**ECE 4705L EXPERIMENT 4**

**OOK MODULATION[[1]](#footnote-1)**

# OBJECTIVE

The objective of this experiment is to understand OOK modulation.

# EQUIPMENT

HP 3312A Function Generator (for the modulation), second function generator (for message signal), Oscilloscope, spectrum analyzer.

# PRE-LAB

Write a 1-2 page report on the theory of OOK modulation. Do your research online, and/or from your communication theory textbook. Include relevant OOK equations, plots from the time-domain, frequency-domain, block diagrams of OOK, etc.

# LAB

1. Set up a 50 Khz, 1-Vpp sinusoidal carrier on the HP3312A (verify it on the oscilloscope). On a different function generator, set up the message signal: a 5-Vpp, 0.5 duty-cycle, 5 Khz square wave (verify on the oscilloscope). When these signals are established, plug in the message square wave into the HP3312A’s “MOD” input, and press the AM button. Adjust, observe and record the OOK time-domain signal on the oscilloscope. You will have to adjust (1) the message offset knob, and (2) the modulation index knob on the HP3312A to get the correct OOK signal on the oscilloscope.

2. Move the cable from the oscilloscope to the spectrum analyzer. Adjust, observe and record the OOK frequency-domain signal.

1. Based on a lab from Professor Richard Cockrum [↑](#footnote-ref-1)