

# HY-330

fall semester 2021

## Introduction to telecommunication systems theory

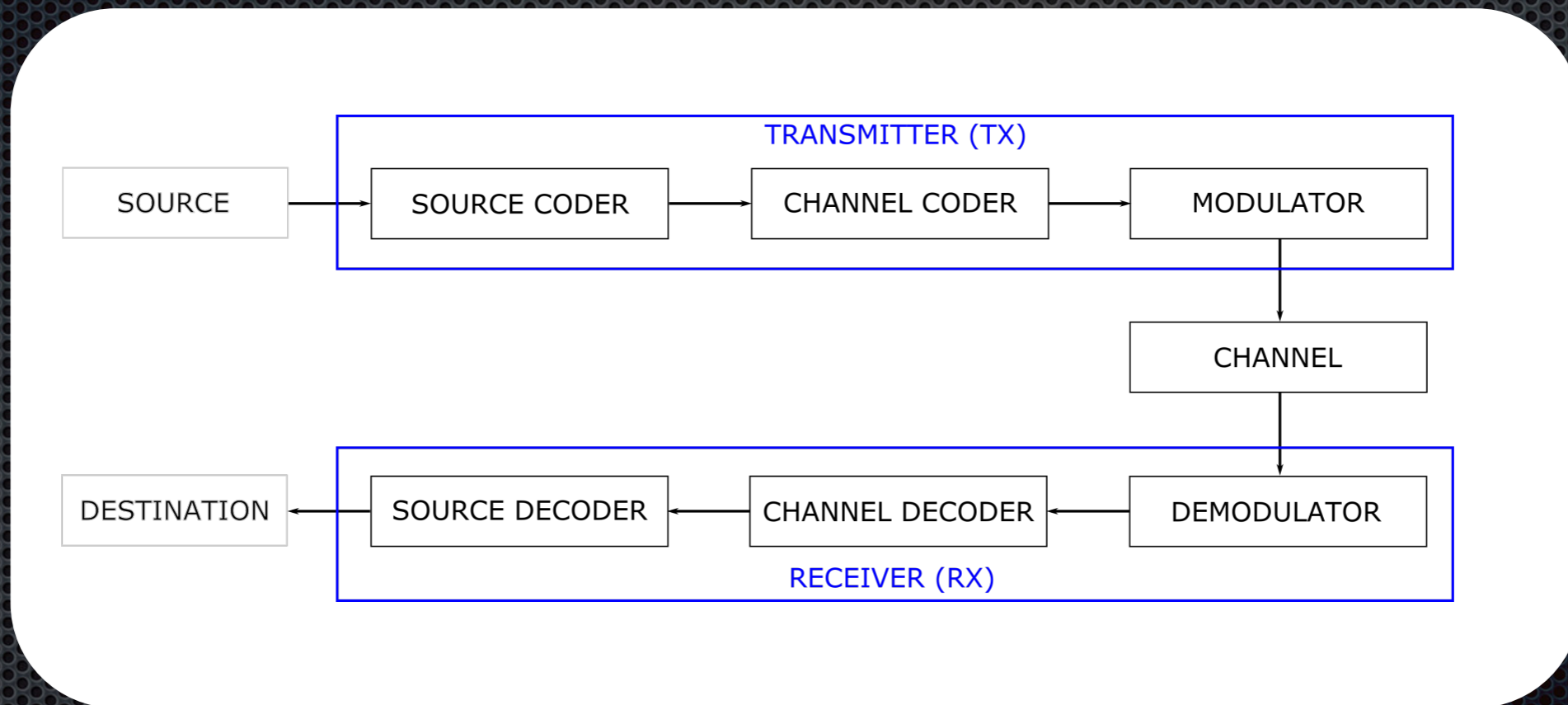
