802.11ac Real-Time Power Measurements using USB Power Sensor

Capture all the details of your WiFi signal in real time

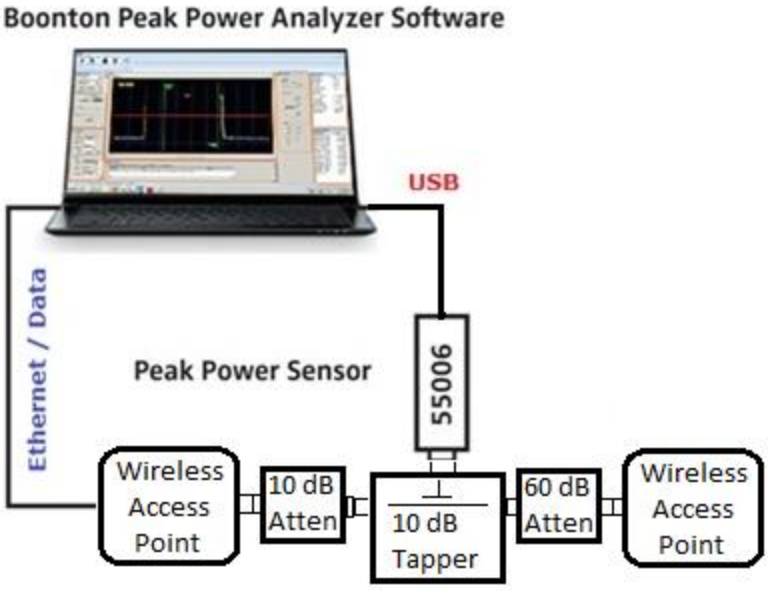
Boonton 55 Series USB Peak Power Sensor Demonstration

Demo: Show gated time domain power measurement capabilities of Boonton 55 series USB Peak Power sensor powered by **Real Time Power Processing™**

Target Users:

- R&D, hardware design, systems, field and manufacturing engineers working with burst signals such as WiFi and LTE-TDD and pulsed RADAR signals.
- Easy to use user interface provides time domain power measurements as well as statistical analysis using gated CCDF. Crest factor measurement of a frame or any segment of an 802.11ac or LTE-TDD signal. Time domain marker measurements including average and peak power measurements as well as pulse characteristics such as overshoot, droop, risetime and intermittent behavior.

Test Set-up:



About 55 Series Wideband USB Peak Power Sensor & Real Time Power Processing™:

Key benefits of the Boonton 55 Series wideband USB peak power sensor is the processing power and real-time signal acquisition featuring **NO GAPS** in acquired data.

- Data buffer capabilities provides real-time average, max and min power levels of each Wi-Fi burst or pulsed RADAR signal making ideal for compliance testing and logging.
- 195 MHz VBW supports 160 MHz 802.11ac and LTE signals
- 100 MSamples/second SUSTAINED sample rate – world's fastest!
- 10 GSamples/second effective sample rate for repetitive signals (superior resolution)
- Capture and analyze data 100x faster than conventional power sensors
- Real-time "video" display update rate versus a series of "snapshots"

Measuring WiFi with Real-Time Power Processing™ USB peak power analyzer:

Two 802.11 Wireless Access Point (WAP) radios are linked via a coaxial cable and attenuators for pathloss. Transmit signal of one of the WiFi radios is tapped of and monitored by 55006 Real Time USB peak power sensor. Boonton's renowned trigger stability, waveform fidelity and superior high video bandwidth added to the **Real Time Power Processing™** feature captures every detail of the WiFi signal without missing a pulse or a glitch.

Fig.1: Preamble, training sequence and data burst of the WiFi signal

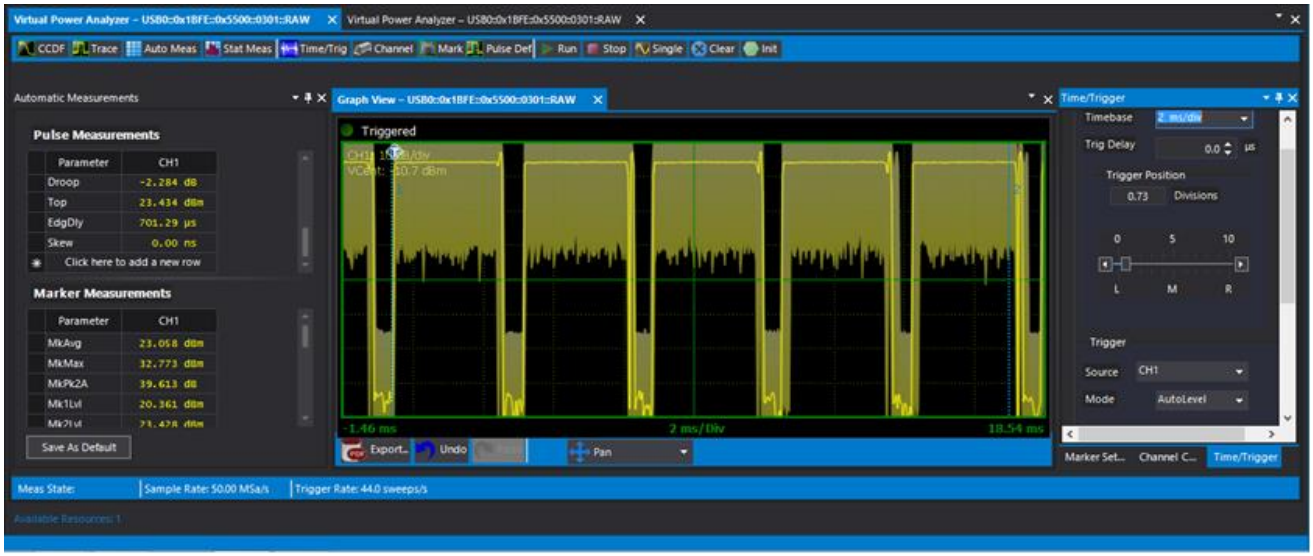


Fig.2: Measuring average and peak power over a marker interval (trace envelope enabled)

Existing and Comparable Products:

- ✓ Replace systems that require crystal detector, a digital oscilloscope, a spectrum analyzer, an average power meter, and assorted connectors & couplings to monitor a single output.
- ✓ Multi sensor configuration enables simultaneous measurements of forward & reflected power (**Return Loss**), and amplifier input & output (**Gain**).

More Resources:

Visit the official Boonton website www.boonton.com or use the QR code below to find out more about USB Power Sensors, Peak Power Meters, Application Notes and White Papers.