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Design of Low Cost Optically Transparent Antenna for WiMAX applications

Electronic devices that are optically transparent have sparked a lot of curiosity. Many new applications for transparent electronics are being developed in a wide range of industries, including displays, glasses, solar panels, terrestrial and satellite communications, integrated circuits, and sensors, where optical transparency is necessary for the covert placement of electronic devices on surfaces. Due to the emergence of novel materials and fabrication techniques over the past few years, there have been substantial improvements made in the creation of transparent wireless electronics. Transparent antennas are among the most popular transparent electronic devices because of their numerous uses in the Internet of Things (IoTs), smart cities, the healthcare industry, security, and other industries. This article focuses on the design of a low cost transparent antenna using a thin Conductive PET film extracted from a thrown away computer keyboard circuit layout. CST student version is used for carrying out the simulation of the antenna design for obtaining its return loss and radiation pattern performances. For the best antenna prototype a return loss of -29.76 dB at 5.26 GHz has been achieved via simulation and broadside radiation patterns are obtained for both the principal planes of the antenna.

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