

Meeting EMC Field Strength Requirements with Solid-State Amplifiers

During EMC immunity testing, amplifiers provide the RF power needed to achieve the field strengths required for evaluating equipment performance within EMC chambers. To ensure test accuracy and compliance with emerging high-frequency standards (6 GHz to 40 GHz), amplifiers must meet wideband range requirements, maintain linearity for signal integrity, and handle modulated signals efficiently.

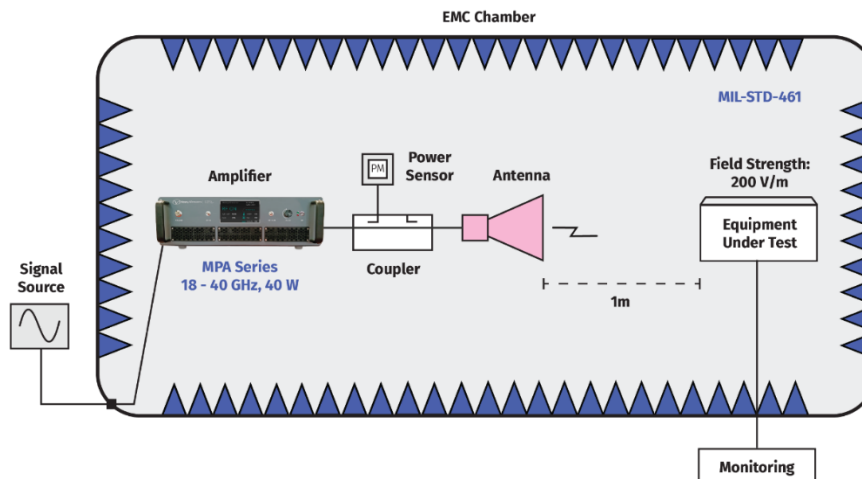
The LLC series bidirectional coupler samples the amplified signal for measurement by the RTP5000 series real-time peak power sensor, while StabilityPlus™ cable assemblies maintain accurate, repeatable signal transmission throughout the test setup.

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

40 GHz 200 V/m (MIL-STD-461)

The setup below demonstrates an EMC immunity test scenario in accordance with MIL-STD-461 requirements. The objective is to generate an electric field strength of 200 V/m at a distance of 1 meter at 40 GHz. The Maury Microwave MPA series solid-state power amplifiers support this requirement by providing the output power, broad frequency coverage, and high performance necessary to achieve this field strength with confidence.



Target Users

Target users include design and test engineers who need to measure and validate device performance in electromagnetic environments to adhere to industry-specific EMC standards.

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Product Overview

Test & Measurement Amplifiers for EMC Immunity Testing

The MPA series of T&M instrument amplifiers ensure EMC immunity testing meets industry standards, offering high reliability, outstanding wideband ranges, and linear performance. All units support full CW, pulsed, AM, PM, FM, or complex modulation such as OFDM. The user-friendly remote-control features, integrated couplers, and power detection enable close positioning to the radiating object for minimal cable insertion loss.

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

RTP5000 Real-Time Peak Power Sensors to 40 GHz

The RTP5000 real-time USB peak power sensors address challenges faced by engineers and technicians who design, verify, and maintain systems utilizing pulsed signals. The RTP5000 series incorporates Real-Time Power Processing™ and offers faster rise times; better time resolution; the fastest measurements (100,000 per second); and a complementary, simple, intuitive, and powerful graphical user interface.

KEY SPECIFICATIONS AND FEATURES:

- Accurate pulse measurements; industry widest video bandwidth of 195 MHz
- Fastest rise time of 3 ns; finest resolution of 100 ps
- Crest factor, PAPR, CCDF, and statistical measurements
- Synchronized multi-channel measurements

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/emc-sipi-2026 to learn more about Maury Microwave solutions.

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