Multiband bandpass filter (bpf) based on folded dual crossed open stubs

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Abstrak

A compact multiband bandpass filter (BPF) based on folded dual crossed open stubs (DCOS) is designed and analyzed. Two Crossed Open Stubs (COS) are used to generate concurrent six-band BPF, where the center frequency located at 0.95 GHz, 1.85 GHz, 2.65 GHz, 3.35 GHz, 4.375 GHz, and 5.25 GHz. The proposed BPF based on folded Dual Crossed Open Stubs (DCOS) is an expansion of tri-band BPF based on a single COS, where the second COS is used to generate second additional tri-band. To achieve miniaturization structure of proposed BPF, the DCOS is folded. The proposed BPF will be designed and analyzed by using Advanced System Design (ADS). The performances of multiband BPF which characterized by return loss, insertion loss, voltage standing wave ratio (VSWR), and group delay, are conducted by simulation, measurement and analysis. It is shown that the simulation and fabrication results of insertion loss, return loss, VSWR, and group delay of the proposed multiband BPF are satisfied to design requirements. However, the center frequencies of fabricated the proposed multiband BPF are shifted average to 5?30 MHz lead to simulated results. This is due to some errors in fabricated process including imperfect dimension of fabricated BPF, soldering between connector to substrate and cable losses.