ABSTRACT

At this time, some SAR sensors that have been aired are linear polarization systems on the antenna. SAR itself stands for Synthetic Aperture Radar, which is where SAR is included into one type of radar. SAR presents information in the form of images or images. So SAR is included into the radar imaging. As the sensor moves on a path that forms a certain rotational angle, the bouncing signal of the object or object is received by the sensor in the form of amplitude and phase and then processed to produce a narrow impulse response.

In this research be analyzed on Circle, Quadrilateral, and Triangle Patch antenna. In this research find the advantages of each Patch in the use of SAR sensor (Synthetic Aperture Radar). After the design of the antenna, from the simulation and measurement results can be concluded that the patch antenna Squared successfully approached the results achieved in this study. The technique of unification used is Microstrip Line Feed can reduce the effect of radiation antenna emitted by the feed and facilitate to produce circular polarization.

The resulting antenna has a RHCP (Right Handed Circularly Polarized) polarization with a middle frequency of 1.27 GHz, VSWR and Return Loss respectively 1.05 for simulation and 1.1165 for measurement, -32.174 dB for simulation and -26,565 dB, Gain 6.86 dBi for simulation and - 4.19 dBi for measurement, Impedance 49.87 Ω, Unidirectional radiation pattern.

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Keywords: *microstrip antenna, circular patch, rectangular patch, triangular patch, Synthetic Aperture Radar*, RHCP (*Right Handed Circularly Polarized*).