Ural Federal University
named after the first President of Russia B.N.Yeltsin

Compact microwave devices on a flexible substrate

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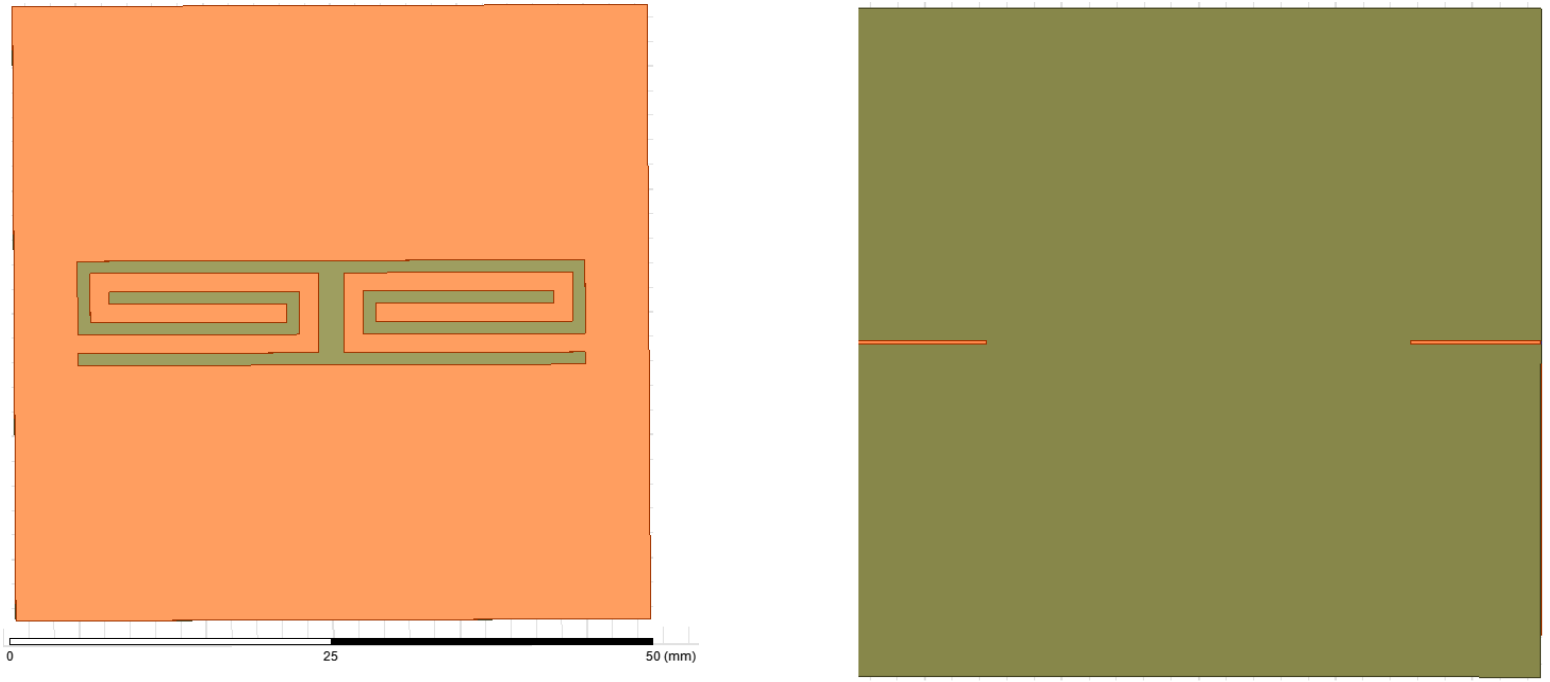

Fig. 1. Top and bottom side of the bandpass filter.

