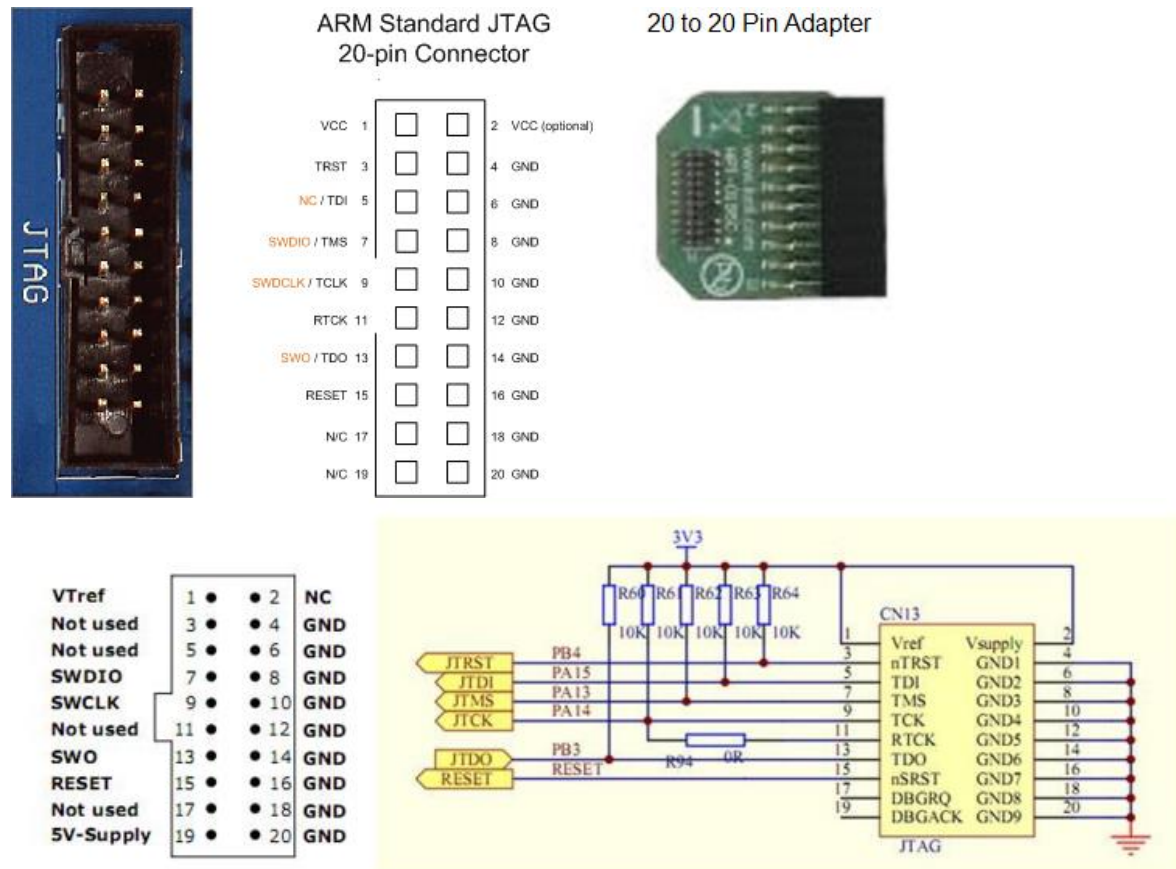


Ways to flash the MCU:

Serial Wire Debug (SWD) (Use ST-link V2) (Recommend, design for STM32)

Actually, one common way to interface chips is JTAG, which require 20 lines:



But JTAG connector is very expensive, so when we use STM32, we can use another interface way which can also done in JTAG. It called Serial Wire Debug (SWD). SWD is an alternative 2-pin electrical interface that uses the same protocol. It uses the existing GND connection. On JTAG devices with SWD capability, the TMS and TCK are used as SWDIO and SWCLK signals, providing for dual-mode programmers.

SWD only requires 4 lines:

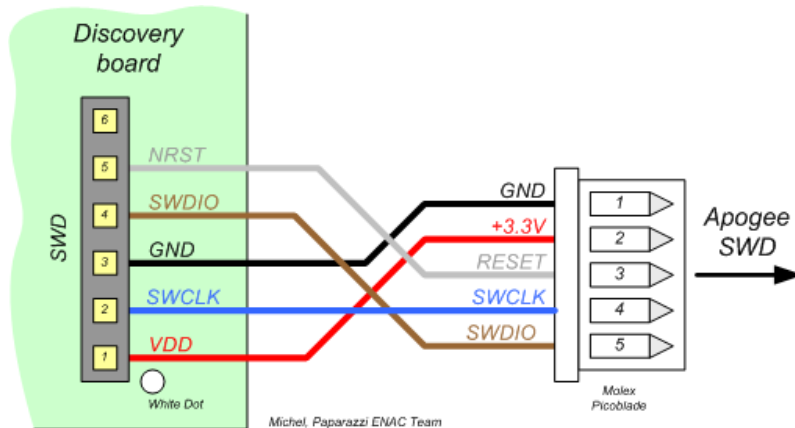
Transferring data must use three wire: SWDIO, SWCLK and GND (common ground with the MCU). VDD pins make MCU and ST-link board common VDD. Reset is reset....

