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- By XCODER

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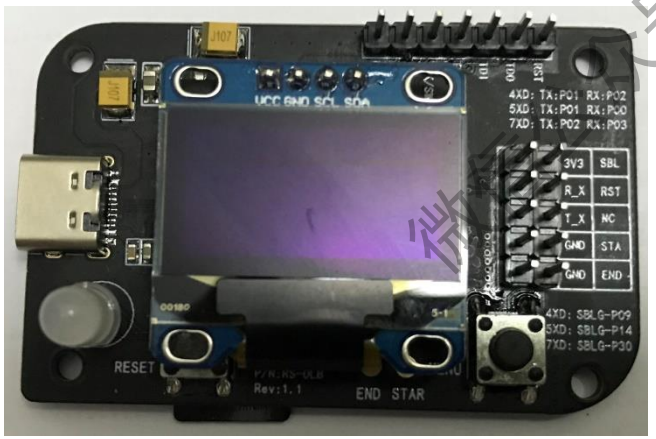
TI SimpleLink MCU产线烧录器说明

该工具可以作为TI Simplelink MCU CC26xx系列，CC13xx系列MCU离线固件烧录使用，该设备可独立使用或配合专用烧录机烧录程序使用。

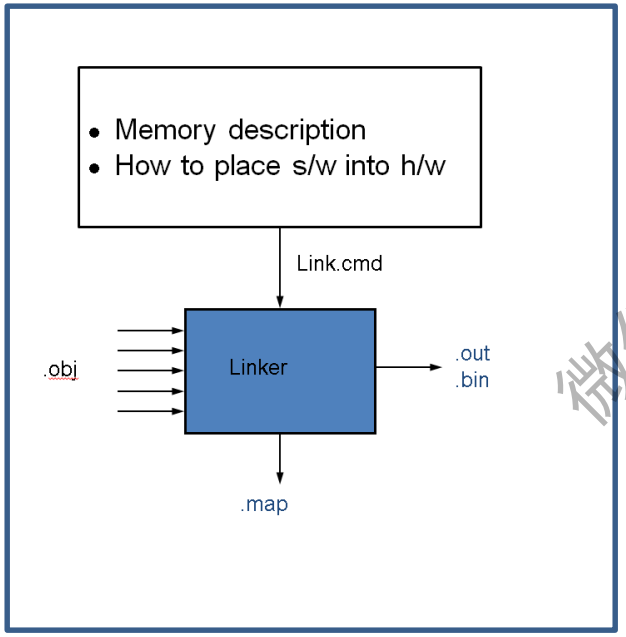
1拖1烧录



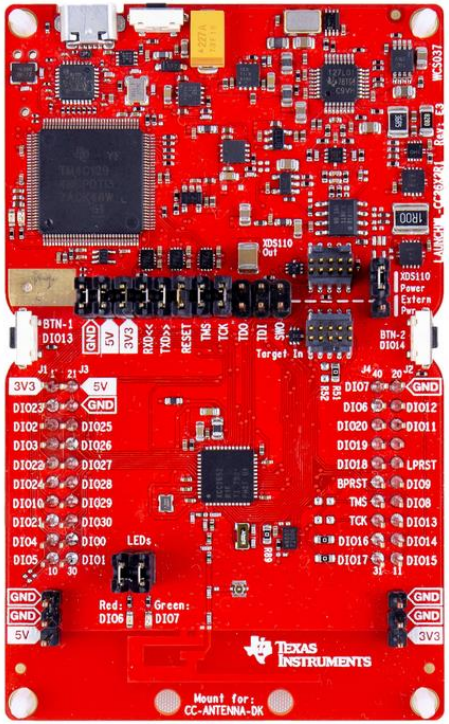
1拖8烧录

调试项目必备的两个工具

- **IDE软件编译调试工具**
  - TI 原厂工具: XDS110 ($99 USD)
- 调试/烧录接口:
  - JTAG
  - cJTAG
- 缺点
  - 贵，必须配合上位机烧录



JTAG
cJTAG

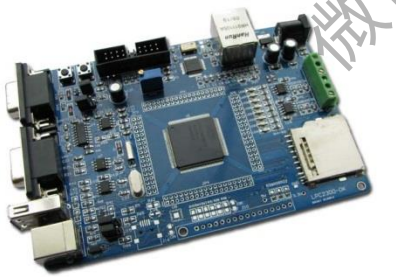


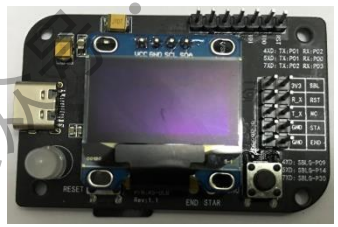
调试项目必备的两个工具

Firmware.bin
01010101010101001010101010
10100101010101010101010101
01011011010110110101010010…

