



IMS 2026 Product Demonstrations

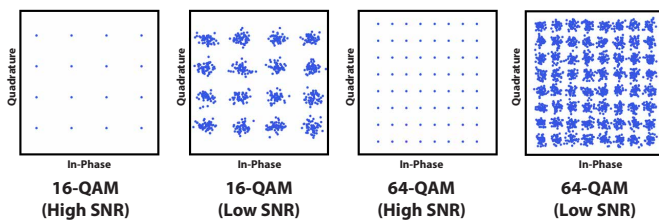
Booths #16027/16028



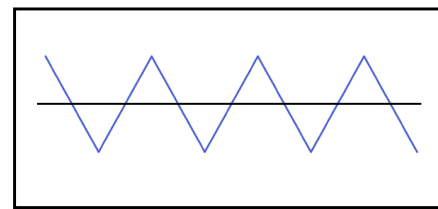
5G NTN Satellite Link Emulation: Payload and Free Space Impairment Effects

Satellite communication links are affected by channel noise that can degrade signal quality and system performance. This noise may be caused by thermal variation in system components, electromagnetic interference, or adjacent channel crosstalk from other satellite transmitter signals. Crosstalk signals occur as either random interference or intentional jamming. These effects degrade the signal-to-noise ratio (SNR) and must be accurately emulated to test and optimize satellite links.

In this demonstration, the Maury Microwave ACE9000 Advanced Channel Emulator with the AWGN option dynamically adds noise to a digitally modulated I/Q waveform to emulate changing link conditions. A digital QAM signal generated by a VSG is passed through the ACE9000 where an AWGN profile is applied, modulated by a triangular noise pattern. As the noise level changes, the constellation points observed on the VSA spread out and smear around ideal symbol positioning, illustrating how variations in SNR impact signal quality between a ground station transmitter and satellite receiver.

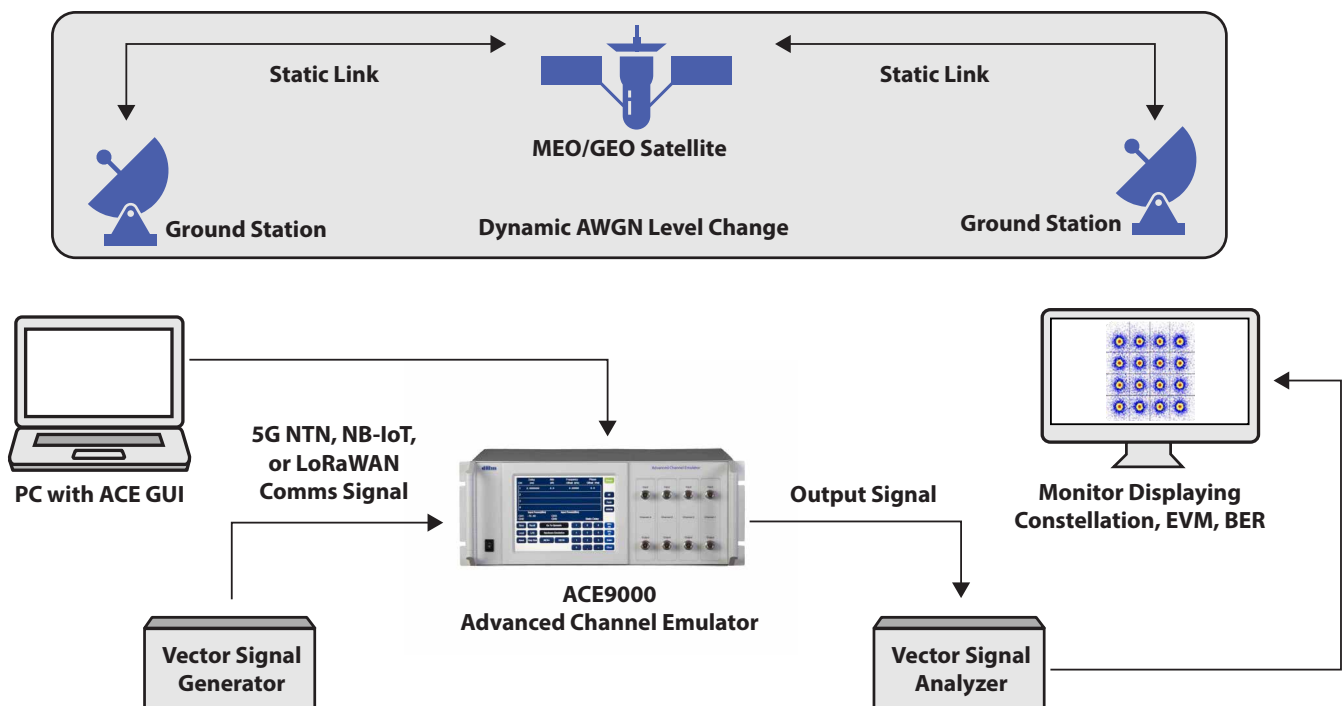


Effect of AWGN on 16-QAM and 64-QAM constellations.



