



ANALOG COMMUNICATIONS LAB

S.PADMA

Assistant Professor

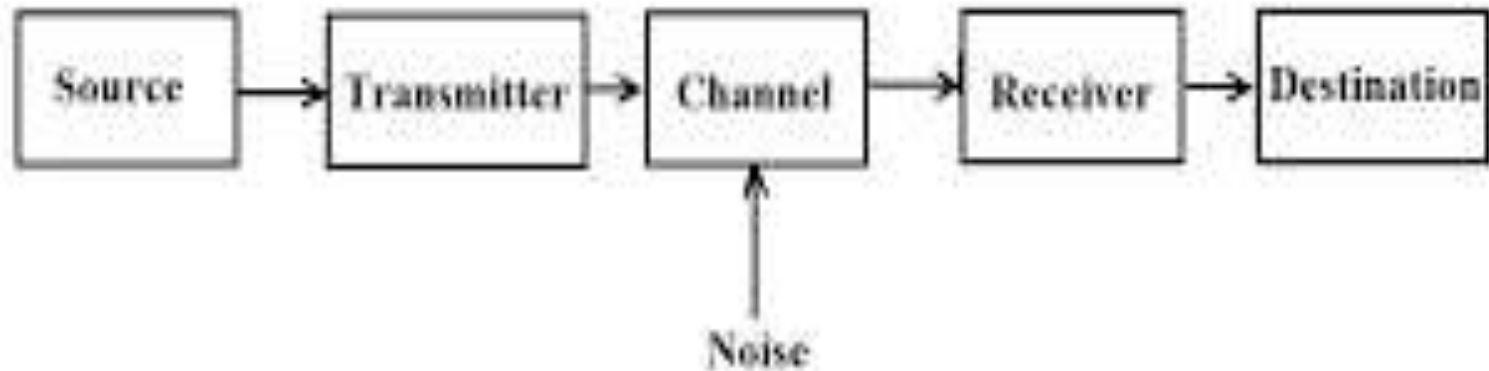
Department of ECE

Jyothishmathi Institute of Technology & Science

CONTENTS

- ▶ Block diagram
- ▶ Circuit diagram
- ▶ Input/output waveforms
- ▶ Advantages and Disadvantages
- ▶ Applications

BLOCK DIAGRAM



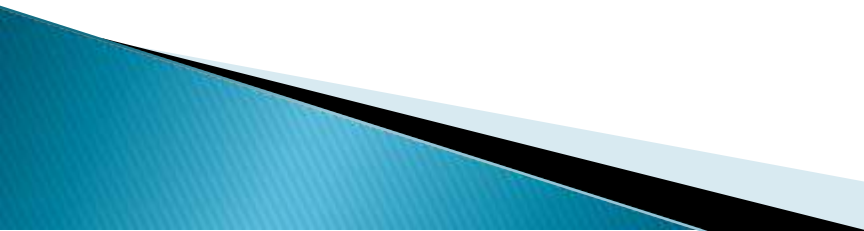
* Basic Block diagram of Analog Communication system

AMPLITUDE MODULATION & DEMODULATION

AIM

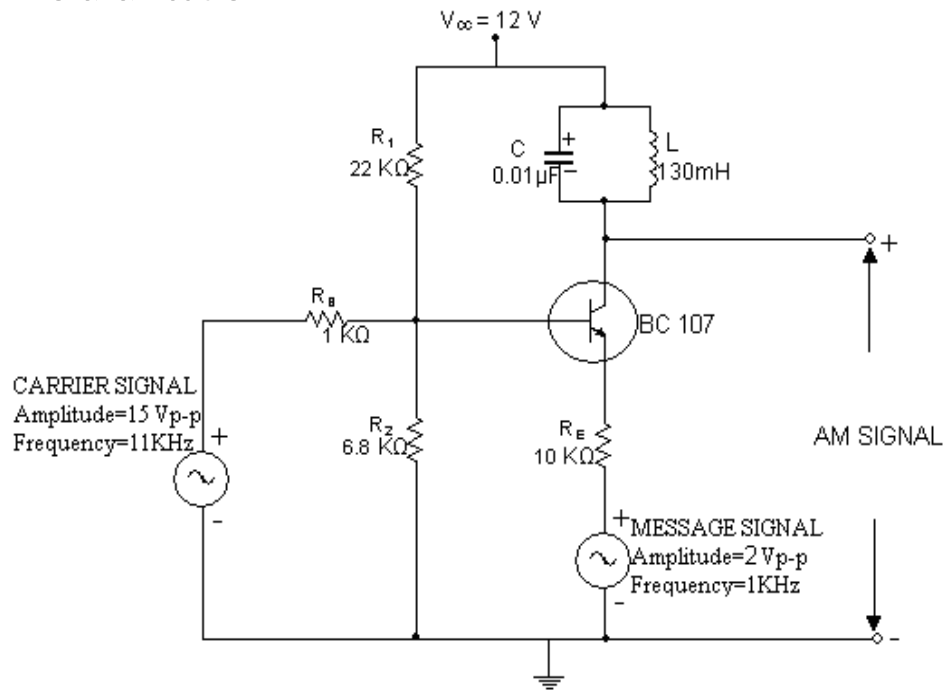
To study the function of Amplitude Modulation & Demodulation (under modulation, perfect modulation & over modulation) and also to calculate the modulation index.

