

ABSTRACT

The importance of weather information is increasing nowadays. The uses of this data include program planning in various sectors of development, agriculture, tourism and other economic activities. Weather radar detects clouds and their movement, rain distribution, rain intensity, wind direction, wind speed and thunderstorms. Around the weather radar frequency there is an earth exploration satellite frequency at 2.69 -2.7 GHz, and a navigation radio frequency at 2.9 - 3.1 GHz. Therefore, the frequencies above need to be selected, so that the weather radar gets good detection results. Therefore, a part is needed to fix problems with the weather radar system. Band Pass Filters are one type of filter that can be used. The parameters that will be measured from the simulation results with measurement results are return loss ≤ -10 dB, bandwidth = 200 MHz, and insertion loss ≥ 3 dB. The design software used in this research is Ansoft HFSS 13.0. The simulation results obtained a return loss of -25.31 dB, an insertion loss of -2.91 dB, and a bandwidth of 410 MHz. Meanwhile, the measurement results obtained a return loss of -15.69 dB, insertion loss -3.88 dB, and a bandwidth of 130 MHz.

Keywords: *Ansoft HFSS 13.0, Band Pass Filter, Parallel Coupled Resonator, S-Band, Weather Radar,*