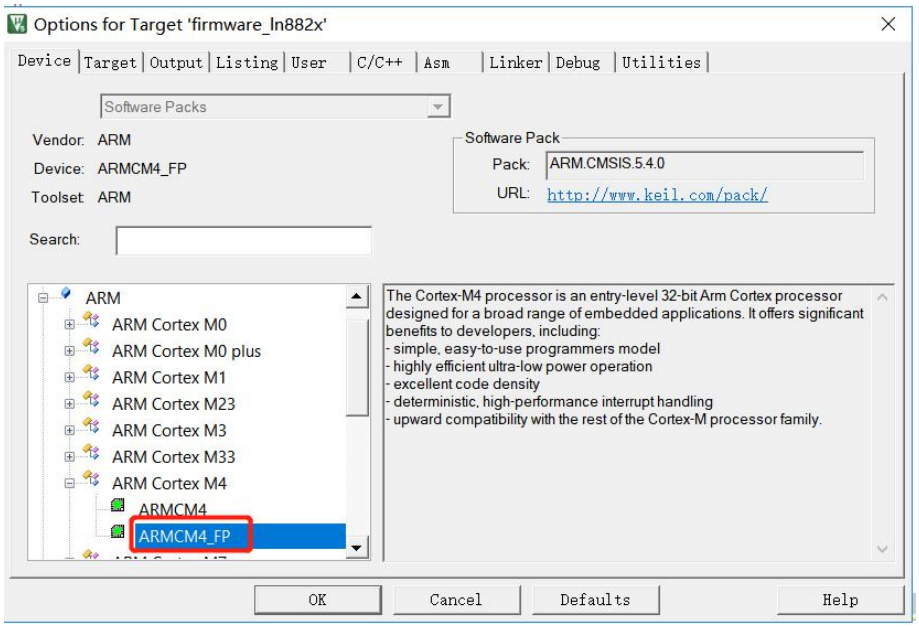
由于工程内部执行python脚本，运行的可执行文件名是python3，所以需要将按照好的python3安装目录下的可执行文件python.exe新拷贝一份并重命名为python3.exe即可，如下图。



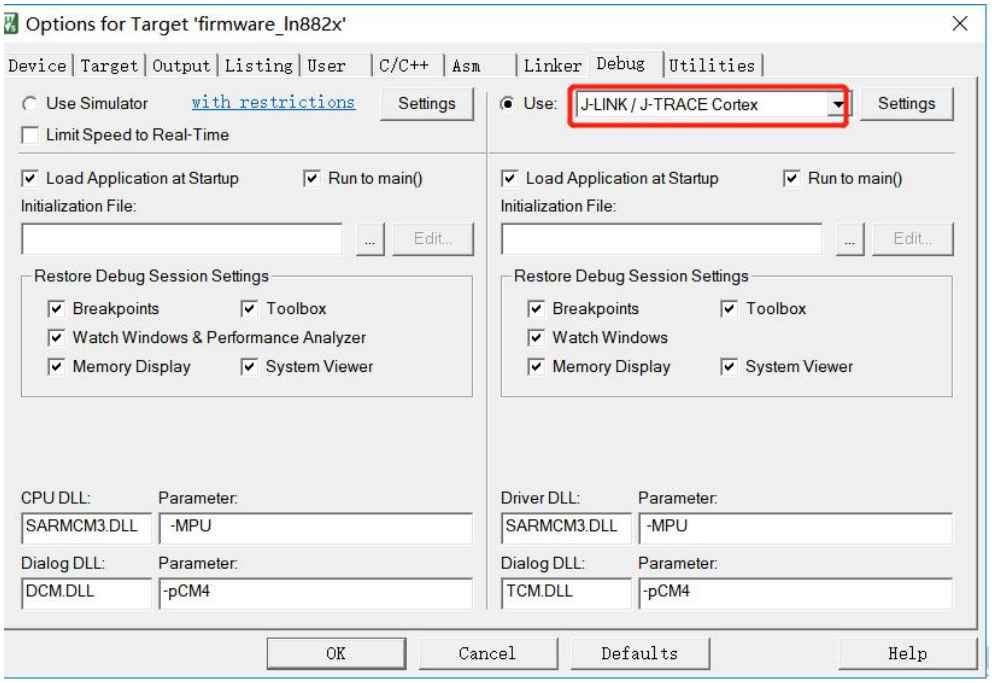


二、Keil project配置说明

1. Device选择ARMCM4_FP(Cortex-M4F)

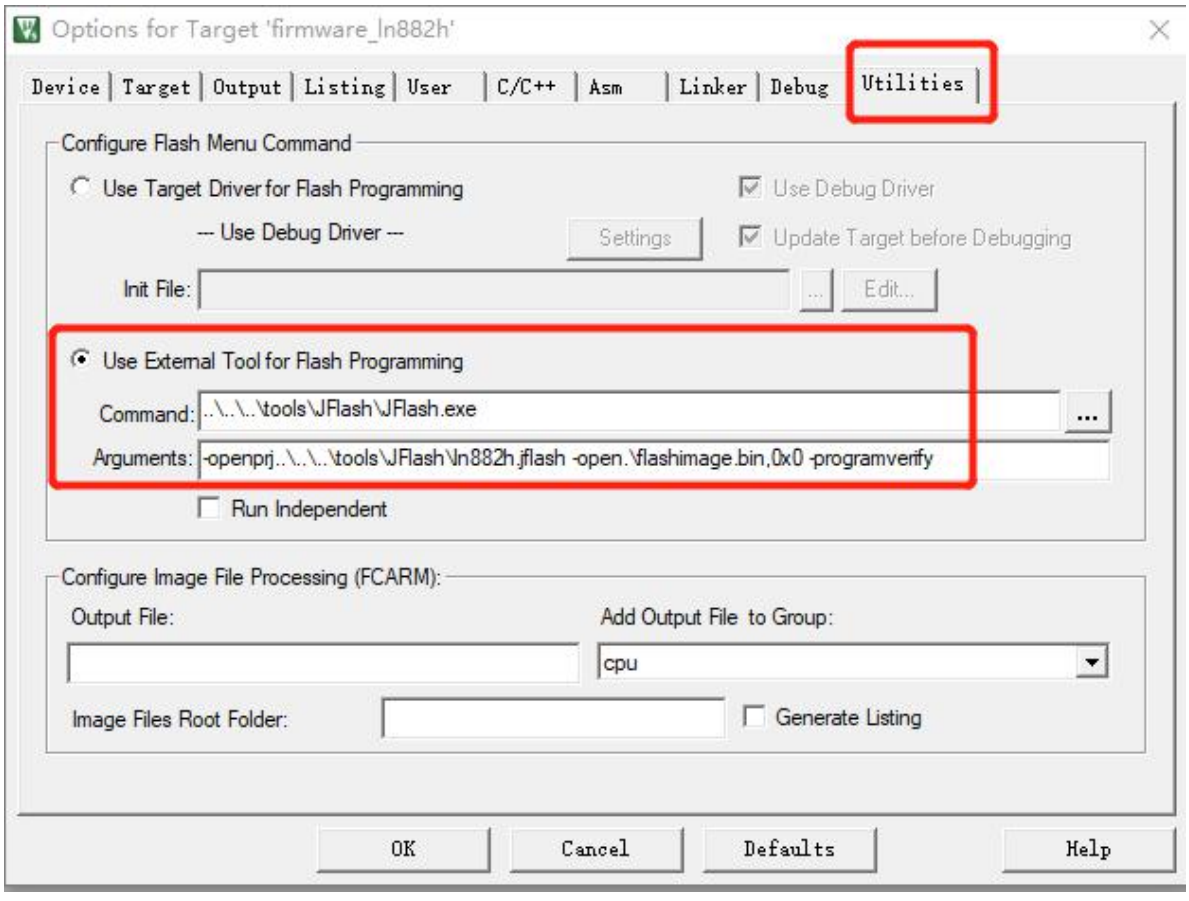


2. Debug配置J-Link调试器



3. Utilities配置烧录工具

使用JFlash.exe作烧录工具



