Electronic Warfare and Counter-UAS Testing with Broadband Noise Generation

Electronic warfare (EW) and counter-UAS systems use RF and microwave technologies to detect, track, disrupt, and disable threats. Radar supports target detection and tracking, while electronic countermeasures use techniques such as noise jamming to disrupt RF communications and GNSS signals. High-power microwave (HPM) systems generate powerful electromagnetic energy to neutralize electronics within its beam footprint.

Maury Microwave provides laboratory test and measurement solutions for characterizing RF signal chains used in EW systems. HSM signal sources provide controlled CW and pulsed RF signals, while UFX7000B/RFX7000B programmable noise generators provide controlled noise and interference. RF power amplifiers amplify these signals to the required test levels, and RTP5000 series peak power sensors and the 4500C peak power analyzer characterize signal performance, including power, pulse timing, rise/fall time, and waveform shape. These capabilities can also support the evaluation of receiver sensitivity and performance under controlled interference.

Maury also provides solutions that support the validation of EW and counter-UAS applications and can be integrated into field-deployed systems. UFX7000B/RFX7000B programmable noise generators combined with MPA series amplifiers provide controlled interference signals for validating applications such as noise jamming, RF link denial, and GNSS interference. For field-deployed systems, noise diodes and modules provide compact noise-generation capabilities, HSM sources provide fast-switching CW or pulsed RF signals, and compact pulsed power amplifiers provide high-performance amplification as integrated system building blocks.

At EuMW 2026, Maury will highlight solutions spanning both areas, from laboratory TX/RX component and signal characterization to RF technologies for integration into EW and counter-UAS systems.

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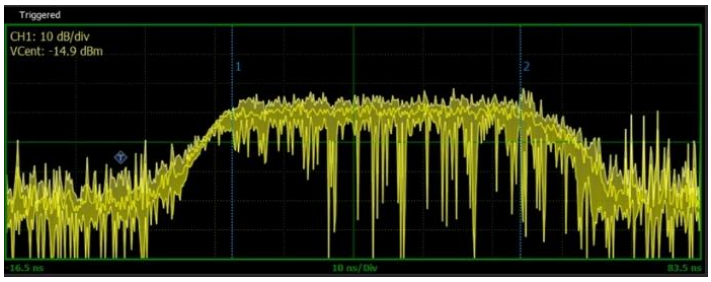
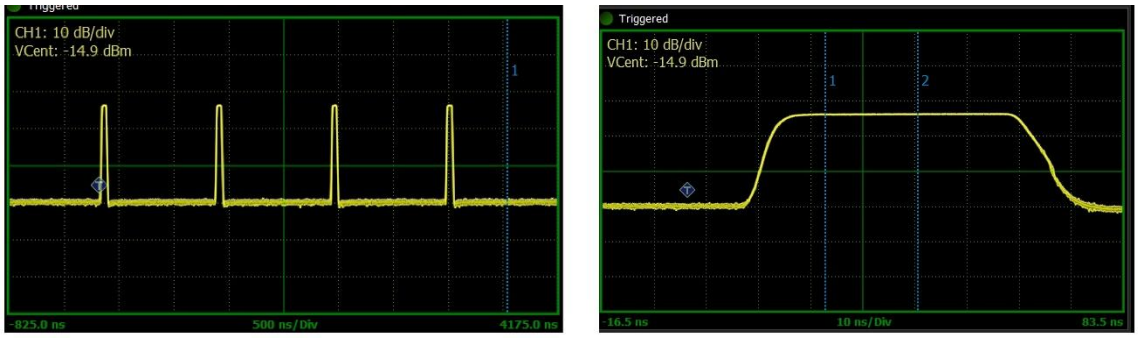
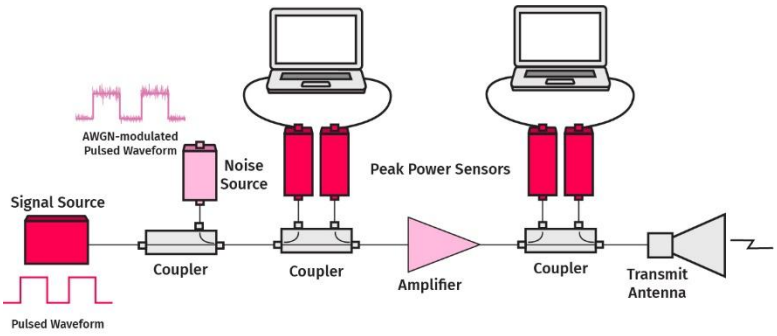
EW and Counter-UAS Application Examples