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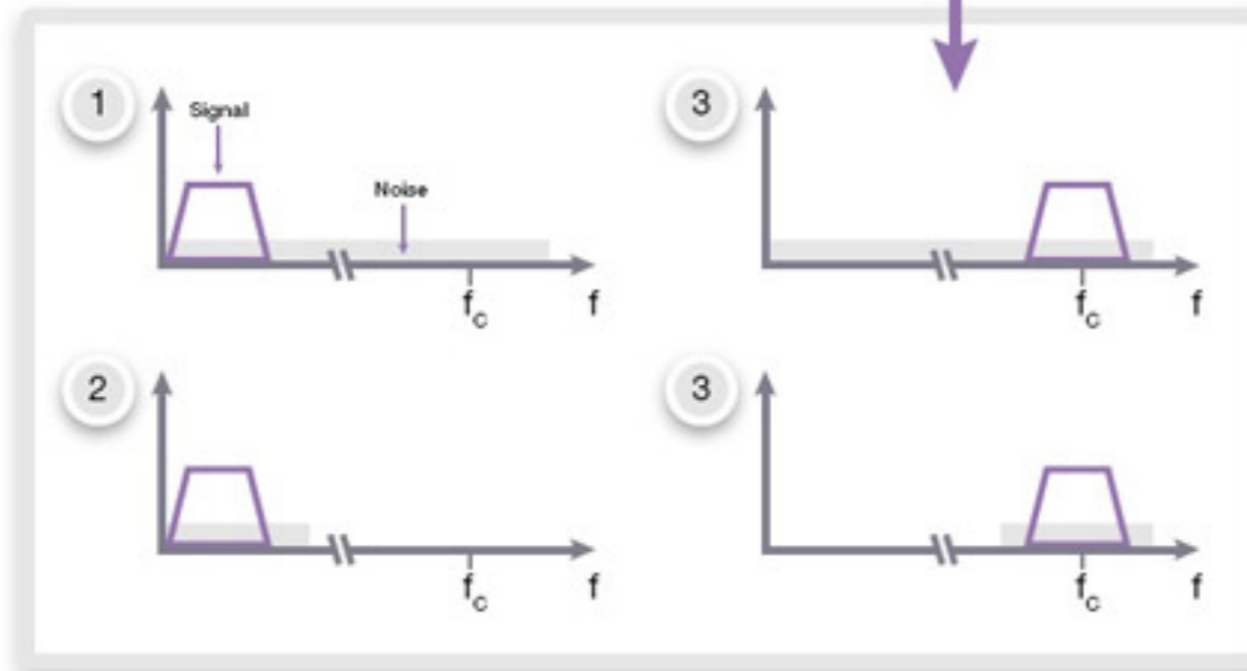
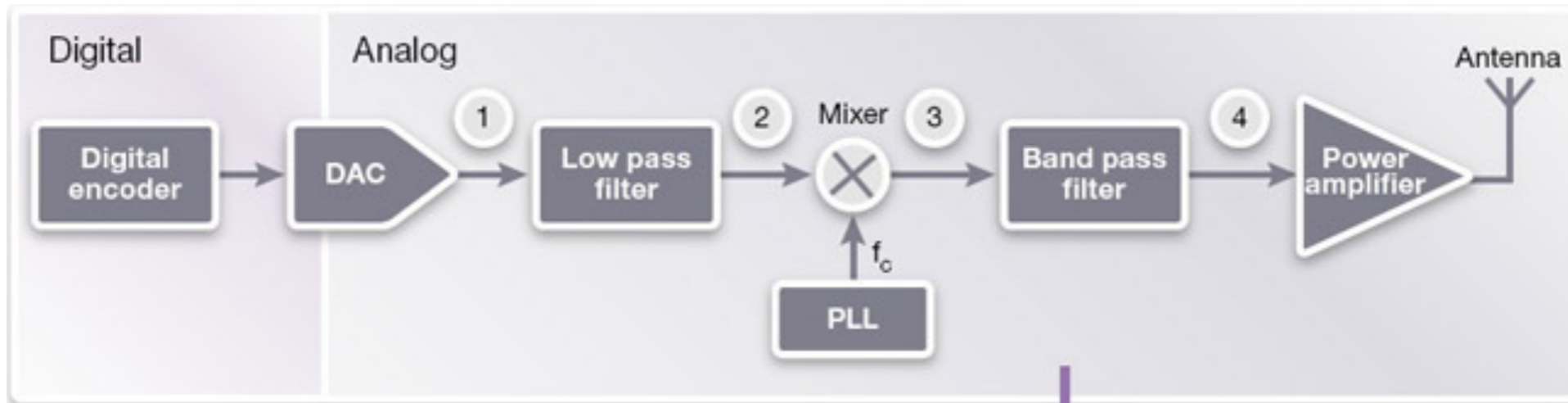
# Tx Chain Overview

- Channel Coding
  - Forward Error Correction (FEC)
  - Interleaver
- Mapping
  - QAM/PSK
- Modulation
  - OFDM/CDMA
- DAC
- Filtering

# Telecommunication System

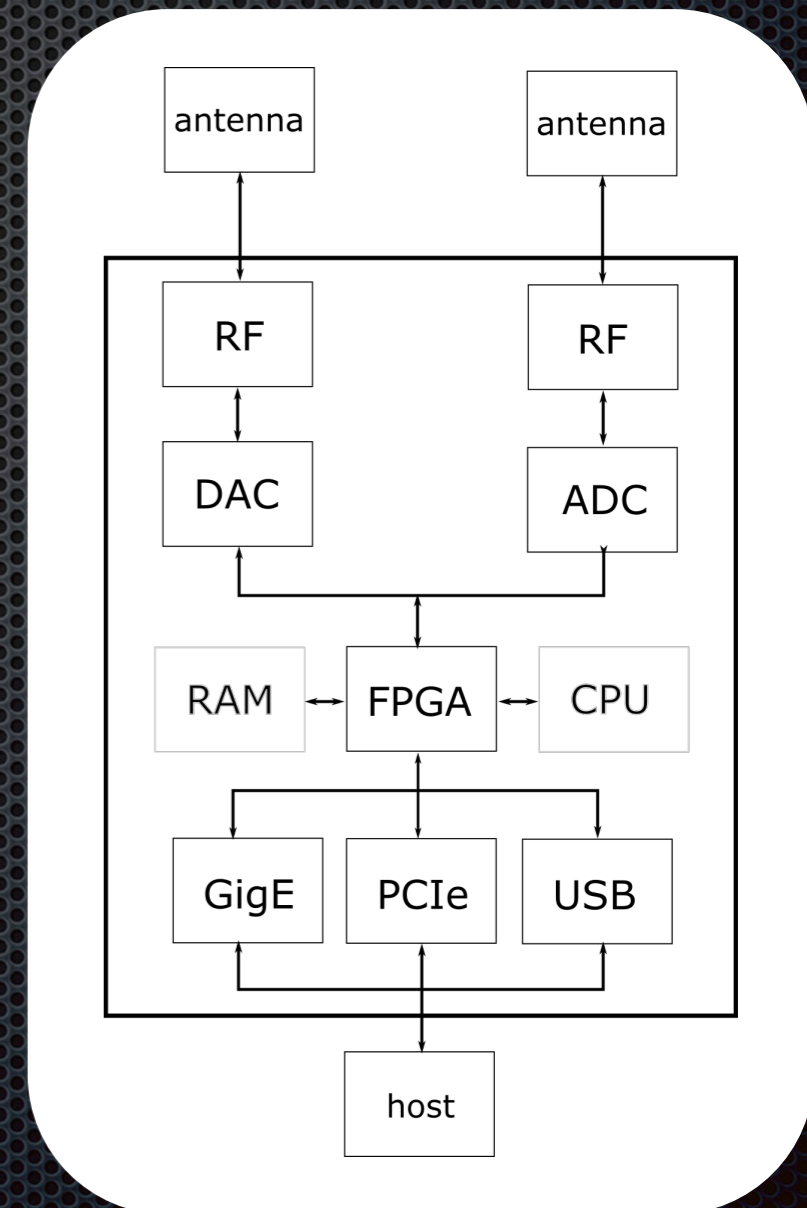


# Basic Transmitter

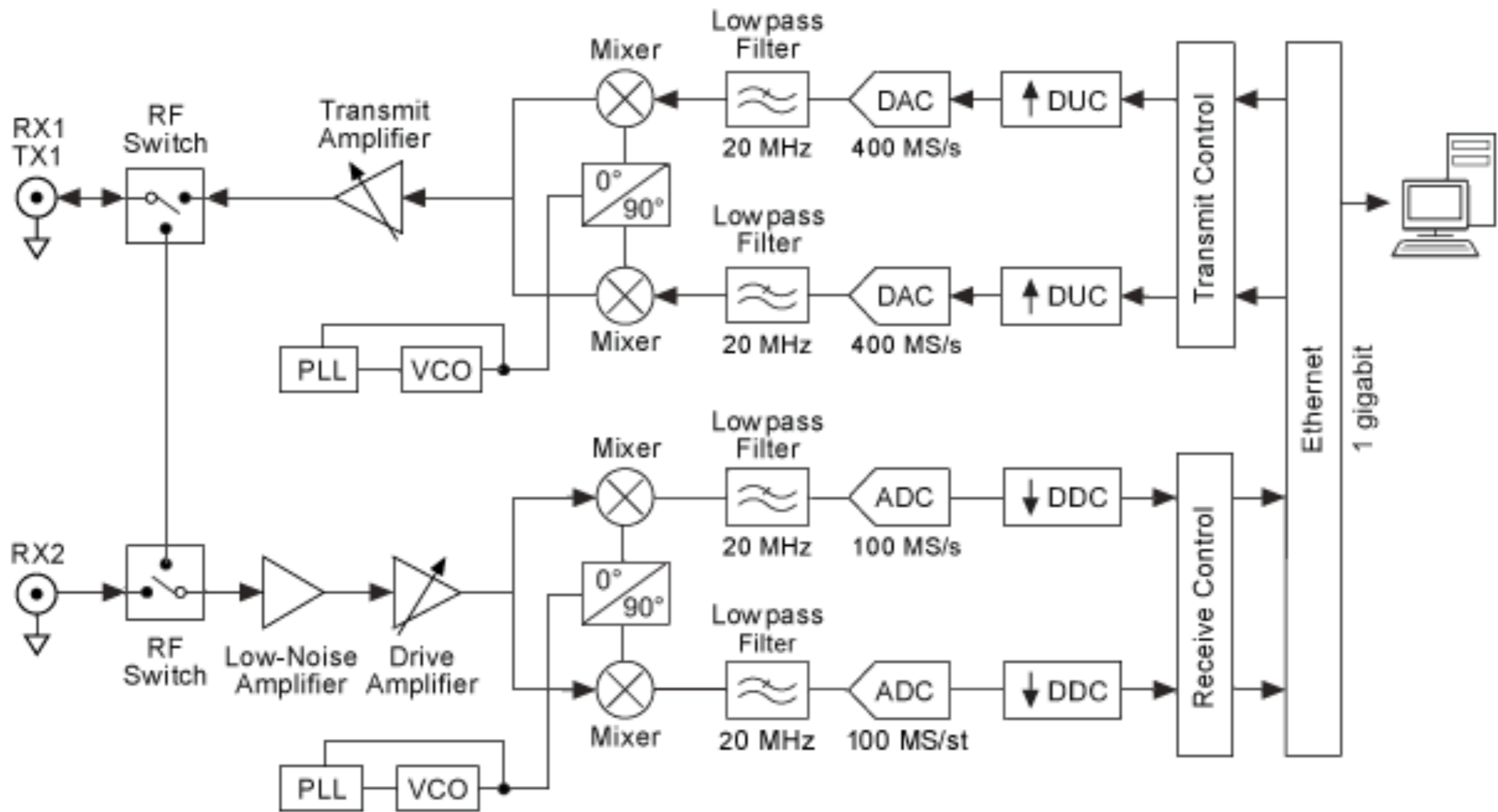


# SDR

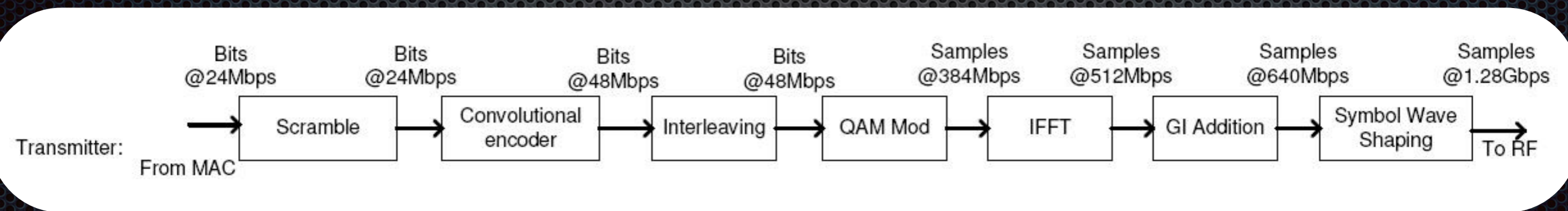
- Software Reconfigurable Receiver & Transmitter hardware
- Limited only by the DAC/ADC characteristics and host interface
  - Sampling Frequency, Resolution
  - Interface throughput
- Most of the signal processing is implemented in software
- Needs high computational resources on host computer, but provides total freedom in the signal processing



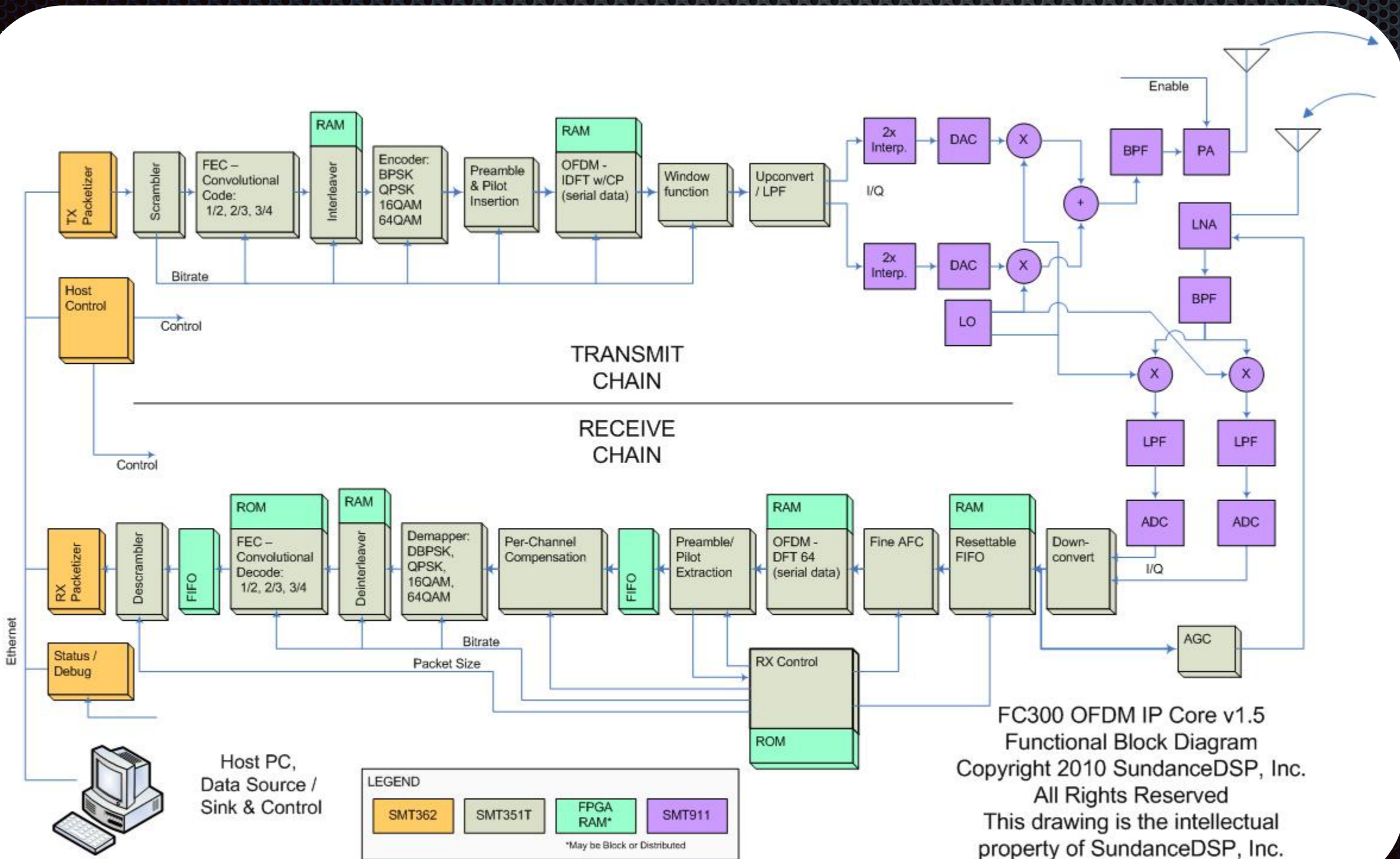
# Typical SDR



# IEEE 802.11a

