

## ABSTRACT

This time, Indonesia is currently trying to create and develop their own nanosatellite. One of the subsystems that contained in nanosatellite component is remote sensing payload in which contained High Power Amplifier (HPA). HPA which is commonly sold in market is almost entirely out of specifications for the nanosatellite. Therefore, it is very important to design and manufacture HPA that match with specifications required for Indonesian nanosatellite. When designing HPA, Pre-amplifier is required to adjust the input power of the designed HPA.

Method that used to complete the design and realization of the pre-amplifier is an experimental method. By manipulating these variables and mathematical theory as well as the required parameters, the design and selection of components used in the manufacture of pre-amplifier will be assisted by S-parameter characteristics of the transistor that exist in transistor datasheet. Processing and assembling of pre-amplifier itself will be conducted in support Laboratory such as Microwave Laboratory.

Pre-made amplifier will operate at a frequency of S-band (2.4 GHz - 2.45 GHz). Removing about 10 dBm output power. Later it will pre-amplifier in the remote sensing payload diimplimentasikan linusat-1 (Satellite Indonesia being developed several universities). The dimensions of the pre-amplifier to be made, namely 5 x 5 cm<sup>2</sup>. Power needed would be made a minimum of less than 0.75 watts. So it will conform to the specifications can be implemented on nanosatellite.

KEY WORD :

Nanosatellite, Pre-amplifier, S-Band Frequency, Remote Sensing Payload.