

Miniaturized microstrip bandpass filter designed using rectangular dual spiral resonator

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Abstract

A miniaturized microstrip bandpass filter based on a rectangular dual spiral resonator (DSR) is proposed in this paper. The rectangular DSR bandpass filter is centered at 3.65 GHz to suit for Wireless LAN (IEEE802.11y) application. The proposed filter offers transmission zero at the high side of out-of-band response. Across the bandwidth, the measured minimum insertion loss is about 1.7 dB, while the measured return loss is better than 19 dB. Measurement results are good agreement and closed to the simulated ones. The total circuit size of the miniaturized bandpass filter is about $0.145\lambda_g$ by $0.135\lambda_g$, where λ_g is the guided wavelength at 3.65 GHz.

Keywords

Miniaturized microstrip bandpass filter; Rectangular dual spiral resonator (DSR); Transmission zero; Wireless LAN.