

ABSTRACT

Synthetic Aperture Radar, as known as SAR, is a remote-sensing technology toward earth surface. In order to receive the result of good sensing, then the other frequencies overlapped at modulation in device and other interferences should be eliminated. Eliminating interference in device is more known as filter. What is needed for filter is Band-pass filter to be able to forward desired frequency and cut the unwanted frequency.

In a design of filter, there are various techniques that can be used to design a filter with high selectivity. Those techniques are two section microstrip ring filter directly coupled to input/output lines, two section ring filter edge coupled to tapped input/output lines, open loop resonators with coupled lines dan open loop resonators with coupled and crossing lines.

The improving performance from this filter is by modifying and forming *open loop squared ring resonator* in order to have 10 MHz frequency bandwidth and 1.27 GHz center frequency. Material used in this filter is duroid RT-5880 that has a dielectric constant 2.2. The result of measuring realized filter lies on 1.272 GHz frequency with a good selectivity. Return loss value is -16.448 dB and insertion loss value is -2.994 dB. However, bandwidth filter is still quite big, which is 22 MHz.

Key words: *Band-pass Filter, Open Loop Square Ring Resonator, duroid RT-5880*