

End-to-End RF Solutions for EMC Immunity Testing

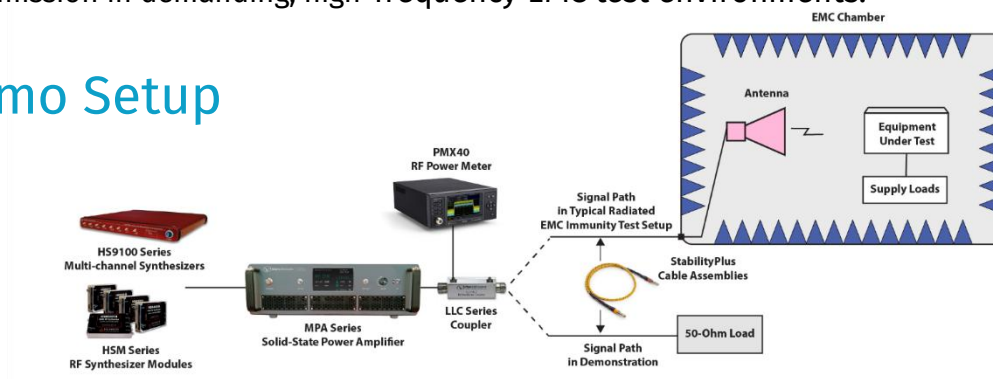
Electromagnetic compatibility (EMC) immunity testing evaluates device performance under different levels of electromagnetic interference. Amplifiers are used to generate the power levels necessary to drive antennas to required field strengths within EMC chambers. To ensure test accuracy and compliance, amplifiers must provide wideband frequency coverage, maintain linearity for signal integrity, and efficiently handle modulated signals. Power measurement instrumentation is used to monitor and verify signal power, while couplers and stable interconnects support accurate signal routing and transmission throughout the test setup.

This demonstration highlights how Maury Microwave signal generators, amplifiers, power measurement instrumentation, and interconnects support precise and reliable EMC immunity testing. The HS9100 series multi-channel RF synthesizer and HSM RF synthesizer modules provide a high-performance, low-phase-noise test signal. An MPA series solid-state GaN power amplifier delivers the wideband frequency coverage, output power, and linearity required to amplify the test waveform while maintaining signal integrity. The amplified signal is routed through the LLC Series coupler, enabling signal power measurement and analysis using the PMX40 benchtop RF power meter. StabilityPlus™ cable assemblies provide consistent phase and amplitude characteristics for accurate signal transmission in demanding, high-frequency EMC test environments.

CW Amplifiers

Frequency (GHz)	Maximum Psat (kW)
0.08 - 1	5
1 - 6	2
2 - 8	2
2 - 18	0.25
6 - 18	2
8 - 12	2
18 - 26.5	1
18 - 40	0.4
26.5 - 40	1
40 - 54	0.2

Demo Setup



Target Users

Target users include design and test engineers responsible for measuring and validating device performance in electromagnetic environments and ensuring compliance with industry-specific EMC standards.

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Product Overview

HS9100 Series Multi-Channel RF Synthesizers

The HS9100 series multi-channel platform is designed to achieve optimal channel-to channel stability across multiple integrated channel synthesizers via a thermally optimized enclosure. Specific attention is paid to phase coherency between the independently controllable channels. Application specific frequency options can be configured to cover combinations up to 1 GHz, 2 GHz, 3 GHz, 4 GHz, 6 GHz, 12 GHz, and 18 GHz.

HSM Series RF Synthesizer Modules

The HSM series RF Synthesizers are microwave CW sources that are architected on a non-PLL based platform. The digital-analog hybrid design provides excellent phase noise performance and spurious response, which complement their phase coherent nature.

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 and dependable results in EMC test environments.

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.

StabilityPlus Phase-Stable 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.

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.

More Resources

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

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