

ZBL140X.pdf

Infrared radiation in the range of interest has a wavelength of 5-20 μm (microns or micrometres).

Here is a reference on radio broadcast antennas:

[http://en.wikipedia.org/wiki/Antenna_\(radio\)](http://en.wikipedia.org/wiki/Antenna_(radio))

While there are broadband designs for antennas, the vast majority of antennas are based on the half-wave dipole which has a particular resonant frequency. At its resonant frequency, the wavelength (figured by dividing the speed of light by the resonant frequency) is slightly over twice the length of the half-wave dipole (thus the name). The quarter-wave vertical antenna consists of one arm of a half-wave dipole, with the other arm replaced by a connection to ground or an equivalent ground plane (or counterpoise). A Yagi-Uda array consists of a number of resonant dipole elements, only one of which is directly connected to the transmission line. The quarter-wave elements of a dipole or vertical antenna imitate a series-resonant electrical element, since if they are driven at the resonant frequency a standing wave is created with the peak current at the feed-point and the peak voltage at the far end.