

FORMULA CHART

⇒ The maximum line of sight distance d_m between the two antennas having height h_T and h_R above the earth is given by

$$d_m = \sqrt{2Rh_T} + \sqrt{2Rh_R}$$

(2) Modulation index $\mu = \frac{A_m}{A_c}$ where A_m and A_c are the amplitude of modulating signal and carrier wave.

(3) In practice $\mu \leq 1$ to avoid distortion

(4) The amplitude modulated signal consists of 3 frequency ω_c , $\omega_c + \omega_m$ and $\omega_c - \omega_m$. Here $\omega_c + \omega_m$ and $\omega_c - \omega_m$ are known as upper side band and lower side band respectively.

(5) Height of the half wave antenna is equal to $\frac{\lambda}{2}$.

(6) Height of quarter wave antenna is equal to $\frac{\lambda}{4}$.

(7) In amplitude modulation $P_t = P_c \left[1 + \frac{\mu^2}{2} \right]$

(8) Maximum frequency can be reflected from ionosphere

$$f_{max} = 9 [N_{max}]^{\frac{1}{2}}$$

(9) Maximum modulated frequency can be detected by diode detector

$$f_m = \frac{1}{2\pi R\mu}$$