

用 JLINK V6 调试 STM32 的教程

相关配置:

开发板用的是万利的 STM3210B-LK1 JLINK 用的是 MCU123.COM 出品的全功能 JLINK V6.0 编译调试环境为: IAR EWARM 4.42A JLINK 驱动用的是 3.86g 下载地址: http://www.mcu123.com/product/jlink/Setup_JLinkARM_V386g.zip

针STM3210B-LK1 评估板需要改动或设置的地方有 3 点:

第一: STM3210B-LK1 评估板的 BOOT0 及 BOOT1 跳线请跳到 0 位置.

第二: STM3210B-LK1 评估板上的 JTAG 接口的第 1,2 脚请接上 3.3V(手工飞线)。

第三: JLINK 用 SWD 方式调试此款板子时, 需要把板子上的 R4, R5 断开(因 其板子上有 STLINK II) 否则调试不成功哟

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一 设置仿真器类型----JLINK 或 JTRACE

安装好 Manley 板子的例程

用 LCD Demo





Workspace Files Files \$ □ □ LCDDemo - BOOT_FLASH ✓ □ □ EWARM ✓ □ □ EWARM ✓ □ □ EWARM ✓ □ □ EWARM ✓ □ □ Stm32f10x_vector.c ✓ □ □ Lib ✓ □ □ USER ✓ □ □ Icd.c ✓ □ □ main.c ✓ □ □ Stm32f10x_it.c ✓ □ □ Output ✓	<pre>x main.c xoid SysTick_Config(void); yoid LcdShow_Init(void);</pre>
Files %::::::::::::::::::::::::::::::::::::	<pre>void SysTick_Config(void); void LcdShow_Init(void);</pre>
Files % % Image: Context of the second s	<pre>void LcdShow_Init(void); 近择FLASH调试 void Led_Config(void); void Button_Config(void); void Led_RW_ON(void); void Led_RW_OFF(void); void delay(void); void delay() { int i,j; j=0;</pre>
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Image: String 2 from_vector.c Image: String 2 from_vector.c Image: String 2 from vector.c Image: String 2 from vector.c<	<pre>void Led_RW_OFF(void); void delay(void); void delay() { int i,j; j=0;</pre>
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	<pre>void delay(void); void delay() { int i,j; j=0;</pre>
I Image: Bit Collection Image: Bit Collection Image: Bit Collection Image: Bi	<pre>void delay(void); void delay() { int i,j; j=0;</pre>
I I III IIII IIII IIII IIII I IIIIIIIII	(int i,j; j=0;
I um manne I um mannn	<pre>int i,j; j=0;</pre>
L = Output	j=0;
	<pre>for (i=0; i<0xfffff; i++) j++;</pre>
	}
	EXTI_InitTypeDef EXTI_InitStruct
	* Function Name : main
	 * Description : Main program
	+ Input : None
	* Output : None
	* Keturn : None
	int main(unid)
	`
	#ifdef DEBUG
1000	debug():



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菜单:

Project->options

Options for pode	C <i>KJ</i> [®] WWW.MCU123.COM	
Category:		Factory Settings
C/C++ Compiler Assembler Custom Build Build Actions Linker Debugger Simulator Angel IAR ROM-monitor J-Link/J-Trace LMI FTDI Macraigor RDI Third-Party Driver	Setup Download Extra Options Plugins Driver 又 Run to T-Link/J-Trace 又 main Setup macros 选择JLINK 「Use macro file Device description file 「Override default \$TOOLKIT_DIR\$\CONFIG\iostm32f10x. ddf	
	OK	Cancel

Project->options ->Debugger->Setup->Driver 选 JLINK

	EXT WWW.MCU123.COM
Options for node Category: General Options C/C++ Compiler Assembler Custom Build Build Actions Linker Debugger Simulator Angel IAR ROM-monitor J-Link/J-Trace LMI FTDI Macraigor RDI Third-Party Driver	<pre>* 'LCDDemo' Factory Settings Edit Edit 使用IAR本身的 flash loader K</pre>
	OK Cancel

Project->options ->Debugger->Download

二 JLINK 仿真器相关设置

下面的设置可以用默认:

	C <i>KJ</i> [®] WWW.MCU123.COM	
Category:		Factory Settings
C/C++ Compiler Assembler Custom Build Build Actions Linker Debugger Simulator Angel IAR ROM-monitor J-Link/J-Trace LMI FTDI Macraigor RDI Third-Party Driver	Setup Connection Breakpoints Reset C Hardware, halt after delay 0 C Hardware, halt at Q (if sup Software Init sequence TTAG/SWD speed Auto Initia 32 kHz Fixed 32 kHz Mardware, halt after delay 0 Catch exceptions Reset IRQ SWI SWI Data Prefetch	
	ОК	Cancel

Ded Lonrig(Wold): Options for node	fLCDDemo"
Options for node Category: General Options C/C++ Compiler Assembler Custom Build Build Actions Linker Debugger Simulator Angel IAR ROM-monitor J-Link/J-Trace LMI FTDI Macraigor RDI Third-Party Driver	Factory Settings Factory Settings Connection Breakpoints Communication Fight Device O TCP/IP Asa. bbb. ccc. ddd Interface TAG scan chain TAG scan chain with multiple tas TAP number: 一通的JTAG方式 SWD Log gommunication Cortex-M3特有的调试 \$TOOLKIT_DIRS\cspycomm.log

第8页

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设置完 OPTIONS 点 OK 退出设置。

重新编译工程:

💥 IAR Embedded Vorkbench IDE					
File Edit View Project Tools Window Help					
Workspace					
	main.c				
	void S				
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	j=0;				
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	int ma				
	{				
	#ifdef				
	debu #endif				
LCDDemo	fo 🔹				
× Massage					
Ruilding configuration: LCDDomo, BOOT, ELAS	2				
Lindating build tree	011				
main.c	main c				
Linking					
Total number of errors: 0					
Total number of warnings: 0					
Build Debug Log					

接下来进入仿真试试。



一般万利的板子用的是 STLINK II,以前的 FLASH LOADER 要重新设置,否则有可能下载 不成功。

原因是 flash loader 的问题。

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删除:

	Flash	Loade	r Overview		
	Range	Base	Loader Path (default)	Extra Parameters	OK Cancel
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F	lash l	Loade	r Overview		X
	Range	Base	Loader Path	Extra Parameters	 ОК
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新建后,点OK退出即可。

Options for node "LCDDemo"	×
	a
Flash Loader Configuration	
General Or OK	
Assemble Start: End: Cancel	
Custom B	
Linker Base address:	
Debugger	
Simulate Override default flash loader path	
Angel \$TOOLKIT_DIR\$\config\flashloader\ST\FlashSTM32F10x.d	
J-Link/J- Extra parameters:	
LMI FTD	
Flash Louise everyon	
	r i
Range Base Loader Path Extra Parameters	ОК
	Cancel
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Options for node	* "ADCDemo"
Category: General Options C/C++ Compiler Assembler Custom Build Build Actions Linker Debugger Simulator Angel IAR ROM-monitor J-Link/J-Trace LMI FTDI Macraigor RDI Third-Party Driver	Factory Settings Setup Download Extra Options Plugins Attach to proggi Yerify download Suppress downloac Use flash loader ,,,, (default), Edit
	OK Cancel

f	; i++) i++:	_
	Progress	×
2	Programming flash	

进入仿真器设了5个断点分别全速运行到断点处。 注: CORTEX M3 只支持 6 个硬件断点,

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🎇 IAR Embedded Workbench ID	E		
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5 - 52555	9		
Workspace ×	main.c		
BOOT_FLASH	<pre>/* System Clocks Configuration */ RCC_Configuration(); /* GPI0 ports pins Configuration */ GPI0_Configuration(); /* NVIC Configuration */ NVIC_Configuration(); /* Configure the systick */ SysTick_Config(); Led_Show_Init(); Led_Config(); Button_Config(); GPI0_EXTILineConfig(GPI0_PortSourceGPI0D, GPI0_PinSource /* Configure EXTI_Line9 to generate an interrupt on fall EXTI_InitStructure.EXTI_Line = EXTI_Line3; EXTI_InitStructure.EXTI_Line = EXTI_Ine3; EXTI_InitStructure.EXTI_LineCond = ENABLE; EXTI_InitStructure.EXTI_LineCond = ENABLE; EXTI_Init(@EXTI_InitStructure); GPI0_EXTILineConfig(GPI0_PortSourceGPI0D, GPI0_PinSource); GPI0_EXTILineConfig(GPI0_PortSourceGPI0D, GPI0_PinSource); </pre>		
	[lfo] ∢]		

