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 2 – RADIO TRANSMITTER & RECEIVER

TOPIC – INTRODUCTION TO RADIO COMMUNICATION

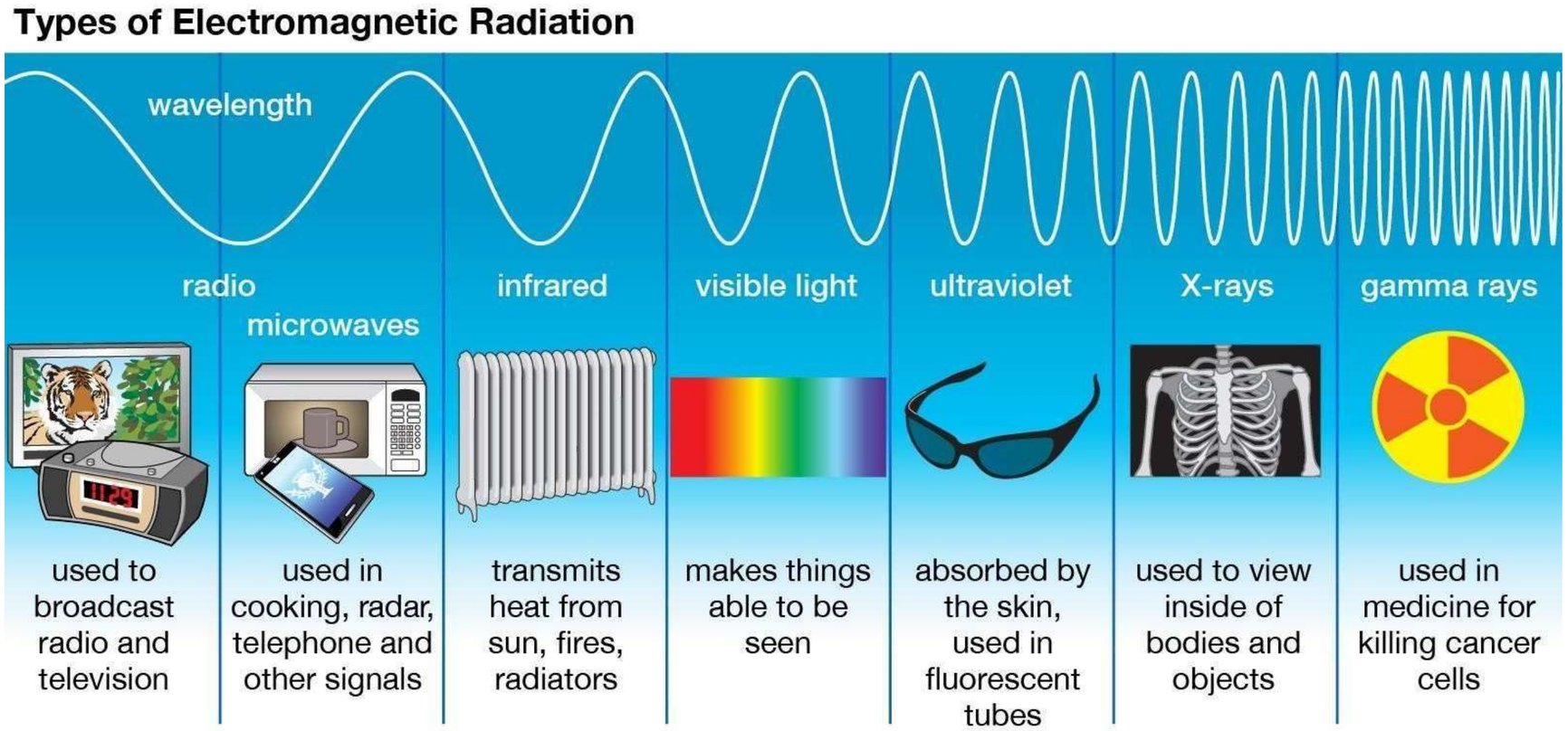
INTRODUCTION

1 .Radio is the radiation of electromagnetic signals through the atmosphere or free space.

2. The transmission and reception of electromagnetic waves of radio frequency, especially those carrying sound messages.

INTRODUCTION

Radio is the technology of signaling and communicating using radio waves. Radio waves are electromagnetic waves of frequency between 30 hertz and 300 gigahertz.



