B. Tech. Project Report on Bandwidth Enhancement in Microstrip Antennas

ABSTRACT

Narrow Bandwidth has been one of the most serious limitations hindering the wider applications of the microsrtip antenna technology. For this reason, much of the research and development in microstrip antennas has been devoted to various techniques for enhancement of the antenna bandwidth. But, most of these techniques, either increase the thickness or lateral size of the antenna. An antenna with U-slot needs no additional structure and gives a bandwidth greater than 30%.

IE3D simulation results are presented for RMSA with single U-shaped slot. The effect of varying slot dimensions on the bandwidth is also studied. It is found that notch resonant frequency is governed by the physical length of the U-slot.

Simulation results are also presented for RMSA with double U-slots. It attained an antenna impedance bandwidth of 40%. Orthogonal mode excitation gives rise to switch of polarization within the bandwidth.

It is found that a TMSA with an U-slot shows wideband characteristics. Unlike RMSA with a U-slot, it doesn't show switch of polarization.

A U-slot patch antenna, which can function properly both in WLL and GSM frequency bands, is designed, fabricated and tested.

Awarded AA Grade
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