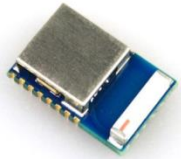
拷贝至烧录器

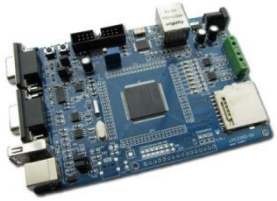
- **IDE软件编译调试工具**
  - TI 原厂工具: XDS110 ($99 USD)
- 烧录接口:
  - TI Simplelink MCU Bootloader
- 优点
  - 便宜，离线烧录，支持与烧录机架配合





Bootloader

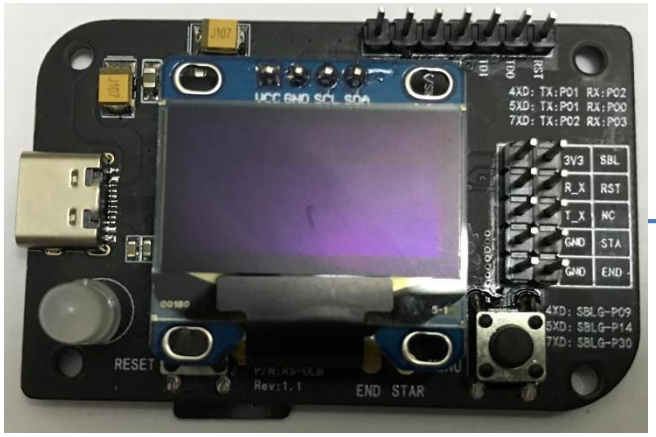




功能特点

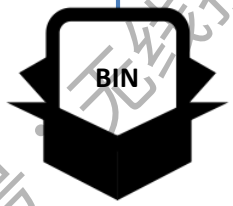
- 采用屏幕显示人机交互模式，设置简单，操作方便。
- 程序加密拷贝在烧录器片上Flash中，可有效防止固件外流。
- 可配置为TI Simplelink MCU 352K flash，128k，64k，32k flash烧录模式。
- 可与烧录机架配合烧录。

