- First, make sure that the keil software is installed on the computer (please consult Baidu for the specific installation method)
- 2. Select the example you want to test, find the file ending with ".uvproj", and double-click to open the project, as shown below:

4夹				· · ·
名称	修改日期	类型	大小	
🧐 system_stm32t10x.h	2011-03-10 10:51	H文件	3 KB	
i test.c	2018-07-06 20:22	sourceinsight.c	11 KB	
🥑 test.h	2014-02-27 12:11	H文件	2 KB	
TOUCH.map	2018-07-06 20:21	Linker Address	97 KB	
TOUCH.plg	2014-02-17 21:59	HTML文档	2 KB	
TOUCH.uvgui.Administrator	2018-07-07 11:00	ADMINISTRATO	141 KB	
TOUCH.uvgui.IBM	2015-04-03 21:15	IBM 文件	139 KB	
TOUCH.uvgui_Administrator.bak	2018-07-06 20:23	BAK文件	140 KB	
TOUCH.uvgui_IBM.bak	2015-04-02 13:58	BAK文件	139 KB	
TOUCH.uvopt	2018-07-06 20:23	UVOPT 文件	15 KB	
TOUCH.uvproj	oject 2018-07-06 19:24	礦ision4 Project	19 KB	
TOUCH_Target 1.dep	2018-07-06 20:21	DEP 文件	36 KB	
TOUCH_uvopt.bak	2018-07-06 19:24	BAK 文件	16 KB	
TOUCH uvproi.bak	2017-12-13 14:20	BAK文件	19 KB	

 After opening the project, compile the project, click the compile button to compile the project. If the "FromELF: creating hex file..." prompt appears, the compilation is successful, as shown in the figure below:

E:\project\3.2inch\QDtech_3.2inch_	ILI9341_SPI_V1.0\2-STM32测试程序\STM32_Demo_STM32F103RCT6_Hardwar 😑 💷 💈	3
File Edit View Project Flash Debug File Edit View Project Flash Debug Image: State Stat	LL19341_SP[_V1.0\2-STM32测试程序\STM32_Demo_STM32F103RCT6_Hardwar □ □ 2 Peripherals Tools SVCS Window Help ▼ 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Build Output	46 //T_DO接PC2 //触摸SPI总线输出 47 //T_IRQ接PC1 //触摸屏中断信号 < Ⅲ	•
<pre>compiling stm32f10x_usart.c linking Program Size: Code=18374 RO-data=5 FromELF: creating hex file "\OBJ\TOUCH.axf" - 0 Error(s), ({ </pre>	854 RW-data=112 ZI-data=1648 Warning(s).	•
	* JLink Info: ETM fitted. J-LINK / J-TRACE C	it. 1

4. Set JTAG as follows: (If it is already set, do not set it)

A. Connect JTAG to the computer and development board, click the magic wand icon ->

Debug-> drop-down menu to select J-LINK/J-TRACE Cortex, as shown below:

E:\project\3.2inch\QDtech	_3.2inch_ILI9341_SPI_V1.0\2-STM32测试程序\STM32_Dem	no_STM32F103RCT6_Hardware_SPI\USER\TOUCH.uvproj - µ	Vision 🗆 🖾
File Edit View Project Flash	Debug Peripherals Tools SVCS Window Help		
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Project	4 🔯 🖹 main.c		▼ ×
E Target 1	😨 Options for Target 'Target 1'	X	· ·
e di main.c	Device Target Output Listing User C/C++ As	n Linker Debug Utilities	VCC常亮
⊞- 🗄 test.c	C Use Simulator Settings	Use: J-LINK / J-TRACE Cortex Settings	
u delay.c	Limit Speed to Real-Time	Û	
⊞– 🗄 system_stm32f1	I Load Application at Startup I ✓ Run to main()	Image: Transmission of the section Image: Transmission of the section	
HARDWARE	Initialization File:	Initialization File:	
e icd.c	Edit	Edit	
⊕– 🗄 myiic.c	Restore Debug Session Settings	Restore Debug Session Settings	E.
⊞- <u>⊪</u> 24cxx.c	Vateb Windows & Porformance Analyzer	V Breakpoints V Toolbox	******
CORE	Memory Display Viach Wildows & Periodinance Analyzer System Viewer	Memory Display System Viewer	
E-FWLID			
Project Realer 1 Eurort	CPU DLL: Parameter.	Driver DLL: Parameter:	
Books CF Functa	SARMCM3.DLL -REMAP	SARMCM3.DLL	
Suild Output			† 🖸
	Dialog DLL: Parameter.	Dialog DLL: Parameter.	-
	DCM.DLL -pCM3	TCM.DLL -pCM3	

