World Academy of Science, Engineering and Technology
International Journal of Electronics and Communication Engineering
Vol:10, No:08, 2016

Design of Compact UWB Multilayered Microstrip Filter with Wide Stopband

Authors : N. Azadi-Tinat, H. Oraizi

Abstract : Design of compact UWB multilayered microstrip filter with E-shape resonator is presented, which provides wide stopband up to 20 GHz and arbitrary impedance matching. The design procedure is developed based on the method of least squares and theory of N-coupled transmission lines. The dimensions of designed filter are about 11 mm × 11 mm and the three E-shape resonators are placed among four dielectric layers. The average insertion loss in the passband is less than 1 dB and in the stopband is about 30 dB up to 20 GHz. Its group delay in the UWB region is about 0.5 ns. The performance of the optimized filter design perfectly agrees with the microwave simulation softwares.

Keywords : method of least square, multilayer microstrip filter, n-coupled transmission lines, ultra-wideband
Conference Title : ICMST 2016 : International Conference on Microwave Science and Technology
Conference Location : Barcelona, Spain
Conference Dates : August 11-12, 2016