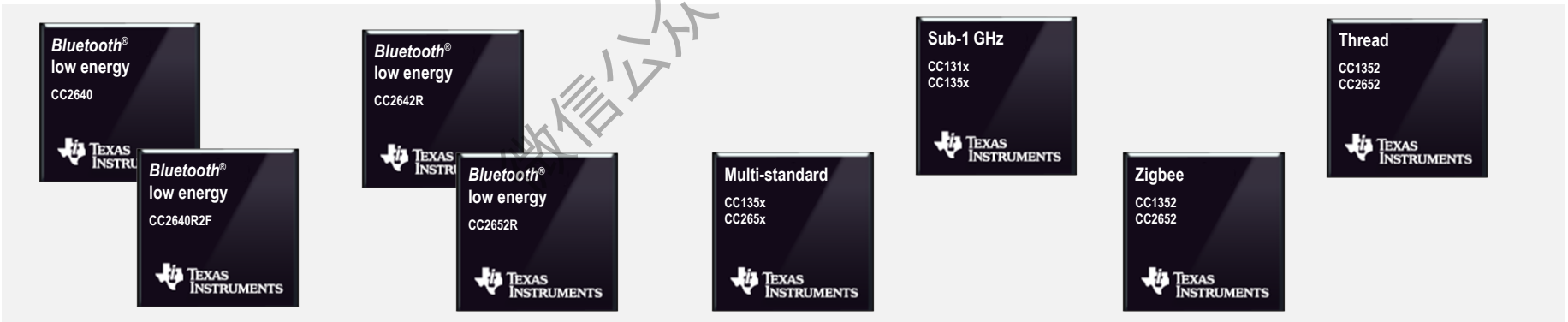
TI SimpleLink MCU产线烧录器说明



1拖1烧录

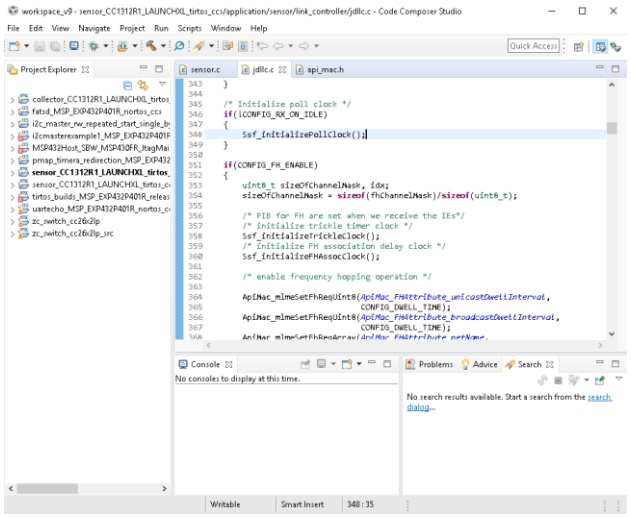
1拖8烧录

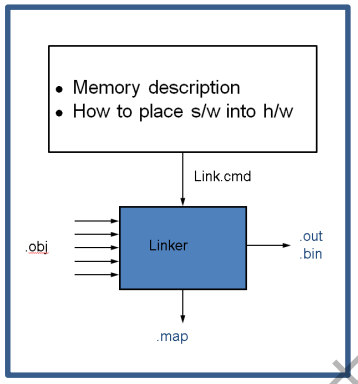




TI SimpleLink MCU Platform

制作烧录固件过程





1.编译生成Bin文件

Firmware.bin

01010101010101001010101010
10100101010101010101010101
01011011010110110101010001000
01010101010101001010101010
10100101010101010101010101
01011011010110110101010010
01010101010101001010101010
10100101010101010101010101
01011011010110110101010010...

