An abbreviation of the term Radio Frequency. It refers to alternating current (AC) having characteristics such that, if the current is input to an antenna, an electromagnetic (EM) field is generated suitable for wireless broadcasting and/or communications. These frequencies cover a significant portion of the electromagnetic radiation spectrum, extending from nine kilohertz (khz), the lowest allocated wireless communications frequency band (it's within the range of human hearing), to several thousands of gigahertz (ghz). When an RF current is supplied to an antenna, it gives rise to an electromagnetic field that propagates through space. This field is sometimes called an RF field; in less technical jargon it is a “radio wave.” Any RF field has a wavelength that is inversely proportional to the frequency. In the atmosphere or in outer space, if f is the frequency in megahertz and s is the wavelength in meters, then s = 300/f. The frequency of an RF signal is inversely proportional to the wavelength of the EM field to which it corresponds. At 9 khz, the free space wavelength is approximately 33 kilometers (km) or 21 miles. At the highest radio frequencies, the EM wavelengths measure approximately one millimeter (mm). As the frequency is increased beyond that of the RF spectrum, EM energy takes the form of infrared (IR), visible, ultraviolet (UV), X rays, and gamma rays. Many types of wireless devices make use of RF fields. Cordless and cellular telephone telephones, radio and television broadcast stations, satellite communications systems, and two-way radio services all operate in the RF spectrum. Some wireless devices operate at IR or visible light frequencies, whose electromagnetic wavelengths are shorter than those of RF fields. Examples include most television set remote control boxes, some cordless computer keyboards and mice, and a few wireless hi-fi stereo headsets. The RF spectrum is divided into several ranges, or bands. With the exception of the lowest frequency segment, each band represents an increase of frequency corresponding to an order of magnitude (power of 10). The table depicts the eight bands in the RF spectrum, showing frequency and bandwidth ranges. The SHF and EHF bands are often referred to as the microwave spectrum.

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