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

- Han Song and shao-Bin Liu, Song Liu &quot;A new six port junction based on microstrip technology&quot; IEEE Trans 2009.

Index Terms

Computer Science

Keywords

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