Triangular noise profile to vary SNR.

Demo Setup



Target Users

Target users include design engineers and system integrators working on satellite communications systems and NTN.

Product Overview

ACE9000 Advanced Channel Emulator

The ACE9000 Advanced Channel Emulator (ACE) is the most advanced non-terrestrial RF channel emulation solution to date. The emulated impairments include delay, signal Doppler, attenuation, phase offset, AWGN, frequency hopping, payload, and multipath fading. The instrument can house up to four 600 MHz instantaneous bandwidth channels. Impairment emulation can be set to fixed values in Static Mode or continuously changed in real time in Dynamic Mode without any phase discontinuities.



Key Specifications and Features

- > 600 MHz of instantaneous bandwidth per channel
- > Timing synchronization up to 16 channels
- > Link emulation including:
 - > Phase continuous delay, Doppler, and attenuation changes
 - > AWGN and Eb/No
 - > 12 tap (path) multipath fading with Rayleigh, Rician, and CW. Angle of Arrival (AOA), k-factor, and correlation controls
 - > RF frequency-agile up/down converters
- > Payload emulation including:
 - > IMUX/OMUX amplitude and group delay distortion
 - > Amplifier compression (AM/AM and AM/PM)
 - > Phase noise
- > Static and dynamic link emulation
- > Ephemeris data generation using SATGEN
- > Remote instrument control through ACE Client application

ACE Client GUI Application

The ACE Client GUI is a comprehensive application that enables the remote control of all ACE functions, graphically displays impairment file contents, and provides wizards for creating custom profiles for payload impairments. The ACE Client GUI also enables signal capture, which generates both time and frequency domain plots of the excitation signal and the output signal after the application of impairments.

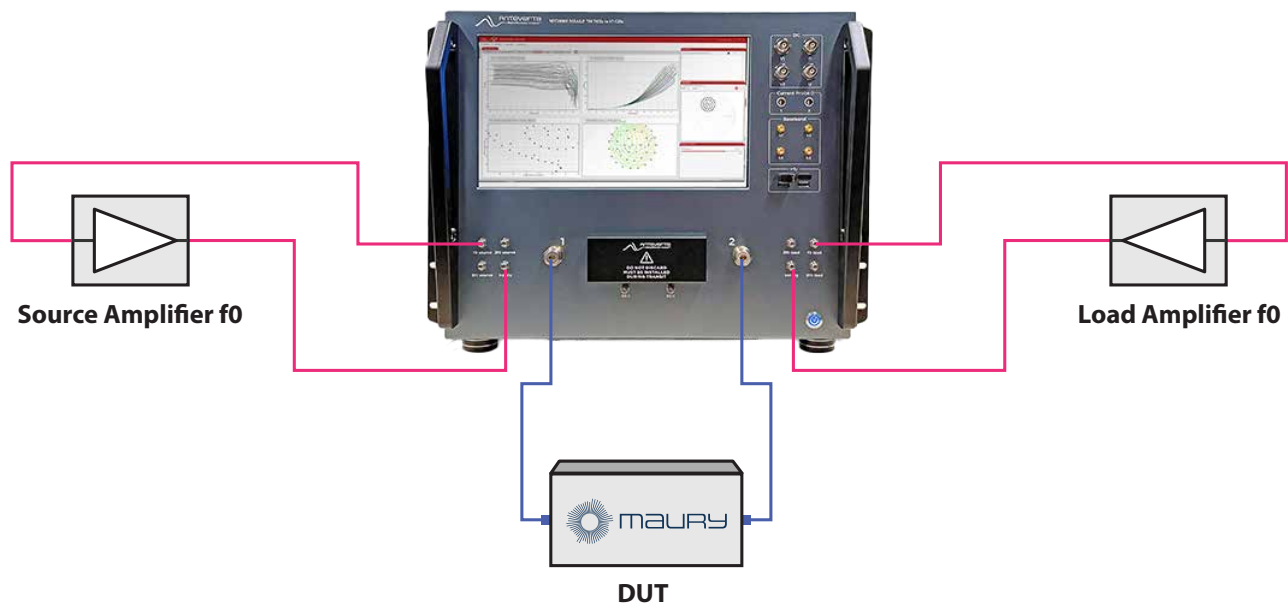
5G/6G Enablement Through Double RF Pulse & Wideband Impedance Characterization

With the growing importance of wireless applications and increasing use of high data rate protocols, optimizing the linearity and efficiency of amplifiers has become crucial. Traditional large-signal characterization test benches based on passive Load Pull face significant challenges. Losses and electrical delay from tuners, cables, and probes constrain the system, limiting the reflection coefficient that can be provided to the DUT.

