



SNS COLLEGE OF TECHNOLOGY

An Autonomous Institution

Coimbatore-35



Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

19ECB301-ANALOG AND DIGITAL COMMUNICATION

III YEAR/ V SEMESTER

UNIT 1 – ANALOG COMMUNICATION

TOPIC – MODULATION-TYPES-NEED FOR MODULATION



MODULATION

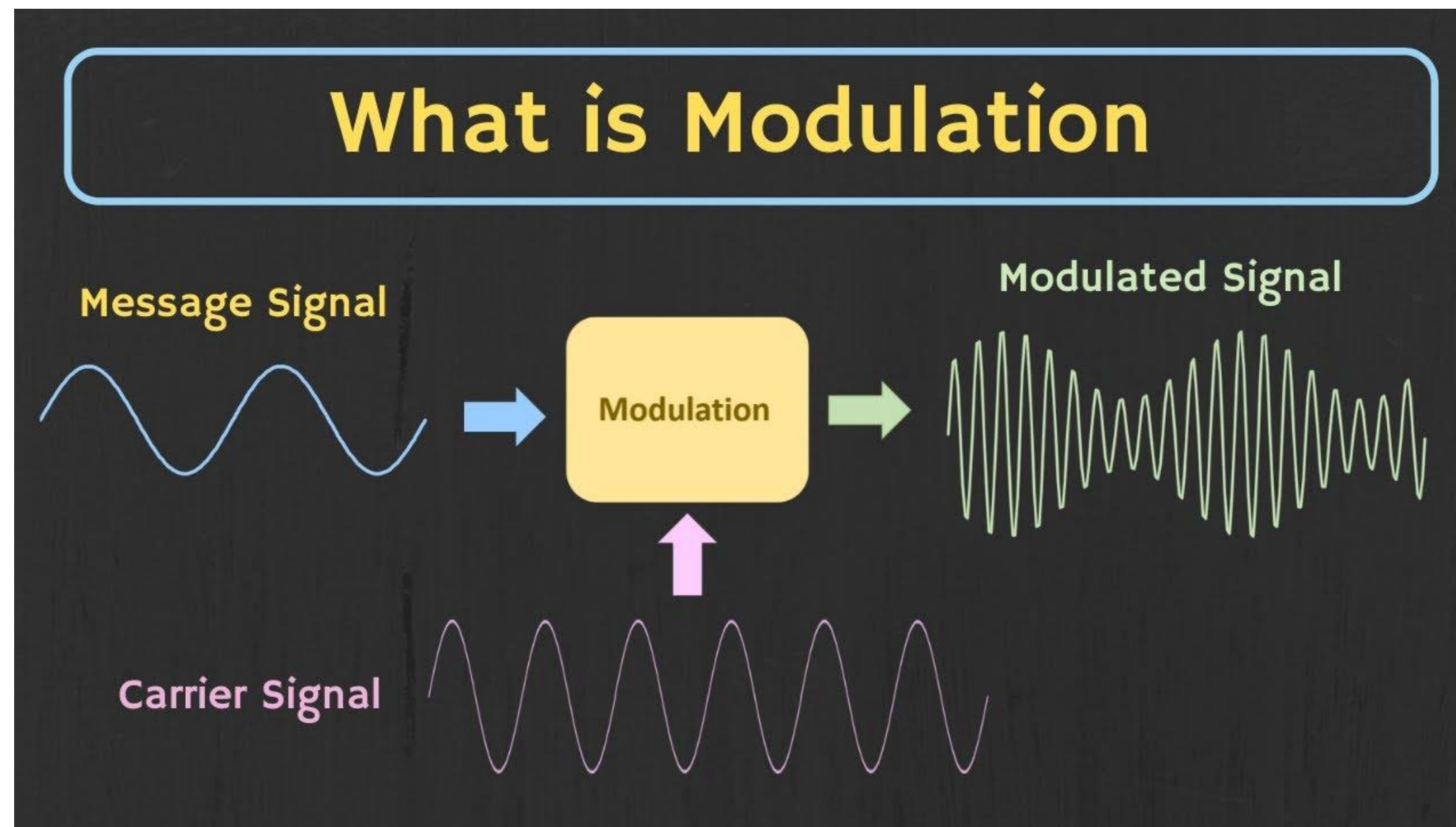




MODULATION



Modulation refers to the process of changing the parameters of the carrier signal corresponding to the instantaneous values of the modulating signal.





BASEBAND SIGNAL



A baseband signal refers to a transmission signal that hasn't been modulated or demodulated to its original frequency. It can be transmitted over optical fibers, coaxial cables.





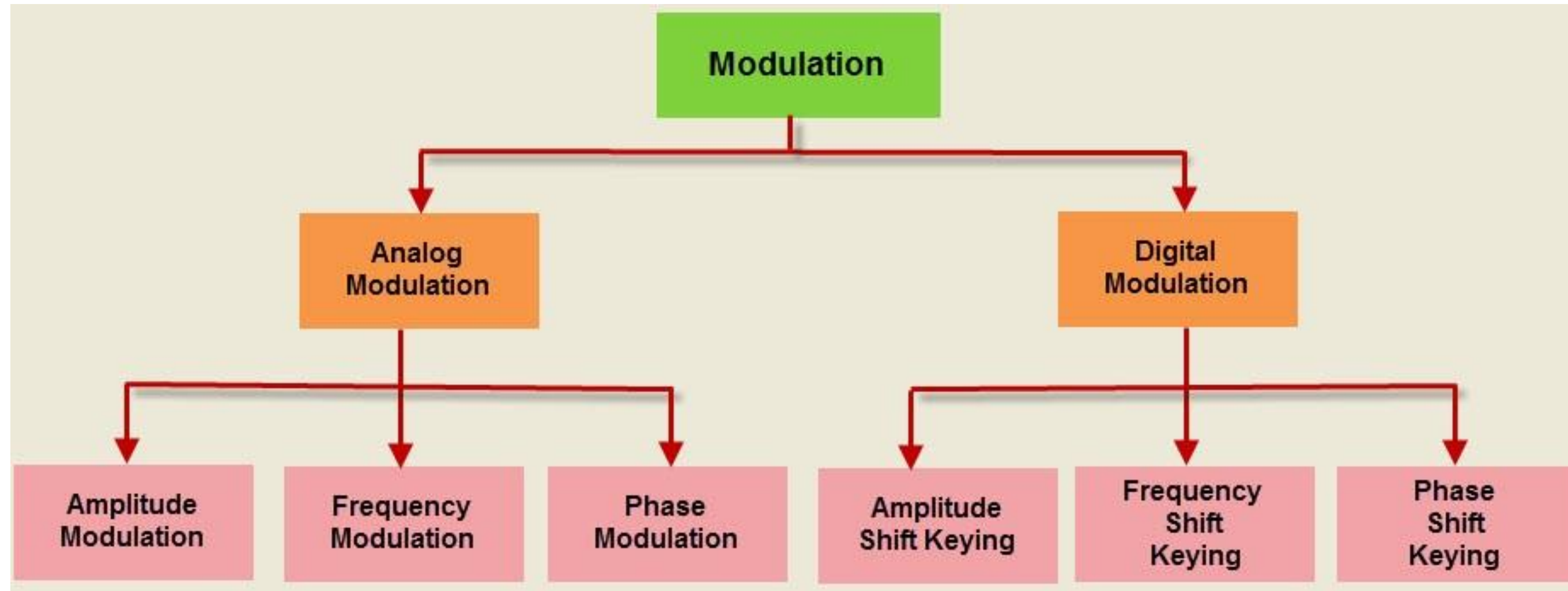
NEED FOR MODULATION



- The size of the antenna gets reduced
- There's no scope for signal mixing
- The communication range increases
- Multiplexing of signals occurs
- Adjustments in the bandwidth are allowed
- Improvement in the reception quality



