奋斗版 STM32 开发板 JTAG 下载步骤

该方法适合奋斗版 STM32 核心开发板及完整开发板。下载工具为 JLINK 仿真器。 利用 J-FLASH 软件下载代码:

- 1. 将板上的 JP1 上的短接块插入,将 JLINK 仿真器的下载电缆插入开发板的 XS3 插座, 给开发板加电。 设置BOOT1为0, BOOT0为0
- 2. 运行 PC 机端的 J-FLASH ARM 软件。 该软件在仿真器随机光盘的文件夹里。



3. 按照如图点击进入并按图示选择并确定



	J-Flash-ARM is a software for J-Link ARM. It requires a license, which can be obtained from	
	SEGGER (www.segger.com).	
	 I his software is capable or programming the flash memory of several ARM micros, as well as evternal Elash compacted to ARM occess. 	
filind	Connection to J-Link USB Device 0 USB SN C USB SN C ICP/IP C	
User interface <u>m</u> ode		
Engineering (More options, type)	pically used for setup)	

	General Target Interface CPU Flash Production	
	JTAG	
	JTAG speed before init	
	C Auto selection	
	C Adaptive clocking	
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register	<u>Auto detection</u>	register
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为"Auto	to TDO. IRLen of ARM7/ARM9	为"Auto
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	TDO	
	TDI	
	Add Insert Delete Edit Up Down	

General Target Interface CPU	Flash Pro-	duction
Device ST STM32F103VE Core Little endian	V	Check core ID ID 3BA00477 Use target BAM (faster) Addr 20000000 64 KB
Use following init sequence:	Value1	Comment
0 Reset 0	Oms	Reset and halt target
Add Insert Delete	<u>E</u> dit	<u>Up</u> D <u>o</u> wn

4. 运行连接后的界面如下,指示出 MCU 器件的详细信息

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Project -	Pe 0 🔀		
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4. 打开需要下载的代码文件。

下载文件需要hex文件,在IAR中,通过如下 设置可以得到hex文件,Option\Output Convert里选中generate additional output, 并且选择输出格式为"Intel extended",编译 后即可得到下载用的hex文件。

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Flash memory	STM32F10xxE internal	8000000	EF	20	88	88	EF	20	88	88	EF	20	88	88	IF	20	88	88			
Manufacturer	ST	8888860	FF	20	88	88	FF	210	88	218	FF	20	88	88	EF	28	88	88			
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5.选择 AUTO 下载代码。

