

An antenna is a resonant device and since the standing wave of voltage and current within the antenna is 90 degrees out of phase, it can be made to behave, in some respects as a tuned circuit. It differs from a conventional tuned circuit (closed oscillatory circuit) in that it will resonate at more than one frequency! An antenna *(half wave dipole) is an open oscillatory circuit (spread out over a wide area).

Fed at the end, an antenna offers low impedance to all frequencies at which the antenna is an odd number of quarter wavelengths long.

Fed in the centre an antenna offers a low impedance to all frequencies at which the antenna is an odd number of half wavelengths long and a high impedance to all frequencies at which it is an even number of half wavelengths long. This is known as current feed and voltage feed respectively.

If the feed point is moved off centre, as in a windom antenna, impedance is proportional to a function of the tangent based on the number of electrical degrees the feedpoint is from the centre of the antenna.