This demonstration performs Load Pull on a partially matched driver amplifier module (~20 dBm output power) using the Maury Microwave MT2000 mixed-signal active Load Pull system. It will showcase fundamental frequency Load Pull using Single-Tone, Double Pulse, Two-Tone, and Modulated Signals under multiple impedance states and a wide power sweep. All impedances over the modulated bandwidth of 2000 MHz are set to a single impedance state.

The MT2000 can perform Load Pull at high speeds, supporting up to 1000 impedance and power states per minute with no limitation on Smith chart coverage. This turnkey solution provides wideband impedance control for modulated signals across the system's modulation bandwidth. It employs automatic and user-defined signal pre-distortion to generate a clean modulated signal at the DUT reference plane and can enforce a single, consistent impedance state across the entire modulated bandwidth without phase skew. Standard measurement metrics include adjacent channel power ratio (ACPR), error vector magnitude (EVM), peak-to-average ratio (PAR), and spectral mask compliance.

Demo Setup



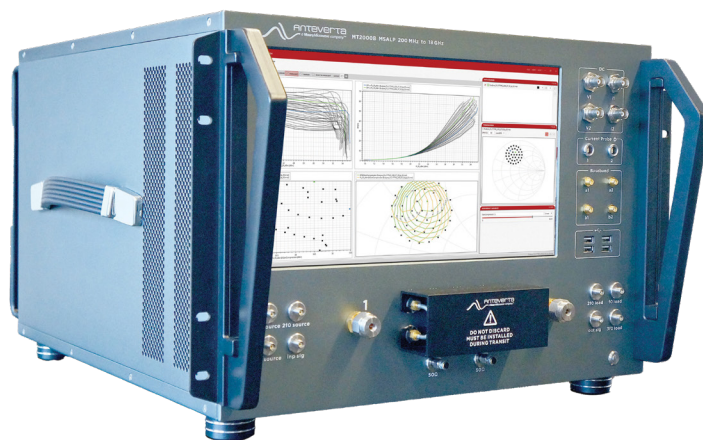
Target Users

Target users include designers of wireless and microwave systems, antennas, and semiconductor devices engaged in technology development, compact model device extraction and validation, and design activities with specific needs related to advanced, high-speed, wideband communications systems.

Product Overview

MT2000 Mixed-Signal Active Load Pull System

The MT2000 is a turnkey one-box Load Pull solution that replaces the functions typically performed by passive fundamental and harmonic impedance tuners, VNAs, NVNAs, analog signal generators, vector signal generators, vector signal analyzers, and oscilloscopes. Moreover, the solution adds the capabilities of high-speed Load Pull measurements and wideband impedance control for modulated signals. By combining multiple bench setups into a single box, offering unrivaled Load Pull speeds, and maximizing Smith chart coverage, the MT2000 is a powerhouse for device characterization, validation of nonlinear compact models, and extracting nonlinear behavioral models.



Key Specifications and Features

Performs Load Pull at high speeds of up to 1000 impedance/power states per minute with limitation-free Smith chart coverage under the following conditions:

- > Single-Tone CW and pulsed-CW RF signal
- > DC and pulsed-DC bias
- > Time-Domain NVNA voltage and current waveforms and load lines
- > Fundamental and harmonic impedance control on the source and/or load
- > Frequencies between 1 MHz and 67 GHz

High-speed Load Pull with high magnitudes of reflection coefficients ideal for:

- > Reducing time-to-market due to faster measurement speeds
- > Eliminating bottlenecks associated with traditional passive mechanical Load Pull systems without compromising accuracy
- > Validating nonlinear compact models
- > Extracting nonlinear behavioral models
- > R&D, design validation test, and on-wafer production test

Wideband impedance control of up to 2000 MHz bandwidth at the fundamental, harmonic, and baseband frequencies and is optimal for:

- > Using ACPR/EVM measurement data in the design of wideband PA circuits
- > Improving PA linearity based on controlled baseband terminations
- > Evaluating the performance of a DUT under realistic antenna load conditions and different matching network topologies

Products on Display Enabling Advanced 5G/6G Applications

Maury Microwave solutions on display for advanced 5G and 6G applications support critical characterization and system testing requirements. Noise conditioning modules improve noise parameter measurement accuracy, while broadband noise sources provide controlled additive white Gaussian noise (AWGN) generation for evaluating performance under realistic impairment conditions.

Product Overview

Noise Conditioning Modules

Maury Noise Receiver Modules (NRMs) and Noise Switching Modules (NSMs) enhance noise parameter measurement system accuracy for advanced RF and millimeter-wave device characterization applications. As 5G and 6G systems continue moving into higher frequencies and wider bandwidths, accurate characterization becomes increasingly important for device modeling and validation.

