ABSTRACT

Antenna is a device that is extremely important in the field of wireless telecommunications. The antenna itself serves as the sender and receiver of information, namely as a transformer of electromagnetic waves in the air. Basically the antenna has many types, from simple to very complex shape, and each of these has a different type of antenna characteristics of each. Each antenna characteristics are not only created for the tool lightweight and single function but also must qualify capable of operating on a triple band and multiband so that it can operate on multiple bands are quite cover operation possible.

In this thesis, the antenna will be designed to be realized is a microstrip antenna which has a rectangular shape with the addition of slits on the side that is able to work at 900 MHz, 1800 MHz, and 2400 MHz. With triple characteristic of this frequency band, the antenna can be used to support the communication of GSM (Global System for Mobile Communication) and WiFi (Wireless Fidelity). Design process begins with a mathematical calculation, then simulated using CST Studio Suite software. Prototype fabrication processes performed by photoetching. And the last measurement of antenna.

Results obtained from the design and realization of rectangular microstrip antenna with the addition of this gap is to work at a frequency of 900 MHz, 1800 MHz which is then shifted to 1869 MHz, and 2400 MHz. VSWR value obtained was 1,047 at 900 MHz, 1442 at a frequency of 1869 MHz, and 1052 at a frequency of 2400 MHz. Then the radiation pattern obtained is omnidirectional.

Keywords: Microstrip antenna, slot, rectangular, Triple Band