

## ABSTRACT

Wilkinson Power Divider is a specific class of power divider circuit that can achieve isolation between the output ports while maintaining a matched condition on all ports. But in wilkinson power divider implemented using a conventional transmission channel  $\lambda / 4$  typically has a narrow bandwidth, So as to obtain the bandwidth that can be used in two or more frequencies is quite difficult, one that uses more than one frequency is SAR. SAR (Synthetic Aperture Radar) is a type of radar that is capable of presenting information in the form of images or images), not only at the operating frequency of 1.27 GHz (S-Band) but there are also contained in the frequency of 2.3 GHz (L-Band). because of this large bandwidth required to work on two frequencies so that the required power divider that have wide bandwidth (wide band).

In this final project, will be designed and realized wideband Wilkinson Power Divider working at a frequency of 1.27 GHz and 2.3 GHz by changing the section of transformator  $\lambda / 4$  in the form of a  $\pi$ -shaped section. Method of  $\pi$ -shaped section yourself using adding its stub on the transformer so as to form the symbol  $\pi$ , because this is the method called  $\pi$ -shaped section. The purpose of using this method is that in order to obtain a high bandwidth and efficiency dimensional substrates used.

The result of measurement power divider at 1,27 GHz has a return loss -15,655 dB, insertion loss output 1 -3,093 dB and output 2 for -3,112 dB, and port isolation -12,403 dB. At 2,3 GHz, return loss -22,77 dB, insertion loss output 1 -3,341 dB and output 2 for -3,445 dB, and port isolation -14,641 dB.

**Keyword** : wide band, $\pi$ -shaped section, Wilkinson power divider, microstrip