



18th International Zurich Symposium on Electromagnetic Compatibility

Excursion to R&S	Enabling Radiocommunication
Subtitle	An introduction to the core business of Rohde & Schwarz
Organizer's name	Manfred Stecher
Organizer's affiliation	Rohde & Schwarz, Munich, Germany

Summary:

Rohde & Schwarz, a leading German electronics company, is one of Europe's major supplier of communications and T&M equipment. For more than 70 years R&S have been developing, producing and marketing professional measurement and communications instruments and systems.

This half-day excursion will give an introduction to the world of RF, including

- radio frequency management
- radiomonitoring and radiolocation systems
- measurement of coverage of radio services
- high-speed mobile radio communication testing
- measurement of signal parameters as well as spurious emissions
- EMC test equipment and systems

Target group: EE students and all engineers interested in radiocommunication

Time: Friday, 28 September 07 from 9:00 to 12:00.

The bus to R&S departs from the G.S. Ohm monument, Theresienstraße at 8:30

Participation fee: 10 € (for the bus to R&S)

Number of participants: maximum 40, minimum 20 (registration required)

Title contribution 1 Introduction and Overview

Speaker Manfred Stecher

Title contribution 2 Radio frequency management
Radio monitoring and radiolocation systems

Speaker Thomas Krenz

Abstract

Reliable and efficient communication is essential for modern societies. To ensure the availability of the scarce natural resource "radio spectrum" regulators and spectrum managers from all over the world rely on products and systems to accomplish the tasks of monitoring and direction finding from 9 kHz up to 256 GHz, locating sources of harmful or illegal emission, interference and intermodulation analysis, identification and classification of signals, planning and licensing of transmitters

Title contribution 3 Measurement of coverage of radio services

Speaker Ulrich Konietzko

To ensure high-quality coverage everywhere and at any time really is a challenge and a problem due to the fact that only a limited number of frequencies (BCCH and TCH) are available. The rate of repetition and distribution of those frequencies is one of the reasons for the generation of interference. The incorrect installation of BTS antennas (bore head, direction, RF power, etc) might be another reason for interference.

The presentation gives an overview of the possible solutions to measure and analyse the radio services.

Title contribution 4 High-speed mobile radio communication testing

Speaker Reinhold Krüger

Testing mobile radios is a challenge for Rohde&Schwarz in various aspects. Depending on the field of application the crucial parameters could be either measurement speed or accuracy or variability of settings. These requirements cannot be solved with a single type of test instrument. The Rohde&Schwarz response is an entire family from stand-alone tester to automatic test systems. This presentation gives an overview to the possible applications with focus to the high-speed scenario in production test of mobile phones.

Title contribution 5 Measurement of signal parameters and spurious emissions

Speaker Herbert Schmitt

Using modern mobile communication systems as an example, the following questions will be discussed: What are typical signal parameters, which have to be measured? What are differences between different standards like GSM, WCDMA, WiMAX/WLAN? What are requirements for spurious emission testing for example for WCDMA?

Title contribution 6 EMC emission and immunity test systems

Speaker Jürgen Kausche

The requirements on modern EMC test systems are increased flexibility, scalability and efficiency. By giving examples, different possibilities will be discussed.

Title contribution 7 Use of Time Domain Methods for EMI Measurements

Speaker Karlheinz Weidner

The common problem of EMI measurements is the total measurement time which often is still very long (e.g. in the order of hours). A significant reduction of the measurement time is possible when using time-domain methods that determine the interfering spectrum by means of the Fast Fourier Transform (FFT).

A general description of the TDEMI system is followed by an explanation of the major problems and how they are solved without missing any interfering signal or without losses in accuracy.