E157 Lecture 24 Day Plan

Any questions before quiz

Quiz + Team Quiz + Talk through solution

Constellations

- Is this constellation AM, PM or both?
- Rotated/stretched constellations and I/Q imbalance
    - Stretch → gain imbalance
    - Rotate → quadrature error (phase imbalance)
- Error Vector Magnitude
- Bits per symbol and Modulation efficiency – (bits/s)/Hz

OOK and the need for protocols

- Make it with a VCO w/ output enable
- what do you infer if you hear 000011001100

When does my mixer need to be synchronous? OOK? FSK? FM? AM? IQ?

- If you're going straight to power detect, probably not
- If you care about sideband content, probably
- Quadrature FM demodulator – see below, mixer can be AND/XOR too, phase detect
- PLL FM demodulator?

How to handle multiple users: TDMA, FDMA, maybe CDMA