

Implementation of single cell composite right-left handed transmission line for ultra wideband bandpass filter

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Abstrak

A design and fabrication of a compact ultra-wideband (UWB) bandpass filter (BPF) using single cell Composite Right-Left Handed Transmission Line (CRLH-TL) is reported in this paper. This compact filter design is achieved using a single cell CRLH-TL structure which is implemented on the FR4 dielectric substrate with permittivity of 4.4 and dielectric thickness of 1.6mm. The dimensions of the filter structure consider the capability of the fabrication tools in Indonesia. The compact filter operates from 4 GHz to 9.5 GHz with insertion loss less than - 1.5dB.