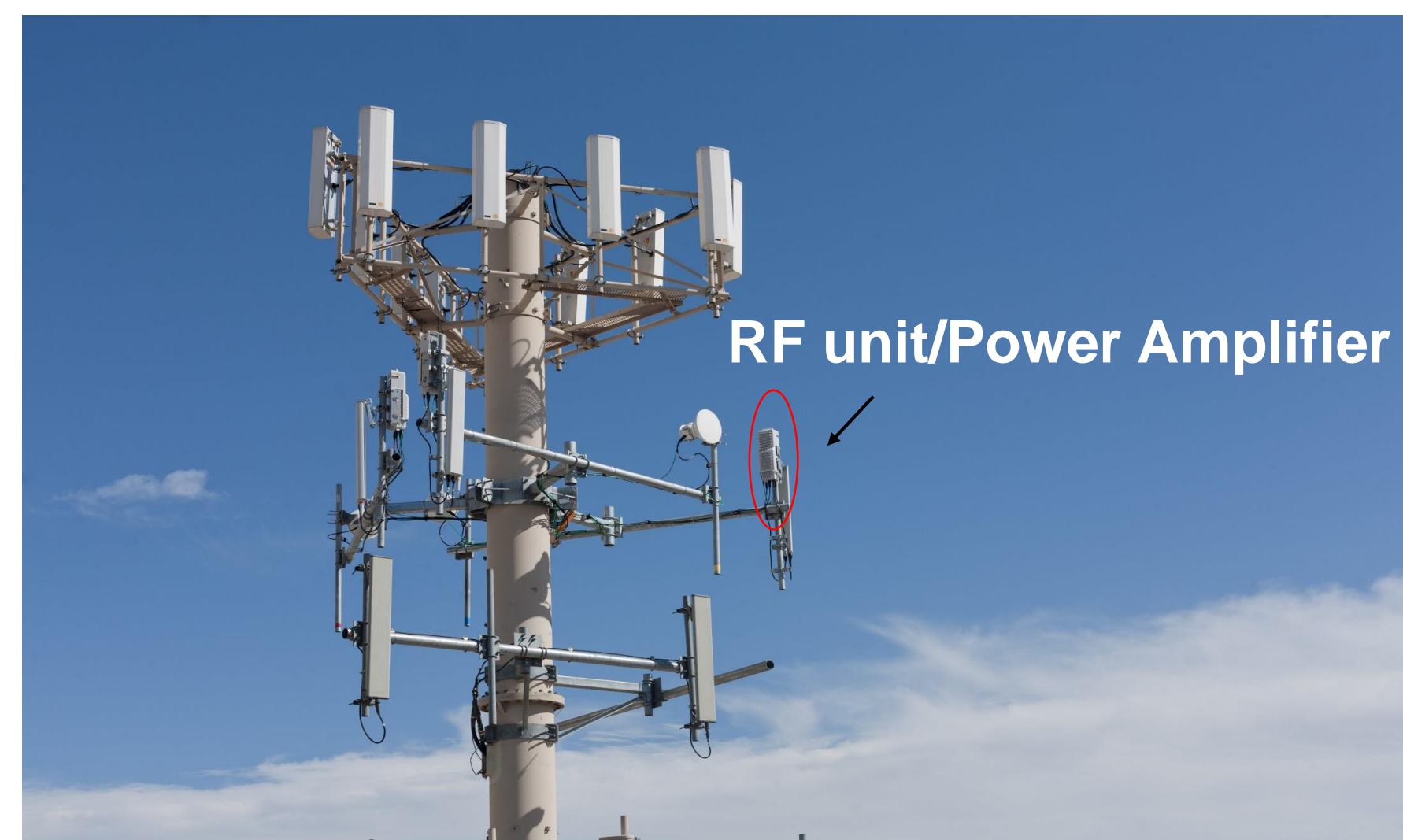




Wideband Push-Push Power Amplifier

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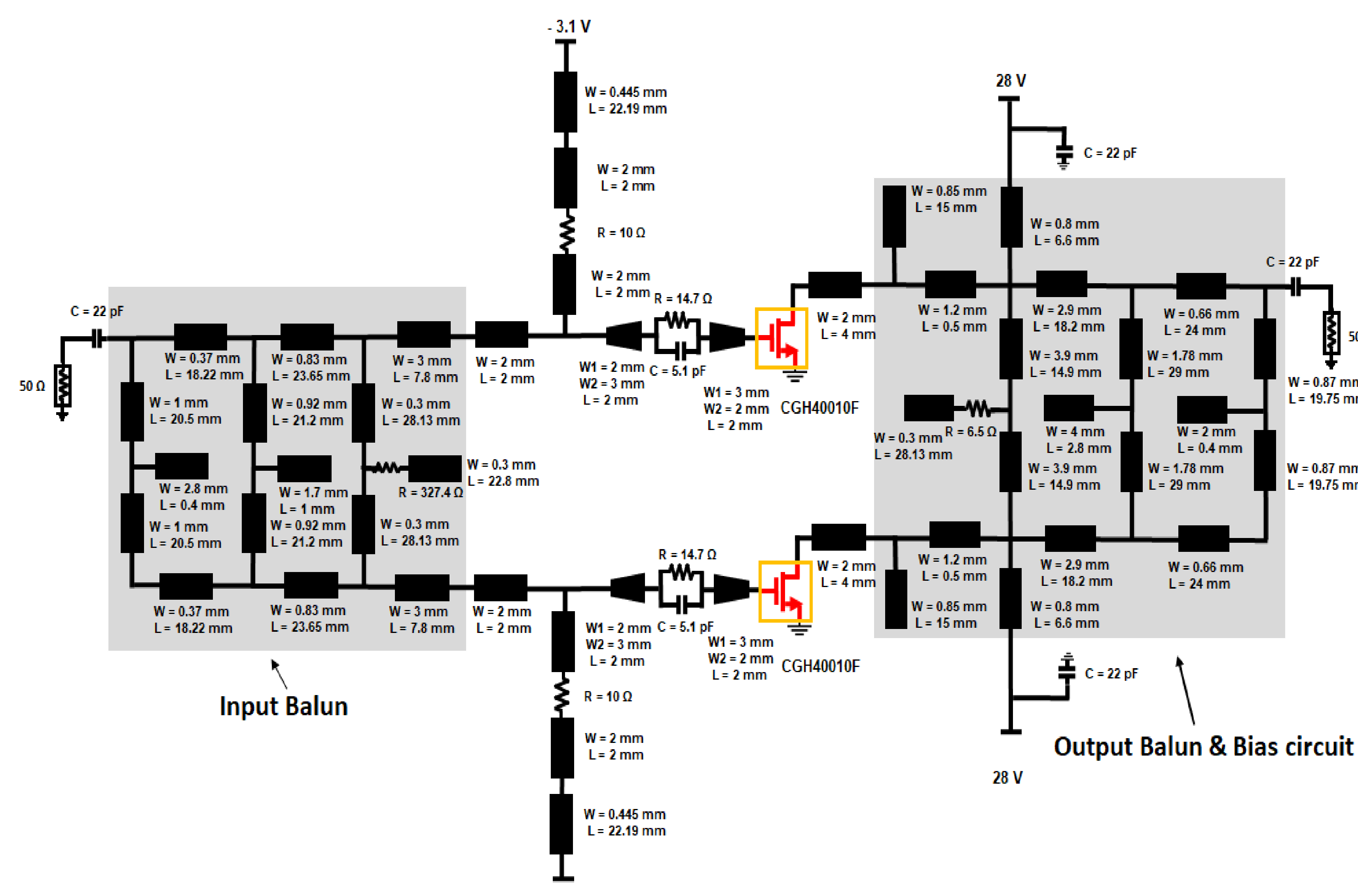
Motivation



Abstract

In this work, complex impedance trajectory following splitting and combining baluns are proposed to design a wideband Push-Pull power amplifier for the next generation 5G wireless communication.

