ABSTRACT

Human need for location accuracy and tracking where something or someone is encouraging the creation of a tool / device that we are familiar with GPS. GPS (Global Positioning System) is a radio-based navigation system that provides information on the position coordinates, speed, and time to the GPS users around the world. Users of this GPS system requires a GPS signal receiving equipment (GPS receiver) to receive and process signals from satellites. The antenna is one of the main components of the GPS receiver to process signals received so that will largely determine the performance of the GPS receiver itself.

The times of day to day also demand the tools that created small dimension. Therefore, this thesis will be designed a GPS receiver antenna using microstrip antenna that so easy to be integrated with GPS communication device. Antenna design was done by using rectangular slot arrays that can work in the L1 GPS frequency of 1575.42 GHz, with a feeding microstrip line. To design the desired dimensions and specifications of the receiving antenna, is calculated theoretically and simulated using Ansoft HFSS software support 12. Next will be the realization (implementation) antenna with fabrication and measuring of antenna parameters.

From the result of the design using Ansoft HFSS 12 obtained results in accordance with the specifications of the antenna, with a limit of ≤ 1.3 VSWR and gain measurement results obtained by 5.6 dBi.

Keywords: microstrip antenna, slot rectangular array, GPS