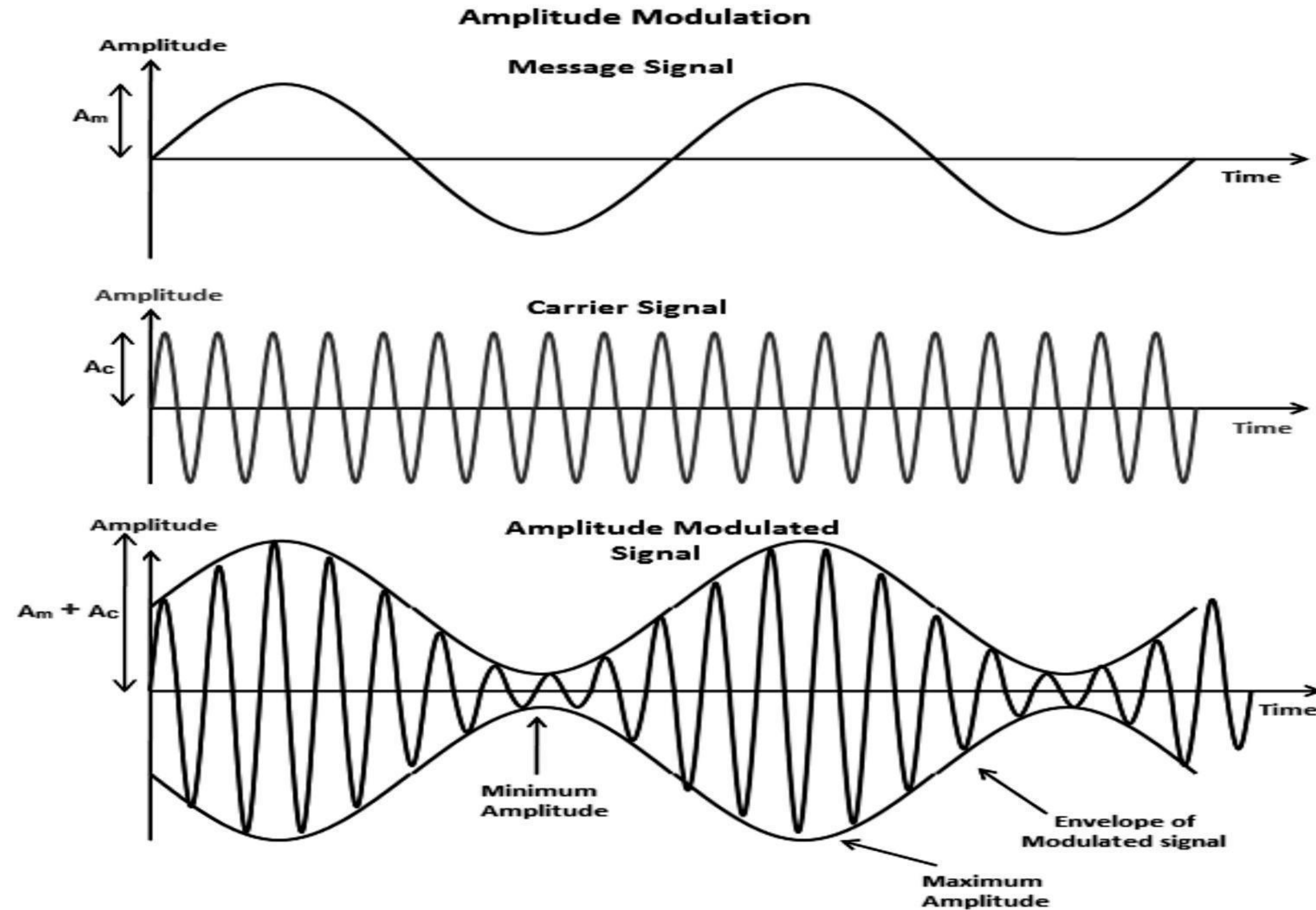
TYPES OF MODULATION





AMPLITUDE MODULATION

Modulation in which the amplitude of a carrier wave is varied in accordance with some amplitude of the modulating signal.