Command：

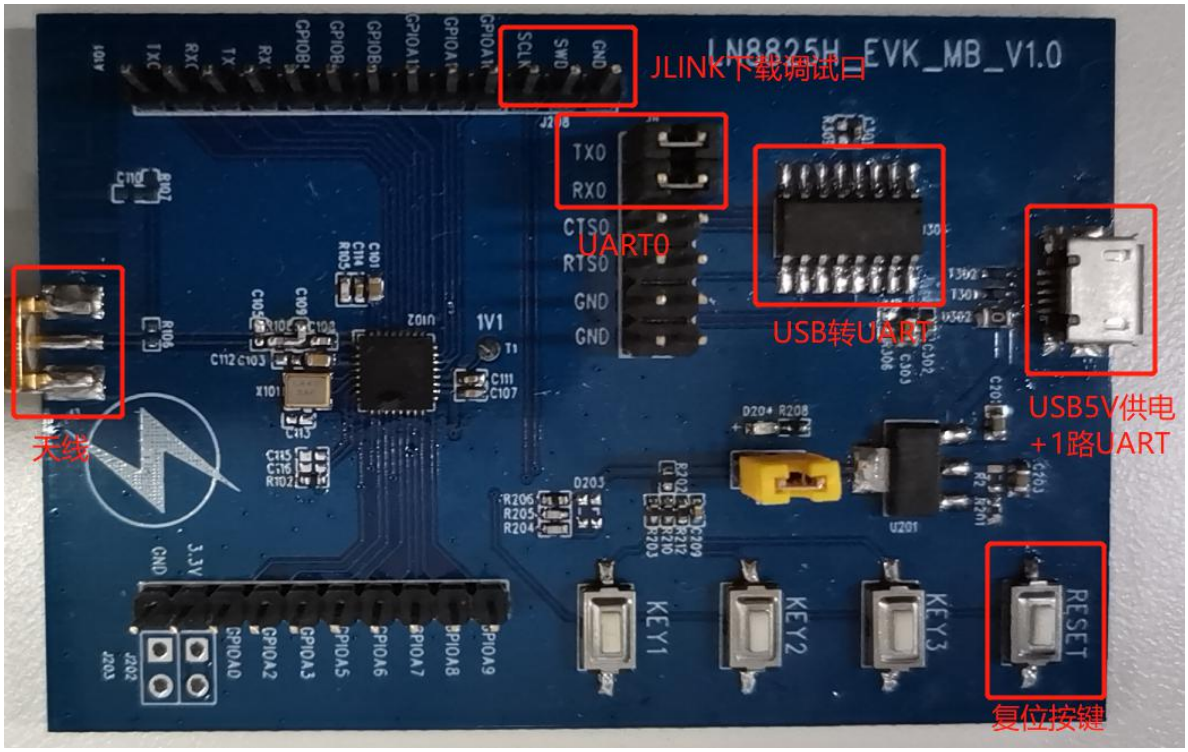
..\..\..\tools\JFlash\JFlash.exe

Arguments：

-openprj..\..\..\tools\JFlash\LN882h.jflash -open.\flashimage.bin, 0x0 -programverify