Noise Receiver Modules

MT7553-series coaxial NRMs integrate the entire output network of a typical noise parameter measurement system into a turnkey solution incorporating wideband LNAs, RF switching between VNA and NFA paths, and wideband bias tees for DUT biasing. Coaxial models support standalone Noise Analyzers or combined VNA/NFA systems. An NRM with an integrated downconverter module may be used when the NFA does not match the noise parameter frequency of interest, translating higher-frequency RF signals to intermediate frequencies directly measurable by lower-frequency NFAs.

MT7553M-series waveguide NRMs are designed for full millimeter-wave noise parameter measurements within the TE₁₀ waveguide band of operation and downconvert noise power densities from the frequency of interest to the NFA bandwidth using a double-sideband swept LO technique. Models are available covering 50–75 GHz (WR15), 60–90 GHz (WR12), and 75–100 GHz (WR10).

Noise Switching Modules

MT7553N-series NSMs integrate the entire input network of a typical noise parameter measurement system into a turnkey solution. These NSMs incorporate RF switching between the VNA and noise source paths along with wideband bias tees to provide DUT biasing. Models are available covering 0.1 GHz–26.5 GHz, 0.1 GHz–50 GHz, and 0.1 GHz–65 GHz.



Additive White Gaussian Noise Sources

Maury noise sources, from amplitude noise modules to noise diodes, provide AWGN generation for RF and millimeter-wave test applications. The higher bandwidths, higher frequencies, and complex modulation schemes of 5G/6G applications necessitates controlled noise generation for evaluating receiver sensitivity, BER, SNR, and performance under real-world impairment conditions.

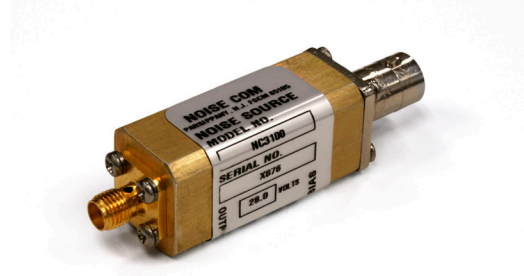
NC1000

NC1000 Series amplified noise modules produce AWGN as high as +13 dBm with bandwidths up to 18 GHz. The high-power modules are designed for noise immunity testing, secure communications, and signal impairment applications, while the lower-power modules serve as random jitter sources for applications including BER and high-speed digital testing. Bandwidth, output power, and flatness can be modified for specific application requirements, and optional TTL-controlled attenuation enables dynamic noise control during testing.



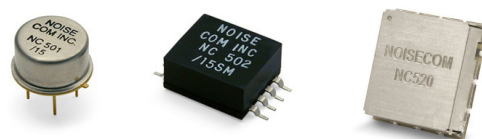
NC3000

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. The NC3000 Series includes the NC3100 units with 15 dB ENR output for noise-figure meters, and the NC3200 Series high-output noise sources with outputs between 26 and 35 dB ENR for radar and satellite communications system testing.



Diodes

Noise diodes and noise modules provide the foundational building blocks for broadband AWGN generation and signal impairment applications. Designed for flat spectral response, stable output characteristics, and flexible integration into analog and RF systems, these components support applications ranging from BER and signal integrity testing to emerging 5G/6G wireless validation and receiver stress testing.



See What Else We're Showcasing

Additional solutions on display include real-time RF power sensors, calibrated noise sources and noise diodes, RF signal generators and synthesizers, calibration kits, and precision interconnect solutions – all supporting the design and development of next-generation wireless systems.

