

## ABSTRACT

Coupler based parallel line can be engineering for various coupling factor, where coupler which has high coupling factor used for capturing small fraction of microwave so that doesn't disturbed main power stream.

Broadband coupler with parallel line and high factor coupling factor very useful for building an instrument which very important for microwave, i.e. network analyzer, SWR meter and vector meter. Kind of coupler which made was a three-section directional coupler, where this kind of directional coupler very suitable for measurement device because it has high coupling factor and wide of bandwidth.

during four month maximal time, made a three-section directional coupler prototype at 750 MHz – 3000 MHz frequency at maximal VSWR 1.5 with SMA-F 50  $\Omega$  terminal,  $25 \pm 1$  dB directivity, and  $20 \pm 1$  dB coupling maximal insertion loss 0.45 dB, based on stripline.

From the measurement of directional coupler, insertion loss at 750 MHz – 2175 MHz frequency about between 0.237 dB – 0.313 dB, as for at 2175 MHz – 3000 MHz frequency, insertion loss was about -2.002 dB until 0 dB, maximum VSWR for each port was 1.299, isolation was about between 41,463 dB - 46,359 dB, directivity was about 22.328 dB – 27.076 dB and coupling factor was about between 17.514 dB – 23.393 dB.

Keywords : broadband coupler, stripline, high coupling factor.