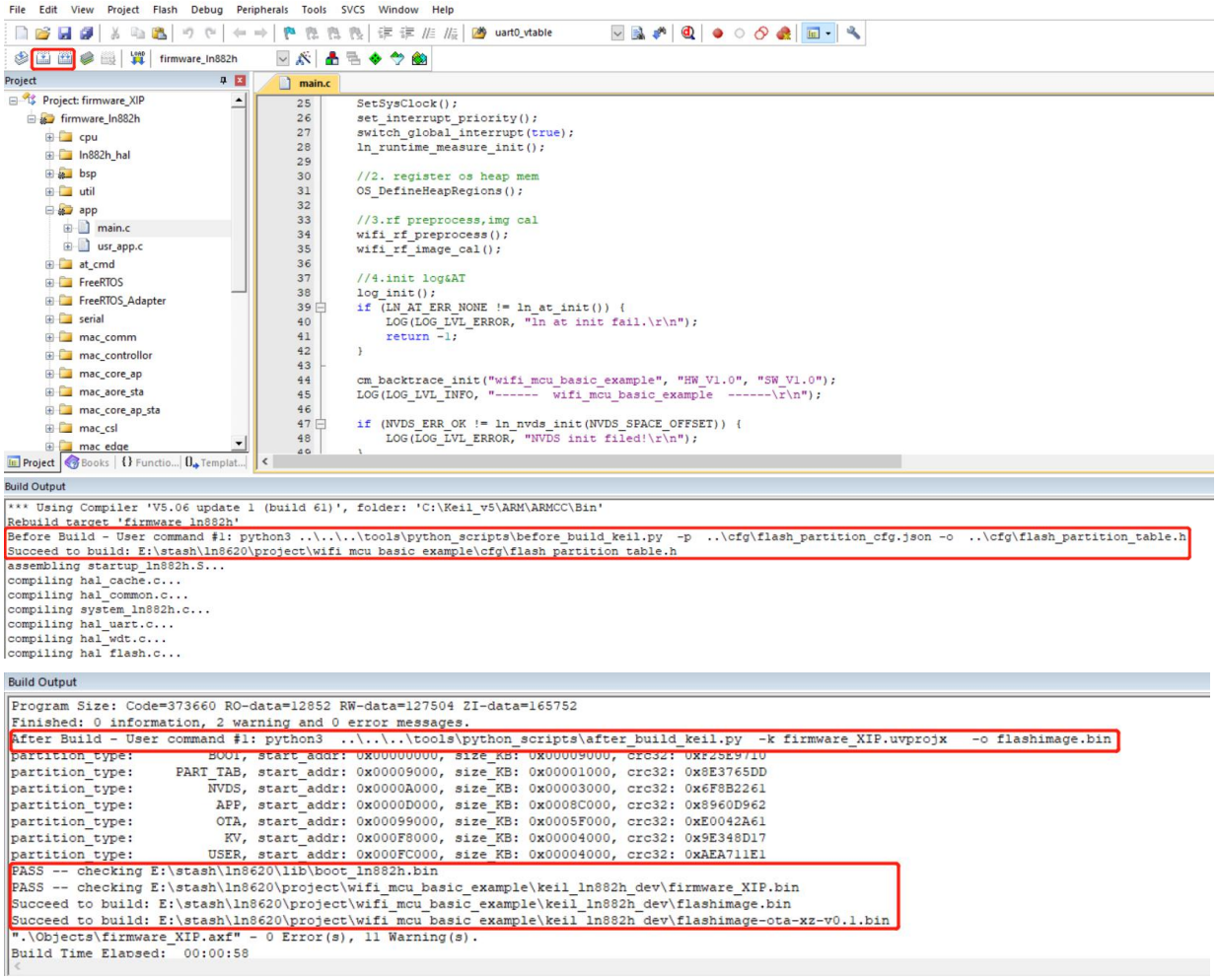
三、EVK硬件接线图

EVK板需要一根USB线连接电脑进行供电（同时作为USB串口转接口），另外连接Jlink调试口即可进行镜像文件的烧写和Jlink调试。



四、编译

编译输出如下图，表示编译成功。



编译前keil会调用一个脚本用来生成分区表头文件flash_partition_table.h，

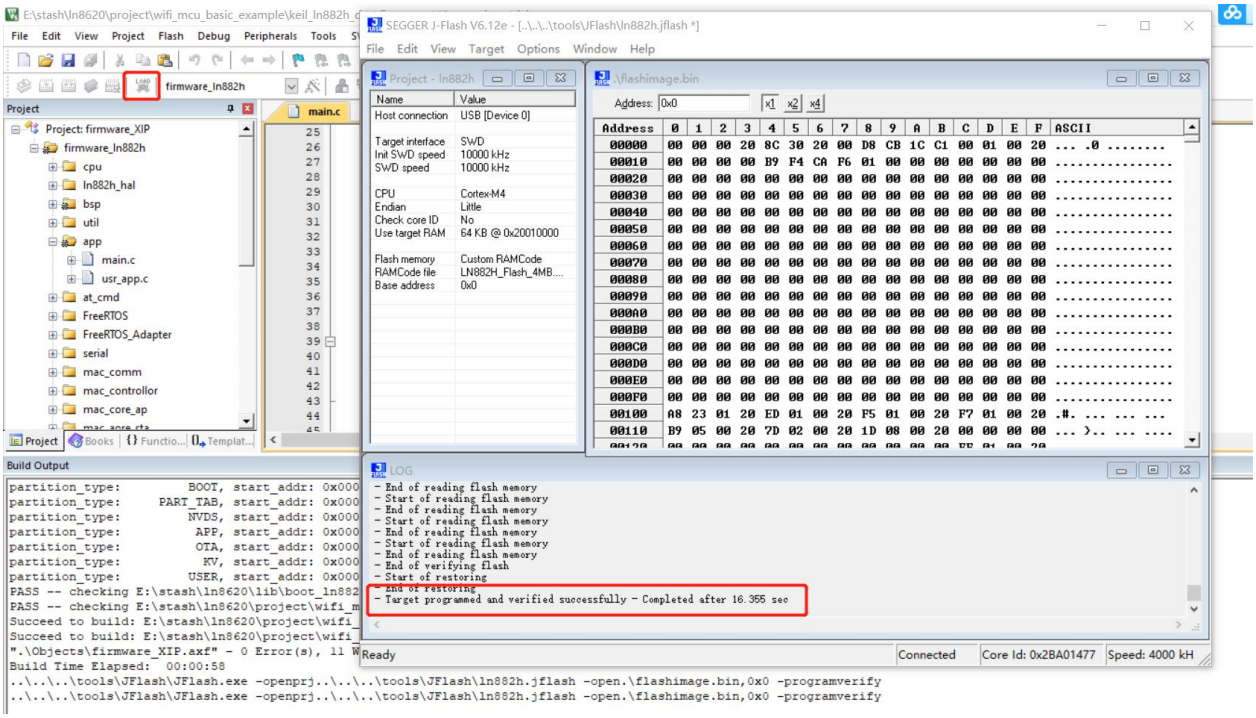
(python3 ..\..\..\tools\python_scripts\before_build_keil.py -p ..\cfg\flash_partition_cfg.json -o ..\cfg\flash_partition_table.h)

编译后keil会调用另一个脚本，after-build脚本用来先处理编译后生成的.axf文件生成.bin、.asm文件，然后将boot.bin与生成的.bin进行拼接合并，image header格式填充等，最终生成flashimage.bin

五、烧录

点击load按钮，keil会自动调用JFlash进行烧录。

如下图，即表示烧录成功。注意：每次jlink烧录前确保芯片进行过复位，可按EVK的复位键进行彻底复位。

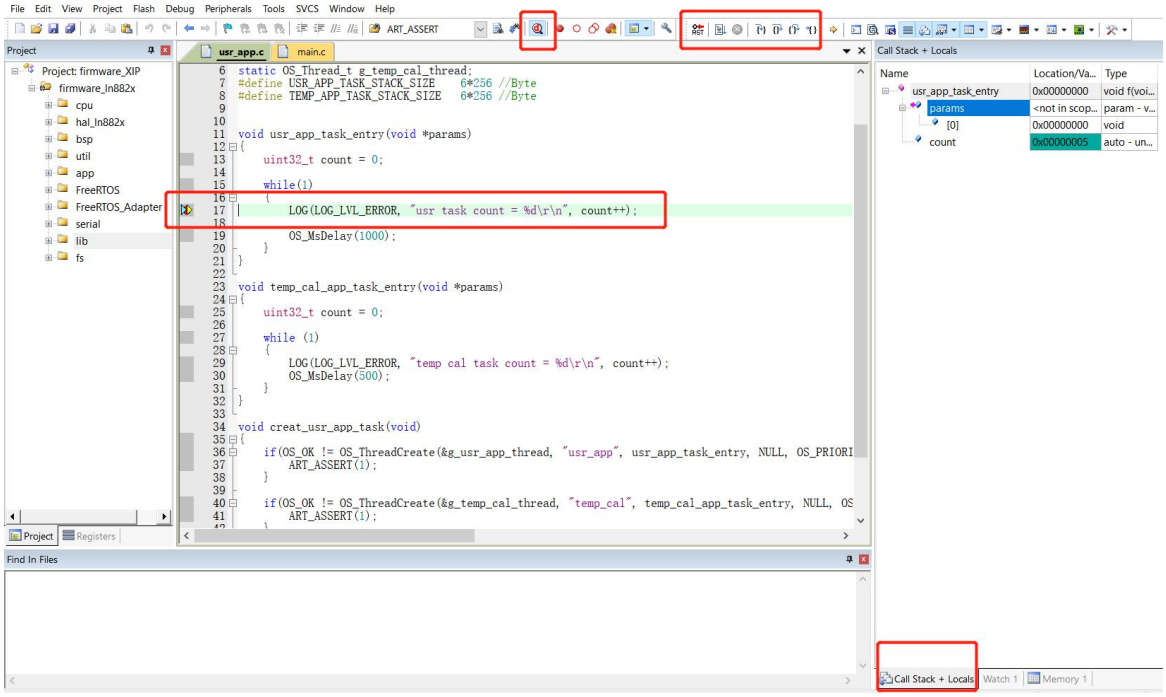


烧录默认只擦除烧录bin文件大小区域，如希望在烧录前进行整片flash的擦除可在keil配置的**Utilities->Arguments**中加入**-erasechip**参数，如下：

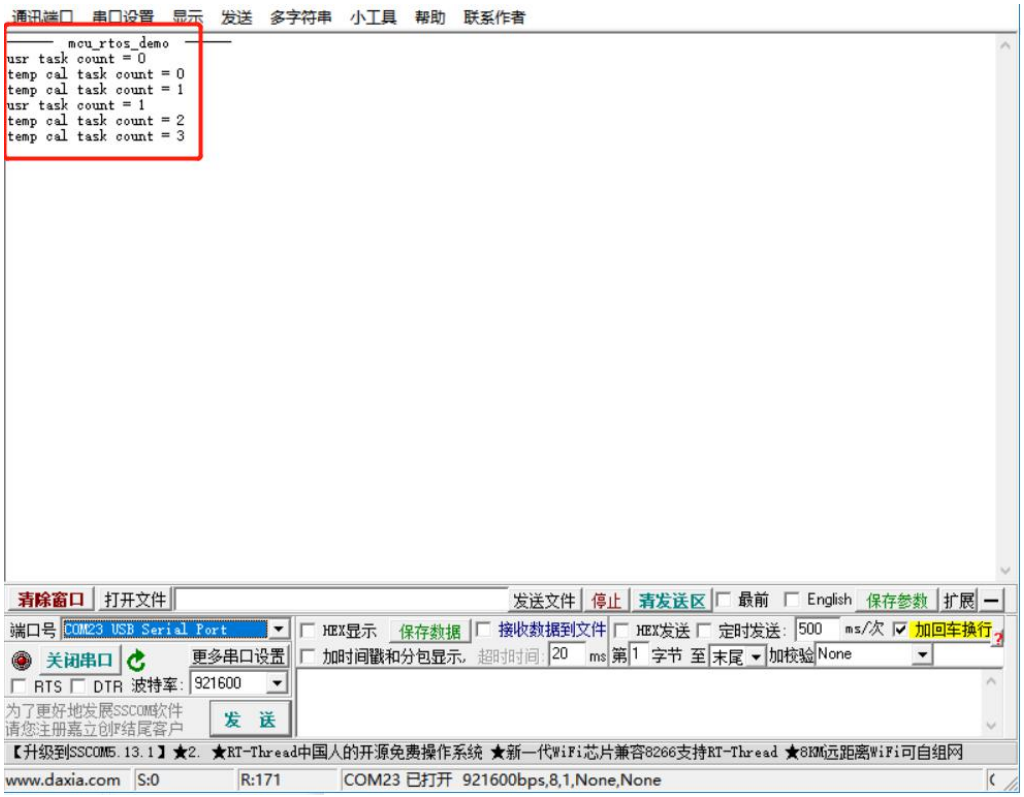
-openprj..\..\..\tools\JFlash\ln882h.jflash -open.\flashimage.bin,0x0 -programverify

六、调试

烧录完毕后关闭Jflash烧录窗口，并点击debug按钮即可进行Jlink断点、单步运行调试，直接在Keil MDK 中操作。如下图：



通过串口工具观察，可观察到打印输出：



七、文档修订历史

1.0	1. Initial version	Wuliang	10/11th, 2021