

ABSTRACT

Technological developments in the field of telecommunications have developed very rapidly. Radio Detection and Ranging (RADAR) is an electromagnetic wave system for detecting, measuring distances, and creating map objects. The basic physics governing the prediction of maximum detection range of radar, for specified targets in free space conditions with detection limited by thermal noise, has been well understood since the earliest days of the radar. In the Continuous Wave (CW) Implementation on the radar will have an advantage over distance measurements. CW radar can reduce radio interference and simplify the selection of microwaves.

At this final task was designed a microstrip filter bandpass that works at the S-band frequency uses a 3 GHz working frequency. The Microstrip filter Bandpass in this study based Square Split Ring Resonator (SRR) to improve filter performance without adding device dimensions.

The Results of the draft bandpass filter have a value of insertion loss -2.947 db, return loss -19.895 dB and bandwidth with 299 MHz at a frequency 3 GHz with Microstrip using a FR-4 material that has a value of permittivity dielectric 4.4.

Keywords: *Bandpass Filter, Continuous Wave, S-Band, Split Ring Resonator*