Conference Program - Demystifying EMC 2022

Dear Delegate

Welcome to Demystifying EMC 2022 virtual conference program.

The conference is dedicated to supporting you in your EMC educational journey.
Hear from leading EMC experts from Rohde & Schwarz and industry partners, live and online across 3 days, at Demystifying EMC 2022.

Partners already announced for the 2022 Conference include Albatross Projects, AVL, CSA Group, Element Material Technologies, EMC Partner, Emitech, Eurofins E&E, Frankonia, Silent Solutions, Silicon Austria, Simulia, TÜV Rheinland, Volkswagen and Würth Electronics.

The three-day conference covers a wide range of current topics in EMC. Morning keynotes from renowned experts create the framework for many topic-focused presentations each day, from electromagnetic coexistence of medical devices, to the requirements for modern anechoic chambers, and in-situ measurements in the field, to name a few. After each lecture, delegates have the opportunity to ask questions live to the experts.

The DEMC2022 keynotes will be delivered by Christina Gessner from Rohde & Schwarz, and special guest speakers Dr. Johann Heyen from Volkswagen, and Dr. Bernhard Auinger from Silicon Austria.

Important challenges and aspects of major topics will be highlighted, starting with the most important trends in EMC, followed by changes in automotive EMC in a transforming environment, and electromagnetic compatibility in power electronics.

DEMC once again features fundamental EMC educational sessions from a global leader in EMC training, Lee Hill, from Silent Solutions. Lee will share his insights on EMC techniques, problem-solving tactics and electronic design advice. **(only available in live session)**

Continue your educational journey by signing up today - use this opportunity to learn and interact with EMC community experts from around the world.

Now on demand or live again in 2023. With best regards

Robert Obertreis
Rohde & Schwarz
Marketing Program Manager - EMC

Arthi Krishnamurthy
Rohde & Schwarz
Market Segment Manager - EMC

Detailed Agenda

DEMC 2022 – Conference Agenda On Demand

	Keynote: Mega trends in EMC testing Complexities in modern electronics continue to grow rapidly in all markets – be it consumer, medical, automotive, industrial, aerospace or military. The interference-free coexistence of numerous electrical and radio products cannot be taken for granted. Only targeted measures for EMC testing & suppression can ensure a safer & more reliable connected world. At Rohde & Schwarz, we work every day to deliver innovative test solutions in close collaboration with our customers, partners and standardization bodies. This key note will discuss the latest trends influencing EMC & interference testing & how to prepare for current & future industry challenges. **Christina Gessner, Rohde & Schwarz**
	Trends in medical device testing: EMC & coexistence (with a practical demonstration) The increasing use of RF wireless medical devices within a crowded RF environment creates new challenges for EMC & RF testing. Understanding and addressing these test challenges are essential to ensure the safe & effective use of these medical devices. In this session, an overview of changes to IEC60601-1-2 Edition 4.1 (immunity against RFID) and ANSI C63.27 (wireless coexistence) standards will be provided. Using a practical demonstration, we will walk through key test challenges and share test solutions and strategies to address them. **Estelle Ang / Naseef Mahmud, Rohde & Schwarz**
	Test reduction, risks and responsibilities The presentation will explore the evolution within our industry with regard to the test and approval of equipment to the regulatory rules and regulations, and how risk and decision making are an integral part of the process. Regulatory compliance sets the requirements clearly, but there are decisions to be made and risks to be taken. Manufacturers and test labs have opportunities to reduce their testing, which may speed time to market, and transfer testing costs into company risks. The presentation will explore the possibilities, the responsibilities of each company involved, and discuss how risk assessment has become a critical part of regulatory compliance. **Michael Derby, Element Materials Technology**
	It's time to see frequency. Using multi-domain oscilloscopes to hunt and solve EMI problems in both the time and frequency domains. Intuition about the appearance of a signal in both the time and frequency domains is a vital skill for EMC troubleshooters. In this live presentation Lee will use a Rohde & Schwarz RTO6 oscilloscope to investigate both known and unknown signals from several digital PCBs. **Lee Hill, Silent Solutions**
	Solving fundamental challenges in compliance EMC testing This session will explore key challenges in compliance EMC testing and will include a practical demonstration of using time domain scan and pre-selection to help solve these challenges. **Jeremy Cline, Rohde & Schwarz**

