

ABSTRACT

Radar is a technology that utilizes electromagnetic waves to detect the presence of an object. The development of radars is used for various applications in various frequency ranges with bandwidth according to their application. One of the existing radar technology is the short range radar (SRR), this radar system will work at close range using high frequency. Where at 24 GHz frequency is considered suitable one of them is used to detect objects at close range such as automotive radar [5].

In the SRR radar system, one of the most crucial parts is the antenna, where the antenna functions as a device that will act as a sender and receiver on a radar system. Where the antenna has the required gain parameters on the SRR radar system, so one method that can meet the gain requirements is to use a patch array. In the final project entitled Design and Realization of Short Range Radar Microstrip Antennas at Frequency 24 GHz, the simulated antenna is a 4x1 patch array microstrip that works at a frequency of 24 GHz which has a VSWR of 1,001, bandwidth of 2,798 GHz, return loss of -64,565 dB. The antenna is realized using Duroid RT5880 material. The antenna measurement results work at a frequency of 22.332 GHz with VSWR 1.248, return loss of -19.17 dB, and impedance of $48.65 \Omega -j10.79 \Omega$.

Keywords : *Short Range Radar, Microstrip, Patch.*