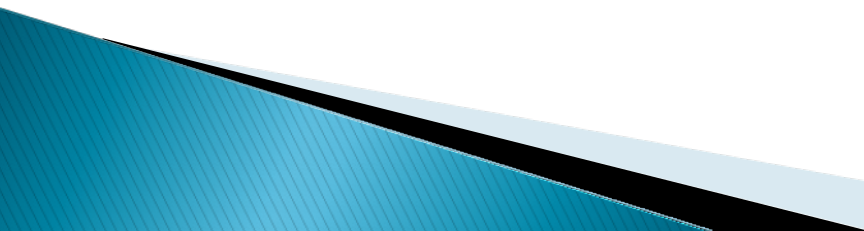


# Basic Concepts in RF and Wireless Performance Testing

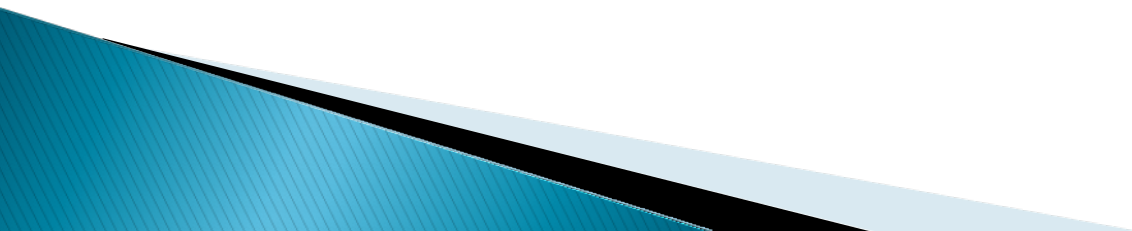
Claudio M. Montiel, Ph. D.



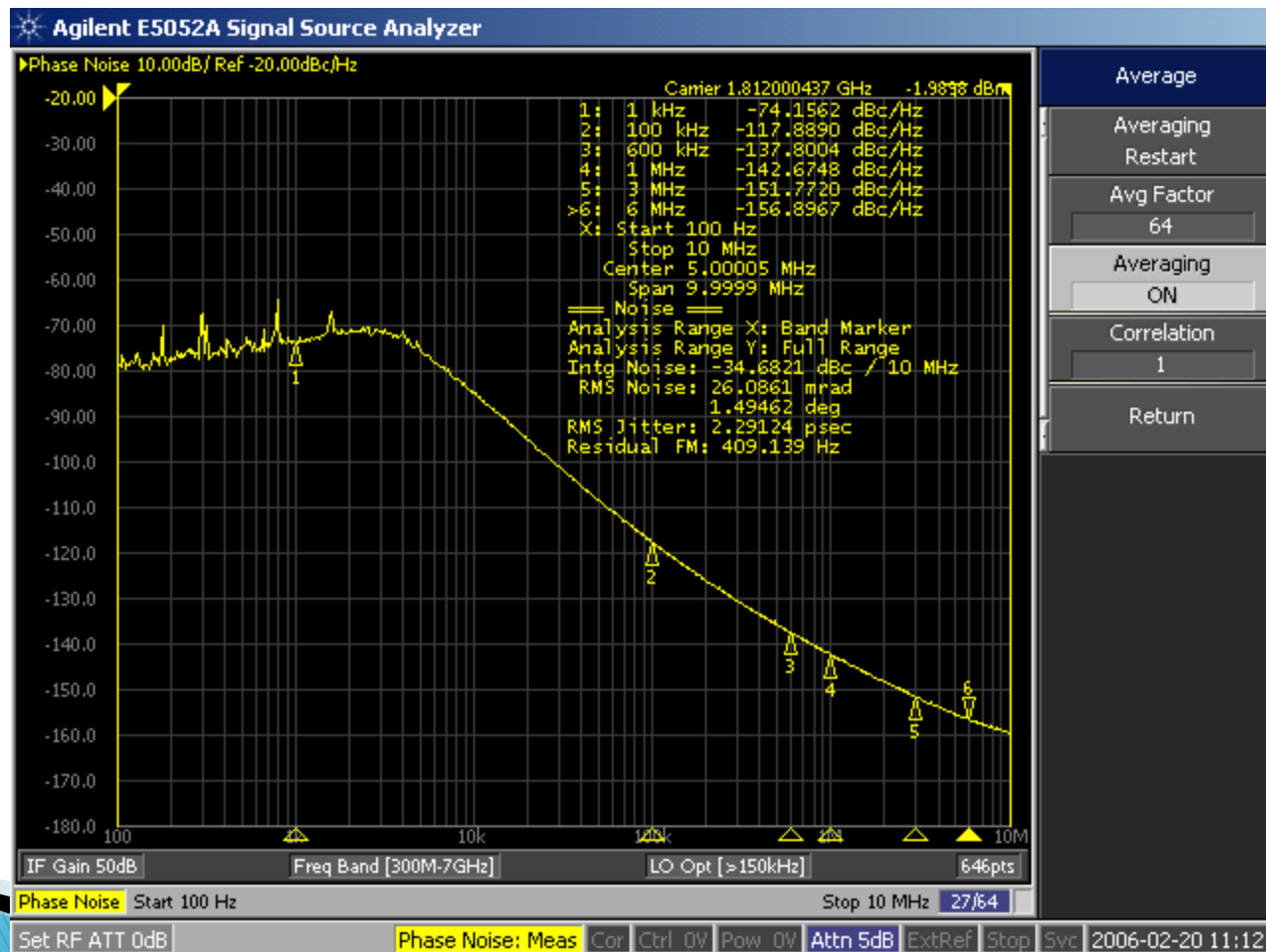
# The module will cover:

