ABSTRACT

Nowadays information exchange need is increasing, it is encouraging to create a reliable and high-speed communication technology. So that information technology can be realized well, needs to be supported by reliable device. In KOMURINDO 2011, data transmission is very important. The data that have been obtained by payload rocket will be sent to the ground segment.

At this Final Project, the design and realization of a receiver antenna that use to connect the payload rocket with ground segment is done. The antenna is made to work at 433 MHz and 50 Ω of impedance. The antenna specifications are determined by observing and calculating what is needed for good data transmission. Designed antenna is a λ/2 monopole antenna which has omnidirectional radiation pattern and linear polarization. While the required bandwidth is 8 MHz and VSWR ≤ 1.2. The antenna was placed on RF Transceiver at the ground segment.

Measurements and tests are carried out using measuring tools such as Network Analyzer, Spectrum Analyzer and Power Meter to obtain information about the antenna. The measurement results of this antenna are: 433 MHz center frequency, 25.99 MHz of bandwidth, VSWR 1.069, 3.857 dBi of gain, linearly polarized,and has omnidirectional radiation pattern. Besides test also carried out to determine the maximum distance of data transmission. Maximum distance of data transmission is 600 m.

Keyword : RF Transceiver, payload rocket , ground segment, 433 MHz