**ST-LINK/V2-MINI**

in-circuit debugger/programmer

Features
■ 5 V power supplied by a USB connector
■ USB 2.0 full speed compatible interface
■ USB standard A to mini B cable
■ SWIM specific features
– 1.65 V to 5.5 V application voltage supported on SWIM interface
– SWIM low-speed and high-speed modes supported
– SWIM programming speed rate: 9.7 Kbytes/s in low speed and 12.8 Kbytes/s in high speed
– SWIM cable for connection to the application
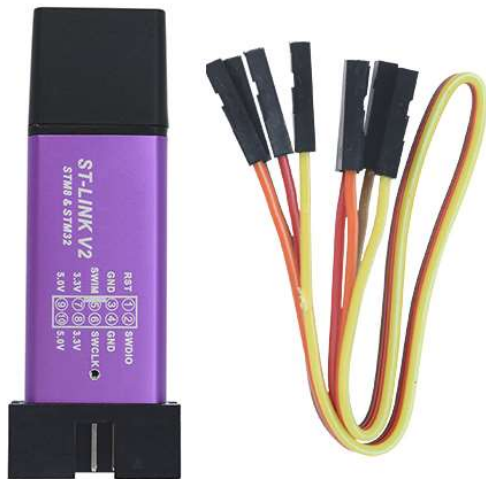
Product Introduction
This is a core chip based on CS32F103C8T6 ARM core board, features are as follows:
1. the board based on the most basic MCU circuit, 8M and 32768 crystal circuit, USB power supply circuit.
2. the core board is divided into two rows leads to all the I / O port.
3. with SWD simulation debug download interface, simple and convenient, debugging speed.
4. the use of the Mirco USB interface, you can do USB communication and power supply, USB interface, compatible with the ordinary Andrews mobile phone charger interface.
6. RTC crystal Epson brand, easy to start, more stable.
7. with double pin, but the pin does not default welding, the user according to their own application scenarios to choose their own welding direction. If welding is required, please tell the owner.
Keil can be used to compile, IAR compiler, can be downloaded through the J-Link or USART1 procedures, the procedures are the owner and debugging procedures, there are problems can consult the owner.

Interface description:
1. SWD interface: support for simulation, download and debug.
2. Mirco USB interface: power supply and USB communication, does not support the download.
3. USART1 interface: USART1 can be used to download the program, or use the USART1 for communication.
4. MCU pin interface: leads all I / O port pins, easy to connect with peripherals.
5. 5V and 3.3V power input and output interface: commonly used in external power supply, or with other modules for common ground treatment

Device Description:
1. Power LED (PWR): Power indicator status, can determine whether the power supply is stable.
2. the user LED (PC13): to facilitate the I / O output test or indicate the program running.

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3. start jumping choose programming mode: (1, the user flash memory 2, SRAM 3, system memory).

4. reset button: reset chip for the user program.

5. 8M Crystal: The frequency can be set to make the system clocked at 72MHz.

6. 32.768KHz Crystal: Available for built-in RTC, or for calibration.

7. Support the full range of STM32 SWD interface debugging, simple interface (including power supply), 4 line speed, stable work; Interface definition shell directly address! Don\'t need to read instructions!

8. support all series STM8 SWIM download debugging (common development environment such as IAR, STVD etc.) are supported. Support the software version is as follows:

ST - LINK Utility 2.0 and above

STVD 2 and above

STVP 3.2.3 and above

IAR EWARM V6.20 and above

IAR EWSTM8 V1.30 and above

KEIL RVMDK V4.21 and above

9. Support the firmware upgrade automatically, to ensure that the ST company product support. When they leave the firmware has been upgraded to the latest V2. The J17. S4.

10. Increase the 5 v power output, the output it can protect the I/O port, not afraid of error cause damage of ST - LINK V2.

11. Easy interface to use pure copper plating 2.54 spacing horn, with 20 cm dupont line, can deal with different target board line sequence, flexible connection;

12. Use U disk aluminum alloy shell to protect the mainboard, convenient to carry, not afraid of static electricity, not afraid of tumbling.

Interface: