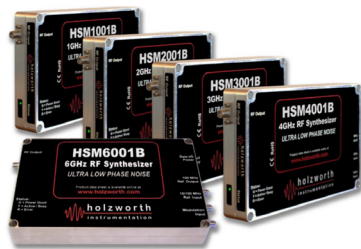
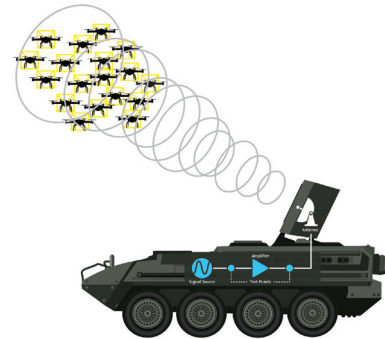


# Maury Microwave Solutions for Directed Energy Weapons

Maury Microwave delivers advanced RF and microwave solutions for directed energy weapons, from high-power microwaves (HPM) to high-energy lasers (HEL). Spanning signal generation, amplification, power measurement, and spreading laser coherence, these solutions enable accurate design, validation, and deployment of mission-ready directed energy systems.

## High-power microwaves

HPM systems generate and radiate electromagnetic energy to neutralize targets within the beam footprint. As these platforms advance across air, ground, and naval applications, optimizing the underlying RF signal chain is critical. Maury solutions support and accelerate RF signal chain R&D, strengthening mission-critical performance and readiness against evolving threats.



## Signal Generation: HSM Modules

Generate low-phase noise waveforms with clean leading edges using high-performance RF synthesizers. Solutions support both CW and pulsed operation, while phase control enables multi-channel configurations for constructive pulse alignment at the target. High amplitude ensures repeatable testing, and fast frequency switching supports frequency-agile system development across mission-relevant bands.



## AWGN Modulation: Noise Sources

Adding controlled additive white Gaussian noise (AWGN) to short, fast-rise-time HPM pulses increases crest factor, generating high instantaneous peaks that effectively stress and damage target circuits. Noise modules and benchtop noise sources provide precise control of noise levels and bandwidth to achieve the required waveform characteristics.



## Amplification: MPA Series

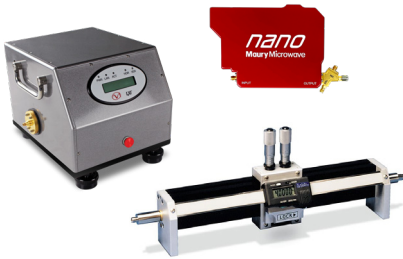
Driver-level amplifiers evaluate circuit susceptibility and analyze waveform behavior without requiring full-scale power output and can be used in a multi-stage amplification architecture. Wide frequency coverage ensures fast rise times and short pulse widths are faithfully replicated, while high linearity prevents the clipping of the highest power peaks in AWGN-modulated waveforms.

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## Power Measurements: RTP5000 Series

Real-time peak power sensors are critical in measuring amplifier performance, antenna radiating power, received power, and field effectiveness, while supporting device hardening tests and determining phase alignment in multi-source antenna configurations. The RTP5000 series provides 3 ns rise times, 100,000 measurements per second, fine 100 ps time resolution, and CCDF statistical analysis.

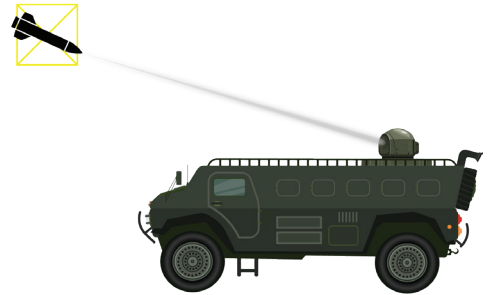


## Device Characterization: Impedance Tuners

Using impedance tuners, load pull measurement allows engineers to expose DUTs to a range of impedances, uncovering how performance metrics like power, gain, efficiency, and linearity change as the load deviates from 50  $\Omega$ . From this data, designers are able to determine maximum deliverable power and ideal operating regions.

## High-energy lasers

HEL systems use highly focused energy to destroy long-range targets with accuracy. Combining multiple laser modules into a single beam to reach required power levels can introduce Stimulated Brillouin Scattering (SBS), leading to high return loss and reflections that damage laser sources. Maury noise sources can spread laser coherence and mitigate SBS effects during system design and deployment.



## SBS Reduction in Product Development: UFX7000B Series

The UFX7000B provides a high level of noise control by providing variable attenuation, filtering, and amplification, enabling a broad range of noise generation capabilities for design validation and determining the exact noise output for any laser system requirement.



## SBS Reduction in System Deployment: NC1000 Series

Producing AWGN up to +13 dBm in a compact, low-cost form factor, the NC1000 amplified noise module delivers the exact noise signal at the required power level and frequency bands for deployed laser systems.

