

ABSTRACT

One example of communication technology that is currently developing rapidly in the military field is rocket control technology, both outside and within the country in a race to conduct research activities in the rocket field. Domestically, "developing the technology of the Honda rocket towards the satellite launch rocket" is being developed by the National Institute of Aviation and Space. In this case LAPAN has not conducted research into the control of the rocket, so it is necessary to have supporting research for the needs of the national rocket.

In this final project, a series of Microstrip Array Antenna series feeds are made using array techniques to increase the required gain. In the research to get a high enough gain used a feeder technique that is a microstrip feeder and series feed array feeder techniques, the technique is used to be able to produce high gain in one sector. Antennas for each sector will be arranged as much as 4 circular sides. This antenna design uses FR4 substrate material, because these materials are easily obtained and fabricated en masse, are inexpensive, and are easy to integrate.

Antenna is one device that plays an important role for this rocket communication, so that the main objectives and objectives of this rocket are met, with the development of antennas that lead to dimensions and wide bandwidth. This antenna works at a frequency of 3 GHz using FR4 substrate. Microstrip antenna has been made using CST Suite Studio software, the results of which will be realized into physical form. The measurement results on the microstrip antenna show that the antenna has a wide bandwidth and can work at a frequency of 3 GHz with a value of $VSWR \leq 2$, return loss ≤ -10 dB, and gain > 10 dBi.

Key Words: CST Suite Studio Software, ESSM, Antenna Microstrip, Rocket.