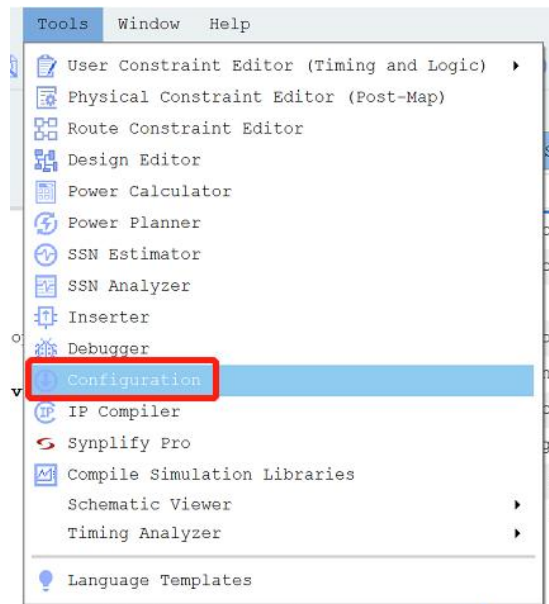


FPGA&CPLD的下载与固化

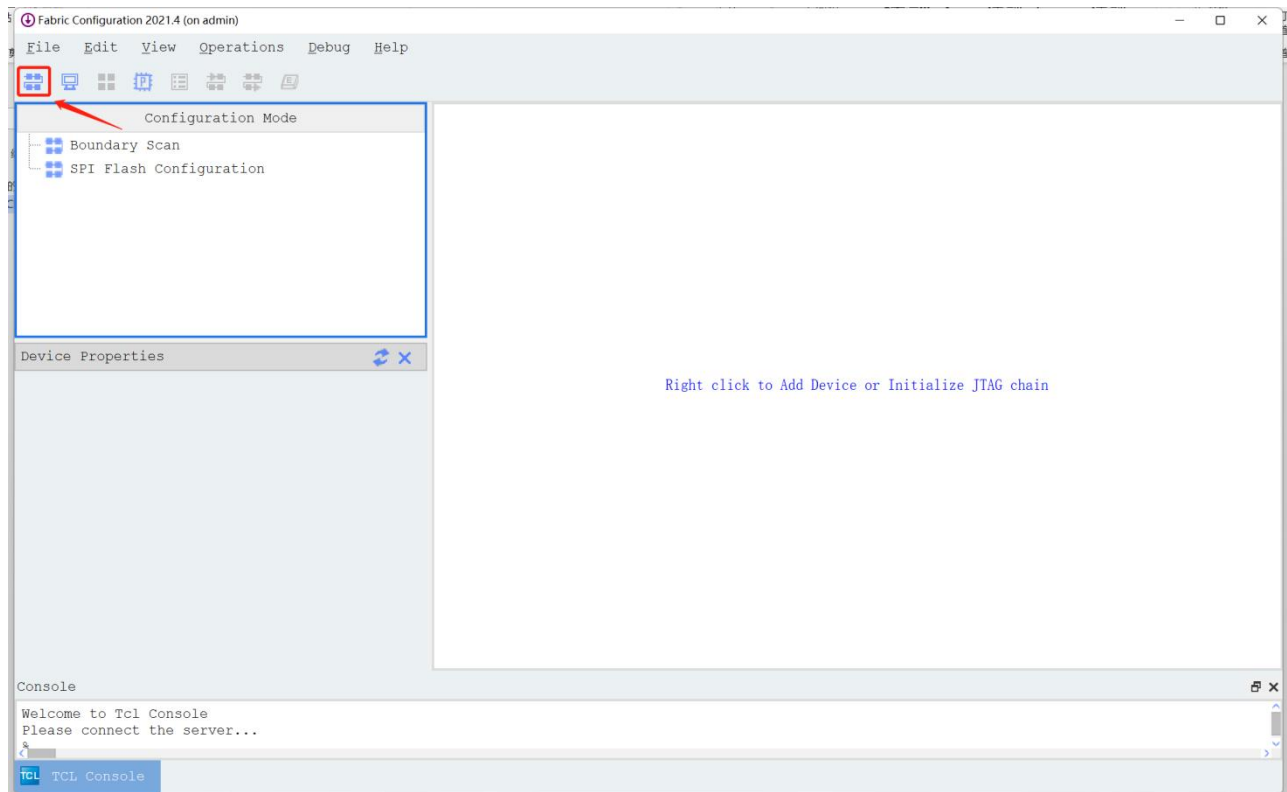
1. FPGA&CPLD 的下载

(1) 生成位流文件 (.sbit) 后, 可以把.sbit 文件下载到 FPGA 或 CPLD 中, 首先将 JTAG 下载器与 PCB 板连接并上电, 点击菜单栏中【tools】 下的【Configuration】。

