ABSTRACT

LTE technology known as 4G will be continued with 5G technology to meet the needs of a growing community. The 5G technology is allocated at frequency of 27.5 GHz to 28.35 GHz. The vivaldi antenna created by Gibson in 1979 is an antenna that has wide beamwidth and is capable of working at a frequency 27 GHz.

In antenna measurement at high frequency scaling technique is required. Scaling technique is a technique that can be done to carry out antenna measurements associated with very large structures. This technique is needed to get the appropriate results, such as radiation pattern, return loss and vswr with a more affordable frequency measurement setting.

In this final project, we designed and realized the process of variance of co-planar vivaldi antenna at 27 GHz frequency which is intended to measure the desired resonance which is set at 2.7 GHz frequency using Duroid Rogers 4003C ($\mathcal{E}_r$ = 3,55 and h = 0,813 mm). From the simulation results through CST Microwave Suite 2017 and the realization results obtained the comparison of two frequencies with the value of vswr ≤1,1 ; return loss ≤ -10 dB and uni-directional radiation pattern.

Keywords : Vivaldi Antenna, Scaling Down Technique.