- ▶ Overview of Applications
  - ▶ Analog and Digital Radios – A Brief Comparison
  - ▶ System Partition – RF and Baseband
  - ▶ Modulation Considerations
  - ▶ Transceiver Architectures
  - ▶ Transceiver Components
  - ▶ RF and Wireless Performance Testing
  - ▶ Q&A
- 

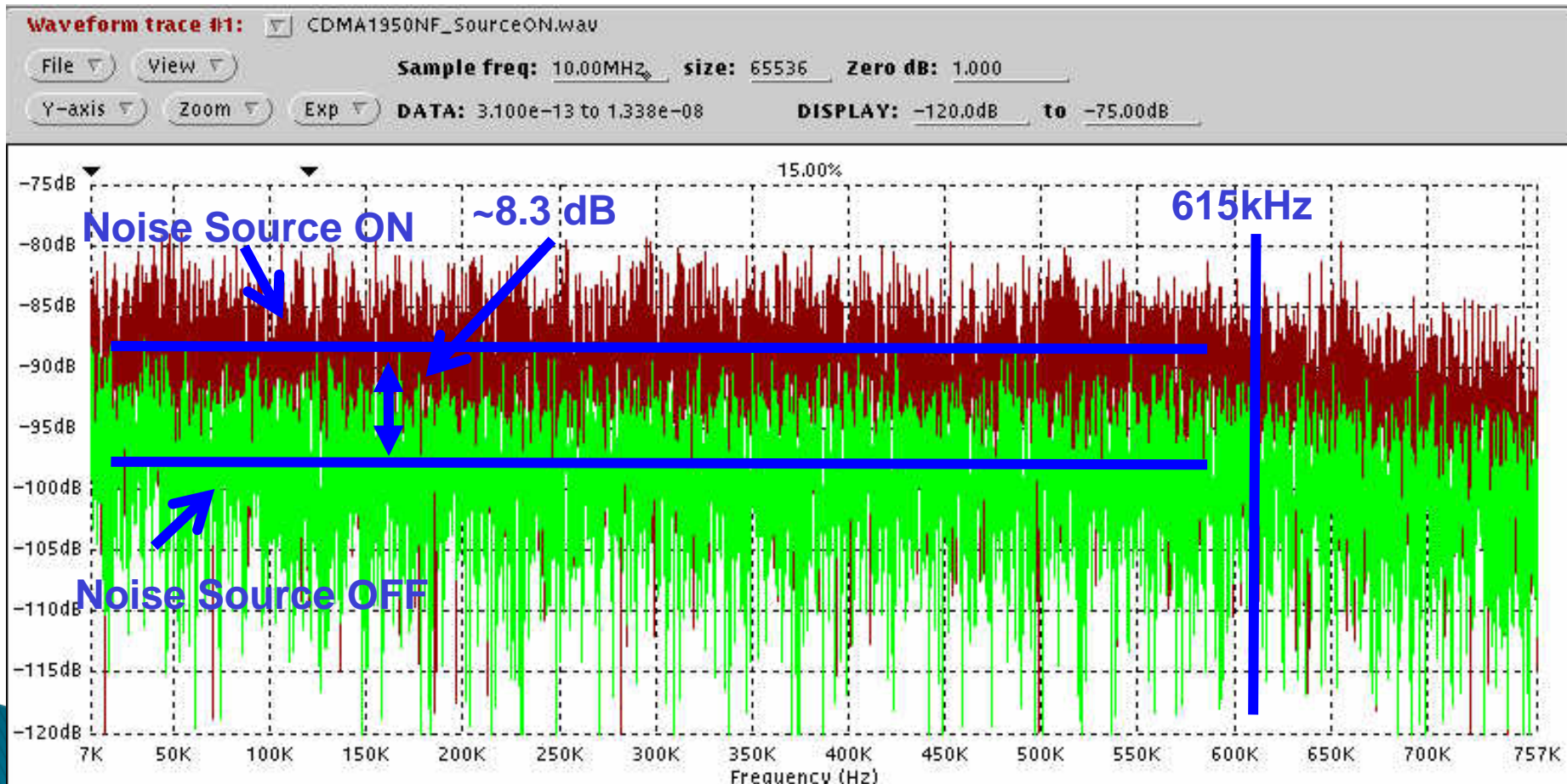
# You will:

- ▶ See how the different blocks are specified and tested.
  - ▶ Understand the difference between device and system specifications.
  - ▶ See sample solutions for different types of RFICs.
  - ▶ Expand your RF knowledge toolbox.
- 

# Sample phase noise measurement on a production ATE DIB for an RF synthesizer (interfaced to bench).



# Sample noise figure measurement on a production ATE DIB for ZIF RF CDMA/WCMA receiver.



Some data are offscale (above or below Y-axis limits)

**What about mismatch loss?**

**NS ENR = 25 dB, Raw DUT NF = 25 - 8.3 = 16.7 dB, after losses DUT NF = 13.5 dB**

# Benefits:

- ▶ Consolidates many scattered topics of RF and Wireless test and measurement into one module.
  - ▶ Provides a handy reference for both new and experienced engineers.
  - ▶ Offers wide applicability to other systems such as GPS, DBS, and radar.
  - ▶ Opportunity to discuss specific or particular issues with an expert in the topic.
- 