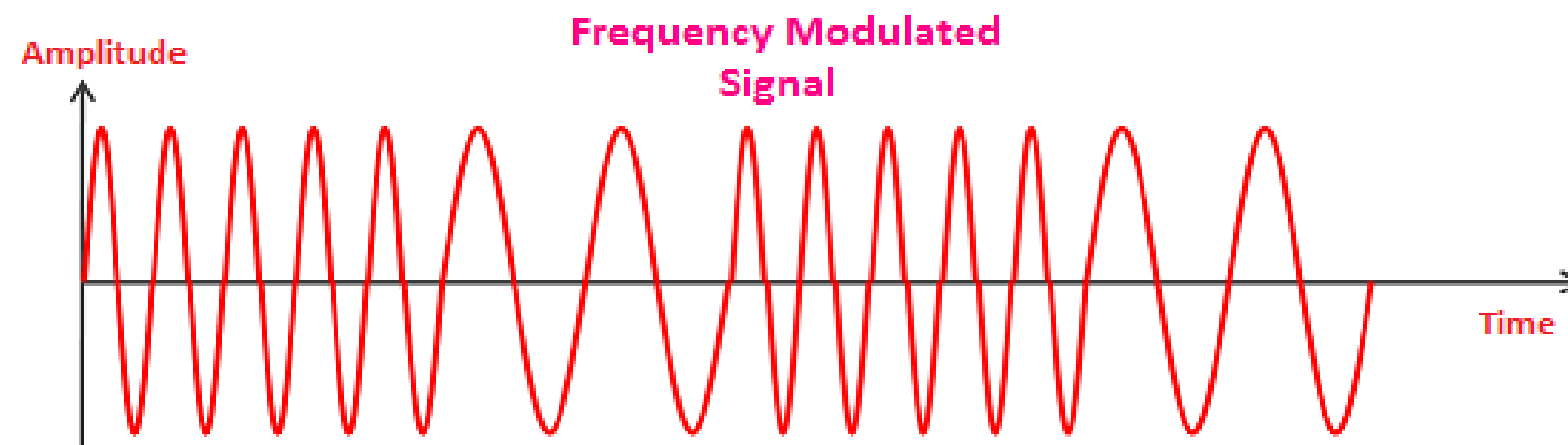
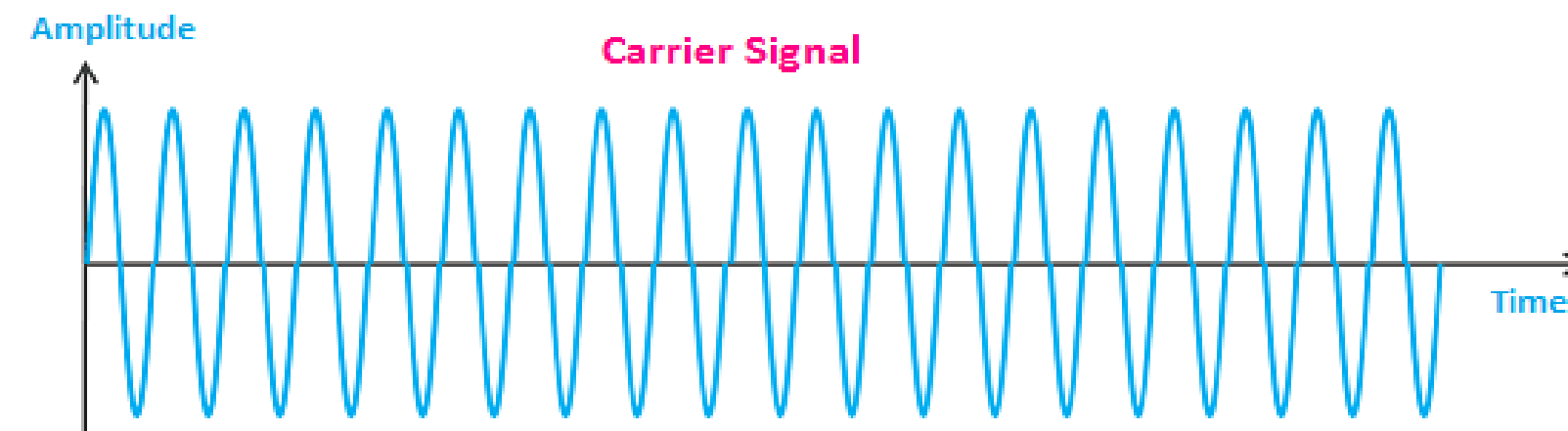
