

## **ABSTRACT**

*In this final project, a circular patch microstrip antenna has been designed using the stacked substrate parasitic method for wireless Local Area Network applications at a working frequency of 2.4 GHz. The parasitic stacked method aims to increase the wider bandwidth value. Stacked parasitic substrate is an additional substrate that is placed above the main antenna at a certain distance. This microstrip antenna design works at a frequency of 2.4 GHz which is useful for WLANs. The gain, bandwidth and return loss values of the antenna will be compared between conventional circular microstrip antennas and circular microstrip antennas that have been added with substrate parasitic.. For the design process, this study used FR4 microstrip with constant dielectric  $\epsilon_r = 4.3$ , loss tangent  $\delta = 0.002$  and thickness  $h = 1.6$  mm. Meanwhile, for simulations used Ansoft HFSS-13 software. From the optimization results, the return loss value is -21.09 dB, VSWR is 1.19, bandwidth is 90MHz, and the gain is 2.95 dB at the working frequency of 2.4 GHz.*

**Keywords :** *Microstrip Antenna, Wireless Local Area Network, Parasitic, 2,4 GHz.*