

Amplitude Modulation and Demodulation using eSim

Name of the participant: Sadichha Sandip Patil

University: Shivaji University

Title of circuit: Amplitude Modulation and Demodulation using eSim

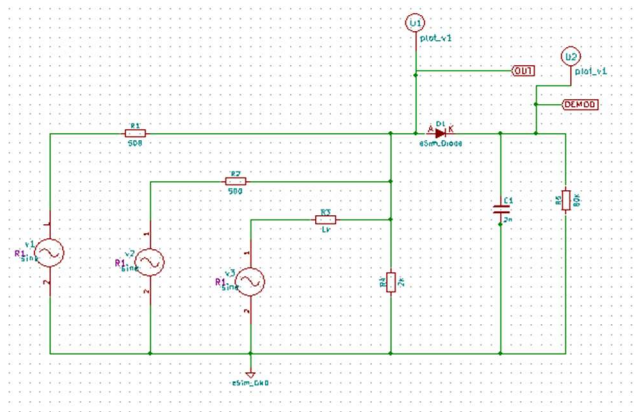
• Problem Statement:

The objective of this project is to design and simulate amplitude modulation (AM) and demodulation circuits using the eSim software environment. The goal is to develop a robust model to demonstrate the fundamental concepts of AM and its recovery (demodulation) with clarity and precision, suitable for educational and experimental purposes.

• Theory:

I have to simulate Amplitude Modulation and Demodulation is performed on eSim software. AM signal is generated by adding carrier signal and upper side band and lower side band signal. Further demodulation is performed with envelope detector circuit. Diagonal clipping and peaky waveform types of envelopes is clearly visualized in this simulation. Amplitude modulation (AM) is a modulation technique where the amplitude of a carrier signal is varied in proportion to a modulating signal, typically a low-frequency audio signal. Demodulation is the process of extracting the original modulating signal from the modulated carrier. This project involves simulating AM and demodulation circuits using eSim, highlighting practical implications of the processes.

• Circuit Diagram:



• Source/Reference(s):

- **Title of the paper:** Simulink Implementation of Amplitude Modulation Technique using Matlab
- **Name of publication:** International Research Journal of Engineering and Technology (IRJET)
- **Authors:** Mr. Ranjeet R. Suryawanshi, Mr. Vikas D. Patil
- **Pages, Published in:** Volume 5, Issue 8, August 2018, Pages 185-189
- **Link:** [Simulink Implementation of Amplitude Modulation Technique using Matlab](https://www.researchgate.net/publication/362538048)

- Laskov, L. B., & Georgieva, V. M. (2021, June 16). Analysis of Amplitude Modulation and Demodulation in MATLAB Simulink Environment. <https://doi.org/10.1109/icest52640.2021.9483470>