

**DESIGN OF MICROSTRIP PATCH ANTENNA WITH
STRIPLINE FEEDING TECHNIQUE**

Thesis presented in partial fulfilment for the award of the

Bachelor in Electrical Engineering (Hons)

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ABSTRACT

This thesis investigates the design of a rectangular microstrip patch antenna with stripline feeding technique. The rectangular patch antenna has a dimension of 88mm x 70 mm. This stripline feeding technique involves two layers of substrate where 4.85mm width and 14mm length are defined as a feed line. The antenna is fabricated using RT/Duroid 5880 with $\epsilon_r = 2.2$ and $h = 1.575\text{mm}$. This substrate material is chosen due to its reliability in fabricating high frequency microwave devices. The selected operating frequency is 2 GHz suitable for many 3G applications. All the design dimensions are constructed and simulated using CST Software. The simulation process repeated several times until the best desired performance acquired. Introduction of aluminium plate and vias are necessary for this doubled layers antenna assembly. Measurements are done using Vector Network Analyzer (VNA). The parameters such as return loss, voltage standing wave ratio (VSWR) and input impedance obtained from simulations and experiments are compared and discussed. Both results showed good performances for this antenna design.

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