ABSTRACT

Wi-fi is a type of computer network that uses radio waves as a medium for data transmission. Therefore access points are one of the most important devices on Wi-fi. Antennas used in access points are required to have a good gain value to maximize the transmit area. It also requires an antenna that has compact dimensions and a flexible design.

In this research, the design and realization of a microstrip antenna which consists of six rectangular patch antennas will be arranged using a Chebyshev polynimial distribution in series. The antenna will be designed to work at a frequency of 5.2 GHz to be used for WiFi (Wireless Fidelity) communication devices. The design will begin with a theoretical calculation in accordance with the microstrip antenna design theory and the distribution of the antenna current arrangement using the Chebyshev polinomial. Then the calculation results obtained are optimized using the help of CST simulation software to obtain the characteristics of the antenna according to the desired specifications. Then as a final discharge, a prototype of a rectangular patch microstrip array antenna will be made which will work at a frequency of 5.2 GHz.

In the prototype that will be made will be measured antenna parameters such as VSWR, polarization, radiation patterns, bandwidth, and the expected gain in accordance with theoretical calculations and simulations.

Keywords: *microstrip antenna, Chebyhev Polinomial.*