B. Click Settings, set ort to SW, and Max to 2MHz, as shown below:

E:\project\3.2inch\QDtech	_3.2inch_ILI9341_SPI_V1.0\2-STM32测试程序\STM32_Demo_STM32F103RCT6_Hardware_SPI\USER\TOUCH.uvproj - µV	ision 🗆 🗆 💥
File Edit View Project Flash	n Debug Peripherals Tools SVCS Window Help	
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Project	4 🔟 🟦 main.c	▼ ×
E- Target 1	📱 Options for Target 'Target 1'	•
B 🔄 USER ⊞ 🔝 main.c	Device Target Output Listing User C/C++ Asm Linker Debug Utilities	VCC常亮
⊞- 🖹 test.c	C Use Simulator Settings © Use: J-LINK / J-TRACE Cortex Settings	
⊞– 🔠 delay.c	Limit Speed to Real-Time	
⊞- 🗄 system_stm32f1	Cortex JLink/JTrace Target Driver Setup	
HARDWARE	Debug Trace Flash Download	
⊞– 🟦 lcd.c	J-Link / J-Trace Adapter SW Device	_
⊕ ∰ myiic.c	SN: 308621590 V IDCODE Device Name Nove	-
touch.c	Device: J-Link ARM SHDI O'XIDAO ARM Coresignt Sw-Dr	****
CORE	HW: V8.00 dil V4.80g	
⊞- 🚞 FWLib	ort: Max @ Automatic Detectic ID CODE:	
	SW _ 2MHz _ C Manual Configurati Device Name:	-
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Build Output		4 🖬
	Connect & Reset Options Cache Options Download Options	^
	Jonnect: Normal ▼ leset: Normal ▼ ▼ Cache Code Verify Code Downlo:	
	V Recet after Conn.	

- 5. Set the flash as follows: (If it is already set, do not set it)
 - A. First select the MCU model, click the magic wand icon -> Device-> select
 STM32F103RC MCU model, as shown below:

E:\project\3.2inch\QDtech_3.2inch_ILI9	341_SPL_V1.0\2-STM32测试程序\STM32_Demo_STM32F103RCT6_Hardware_SPI\USER\TOUCH.uvproj - µVision 📃 💷	23
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Project 🛛 🗣 🙆	🖹 main.e	▼ ×
🖃 🛅 Target 1	Options for Target 'Target 1'	*
e- 🗟 main.c	Device Target Output Listing User C/C++ Asm Linker Debug Utilities	
e- i test.c	Device Database	
u− i delay.c	Vendor: STMicroelectronics Software Pack	
⊞– 🖆 system_stm32f10x.c	Device: STM32F103RC Pack: Keil.STM32F1xc_DFP.1.0.4	
🗉 🗁 HARDWARE	Toolset ARM URL: http://www.keil.com/pack/	
🗈 🖹 key.c		
⊡ i lcd.c	Search:	=
B = ≦ 24ccc c		
	STM32F103RC STM32 F1 series of mainstream MCUs covers the series of a large variety of annihilations in the industrial medical and	***
🗉 🧰 CORE	STM32F103RD Consumer markets. High performance with first-class peripherals and low-	
🗄 🧰 FWLib	STM32F103RE select this MCU power, low-voltage operation is paired with a high level of integration at accessible prices with a simple architecture and easy-to-use tools.	
	STM32F103RF model Typical applications include motor drives and application control, medical	-
Project 🛞 Books 🚯 Funct 🗓 Temp	STM32F103RG and nanoneid equipment, industrial applications, PLCs, inverters, printers, and scanners, alarm systems, video intercom, HVAC and home audio	•
id Output	equipment	
nu output	- LCD parallel interface, 8080/6800 modes	-
	STW32F103T0 STW32F10 STW32F10 STW32F10 STW32F10 STW32F1 STW32F1	^
	G CTM32F10316 - 96-bit unique ID	

B. Select the flash model and click Utilities->Settings->Add->Select STM32F10x

High-density Flash->Add, as shown below:

