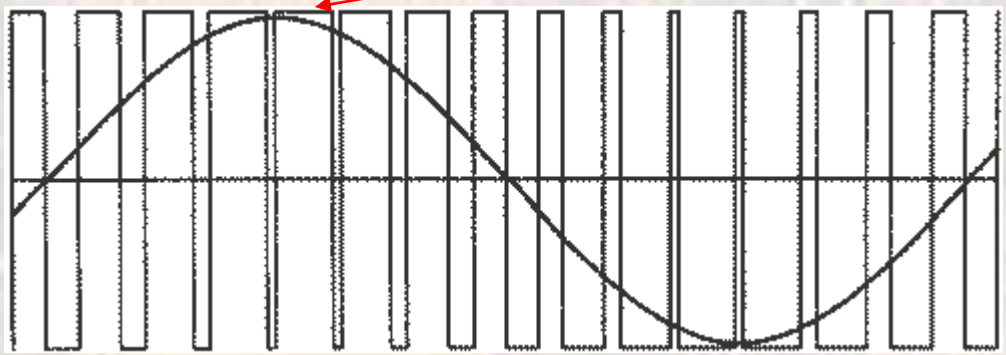
PWM Basics

Last updated 6/4/21

PWM Basics

- Pulse Width Modulation(PWM)
  - Create a fixed frequency square wave
  - Vary the duty cycle (pulse width) to emulate an analog signal

mostly on pulses → average = high voltage



src: StackExchange

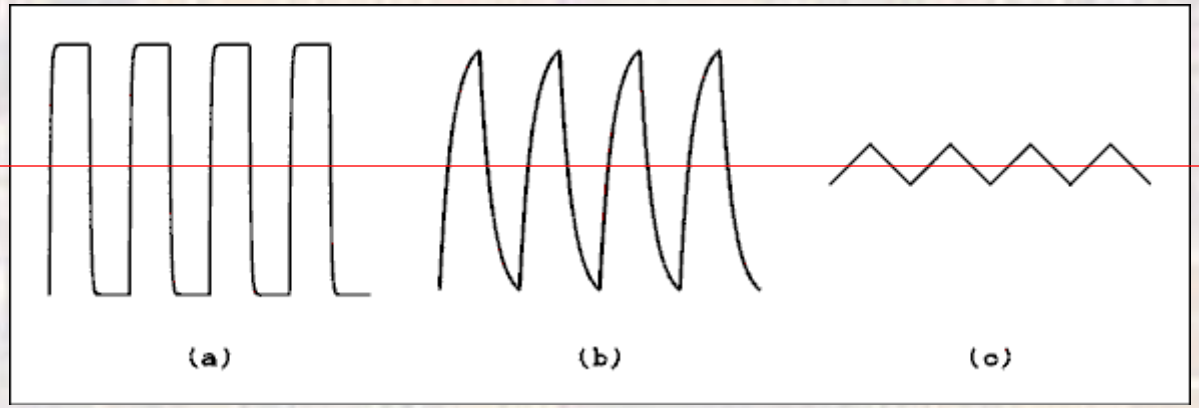
for illustration only
not an accurate depiction

mostly off pulses → average = low voltage

PWM Basics

- Pulse Width Modulation(PWM)
  - When a PWM signal is fed to a circuit that has a low pass filter characteristic:
    - The high frequency components are removed
    - The low frequency components remain
    - The DC component remains

Increased filtering →



src: StackExchange

PWM Basics

- Pulse Width Modulation(PWM)
  - DC value is proportional to the duty cycle (pulse width)
    - With a 3.3v signal
    - Effective DC values: ——