



18th International Zurich Symposium on Electromagnetic Compatibility

WS-4 on Friday September 28

Measurement and Compliance Uncertainties in EMC Tests

organized by Dipl.-Ing. Manfred Stecher, Rohde & Schwarz, Munich, Germany
coorganizer: Prof. Dr. Matthias Wuschek, FH Deggendorf, Germany

ISO/IEC 17025 requires that testing laboratories shall have and shall apply procedures for estimating the uncertainty of measurement. Whereas the instrumentation uncertainty deals with the uncertainties of the testing apparatus (measuring receivers, signal sources and coupling networks) including the influence of the test site, compliance uncertainty deals with other influences (test setup, EUT operation etc). The necessary background for EMC test laboratories will be given this workshop. The estimation and calculation of measurement uncertainties in EMC tests will be based on the most recent international Basic Standards and publications of mathematical statistics. The influence quantities of the measurement uncertainties of all typical EMC tests will be treated and measures of minimizing the uncertainties will be explained. In detail, the following EMC tests will be treated:

- Measurement of conducted emissions on power and telecommunication ports
- Measurement of the disturbance power using the absorbing clamp
- Measurement of radiated emissions on an open area test site and in a fully anechoic chamber
- Measurement of conducted immunity
- Measurement of radiated immunity
- Measurement of immunity to impulsive quantities (ESD, burst and surge)

Calibration procedures and the uncertainties involved will be given as well as assistance for the understanding and evaluation of calibration reports, so that the participant will be able to optimally use all available material. Numerous hints will be given to avoid systematic errors and to minimize uncertainty.

Recommended background for participants

- education in electrical engineering (e.g. Dipl.-Ing., Bachelor or Master)
- some experience in an EMC testing laboratory
- background information on laboratory accreditation and EMC standards

Target group

- managers and personnel of EMC testing laboratories
- PHD students with focus on EMC
- designers and product managers for EMC test equipment and systems

Schedule Friday September 28

13:20-13:30	Stecher	Introduction
13:30-14:20	Wuschek	Basics
14:20-15:00	Stecher	CISPR 16-4-2
15:00-15:30	Break	
15:30-16:00	Wuschek	Immunity
16:00-17:00	Stecher	Miscellaneous