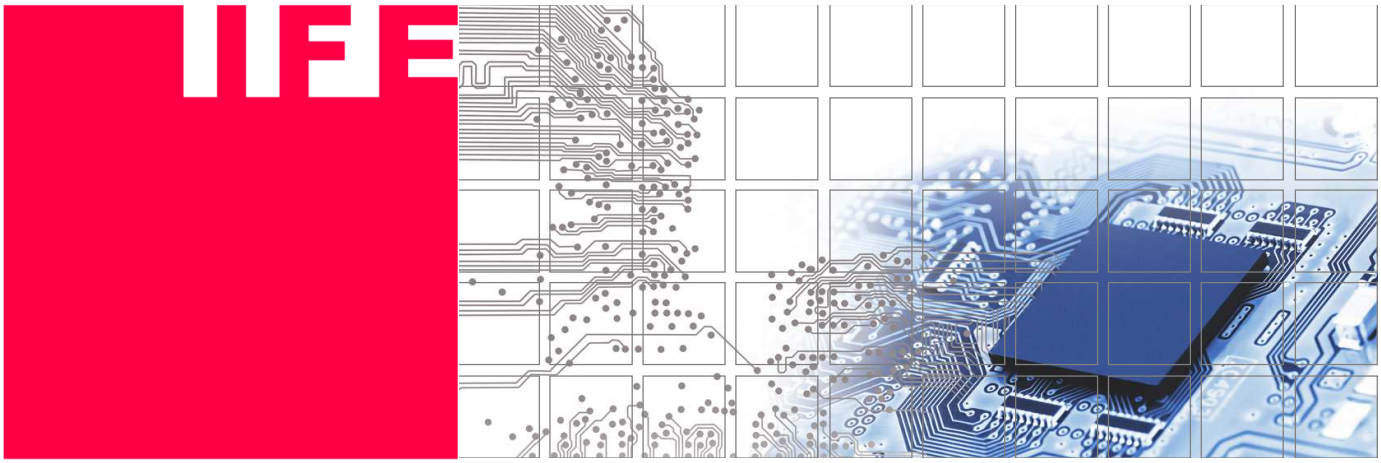
TU Graz

Institute of Electronics



emv 24
FACHTAGUNG

21. EMC Symposium 2024

18. – 20. September 2024

Program

IEEE Austria Section

OVE

SEIBERSDORF LABORATORIES

ife

21. EMC SYMPOSIUM 2024

The EMC symposium has become an annual fixture for the exchange of experience and ideas within the EMC community and serves to impart practical EMC knowledge and information about innovations and new developments within the industry.

Austria's most important EMC event will take place for the 21st time in fall 2024. The event will last 3 days and will include specialist presentations as well as an exhibition area for companies in the EMC industry.

Event venue and date

Technische Universität Graz, Inffeldgasse 25D, 8010 Graz

EMC Symposium: Inffeldgasse 25D, Hörsaal i7

Exhibitors' area: Foyer Inffeldgasse 25D, EG und 1.OG

Evening event: Gösser Bräu, Neutorgasse 48, 8010 Graz

Wednesday, 18. Sept. 2024	EMC Fundamentals Training	9:00 am – 1:00 pm
Wednesday, 18. Sept. 2024	Hands-On EMC Training	1:00 pm – 6:00 pm
Thursday, 19. Sept. 2024	EMC Symposium	8:30 am – 4:15 pm
Thursday, 19. Sept. 2024	Evening Event	6:30 pm – open end
Friday, 20. Sept. 2024	EMC Symposium	9:30 am – 5:00 pm

Organizer

Institute of Electronics at Graz University of Technology as the responsible organizer together with the OVE Academy, the Austria Chapter of the IEEE EMC Society and Seibersdorf Labor GmbH.

Conference fees

Participation in the symposium incl. documents, symposium bag, lunch, coffee breaks, drinks and participation in the evening event on 19. Sept. 2024.

EMC Symposium 2024 **19. Sept. 2024 – 20. Sept. 2024**	**Early Bird Prices** **Registration until 15. July 2024**	**Regular Prices** **Registration from 16. July 2024**
Regular	340,-- EUR	485,- EUR
OVE/IEEE Member	295,-- EUR	425,- EUR
IEEE EMC Chapter and Student fee	160,-- EUR	210,- EUR
EMC Fundamentals Training and Hands-On EMC-Training **18.09.2024**	**Early Bird Prices** **Registration until 15. July 2024**	**Regular Prices** **Registration from 16. July 2024**
EMC Fundamentals Training	220,- EUR	250,-- EUR
EMC Fundamentals Training Students	110,-- EUR	130,-- EUR
Hands-On EMC-Training	320,-- EUR	350,- EUR
Hands-On EMC-Training Students	150,-- EUR	180,- EUR

PROGRAM 18. SEPT. 2024

EMC FUNDAMENTALS TRAINING (WILL BE HELD IN ENGLISH)

