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ST-LINK V2

(STM8 & STM32 PROGRAMMER)



DESCRIPTION

ST-Link-Compatible Programmer & Emulator / Debugging dongle. This little USB stick contains a microcontroller with the code for ST's classic programmer/emulator for STM8 and STM32 bit processors. Since STM's are so common, this tool will come in handy whenever you encounter them. This programmer also got 5V and regulated 3.3V power supply mode. Comes with one USB stick and a couple pieces of female-female jumpers. Tested & work great with Arduino IDE & STM32 ST-LINK Utility software.

Pinout Diagram





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Programming STM32 (STM32F103C8T6) using ST-LINK V2

A. Preparation

- 1. ST-LINK V2
- 2. STM board (STM32 / STM8 Series Compatible)
- 3. Jumper Wire (Female to Female)
- 4. Arduino IDE (Software)
- 5. LED (Optional for testing User can use Built-in LED on MCU)

B. Installing STM Development Board into Arduino IDE

1. Open the Arduino IDE Preferences menu. (File>Preferences).



2. Add the following line/link into Additional Boards Manager URLs box. (http://dan.drown.org/stm32duino/package_STM32duino_index.json)

Preferences			×			
Settings Network						
Sketchbook location:						
C:\Users\TECH\Docume	ents \Arduino		Browse			
Editor language:	System Default v (requires restart of Arduino)					
Editor font size:	Additional Boards Manager URLs					
Interface scale:	Enter additional URLs, one for each row					
Theme:	https://dl.espressif.com/dl/package_esp32_index.json					
Show verbose output o	ow verbose output c http://arduino.esp8266.com/stable/package_esp8266com_index.json					
Compiler warnings:	https://github.com/tenbaht/sduino/raw/master/package_sduino_stm8					
Display line numbe	<					
Verify code after u	Click for a list of unofficial boards support URLs					
Check for updates	OK Cancel					
Use accessibility fe.						
Additional Boards Manag	ger URLs: package_sduino_stm8_index.json,http://dan.drown.org/stm32duino/package_STM32duino_index.json					
More preferences can b	e edited directly in the file					
C:\Users\TECH\AppData	a\Local\Arduino15\preferences.txt					
(edit only when Arduino	is not running)					
		ОК	Cancel			



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3. Open Boards Manager to download the STM board.

🥯 B	Blink Are	duino 1.8.1	13	- 0	Х		
File E	Edit Ske	tch Tools	Help				
	6) 1		Auto Format	Ctrl+T			
			Archive Sketch				
Bli	nk		Fix Encoding & Reload				
10	/*		Manage Libraries	Ctrl+Shift+I	^		
2	Bli	ink	Serial Monitor	Ctrl+Shift+M			
3 4	Tur	rns	Serial Plotter	Ctrl+Shift+L			
5	Mos	st 1	WiFi101 / WiFiNINA Firmware Updater				
6	Leo	ona:	in the second second		_		
7	pin	n tì	Board: "Generic STM32F103C series"		2	Boards Manager	
8	the	e de	Variant: "STM32F103C8 (20k RAM. 64k Flash)		2	Arduino AVR Boards	

4. Search for 'STM32F1xx/GD32F1xx' and Install board based on picture below.

💿 Boards Manager	×
Type All 🗸 STM	
	^
STM32F4xx boards	-
by stm32duino Boarde included in this packages	
STM32 Discovery F407, STM32F4Stamp F405, Netduino2 F405.	
Online Help More Info	
CTM22E1am/CD22E1am beaute	_
by stm32duino version 2021.5.31 INSTALLED	
Boards included in this package:	
Maple Mini, Maple (Rev 3), Maple (RET6), Microduino Core STM32 to Flash, STM Nucleo F103RB (STLink), Generic STM32F103C series, Generic STM32F103R series, Generic STM32F10R series, Ge	
Generic GD32F103C series.	
Online Help More Info	
Select version ++ Install Remove	
	~
d	ose