Log

Sun Jul 27 23:04:19 2008: DLL version: V3.86g, compiled Jul 11 2008 10:48:30

Sun Jul 27 23:04:19 2008: Firmware: J-Link ARM V6 compiled Jul 22 2008 11:42:42

Sun Jul 27 23:04:19 2008: JTAG speed is initially set to: 32 kHz

Sun Jul 27 23:04:19 2008: TotalIRLen = 9, IRPrint = 0x0011

Sun Jul 27 23:04:19 2008: Found Cortex-M3, Little endian.

Sun Jul 27 23:04:19 2008: TPIU fitted.

Sun Jul 27 23:04:19 2008: FPUnit: 6 code (BP) slots and 2 literal slots

Sun Jul 27 23:04:21 2008: Found Cortex-M3, Little endian.

三 JTAG/SWD 两种方式的调试

JTAG 方式:

Uptions for node [LCDDemo]
Category: Factory Settings General Options C/C++ Compiler Assembler Custom Build Build Actions Linker Debugger Simulator Angel IAR ROM-monitor HIR FTDI Macraigor RDI Third-Party Driver Image Communication Image Communication

Q	K1
	WWW.MCU123.COM
Workspace ×	main.c
BOOT_FLASH	<pre>for (i=0; i<0xfffff; i++) j++;</pre>
Files # ■ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □<	<pre>} EXTI_InitTypeDef EXTI_InitStructure; /************************************</pre>
LCDDemo	/* GPIO ports pins Configuration */
× Log	
Log Sun Jul 27 23:30:57 2008: DLL vers Sun Jul 27 23:30:57 2008: Firmware Sun Jul 27 23:30:57 2008: TotallRLG Sun Jul 27 23:30:57 2008: Found Cd Sun Jul 27 23:30:57 2008: TPIU fitte Sun Jul 27 23:30:59 2008: Found Cd Sun Jul 27 23:31:00 2008: TPIU fitte Sun Jul 27 23:31:00 2008: TPIU fitte Sun Jul 27 23:31:00 2008: TPIU fitte Sun Jul 27 23:31:00 2008: Software Sun Jul 27 23:31:00 2008: Initial resi	ion: V3.86g, compiled Jul 11 2008 10:48:30 : J-Link ARM V6 compiled Jul 22 2008 11:42:42 eed is initially set to: 32 kHz en = 9, IRPrint = 0x0011 prtex-M3, Little endian. id. 6 code (BP) slots and 2 literal slots prtex-M3, Little endian. id. 6 code (BP) slots and 2 literal slots reset was performed et was performed
Sun Jul 27 23:31:00 2008: Device a	it TAP0 selected
Build	

用 SWD 方式调试 STM32 设置 SWD 方式

Project->options ->J-Link/J-Trace->connection->interface

中选择 SWD。

C <i>KJ</i> [®] WWW.MCU123.COM			
Options for node	"LCDDemo"		
Category: General Options C/C++ Compiler Assembler Custom Build Build Actions Linker Debugger Simulator Angel IAR ROM-monitor J-Link/J-Trace LMI FTDI Macraigor RDI Third-Party Driver	Factory Settings Setup Connection Breakpoints © USB Device 0 • • USB Device 0 • • TCP/IP saa. bbb. ccc. ddd Interface JTAG scan chain JTAG JTAG scan chain with multiple tas TAP number: Image: Connection Scan chain contains non-ARM device Preceeding VELUCESUM Image: Connection StoolKIT_DIR\$\cspycomm.log .		

设置后进入仿真在 Debug log 中可以看到调试信息:



注: 有问题大家可以到<u>www.mcu123.net/bbs</u> 讨论,指正。谢谢。

调试 CORTEX-M3 系列的芯片推荐使用的开发工具有:IAR 环境: J-LINK 首选。KEIL RVMDK 环境: ULINK2 首选。