

## ABSTRACT

One of many Improvements in technology on Ultra Wide-Band (UWB) antenna plays an important role as an application that widely used for communication facility such as radio and radar detection systems. UWB antenna has many advantages such as small size antenna, low cost, can penetrate walls and safe for health. Final Project titled “Design and Realization an Ultra Wideband (UWB) Dual Elliptical Microstrip Antenna for Through-Wall Radar” aim to design and create dual elliptical shaped microstrip antenna for through-wall radar application as a solution to fulfill of these developments.

Process of working was carried, to design UWB antenna with dielectrical material Roger 8550. UWB antenna which applied for through wall radar simulated using software CST 2010 as simulation tool before fabrication process. Simulation were performed to see the effect of reflector and slot for the antenna and to fit its parameters for characteristic of UWB antenna for through wall application. In order to validate the design, a prototype is also fabricated and measured. Measured results agree well with the simulated ones.

The measured results confirm that the proposed antenna features bandwidth 9.1 over the UWB range from 3,1 GHz to 10,6 GHz, a maximum gain around 9 dBi, radiation pattern unidirectional, and polarization elliptical. Thus it is suitable for see-through-wall imaging applications.

**Keyword :** *ultra wideband, microstrip, bandwidth, through-wall radar.*