

EMC Radiated Power Measurement with the ML2439A Power Meter



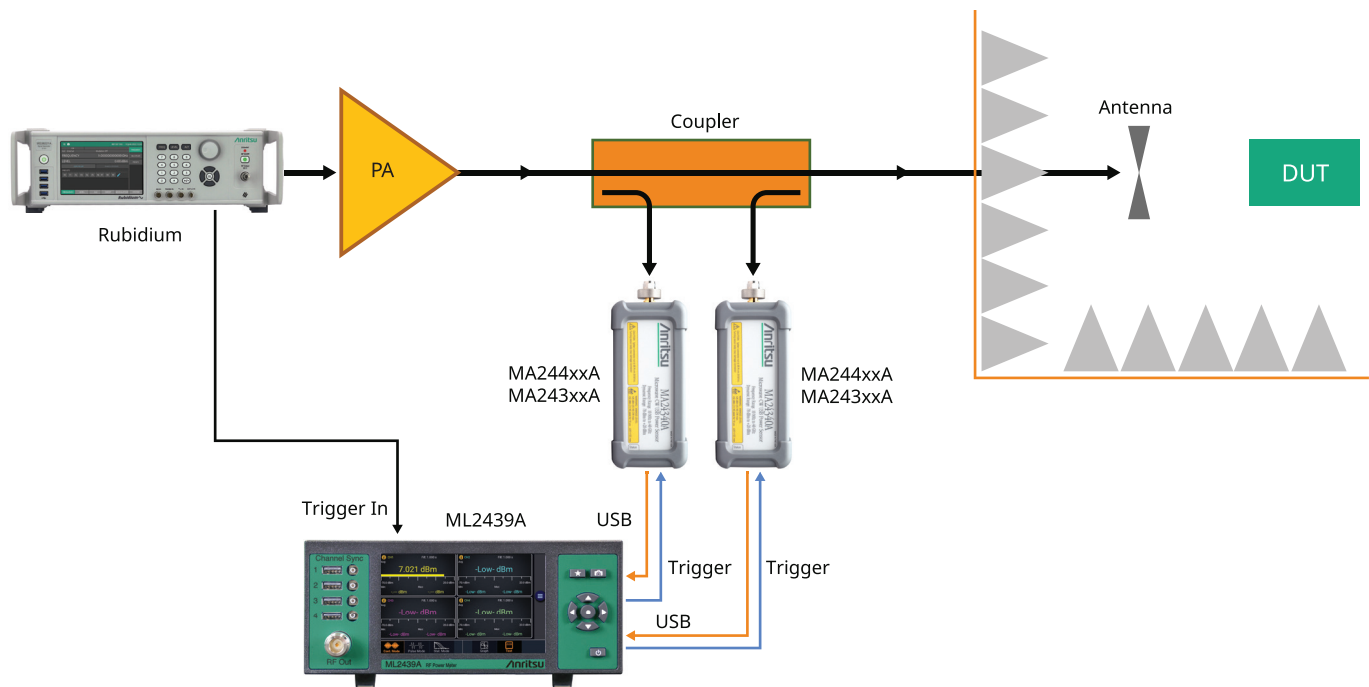
Introduction

IEC/EN 61000-4-3 is an international electromagnetic compatibility (EMC) standard that defines the testing and measurement techniques for evaluating the radiated radio-frequency (RF) electromagnetic field immunity of electrical and electronic equipment. The radiated immunity assesses how well a Device Under Test (DUT) operates when exposed to external RF electromagnetic fields from distant sources (like cell phones or broadcast transmitters). The test covers a broad spectrum, generally from 100 MHz to 8 GHz, accommodating modern wireless services but can cover much higher frequencies as determined by the type of Device Under Test. For most consumer devices this test is a mandated test by national regulatory authorities.

Radiated Immunity Measurement

The radiated immunity test is conducted inside a shielded, semi-anechoic or fully anechoic chamber lined with RF-absorbing materials (like ferrite tiles or carbon foam) to minimize unwanted reflection. The device under test is placed inside the anechoic chamber along with wideband log-periodic or biconilog antenna at a specific distance. Antenna is connected to an RF signal source such as Anritsu Rubidium Generator that generates high power pulsed signal. The high power pulsed RF energy is radiated by the antenna towards the device under test.

While making the radiated immunity measurement it is most important to measure the input power going into the antenna placed inside the anechoic chamber. Since antenna VSWR is not ideal at all frequencies, some input power is reflected back. Hence it is critical to measure both forward and reflected power at antenna input to make sure correct power is radiated to produce desired electric field near Device Under Test.



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ML2439A Power meter along with MA244xxA peak power sensors are well suited to make accurate forward and reflected power at antenna input. When the RF power is pulsed, the pulse trigger from the signal generator can be input into the trigger input of ML2439A. This trigger is distributed to the two MA244xxA peak power sensors by ML2439A thus enabling synchronized power measurement of forward and reflected power.