HISTORY

Early radio testing scenario from AT & T Lab

HISTORY

** In 1873 James Clerk Maxwell showed mathematically that electromagnetic waves could propagate through free space.

** The first intentional transmission of a signal by means of electromagnetic waves was performed in an experiment by David Edward Hughes around 1880.

** In 1888 Heinrich Rudolf Hertz was able to prove transmitted electromagnetic waves in an experiment confirming Maxwell's theory of electromagnetism.

HISTORY

** Nikola Tesla experimentally demonstrated the transmission and radiation of radio frequency energy in 1892 .

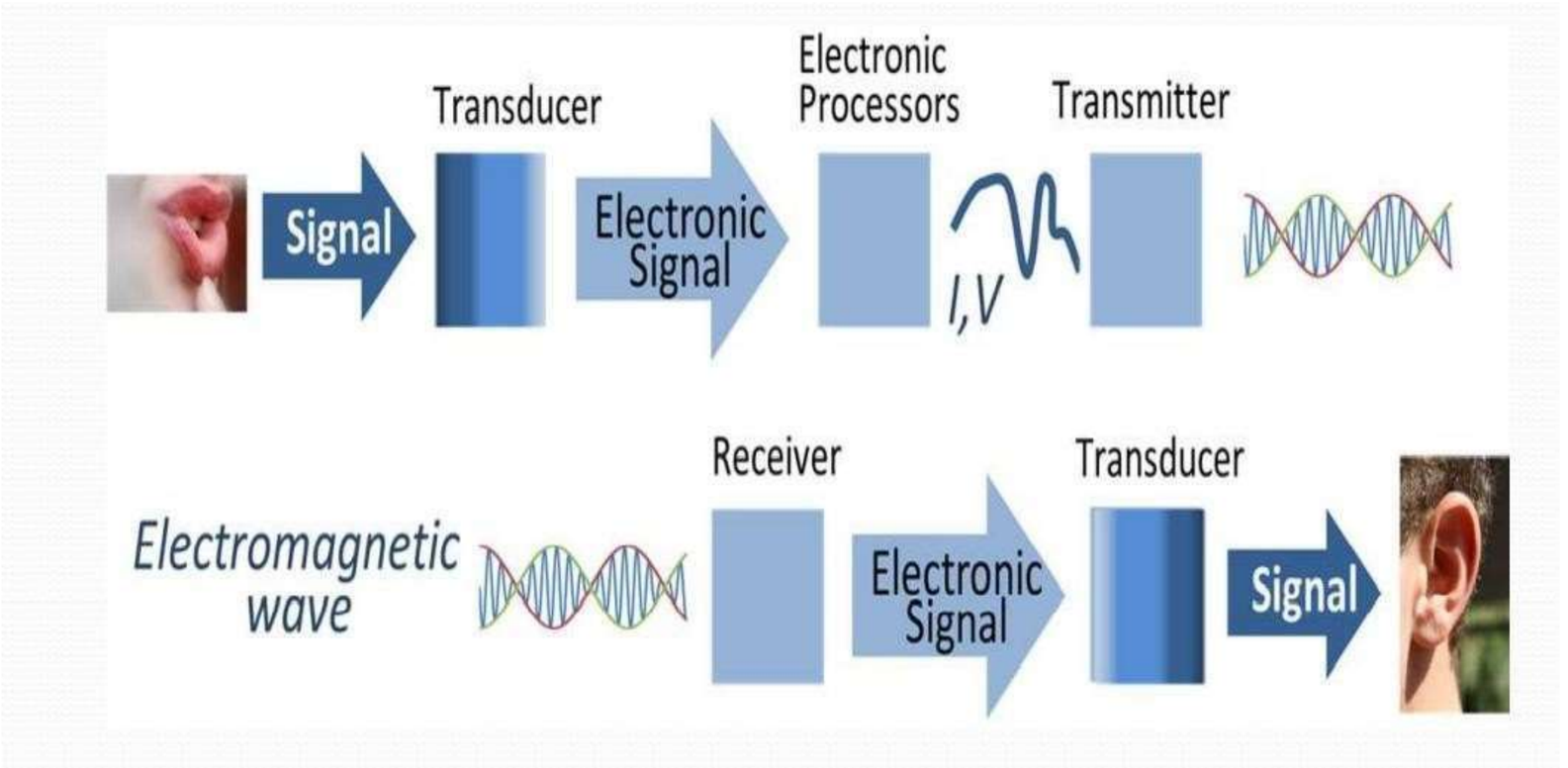
** 1895, Marconi built a wireless system capable of transmitting signals at long distances (1.5 mi. / 2.4 km).