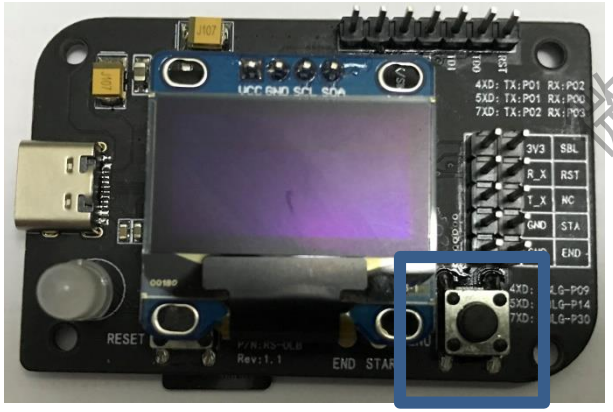
2.Bin文件改名为Firmware.bin

3.制作个性化烧录文件

Bin文件个性化配置

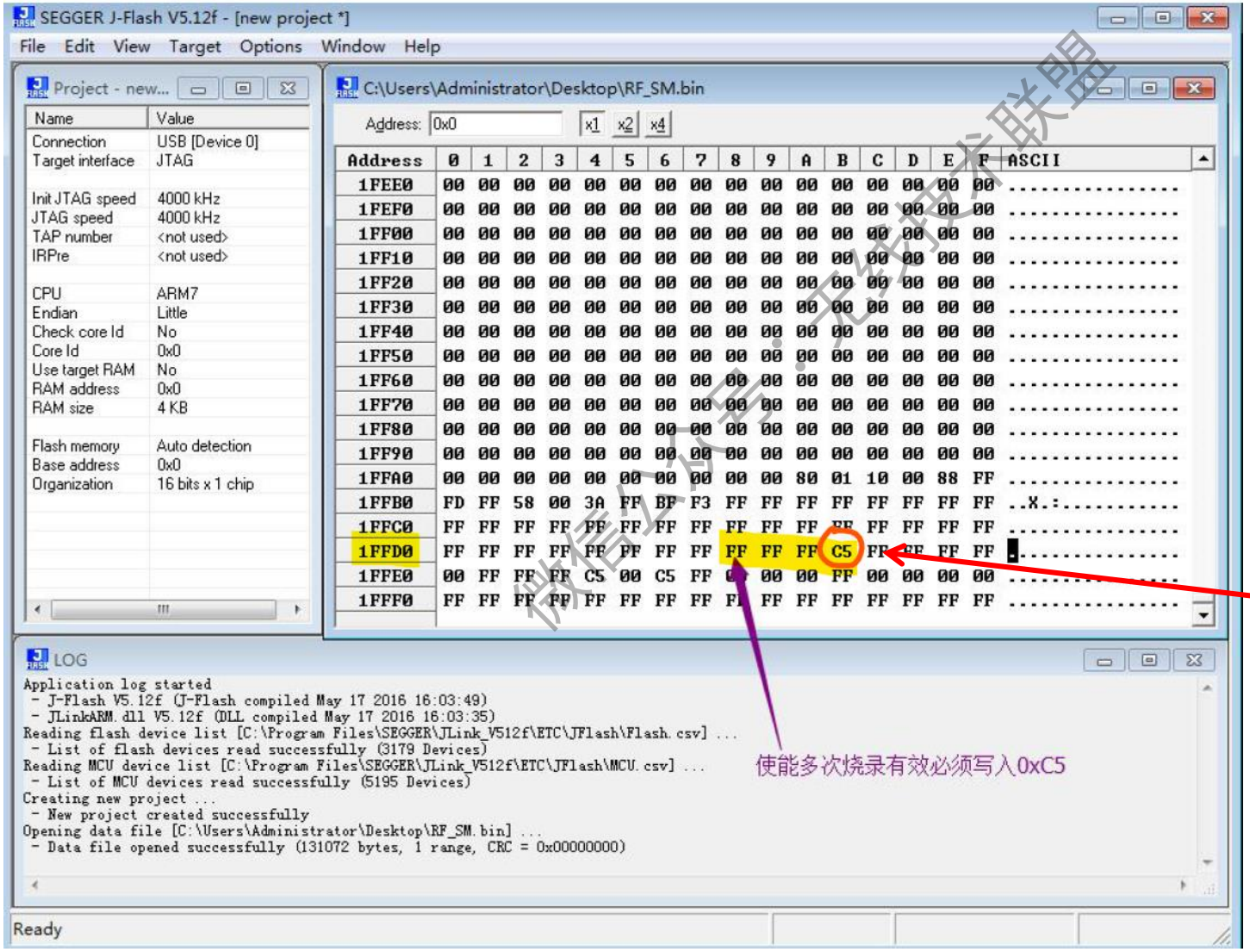
4.拷贝程序至SD卡

5.开机长按右键，进入固件更新程序

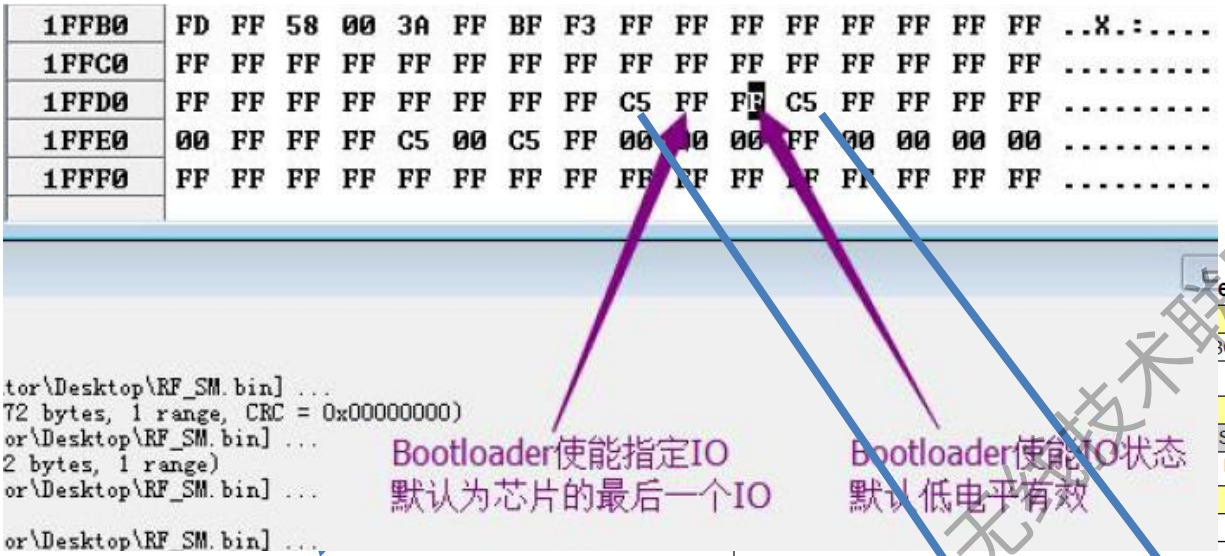


可选：BIN文件配置(使能BootLoader)

利用第三方攻击SEGGER J-flash打开固件，查看bin文件内容，查看下图红色圈标识位数据是否为0xC5，若不为，手动改为0xC5，保存固件，若希望多次烧录，蓝色箭头指向的数值也需改为0xC5。



可选： BIN文件配置(使能BootLoader)