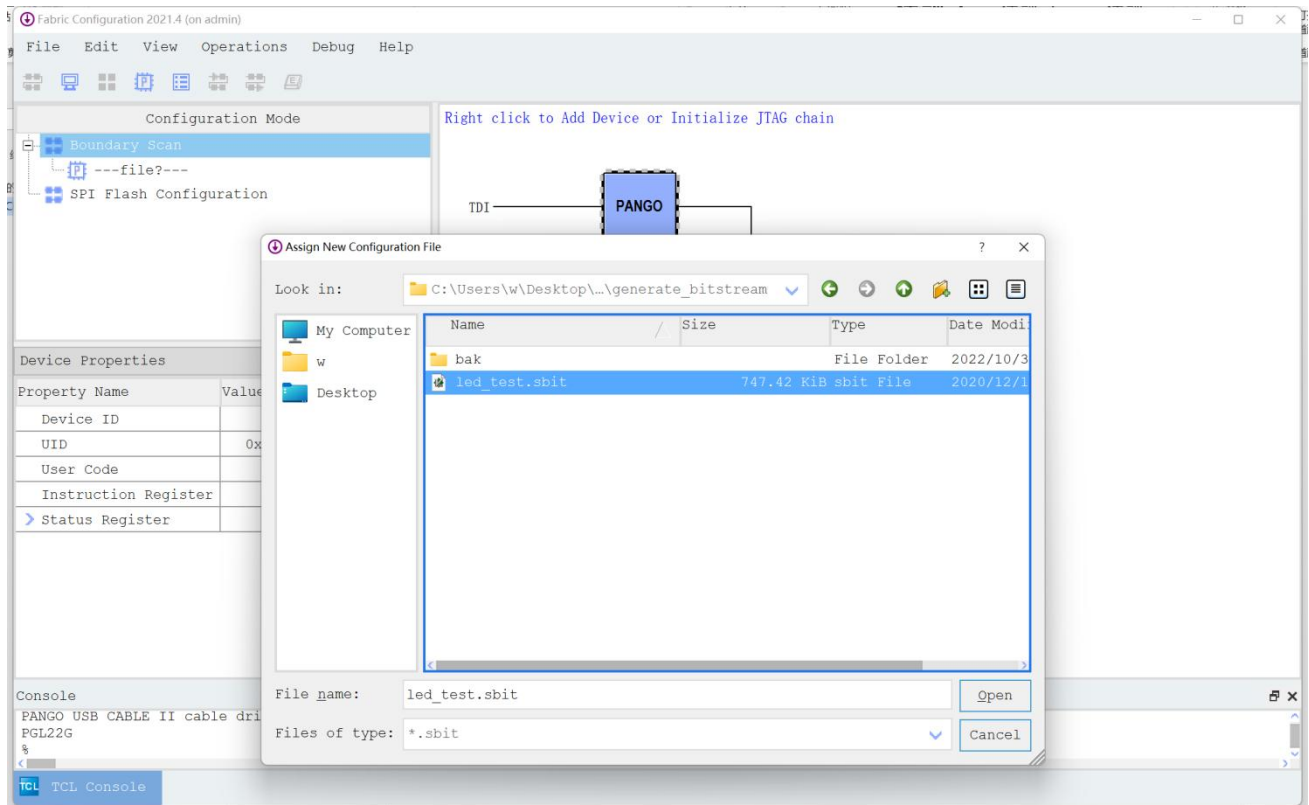


Configuration

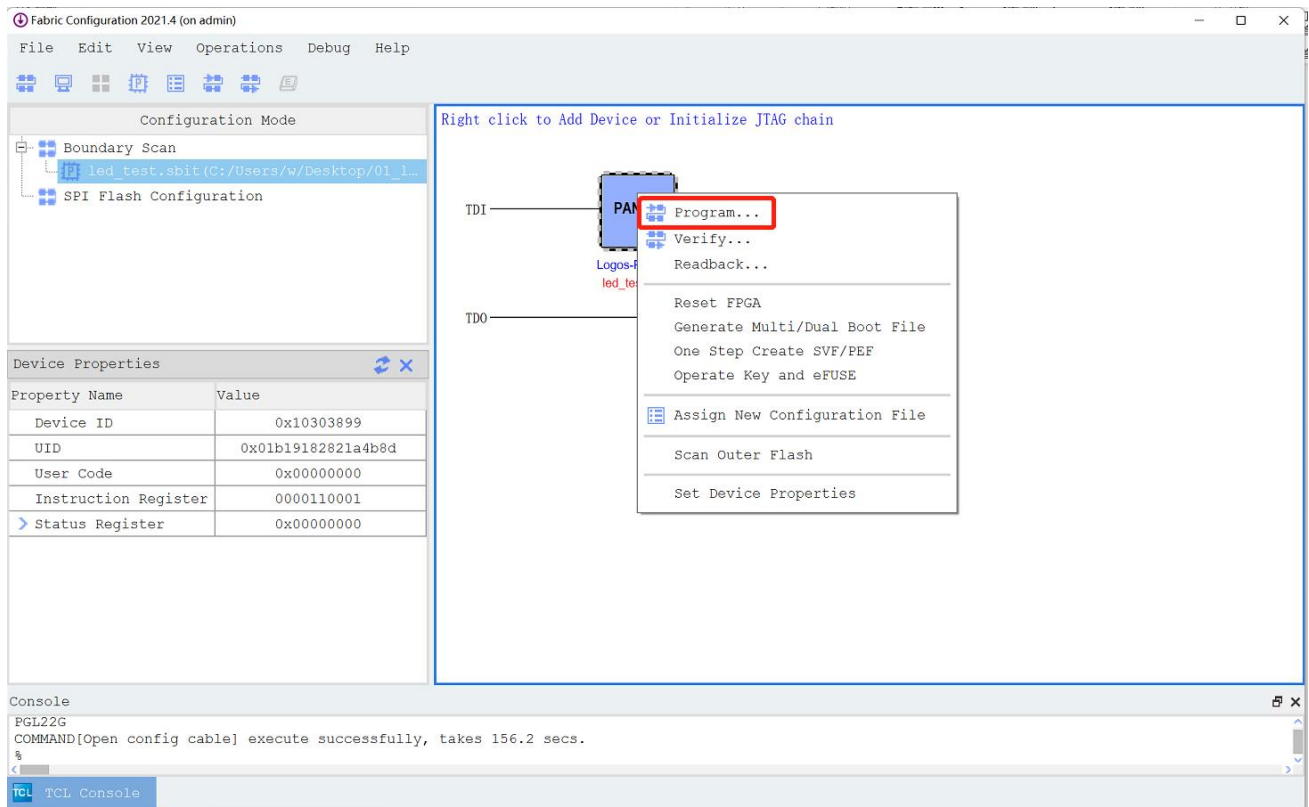
(2) 在弹出的界面中单击【Scan Devive】。



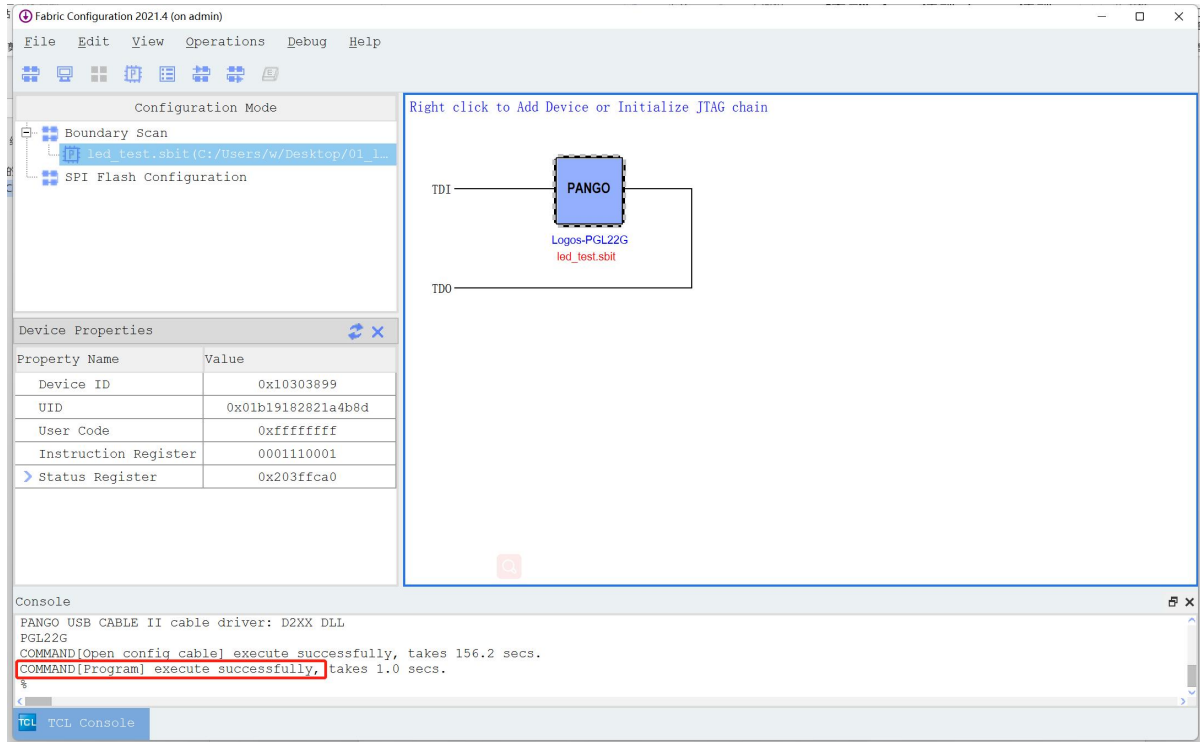
(3) 在扫描到器件后，会弹出加载.sbit 文件界面，按要求添加即可。



(4) 添加好.sbit 文件后，选中器件并右击，在弹出的菜单中选择【Program】。

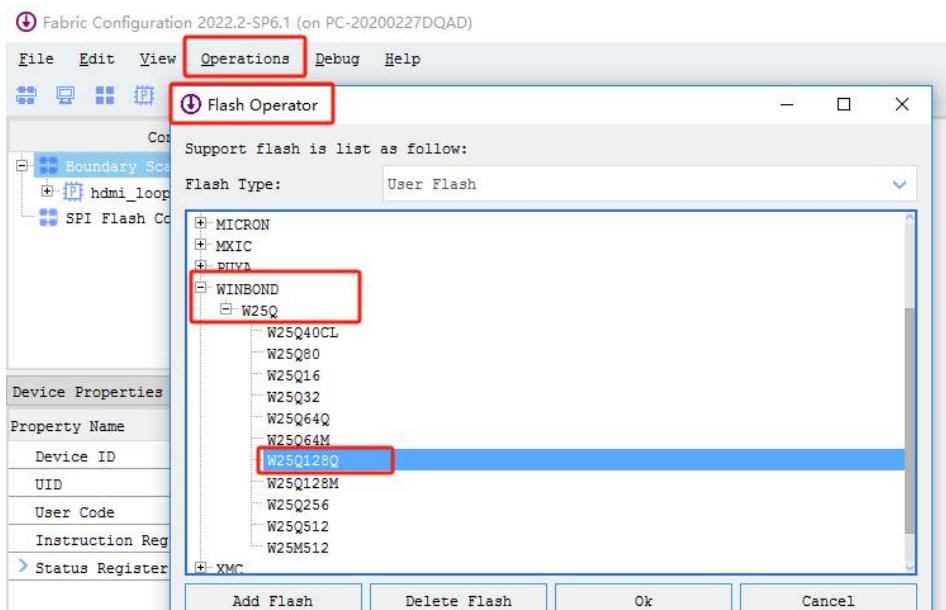


(5) 信息区：显示“COMMAND[Program] execute successfully..”即已完成 FPGA 或 CPLD 的下载。



