

# **Measurement of Radio-Noise Emissions (ANSI C63.4) and Introduction to Measurement Uncertainty**

This workshop is presented in two parts based on the 2008 edition of ANSI C63.4 and an introduction to basic principles of measurement uncertainty with examples applicable to EMC measurements.

These workshops are designed to increase your understanding of the methods of measurement of radio-noise emissions from low voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz as it applies to determining compliance with FCC technical standards for digital devices and other similar product requirements. The C63.4 workshop is followed by a half-day introduction to measurement uncertainty and a review of the work contained in the draft ANSI C63.23 on the subject, currently under development.

## **Workshop Overview**

In this workshop, you will learn about:

- RF emission measurement procedures
- How to use ANSI C63.4
- National and international regulatory implication
- Test facility and instrumentation requirements
- Equipment test arrangements
- Simple and complex information technology equipment (ITE) problem solving workshop
- Application to other than ITE
- Measurement uncertainty

## **Support Material**

- ANSI C63.4-2008 and portions of the draft ANSI C63.23
- A complete lecture notebook
- FCC handouts and references

## **Who Should Attend**

Those responsible for determining compliance with FCC Rules and

Regulations (and CISPR 22) of their own or their client's products, including:

- Product Developers
- Test Engineers and Technicians
- Product Managers
- Regulatory Compliance Managers
- Test Instrumentation Developers

and those who are responsible for determining the uncertainty of emission measurement instrumentation

**Date and Location: August 15-16, 2008**  
**Detroit Marriott - Renaissance Center**  
IEEE EMC 2008 Headquarter Hotel  
Phone: 313-568-8000 or 800-228-9290  
Please make your hotel reservation by calling the hotel directly and asking for the EMC 2008 Symposium rate. Or, reserve your room on line at [www.emc2008.org](http://www.emc2008.org)

## **Expert Instructors**

The ANSI C63.4 workshop instructors are Donald N. Heirman, Workshop Director, (Don HEIRMAN Consultants), H. Robert

Hofmann (Hofmann EMC Engineering), and Bill Hurst (Federal Communications Commission); instructors for the measurement uncertainty workshop are: Don Heirman, Mike Windler and Bob Delisi (both of Underwriters Laboratories)

## **Fee Includes:**

**C63.4:** Complete lecture notebook, continental breakfast, lunch (first day only) breaks, and completion certificate.

**Measurement Uncertainty:** Lecture notebook and certificate of completion

## **Agenda**

### **ANSI C63.4:**

Aug. 15 7:30 am Registration and Continental Breakfast  
Class: 8:00 am to 4:30 pm

Aug. 16 Class: 8:00 am to noon

### **Measurement Uncertainty:**

Aug. 16: 12:45 pm: Registration  
Class: 1:15 pm to 4:45 pm

## **Registration Form**

**Telephone: 425-868-2558** **Contact: Janet O'Neil** **Fax: 425-868-2558 (call first)**

Ms./Mr. \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Daytime Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_

Credit Card (check one): MC \_\_\_\_\_ Visa \_\_\_\_\_ Amex \_\_\_\_\_

Credit Card No: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

Signature: \_\_\_\_\_

## **C63.4 workshop only (1 and ½ days)—15-16 August**

By June 15\*: \$800 USD \_\_\_\_\_

C63® & S/C Members (by June 15) \$750 USD \_\_\_\_\_

## **Measurement Uncertainty (half day)—16 August PM**

By June 15\*: \$400 USD \_\_\_\_\_

C63® & S/C Members (by June 15) \$350 USD \_\_\_\_\_

## **Both workshops**

By June 15\*: \$1000 USD \_\_\_\_\_

ASC C63® & S/C Members (by June 15) \$ 950 USD \_\_\_\_\_

Add \$200 if after June 15 or at the door\*\* \$ 200 USD \_\_\_\_\_

Add'l copy of both workshop notebooks\*\*\* \$ 100 USD \_\_\_\_\_

Total \$ \_\_\_\_\_ USD

## **Check or Credit Card Number must accompany registration.**

Make check payable to **U.S. EMC Standards Corporation** in U.S. dollars drawn on a U.S. bank. Mail to:

Janet O'Neil  
ETS-Lindgren  
22117 Northeast 10<sup>th</sup> Place  
Sammamish, WA 98074  
Email: [j.n.oneil@ieee.org](mailto:j.n.oneil@ieee.org)

## **NOTE: You are not registered until you receive confirmation**

\*Please do not mail after July 10.

\*\*With prior telephone or fax registration only.

\*\*\*Order by June 15 for pickup at the workshop.

The organizing committee reserves the right to substitute speakers, modify the program (or lecture notes), restrict attendance or to cancel the workshop(s). In the event the workshop(s) is/are canceled, registration fees will be refunded. No refunds will be made to individuals who cancel after July 10. Substitutions are allowed. *Workshops without a minimum of 15 attendees signed up by 1 July 2008 will be cancelled and registration fees returned. It is suggested that you book refundable travel arrangements as appropriate if workshop(s) is/(are)s cancelled.*