

ABSTRACT

Nano satellite is one type of man-made satellite which has a small size of 1U (10 cm x 10 cm x 10 cm) where the size is based on the standard cube - sat and has a mass of 1 - 10 kg. In this nano satellite, there is a communication system that connects the space segment (satellite) and also the earth segment (earth station) or commonly referred to as a satellite communication system. Besides being used to communicate between segments, this satellite communication system can also be used to control all functions of the satellite by the earth station.

In this nano-satellite communication system usually uses the UHF (Ultra High Frequency) and VHF (Very High Frequency) frequency bands. Then the frequency used in this study is the VHF frequency of 145 MHz. As for the process of sending data to the system, it takes a module that is able to work at VHF frequencies, namely the RF4463PRO module. In addition, there is a microcontroller which is used to assist the RF4463PRO module in processing data on the system.

The result of this final project is a prototype of a nano-satellite communication system that uses the RF4463PRO module with a frequency of 145 MHz. After the prototype of the satellite communication system was designed, experiments were carried out by sending data between segments with different baudrates and also different modulations. Therefore, the prototype of this satellite communication system is made based on two segments, namely the space segment and the earth segment.

Keywords : *Nano Satellite, Satellite Communication System, RF4463PRO Module, VHF*