

Radiated and Conducted Immunity Testing

Keysight Technologies and TOYO

Ensure your products meet standards for immunity to electromagnetic interference

The effective operation of your product depends upon its ability to function in the presence of electromagnetic interference (EMI). International standard IEC61000 specifies the conditions under which a product must be tested in order to confirm that the equipment-under-test (EUT) has the specified immunity against external electrical noise. In Europe, IEC6100 forms part of the EMC Directive and is mandatory for all companies wishing to sell their products in the region.

Radiated and conducted immunity testing assesses the ability of a product to withstand radiated and conducted noise. A signal generator is used as a noise source, which is then passed through an RF power amplifier and applied as interference to the EUT. For a radiated immunity test the signal is routed through an RF antenna while for a conducted test it is applied via a CDN (coupling/decoupling network). The interference level is calibrated by an electric field sensor (radiated) or a spectrum analyzer (conducted), and an RF power meter is used to monitor the output from the RF power amplifier.

TOYO Corporation offers a comprehensive range of solutions for radiated immunity and conducted immunity testing. The test systems use a Keysight Technologies N5171B EXG RF signal generator, E9304A E-series average power sensor, N1914A EPM series dual channel power meter, and N9321C RF spectrum analyzer. TOYO's proprietary software application controls all of the instruments ensuring a fully automated test solution.

Features

- Test your product's immunity to electromagnetic interference
- Radiated and conducted immunity testing
- Automated immunity test system.
- Uses Keysight test instrumentation
- Frequency range 80 MHz to 2.7 GHz (radiated)
- Frequency range 150 kHz to 80 MHz (conducted)
- Prove compliance to international EMI immunity standards



Radiated and Conducted Immunity Testing

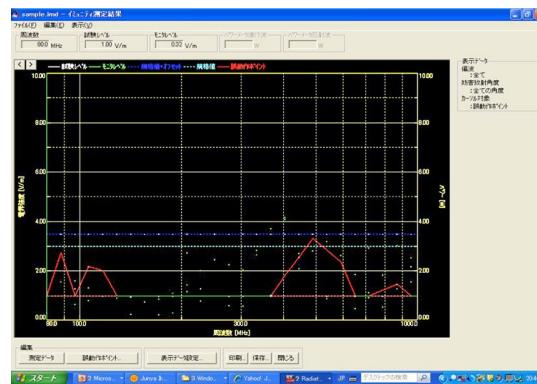
For radiated immunity testing the systems provide a frequency range of 80 MHz to 2.7 GHz while for conducted immunity testing the frequency range is from 150 kHz to 80 MHz. Interference levels are for industrial zones, 10 V/m (radiated), 10 Vemf (conducted) and for commercial or residential zones, 3 V/m (radiated), 3 Vemf (conducted). TOYO also offers immunity test systems for automobiles and on-vehicle components generating interference levels of up to 200 V/m.

With TOYO radiated and conducted immunity test systems based on Keysight instrumentation you can ensure that your products meet the requirements of international standards for immunity to electromagnetic interference.



To learn how this solution can address your specific needs please contact Keysight's solutions partner, TOYO: www.keysight.com/find/toyo

System Components



Keysight Technologies

| | |
|--------|--------------------------------------|
| N5171B | EXG RF analog signal generator |
| E9304A | E-Series average power sensor |
| N1914A | EPM Series dual channel power meter |
| N9321C | RF spectrum analyzer, 9 kHz to 4 GHz |

TOYO Corporation

| | |
|-------------|------------------------------------------|
| IM5/RS-AJ | Radiated immunity measurement software |
| IM5/CS-AJ | Conducted immunity measurement software |
| CBA 1G-250 | RF power amplifier (80 M-1 GHz/250 W) |
| CBA230M-080 | RF power amplifier (150 k-230 MHz/80 W) |
| AS0102-55 | RF power amplifier (1-2 GHz/55 W) |
| AS1806-55 | RF power amplifier (1.8-6 GHz/55 W) |
| VULP9118E | Log-periodic antenna (70 M-1.5 GHz) |
| STLP9149 | Stack log-periodic antenna (700 M-9 GHz) |
| EP-600 | Electric field sensor (100 k-9.25 GHz) |
| CDN | Coupler/de-coupler network |
| BS5000 | RF select |

For more information on Keysight Technologies' products, applications, or services, please visit: www.keysight.com



This information is subject to change without notice. © Keysight Technologies, 2012 - 2023, Published in USA, July 12, 2023, 5990-7346EN