

ABSTRACT

Ultra Wideband (UWB) is a wireless technology which has a very wide bandwidth with low power for short range communications. One of the international standards on antenna performance of antenna with a wide bandwidth is determined by the Europe Telecommunication Standards Institute (ETSI). This institution establishes that the UWB antenna has a bandwidth of at least 20% of the center frequency. The ultra wideband technology is one of the promising solutions for high speed wireless communications over short distances. Therefore, have been conducted research to produce antenna with small size and wide bandwidth.

In this Final Project an ultra wideband microstrip antenna with fractal koch patch has been designed and realized at first iteration by changing the geometry of groundplane into pyramid shape. Changes to the geometry of the groundplane are required to widen the antenna bandwidth. While the technique of feeding is microstrip line.

From the simulation results obtained bandwidth of 10.038 GHz with frequency range of 3.3924 GHz – 13.431 GHz. The obtained gain is 3.1226 dB with omnidirectional radiation pattern, and linear polarization. The realized, antenna has a bandwidth of 8.01 GHz which can work on a frequency band of 3.405 GHz – 11.415 GHz with omnidirectional radiation pattern, elliptical polarization, and gain of 3.94 dB.

Key Word : Microstrip Antenna, Ultra Wideband, Fractal, Pyramid Groundplane