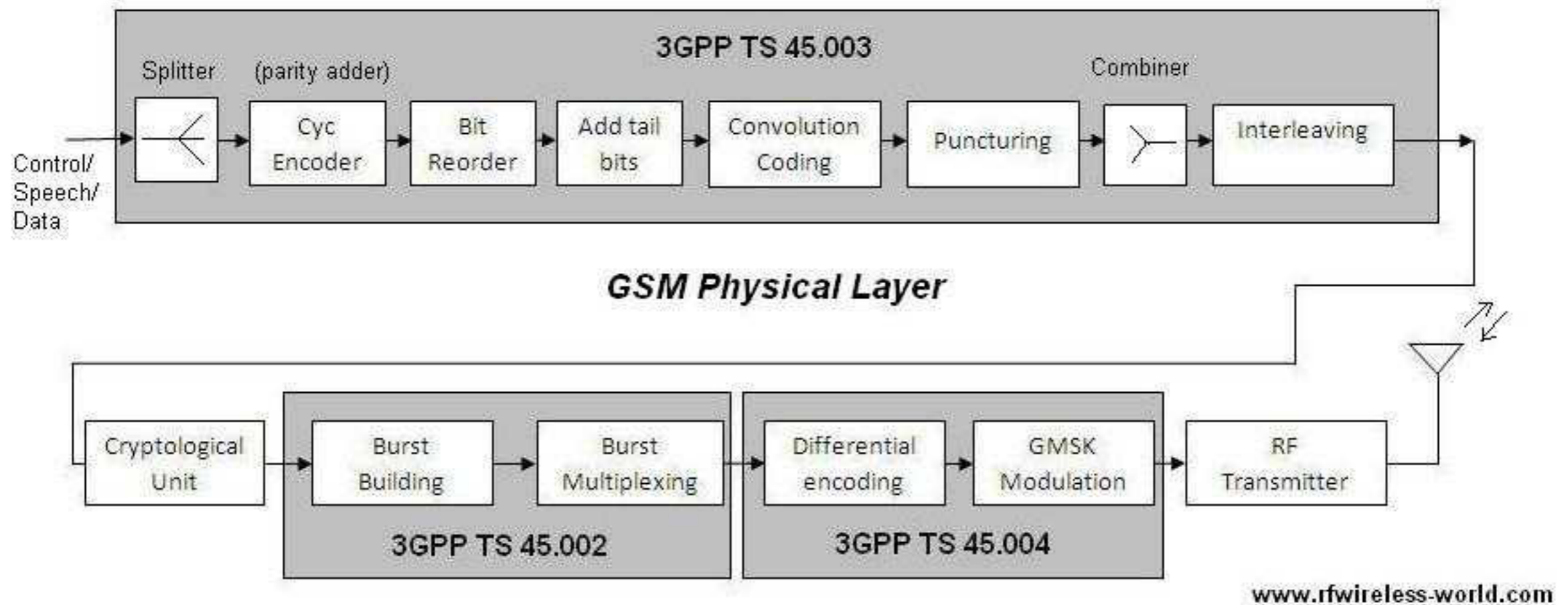


# 802.11 transceiver

