

# Line of Sight (LOS)

## Outdoor Wireless Networks - Why Line of Sight (LOS) is so important

When designing an outdoor Wireless network one of the first questions to ask is what is between point A (antenna 1) and point B (antenna2). The path between two antennas is referred to as the Line of Sight. There are three main categories of Line of Sight, the first being full Line of Sight (LOS) where no obstacles reside between the two antennas, the next is called Near Line of Sight (nLOS) which includes partial obstructions such as tree tops between the two antennas, and lastly Non Line of Sight (NLOS) where full obstructions exist between the two antennas. By determining the specific line of sight conditions in the WiFi network area you can then determine the correct type of wireless system to install.

The Fresnel Zone referenced in the diagrams below is an electromagnetic phenomenon, where light waves or radio signals get diffracted or bent from solid objects near their path. The radio waves reflecting off the objects may arrive out of phase with the signals that traveled directly to the receiving antenna thus reducing the power of the received signal.

