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Design of Folder Reflector Yagi Uda Antenna for IMT Band Frequency

M.Saravanan[1], S.Agatha Janet[2]

Assistant Professor, ECE Department, V.S.B Engineering College, Karur, Tamilnadu ,India [1]
Assistant Professor, ECE Department, SCAD College of Engineering and Technology, Tirunelveli [2]

Abstract: Microstrip antennas were first investigated from that idea that it would be highly advantageous to fabricate on the same dielectric substrate. Other advantages were soon discovered to be its lightweight, low profile, conformability to shaped surfaces, and low fabrication costs. Unfortunately, these same patches continually exhibit narrow bandwidths, wide beam widths, and low antenna gain. This project is concerned with investigations of microstrip Yagi antenna that are to be used at range 1.8 GHZ This antenna has been fabricated with a high dielectric constant substrate material (Rogers TMM 4(tm) with dielectric constant ε_r=4.7) ,substrate thickness of 5mm.This has successfully produced antenna at frequency 1.8 GHZ with minimum return loss -10dB, antenna bandwidth minimum is 2% with radiation efficiency more than 90% and validated it's potential to be operated on IMT band. Generally, the trade-offs in this design are between size, simplicity and performance.

Keywords: Yagi Uda antenna, Strip-line, VSWR, S-Parameters, Ansoft HFSS Tool.