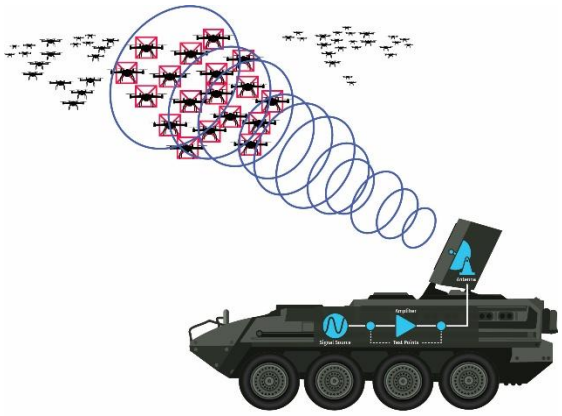
Maury noise generation solutions create controlled noise-modulated HPM pulses, such as this example with 40 MHz AWGN and a 10 dB crest factor.



Maury peak power measurement solutions characterize HPM pulse performance, shown here capturing 1.3 dBm peak power, -20.5 dBm average power, +952 kHz PRF, 1 µs period, and 4.6% duty cycle of a pulse train (left) as well as narrowing in on a single pulse (right) with a 5.3 ns rise time.



In this HPM transmit chain example, Maury solutions generate pulsed and noise-modulated waveforms, amplify the resulting signal, and characterize power and signal fidelity.



Maury HPM solutions support RF signal chain R&D for counter-USA applications designed to neutralize drone swarms.

Target Users

Target users include RF and microwave engineers, system designers, and integrators developing and testing counter-UAS systems.

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Product Overview

UFX7000B Programmable Noise Generator

The UFX7000B broadband AWGN generator has a powerful single board computer with a flexible architecture used to create complex custom noise signals for advanced test systems. This versatile platform allows the user to meet their most challenging design requirements. Precision components provide high output power with superior flatness, and the flexible computer architecture allows control of multiple attenuators, switches, and filter banks.

KEY SPECIFICATIONS AND FEATURES:

- Output power up to +30 dBm
- 127 dB of attenuation; 0.1 dB step size
- Units > 2 GHz have total attenuation of 79.9 dB
- Low distortion signal path; Power 115 VAC, 60 Hz

NC3000 Series Calibrated Coaxial Noise Sources

The NC3000 Series calibrated coaxial AWGN sources are well suited for receiver testing, noise figure measurements, or applications that require broadband noise and fast switching times. Several models include output isolators, and voltage regulators that provide excellent stability over varying temperature and voltage ranges.

- Excellent temperature and voltage stability
- Units for noise figure meters feature 15.5-dB ± 0.75 dB ENR output
- High-output units for radar and satcom feature output between 26 and 35 dB ± 1 dB ENR

Broadband and High-Power Solid-State Power Amplifiers

Built on advanced solid-state technology, the MPA series amplifiers provide excellent linearity, low distortion, and stable output power, making them well suited for demanding research, test, and communications applications. The solid-state architecture enhances durability, reduces maintenance, and ensures consistent performance during continuous operation. Maury offers extensive customization to meet the integration requirements of aerospace and defense (A&D) applications.

KEY SPECIFICATIONS AND FEATURES:

- State-of-the-art solid-state GaN PAs
- Broadband design for modulated signals
- Psat from 10W to KW; Integrated protection circuitry and coupler
- Remote control; TTL and LVTTL options enabling fast T_rise and T_fall (20ns)

More Resources

Visit maurymw.com/info/eumw-2026 to learn more about Maury Microwave solutions.

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