



NATIONAL INSTITUTE OF TECHNOLOGY, SILCHAR

Department of Mathematics

Project Report on,

**“DATA TRANSMISSION ANALYSIS AND SIMULATION APPLYING
AMPLITUDE/FREQUENCY MODULATION AND EFFECTS OF
ATTENUATION ON THE TRANSMITTED SIGNAL.”**

July 9, 2020

ABSTRACT

In this project we account for and study the area of data communication, the technical aspects, theory governing the transmission of signal, simulation of different modulations, transference of the signal across the transmitting channel, effects of attenuation on the transmitting signal and finally aspects of demodulation.

Rigorous mathematical analysis of the different signals are done using powerful mathematical tools such as Laplace and Fourier transforms for ease of analysis of different signals as well as in application. Simulations of transmission of different kinds of signals in MATLAB are shown in this project with exquisite detail.

We have covered different types of modulation in theory additionally, Amplitude and Frequency in particular for this project. The process of modulation with carrier signal and input/message signal is examined thoroughly.

We try to cater to the power of computer software such as MATLAB, open source software such as L^AT_EX to develop this project.

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1 Introduction