** From Marconi's experiments, the phenomenon that transmission range is proportional to the square of antenna height is known as "Marconi's law".

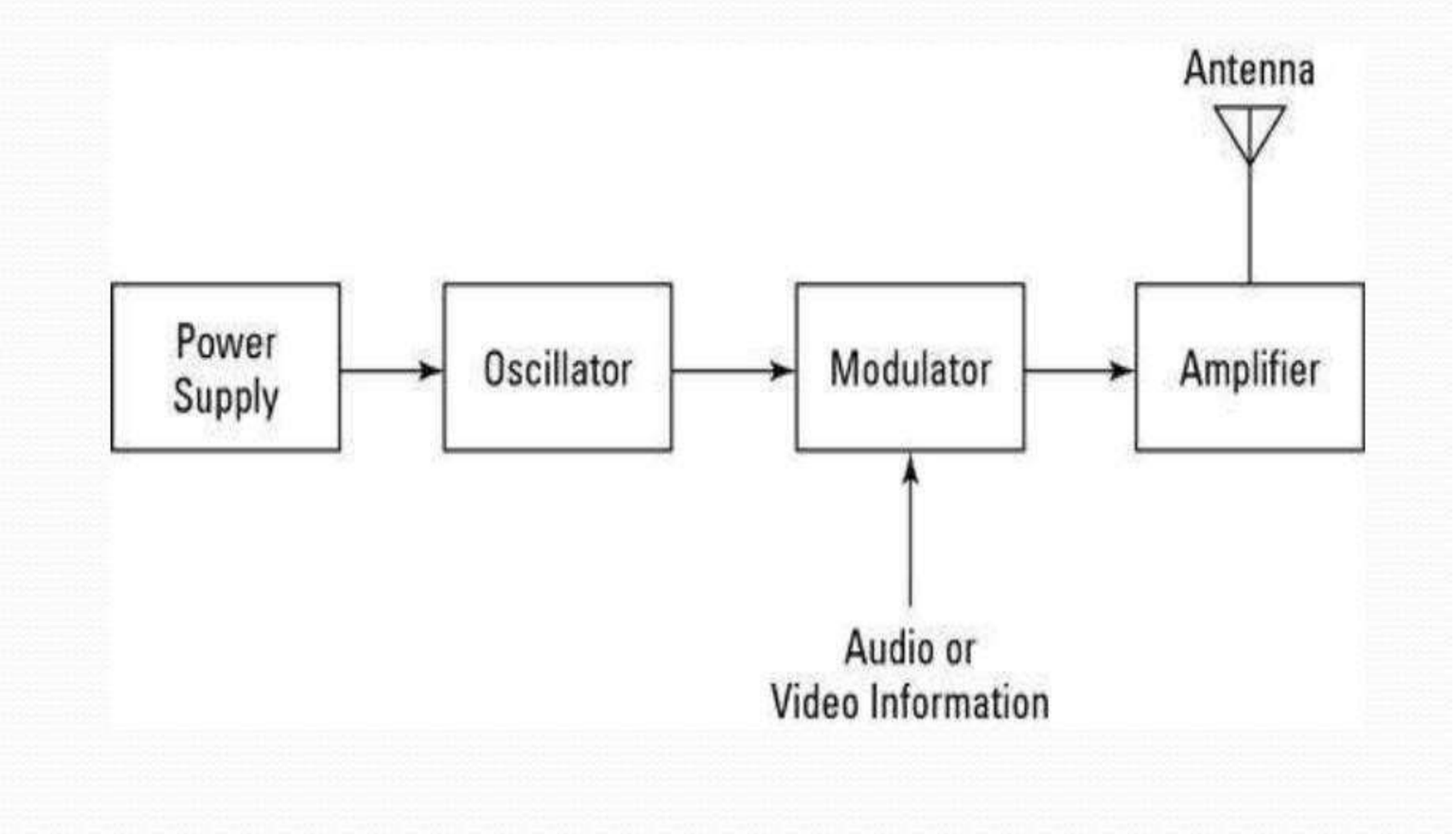
CLASSIFICATION OF RADIO WAVES

Class	Frequency Range
1 .Very Low Frequency	10 to 30 kHz
2.Low frequency	30 to 300 kHz
3. Medium frequency	300 to 3000 kHz
4.High frequency	3 to 30 MHz
5.Very high frequency	30 to 300 MHz
6.Ultra high frequency	300 to 3000 MHz
7.Super high frequency	3000 to 30000 MHz