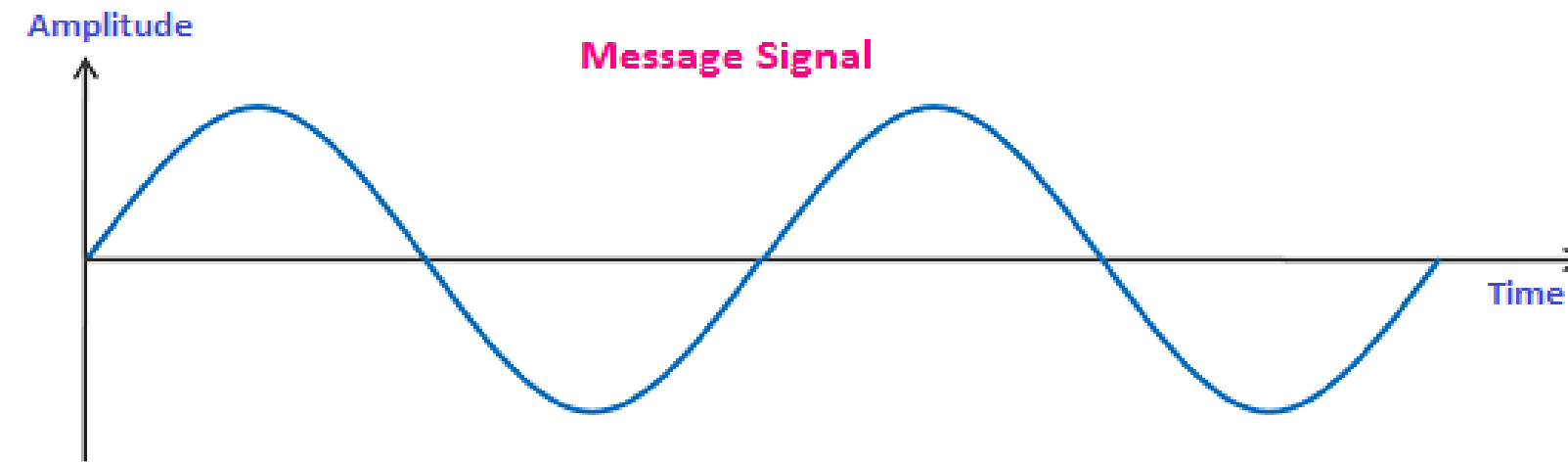
FREQUENCY MODULATION