Method



Proposed wideband Push-Pull power amplifier

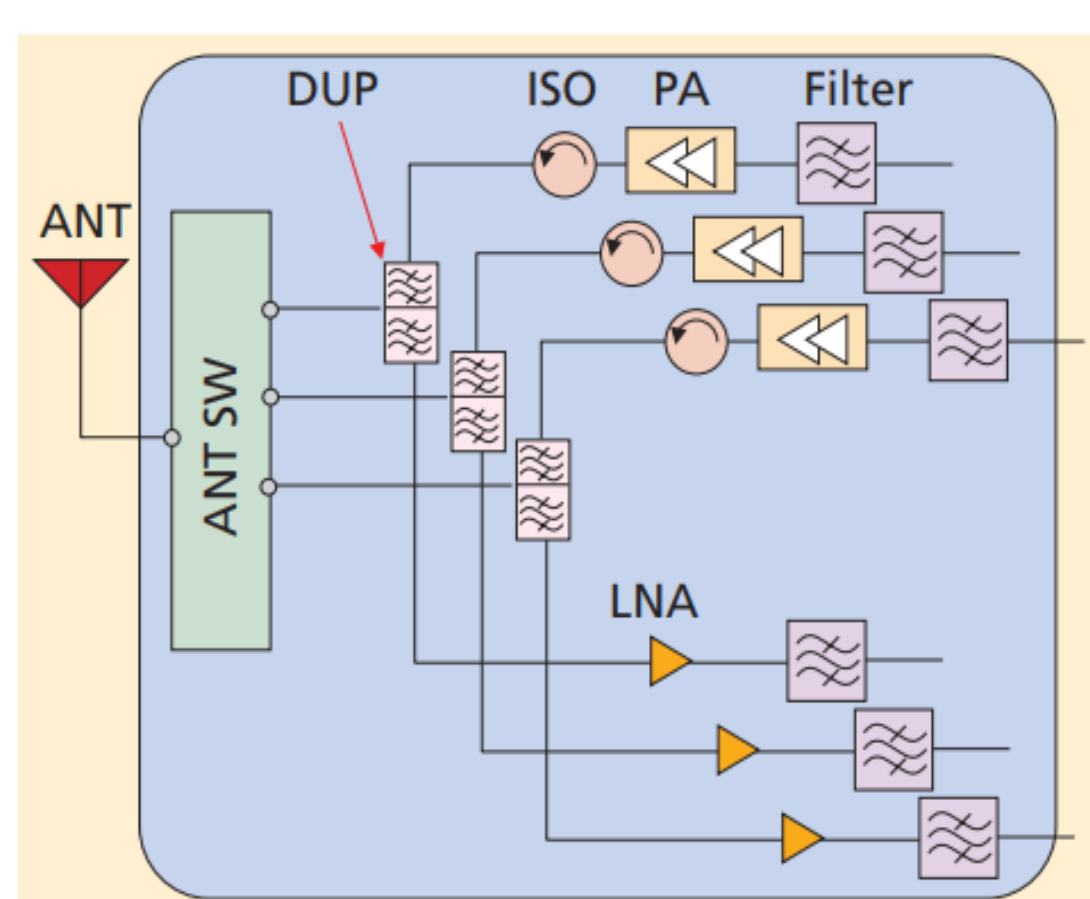
Background

Multi-band architecture

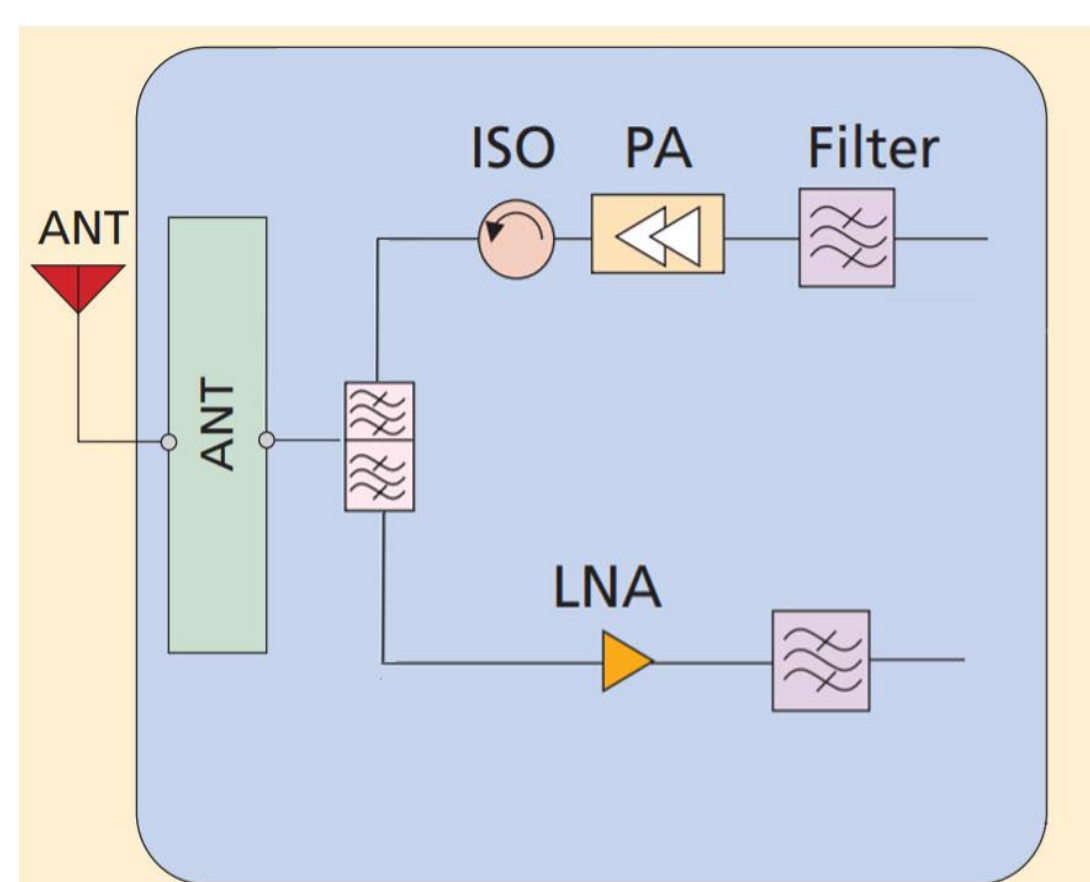
