

Tuesday, 6 September

**Opening Session, Keynotes, Poster and
Oral Sessions**

Date: Tuesday, 06/Sept/2022

9:00am	OS-A: Opening ceremony Location: G3		
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9:40am			
9:40am	OS-B: Key Note 1 Location: G3		
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10:20am			
10:20am	F-02A: Coffe break Location: Exhibition Area		
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10:50am			
10:50am	OS-C: Key Note 2 Location: G3		
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11:30am			
11:30am	OS-D: Key Note 3 Location: G3		
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12:10pm			
12:30pm	Poster-1: Poster session 1 Location: Exhibition Area	L-02: Lunch break Location: Restaurant Area	
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2:30pm			
2:30pm	SS-01A: Modelling and measurement of LF EMI Location: G1	OS-01A: Wireless technologies Location: G2	OS-02A: Shielding and filtering Location: G3
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3:50pm			
3:50pm	F-02B: Coffe break Location: Exhibition Area		
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4:20pm			
4:20pm	SS-01B: Modelling and measurement of LF EMI Location: G1	OS-01B: Wireless technologies Location: G2	OS-02B: Shielding and filtering Location: G3
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5:40pm			

Session

Poster-1: Poster session 1

Time:

Location: Exhibition Area

Tuesday, 06/Sept/2022:

12:30pm - 2:30pm

Presentations

System Analysis of Electromagnetic Environment Created by Radiating 4G/5G User Equipment Inside Buildings

Vladimir Mordachev

Belarusian State University of Informatics and Radioelectronics, Belarus

Worst-Case Adaptive Model of Field Penetration into Shielding Enclosure

Eugene Sinkevich¹, Yauheni Arlou¹, Natalia Sinyak¹, Ivan Shakinka¹, Xie Ma², Wen-Qing Guo²

¹Belarusian State University of Informatics and Radioelectronics, Belarus; ²China Electronics Technology Cyber Security Co., Ltd., China

Impact of Electromagnetic Radiation of 4G/5G Base Stations on Medical Short-Range Devices in Urban Area

Aliaksandr Svistunou¹, Vladimir Mordachev¹, Eugene Sinkevich¹, Ming Ye², Arthur Dubovik¹, Ivan Shakinka¹

¹Belarusian State University of Informatics and Radioelectronics, Minsk, Belarus; ²Huawei Technologies Sweden AB, Stockholm, Sweden

Estimation of effectiveness of EMI gaskets by using results of standardized measurements

Dzmitry Tsuanenka¹, Eugene Sinkevich¹, Yauheni Arlou¹, Alexey Galenko¹, Xie Ma², Wen-Qing Guo²

¹Belarusian State University of Informatics and Radioelectronics, Belarus; ²China Electronics Technology Cyber Security Co., Ltd., China

Source Reconstruction Method Using Phase-Less Magnetic Near-Field Measurements: Application of the Method of Moment with Roof-Top Basis Functions

Hamidreza Karami¹, Marcos Rubinstein², Christophe Perrenoud³, Emmanuel deRaemy³, Pascal Kraehenbuehl³

¹Electromagnetic Compatibility Laboratory, Ecole Polytechnique Fédérale de Lausanne (EPFL); ²University of Applied Sciences and Arts Western Switzerland (HES-SO), Institute for Information and Communication Technologies; ³Federal Office of Communications, Electromagnetic Compatibility Section, Biel/Bienne, Switzerland

Angular Spectrum for Wireless Over-the-Air Measurements in the Loaded Reverberation Chamber

Junhao Zheng, Xiaoming Chen

Xi'an Jiaotong University, China, People's Republic of

Characterization of Parasitic Impedances of PV Panels from Common Mode Perspective

Makarand Mukund Kane, Nathaniel Taylor, Daniel Månsson

KTH Royal Institute of Technology, Sweden

Time-domain Characterization of Reconfigurable Intelligent Surfaces for Wireless Communications

Giuseppe Pettanice, Fabrizio Loreto, Daniele Romano, Fortunato Santucci, Piergiuseppe Di Marco, Giulio Antonini, Roberto Alesii

Università degli Studi dell'Aquila, Italy

Shielding Effectiveness Measurements DC to 40 GHz, draft IEEE 2855

Mart Coenen

EMCMCC, Netherlands, The

Correlation between HF interference at low and high elevation angle

ANTONIOS CONSTANTINIDES, HARIS HARALAMBOUS

Frederick Research Center (FRC), Cyprus

Uncertainties and Limitations of Shielding Measurement with Two Antenna Method

Stefan Cecil, Kurt Lamedschwandner

Seibersdorf Laboratories, Austria

A Comparative Analysis of LoRa and LoRaWAN in the Presence of Jammers and Transient Interference

Artur N. de Sao Jose¹, Nathan Chopinet², Eric Pierre Simon^{1,3}, Alexandre Boé^{1,3}, Thomas Vantroys^{1,4}, Christophe Gransart², Virginie Deniau²

