

SCHOOL OF ENGINEERING

AMPLITUDE SHIFT KEYING DATA TRANSMISSION
PROJECT FINAL REPORT

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ABSTRACT

The purpose of this project is to study the principles of Amplitude Shift Keying (ASK) modulation and demodulation and to implement the ASK modulator, noncoherent demodulator and coherent demodulator.

Amplitude shift keying is the simplest digital modulation technique, where a binary information signal directly modulates the amplitude of an analogue carrier ('on' when logic is high and 'off' when logic is low). ASK is similar to standard amplitude modulation except there are only two output amplitudes possible. The use of ASK to transport digital information is relatively low quality, low-cost type of digital radio and is, therefore, seldom used in high-capacity, high performance communication systems.

ASK transmission is highly susceptible to noise interference. The term noise refers to unintentional voltages introduced onto a line by various phenomena such as heat or electromagnetic induction created by other sources. These unintentional voltages combine with the signal to change the amplitude. A '0' can be changed to '1', and a '1' to '0'. Noise will be a problem for ASK, which relies solely on amplitude for recognition. Noise usually affects the amplitude; therefore, ASK is a modulating method most affected by noise.