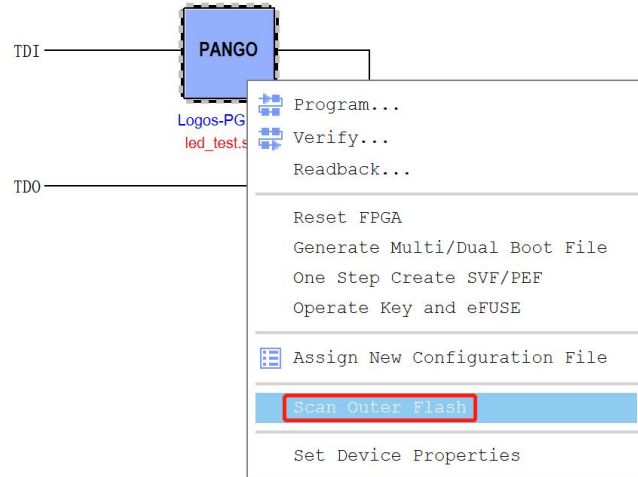
2. FPGA 的 Flash 固化

(1) 例如外部 flash 采用 winbon 的 W25Q128JVEQ，是 configuration 工具中已支持的 flash 型号则可直接由步骤（3）开始操作，若采用 flash 型号在 configuration 工具中暂不支持需先进行步骤（2）新增用户 flash 操作；

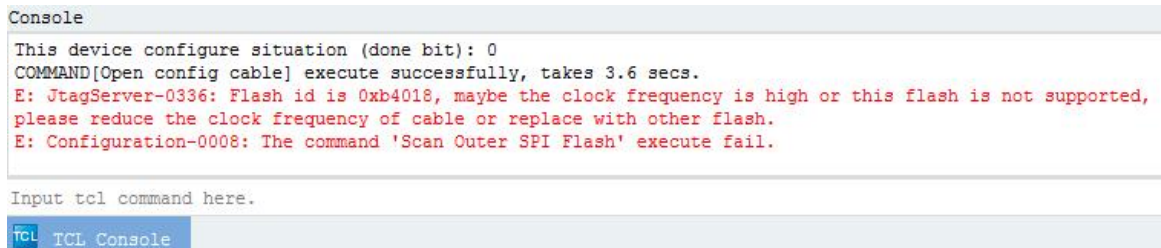


(2) 新增用户 flash 操作

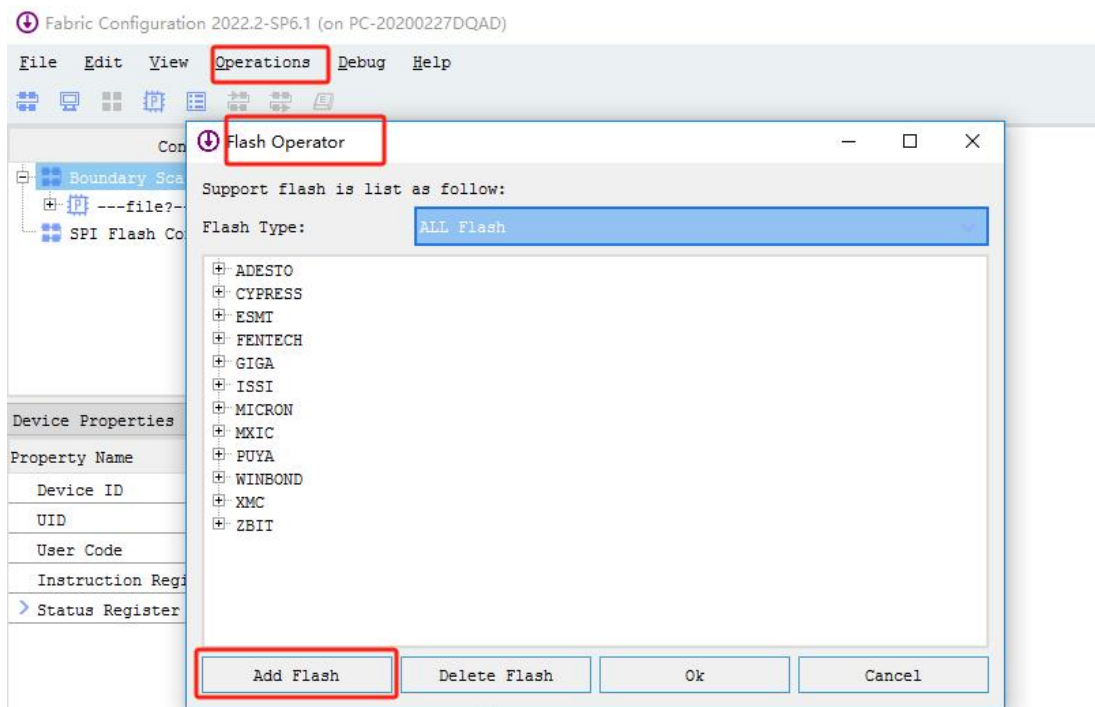
例如外部 flash 采用芯天下的 XT25BF128FSSIGU-W，右键界面 PANGO 器件选择扫描外部 flash