5. Once Board installed it will display as Picture below.

💿 Bli	nk Arduir	no 1.8.	13	-		×				
File Ec	lit Sketch	Tools	Help							
			Auto Format	Ctr	l+T					
	-		Archive Sketch							
Blin	¢ .		Fix Encoding & Reload							
1 🗆	/*		Manage Libraries	Ctr	l+Shift+I	1				
2	Blink		Serial Monitor	Ctr	l+Shift+N	N				
4	lurns		Serial Plotter	Ctr	l+Shift+L					
5	Most		WiEi101 / WiEiNINA Eirmware Undater							
6	Leona		without with with a second second							
7	pin t		Board: "Generic STM32F103C series"				Boards Manager			
8	the d	d	Variant: "STM32F103C8 (20k RAM. 64k Fla	ish)"		3	Arduino AVR Boards >			
10	This	4	Upload method: "STLink"			3	ESP32 Arduino >			
11			CPU Speed(MHz): "72Mhz (Normal)"			3	ESP8266 Boards (3.0.2)			
12	modif	-	Optimize: "Smallest (default)"			2	STM32F1 Boards (Arduino_STM32)		Maple Mini	
13	by Sc	d	Port			3	STM8S Boards		Maple (Rev 3)	
14	Modif		Get Board Info			Ţ			Maple (RET6)	
16	1100111	1	Programmer			>			Microduino Core STM32 to Flash	
17	*/		Burn Bootloader			-			STM Nucleo F103RB (STLink)	
18			buin bootioadei					•	Generic STM32F103C series	
	<					>			Generic STM32F103C6/fake STM3	32F103C8
									Generic STM32F103R series	
									C CTN 42051007	



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C. Circuit Connection

ST-LINK V2	STM32F103C8T6
RST	-
SWCLK	DCLK
SWIM	-
SWDIO	DIO
GND	GND
3.3V	3.3V
5.0V	-



(No need to short Boot0 & Boot1)

D. Uploading Code to STM32F103C8T6

1. Open **Blink** code that specially made for STM32 board as below. Note that this Example code will added automatically after board installation earlier.

0	Blink Arduin	o 1.8.13	- 0	Х			
File	Edit Sketch	Tools Help	▲				
	New	Ctrl+N	Stepper	>>.			
	Open	Ctrl+0	Temboo	>			
	Open Recent		RETIRED	>			
	Sketchbook	3	Examples for Generic STM32F103C series	^			
	Examples	3	A_STM32_Examples	>	Analog	>	
	Close	Ctrl+W	Adafruit_ILI9341	;	Communication	>	
	Save	Ctrl+S	Adafruit_ILI9341_STM	;	Control	>	
	Save As	Ctrl+Shift+S	Adafruit_SSD1306	>	Digital		Blink
	Page Setup	Ctrl+Shift+P	EEPROM	>	Display	2	BlinkWithoutDelay
	Print	Ctrl+P	Ethernet_STM	2	General		Button
	Destaura	Chilly Common	FreeRTOS821	2	Maple		Debounce
	Freierences	Cui+Comma	FreeRTOS900	2	Sensors		MapleMorse
	Quit	Ctrl+Q	Lcd7920_STM	2	Stubs	2	StateChangeDetection

(File > A_STM32_Examples > Digital > Blink)



2. Make sure Board types & its other configurations are same as Picture below. (Note that ST-LINK V2 don't use COM Port).

0	Blink	Arduin	o 1.8.1	3 -	-		Х
File	Edit	Sketch	Tools	Help			
	0			Auto Format	Ctrl+	т	
				Archive Sketch			
В	link			Fix Encoding & Reload			
1	+ /*			Manage Libraries	Ctrl+	Shift+I	
18				Serial Monitor	Ctrl+	Shift+M	
19				Serial Plotter	Ctrl+	Shift+L	
20		id set	-				-
22		// in:		WiFi101 / WiFiNINA Firmware Updater			
23		pinMod		Board: "Generic STM32F103C series"			>
24	}			Variant: "STM32F103C8 (20k RAM. 64k Flash)"			>
25				Upload method: "STLink"			>
26		the .		CPU Speed(MHz): "72Mhz (Normal)"			>
28		digita		Optimize: "Smallest (default)"			>
29		delay		Port			>
30		digita		Get Board Info			1
31		delay					
32	}			Programmer			>
				Burn Bootloader			

3. Connect ST-LINK V2 to PC, make sure that it was detected on Device Manager.





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4. Once device detected, click on **Upload** to upload the code.

💿 Blink Arduino 1.8.13	_	×
File Edit Sketch Tools Help		
📀 📀 🛅 🎦 Upload		ø
Blink		
1 🗄 /*		^
18		

5. Once Code Successfully Uploaded it will display as below.



6. Connect LED to STM32 for result. LED will Blink every 1 second.

STM32F103C8T6	LED
B1	Positive (+) / Anode
GND	Negative (-) / Cathode

7. Alternatively change PB1 in the code to PC13 to test the Code with Built-in LED.