	Keynote: Automotive EMC in a vast transforming environment The automotive future will be fully electric, connected and autonomous. The way to zero emission and a new world of mobility is ahead and key milestones are due this decade to meet ambitious targets throughout the near future. What is the impact on automotive EMC, RF and mobile antenna development, product release, homologation and certification? This key note will address above stated challenges in automotive industry. It will give an introduction to Volkswagen's RF development center and then try to link and assess how EMC & RF can best contribute to this future. **Dr. Johann Heyen, Volkswagen**
	Automotive EMC test systems Reliable and efficient measurement test strategies sets an important quality stamp to the daily operation of modern EMC [EMI/EMS] test facilities. This presentation will walk you through the relevant requirements and standards, including key decision criteria, checklists and potential pitfalls in automotive EMC testing. You will learn how the return on investment is ensured with the implementation of long-term performance measures and service maintenance concepts. **Michael Friederich, Rohde & Schwarz**
	Challenges and requirements for a modern and efficient EMC anechoic chamber solution The presentation focuses on several challenges that every EMC laboratory operator and investor faces. The first part explores modern approaches for EMC laboratories and highlights important aspects related to efficiency, reproducibility, cost-optimization while maintaining performance. The second part showcases challenges for new investments for such high-end EMC laboratories and accentuates aspects of safety and prevention, risk limitation, and cost-savings throughout a complete construction phase. **Dr. Daniel Feyerlein, Frankonia**
	New developments in CISPR automotive EMI standards for electric vehicles Automotive EMI standards are developing quickly to address the impact of electric and hybrid vehicles on the electromagnetic environment. Recent changes in CISPR 25 and CISPR 36 and the ongoing revision of CISPR 12 as well as a demand to reduce test time and record the disturbance characteristic of the device under test bring new requirements for vehicle manufacturers and component suppliers. Usage of FFT-based measuring instruments is the key for addressing these topics. The presentation will address the applicability of FFT-based receivers for EMI compliance measurements against international standards, gives an inside view on the technology of such receivers and will conclude with practical use cases. **Jens Medler, Rohde & Schwarz**

	Keynote: Paradigm change in power electronics Power electronics and electromagnetic compatibility in power electronics is currently seeing a paradigm change due to the use of wide band gap semiconductor technologies. Then be able to take full advantage of the steeper edges in the switched voltages and currents of these devices, it is inevitable to incorporate design techniques from RF & microwave as well as modeling and simulation of all components and parts. The presentation will reveal these challenges and propose solutions how to tackle them. **Dr. Bernhard Auinger, Silicon Austria**

	Connected IoT products bring radiated spurious emissions (RSE) testing into play In this session, we will address some of these questions: Why do we need RSE testing in today's connected/IoT world? Which global standards regulate it and what are the overall challenges within 3G/4G/5G/WLAN/BT and 5G FR1? We can help you understand what you need to upgrade your EMC system for RSE, with test setup examples and conclude with the future outlook for RSE testing. **Jürgen Kausche, Rohde & Schwarz**
	From ESD to voltage dips and everything in-between Every engineer is confronted by EMC in one form or another. Conducted phenomena tend to be the poor relative of the more glamorous, at least in test equipment terms, radiated phenomena. But the phenomena when applied to electronic circuits can become the "devil in the detail". Not to be overlooked, conducted phenomena apply to all branches of electronics from component design to complete systems. **Nick Wright, EMC Partner**
	New CISPR radiated emission standards below 30 MHz The publication of a series of changes in CISPR standards is now imminent. The basic standard CISPR 16 will adopt major changes to site validation, antenna calibration and measurement methods through 2022. And product standards such as CISPR 11 and 36 are advancing in their preparation with others to follow. This presentation provides a brief overview of the coming changes, their reasons and their likely impact. **Martin Wiles, Albatross**
	Better safe than sorry; Practical EMC design considerations It is usually the case that EMC is not considered at the early stages of the design. This session looks into the implementation of good design practice to optimize signal integrity. This includes: (1) A practical review of filter design and component selection (including parasitics) using LT Spice simulation and REDEXPERT. (2) Identifying and simulating, using LT Spice, EMI issues as well as solutions. This is based on a Type 2 PoE PD design with a layout and tracking problem. (3) Investigating different interfaces and presenting relevant filtering, OVP and recommended layout and tracking. **Mohamed Al-Alami, Würth Electronics**
	Innovative EMI testing: Beyond quasi-peak and large EUT measurements Modern digital technologies require new testing methods. Studies have shown the Amplitude Probability Distribution (APD) correlates better with interference influence on modern digital systems. The Multi CISPR APD enables fast and futureproof EMI testing. Large EUT's as wind turbines don't fit in measurement chambers. Special techniques enable "in-situ" (on-site) testing at the place of operation, with methods for separation of EUT and ambient emission **Tobias Gross, Rohde & Schwarz**