TX #2 – Radio Propagation – Sending Data Through Air

Radio Waves are propagated when **the electrical energy produced by the radio transmitter is converted into magnetic energy by the antenna**

Magnetic waves can travel through space

Receiving antenna will intercept a very small amount of this magnetic energy

This antenna will convert the magnetic energy back into electrical energy.

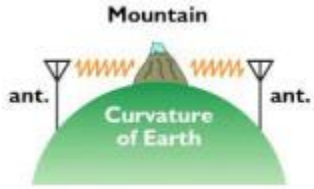
Radio receiver will amplify this electrical energy.

Sending info through air completed

How far can data be transmitted?

The main consideration in a radio system is *the loss in transmission path between transmitter & receiver*

Factors effecting? → 1) Obstacles 2) Power Loss



The most reliable system

Curvature of earth limits the line-of-sight distance

=>Maximum line-of-sight distance is determined by the antenna height, and is limited by obstacles (for example the mountain)

Signal Power → Decrease in proportion to the square of distance. If the distance doubles, the power decreases by four times.

In real case – power drops much faster due to the attenuation by obstructions, foliage and other factors