e 11-13. BL_CONFIG Register

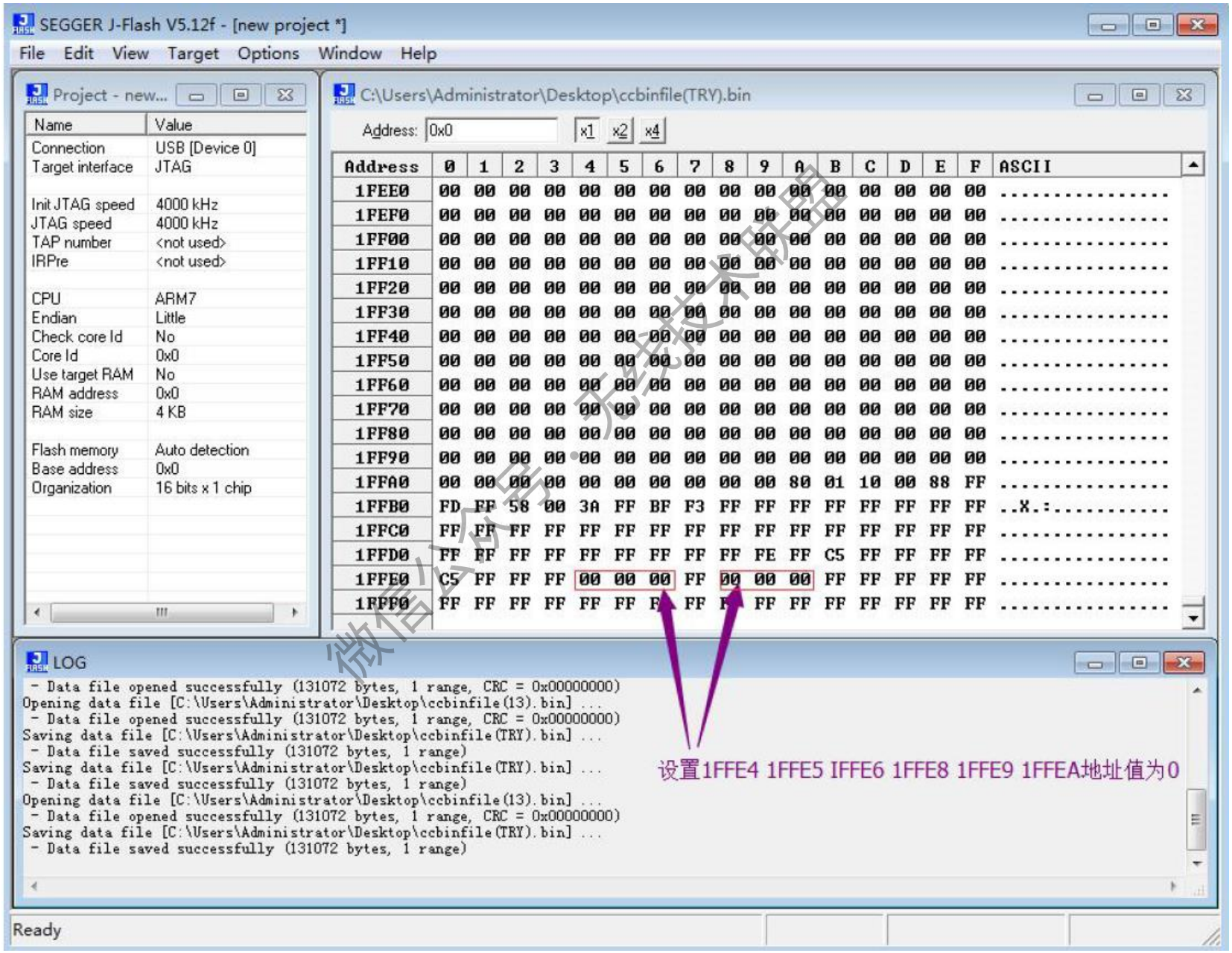
31	30	29	28	27	26	25	24
OOTLOADER_ENABLE							
R-C5h							
23	22	21	20	19	18	17	16
SERVED							BL_LEVEL
R-0h							R-1h
15	14	13	12	11	10	9	8
BL_PIN_NUMBER							
R-FFh							
7	6	5	4	3	2	1	0
BL_ENABLE							
R-FFh							

如若要使能多次烧录功能，需要把BL_CONFIG 7-0位改为0xC5，芯片即可多次烧录，否则，芯片只有在空片模式下才能使用bootloader，烧录一次固件之后无法再通过bootloader烧录第二次！

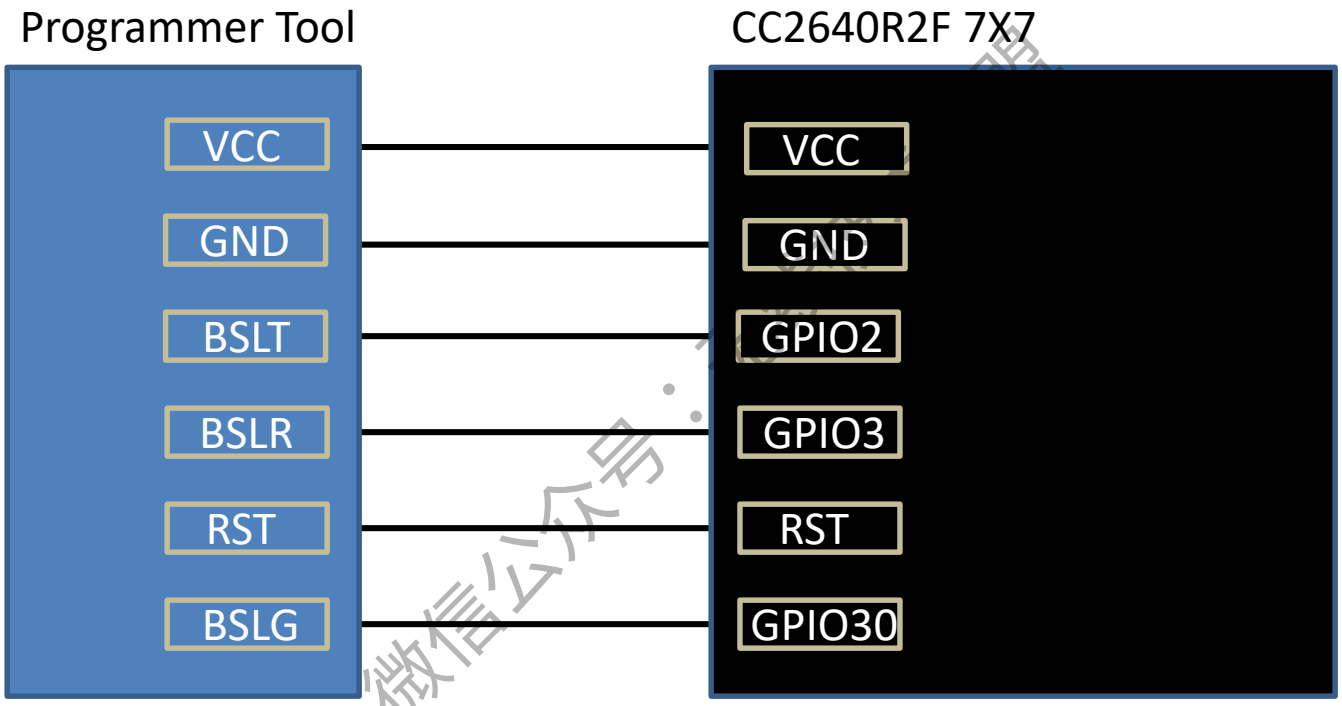
Table 11-15. BL_CONFIG Register Field Descriptions

