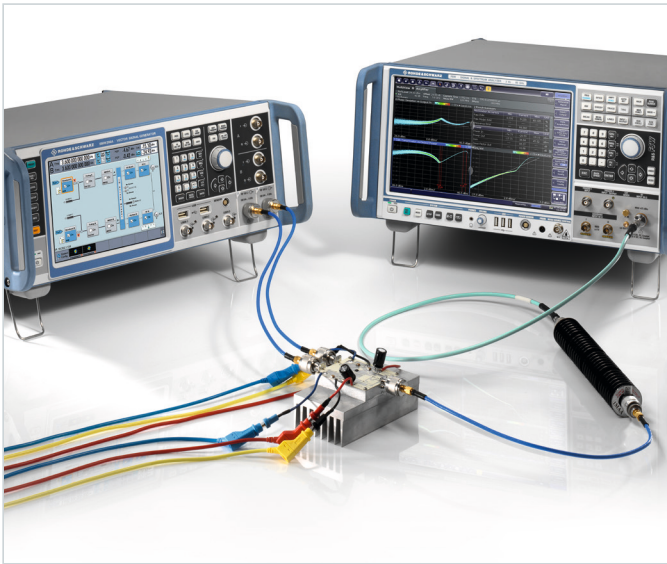


Optimize Doherty power amplifiers

Speed up development, verify best performance and start up series production with confidence.

Doherty designs achieve high efficiency, greater linearity and increased output power. Get deep insight into your design with a dual-path, precisely synchronized source driving the Doherty amplifier and improve your yield.

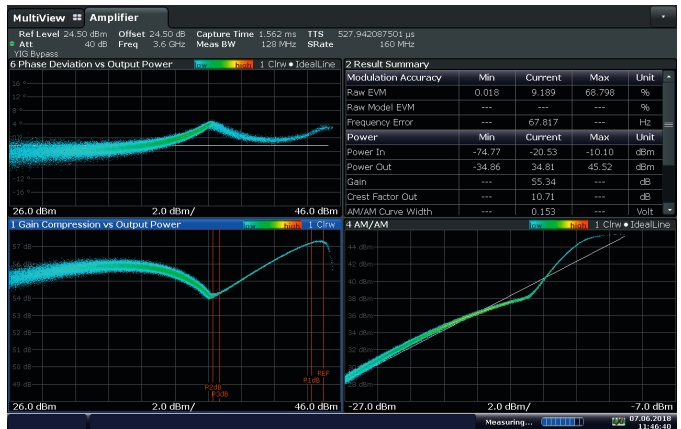


Verification of 5G NR GaN Doherty amplifier maximum performance made easy with the R&S®SMW200A vector signal generator and the R&S®FSW signal and spectrum analyzer

Your task

You are responsible for developing a Doherty amplifier for a high-performance radio transmitter. Whether it is for 5G, SatCom or any other application demanding high performance and reproducibility, the challenges remain the same:

- How can you be sure that you are getting the maximum possible performance from the design?
- How can you evaluate its sensitivities and variations for series production?



Perfect Doherty drive conditions generated by the R&S®SMW200A and AM/AM / AM/PM analysis with the R&S®FSW-K18 option