Modulation in which the frequency of a carrier wave is varied in accordance with the amplitude of the modulating signal.

Amplitude of Carrier Signal is constant.

Frequency Modulation

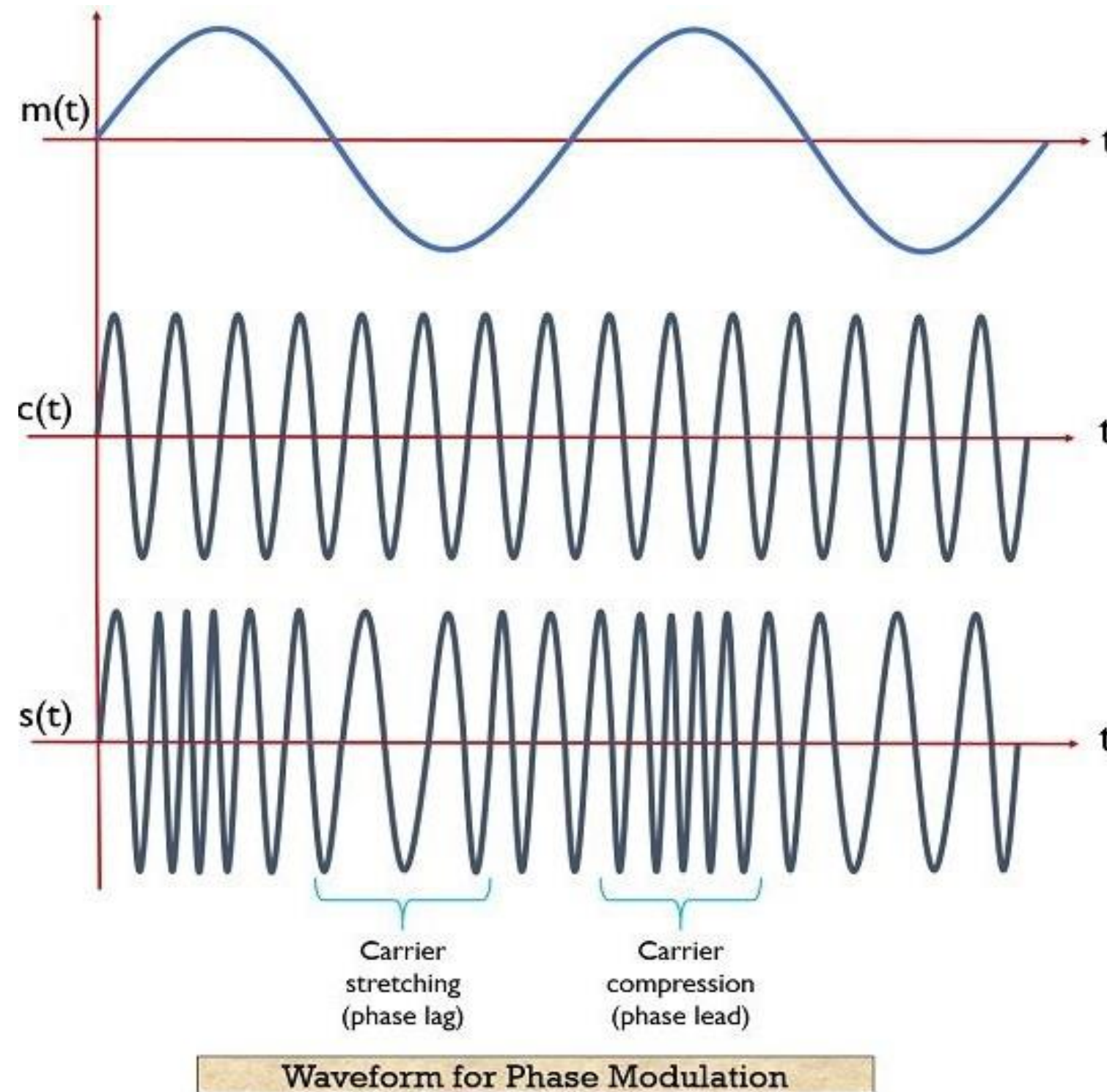




PHASE MODULATION