Signal Integrity Test Confidence Achieved Through Cable Superiority

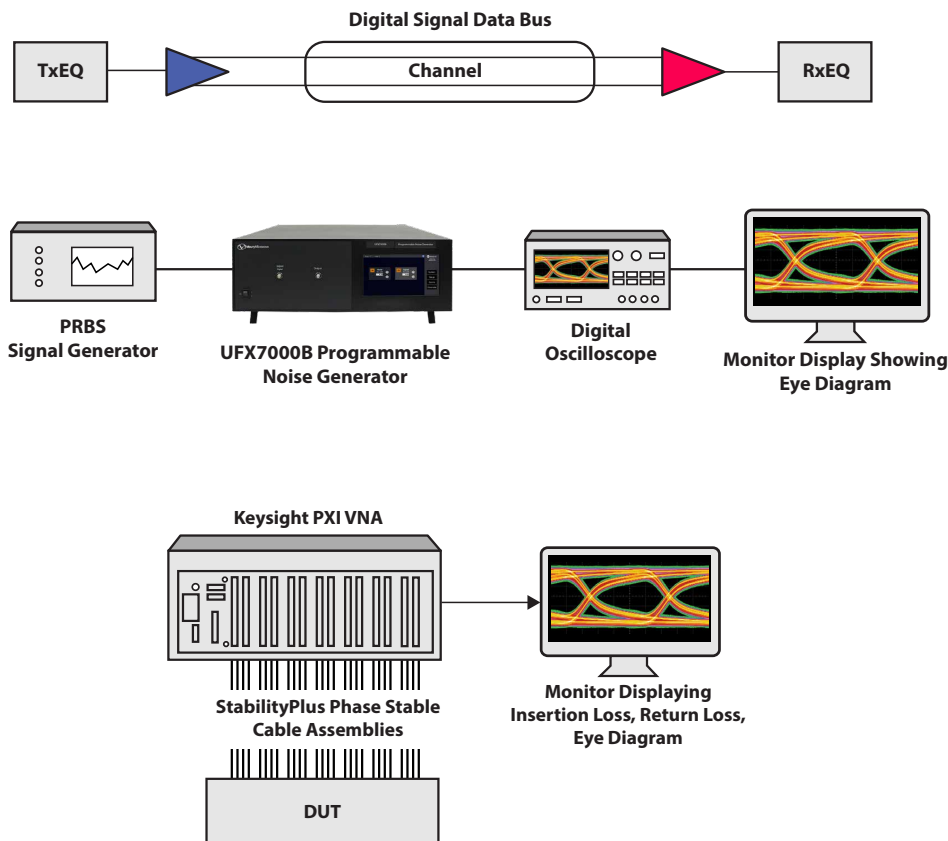
As digital communication systems continue pushing toward higher data rates, links become increasingly sensitive to noise and transmission impairments, with less tolerance for signal degradation before errors occur. As a result, engineers must accurately simulate and evaluate real-world channel conditions to ensure reliable system performance.

This demonstration shows how the Maury Microwave UFX7000B Programmable Noise Generator injects controlled additive white Gaussian noise (AWGN) into a high-speed digital signal path to evaluate signal quality and overall link performance. A PRBS signal generator creates a pseudo-random binary sequence that acts as the clean transmitted data stream for testing. The PRBS signal is fed into the UFX7000B, which adds broadband AWGN to vary carrier-to-noise conditions and emulate real-world impairments.

The impaired signal is then analyzed on a digital oscilloscope using an eye diagram, which displays signal quality over time. As noise is combined with the signal, the eye opening begins to close. The reduced eye opening indicates signal degradation, lowering the receiver SNR threshold and increasing the bit error rate (BER). The precision attenuators allow AWGN to be added in small step sizes for precise BER testing on high-speed signals while providing test repeatability.

Also featured is a high-speed digital interconnect measurement setup utilizing a Keysight PXI multiport VNA and Maury StabilityPlus™ phase stable cable assemblies. The system characterizes cables, connectors, and backplanes through measurements such as insertion loss, return loss, and eye diagrams, supporting high-speed serial link validation, PCIe/Ethernet/PAM4 characterization, channel compliance testing, and TDR/TDT measurements. StabilityPlus cable assemblies help ensure excellent measurement repeatability and high-confidence results.

Demo Setup



Target Users

Target users include RF and test engineers who need to characterize high-speed interconnects, validate link performance, and evaluate signal integrity under realistic noise conditions.

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 White Gaussian noise
- > 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

StabilityPlus Cable Assemblies

StabilityPlus™ (SP-series) sets the standard for high-performance ruggedized microwave/RF cable assemblies. Designed specifically for phase-stable and amplitude-stable applications, the SP-series offer excellent measurement repeatability even after cable flexure.



Key Specifications and Features

- > The industry's best amplitude and phase stability with flexure
- > Flexible to facilitate easy installation
- > Durable, ruggedized and crush-resistant
- > Color-coded connectors to avoid damage caused by connector mismatch

Driving EMC Compliance with Confidence using Solid State Amplifiers

Maury Microwave solid-state power amplifiers are based on modern Class AB GaN technology with outstanding linearity performance and reliability. Ideal for CW, pulsed, and modulated signals for EMC, EW, radar, and component testing, Maury power amplifiers are the ideal wideband and high-power solution to simplify bench setup and optimize measurement time.

CW Amplifiers

Frequency	Maximum Saturated Power capabilities – CW Amplifiers
0.8-1 GHz	1000 W
0.4-12 GHz	100 W
0.6-6 GHz	2000 W
2-8 GHz	2000 W
2-18 GHz	250 W
6-18 GHz	2000 W
8-12 GHz	2000 W
18-26.5 GHz	1000 W
18-40 GHz	400 W
26.5-40 GHz	1000 W
40-54 GHz	200 W
90-98 GHz	30 W

