

Q4]

Radio Transmission

① Almost all networks use radio waves for data transmission eg: GSM at 900, 1800, 1900 MHz, DECT at 1880 MHz etc.

Radio Transmission technologies can be used to ~~set~~ up ad-hoc connections for work groups, to connect eg. a desktop with a printer without a wire; or to support mobility with a small area.

② Two main types of radio transmission are

- AM (Amplitude modulation)
- FM (Frequency modulation)

③ The AM transmission the carrier wave has a constant frequency, but the strength of the wave varies. The FM transmission is just the opposite the varying frequency & same amplitude.

④ The antenna converts the electrical signals into electromagnetic waves and sends them out or they can be received.

⑤ The images and sounds are converted into electric signals by a microphone or video camera. The signals are amplified and transmitted. If the carrier is amplified it can be applied to an antenna.

Advantages

- ① Long-term experiences with radio transmission for wide area networks (eg:- microwave links)
- ② Radio transmission can cover larger areas and can penetrate thinner walls, planks, ~~furniture~~ furniture etc.
- ③ Additional coverage is gained by reflection
- ④ Radio typically does not need a LOS if the frequency are not too high.
- ⑤ Higher transmission rates (eg 54 Mbit/s) than infrared.

Disadvantages

- ① Radio transmission can be interfered with other senders or electrical devices can destroy data transmitted via radio
- ② Bluetooth is simple than certain bands
- ③ Shielding is not very simple
- ④ Very limited range of license free bands are available worldwide
- ⑤ A lot harmonization is going on due to market pressure.