- ✓ Separate transceiver for each band
- ✓ More space and cost requirement

Alternative:

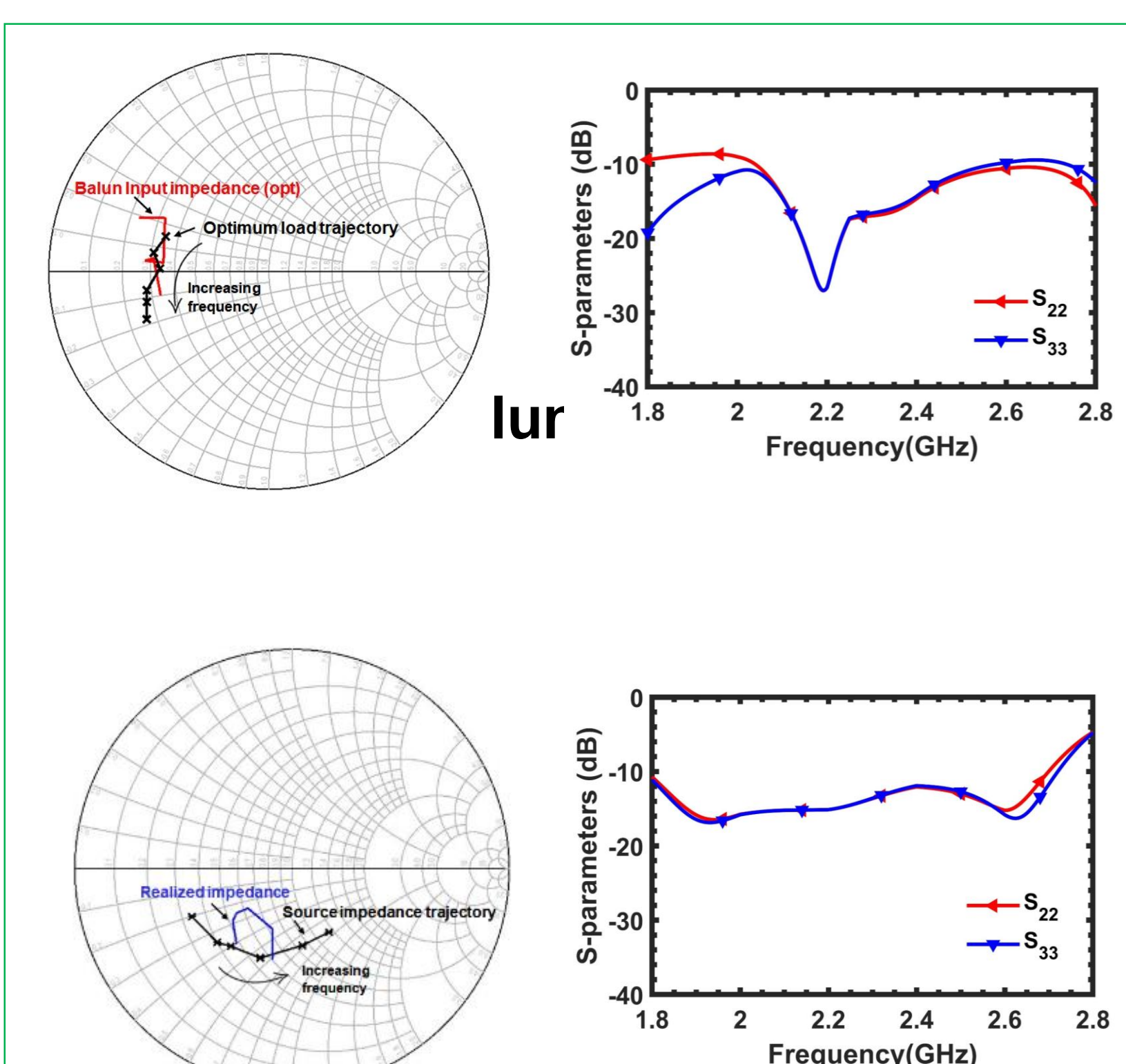
- ✓ Single unit transceiver with wideband characteristic



