ABSTRACT

In the modern era, the field of telecommunications is growing rapidly, both in the civil and military fields. Radar, sonar to control missiles or missiles. Starting from the antena, telemetry, radio frequency, booster, until the protective case and the power of the missile destroyed.

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

Antena in this final project is one of the important devices for this rocket communication, so that the main objectives and objectives of this missile are fulfilled, with the development of antenas that lead to dimensions and wide bandwidths. This antena works at 3.1 GHz frequency using FR4 substrate. Microstrip antena will be simulated using CST Suite Studio software, the results of which will be realized into physical form.

The measurement results on this microstrip antenna show that the antena has a wide bandwidth and can work at a frequency of 3.1 GHz with a value of VSWR ≤ 2, return loss ≤ - 10 dB, and a minimum gain of 3 dB. Antenas are arranged using series and parallel feeds with 4 x 2 arrays.

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