

Data Communication Open-Ended Lab Experiment: Demonstrate an experiment for shift keying (ASK) and multiplexing (FDM) to communicate binary bits as analog signals; Demultiplex and convert them back into binary bits at the receiver

Software

- MATLAB

Task

Your experiment should include the following:

- Convert multiple Digital data (as binary bits) into Analog signals using ASK (Amplitude shift keying)
- Multiplex the above obtained multiple Analog signals using FDM (Frequency Division Multiplexing)
- Demultiplex the composite Analog signal back into individual Analog signals
- Convert the individual Analog signals back into the original Digital data (as binary bits)

Lab Report

Your lab report and presentation should include the following sections:

Purpose

This is a summary statement of the work to be accomplished in this experiment. An overall direction for laboratory investigation, the obtained result and summary of conclusions must be provided.

Procedure

Explain step-by-step procedure in a numbered sequence so that other learners can comprehend the experiment and be able to reproduce the experiment by reading your procedure.

Results

The MATLAB code used along with the necessary diagrams to represent the proper functioning of the experiment should be provided with proper labeling.

Impact on Society, health and safety

You need to analysis the impact shift keying (ASK) and multiplexing (FDM) have on Society, Health, Safety and Culture.

Discussion and Conclusions

This section should be based on the information described in the report and is the closure of your report. Any advantages or limitations of the experiment should be included here. Any problems encountered while performing a particular step in the experiment can also be mentioned here.

Reference

Proper referencing should be used, citing at least two resources that you have used for this report