In this work, a compact and broadband and planar monopole antenna consists of one unit cell of epsilon negative transmission line (ENG TL) is proposed. A disc-shaped monopole antenna is implemented at 2.45 GHz resonance frequency for 2.4 GHz applications. A 50 Ω microstrip line is used as a feedline and element of the antenna has 0.1 0 of diameter. The size of the antenna is reduced to 0.32 λ₀ X 0.32 λ₀, and the -10 dB fractional bandwidth is improved to 12.8% due to using metamaterial transmission line. Prototype antenna is fabricated and tested, and the measured results are compared to the simulated results using Ansoft HFSS.

References


Index Terms

Computer Science 

Wireless

Keywords

Compact antenna, Microstrip feedline, Epsilon negative transmission line, ZOR antenna