Summary

ML2439A is most versatile Power Meter that supports

- Up to four measurement channels simultaneously with Anritsu MA244xxA peak and wideband power sensors
- Measurements on MA244xxA sensors can be synchronized with a common trigger signal distributed by ML2439A



Specifications are subject to change without notice.

• **United States**

Anritsu Americas Sales Company

490 Jarvis Drive, Morgan Hill, CA 95037-2809, U.S.A.
Phone: (408)-778-2000

• **Canada**

Anritsu Electronics Ltd.

Americas Sales and Support

490 Jarvis Drive, Morgan Hill, CA 95037-2809, U.S.A.
Phone: +1-800-Anritsu (1-800-267-4878)

• **Brazil**

Anritsu Eletrônica Ltda.

Praça Amadeu Amaral, 27 - 1 Andar
01327-010 - Bela Vista - São Paulo - SP, Brazil
Phone: +55-11-3283-2511

• **Mexico**

Anritsu Company, S.A. de C.V.

Blvd Miguel de Cervantes Saavedra #169 Piso 1, Col. Granada
Mexico, Ciudad de Mexico, 11520, MEXICO
Phone: +52-55-4169-7104

• **United Kingdom**

Anritsu EMEA Limited

900 Capability Green, Luton, Bedfordshire, LU1 3LU, U.K.
Phone: +44-1582-433200

• **France**

Anritsu SA

12 avenue du Québec, Immeuble Goyave,
91140 VILLEBON SUR YVETTE, France
Phone: +33-1-60-92-15-50

• **Germany**

Anritsu GmbH

Nemetschek Haus, Konrad-Zuse-Platz 1,
81829 München, Germany
Phone: +49-89-442308-0

• **Italy**

Anritsu S.R.L.

Spaces Eur Arte, Viale dell'Arte 25, 00144 Roma, Italy
Phone: +39-6-509-9711

• **Sweden**

Anritsu AB

Kistagången 20 B, 2 tr, 164 40 Kista, Sweden
Phone: +46-8-534-707-00

• **Finland**

Anritsu AB

Technopolis Aviapolis, Teknobulevardi 3-5 (D208.5.),
FI-01530 Vantaa, Finland
Phone: +358-20-741-8100

• **Denmark**

Anritsu A/S

c/o Regus Winghouse, Ørestads Boulevard 73, 4th floor,
2300 Copenhagen S, Denmark
Phone: +45-7211-2200

• **Austria**

Anritsu EMEA GmbH

Am Belvedere 10, A-1100 Vienna, Austria
Phone: +43-(0)1-717-28-710

• **United Arab Emirates**

Anritsu A/S

Office No. 164, Building 17, Dubai Internet City
P. O. Box – 501901, Dubai, United Arab Emirates
Phone: +971 (0) 4-2424919

• **India**

ANRITSU INDIA PRIVATE LIMITED

6th Floor, Indique ETA, No.38/4, Adjacent to EMC2,
Doddanekundi, Outer Ring Road, Bengaluru – 560048, India
Phone: +91-80-6728-1300
Fax: +91-80-6728-1301

• **Singapore**

ANRITSU PTE LTD

1 Jalan Kilang Timor, #07-04/06 Pacific Tech Centre
Singapore 159303
Phone: +65-6282-2400

• **Vietnam**

ANRITSU COMPANY LIMITED

16th Floor, Peakview Tower, 36 Hoang Cau Street, O Cho Dua Ward,
Hanoi, Vietnam
Phone: +84-24-3201-2730
Fax: +84-24-3201-2740

• **P.R. China (Shanghai)**

Anritsu (China) Co., Ltd.

Room 2301-2303, Tower A, New Caohejing International Business
Center No. 391 Gui Ping Road, Shanghai, 200233, P.R. China
Phone: +86-21-6237-0898

• **P.R. China (Hong Kong)**

ANRITSU COMPANY LIMITED

Unit 1302, 13th Floor, New East Ocean Center,
No.9 Science Museum Road, TsimShaTsui East,
Kowloon, Hong Kong
Phone: +852-2301-4980

• **Japan**

ANRITSU CORPORATION

8-5, Tamura-cho, Atsugi-shi, Kanagawa, 243-0016 Japan
Phone: +81-46-296-1244
Fax: +81-46-296-1239

• **Korea**

Anritsu Corporation Limited

8F, A TOWER, 20, Gwacheondaero 7-gil, Gwacheon-si,
Gyeonggi-do, 13840, Republic of Korea
Phone: +82-2-6259-7300

• **Australia**

Anritsu Pty Ltd

Unit 20, 21-35 Ricketts Road, Mount Waverley, Victoria 3149, Australia
Phone: +61-3-9558-8177

• **Taiwan**

ANRITSU COMPANY, INC.

7F., No. 316, Sec. 1, Neihu Rd., Neihu Dist., Taipei City 114663,
Taiwan
Phone: +886-2-8751-1816

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