Abstract

This paper presents about the wide band six-port junctions based on micro-strip technology for C band (4 to 8GHz), Ku band (12 to 18 GHz), K band (18 to 26.5 GHz), Ka band (26.5 to 40 GHz), V band (50 to 75GHz) is proposed and their performance was analyzed. A six-port junction consists of one Wilkinson power divider and three -3dB hybrid couplers or two hybrid couplers and two power dividers. The six-port junctions presented here are designed at the center frequency of 5.8GHz, 10GHz, 37GHz and 73 GHz. The circuit is simple structure, small size, and low cost, good performance. We employed Advanced Design System (ADS) for simulation. The two input ports connected with local oscillator signal and RF signal, respectively. The I and Q signals are composed by two of the four output signals. With this simple structure, small size, low cost and good performance, wide band micro-strip six-port junction can be used for cognitive radio. Saving mixer, I/Q signals can be obtained through direct demodulation.

References

Performance and Analysis of Wide Band Micro-strip Six-Port Junctions for Cognitive Radio


Index Terms

Computer Science

Keywords
Hybrid Coupler; Micro-strip; Power Divider; Six-port Junction