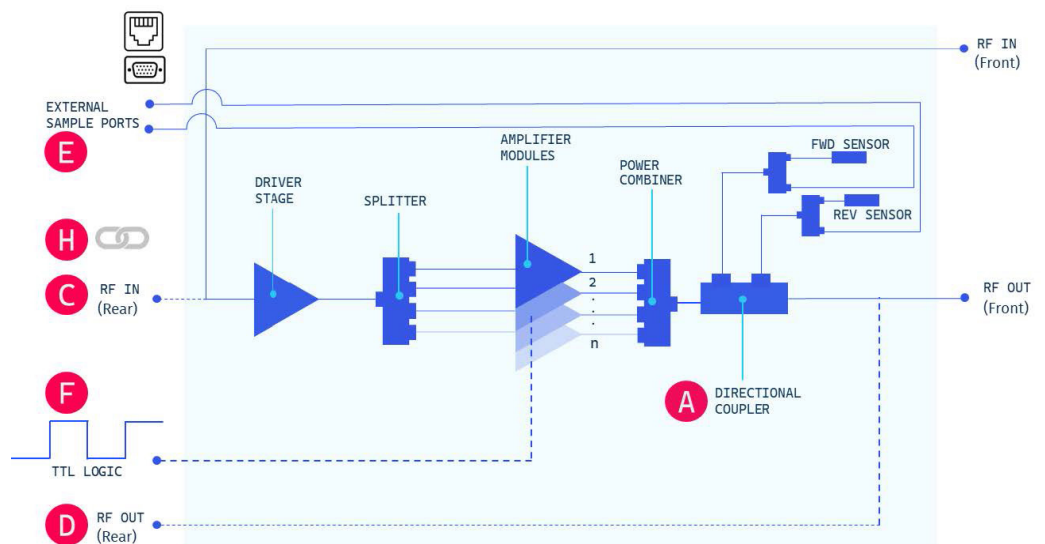
Pulsed Amplifiers

Frequency	Maximum Saturated Power capabilities – kW Pulsed Amplifiers
2-4 GHz	10 kW
4-8 GHz	10 kW
8-18 GHz	5 kW
8-12 GHz	12 kW
12-18 GHz	7 kW



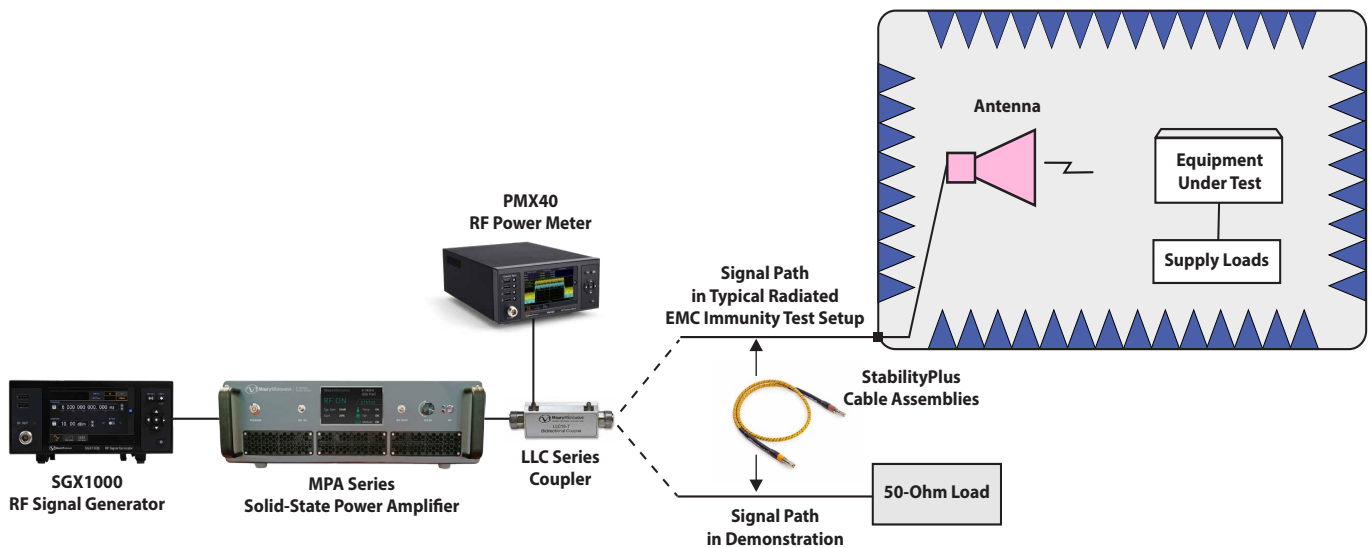
Available Options

A	Coupler with FWD and REV power measurements
C/D	Input (C) or Output (D) on the rear
E	Sampling
F	TTL Logic
H	Interlocking



EMC Immunity Testing Solutions

Maury solid-state power amplifiers, couplers, power measurement instrumentation, and precision cable assemblies ensure accurate and standards-compliant EMC testing, supporting high-frequency signal amplification, routing, and signal power analysis.



Product Overview

Broadband and High-Power Solid-State Power Amplifiers

The MPA-series provides robust output power, linearity, and the reliability required to meet compliance standards. Designed for continuous operation across broad frequency ranges, they deliver stable, repeatable performance for immunity and emissions testing. Their solid-state architecture ensures durability, low maintenance, and dependable results in demanding EMC test environments.