09:00 – 09:15	OPENING	
09:15– 10:00	**Introduction to EMC - Requirements and Compliance Testing (Dr. Kurt Lamedschwandner, Head of EMC Test Laboratory, Seibersdorf Labor GmbH)**	SEIBERSDORF LABORATORIES
10:00 – 10:45	**EMC aware PCB Design – Design Rules and Guidelines (Univ.-Prof. Dipl.-Ing. Dr.techn. Bernd Deutschmann, Graz University of Technology)**	TU Graz
10:45 – 11:00	*COFFEE BREAK*	
11:00 – 11:45	**EMC/ESD aware IC Design with respect to PCB design (a.Univ.-Prof. Dipl.-Ing. Dr. Timm Ostermann, JKU University of Linz)**	JKU IIC INSTITUTE FOR INTEGRATED CIRCUITS
11:45 – 13:00	LUNCH (only when booking the Hands-On EMC training)	

HANDS-ON EMC-TRAINING (WILL BE HELD IN ENGLISH)

The electromagnetic compatibility (EMC) of electronic systems has become increasingly important in recent years. From the formulation of the product idea to series production, the integration of EMC measures in the development of electronic systems is indispensable today. Developers not only have the task of developing their products in accordance with economic and functional aspects, but also with the applicable EMC regulations and standards. This means that the product must not generate too much electromagnetic interference and must not be susceptible to interference. It often takes a long time for an electronic system to successfully pass all EMC tests. With the help of the necessary basic knowledge in the field of EMC and some important design guidelines, electromagnetic compatibility can often be ensured very quickly.

The aim of this hand-on training course is to provide important basic knowledge of EMC measurement technology. In small groups, the participants will perform various exercises on the characterization of the electromagnetic emission, coupling mechanisms, effects of the choice of decoupling capacitors, and many more. Participants learn about important EMC measuring devices such as EMI receivers, Spectrum analyzers, Vector network analyzers and how to use these devices.

The Hands-On EMC training is presented to you as a collaboration between Rohde & Schwarz and IFE/TU Graz.

	ROHDE&SCHWARZ TU Graz
13:00 – 13:15	INTRODUCTION
13:15– 14:15	***Workshop I: Coupling Mechanisms (Jan Eberl)*** Explore galvanic, inductive, capacitive, and radiated coupling on a single PCB. Learn about simple mitigation techniques, multi-layer PCBs, EMI-hardened opamps, and compare your results to calculations and simulations.
14:15 – 15:15	***Workshop II: Characterizing Passive Components (Ko Odreitz)*** Learn how to use a vector network analyzer (VNA) to characterize the impedance of capacitors. Compare your results to the impedance curve in the data sheet. Explore the pros and cons of 1-port and 2-port measurements in series-through and shunt-through configurations. Perform voltage-dependent measurements using bias tees.
15:15 – 15:30	COFFEE BREAK
15:30 – 16:30	***Workshop III: Decoupling Capacitors and 150-Ohm Method (Bernd Deutschmann)*** Choose between different decoupling capacitors and immediately see the effect on conducted electromagnetic emissions of integrated circuits. Examine how the capacitor's impedance curve affects the emissions measured in a 150-Ohm IC-level test setup. Learn the settings of EMI receivers and how they differ from spectrum analyzers.
16:30 – 17:30	***Workshop IV: Conducted Emissions (Marco Pfeifer)*** Examine a CISPR25 standardized test setup to measure the conducted electromagnetic emissions of a GaN half-bridge circuit. Separate differential and common mode noise mathematically, and learn how the measurement setup affects the latter. Experiment with various filter structures and figure out how interferences can be mitigated. Furthermore, measure the influence of differential mode filters on the common mode interference and vice versa. Ultimately, build the most effective filter for a certain load.

PROGRAM 19. SEPT. 2024
EMC SYMPOSIUM

08:30 – 09:00	REGISTRATION, OPENING	
09:00 – 09:30	*Presentation 2.1*	
09:30 – 10:00	*Presentation 2.2*	
10:00 – 11:00	COFFEE BREAK, EXHIBITION	
11:00 – 11:30	*Presentation 2.3*	
11:30– 12:00	*Presentation 2.4*	
12:00 – 13:30	LUNCH	
13:30 – 14:00	*Presentation 2.5*	
14:00 – 14:30	*Presentation 2.6*	
14:30 – 14:45	*Poster Pitch*	
14:45 – 15:45	POSTER SESSION, COFFEE BREAK, EXHIBITION	
15:45 – 16:15	*Presentation 2.7*	
18:30	**Get Together Open End, Gösser Bräu**	

PROGRAM 20. SEPT. 2024
EMC SYMPOSIUM

09:30 – 10:00	*Presentation 3.1*	
10:00 – 10:30	*Presentation 3.2*	
10:30 – 11:30	COFFEE BREAK, EXHIBITION	
11:30 – 12:00	*Presentation 3.3*	
12:00 – 12:30	*Presentation 3.4*	
12:30 – 13:30	*LUNCH*	
13:30 – 14:00	*Presentation 3.5*	
14:00 – 14:30	*Presentation 3.6*	
14:30 – 15:30	COFFEE BREAK, EXHIBITION	
15:30 – 16:00	*Presentation 3.7*	
16:00 – 16:30	*Presentation 3.8*	
16:30 – 17:00	Best Poster Award	
17:00	**Closing**	