A compact wide band Printed LPDA (Log Periodic Dipole Array) antenna is proposed for WLAN applications in 5-6 GHz range. The antenna having dimensions of 36.58 mm x 24.37 mm x1.6 mm is designed and simulated using HFSS 13. The prototype of proposed antenna is developed using simple FR4 substrate. The proposed antenna works well in the desired operating bandwidth from 5-6 GHz and covers dual bands of IEEE 802.11a (5.15-5.35 GHz and 5.725-5.825 GHz) with VSWR effectively less than 2. The antenna shows a wide impedance bandwidth of 1.643 GHz from 4.869 GHz – 6.512 GHz, with bandwidth efficiency of 28.87 %. The antenna gain is > 6 dB throughout the operating band, with max gain of 7.6 dB at 5.6 GHz and stable radiation pattern in end fire direction. Measured results for S11 parameter are in good agreement with simulated one, which validates the proposed antenna design.

References


Index Terms

Computer Science Wireless

Keywords

PLPDA (Printed Log Periodic Dipole Array), WLAN, FR-4, Wide band