

## ABSTRACT

Nanosatellite is a satellite that operates at LEO orbit and has such a less dimension compared to the other satellite. Nanosatellite has narrow bandwidth characteristics for data transmission for monitoring deforestation operating at 2.35 GHz at an altitude of 700km.

Filter as a device that can select a signal at certain frequency band to minimize the interference from adjacent frequencies. The use of combline band pass filter for nanosatellite application gives many advantages because of less dimension of the filter and its selectivity. Combline Band Pass Filter is a filter design method that is most beneficial and can be applied to satellite communication system which transmits signals with enormous power because of its vacuum feature called cavity box. Picking a suitable material for the filter is an important step that determines the quality of the filter. The simulation of the filter uses variation of materials such as silver, gold, copper, aluminium and brass and the realization of the filter uses brass as the material of the filter. This filter works with a center frequency of 2.35 GHz. This filter is used on the frequency response of 0.1 dB ripple Chebyshev and impedance input terminals and output terminals 50 Ohm. In designing the filter to note the type of material combline filter maker, rigorous determination of dimensions and characteristics of each resonator so that the results obtained ideal filter.

The result of this band pass filter able to pass a signal between 2.250-2.450 MHz and has a bandwidth of 38 MHz, VSWR 1,28, insertion loss -3,76 dB, and return loss -28,293 dB.

Keywords : Combline, Band Pass Filter, Chebyshev.