

## ABSTRACT

*Has been designed and realization a waveguide slot antenna for WLAN application on 3,6 GHz frequency where this frequency appropriated with IEEE 802.11y-2008. The material that used in the design of the antenna is a rectangular waveguide made from brass. The specifications of this waveguide slot antenna are the frequency is 3,6 GHz, antenna gain  $>5$  dB and VSWR  $< 1,5$ , line impedance is  $50 \Omega$ . The waveguide size given by the used frequency, 3,6 GHz, so the type of waveguide which used is WR 229 with  $a=2,290$  inch and  $b= 1,145$  inch . The result of this measurement show the performance better than the initialization spesification. One of the parameter which is easier to be analyzed is the value of VSWR is 1,3 when its simulated by Ansoft HFSS 11, but after realization the value of VSWR is 1,091. This thing possibly happened because of appropriate manufacturer process, the size from inner precise the distance between two close end so this is already fulfill the condition and make this wave can spread well inside the waveguide.*

*By the waveguide slot antenna on 3,6 GHz frequency in this Final Project, hope will support telecommunication researching where a transmission line can be used as antenna using a vertical slot with specific space so the electromagnetic wave can be radiated to the air. Beside that antenna can be implemented as a hotspot on wireless network such as WLAN.*

**Keywords :** Waveguide Slot Antenna, WLAN 3,6 GHz