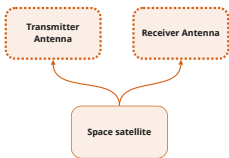


Signal	Band width
Mobile phone	896 – 901 M Hz
Satellite Communication	840 – 935 M Hz
AM	5.9 – 6.4 G Hz
FM	3.7 – 4.2 G Hz
TV (V HF)	540 – 1600 kHz
TV (V HF)	88 – 108 M Hz
TV (V HF)	54 – 72 M Hz
TV (V HF)	76 – 216 M Hz
TV (V HF)	420 – 890 M Hz



It refers to the data carrying capacity of a channel or medium

Transmitter antenna radiates E.M. waves, these waves travel through space & reach receiving antenna at other end.

Propagation of Electromagnetic waves in Atmosphere



Communication Systems

Contribution

Sir Tim Burners-Lee invented the world wide web (www) in 1989

Sky waves

To transmit the information signal of low frequency, it is super imposed on high frequency wave as a carrier wave called modulation

Demodulation

The process of retrieval of information from the carrier wave at the receiver is termed as demodulation. It is reverse of modulation

Sky waves

Ionosphere plays major role in sky wave propagation.

- In ionosphere ionization occurs due to the absorption of UV rays coming from the sun by the air molecule.
- In this layer bending of E.M. wave occurs so that they are diverted towards the earth which is helpful in sky wave propagation.

Radio waves (1710 K HZ to 40 MHZ) are propagated in sky wave propagation.

Band width of Transmission Medium

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Space Wave

Space waves travel in straight line from transmitter antenna to receiver antenna.

- It is used for line of sight communication as TV broadcast or satellite communication.
- The maximum line of sight (LOS) distance $d_m = \sqrt{2R h_1} + \sqrt{2R h_2}$
 h_1 = height of transmitter antenna
 h_2 = height of receiver antenna.