

## **ABSTRACT**

Synthetic Aperture Radar (SAR) is a modification of the Radar system that serves for remote sensing of the Earth's surface. In order for SAR to obtain good and satisfactory sensing results, other frequencies that are overlapping at the time of modulation in the device and frequency of interference as well as noise or other interference must be eliminated.

In an attempt to remove such interference, it is used a component known as the filter name, which serves to select the desired frequency and dampen the unwanted frequencies. In this final task the filter used in the design is a bandpass filter that works on a frequency range of 5.75 Ghz-5, 85GHz with a central frequency of 5.8 Ghz with insertion loss and return loss-3 dB and-11 dB and bandwidth of 100 Mhz.

In this study designed a Band-pass filter that works on the C frequency bands of the Square Loop resonator with a working frequency of 5.8 Ghz. The results of measurements obtained in the realization process of bandpass filter is the value of insertion loss of- 8.375 dB and the return loss value of-11.95 dB as well as the final dimension of the filter is 2.5 cm x 2.5 cm.

Keywords: Radar, Square Loop resonator, C-band