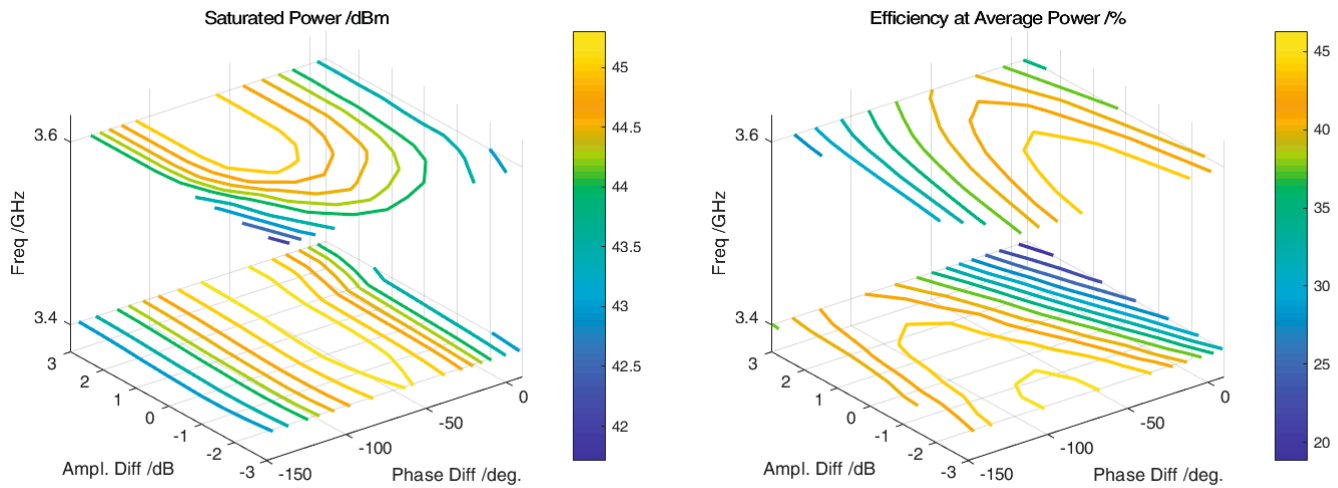
T&M solution

With the R&S®SMW200A dual-path RF vector signal generator, which perfectly addresses the dual-path architecture of the Doherty, and the R&S®FSW signal and spectrum analyzer, you now have the toolkit you need to gain previously inaccessible insight into your design.

By performing a precise, repeatable and automated sweep of the amplifier inputs, you:

- Establish best-case performance of key parameters such as efficiency, linearity and power
- Make an informed choice regarding the best input architecture, especially for fixed RF input split
- Analyze the sensitivity of different design scenarios and understand how your design will perform in series production

Fixed RF split design sensitivity analysis



Explore your design's performance capability, understand the trade-offs, prepare for production.

Application

Running a test campaign while changing the drive signals in the two Doherty paths enables complete amplifier design characterization.

The R&S®SMW200A vector signal generator outputs two signals whose relative linear (amplitude and phase) or non-linear (e.g. shaped) characteristics are varied with precision.

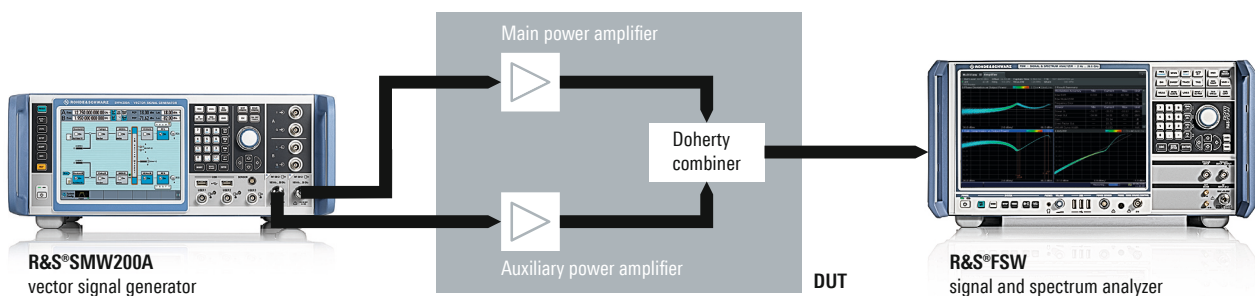
The R&S®FSW signal and spectrum analyzer not only returns scalar quantities such as spectral regrowth and EVM, but also AM/AM and AM/PM, gain and peak envelope power (using the R&S®FSW-K18 option).

This rapidly acquired data provides you with previously invisible insights for a well performing signal split design for dual-path Doherty.

You are assured of the highest possible performance from any set of devices no matter which of the following you use:

- Fixed RF input splitter
- Programmable RF splitter
- Dispersive input splitter
- Dual-input digital Doherty

Dual-input Doherty amplifier test setup with the R&S®SMW200A, the R&S®FSW and the DUT



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