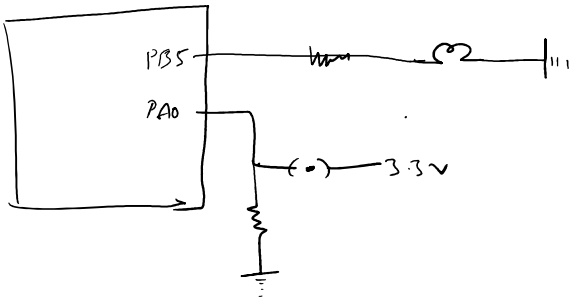
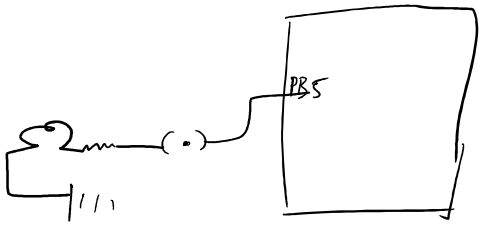
STM32 Stock

14 April 2025 16:03

DIGITAL SIGNALS



NORMAL SWITCH



STM32 TIMERS

Timer Modes You Should Know

Mode	What it does	Example Use Case
Basic Counting	Just counts time	Time measurement
Interrupt Mode	Fires a function every X ms	Blinking LED, polling
PWM Mode	Generates pulse signals	Motors, Servos, ESCs
Input Capture	Measures input pulse timings	Ultrasonic sensors, IR

timer frequency = 1000Hz / 1s

prescaler → frequency → 1000Hz

ARR → reload after how much count

Timer Registers You Configured:

Prescaler

- You set it to **31999**
- It divides the system clock (assume 32 MHz) like this:

```
sql                                                    Copy  Edit

Timer frequency = System Clock / (Prescaler + 1)
                = 32,000,000 / (31999 + 1)
                = 1000 Hz (1 count every 1 ms)
```

Counter Period (ARR - Auto Reload Register)

- You set it to **999**
- So the timer counts from 0 to 999 (which is 1000 steps)
- At 1000 steps * 1 ms = **1 second total**

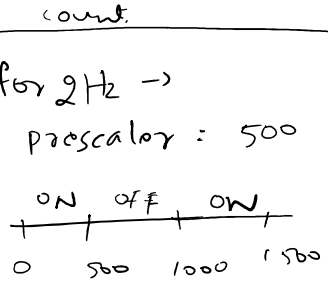
0 → 999 after 999 it reloads/overflows

Result:

- The timer overflows every 1 second
- Each overflow → **interrupt is triggered**

for 2Hz →

prescaler : 500



for $1+1_2$

presc → 999