Antenna and wave propagation by k d prasad

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What are the dual characteristics of antenna? DUAL CHARACTERISTICS OF AN ANTENNA: The duality of an antenna specifies a circuit device on one band and a space device on the other hand. Figure. 11 shows the schematic diagram of basic antenna parameters, illustrating dual characteristics of an antenna.

What is the principle of radiation of EM waves from antenna? Radiation Principles: Antenna is radiates by the principle of resonance. Resonance implies maximum standing current wave is observed along the antenna length. A simple dipole antenna has two antenna rods pointing in opposite directions but remains parallel.

What are the different types of antennas in antenna and wave propagation? Some of the most common types of antenna arrays include linear arrays, planar arrays, and circular arrays. Linear arrays are a type of antenna array that consists of a number of antennas that are arranged in a straight line.

What are the three types of antennas? There are several different types of antennas in three broad categories: omni-directional, directional, and semi-directional.

How does an antenna radiate waves? Antenna radiating radio waves: The transmitter applies an alternating current (red arrows) to the rods, which charges them alternately positive and negative, emitting loops of electric field. The arrows of the loops get reversed each time the current changes polarity.

How do EM waves detach from antenna? The "electric field detachs" from the antenna because it is not simple electrostatic field, but instead it is transverse wave generated by accelerated electrons in the antenna. Accelerated charged particles create such propagating waves of electric field.

How does an antenna transmit electromagnetic waves? The antenna converts the electric current to radio waves that are transmitted out in all directions. A receiving antenna intercepts EM waves transmitted through the air. From these waves, the antenna generates a small amount of current, which varies depending on the strength of the signal.

What is the most effective antenna shape? An ideal antenna called an isotropic source radiates spherically or equally well in all directions. In a dipole, the radiation pattern is shaped like a doughnut. Looking down on the antenna, you will see a radiation pattern shaped like a figure 8 (Fig.

What is the most efficient antenna? Full-wave loops have the highest radiation resistance, and hence the highest efficiency of all antennas: Their radiation resistances are a few hundreds of Ohms, whereas dipoles and monopoles are tens of Ohms, and small loops and short whip antennas are a few ohms, or even fractions of an Ohm.

Why are radiators stacked vertically on a TV tower? Sectional: also known as an "anti-fading aerial", the mast is divided into two sections with an insulator between them to make two stacked vertical antennas, fed in phase. This collinear arrangement enhances low-angle (ground wave) radiation and reduces high-angle (sky wave) radiation.

What is the radiation pattern of an antenna? The radiation pattern or antenna pattern is the graphical representation of the radiation properties of the antenna as a function of space. That is, the antenna's pattern describes how the antenna radiates energy out into space (or how it receives energy).

What are the applications of antenna in real life? With so many devices going wireless, we can find plenty of applications in our daily lives that rely on antennas. Some of the most common and popular uses of antennas are for mobile phones, Wi-

Fi routers, laptops, radios, TVs, cellular systems, satellite dishes and much more.

Why are antennas called rubber ducks? Origin of the Rubber duck antenna name Kennedy, named the device when she pointed at one on an agent's transceiver and said, rubber ducky. Meanwhile, Thomas A. Clark, a senior scientist with NASA, claims to have come up with the name from a Vaughn Meader comedy about the Kennedy family.

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