

Assignment#1
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Coaxial Cable:

Coaxial cable is a type of copper cable specially built with a metal shield and other components engineered to block signal interference. It is primarily used by cable TV companies to connect their satellite antenna.

Twisted pair cables:

Twisted pair cabling is a type of wiring in which two conductors of a single circuit are twisted together for the purposes of improving electromagnetic compatibility. This type of cable is widely used in different kinds of data and voice infrastructures.

Fiber Optic cable:

A fiber optic cable is a network cable that contains strands of glass fibers inside an insulated casing. They're designed for long-distance, high-performance data networking, and telecommunications. Fiber optic cables carry communication signals using pulses of light generated by small lasers or light-emitting diodes(LEDs).

Radio Waves:

Radio waves have the longest wavelengths and lowest frequencies in the electromagnetic spectrum. The wavelengths of the radio waves ranging from 1mm to 100km and frequencies ranging from 3KHz to 300GHz. Radio waves travel at the speed of light in a vacuum. An advantage of radio waves is that They can travel long distances carrying message.

Limitation:

A disadvantage for radio waves is that it has low frequency so it can't transmit (send) a lot of data at one time.

Microwave:

Microwave is an electromagnetic wave with wavelength ranging from 10 micrometre to 10 meters. These waves are commonly produced by electromagnetic oscillators with high frequency in electric circuits. Microwaves are often used in radar, telemetry and microwave ovens. These are also used to transmit telephone conversations. Microwaves are good for transmitting information from one place to

another place because microwave energy can penetrate through, light rain, snow, clouds, and smoke. Shorter microwaves are used in remote sensing.

Limitation:

Signal absorption by the atmosphere. Microwaves suffer from attenuation due to atmospheric conditions.