

## ABSTRACT

*Telecommunication technology continues to experience development, the devices used must also be upgraded, such as cellphones, laptops and so on. An antenna is also needed that can cover all the technologies that have been developed to meet human needs. From 2G to 5G, which is a new technology developed in Indonesia, so that it can be used for all technologies without having to lose anything.*

*In this final project, a multi-generation ultra is designed by wideband antenna , where this antenna will work from a frequency of 800 MHz to 3.5 GHz. The technique used in antenna design is DGS, where this technique is expected to increase the antenna bandwidth so that all cellular frequencies can be covered. The material used as a substrate is FR-4 Epoxy, then for the patch and groundplane the material used is copper.*

*The results show that in the final simulation process obtained a return loss of -13.217579 dB, a VSWR of 1.5433334 and a bandwidth obtained of 812 MHz to a range of 5.539 GHz while a gain of 3.537 dBi with an the omnidirectional radiation pattern. The results from the antenna measurements are obtained a return loss of -12.2784 dB, a VSWR of 1.62386 and while a gain of 6.24 dBi with an the omnidirectional radiation pattern.*

**Keywords:** *VSWR, Ultra Wideband, Return loss, Bandwidth, Polarization*