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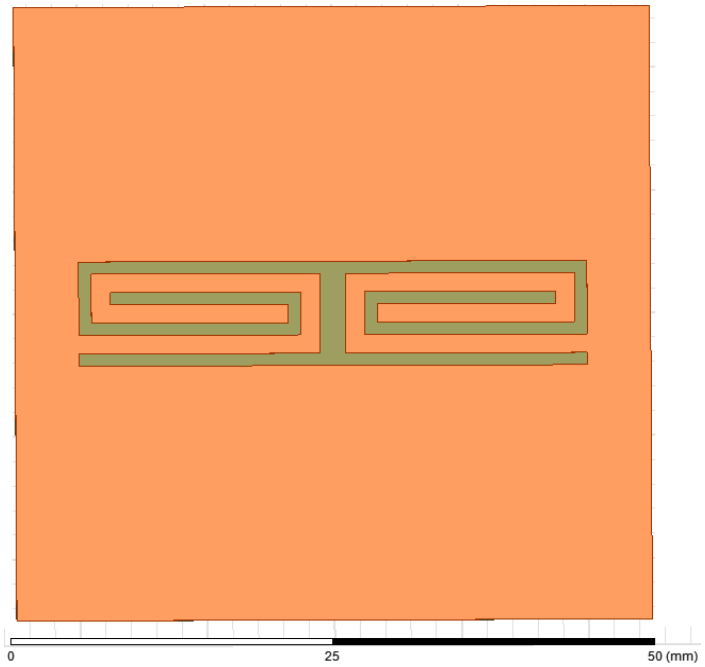


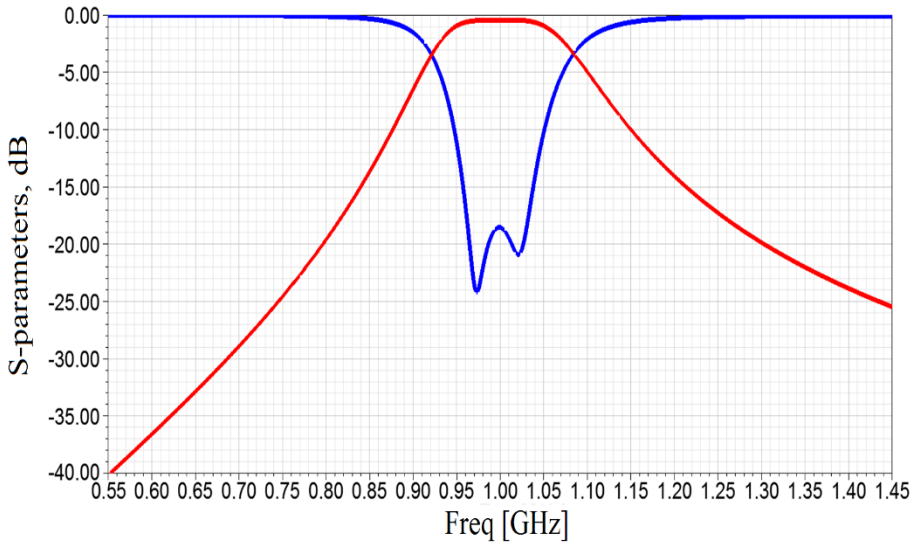
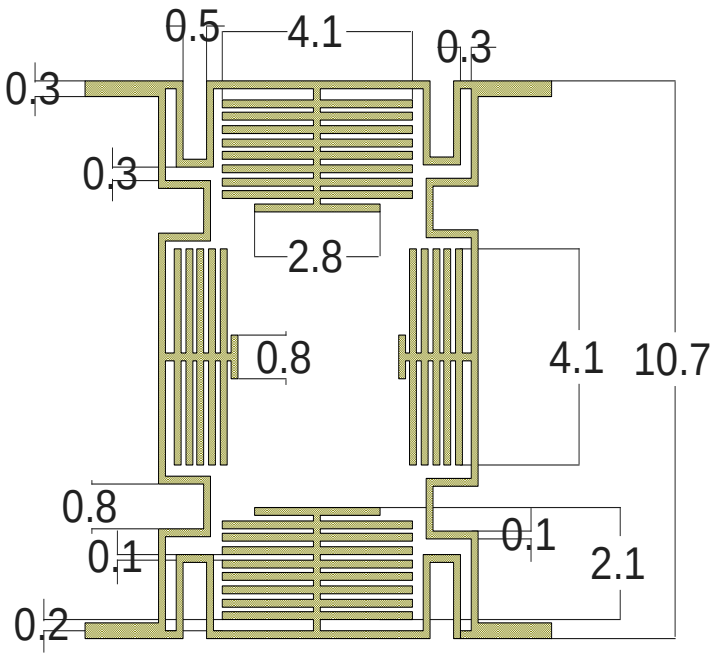


Fig. 2. Frequency response of a bandpass filter.