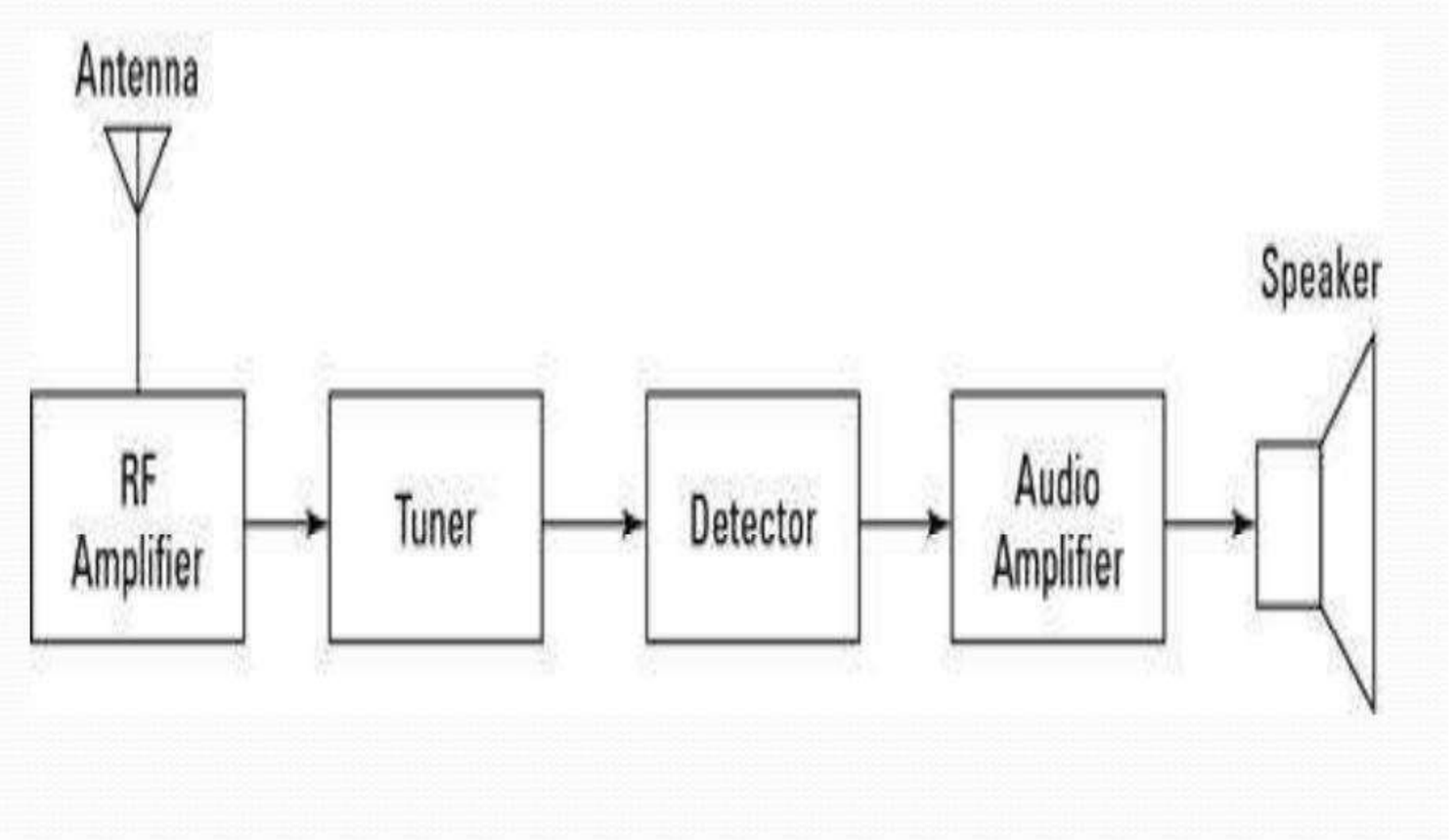
MECHANISM


Transducer
Electronic Processors
Transmitter
Signal
Electronic Signal
I,V
Receiver
Transducer
Electromagnetic wave
Electronic Signal
Signal

RADIO TRANSMITTER



RADIO RECEIVER



APPLICATIONS OF RADIO WAVES

1 . Wireless technology

2. Mobile telephone communication

3 .television

4 .Radar

5 .radio waves in space

6 .WiFi

THANK YOU