Abstract

This paper presents a novel ultra wideband (UWB) bandpass filter (BPF) with a notch-band at specified frequency. Moreover, its equivalent circuit model (ECM) is also investigated. The proposed filter consists of a stepped impedance resonator (SIR), a parallel coupled feed line on the top and a rectangular shaped defected ground structure (DGS) on the bottom of the structure. The notch band can be shifted to any other desired frequency by tuning the length of the parallel coupled feed line. Good performances in terms of wide stop-band rejection, low insertion loss, high return loss and more compact size (7.99×6 mm^2) than those reported in literature are achieved. In addition, simulation results accomplished by ECM are in good agreement with the full-wave EM.