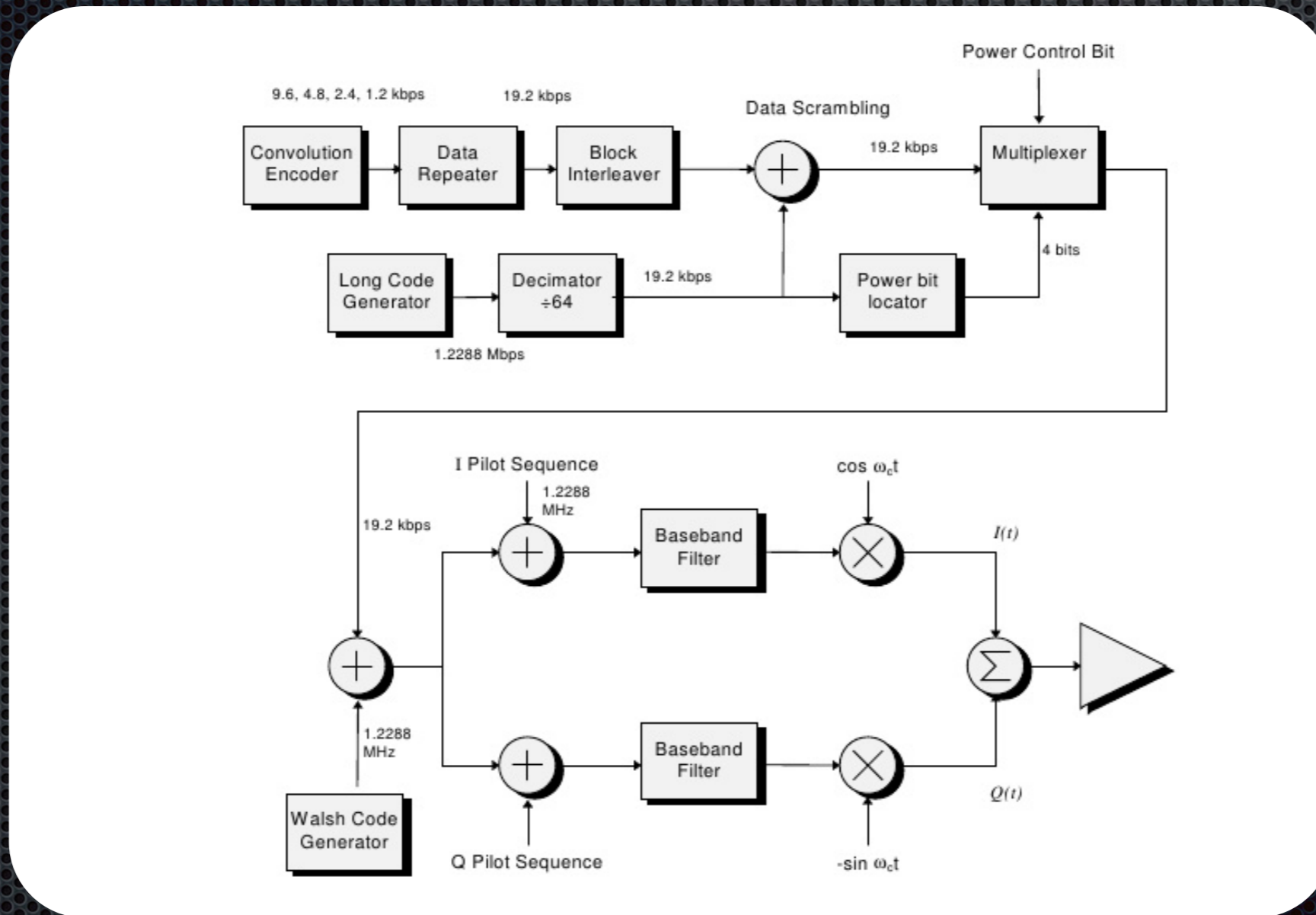




# GSM



# CDMA2000



# DVB-T

