

## **ABSTRACT**

The need for military monitoring and detection devices is one of the most important things in today's technology world in terms of improving performance, so in this study a Rectangular Microstrip Antenna was made for Military Radar applications that work at a resonant frequency of 8 GHz with the V-Slot method which aims improve the performance of the antenna designed from previous research. In previous research, a microstrip antenna has been designed that works at a frequency of 8 GHz with the array method and U-Slot. However, in this study only maximizing the rectangular and V-Slot shapes is expected to be able to improve the performance of simulated antenna parameters including VSWR  $\leq$  2, Return Loss  $\leq$  -10 dB, Gain  $\geq$  6 dB, Bandwidth  $\geq$  60 MHz, and to produce circular polarization. The simulation results show that the antenna is able to work at a frequency of 8 GHz in Military Radar Applications with a Return Loss value of -14,25 dB, VSWR of 1,481, Gain of 9,365 dB, Bandwidth of 1511,6 MHz and producing circular polarization with an Axial Ratio value of 2,623 dB.

**Keywords:** 8 GHz, Antenna Performance, Rectangular Microstrip Antenna, V-Slot, Military Radar