

## ABSTRACT

WiMAX is a technology standard for Metropolitan Area Network (MAN) made as solution for frequency spectrum limited also cable network. This standard known as 802.16 which informed during 2001 by Institute of Electrical and Electronics Engineers (IEEE) and had been up grade early 2003 as 802.16e, it also support peak of data speed until 75 Mbps and covering 50 km areas by range of frequency about 2.3-2.4GHz.

Supporting this technology needs antenna system operated at certain frequency allocation standard, that is certain gain, beamforming, accuration and it realized by arrays antenna efficiently. At it fabrication, certain feed network using 2:1 power combiner/splitter for power consumption so that certain arrays antenna current distribution can be achieved. A power combiner/splitter can be built by *90° Hybrid Branch-Line Coupler* and it is viewed as four poles circuit which one pole is terminated by certain impedance. Therefore, it can also be viewed as an accurate matching impedance from each pole. Realizing Power combiner/splitter as a passive component that is combine two input signals becomes an output signal with phase shifter characteristic and reciprocally using Ansoft simulator software and stripline had been done in this Final Project. All analysis and valid measurement data support power combiner configuration at arrays antenna that can integrate benefits and advantages of arrays antenna so that certain bandwidth can also be achieved and also supports indoor communication necessities.

**Keyword : Power combiner/splitter, Coupler, 90° Hybrid Branch-line, Microstrip**