Abstract

This paper presents the complete analysis, design of microwave Parallel coupler using synthesis approach and Branch Line Coupler which has been fabricated using FR-4 PCB substrate material and tested in the lab environment successfully. The design of all above components is done using the IE3D simulation tool and tested its S-Parameter results with Vector Network Simulator (VNA). The design parameters with respect to the IE3D structures of the physical dimensions are optimized successfully using Matlab.
The complete design of microstrip directional couplers using the synthesis method by Abdulla Eroglu. [IEEE transaction on instrumentation and measurements propagation letters, vol. 13, 2014]. Microwave Engineering by David M. Pozar.


**Index Terms**

Computer Science  
Circuits And Systems

**Keywords**

Branch Line Coupler (blc); Fr-4 Substrate; Ie3d Tool; Parallel Coupler; Vector Network Simulator (vna)