W E:\project\3.2inch\QDtech_3.2inch_ILI9341_SPI_V1.0\2-STM32测试程	序\STM32_Demo_STM32F103RCT6_Hardware_SPI\USER\TOUCH.uvproj - µVision 📃 🖂 🖉
File Edit View Project Flash Debug Peripherals Tools SVCS Windo	w Help
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🤒 🖾 🥔 🚉 🛱 Target 1 💿 🕏 📩 🗟 🔶 🦈 🏫	
Project 🛛 🛱 🔛 main.c	* ×
Options for Target 'Target 1'	× ·
Device Target Output Listing User C/C++ Asa Linke Configure Flash Menu Command	r Debug Utilities E) 如果不需要控制可接VCC常完 接
Use Debug Driver Settings	Add Flash Programming Algorithm
Cortex JLink/JTrace Target Driver Setup	Description Flash Size Device Type Origin
Debug Trace Flash Download Download Function C Erase Full C) \bigtriangledown Program G Erase Sector: \bigtriangledown Verify C Do not Erase \bigtriangledown Reset and Run	A LPC18xx1pH-density512k On-chip Flash Device Family Package STM32F10k High Optons 168 On-chip Flash Device Family Package LPC18xx14xx12k LPC18xx14x12k MDK Core MDK Core RC28F640.3x Dual Flash 16M Ext. Flash 32-bit MDK Core S29GL064N Dual Flash 16M Ext. Flash 32-bit MDK Core
Programming Algorithm	
Description Device Size Device Type STM32F10x High-dens 512k On-chip Flash	об П
:art: [d\Keii_v5\ARM\PACK Keil \STM32F1xx_DFP\1.0.4\Flash\STM32F10x_512.FLM
Add	Add Cancel

6. After setting both JTAG and flash, you can download the program. Download the program, click the download button, download the hex file to the development board, if the "Programming Done. Verify OK." prompt appears, the download is successful, as shown below:

E:\project\3.2inch\QDtech_3.2inch_ILI	19341_SPI_V1.0\	2-STM32测试程序\STM32_Demo_STM32F103RCT6_Hardwar	
File Edit View Project Flash Debug F	Peripherals Tools	SVCS Window Help	
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😂 🖭 🕮 🥔 🔜 🗱 Target 1	💌 🔊 🛔 🗟	🗇 🐡 🚳	
roject Click to download	📩 main.c		▼ ×
Target 1 Imain.c Imain.c Imain.c	36 // 37 // 38 // 39 // 40 41 // 42 // 43 // 44 // 45 // 45 // 47 //	SDI (MOSI) 接PB15 //SPI总线写数据 'SCK 接PB13 //SPI总线时钟信号 'LED 接PB9 //背光控制信号(高电平 'SDO (MISO) 接PB14 //SPI读信号如无需读取 '	(可不接 (可不接
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Build Output			4
rase Done. rogramming Done. Perify OK. upplication running	l successful		
		* JLink Info: ETM fitted.	J-LINK / J-TRACE Co

7. After the program is successfully downloaded, if the module does not have any reaction, you need to press the reset button to run normally. If you want the program to run automatically after the download is successful, you need to set it as follows:
Click the magic wand icon -> Utilities->Settings-> check Reset and run, as shown below:

🔣 E:\project\3.2inch\QDtech_3.2inch_ILI9341_SPI_V1.0\2-STM32测试程序\STM32_Demo_STM32F103RCT6_Hardware_SPI\USER\T.	
File Edit View Project Flash Debug Peripherals Tools SVCS Window Help	
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E Target 1 Options for Target 'Target 1'	*
B → OSER main Device Target Output Listing User C/C++ Asm Linker Debug Utilities	要控制可
Er ⊡ tesConfigure Elash Manu Command	
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del to Se raiger Driver of Hash Programming to Se Debug Driver	
HARDI	
E key Cortex JLink/JTrace Target Driver Setup	
e- 🖆 lcd	=
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B-CORE	
B G FWLib	
Programming Algorithm	-
EProject 6 80 STM32F10x High-dens 512k On-chip Flash 08000000H - 0807FFFFH	•
Build Output	#
Frase Done	
Programming Do	
Verify OK. Application ru	

8. If the module displays characters and graphics normally, the program runs

successfully.

NOTE:

 When downloading the program, if the following error occurs, the JTAG setting is incorrect. Please follow step 4 of the operation instructions:

k - Cortex-M Error	JLink - Cortex-M Error
8 No JLink Device found	No Cortex-M SW Device Found
确定	确定
INK is not connected to the computer	JLINK is connected to the computer, but not connected to the development board

2. If the following error occurs, the flash setting is incorrect. Please follow step 5 of the operating instructions:

Vision		23
<u>^</u>	Error: Flash Download failed - "Cortex-M3"	
	确定	