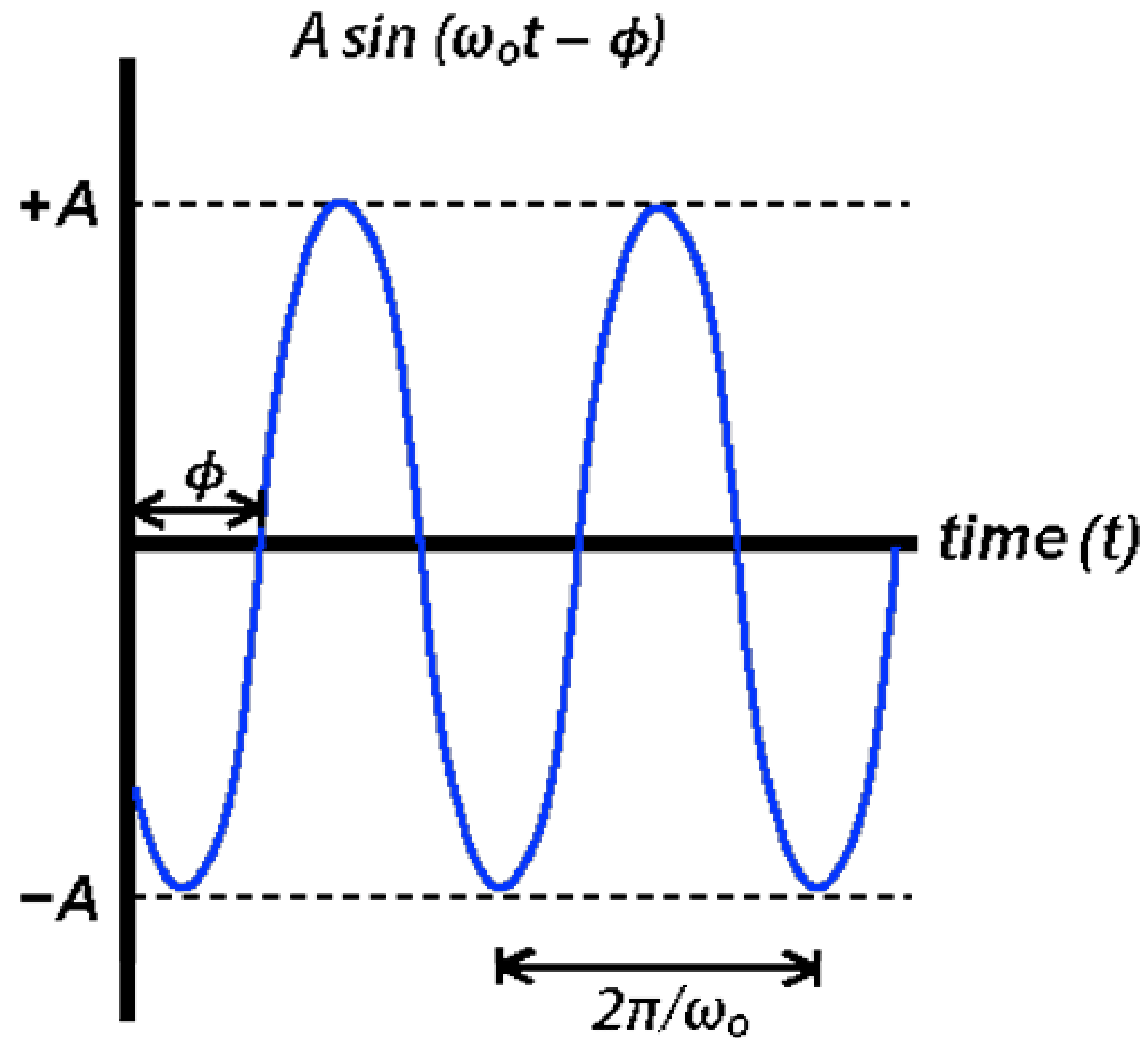
Modulation in which the phase of a carrier wave is varied in accordance with the amplitude of the modulating signal.

Amplitude of Carrier Signal is constant.





DIFFERENCE BETWEEN FREQUENCY AND PHASE





THANK YOU