Simplex

In simplex communication, a network cable or communications channel can only send information in one direction; it's a “one-way street”.

Examples:

Broadcast radio, broadcast television, GPS, baby monitors, garage door openers, surveillance cameras, IP television etc.

Half-Duplex

In half-duplex communication, a connection between two devices is capable of sending data in both directions, **BUT ONLY one direction** or the other can be utilized at a time.

Examples:

PTT Walkie talkies (point to point)

Legacy Ethernet (point to multipoint)

WiFi (point to multipoint)

Full-Duplex

In full-duplex operation, a connection between two devices is capable of sending data in both directions **simultaneously**.

Examples:

Telephone conversations

Modern Ethernet (point to point)

Framing

Framing in the context of communications refers to the process of delimiting the start and end of a message as well as identifying/labelling the message’s source and intended recipients.

Protocols

Protocols in the context of a communication refer to a set of pre-established rules that governs and results in a successful communications.

Point-to-point connection

A point-to-point connection refers to a communications connection between two nodes or endpoints.

Point-to-point can support simplex, half and full duplex modes of communications.

Point-to-multipoint connection

A point-to-multipoint connection refers to a communication connection in which many nodes can receive information transmitted by one node.

Point to multipoint can support simplex and half duplex modes of communications.

Attenuation

Attenuation is a general term that refers to any reduction in the strength of a signal.

Attenuation is a natural consequence of signal transmission over long distances.