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CE of affected sectors verified successfully CEK = (orf23065AF) Target programmed and verified successfully CEK = (orf23065AF) Target grage there (1996 bytes, 1 range) Target sector (1, 2, 3, 4, 5, 6, 7, 8 Target sector (1, 2, 3, 4, 5, 6, 7, 8 Target grage maned and verified successfully CEK = (orf23065AF) Target grage maned successfully CEK of affected sectors "CEK of affected sectors	Organizat	5													1	EF	20	99	68		·~···	···· ··	•
B EF 2D 08 00	- 0.1 m		17	- 26	ŵ.	1									8	EF	20	66	68		·****	····-·	•
Competted EF 2D 00 00 EF 2D 00 00 EF 2D 00 00			<u>L</u>		-										0	EF	2D	88	88		·****		
CRC of affected sectors verified successfully CRC = OxF28065AF) Turget srased, programed and verified successfully - Completed after 4.000 sec the spectrum completed successfully Turget srased, programed successfully Turget srased, programed successfully CRC of affected sectors "GRC of affected sectors verified successfully CRC = OxF28065AF) Turget programmed successfully Turget srased, programmed and verified successfully CRC = OxF28065AF) Turget srased, programmed and verified successfully CRC = OxF28065AF) Turget srased, programmed and verified successfully CRC = OxF28065AF) Turget srased, programmed and verified successfully CRC = OxF28065AF) Turget srased, programmed and verified successfully - Completed after 4.180 sac			8080170		20		100	u	20	60		T.L.	40		-08	EF	20	88	88			******	- 2
<pre>- CRC of affected sectors verified successfully CRC = Out23005AF) - Target sensed, programmed and verified successfully - Completed after 4.200 sec use programming target U7904 bytes, 1 range) - Erssing affected sectors - Erssing sector 0, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing strengt U7904 bytes, 1 range) - Target sequenced successfully - Target programmed and verified successfully CRC = Out23005AF) - Target sectors 0, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing strengt U7904 bytes, 1 range) - Target programmed and verified successfully CRC = Out23005AF) - Target sectors 0, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing strengt U7904 bytes, 1 range) - Target sectors 0, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range) - Target sectors 0, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range) - Target sectors 0, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range) - Target sectors 0, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range) - Target sectors 0, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range) - Target sectors 0, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range) - Target programmed and verified successfully - Completed after 4.150 sac - Erssing sectors 0, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range) - Target sectors 0, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1 range, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1, 2, 3, 4, 5, 6, 7, 8 - Erssing target U7904 bytes, 1, 2, 3, 5, 6, 7, 8 - Erssing target U7904 bytes, 1, 2, 5, 6, 7, 8 - Erssing target U7904 bytes, 1, 2, 5,</pre>	2.10C																					- 1	
- Target srased, programmed and verified successfully - Completed after 4.200 sec units programmed target (1996) hyper, 1 range) - Brasing affected sectors - Frayse operation completed successfully - Target programmed successfully - Target programmed successfully - Target sector 0. - CBC of affected sectors verified successfully CBC = 0xF23065AF) - Target sector sector verified successfully CBC = 0xF23065AF) - Target sector 0. - Completed Core Id 0x284004TF Smaal 200 MB	* CHC of af	fected sectors verifie	d successfull	y (C)	ю = .	OxF23	1065	(F)															-
Traing sector 0, 1, 2, 3, 4, 5, 6, 7, 8 - Traing sector 0, 1, 2, 3, 4, 5, 6, 7, 8 - Traing sector 0, 1, 2, 3, 4, 5, 6, 7, 8 - Trays maning target (TMM4 bytes, 1 range) - Target programmed successfully - Verifying CHE of affected sectors verified successfully (CHE = 0xF2B055AF) - Target arssed, programmed and verified successfully - Campleted after 4, 150 sec - Iarget arssed, programmed and verified successfully - Campleted after 4, 150 sec - Iarget arssed, programmed and verified successfully - Campleted after 4, 150 sec	- Target erase	id, programmed and vari	fied successf	ully	~ Co	eplet	tedin	fter	4.0	08 14	HC .												
 Braing sector 0, 1, 2, 3, 4, 5, 6, 7, 8 Braze operation completed successfully Programming target GTM64 bytes, 1 range, "Target programmed successfully Verifying CE of affected sectors verified successfully CEC = 0xF2B055AF) Except arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed and verified successfully CEC = 0xF2B055AF) Target arased, programmed arased success	- Krasing alle	ig target (17904 bytes,	1 Pingel																				
- Eruse operation completed inconstilly - Preprinting target (T9064 byte, I range) - Target programmed successfully - Varifying (EC of affected sectors - CEC of affected sectors varified successfully (EK = CuF2SO65AF) - Target erused, programmed and varified successfully - Completed after 4 190 sec - Target erused, Core Id Cu2BADOATT Second: 200 MB:	- Erssing a	actor 0, 1, 2, 3, 4, 5	. 6. 7, 8																				
Turget programmed successfully • Verifying CHC of affected successfully CHC = OxF23065AF) • CHC of affected successfully CHC = OxF23065AF) • Target srased, programmed and verified successfully - Completed after 4 190 sec adv Competted Core Id Ox384004TT Stand 200 MM	- Eraze ope	cration completed succe	stfully																				
Verifying CHC of affected sectors "CHC of affected sectors varified successfully UEC = OnF2005AF) Target areaed, programmed and varified successfully - Completed after 4 150 sec	- Tweet pr	ogrammed successfully	Fange/																				
- Target arased, programmed and varified successfully - Congleted after 4 180 sec Target arased, programmed and varified successfully - Congleted after 4 180 sec Target arased Core Id 0x38400477 Second 200 Me	- Verifying CB	C of affected inctors		2712				2011															
redr Connected Core Td 0x30800477 Seeed 200 Mit-	- URL of at	fected sectors verified	d successfull	y un	2	our2:	10054		10.0	10 m	<u>.</u>												
Connected Core Td 0x28400477 Search 200 Mit-				-	2.0				-		5												
and Connected Core Td 0x08400477 Search 200 Mr	63																						3.5
THE PARTY AND	eady			-				-	-			-	Ce	opec	ted		Core	Id	0x38	A004TT	See	4: 200 3	Mr

8. 完成后,给开发板重新供电,程序即开始运行。

利用 MDK 开发环境下载代码:

- 1. 将板上的 JP1 上的短接块插入 , 将 JLINK 仿真器的下载电缆插入开发板的 XS3 插座 , 给开发板加电。
- 2. 运行 PC 机端的 MDK 软件。