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 LVTTTL options enabling fast T_{rise} and T_{fall} (20ns)

PMX40 Benchtop Power Meter

The PMX40 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. As a benchtop meter, the PMX40 provides a standalone solution for capturing, displaying, and analyzing peak and average RF power in both the time and statistical domains through an intuitive, multi-touch touchscreen display.



Key Specifications and Features

- > Capture/display/analyze peak and average power
- > Frequency range from 4 kHz to 40 GHz
- > 195 MHz video bandwidth, 3 ns rise time, 100,000 Meas/s, 100 ps time resolution
- > Synchronous multi-channel measurements (up to 4 channels)
- > Sensors can be used as standalone instruments

StabilityPlus Cable Assemblies

StabilityPlus™ (SP-series) sets the standard for high-performance ruggedized microwave/RF cable assemblies. Designed specifically for phase-stable and amplitude-stable applications, the SP-series offer excellent measurement repeatability even after cable flexure.



Key Specifications and Features

- > The industry's best amplitude and phase stability with flexure
- > Flexible to facilitate easy installation
- > Durable, ruggedized and crush-resistant
- > Color-coded connectors to avoid damage caused by connector mismatch

SGX1000 Series RF Signal Generator

The SGX1000 series of RF signal generators offer high performance signal generation with an easy-to-use interface in a compact form factor. The SGX1000 utilizes a proprietary blend of direct digital and direct analog synthesis to provide ultra-fine frequency resolution, lightning-fast frequency switching, ultra-low phase noise and jitter, and superior reliability.



Key Specifications and Features

- > Frequency range: 10 MHz to 18 GHz
- > Output power range: -50 to +18 dBm
- > 10/100 MHz reference input
- > Multi-touch, touchscreen
- > Lightning fast – Switching speed: 350 μ s (typ)
- > Ultra-low phase noise (3 GHz, 10 kHz offset) -122 dBc/Hz (typ)
- > Ultra-low jitter: 60 fs (typ)
- > Excellent amplitude accuracy (as low as -40 dBm): +/-0.5 dB (typ)

Low-Loss, High-Power Bidirectional Airline Couplers

Combining precision machining with stellar electrical characteristics, the LLC-series of bidirectional airline couplers represent high-power coupler technology and offer unmatched performance with high directivity and low insertion loss for broadband performance.



Key Specifications and Features

- > High power handling for all power applications
- > High directivity for improved accuracy
- > Low insertion loss for maximum performance
- > Broadband frequency coverage for all popular applications
- > Excellent VSWR for improved match

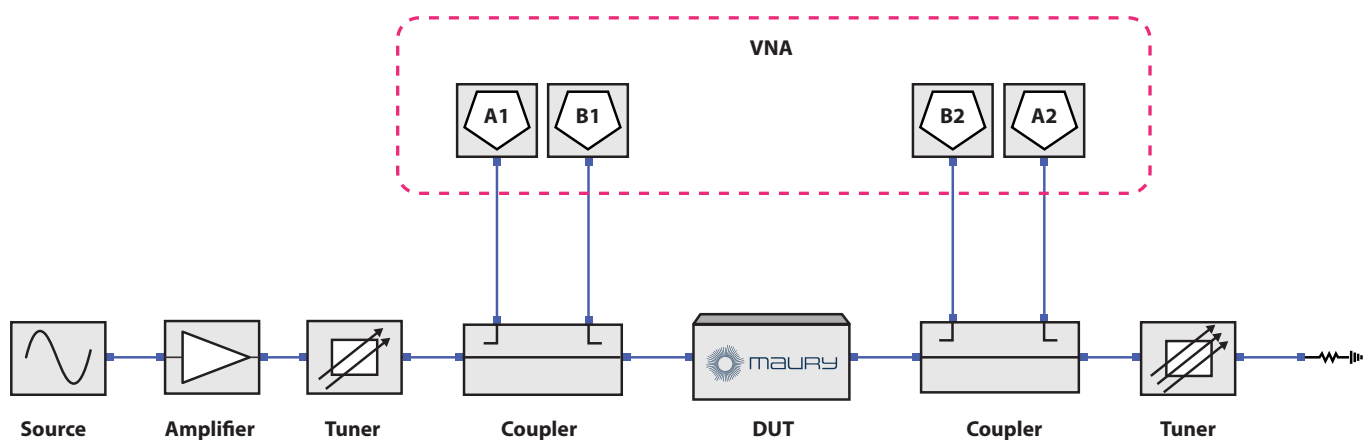
Modelling & Component Characterization: Pulsed DC & RF Vector Receiver Load-pull

Achieving accurate large-signal characterization at high frequencies to optimize efficiency and linearity requires precise control over harmonic terminations. Traditional scalar load-pull techniques are often insufficient, as they only measure fundamental power and lack the magnitude and phase data necessary to characterize harmonic signals. This "blind spot" limits an engineer's ability to analyze complex nonlinear behaviors. In addition, RF performance of high-power devices is frequently skewed by thermal effects during long measurement cycles. To isolate these effects and capture the true intrinsic behavior of a device, short-pulse measurement techniques are essential.

