MOBILE COMPUTING - ASSIGNMENT PRESENTATION

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Topic : Frequencies for Communication

VLF - Very low frequency :(3 kHz to 30 kHz) Used for submarine communication, as the waves can penetrate seawater.
LF - Low frequency : (30 kHz to 300 kHz) Used for long-range navigation and radio broadcasting.
MF - Medium frequency : (300 kHz to 3 MHz)Used for commercial AM radio broadcasting and maritime communication.
HF - High frequency : (3 MHz to 30 MHz) Used for long-range communication, such as aviation, maritime, and military applications.
VHF - Very high frequency : (30 MHz to 300 MHz) Used for line-of-sight communication, such as FM radio, television broadcasting, and air traffic control.
UHF - Ultra high frequency : (300 MHz to 3 GHz) Used for line-of-sight communication and satellite communication, such as cellular phones, walkie-talkies, and GPS.
SHF - Super high frequency : (3 GHz to 30 GHz) Used for satellite communication, microwave ovens, and some forms of radar.
EHF- Extra high frequency : (30 GHz to 300 GHz) Used for satellite communication, remote sensing, and some scientific research.
UV - Ultraviolet : (10^15 Hz to 10^16 Hz) Light used for some scientific research, but not used for communication purposes.

Relationship between frequency and wavelength : $\lambda=c/f$.
λ- wavelength, f- frequency, c- speed of light (3×10^8 m/)

Wireless Transmission :
Wireless communication system consists of :

- Transmitters : Transmitters are used to transmit electromagnetic waves carrying information from one point to another without the need for physical connections. A transmitter is a device that converts electrical signals into electromagnetic waves and transmits them through the air, where they are received by a receiver and converted back into electrical signals.

- Antennas : Antennas are responsible for transmitting and receiving electromagnetic waves that carry information. Antennas are designed to convert electrical signals into electromagnetic waves and vice versa. Antennas are used for both transmitting and receiving signals. They are used for long distance communication.

- Receivers : Receivers are used to receive and decode the electromagnetic waves that are transmitted by the transmitter. A receiver is a device that converts the received electromagnetic waves back into electrical signals that can be processed to extract the information that was transmitted.

In some cases, transmitters and receivers are on same device, called transceivers.