3. 点击 OPTION 选项,显示如下,选择仿真工具为 Cortex-M3 J-LINK

○ Use Simulate □ Limit Speed t	r Settings o Real-Time	Sin Linker	-M3J-LINK Settings
Load Applica Initialization File:	tion at Startup 🔽 Run to main()	Load Applica	ation at Startup 🔽 Run to main()
	Edit.		Edit
Restore Debug Breakpoir Watchpo Memory [j Session Settings nts ⊽ Toolbox ints & PA Display	Restore Debug Breakpoin Watchpo Memory D	g Session Settings nts IV Toolbox ints Display
CPU DLL:	Parameter:	Driver DLL:	Parameter:
SARMCM3.DLL		SARMCM3.DLL	
Dialog DLL:	Parameter:	Dialog DLL:	Parameter:
DARMSTM.DLL	-pSTM32F103VE	TARMSTM.DLL	-pSTM32F103VE

4. 参数如图选择,不同版本 J-LINK 仿真器会有一些区别。

Control Mary SECTORES		Incons	5 1 H	in i	- Mage
JUNK Varian V7.00	TDO	Ox3BA00477	ARM CoreSight JTAG-DP	0 IH len	Up
Device Family: Cortex-M	TDI	0x06414041	Unknown JTAG device	0	Down
Firmware Version: V4.03r	(Au	tomatic Detection	ID CODE:		6
□ SWJ Port: JTAG 👻	C Ma	nual Configuration	Device Name:		
Max Clock: 2MHz	Add	Delete L	Ipdate IR len		
Debug	1.21				
Debug					
Connect & Reset Options	Parat Autoda		Cache Options Dow	nload Option	is Ionnala a d
Connect & Reset Options Connect: Normal	Reset: Autodet	ect 💌	Cache Options Dow ✓ Cache <u>C</u> ode ✓ Cache <u>M</u> emory	nload Option (erify Code D)ownload to j	s Iownload <u>F</u> lash
Connect & Reset Options Connect: Normal	Reset: Autodet	ect	Cache Options	nload Option /erify Code D Jownload to J	s Iownload Elash
Connect & Reset Options Connect: Normal Reset after Connect Interface USB C TCP/IP	Reset: Autodet	ect 💌	Cache Options ✓ Cache Code ✓ Cache Memory ✓ Cache Memory Misc Pir	nload Option /erify Code D Jownload to J	s rownload Elash ink Info
Connect & Reset Options Connect: Normal Connect: Normal Conn	Reset: Autodet P/IP etwork Settings P-Address 127 0	ect •	Cache Options	nload Option (erify Code D Jownload to J	s Fownload Elash ink Info

5. 如图选择

Cortex-I Target Driver	Setup			
Debug Trace Flash Downlos	id			
Download Function C Erase Full Chip C Erase Sectors C Do not Erase	 ✓ Program ✓ Verify ✓ Reset and Run 	BAM for Alg	orithm 20000000 Size: 0x0800	-
Programming Algorithm				
Description	Device Type	Device Size	Address Range	
	Ŗ	Start:	Size	
	Add	Hemove		
	OK	Cancel	-	Help

6.

milodd i difedol		RAM for Aldor	ritlana	
LOAD 📜	Add Flash Programming	Algorithm		200
C D	Description	Device Type	Device Size	
ogramming Algor	LM3Sxxx 32kB Flash LM3Sxxx 64kB Flash LM3Sxxx 8kB Flash LPC1700 IAP 128kB Flash LPC1700 IAP 256kB Flash LPC1700 IAP 256kB Flash LPC1700 IAP 26kB Flash RC28F640J3x Dual Flash STM32F10x Med-density Flash STM32F10x Low-density Flash STM32F10x High-density Flash STM32F10x Flash Options TMPM330Fx 128kB Flash TMPM330Fx 256kB Flash TMPM330Fx 512kB Flash	On-chip Flash On-chip Flash	32k 64k 8k 128k 256k 32k 64k 16M 128k 16k 512k 8M 16 128k 256k 512k	
	Add	Cancel		

7.

Programming Algorithm Description Device Type Device Size Address Range STM32F10x High-density Flash On-chip Flash 512k 08000000H - 0807FFFFH Start: 0x08000000 Size: 0x00080000 Add Remove Image: Comparison of the second sec	nload Function CAD C Erase Full Chip C Erase Sectors C Do not Erase	wn Ioad Chip IV Program ctors IV Verify rase IV Reset and Run	RAM for Algorith	m 0000 Size: 0x0800	
Start: 0x08000000 Size: 0x00080000 Add Remove Remove Remove	ramming Algorithm scription M32F10x High-density Flash	Device Type Flash On-chip Flash	Device Size 512k 0	Address Range 8000000H - 0807FFFFH	
AddRemove			Start: 0x0800	0000 Size: 0x000800	000
k,		Add	Remove		
				Ŕ	

8. 在主界面选择 FLASH 选项,完成代码下载。



2010.3.24 By Sun68