

## ABSTRACT

Antenna was used on the radio communication as intrinsic matching impedance between propagation space and characteristic of electromagnetic waveguide radio frequency. In the dynamic radio communication system or statistic whom high frequency, the used of wideband antenna was needed to change information and save the energy.

Antenna that engineered in this final project was the helix linear polarized antenna with square wire ground plane, where was the antenna still often because usually its ground plane was flat. The main purpose of this final project was the antenna has linear polarization and worked in range frequency 1250-2500 MHz. Its frequency was matched with the world of telecommunication that included frequency range DCS 1800 MHz, CDMA 1900MHz, UMTS 2100MHz, Wi-Fi 2400 MHz, etc.

On this final project has been engineered Helix Linear Polarized Antenna 1250 – 2500 MHz 50 Ohm Unbalanced Terminal With Square Wire Ground Plane, where was the groundplane make in four variety and different. Every groundplane result the output that can be compared one to another and also result frequency range with  $VSWR \leq 1,5$ . For the proximate coil core groundplane result frequency range 1752.91-1972.08 MHz with *bandwidth* 11.69 %, the wide apart coil core groundplane result frequency range 1740-1887.08 MHz with *bandwidth* 7.84 %, the wide apart coil core groundplane without isolation result frequency range 1847.08-1975 MHz with *bandwidth* 6.8%, flat groundplane result frequency range 1865-1986.5 MHz with *bandwidth* 6.48%. From result that got it can concludes that groundplane with the best performance is groundplane which made of coil and proximate coil core.

Keyword : Helix antenna, linear polarization, square wire ground plane