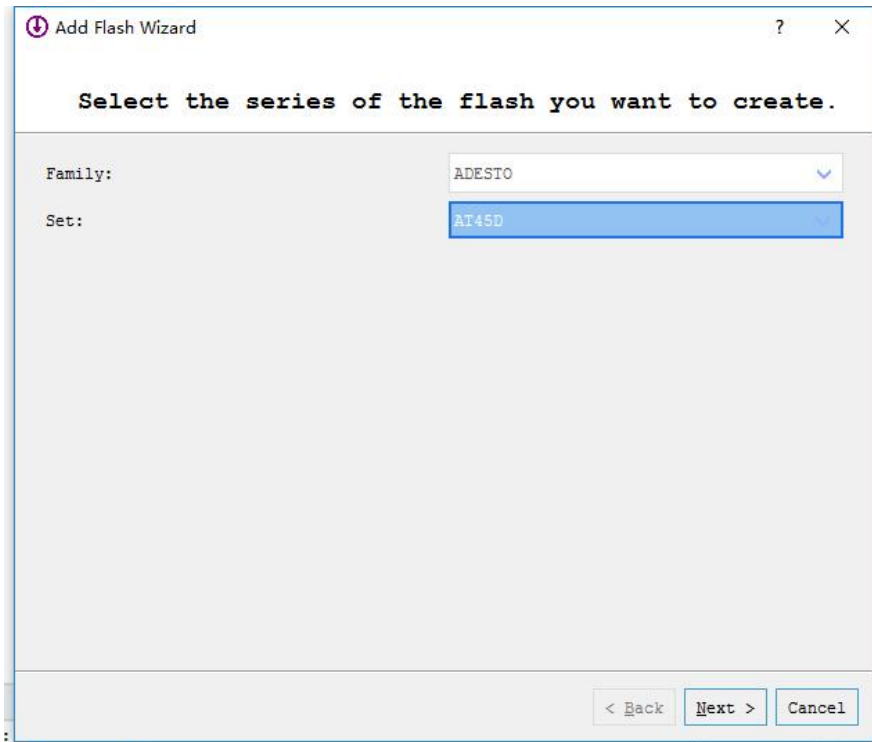
可扫描出 flash 的 ID 为 0xb4018，configuration 工具暂不支持



