

ABSTRACT

To improve the usage efficiency of antenna in various applications of wireless technologies, such as GSM, WLAN, WiFi, UMTS and other wireless technology, the antenna that is made, must have some operating frequency or having a wideband frequency.

Log periodic antenna is an antenna that has similarities with Yagi Uda antenna in case of a dipole antenna array. But the *log periodic* antenna has a pattern of length, thickness and spacing of each particular element, depending on the geometric ratio of these antennas. *Log periodic* antenna has a wide frequency band so it can increase the efficiency of its usage.

Unfortunately, the dimension of the *log periodic* antenna is very large. For example, to realize the antenna for a frequency range of 54 to 216 MHz, the dimension reaches more than 5 m. To reduce the size of its dimensions, the antenna can be deployed on to a PCB.

Printed antenna is a type of antenna that is printed on a PCB with certain ϵ_r , that has the advantages of thin geometry, lightweight and can be applied to Microwave Integrated Circuits (MICs). So the printed antennas have qualified to be applied to wireless technology.

In this final project, the author designs and realizes the printed log periodic antenna with Koch fractal iterations series that can operate at frequencies from 0.8 to 2.5 GHz. It is expected that, the antenna is working on wideband frequencies from 0.8 to 2.5 GHz with $VSWR \leq 2$. In the design and simulation, the author uses 3D Antenna Simulator Software, to obtain the desired dimensions and specifications. Then, the author realizes the antenna and testing of antenna parameters.

Key Word : log periodic antenna, printed antenna, log periodic fractal Koch series iteration, wideband