

Narrowband elliptic bandpass filter using dual-mode microstrip square loop resonator for WiMax application

ABSTRACT

In this paper, a narrowband bandpass filter using dual-mode microstrip square loop resonator is proposed. This structure has a 5.1% fractional bandwidth at 2.3GHz. By using some simple techniques, the optimum results will be achieved. The dual-mode resonator will be produced by adding a square patch inside the loop resonator. The simulation and measurement results are also presented. The filter is fabricated on RT/Duroid 6010 substrate having a relative dielectric constant of 10.2 and 0.635 mm thickness. The final dimension is measured at 19.65 mm 19.65 mm. The minimum measured insertion loss is 1.68 dB and return loss obtained is better than -20 dB, where experimental results and simulated values are in good agreement.

Keyword: Elliptic filter; Dual-mode; Dual-mode bandpass filter; Square loop; WiMax