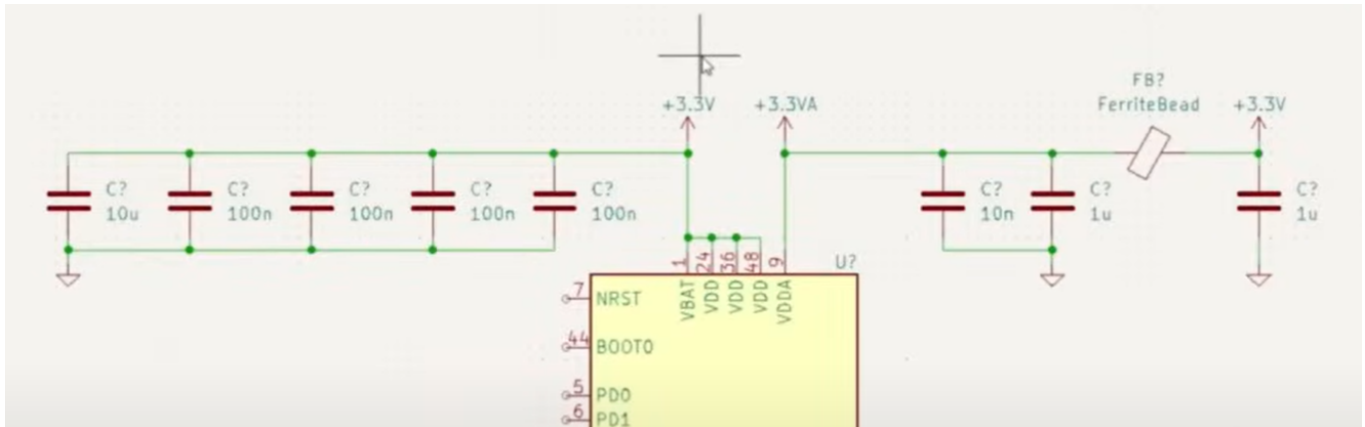


STM32 bare chip PCB

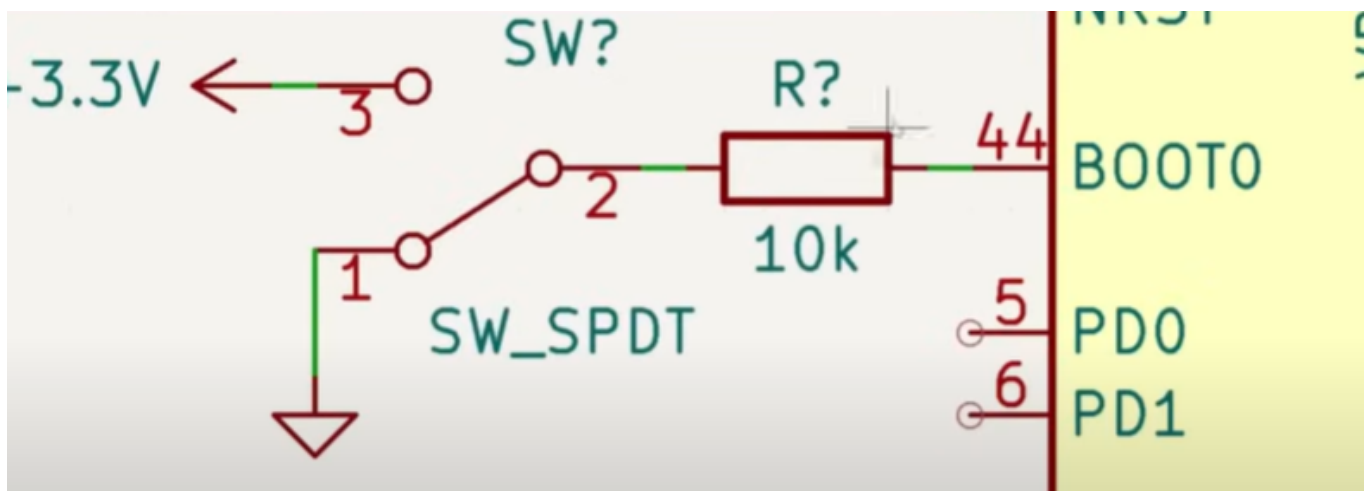
Decoupling capacitors are used for every VDD pins, in case the STM32 chip needs additional power for short burst

Decoupling capacitors are connected across the load, and bypass capacitors are connected to the ground



A ferrite bead becomes resistive over its intended frequency range and it dissipates the energy as heat in other frequency ranges

If we don't want to use JTAG or SWD, we can pull up the BOOT0 pin high and program it via USB, I2C etc



anytime you want to flash a program to the STM32, you toggle the switch program it and then again toggle it back to ground

a typical rule of thumb is to take the

00:30:05.279 load capacitance of the crystal itself

00:30:07.039 and we saw that from the data sheet or

00:30:08.720 from the part description that this was
00:30:10.799 10 picofarads we subtract from that the
00:30:13.679 stray capacitance which is typically
00:30:15.440 something like three to five picofarad
00:30:17.760 and multiply that difference by two so
00:30:20.640 we have 10 picofarad to low capacitance

What does BOOT0 pin do

Once the boot0 pin is set high, **the chip executes the bootloader section in memory** and it will not go back to the execution of application section of memory unless the boot0 pin is set low.

1. Boot from Main Flash Memory

BOOT0	BOOT1
Low	Any

In this mode, the microcontroller starts up from the onboard Flash memory. This is the typical configuration for normal operation when using Flash memory with sizes of 64K, 128K, or 256K.

2. Boot from System Memory

BOOT0	BOOT1
High	Low

This mode is used when downloading firmware via serial communication (e.g., UART) or in-system programming (ISP). It allows for programming and debugging of the microcontroller.

Voltage requirements for every component

Transistor- 1.5V

Gyroscope, quadcopter motor- 3.7V operating voltage 3.3V

Wheel motors,H bridge - 5V,