Bit	Field	Type	Reset	Description
31-24	BOOTLOADER_ENABLE	R	C5h	Bootloader enable. Boot loader can be accessed if IMAGE_VALID_CONF.IMAGE_VALID is non-zero or BL_ENABLE is enabled (and conditions for boot loader backdoor are met). 0xC5: Boot loader is enabled. Any other value: Boot loader is disabled.
23-17	RESERVED	R	0h	Reserved
16	BL_LEVEL	R	1h	Sets the active level of the selected DIO number BL_PIN_NUMBER if boot loader backdoor is enabled by the BL_ENABLE field. 0: Active low. 1: Active high.
15-8	BL_PIN_NUMBER	R	FFh	DIO number that is level checked if the boot loader backdoor is enabled by the BL_ENABLE field.
7-0	BL_ENABLE	R	FFh	Enables the boot loader backdoor. 0xC5: Boot loader backdoor is enabled. Any other value: Boot loader backdoor is disabled. NOTE! Boot loader must be enabled (see BOOTLOADER_ENABLE) if boot loader backdoor is enabled.

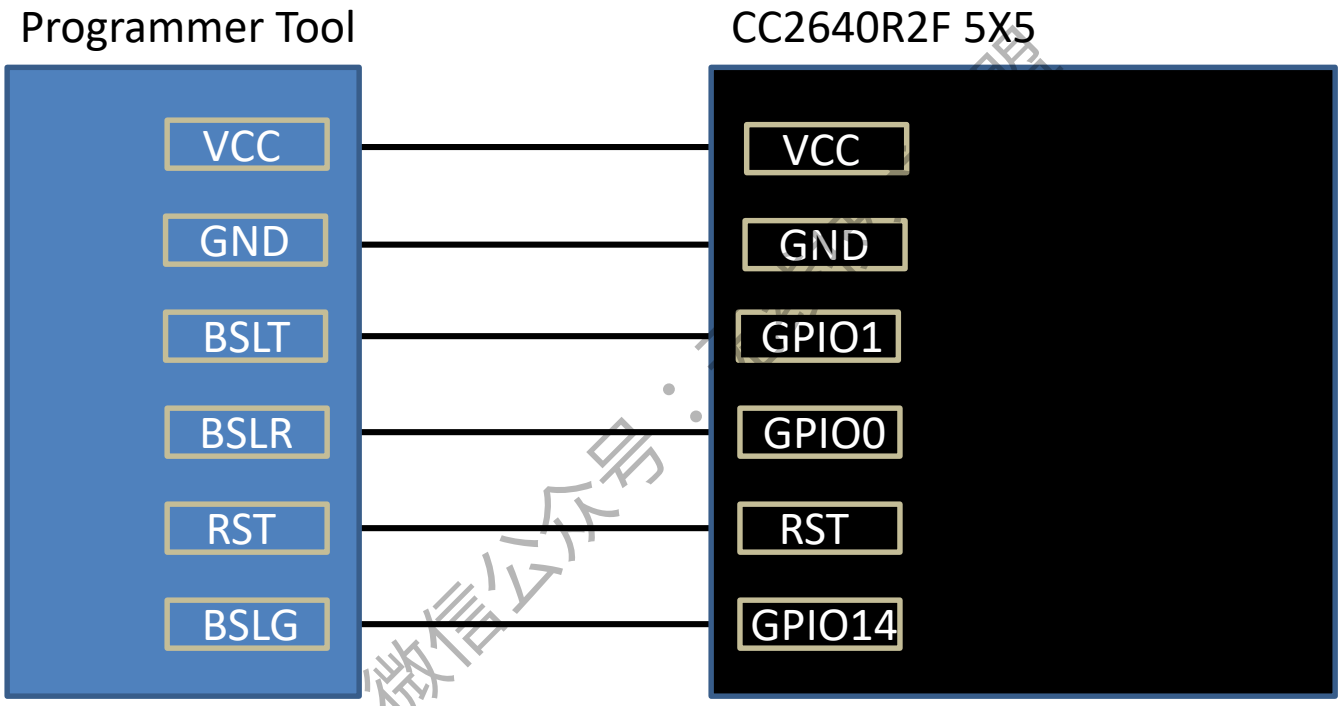
可选： BIN文件配置(禁用JTAG)



