https://onlinedocs.microchip.com/pr/GUID-B2CE0E6C-70BF-42CF-B0CF-6705800FC877-en-US-2/index.html?GUID-0E7F6790-5542-40E4-B0F3-CBE706CB6D02

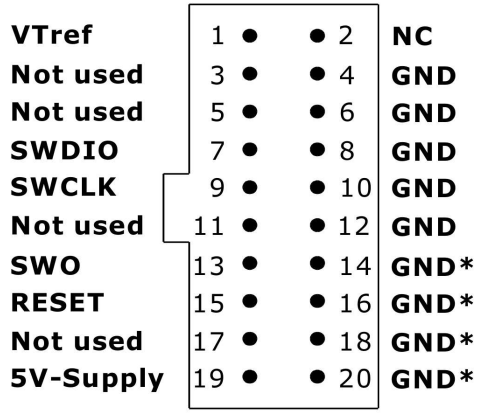


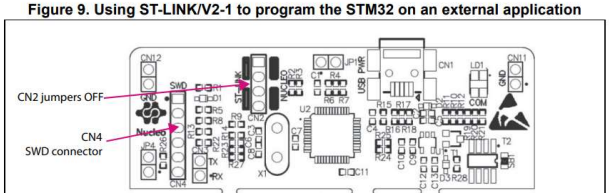
Table 4. JTAG/SWD cable connections on STLINK-V2

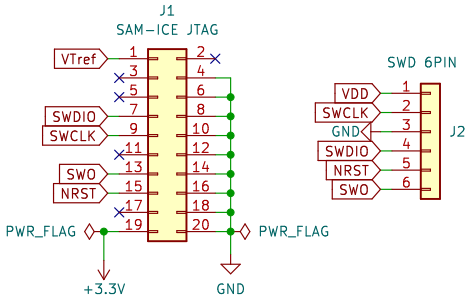
Pin no.	ST-LINK/V2 connector (CN3)	ST-LINK/V2 function	Target connection (JTAG)	Target connection (SWD)
1	VAPP	Target VCC	MCU VDD(1)	MCU VDD(1)
2				
3	TRST	JTAG TRST	NJTRST	GND(2)
4	GND	GND	GND(3)	GND(3)
5	TDI	JTAG TDO	JTDI	GND(2)
6	GND	GND	GND(3)	GND(3)
7	TMS_SWDIO	JTAG TMS, SW IO	JTMS	SWDIO
8	GND	GND	GND(3)	GND(3)
9	TCK_SWCLK	JTAG TCK, SW CLK	JTCK	SWCLK
10	GND	GND	GND(3)	GND(3)
11	Not connected	Not connected	Not connected	Not connected
12	GND	GND	GND(3)	GND(3)
13	TDO_SWO	JTAG TDI, SWO	JTDO	TRACESWO(4)
14	GND	GND	GND(3)	GND(3)
15	NRST	NRST	NRST	NRST
16	GND	GND	GND(3)	GND(3)
17	Not connected	Not connected	Not connected	Not connected
18	GND	GND	GND(3)	GND(3)
19	VDD	VDD (3.3 V)	Not connected	Not connected
20	GND	GND	GND(3)	GND(3)

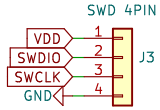
Table 5. Debug connector CN4 (SWD)

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 STM32
6	SWO	Reserved

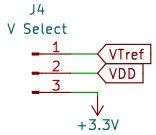
Figure 9. Using ST-LINK/V2-1 to program the STM32 on an external application







Note.
For a genuine ST-Link V2, connect the VTarget (VTr) pin to the target's VDD, while for a clone, connect the 3.3V pin to the target's VDD



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Sheet: /
File: JTAG_to_SWD.kicad_sch

Title: JTAG to SWD

Size: A4 | Date: 2023-10-16 | **Rev: 1.1**
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