APPARATUS

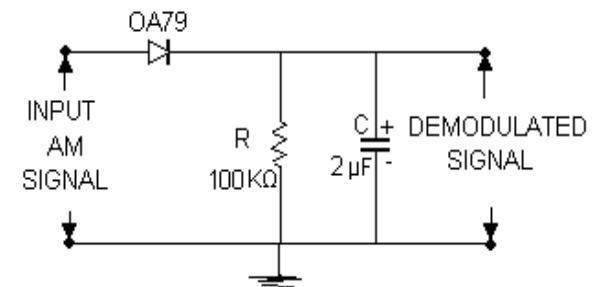
- ▶ Amplitude Modulation & Demodulation trainer kit.
 - ▶ C.R.O (20MHz)
 - ▶ Function generator (1MHz).
 - ▶ Connecting cords & probes.
- 

CIRCUIT DIAGRAM

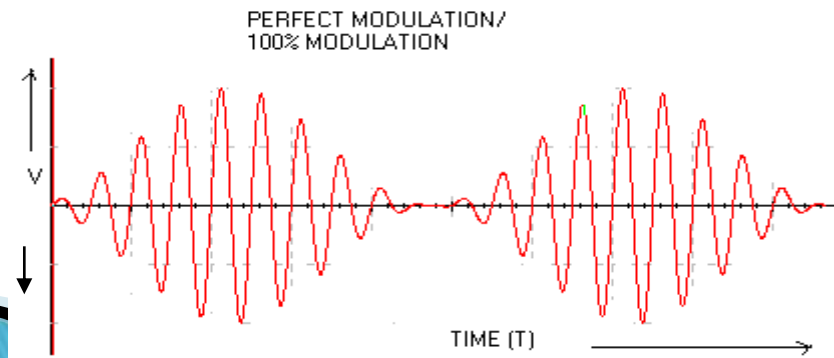
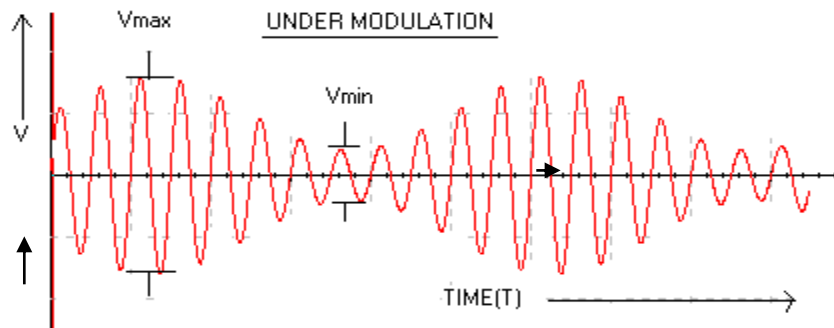
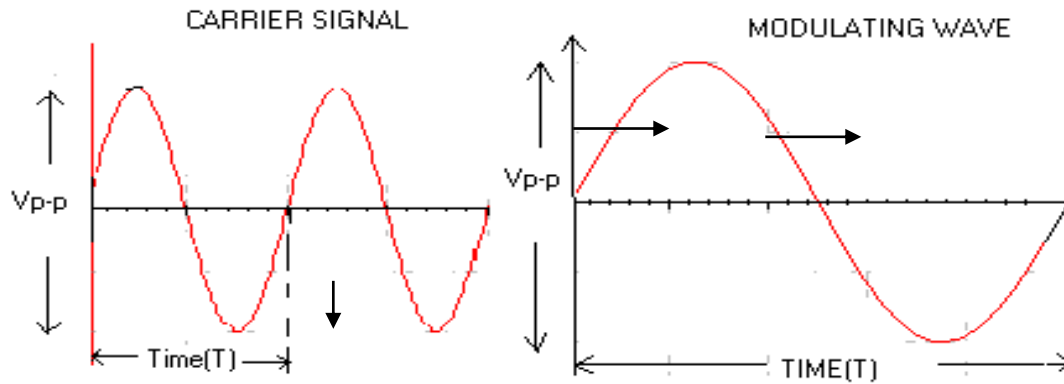
Modulator:



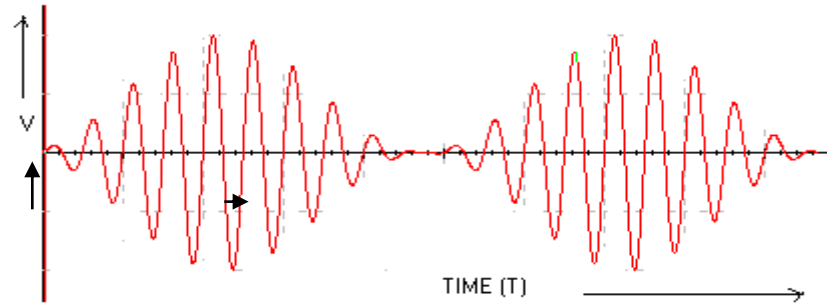
Demodulator:



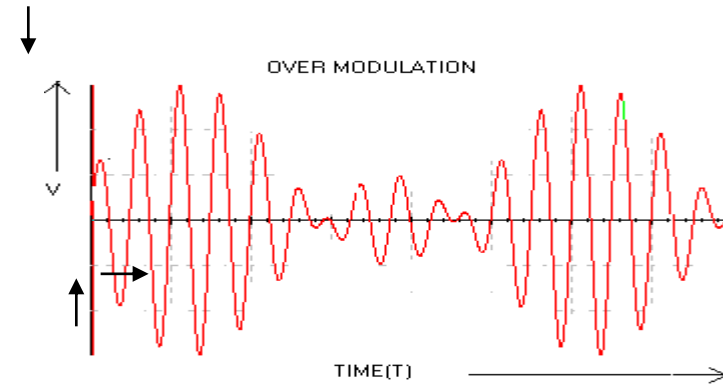
Input & Output waveforms



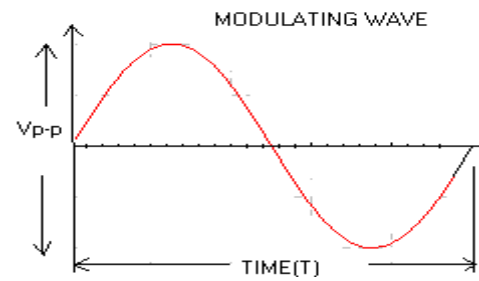
PERFECT MODULATION/
100% MODULATION



OVER MODULATION



Demodulated signal

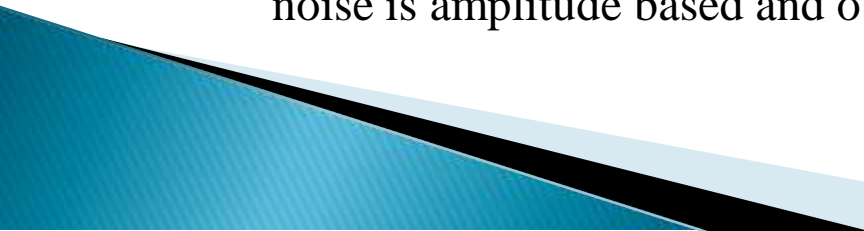


Advantages and disadvantages of AM

Advantages of AM

- ▶ It is simple to implement
- ▶ It can be demodulated using a circuit consisting of very few components
- ▶ AM receivers are very cheap as no specialized components are needed

Disadvantages of AM

- ▶ An amplitude modulation signal is not efficient in terms of its power usage
 - ▶ It is not efficient in terms of its use of bandwidth, requiring a bandwidth equal twice that of the highest audio frequency
 - ▶ An amplitude modulation signal is prone to high levels of noise because most noise is amplitude based and obviously AM detectors are sensitive to it
- 

APPLICATIONS

- ▶ Portable Two way radios
 - ▶ VHF Aircraft radio: The band (channel) of frequencies used in Civil Aviation
 - ▶ Citizens Band Radio: a system of short-distance radio communications between individuals typically on a selection of 40 channels within the 27 MHz (11 m) band.
 - ▶ Computer Modem
- 