

## **Abstract**

The development of wireless communication technology is become faster and various emerge new technology standards. Filter is a that is very important usefulness device in determining the quality of band and attenuate the signal in unwanted frequencies band.

Filter is designed to have an application in WiMAX which is standard technology from WMAN (Wide Metropolitan Area Network) that can cover area by more than 50 km, but has a narrow bandwidth. DITJEN POSTEL set Wimax frequency band in Indonesia at 2.3 - 2.4 GHz and 3.3 GHz-4.3 GHz for fixed Wimax. This frequency band, allowing the occurrence of interference with adjacent frequencies, that is WiFi technology, at a frequency of 2.4 GHz and downlink of satellite communication system technology, at a frequency of 4 GHz. This final project will concern about the design and realization of filter devices on WiMAX technology, to avoid interference with WiFi service and satellite downlink.

This result of this final project is a microstrip BPF that has a dual pass-band at frequency 2.3 GHz and 3.3 GHz with a bandwidth of 90 MHz. The used method is Stepped impedance resonator method that allows dual-band filter design. Filter has a fairly high level of reliability in terms of return loss to loss with 20 dB threshold.

**keywords : Dual-band filter, Stepped Impedance Resonator, Microstrip**