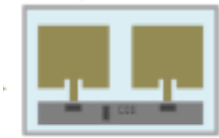# Design

Downlink communication - from reader to tag

- Using **presence / absence** of packets to encode data

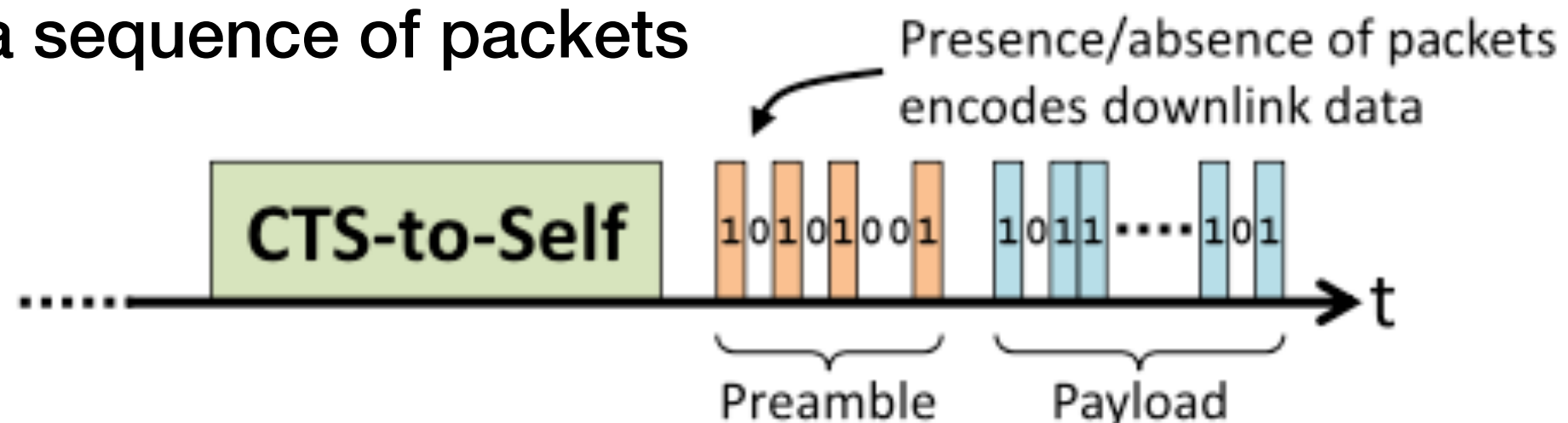- For the sender (the WiFi reader device):

  Silence!

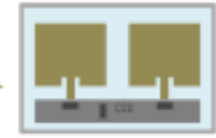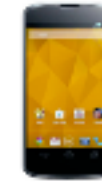 - Send a CTS-to-Self, global silence first

  - Send the preamble - let Tag know that a transmission is about to happen

  - Send a sequence of packets

Presence/absence of packets encodes downlink data

CTS-to-Self | 10101001 | 1011 ···· 101 → t

Preamble | Payload

Design

Downlink communication - from reader to tag

- For the receiver (the RF Tag):

  - How to perceive the presence/absence?

    - Wi-Fi transmissions are modulated using OFDM, which is known to **have a high peak to average ratio**

    - A low power receiver circuit for peak detection @2.4GHz.