ABSTRACT

By using a *offset* dual reflector antenna, the radiation pattern and beam width can be changed, which in turn can increase the gain of the antenna. Several factors, including a change in the reflector panel angle (α), a change in the distance between the driving element and the reflector panel, and a change in the reflector length dimension (h), can affect the magnitude of the gain change produced by adding a reflector. The radiation pattern of a biquad antenna is bidirectional, which means that the signal is emitted in both directions with the same magnitude. By adding a reflector, the radiation pattern is restricted from widening backwards and the beam strength is amplified in the opposite direction. The change in the antenna's radiation pattern before and after adding the reflector can be seen clearly.

This research uses the ray tracing method for design and implementation in software to produce new designs using MATLAB and FEKO software. Therefore, the design results that have been made with MATLAB software will be 3D designed using FEKO software.

The double reflector *offset* antenna has parameter results obtained such as *return loss* ≤ -20dB and gain ≥ 20dB and has a good radiation pattern.

Kata Kunci: *Reflector, Dual Reflector Offset Antenna, Ray Tracing, Antenna.*