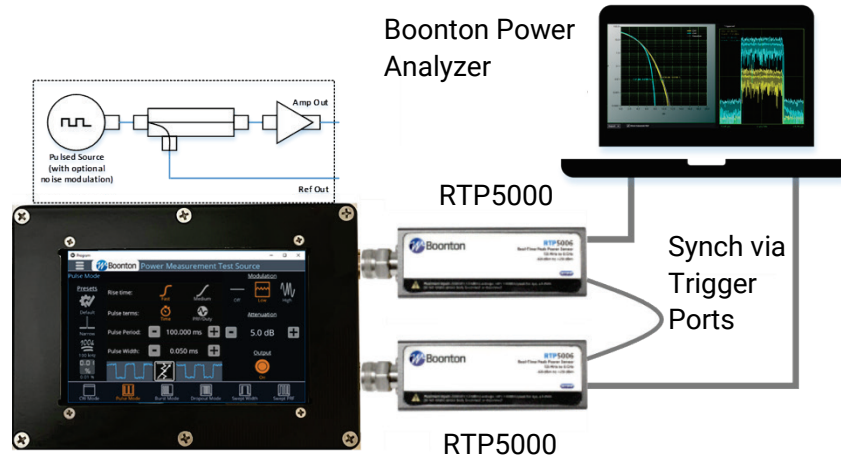
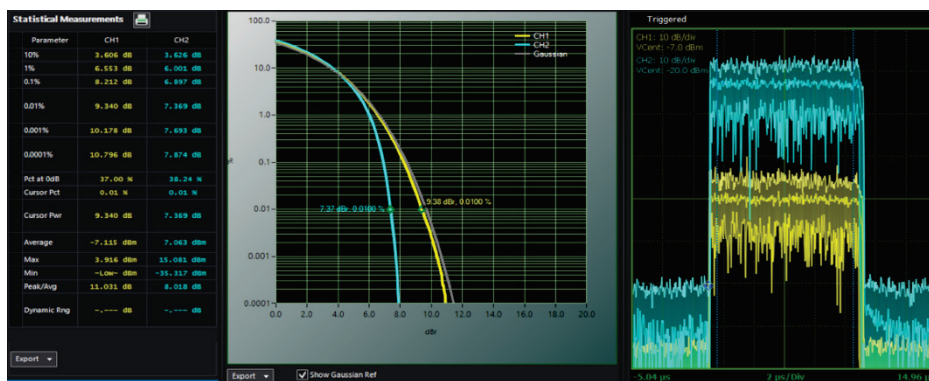


Amplifier Characterization



Demonstration Overview

Modern m-QAM, OFDM systems exhibit high peak-to-average power ratios (PAPR). If the peaks are suppressed due to non-linearities, this may lead to symbol and bit errors. Boonton RTP5000 Series USB real-time peak power sensors can show crest factor and complementary cumulative distribution function (CCDF) curves which show the probability of exceeding a range of PAPR levels. In this demonstration, the RTP5000 sensors are measuring the CCDF at the input and output of an amplifier in compression. Comparing the CCDF curves at input and output gives a clear way to show the impact of amplifier nonlinearity on signal distortion. The RTP5000 sensors have industry leading performance with video bandwidth of up to 195 MHz, rise time as fast as 3 ns, time resolution as fine as 100 ps, and measurements speed of 100,000 measurements per second. With models up to 40 GHz the RTP5000 is a great solution for characterization of amplifiers used in Wi-Fi, 5G cellular, satcom, and radar applications.



Input and output statistical results

Input and output CCDF curves

Input and output time domain profile

Target Users for Amplifier Characterization

Target users include design engineers and technicians engaged in design, verification, and troubleshooting of RF and microwave amplifiers used in radar and communications applications.

Product Overviews

RTP5000 Real-time Peak Power Sensors to 40 GHz

The Boonton RTP5000 Real-time Peak USB Power Sensors address challenges faced by engineers and technicians who design, verify, and maintain systems utilizing pulsed signals. The RTP5000 Series incorporates Real-time Power Processing™ and offers faster rise times, better time resolution, the fastest measurements, and a complementary simple, intuitive, and powerful graphical user interface.

KEY FEATURES AND SPECIFICATIONS:

- Accurate pulse measurements
- Industry widest video bandwidth of 195 MHz
- Fastest rise time of 3 ns and finest resolution of 100 ps
- Crest factor, CCDF, and statistical measurements
- Synchronized multi-channel measurements

Boonton Power Analyzer Software

The Boonton Power Analyzer is a Windows-based software package that provides control and readout of the Boonton RTP5000 and RTP4000 series power sensors. It is an easy-to-use program that provides time-domain and CCDF views of RF waveforms with variable peak hold and persistence views. Power measurements are supported using automated pulse and statistical measurements, power level and timing markers.

KEY FEATURES AND SPECIFICATIONS:

- Automated pulse and marker measurements
- Crest factor, CCDF, and statistical measurements
- Multiple pulse measurements

PMX40 RF Power Meter

The PMX40, compatible with Boonton RTP5000 and RTP4000 series power sensors, provides design engineers and technicians the utility of traditional benchtop instrument, the flexibility and performance of modern USB RF power sensors, and the simplicity of a multi-touch display built with Boonton award-winning technology.

KEY FEATURES AND SPECIFICATIONS:

- Frequency range from 4 kHz to 40 GHz
- Industry-leading 100,000 measurements per second
- Synchronous multi-channel measurements (up to 4 channels)
- Sensors can be used as standalone instruments

Company Overview

Boonton

Boonton Electronics is a leader in high-performance RF and microwave test equipment for radar, avionics, electronic warfare, satellite and wireless communications, and EMI/EMC applications.

Resources for More Information

Visit info.wtcom.com/ims-2023 to learn more about T&M solutions from Boonton.