在 Operations 菜单通过点击 Flash Operator 选项，弹出的对话框中进行用户自定义 FLASH 的添加

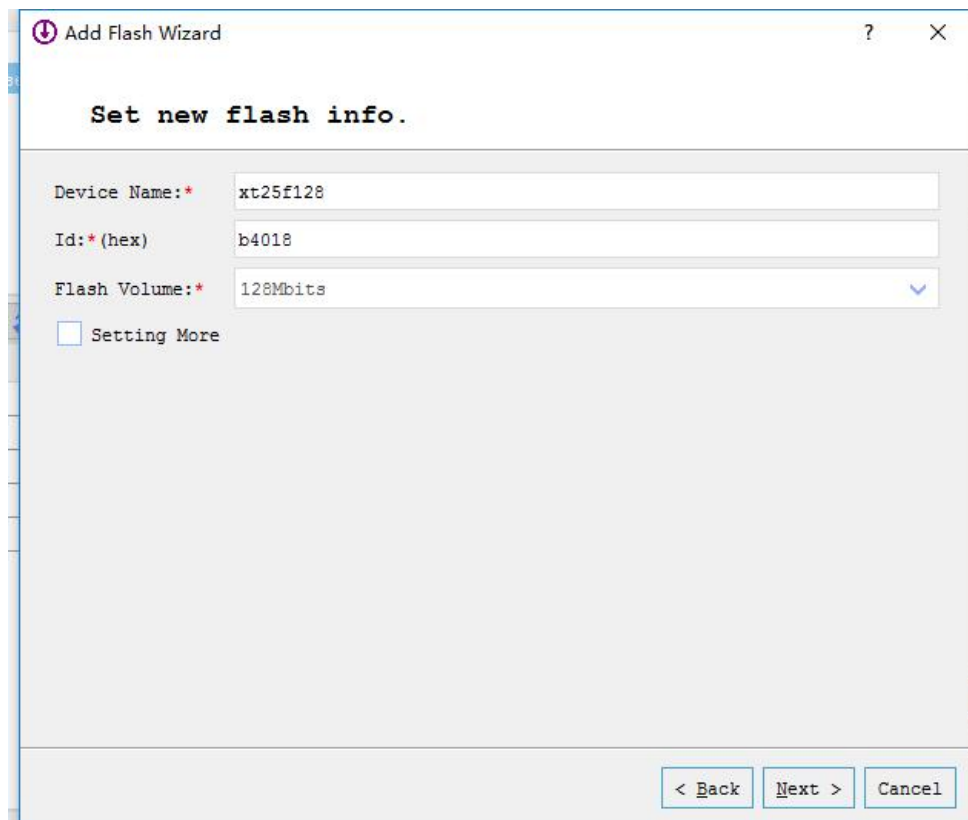


选择 flash 厂商和系列



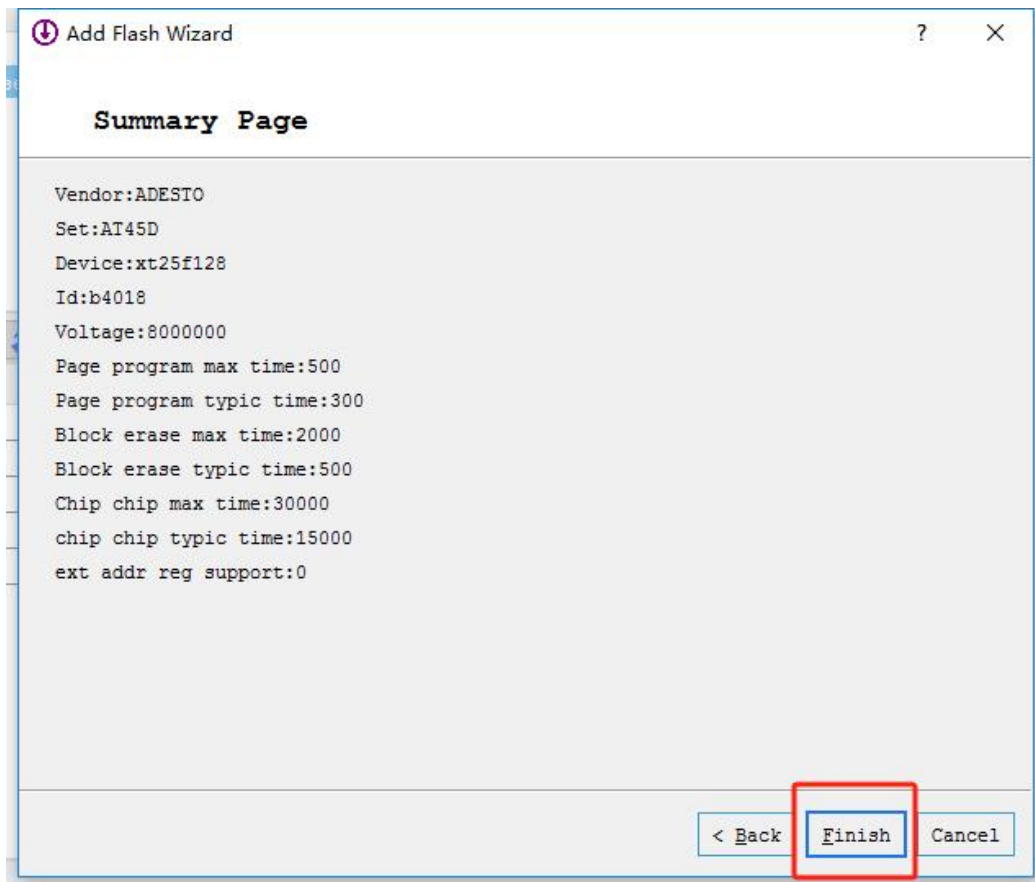
The dialog box is titled "Add Flash Wizard" and contains the instruction "Select the series of the flash you want to create." It features two dropdown menus: "Family:" with "ADESTO" selected and "Set:" with "AT45D" selected. At the bottom, there are three buttons: "< Back", "Next >", and "Cancel".

填写 flash 具体信息，ID 为 Scan Outer Flash 步骤所扫描的结果（0xb4018），再点击 next

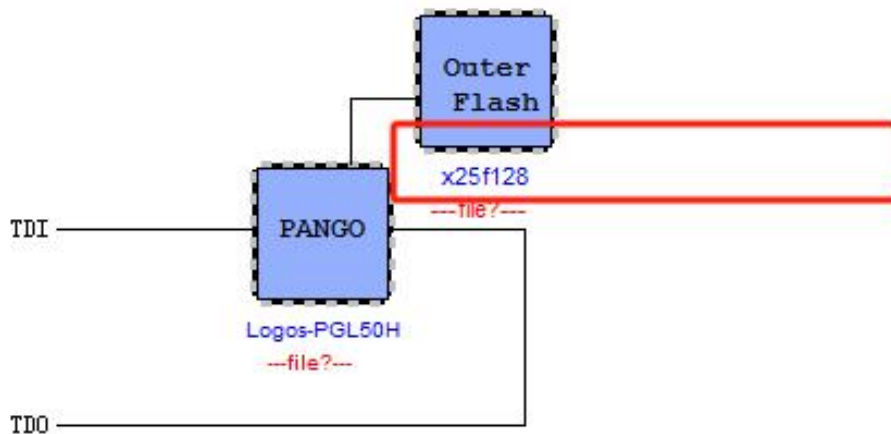


The dialog box is titled "Add Flash Wizard" and contains the instruction "Set new flash info." It features three input fields: "Device Name:*" with "xt25f128", "Id:*(hex)" with "b4018", and "Flash Volume:*" with "128Mbits". There is also a checkbox labeled "Setting More" which is currently unchecked. At the bottom, there are three buttons: "< Back", "Next >", and "Cancel".

