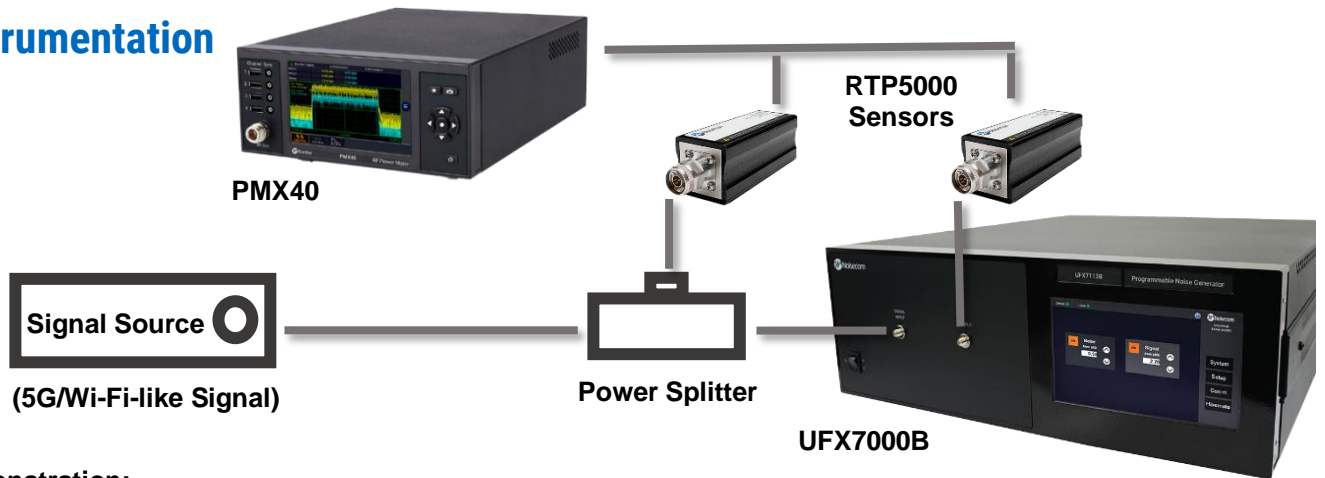


Noisecom UFX7000B Programmable AWGN Generator And Boonton RF Power Measurement Instrumentation

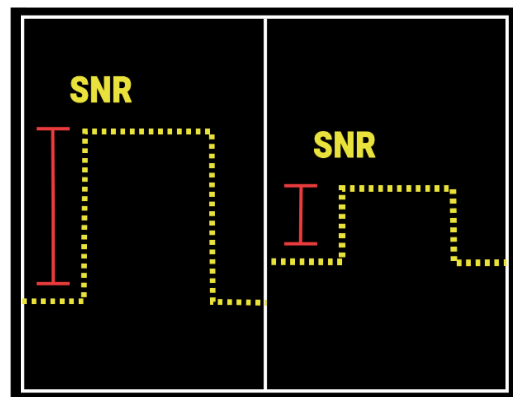


Demonstration:

Applications demanding increased data rates and operating frequencies need to contend with rising noise floors due to the influx of communications sources (5G, Wi-Fi, satellite, etc.). It is, therefore, vital to measure the robustness of communications devices and understand their tolerance to noise. The signal-to-noise ratio (SNR) and carrier-to-noise ratio (C/N) can **quantify a system's response to interference**, enabling insight into its ability to operate in real-world conditions. Noisecom showcases how controlled additive white Gaussian noise (AWGN) generation can ensure the performance designed in the lab is realized in the field.

The demonstration first monitors the 5G/Wi-Fi output from a signal source with a **Boonton RTP5000 Series Real-time USB Peak Power Sensor**. The signal is then fed into the **Noisecom UFX7000B Programmable AWGN Generator**, which enables manipulation of the carrier signal and noise floor in 0.1 dB steps over a 127 dB dynamic range. An RTP5000 Series sensor captures the UFX7000B output and **measures SNR and CNR accurately at rapid speeds**.

The RTP5000 Series sensors connect to the **Boonton PMX40 Benchtop RF Power Meter**, which provides benchtop utility, USB sensor flexibility, and touch screen simplicity. Among its various measurement modes, the PMX40 offers statistical measurement capability and analysis of fast-rising pulses. Providing the ultimate versatility, the PMX40 sensors can be disconnected and independently used as standalone instruments.



Precision Carrier and Noise
Manipulation

Target Users:

Users include design engineers and production automated test engineers working with wireless communications systems, satellite networks, and radar systems that need to test how broadband noise impacts operation. For tight rackmount systems, the **Noisecom RFX7000B Programmable AWGN Generator** offers a compact form factor solution.

Product Overview:**UFX7000B Programmable AWGN Generator:**

The Noisecom UFX7000B has a powerful single board computer with a flexible architecture used to create complex custom noise signals for advanced test systems. Offering both remote and manual control capabilities, the instrument's precision components provide high output power with superior flatness while the flexible architecture allows control of multiple attenuators, switches, and filter banks.

Key Specifications and Features:

- Output power up to +30 dBm
- 127 dB of attenuation; 1 dB step size (optional 0.1 dB step size)
- Highly customizable to fit a variety of design needs

RTP5000 Series Real-time USB Peak Power Sensors:

Boonton RTP5000 Series sensors utilize Real-time Power Processing™ technology to deliver the fastest measurement rate of 100,000 measurements per second with zero latency or gaps in acquisition. Its superior performance also includes 3 nanosecond rise times, 195 MHz of video bandwidth, and 100 picosecond time resolution.

Key Specifications and Features:

- Accurate automated pulse measurements
- Crest factor, CCDF, and statistical measurements
- Synchronized multi-channel measurements

PMX40 RF Power Meter:

The Boonton PMX40 combines the utility of a traditional benchtop instrument, the flexibility and performance of modern USB RF power sensors, and the simplicity of a multi-touch display. It utilizes high-performance USB RF power sensors, which provide industry-leading performance and capabilities either independently or for synchronized multi-channel measurements of CW, modulated, and pulsed signals.

Key Specifications and Features:

- Capture, display, and analyze peak and average power
- Frequency range: 4 kHz to 40 GHz
- Sensors can be used as standalone instruments

About Noisecom:

Noisecom is a leader of RF and microwave noise sources for signal jamming and impairment, reference level comparison and calibration, receiver robustness testing, and jitter injection. Noisecom products are customizable to meet the unique needs of challenging applications and can be designed for high power, high crest factor, and specific filter responses with a wide selection of input and output options.

About Boonton Electronics:

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. Boonton products enable a wide range of RF signal generation, power measurement, and signal analysis for RF product design, production, maintenance, and system integration.

More Resources:

- **UFX7000B:** <https://noisecom.com/products/instruments/ufx7000b-programmable-noise-generator>
- **RTP5000:** <https://boonton.com/rtp>
- **PMX40:** <https://boonton.com/pmx40>