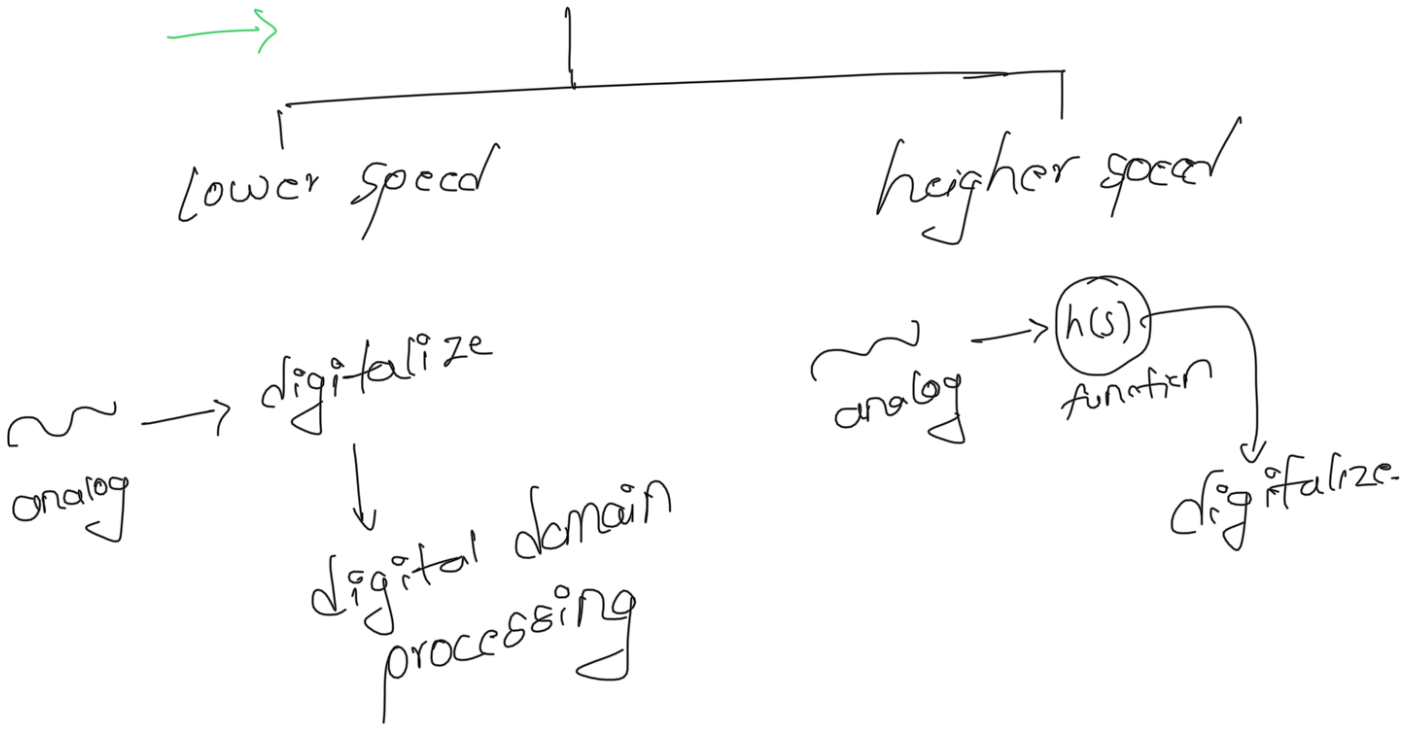
Why Analog

→ For small RF signal, it require ADC which consumes lot of power like the received signal is in range of few mili-volt & dur of few hundred μ-seconds.

So to make ADC (analog part) to consume very less power

→ when digital signal is too small or so distorted analog equalizer is more preferrable when data rates are high.

→



Analog Design Challenges

→ Transistor Imperfections
→ Declining Supply voltage
→ Power Consumption
→ Circuit Complexity
→ PVT variations
- fabrication process
- supply voltage
- ambient temperature

Integrated
↳ multiple electronic devices on same substrate

Why CMOS?