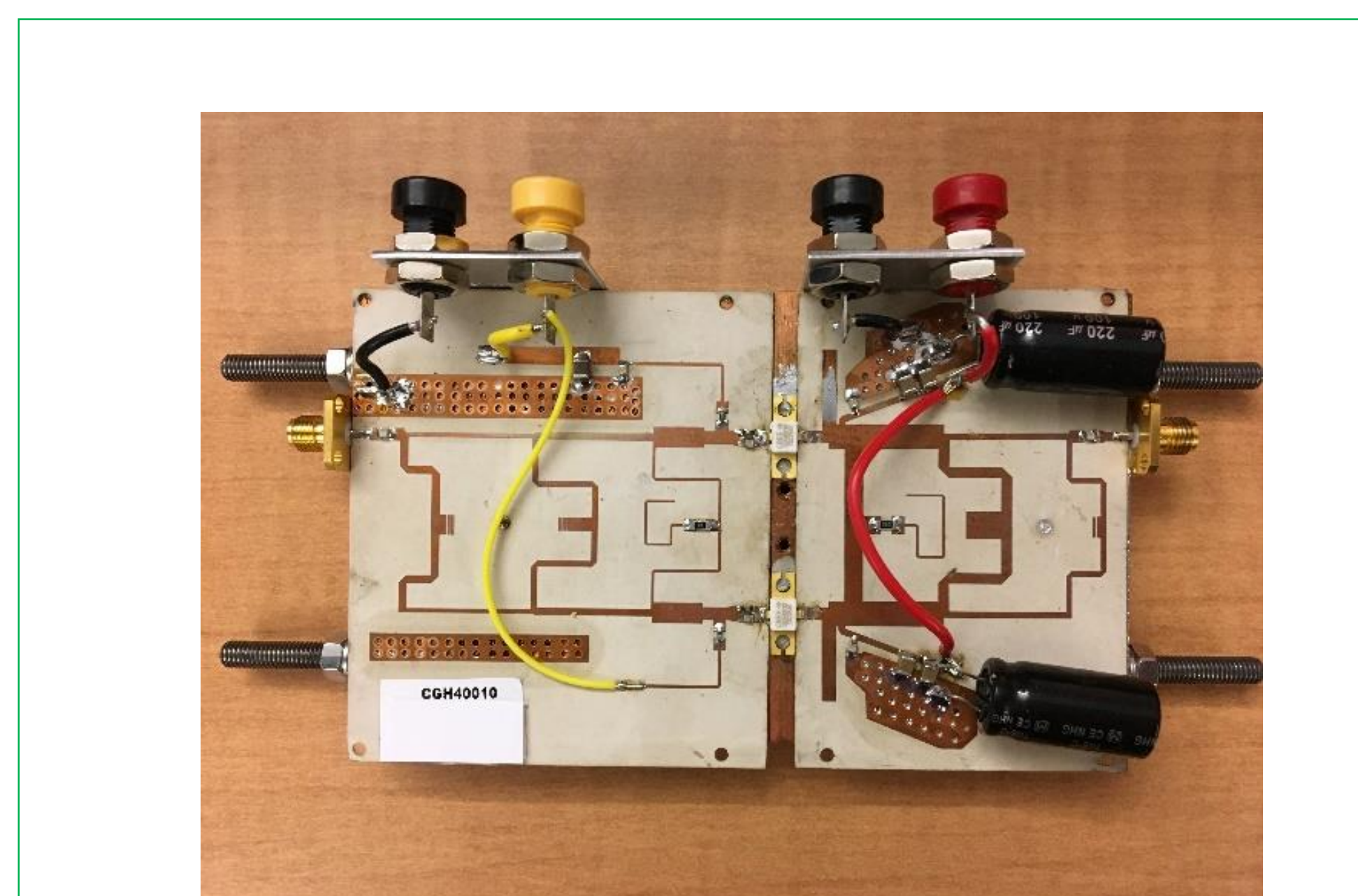
Multiband architecture



Broadband architecture

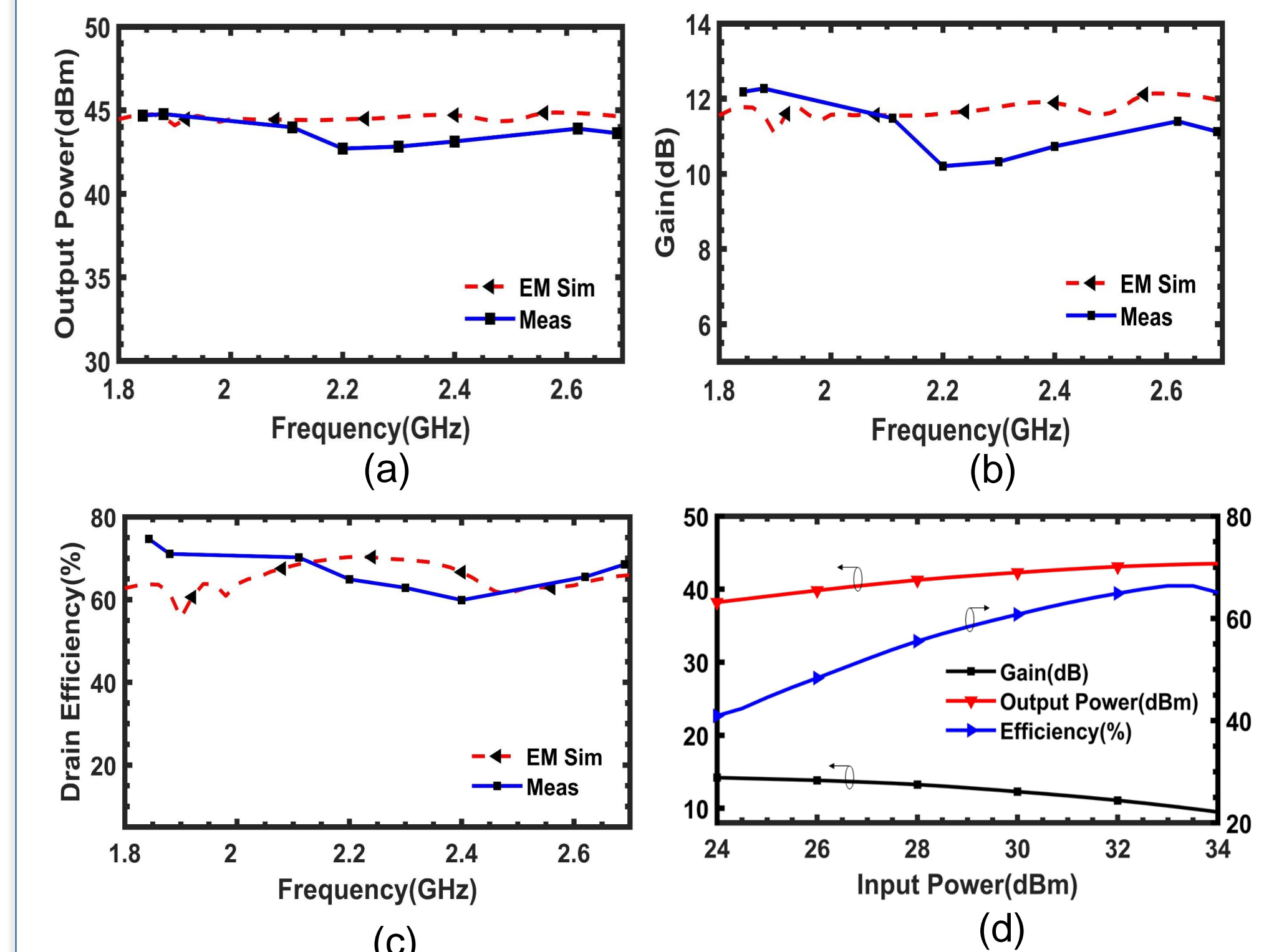


Output balun performance

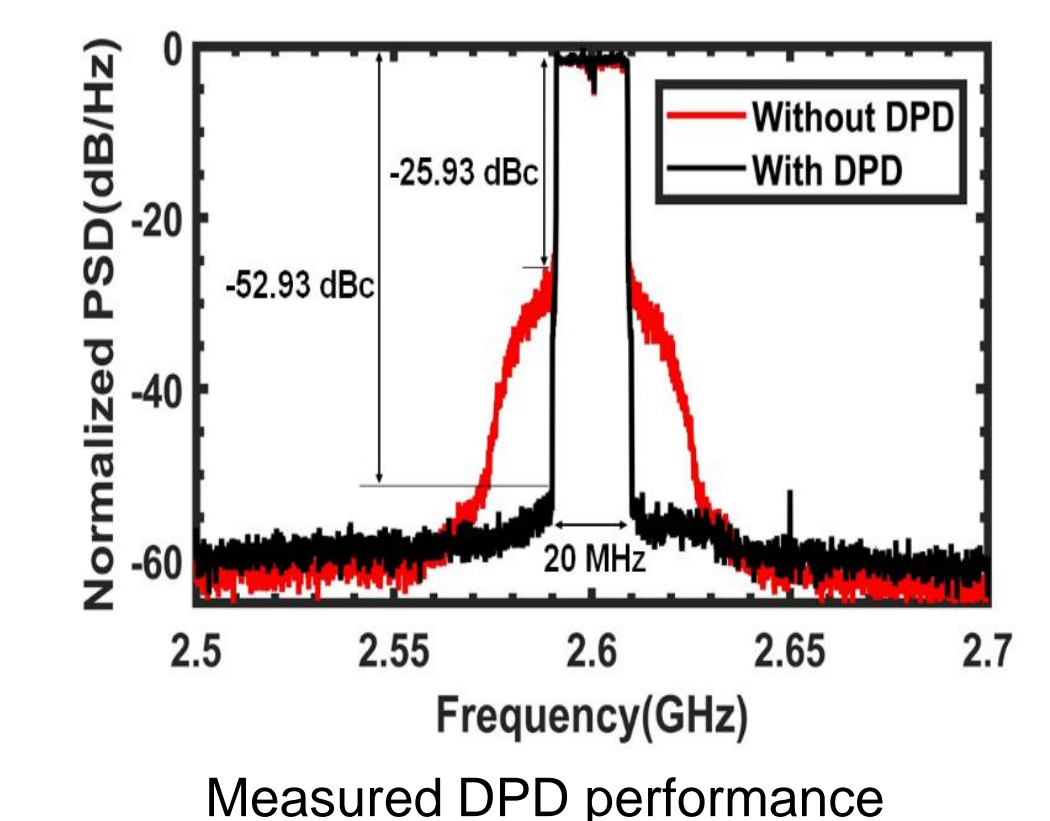


Fabricated wideband Push-Pull power amplifier

Results



Simulated Vs. Measured results for (a) Output power (dBm) (b) Gain(dB) (c) Efficiency(%) and (d) Measured input power sweep results for Gain, Output power and Efficiency



Measured DPD performance

Conclusion

- ✓ A Broadband performance is achieved from 1.8 GHz- 2.7 GHz
- ✓ Provides an average gain with very little deviation
- ✓ DPD is able to provide less than -50 dB ACPR

References

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□ M. H. Maktoomi et al., "A Complex Load Matched Microstrip Balun," *2019 IEEE MTT-S Int. Micr. Symp.(IMS)*, 2019