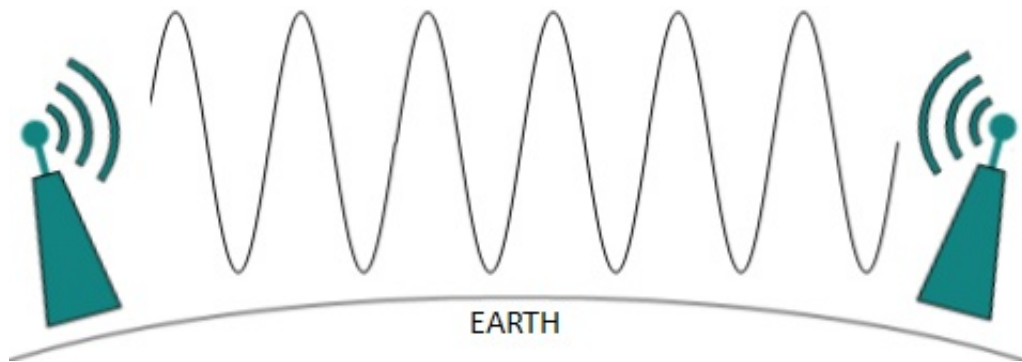


## Radio Wave

Radio waves frequency are easy to generate, can travel long distances, and can penetrate buildings easily, so they are widely used for communication, both indoors and outdoors. Radio waves can have wavelength from 1 mm – 100,000 km and have frequency ranging from 3 Hz (Extremely Low Frequency) to 300 GHz (Extremely High Frequency). Radio waves also are unidirectional, meaning that they travel in all directions from the source, so the transmitter and receiver do not have to be carefully aligned physically.



Radio waves at lower frequencies can travel through walls whereas higher RF travels in straight line and bounces back. The power of low frequency waves decreases sharply as it covers longer distance. High frequency radio waves have more power.

Lower frequencies like (VLF, LF, MF bands) can travel on the ground up to 1000 kilometers, over the earth's surface.

Radio waves on high frequencies are prone to be absorbed by rain and other obstacles. They use Ionosphere of earth atmosphere. High frequency radio waves such as HF and VHF bands are spread upwards. When it reaches Ionosphere it is refracted back to the earth.