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# A Novel Dual Band-pass filter Based On Coupling of Composite Right/Left Hand CPW and (CSRRs) Uses Ferrite Components

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**Abstract :** Recent works on microwave filters show that the constituent materials such filters are very important in the design and realization. Several solutions have been proposed to improve the qualities of filtering. In this paper, we propose a new dual band-pass filter based on the coupling of a composite (CRLH) coplanar waveguide with complementary split ring resonators (CSRRs). The (CRLH) CPW is composed of two resonators, each one has an interdigital capacitor (CID) and two short-circuited stubs parallel to top ground plane. On the lower ground plane, we use defected ground structure technology (DGS) to engrave two (CSRRs) offered with different shapes and dimensions. Between the top ground plane and the substrate, we place a ferrite layer to control the electromagnetic coupling between (CRLH) CPW and (CSRRs). The global filter that has coplanar access will have a dual band-pass behavior around the magnetic resonances of (CSRRs). Since there's no scientific or experimental result in the literature for this kind of complicated structure, it was necessary to perform simulation using HFSS Ansoft designer.

**Keywords :** complementary split ring resonators, coplanar waveguide, ferrite, filter, stub.
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