

## ABSTRACT

Weather radar is a type of radar that is used for rainfall forecasting, calculating the cloud movements, estimating the types of weather objects (rain, cloudy, snow, etc.). Weather radar works by emitting vibrations from electromagnetic waves at microwave frequencies in the atmosphere. In this case, in order for the weather radar to get good sensing results, other frequencies that carried or unwanted and interference by other frequencies during modulation in the device must be eliminated. To eliminate the interference constraints, a device called filter is needed. The filter that will be needed is a band-pass filter so that it can pass the passband frequency and cut the stopband frequency.

In this study, a band-pass filter is designed and realized that works on s-band frequency, uses the meander loop dual resonator model and using Rogers Duroid 5880LZ and 2,0 dielectric permivity of the middle frequency of the filter at a frequency of 3,00 GHz with a bandwidth of 100 MHz.

The design of band-pass filter is done by using numerical simulation software for electromagnetic, and the realization measurement is done by using Vector Network Analyzer. There are several value obtained from the realization measurement, they are -3,0533 dB of insertion loss, -12.981 dB of return loss, 140 MHz bandwidth in frequency of 3,963977 GHz.

**Keywords: Weather Radar, Band-pass Filter, Rogers Duroid 5880LZ, Meander Loop Resonator**