

# 05 - Wireless 802.11

## WLAN: IEEE 702.11b

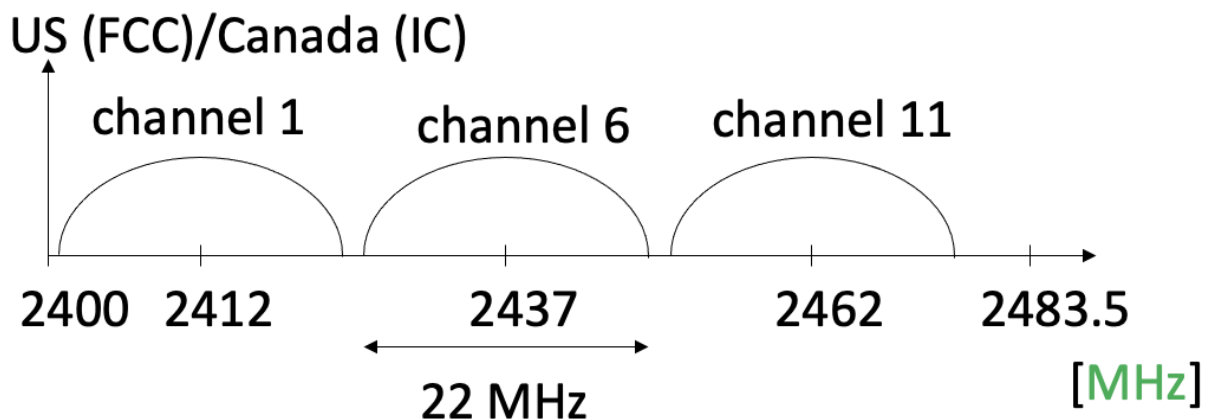
- 1, 2, 5.5, or 11 Mbps
  - User data rate max approx 6 Mbps
- transmission range of 300m outdoor 30m indoor
  - max data rate 10m indoor
- frequency free 2.4 Ghz ISM-band
- physical channels

12 channels available for use in the US

Each channel is 22 MHz wide

Only 3 orthogonal channels

Using any others causes interference



## CD

- because there are multiple channels and not a single shared channel

- CSMA carrier sense doesn't work for wireless because C cannot detect data from A to B on line  $A \rightarrow B \rightarrow C$
- so if C transmits, collision at B  $\rightarrow$  C needs to defer sending

## RTX/CTS (MACA)

- node A, before transmitting, send a couple bytes called RTS request to send on channels
- B responds with clear to send CTS broadcast
- C hears CTS and defers

## Backoff Interval