

DESIGN OF A 5.6 GHZ MICROSTRIP ANTENNA FOR ITS APPLICATIONS

Santha Lakshmi S

Hamsha varsha S R

Prethi A

Dept of ECE,

Panimalar Institute of Technology

Chennai, India

In this study, a miniaturized broadband E-shaped microstrip antenna is designed to operate at 5.6 GHz for Intelligent Transportation Systems (ITS). The antenna is developed using CST Studio Suite and optimized for enhanced bandwidth and return loss performance. The proposed design occupies compact dimensions of $26.04 \text{ mm} \times 21.93 \text{ mm}$ with a substrate thickness of 1.6 mm. Fabricated on an FR-4 substrate, the antenna utilizes a 50Ω microstrip line-fed configuration. Optimization of the E-shaped patch, including variation in the dimensions of the E arms, resulted in improved performance metrics with a return loss of -27.87 dB and a VSWR of 1.011 at 5.677 GHz, confirming its suitability for ITS-related applications.