

"Antennas" redirects here. For other uses of "antenna", see Antenna (disambiguation). In radio engineering, an antenna or aerial is the interface between radio waves propagating through space and electric currents moving in metal conductors, used with a transmitter or receiver.[1] In transmission, a radio transmitter supplies an electric current to the antenna's terminals, and the antenna radiates the energy from the current as electromagnetic waves (radio waves). In reception, an antenna intercepts some of the power of a radio wave in order to produce an electric current at its terminals, that is applied to a receiver to be amplified. Antennas are essential components of all radio equipment. An antenna is an array of conductors (elements), electrically connected to the receiver or transmitter. Antennas can be designed to transmit and receive radio waves in all horizontal directions equally (omnidirectional antennas), or preferentially in a particular direction (directional, or high-gain, or "beam" antennas). An antenna may include components not connected to the transmitter, parabolic reflectors, horns, or parasitic elements, which serve to direct the radio waves into a beam or other desired radiation pattern. Strong directivity and good efficiency when transmitting are hard to achieve with antennas with dimensions that are much smaller than a half wavelength.

In the present book, fifteen typical literatures about Antennas published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on Antennas. We hope this book can demonstrate advances in Antennas as well as give references to the researchers, students and other related people.¹

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¹ [https://en.wikipedia.org/wiki/Antenna_\(radio\)](https://en.wikipedia.org/wiki/Antenna_(radio))