



DESIGN AND ANALYSIS OF SINGLE EUCED  
ELECTRICAL ANTENNA

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**DEVELOPMENT AND ANALYSIS OF SINGLE ENDED  
ELLIPTICAL ANTENNA**

This thesis is presented in partial fulfillment for the award of the  
Bachelor of Engineering (Hons.) Electrical



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## ABSTRACT

This work highlights the development and analysis of a Single Ended Antenna (SEA) operating within the range of 3.1 to 10.6 GHz for ultrawideband (UWB) applications. Tapering concept was used to achieve the required parameters; resonance frequency at 4.592GHz, return loss ( $S_{11}$ ) of -13.24 dB, Voltage Standing Wave Ratio (VSWR) of less than 2 and radiation efficiency of 80%. All these parameters were determined by using commercial computer aided design (CAD) software. This antenna is fed by coaxial feed and was fabricated using RT Duroid 5870 with the dielectric constant,  $\epsilon_r$  equal to 2.33 and the height of the substrate,  $h$  is 0.5mm. A Vector Network Analyzer (VNA) was used to analyze the prototype antenna. The simulated and measured values concur well.

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