

新版本 STM32F401RCT6 開發板完全相容老版本 STM32F401CCU6, 差異在於晶片封裝不同, 可直接替換。

資料下載鏈接:https://pan.baidu.com/s/16JkaaW5h65oxxe4guZp1ew 提取碼:d192

STM32 下載燒錄事項說明: https://www.weact-tc.cn/2019/11/30/STM32Download/

MicroPython 部分教程: https://www.weact-tc.cn/2020/01/01/micropython/



ISP 模式下載

方法 1: 上電狀態下,按住 BOOT0 鍵和複位鍵,然後鬆開複位鍵, 0.5 秒後鬆開 B OOT0 鍵

方法 2: 掉電狀態下,按住 BOOT0 鍵,上電後 0.5S 鬆開 BOOT0

USB 數據線連接 MCU 的 TYPE-C 介面,串口連接 PA9、PA10,下載軟體推薦 STM32CubeProg, WeAct Studio Downloa d Tool

串口下載

USB 轉串口 (ex.: CH340) TX - PA10, RX - PA9, 同時不要將 MCU 的 Type-C 連接到電腦, 必須使用外部供電, 不然會影響 MCU 下載

使用 STM32CubeProgammer 進行串口下載

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USB 下載 (DFU 下載)

STM32CubeProgrammer 勾選 USB 模式, WeAct Studio Download Tool 雙擊 WeAct Studio U SB Download Tool.bat, 然後根據提示操作

		Not connecte						
	USB	•	Co	nnec	t.			
	ST-LINK UART		iguratio	n				
	USB		o DF	•	Ø			
â	ΟΤΑ							
U								

MCU 進入 ISP 模式,使用 USB 數據線連接電腦 選擇固件,其餘操作跟串口下載一致

設備管理器->通用串行匯流排設備出現 STM32 Bootloader 或者 DFU in FS Mode 設備 如果出現的設備是 STM Device in DFU Mode,需要右鍵卸載設備同時勾選刪除此設備的驅動 程式軟體,之後再安裝 WeAct Studio Download Tool/DFU_Driver/Driver/目錄下的驅動,選擇 STM32Bootloader.inf,右鍵點選安裝

USB下載受天氣影響可能存在一定的不穩定性,如反復出現如下 ERROR 或者出現設備無法識別, 請採用串口下載,並斷開 USB 連接。

1 2Error: failed to download Segment[0] Error: failed to download the File

上述 ERROR 造成原因: 室溫偏低, HSI 產生偏差, USB 下載使用的是外部高速晶振, 而 IS P 程式(ST 的自舉程式)通過 HSI 測量外部晶振 HSE 頻率然後再配置時鐘,當 HSI 偏差過 大, HSE 測量頻率不正確,從而使得 USB 時序不對,造成下載錯誤。具體詳情可見網盤 / 通用文檔/AN2606 STM32 微控制器系統記憶體自舉模式.pdf 解決方法: 適當加熱 MCU 至 25℃ 以上(用手捂熱)

ST-Link/J-link 下載

連接 STM32 的 SW 介面:

SW 介面 GND SCK DIO 3.3V

在 MDK 軟體點擊下載按鈕或者在 STM32CubeProg 中選擇 ST-Link 根據提示操作即可。

CubeMX 工程或標準庫工程,要使能 SW 調試介面,不然調試器是不能識別出 MCU 代碼工程晶振設置不對或其他異常導致調試器不能識別 MCU,此時手動設置 MCU 進入 ISP 模 式,調試器就能識別出 MCU,再點擊下載即可

ISP 模式只是 ST 公司固化在 MCU 裏面的一段啟動代碼,檢查 BOOTx 設置,運行模式則轉跳地 址 0x08000000 運行,下載模式則等待下載命令,此時 SW 調試下載介面是開放的,調試器可 以讀取下載 MCU 代碼。

JTAG接口	转接
TMS	
ТСК	
VTEST 1脚	某些JLink需要接到3.3V才识别MCU
3.3V	
GND	

nload Tool.bat, 然後根據提示操作

調試介面分 SW 介面和 JTAG 介面, ARM 的調試器基本都支持 SW 介面 JLink 能連接上晶片,但是不能下載,請升級 Jlink 驅動到新版本, V6.50a 測試可用