Coupler



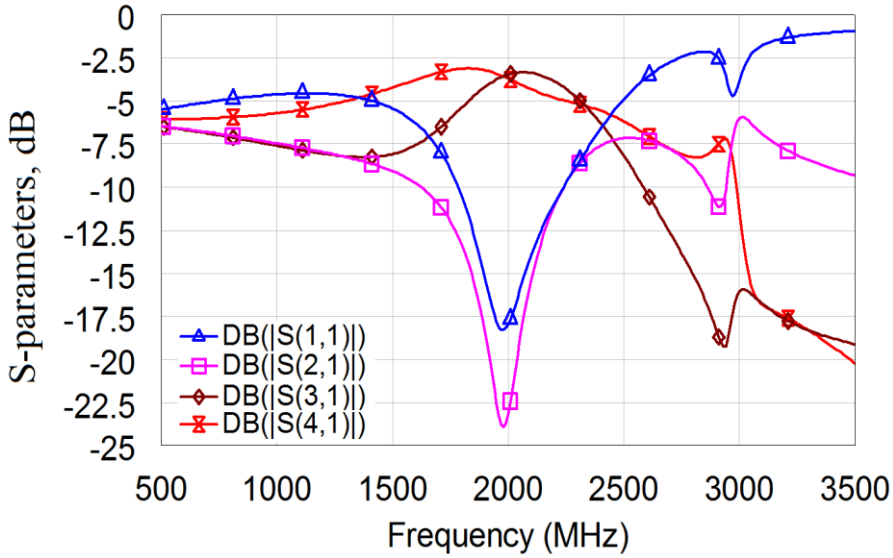


Fig. 3. Compact coupler design and characteristics .

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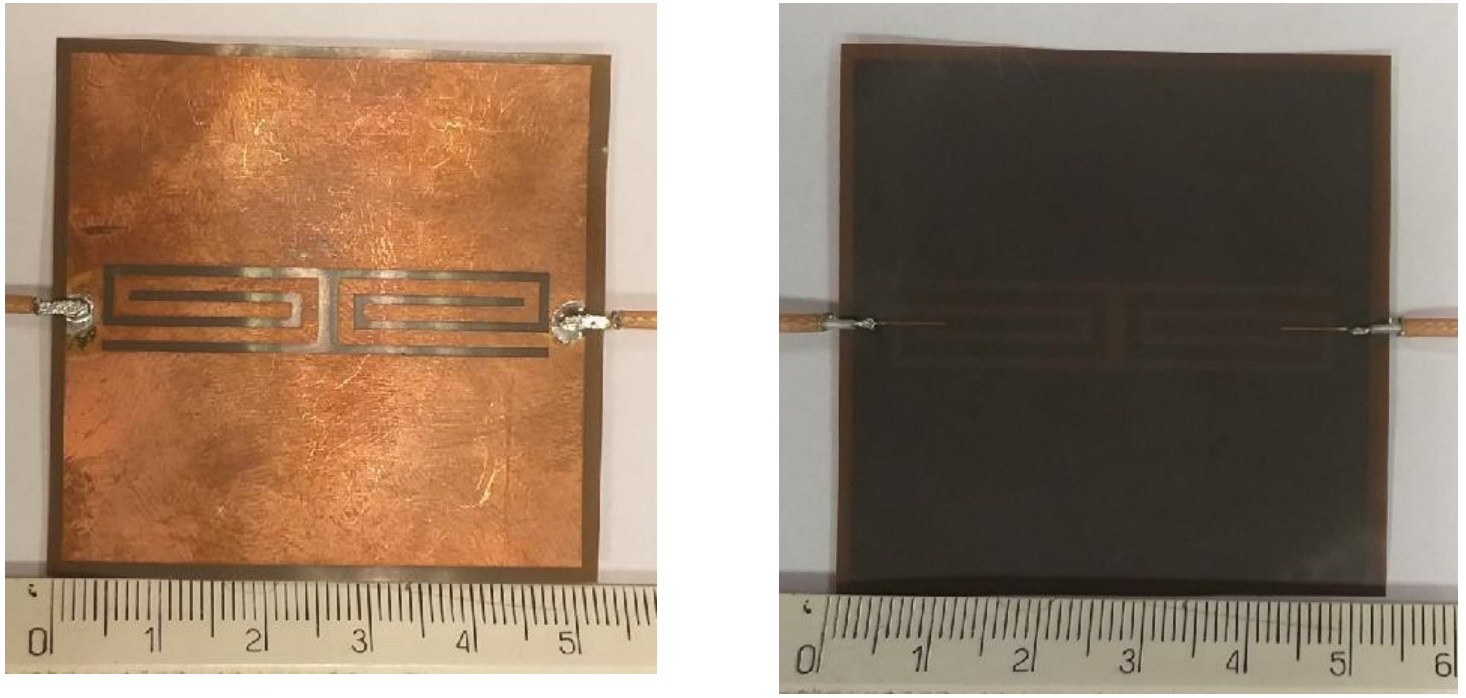

