

FORMULAS FOR COMMUNICATIONS

Frequency and Wavelength:

Frequency in kilohertz = $(300,000) / \text{wavelength in meters}$

Frequency in megahertz = $(300) / \text{wavelength in meters}$

Frequency in megahertz = $(984) / \text{wavelength in feet}$

Wavelength in meters = $(300,000) / \text{frequency in kilohertz}$

Wavelength in meters = $(300) / \text{frequency in megahertz}$

Wavelength in meters = $(984) / \text{frequency in megahertz}$

Length of an Antenna:

Quarter-wave antenna:

Length in feet = $234 / \text{frequency in megahertz}$

Half-wave antenna:

Length in feet = $468 / \text{frequency in megahertz}$

LCR Series Time Circuits:

Time in seconds =

$\text{Inductance in henrys} / \text{Resistance in ohms}$

Time in seconds =

$\text{Capacitance in farads} \times \text{Resistance in ohms}$

70 Volt Loud Speaker Matching Transformer:

Transformer Primary Impedance =

$(\text{Amplifier output volts})^2 / \text{Speaker Power}$

Time duration of One Cycle:

100 kilohertz = 10 microsecond cycle

250 kilohertz = 4 microsecond cycle

1 megahertz = 1 microsecond cycle

4 megahertz = 250 nanoseconds cycle

10 megahertz = 100 nanoseconds cycle