This demonstration introduces an advanced vector-receiver harmonic load-pull system designed for high-frequency applications. By integrating pulsed RF and pulsed biasing, the setup decouples thermal drift from electrical performance. Using NT-18G-50G-1C-C and NT-8G-67G-3C-C tuners, the system precisely manipulates source and load impedances across a wide 8–67 GHz bandwidth.

The Maury pulsed PIV system provides DC pulsing, synchronized with a VNA to ensure data acquisition occurs within the optimal measurement window. The InsightPro™ software tool enables comprehensive nonlinear characterization by utilizing short pulses to minimize thermal overhead. The system accurately captures critical data, such as power gain, output power, efficiency, input impedance, and AM/PM.

Demo Setup



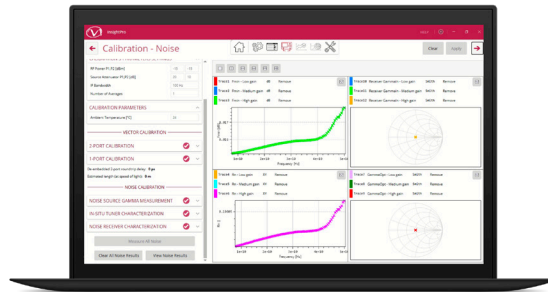
Target Users

Target users include engineers involved in process development focused on performance analysis of power, gain, and efficiency. Additional applications include compact modeling with large-signal verification of compact device models including harmonic control, production testing through the extraction of behavioral models for rapid device evaluation, and reliability and durability testing under short- and long-term large reflection conditions.

Product Overview

InsightPro Measurement & Modeling DC Software

InsightPro is the industry's premier unified software suite, designed to accelerate the component and sub-system measurement and model extraction workflow for R&D, design verification, and small-scale production testing.



Key Specifications and Features

- > Flexible bench configuration for easy instrument/DUT setup to match any workflow
- > Automated, multi-instrument calibration workflows empower users to achieve high accuracy results across diverse setups with minimal user intervention
- > Built-in system calibration verification for accuracy before data collection begins
- > Comprehensive small-signal, large-signal, and pulsed testing captures real-world device behavior for reliable design and modeling
- > Powerful visualization and analytics suite empowers users to quickly interpret results, extract models, and drive faster design decisions

Nano Series Automated Impedance Tuners

The Nano™ Series (NT-series) automated impedance tuners enable high-gamma load- or source-pull characterization across a wide spectrum. Their compact size is suitable for on-wafer measurements.



Key Specifications and Features

- > Compact, lightweight design optimized for seamless integration with on-wafer probe station
- > Direct connection to probe maximizes tuning range and reduces phase skew
- > Eliminates the need for external probe mounts, cables, and couplers
- > Minimizes transmission line lengths by bringing tuning element closer to the DUT
- > Models are available with integrated low-loss, high-directivity coupler

Pulsed IV Measurement System

The Maury Pulsed IV measurement system is a fully integrated Pulsed IV power supply that enables accurate IV characterizations in quasi-isothermal conditions. The integrated solutions include 3 modules:

PIV Main:

- > High Voltage AC/DC power supply module with 10 ns resolution

PIV- 30V-BP:

- > Bipolar +/-30V gate pulsed IV module

PIV-280V:

- > 280V drain pulsed IV module



Key Specifications and Features

- > Integrated power supply and measurements modules
- > Wide range of pulsed and DC voltage settings: +/-30V (Gate) and 280V (Drain)
- > High-resolution DC and Pulsed IV measurements with unique 10ns time resolution
- > Integrated with InsightPro (device characterization software suite) for modelling and validation analysis
- > Measurement and pulsed trigger for S-parameters and fast power measurements
- > Open source SCPI commands

More from Maury at IMS 2026

Maury Microwave is your trusted calibration, measurement, and modeling solutions partner. We collaborate closely with customers, embracing their objectives as our own to empower innovation from RF through sub-THz – your success is our success. Whether launching a new semiconductor technology or satellite payload, our calibration, calibration validation, measurement, measurement verification, modeling, and data analysis solutions ensure the right decisions are made every step of the way.

We understand that the quality of data drives the quality of decisions. Leveraging our measurement science expertise, we identify, create, and supply each element in complex measurement systems to ensure accuracy and repeatability. Our comprehensive, integrated approach, from initial calibration and verification to advanced instrumentation hardware to precise measurement and analysis, enables innovators to confront the barriers facing the development and execution of next-generation wireless technology.

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IMS 2026

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