WeAct_HID_FW_Bootloader 下载

點我下載軟體

僅支持 STM32F4 系列核心板

STM32F401CC、STM32F401CE、STM32F411CE 核心板均可使用, 實現類似 51 單片機下載, 但無需串口, 只需一根 數據線,

和修改 Keil 工程兩個地方(詳情見視頻)即可實現。速度比串口下載更快且更方便

WeAct HID Flash WeAct HII 工程设置步骤 1 修改工程ROM起始地	D Flas	h 000	- 日 × > Soft Version: 1.0.0.0 > Windows Version: 6.2.9200.0 > MCU 进入 Bootloader 方法
Read/Only Memory Areas default off-chip Start IT ROM1: IT ROM2: IT ROM3: on-chip IROM1: IROM1:	Size	Startup C C	> 按住KEY键, 重新上电或复位 > Language: zh-CN
2. main() 添加代码 SCB->VTOR = FLAS 请双击选择/手动输入面	I H_BASE I/牛地址/拖	✔ 0x4000; 拽固件至i	 窗口置顶 ▼ 下载完自动复位 MCU 信息 MCU 复位 APP 擦除 下载固件

APP 工程修改方法

修改工程 ROM 起始地址為 0x8004000

STM32CubeIDE 設置

70 -	/**										
71	* @brief	Ontio	ns for Ta	raet 'stm32	f401 test						V
72	* @retva			iger sunsz	ito1_test						^
73	*/	Device	Target	utnut List	ting liser] c/c++] a		Linker	Debug 11+i]	ities]	
74	int main (v	201100	. 10	arbar mar		10,0 1,			needs other		
75 🚍	{	STMicroe	electronics	STM32F401C	CUx		Code	Generation	·		
76	/* USER				F		ARM	Compiler:	Use default	compiler version	on 5 💌
77	uint32_t				Xtal (MHz):	4.0					
78	uint8_t	Operation	n evetem:	None		-					
79	tick = 0	operating	g system.	Induce		-		Ise Cross-I	Module Optimiza	tion	
80	/* USER	System V	/iewer File:				L n	Ise MicroL	IB [Big Endian	
81		STM32F	F401x.svd				Floati	ng Point H	lardware: Sing	le Precision	-
82	1		Custom Ele								
83	/* MCU U	1_ Use	CUSION FIR	5							
01	A Deast	-Read/0	Only Memo	ry Areas			Read/Write Memory Areas				
96	HAT Thit	default	off-chip	Start	Size	Startup	default	off-chip	Start	Size	Nolnit
87		_	BOUL				-				
88	/* USER		ROM1:			· · ·		RAM1:			
89		Г	ROM2:			С	Г	RAM2:			
90	/* USER	_	DOM2.		í		-	DAM2.	i	<u> </u>	
91			RUM3:			C		RAM3:	1	I	
92	/* Confi		on-chip					on-chip			
93	SystemCl		IROM1:	0x8004000	0x40000	•	•	IRAM1:	0x20000000	0x10000	
94			IDOUD				_	IDAM2		í —	
95	/* USER		INOM2:		1			INAMIZ:	I	1	
96		0x80	000	< -00	0x80	0400	0				
97	// 添加]				5.00		-				
98	// Added				OK	Can	cel	De	faults		Help
99	SCB->VTC										

main()函數開頭增加以下代碼

1SCB->VTOR = FLASH_BASE 0x4000;

軟體使用步驟

將核心板用數據線連接電腦,出現 WeAct HID 設備 按住 KEY 鍵,重新上電或複位進入 Bootloader 軟體選擇固件,點擊<下載固件>即可完成下載 所選固件會隨 KEIL 重新編譯而更新,無需重新選擇

進入 Bootloader 方法

按住<KEY 鍵>, 重新上電或複位, C13 LED 閃爍即可鬆開 APP 進入 Bootloader 參考 stm32f401_test_APP 0x8004000.zip 工程

在 Bootloader 中

單擊/雙擊<KEY 鍵>為 C13 LED 亮滅 SW 調試口開放,可以用調試器燒寫,無需進入 DFU 模式

退出 Bootloader 方法

複位 MCU, 複位鍵/上位機點擊<MCU 複位> 長按<KEY 鍵>, C13 LED 閃爍即可鬆開

注意事項:

首次燒錄 Bootloader, MCU 不會往下運行, 同時 C13 LED 200MS 閃爍,只需再次複位 MCU 即可 Bootloader 以及 APP 燒錄軟體源碼 均不開放