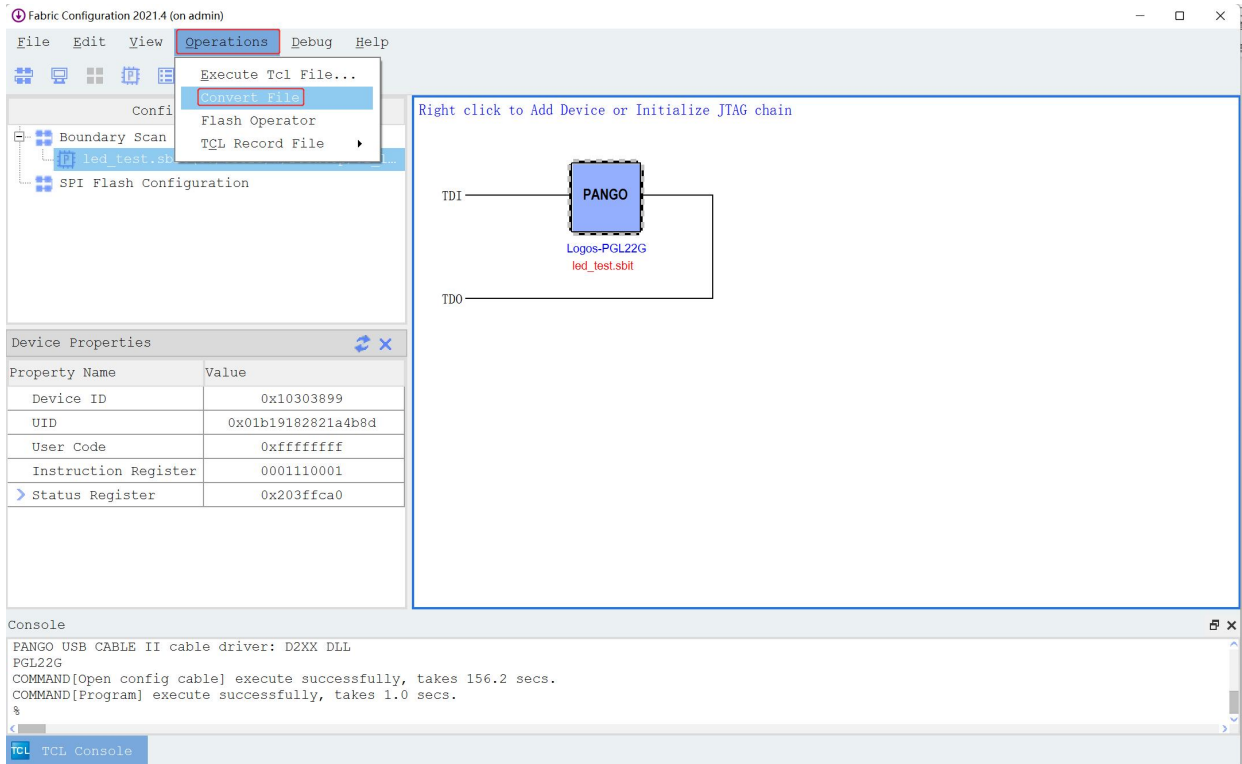
点击 finish 后完成新增 flash



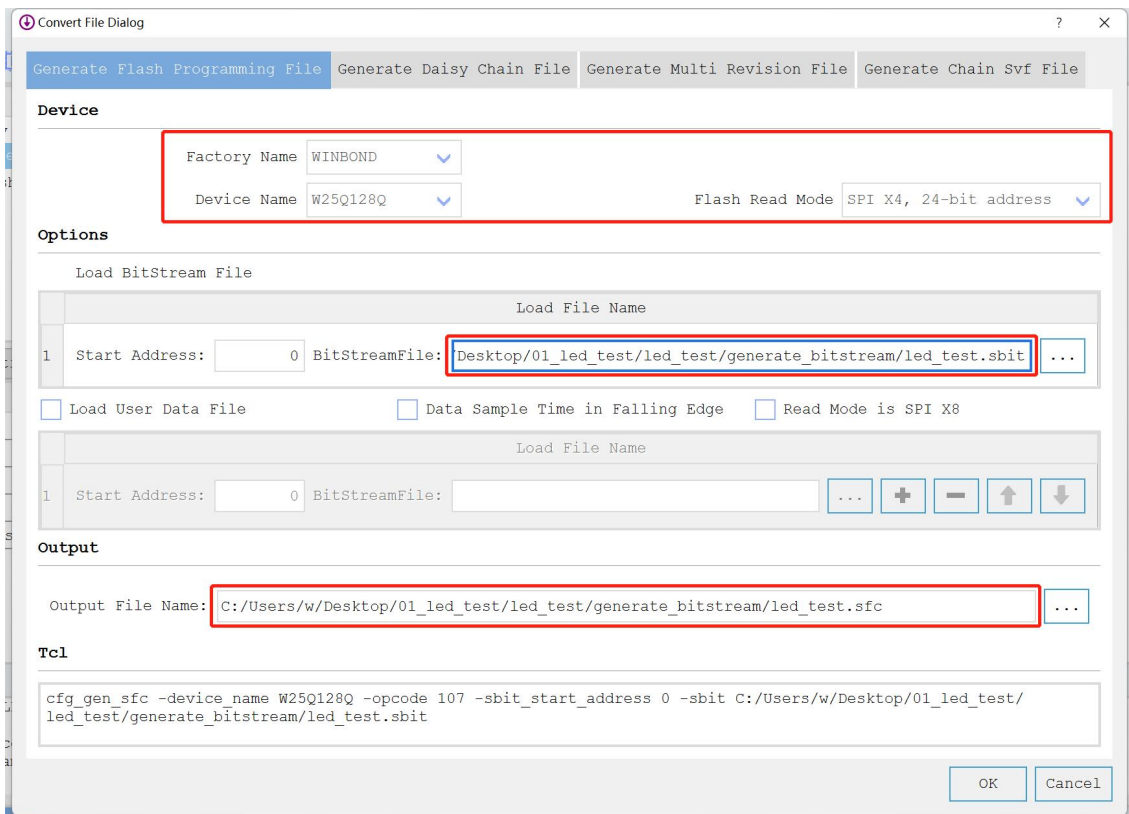
新增完成后重启 configuration 工具，Scan Outer Flash 操作可扫描出对应新增的 flash (x25f128)



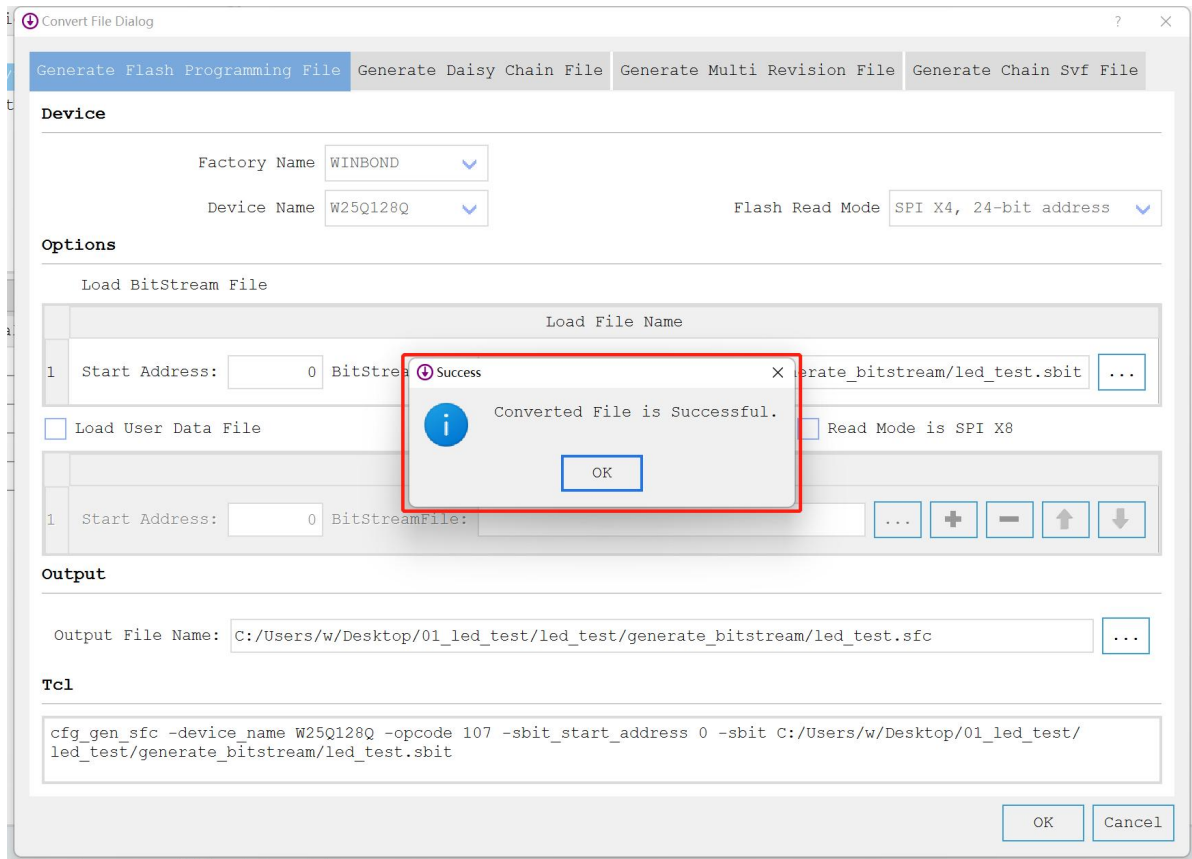
(3) FPGA 的 flash 固化需要先将 .sbit 文件转换成 flash 的 .sfc 文件。点击菜单栏的【Operations】选择【Convert File】。