Fig. 4. Top and bottom side of the bandpass filter.

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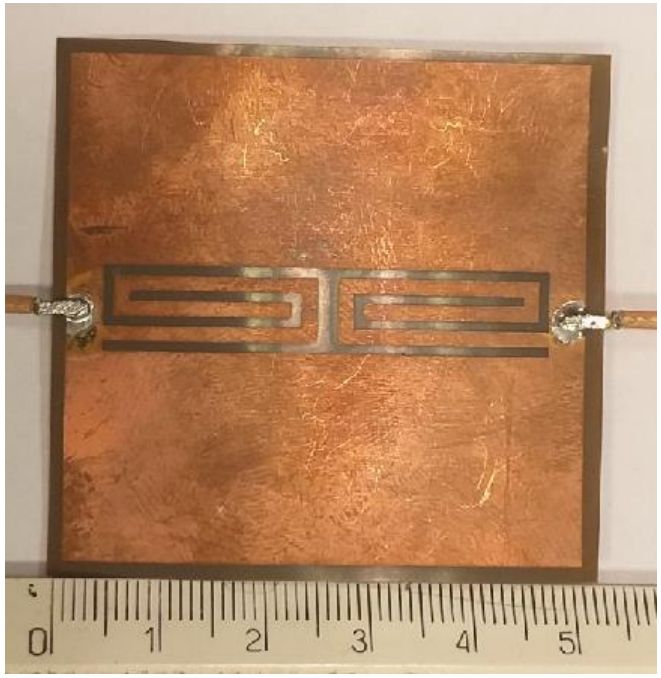