Table 4. Debug connector CN4 (SWD)

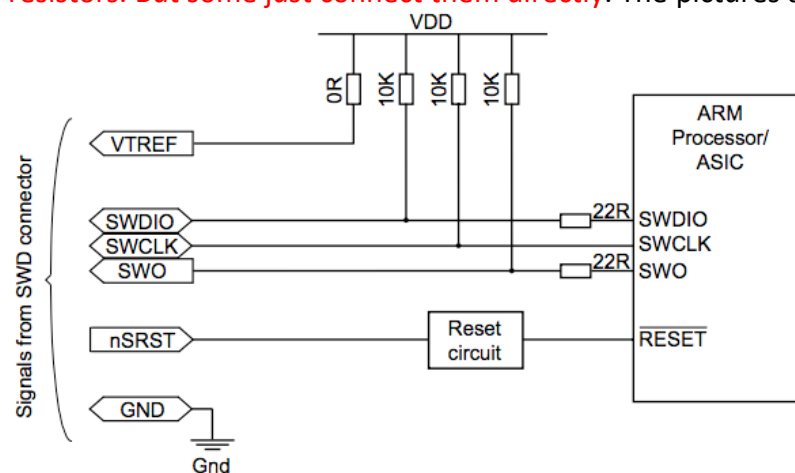
Pin	CN4	Designation
1	VDD_TARGET	VDD from application
2	SWCLK	SWD clock
3	GND	Ground
4	SWDIO	SWD data input/output

5	NRST	RESET of target MCU
6	SWO	Reserved

We don't need SWO here.



I found a lot of schematic on the internet, some schematics for the SWD part connect 10k resistors. But some just connect them directly. The pictures are showing below,



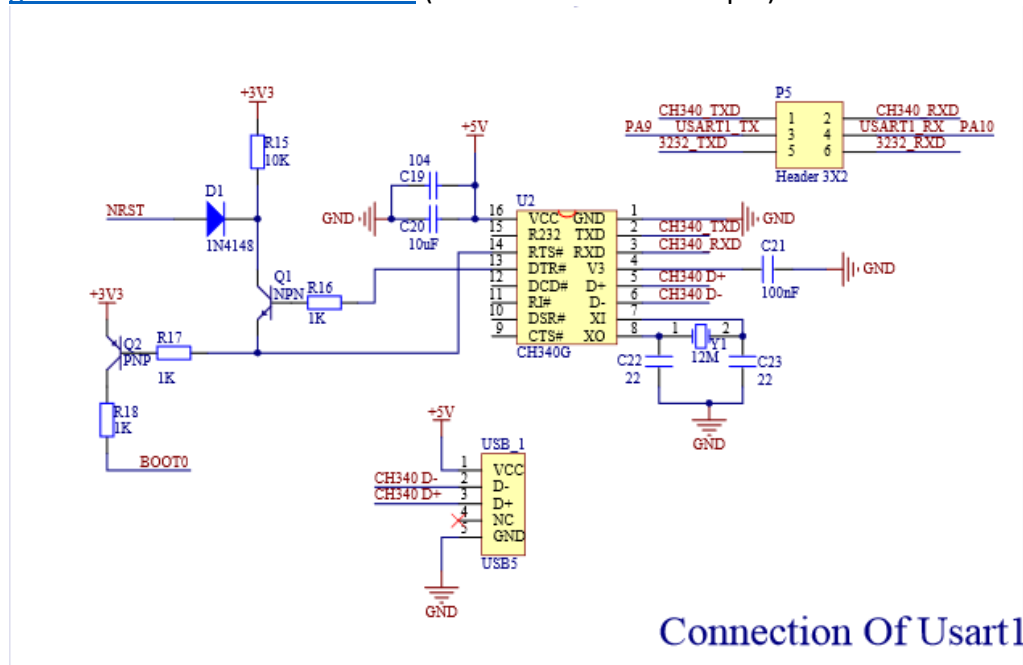
Current requirement for VDD(3.3) is no more than 300mA, VDD(5V) is no more than 400mA.

Component: https://www.adafruit.com/product/2548?gclid=EAlaIQobChMI0-69o7T51gIVDzNpCh2fIQ4BEAQYAABEgIE7_D_BwE

and download the drive (st-link_v2_usbdriver.exe) and specific software (STM32 ST-link Utility).

Serial interface (Use CH340G)

Component: <http://www.dx.com/p/stc-stm32-ch340g-upgraded-usb-to-ttl-downloader-green-389333#.WecN3hNSxHU> (do not include BOOT0 pin)



and download the drive and specific software on computer to load the code.

But both ways we need to find out a way to control BOOT0 pin on MCU to make sure the mode is right.

查看原图

Table 9. Boot modes

Boot mode selection pins		Boot mode	Aliasing
BOOT1	BOOT0		
x	0	Main Flash memory	Main Flash memory is selected as boot space
0	1	System memory	System memory is selected as boot space
1	1	Embedded SRAM	Embedded SRAM is selected as boot space