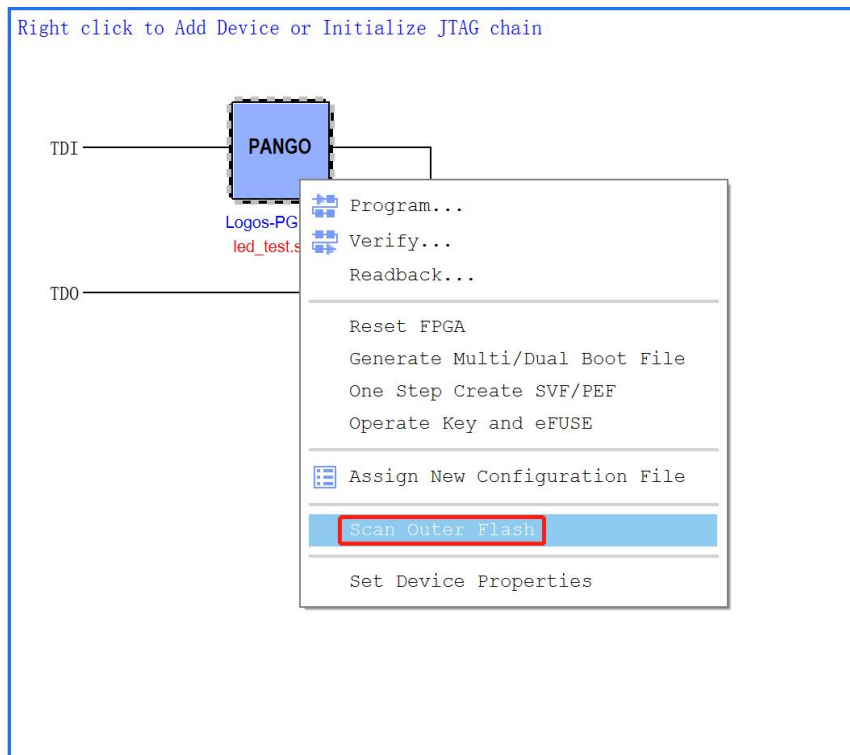
(4) 在弹出的界面中，根据使用的 flash 型号选择厂家和设备型号（若不确定 flash 器件型号可先右键界面 PANGO 器件选择扫描外部 flash 查看扫描结果），选择要转换的.sbit 文件，自动显示.sfc 文件位置，点击 OK。



