

## ABSTRACT

*WiFi is one type of computer network that uses radio waves as a means or data transmission medium. One of the supporting devices WiFi is access point. The antenna used in the access point is required to have a gain value > 5 dBi in order to be able to maximize the transmit area. In order to reach a large area and serve many users. In addition, the antenna used must be in accordance with the access point dimension.*

*The designed antenna is a microstrip antenna that is easy to fabricate and with minimum dimensions. Microstrip antenna is also chosen because it is easy to adjust to its dimensions and light size. The inset-fed method is chosen to increase the return loss value and simplify the bandwidth setting. The 1x4 array method is chosen to increase the gain value.*

*In this Final Project, we get the value on the simulation of return loss at -29 dB at 2,4 GHz, 7,38 dBi gain with bandwidth width 100 MHz in the frequency range 2,350 - 2,450 GHz. In the measurement of the realization results obtained return loss -28,46 dB, gain 8,64 dBi with a bandwidth width of 108 MHz in the frequency range 2,351 - 2,458 GHz. This proves by using inset-fed and arrays to increase gain and return loss.*

**Keywords:** WiFi 2.4 GHz, Microstrip, Access Point, Array 1 × 4, Inset-fed.