## ABSTRACT

Filters for weather radar determine the desired resolution to detect the intensity of rainfall and bad weather. If the bandwidth on the filter is narrow, then the resolution will be high and the object that observed will be more precise. Moreover, the narrow bandwidth on the filter can handle the signals that be interferance at some frequencies. The band pass filter can be passed the signals at a particular frequency band and absorbs the signals outside that frequency.

In this Final Project was designed and realized Square Ring Band Pass Filter using 6 order to produce a narrow bandwidth and minimize the occurrence of interference. Band Pass Filter have a frequency range of 5.550 GHz - 5.650 GHz with a middle frequency of 5.6 GHz in accordance with standards defined by ITU-R 229. Filters designed using Roger RO4350B with dielectric constants 3.48 and simulated using CST Studio Suite 2017, and then measured using Network Analyzer.

The results of simulation design of Square Ring Band Pass Filter in the central frequency 5.6 GHz with return loss of about -26.155 dB, insertion loss of about -0.5 dB and bandwidth of about 100 MHz. While the results of square ring band pass filter that has been realized obtained measurements the return loss of about -30.167dB, insertion loss of about - 9.1 dB, and the bandwidth of about 100 MHz.

Keywords: Filter, Band Pass Filter, Square Ring, Weather Radar, Roger RO4350B