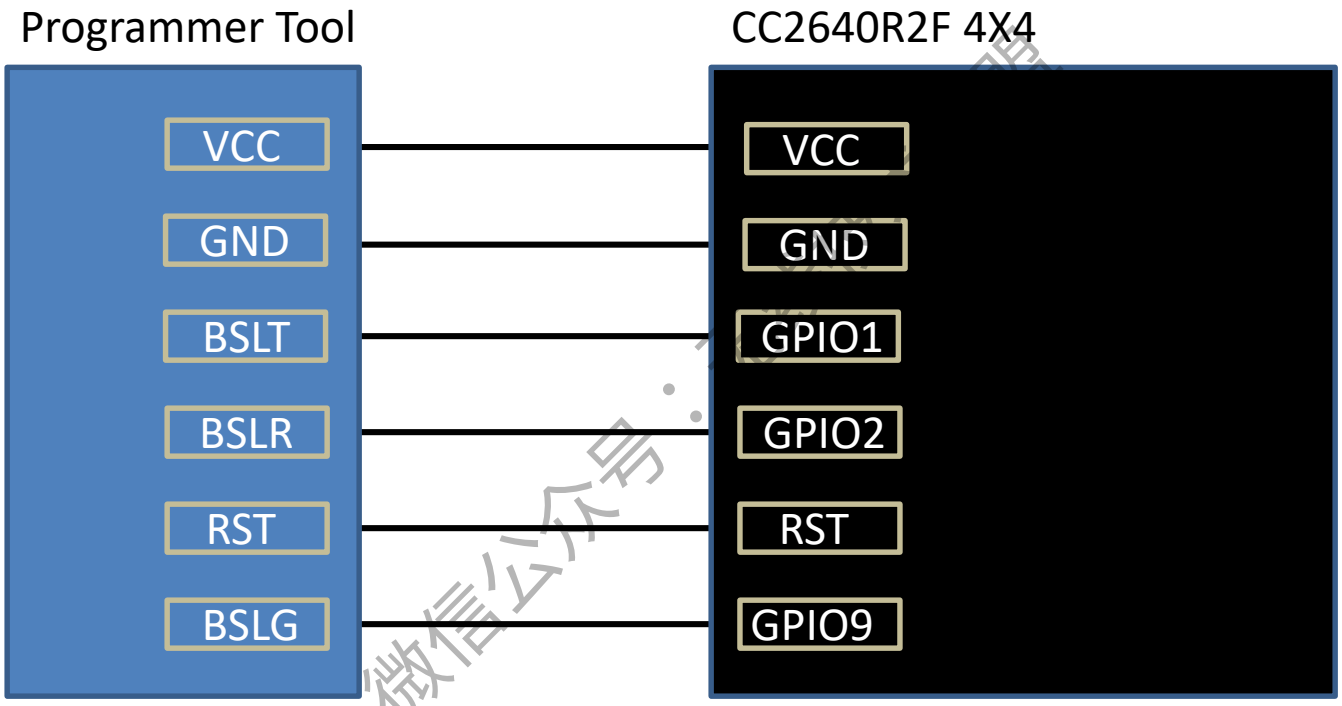
烧录器与7X7芯片接线图



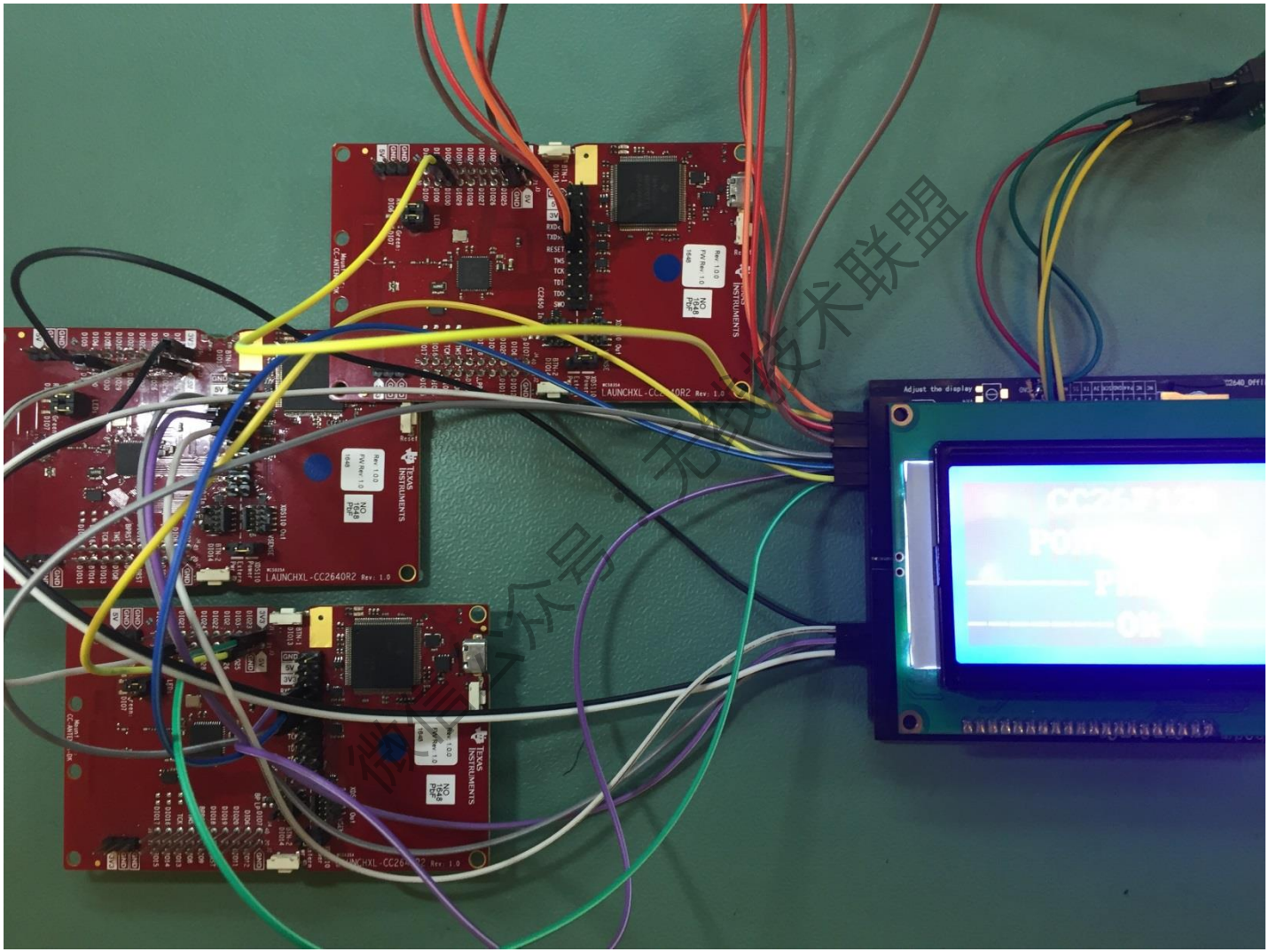
烧录器与5X5芯片封装接线图



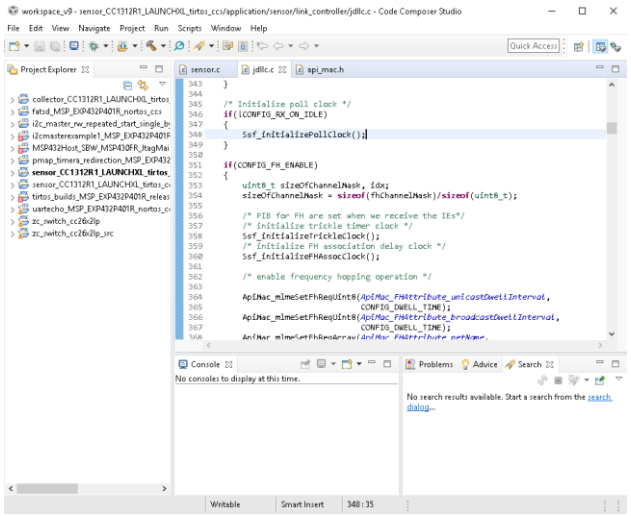
烧录器与4X4芯片封装接线图

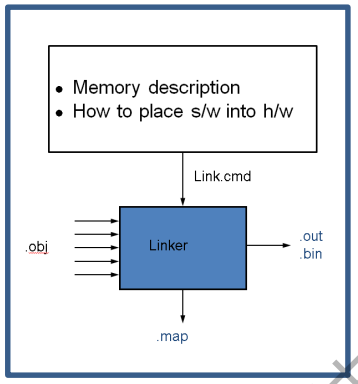


实例



制作烧录固件过程





1.编译生成Bin文件

Firmware.bin

0101010101010101001010101010
1010010101010101010101010101
0101101101011011010101001000
0101010101010101001010101010
1010010101010101010101010101
0101101101011011010101001010
0101010101010101001010101010
1010010101010101010101010101
0101101101011011010101001010...

2.Bin文件改名为Firmware.bin

3.制作个性化烧录文件

Bin文件个性化配置

4.拷贝程序至SD卡

5.开机长按中间按键，直至显示配置界面

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