- 安装 CH32F103 器件库,点击示例程序目录下的 Keil.WCH32F1xx_DFP.1.0.0.pack 文件(或 者去官网下载: <u>http://www.wch.cn/downloads/CH32F103EVT_ZIP.html</u>),如果之前已经安 装好了,此步骤可以省略。
- 2、使用跳帽将 BTO 和 BT1 分别接到 GND 上,如下图所示:



3、找到 CH32F103C8T6 开发板 SWD 接口,如下图所示:



- 4、将仿真器(理论上只要支持 SWD 协议的仿真器都支持,这里以 ST-LINK 为例)的 3.3V、 DIO、CLK、GND 引脚和 SWD 接口引脚一一对应连接起来
- 5、打开 KEIL 工具软件,点击如下图所示按钮:

File Edit View Project Flash De	bug Peripherals Tools SVCS	Window Help
🗋 🖬 🖉 🐰 🖓 🗛 🛍 🖉 🤗	◆⇒ P R R R 律者	🗉 // 🗄 // 🛣 printf 🛛 🔽 🔜 🥐 🛛 🔍 👻
🔗 🕮 🕮 🏈 🕶 🔜 🗱 TEMPLET	🔹 🗟 🛃 🔁 🔹	> 🚳
Project 🛛 🗜 💌		
Project: TEMPLET		
🖃 😓 TEMPLET	「「「」」に、「」」に、「」」に、「」」の「「」」で、「」」で、「」」で、「」」で、「」」で、「」」で、「」」で	
🗉 🛄 USER		
HARDWARE		
🗉 📮 CORE		
🗉 📮 FWLib		
🗉 📮 SYSTEM		
CMSIS		
🗈 🏶 Device		

6、在弹出的界面里点击 Debug 按钮,然后在 Use 里选择 ST-LINK Debugger,如下图所示:

Coptions for Target 'TEMPLET'		X		
Device Target Output Listing User C/C++ Asm	Linker Debug Utilities			
C Use Simulator with restrictions Settings		Settings		
Limit Speed to Real-Time	Signum Systems JTAGjet			
Image: Vertication at Startup Image: Vertication Transmission Initialization File: Image: Vertication Transmission	✓ Load A NULINK Pro Cortex Debugger NULink Debugger Initializatio SiLabs UDA Debugger	n()		
Edit	CMSIS-DAP Debugger	Edit		
Restore Debug Session Settings	Restore PEMicro Debugger			
✓ ✓ Toolbox	Bre ULINKplus Debugger			
✓ Watch Windows & Performance Analyzer	Watch Windows			
V Memory Display V System Viewer	Memory Display System Viewer			
CPU DLL: Parameter:	Driver DLL: Parameter:			
SARMCM3.DLL -REMAP	SARMCM3.DLL			
Dialog DLL: Parameter:	Dialog DLL: Parameter:			
DCM.DLL -pCM3	TCM.DLL -pCM3			
Warn if outdated Executable is loaded	Warn if outdated Executable is loaded			
Manage Component Viewer Description Files				
OK Can	ncel Defaults	Help		

7、将 CH32F103C8T6 开发板上电,然后点击 Use 旁边的 Settings 按钮,弹出如下界面,则 说明 ST-LINK 下载器连接成功:

Debug Trace Flash Download Debug Adapter Unit: ST-LINK/V2	SW Device	ove
Serial 53FF71067766485259261681 Version: V2 FW: V2J31S7 Check version on sta Target Com Port SW Clock Req: 4 MHz Selecter 4 MHz	SWDIO 0x1BA0 ARM CoreSight SW-DP ● ● <th>Jp own</th>	Jp own
Debug Connect & Reset Options Connect: Normal Veset: Autodeto V Reset after Conny Stop after	etect ▼ r Res Cache Options Cache Code Cache Memory Download Options Verify Code Downlo: Download to Flash	

8、点击 Flash Download 按钮,进入 flash 设置界面,如下图所示(如果 flash 已经选择好,

则第8、9步骤可以省略):

Cortex-M Target Driver Setup
Debug Trace Flash Download Download Function C Erase Full C V Program E Erase Sector: V Verify O Do not Erase V Reset and Run RAM for Algorithm :art: 0x20000000 ize: 0x1000
Programming Algorithm Description Device Size Device Type Address Range
art: ize:

9、点击 Add 按钮(如上图所示)选择 flash,一般都是选择第一个(算法已经处理好了),选择好了,点击下方的 Add 按钮退出,如下如所示:

Add Flash Programming	Algorithm			
Description	Elash Size	Device Type	Origin	
CH32F1xx_64 Flash	64k	On-chip Flash	Device Family Package	
STM32F10x Flash Options	16B	On-chip Flash	Device Family Package	-
AM29x128 Flash	16M	Ext. Flash 16-bit	MDK Core	
K8P5615UQA Dual Flash	64M	Ext. Flash 32-bit	MDK Core	
LPC18xx/43xx MX25V803	8M	Ext. Flash SPI	MDK Core	
LPC18xx/43xx S25FL032	4M	Ext. Flash SPI	MDK Core	
LPC18xx/43xx S25FL064	8M	Ext. Flash SPI	MDK Core	
LPC407x/8x S25FL032 SP	4M	Ext. Flash SPI	MDK Core	
LPC5460x MT25QL128 S	16M	Ext. Flash SPI	MDK Core	
M29W640FB Flash	8M	Ext. Flash 16-bit	MDK Core	
MIMXRT105x EcoXiP Flash	4M	Ext. Flash SPI	MDK Core	
RC28F640J3x Dual Flash	16M	Ext. Flash 32-bit	MDK Core	
S29GL064N Dual Flash	16M	Ext. Flash 32-bit	MDK Core	
S29JL032H_BOT Flash	4M	Ext. Flash 16-bit	MDK Core	
S29JL032H_TOP Flash	4M	Ext. Flash 16-bit	MDK Core	
I Selected Flash Algorithm File:				
d:\Keil_v5\ARM\PACK\Keil\\	WCH32F1xx_D	FP\1.0.0\Flash\CH3	32F1xx_64.FLM	
		Add	Cancel	

10、 点击确定按钮和 OK 按钮,退出设置界面,如下图所示:

Cortex-M Target Driver Setup	×
Debug Trace Flash Download Download Function	
Programming Algorithm Description Device Size Device Type Address Range CH32Flxx_64 Flash 64k On-chip Flash 08000000H - 0800FFFFH izert	
Add Remove	
确定 取消 应用(<u>A</u>)	

11、 点击编译按钮进行程序编译,成功后,就可以进行下载,如下图所示(如果已经编译,则该步骤可以省略):

🔢 G:\STM32核心板资料\QD开发板\CH32F103C8T6核心板\CH32F103C8T6最小系统板资料包\程序示例\Demo_CH32F103C8T6_工程模板\P 💶 🔜
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help
□ 🚰 🚽 🗿 メ 🗄 砲」 ウ ビー 🗢 🖗 魯 魯 宰 華 μ k 🖉 STM32 🔷 🔍 🔍 ● ○ 🔗 🌒 💷 🔍
😳 🛅 🦉 - 🗟 🞇 TEMPLET 💿 🛣 着 🗟 🔶 🧇 🃾
Project 编译 📲 📲
Project: TEMPLET
in 😂 TEMPLET
B- USER
- HARDWARE
E Project Books 1) Functions 0, Templates
Build Output
*** Using Compiler 'V5.66 update 6 (build 750)', folder: 'D:\Keil_v5\ARM\ARMCC\Bin'
n.logJTERFEI.axf" - 0 Error(s), 0 Warning(s).
Build Time Elapsed: 00:00:01
▲ · · · · · · · · · · · · · · · · · · ·
编译成功
4 F
E Build Output k Find In Files
ST-Link Debugger

12、 点击下载按钮进行程序下载,出现如下提示,则说明下载成功,如下图所示:

📱 G:\STM32核心板资料\QD开发板\CH32F103C8T6核心板\CH32F103C8T6最小系统板资料包\程序示例\Demo_CH32F103C8T6_工程模板\P	x
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help	
□ 🚰 J 🎜 A 山 逸 っ つ 4 ⇔ き 急 急 急 準 連 // // @ STM32 🔷 🎍 🖉 • ● ○ 🔗 🍭 🔲 • 🍬	
○ 🖾 👙 • 🗟 🙀 TEMPLET	
Project 📮 🖬	
Project: TEMPLET	
🗛 TEMPLET 下载	
🕮 🚨 USER	
HARDWARE	
B GRE	
Scholar Constant	
B S Device	
EProject Books B Functions D_Templates	
Build Output	4
*** Using Compiler 'V5.06 update 6 (build 750)', folder: 'D:\Keil_v5\ARM\ARMCC\Bin'	-
<pre>"OsJTERFET.at" - 0 Error(s), 0 Warning(s).</pre>	
Build Time Elapsed: 00:00:01 Load "/OBC/ITEMPLET.axf"	
Erase Done.	
Verify OK.	
Application running Flash Load finished at 16:31:56	
	-
🗷 Build Output 🗔 Find In Files	
ST-Link Debugger	at