→ CMOS :- Complementary MOS
(with both p & n type transistor)

+ Device Scaling
& MOSFET

- Speed of [illegible]
- Lower supply voltage

Levels of Abstraction :

- device physics level
- transistor level
- architecture level
- system level

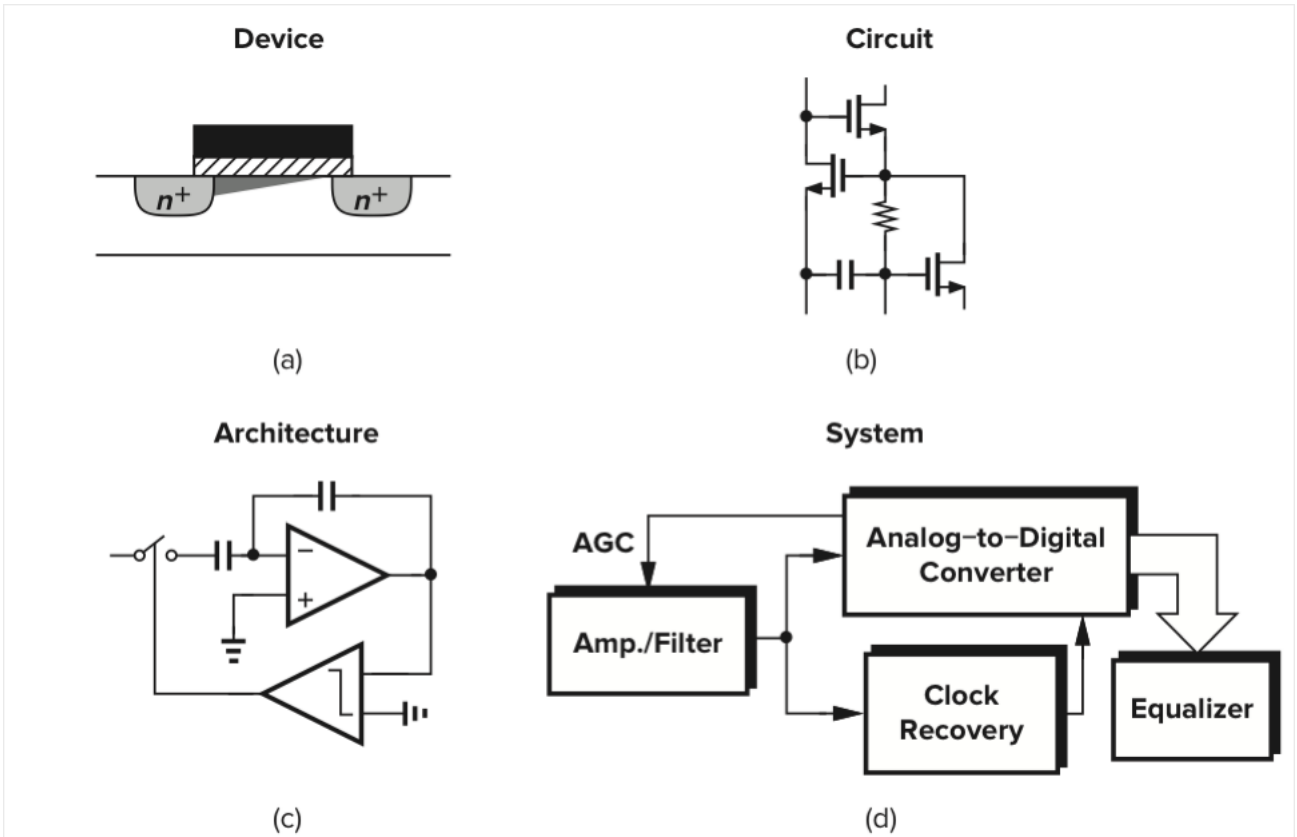


Figure 1.5 Abstraction levels in circuit design: (a) device level, (b) circuit level, (c) architecture level, (d) system level.