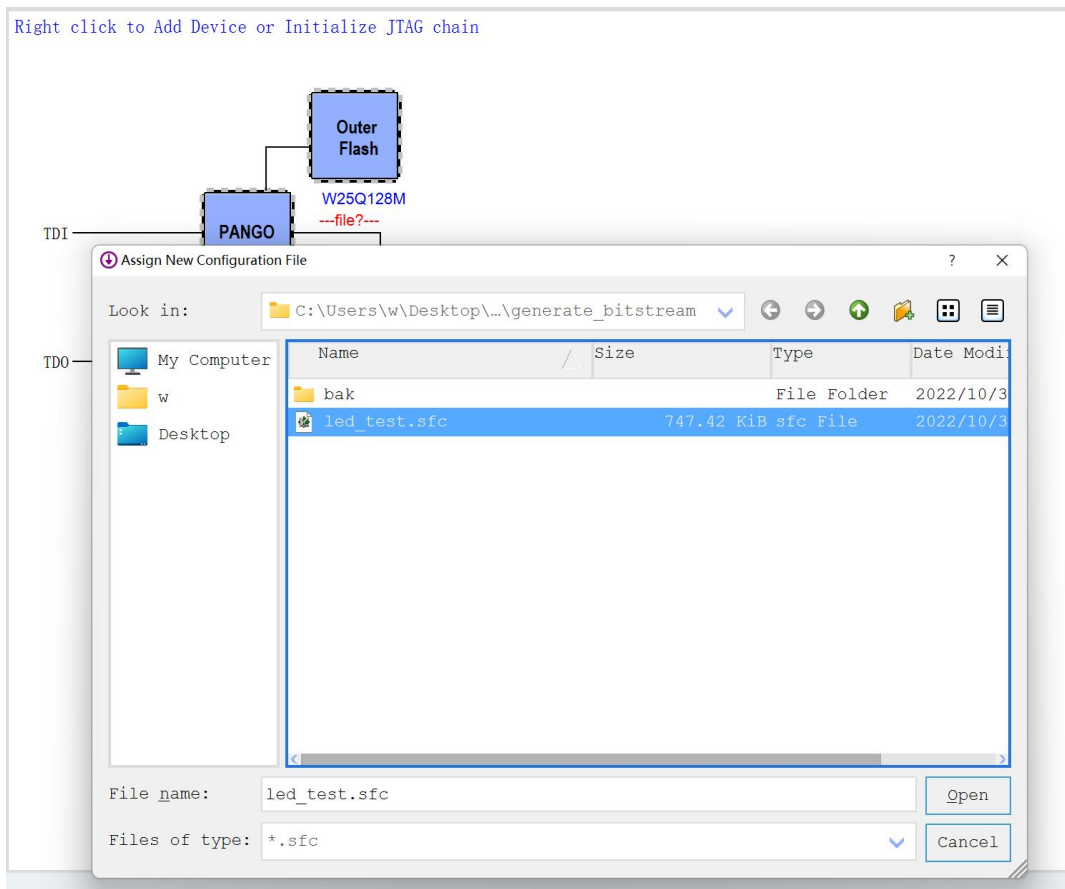
(5) 转换成功后，显示如下界面，点击 OK 退出：



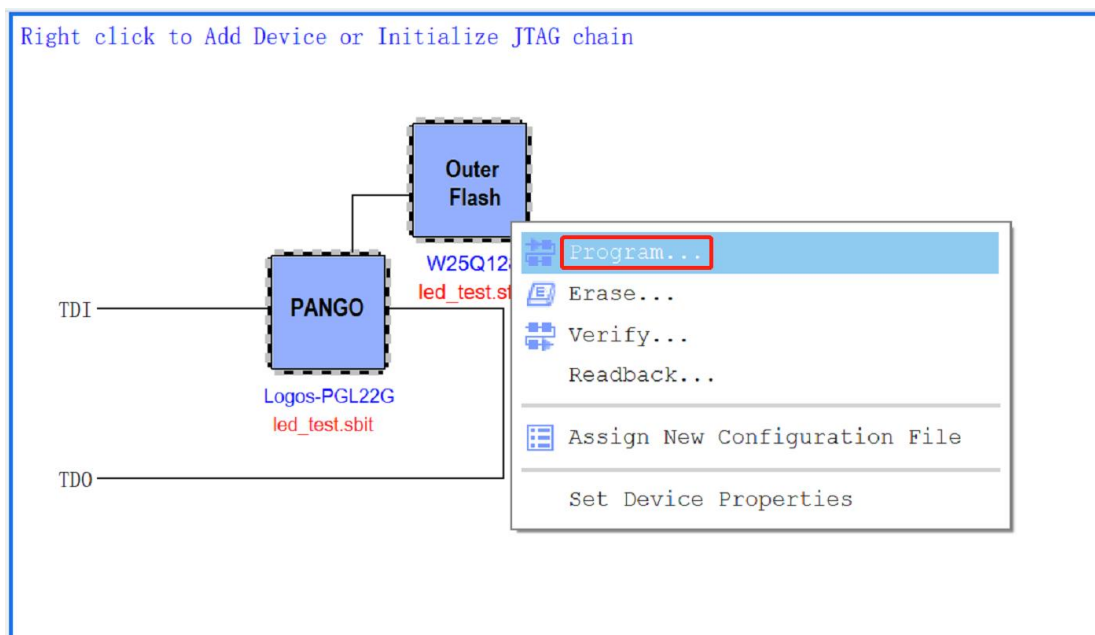
(6) 选中器件右击，选择下拉菜单中的【Scan Outer Flash】



(7) 在弹出的界面中选择.sfc 文件，点击【Open】



(8) 右击【Outer Flash】，在下拉菜单中点击【Program...】



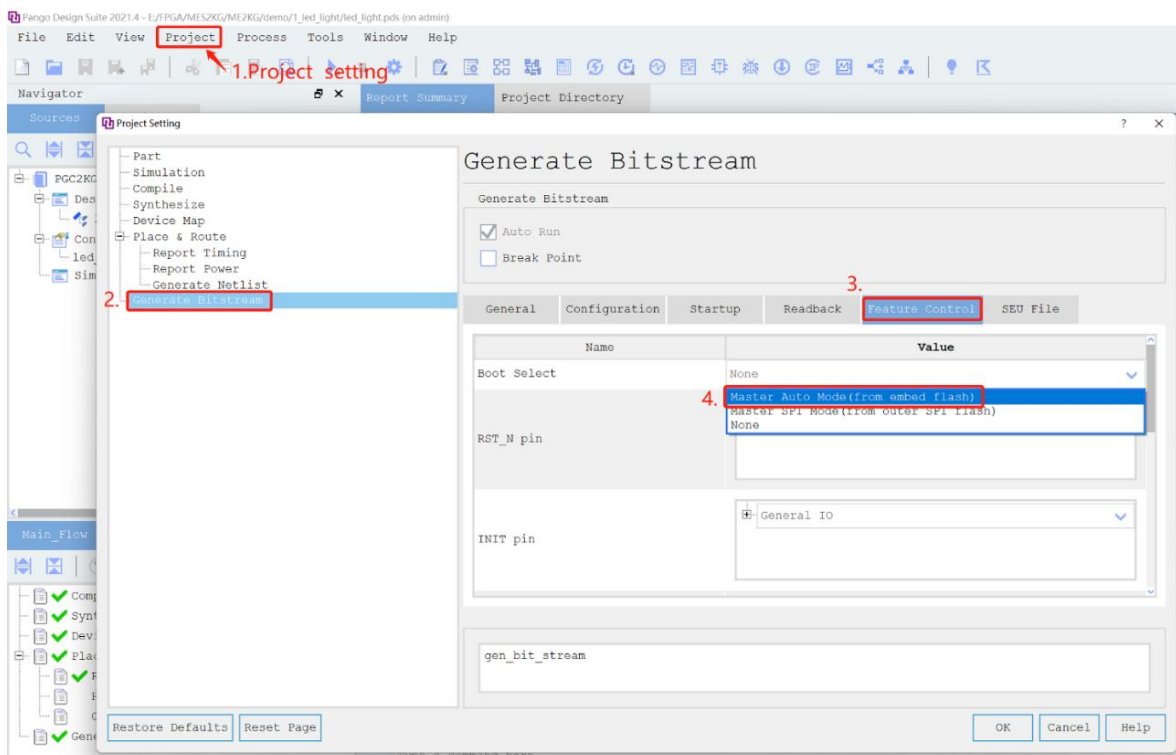
(9) 进度条消失并出现下图，至此 FPGA 的 Flash 固化完成。

Console

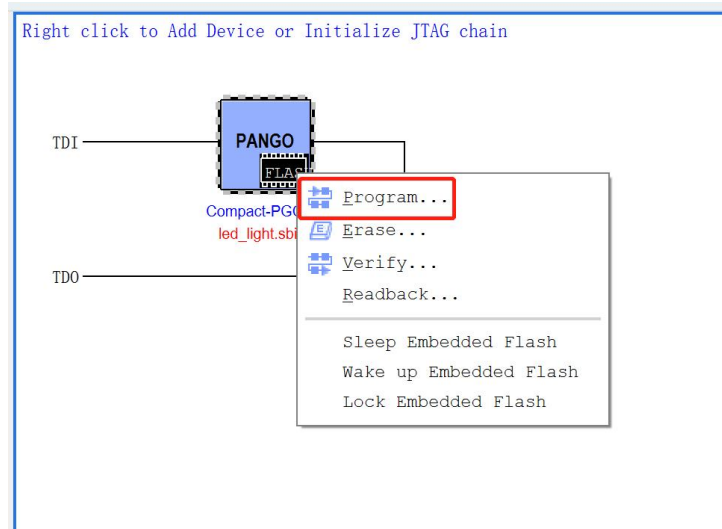
```
FGH22G
COMMAND[Open config cable] execute successfully, takes 3.5 secs.
COMMAND[Scan Outer SPI Flash] execute successfully, takes 6.0 secs.
The start address of operating flash is 0x0.
COMMAND[Erase Outer Flash] execute finish, takes 5.8 secs.
The start address of operating flash is 0x0.
COMMAND[Program Outer Flash] execute finish, takes 14.2 secs.
The start address of operating flash is 0x0.
COMMAND[Verify Outer Flash] execute successfully, takes 1.2 secs.
%
```

3. CPLD 的 Flash 固化

Compa 系列 CPLD 器件内置 eFlash，无需外挂 Flash。首先按照下图设置 CPLD 器件的启动方式【Master Auto Mode (from embed flash)】，重新生成新的位流文件.sbit。



(2) 按照“1.FPGA&CPLD 的下载”流程进入到下载界面，选择新的.sbit 文件，右击器件中的【Flash】，在下拉菜单中选择【Program】，等待进度条消失出现“[Verify EFlash]execute successfully...”，自此 CPLD 的 eFlash 固化完成；



Console

```
COMMAND[get_cable_paras] execute successfully, takes 0.8 secs.  
PANGO USB CABLE I2 cable driver: D2XX DLL  
PGC2KG  
COMMAND[Open config cable] execute successfully, takes 3.8 secs.  
The feature control value read form device is : 0x00020101, which is differ from target control value  
in bit stream file : 0x00020902. now it will program target control value and then reset device.  
Feature Control value is : 0x00020902  
COMMAND[Program EFlash] execute finish, takes 7.9 secs.  
COMMAND[Verify EFlash] execute successfully, takes 1.0 secs.  
%
```