

ABSTRACT

Geo-Kompsat-2A (GK-2A) satellite is one of the meteorological satellites that serves to provide information about weather conditions such as cloud detection, sea surface temperature, atmospheric conditions and many more related to meteorology. The GK-2A satellite is in geostationary orbit at an altitude of 35,786 km with a longitudinal 128.2°. The satellite is at a considerable distance and the amount of interference that occurs is required a Low Noise Amplifier (LNA). This LNA serves to increase the level of the receive signal and suppress the resulting noise level so that it can be processed by the next stage.

In the Final Project is designed and realized LNA that can operate at a frequency of 1,691.64 - 1,692.64 MHz for earth stations on the GK-2A satellite system. The LNA expected from this Final Project has the lowest Noise Figure possible, should be able to work on frequency bands between 1,691.64 - 1,692.64 MHz, have the lowest internal noise and sensitivity to be able to receive weak signals. LNA performance testing is done by mathematically calculating and testing measurement data with the desired specifications and applied to earth stations to obtain results in the form of imagery from GK-2A satellites using the help of Raspberry pi 3 devices, RTL-SDR and Goesreceive software. The result of this final project is a Low Noise Amplifier has a gain of 8 dB and Noise Figure of -2.7 dB and is able to receive signals from the GK-2A satellite.

Keywords : Earth Station, Low Noise Amplifier, Gain, Noise Figure