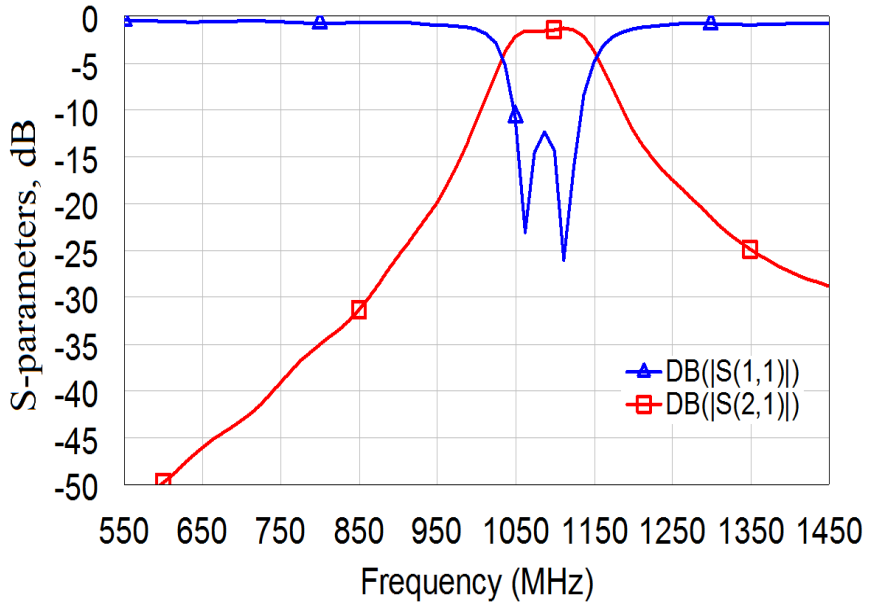

Fig. 5. S-parameters from the frequency..

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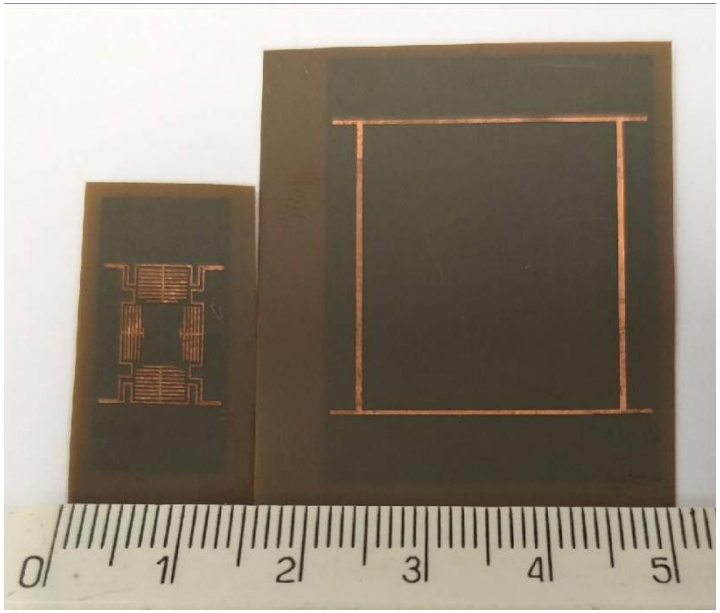

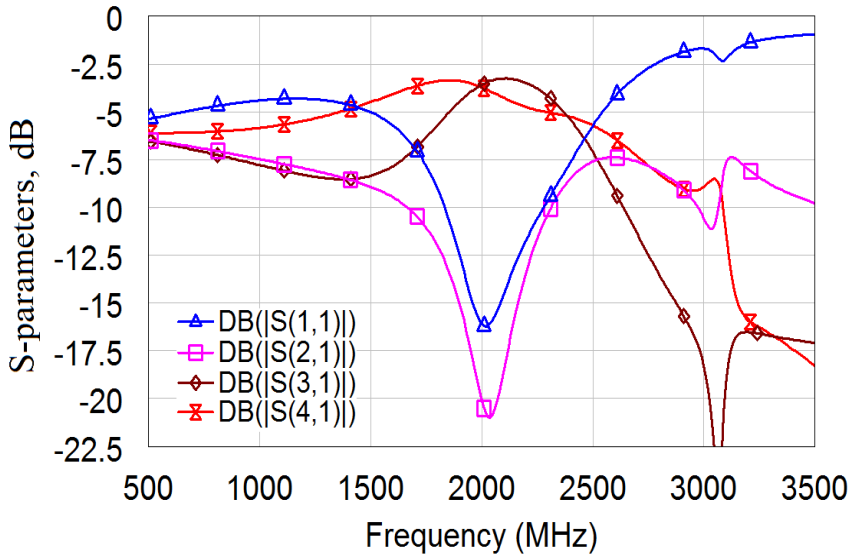

Fig. 6. Compact coupler design and characteristics .

Conclusion

The designs of compact microwave devices on flexible substrate are investigated. Spiral resonators on a flexible substrate were used to design a bandpass filter with a central frequency of 1090 MHz and a FBW of 11%. The area of such a device is 50 x 50 = 2500 mm2. In addition, we designed a compact coupler, whose area is 86% less than that of a standard coupler, but the bandwidth is rather small (80 MHz).

Thank you for attention!