¹Univ. Lille, CNRS, USR 3380-IRCICA; ²Univ. Gustave Eiffel, COSYS-IFSTTAR; ³Univ. Lille, CNRS, Centrale Lille, Univ. Polytechnique Hauts-de-France, UMR 8520-IEMN; ⁴Univ. Lille, CNRS, Centrale Lille, UMR 9189 CRISTAL

Mitigating Radiated Emissions of Power Feeders On-board Electric Aircraft

Leonardo Malburg¹, Niek Moonen¹, Jesper Lansink-Rotgerink^{1,2}, Frank Leferink^{1,3}

¹University of Twente, Enschede, the Netherlands; ²NLR, Marknesse, the Netherlands; ³THALES Nederland B.V., Hengelo, the Netherlands

RF Coexistence Testing on Wireless Medical Patient Monitoring Device

Mahmud Naseef¹, Alen Moskofian², Pascal Hervé², Georgios Kokovidis³, Dennis Mendoza³, Bill Dowd³

¹Rohde & Schwarz, Germany; ²CSA Group Bayern, Germany; ³Dräger Medical Systems, Inc., USA

Electromagnetic Compatibility of Train Radio Communication with the Traction Systems

Tetiana Serdiuk, Botnarevscaia Rodica

Ukrainian State University of Science and Technologies, Ukraine

Measurement of Pulsed Aircraft Radio Altimeter In-Band and Out-band Interference Threshold Power Due to Sub-6 band 5G Mobile Communication Systems

Shunichi Futatsumori, Norihiko Miyazaki

Electronic Navigation Research Institute, National Institute of Maritime, Port and Aviation Technology, Japan

Study on Mitigating the Capacitive Noise Coupling Paths in Phase Shifted Full Bridge Converters

Róbert Orvai¹, Márk Csörnyei²

¹Óbuda University; ²Robert Bosch Kft.

Conducted EMI Emissions Investigation in SPWM based Control Modular Multilevel Converters

Dijlali Hamza

University of Ottawa, Canada

ML Based SI-Design Support Outlook to AI enhanced PCB Design Processes – a Practical Approach

Werner John¹, Julian Withöft², Emre Ecik², Ralf Brüning³, Jürgen Götze²

¹PYRAMIDE2525/TU Dortmund, Paderborn - Germany; ²TU Dortmund/Information Processing Lab; ³EMC Technology Center Paderborn Zuken GmbH

Electromagnetic Compatibility of Track Circuits with Parallel Traction Network

Volodymyr Havryliuk

Ukrainian State University of Science and Technology, Ukraine

Bias Network Noise effects modeling for RF amplifiers and MCM for Space Application

Adrian Martin¹, Ivan Herrero¹, Antonio Montesano¹, David Peña¹, Paula Sánchez¹, Ana Lopez²

¹Airbus, Spain; ²CT Ingenieros

Session

SS-01A: Modelling and measurement of LF EMI

Time:

Location: G1

Tuesday, 06/Sept/2022:

2:30pm - 3:50pm

Presentations

Un-terminated Black-Box EMI Models of Power Converters Driven by Random Modulation Strategies

Lu Wan, Abduselam H. Beshir, Xinglong Wu, Xiaokang Liu, Flavia Grassi, Giordano Spadacini, Sergio A. Pignari
Dept. of Electronics, Information and Bioengineering (DEIB), Politecnico di Milano, Italy

Versatile LabVIEW-FPGA-based Testbench for Electromagnetic Interference Evaluation in VSDs

Douglas Aguiar do Nascimento^{1,2}, Robert Smoleński¹, Piotr Leżyński¹, Alexander Matthee^{2,1}, Niek Moonen², Frank Leferink²

¹University of Zielona Góra; ²University of Twente

Influence of Chaotic spreading factor modulation based Random Modulation on G3-PLC system

Amr Madi^{1,2}, Waseem Elsayed^{1,2}, Douglas Nascimento^{1,2}, Abduselam Beshir³, Piotr Lezynski¹, Robert Smolenski¹

¹University of Zielona Gora, Poland; ²University of Twente, Netherlands; ³Politecnico di Milano, Italy

Mode Stirred Chamber Measurement of GHz Emissions of Wireless Power Transfer Systems

Christoph Brillinger², Mehdi Gholizadeh¹, Ralph Prestos², David Pommerenke¹

¹Graz University of Technology IFE, Austria / Graz EMC lab; ²Silocon Austria Labs

Session

OS-01A: Wireless technologies

Time:

Location: G2

Tuesday, 06/Sept/2022:

2:30pm - 3:50pm

Presentations

Interference requirements at vehicle platforms to protect UWB communication

Kia Wiklundh¹, Björn Bergqvist²

¹Private; ²Volvo Cars, Sweden

A Study of Electromagnetic Robustness of IO-Link Wireless and SmartMesh IP for Applications on an Agricultural Vehicle

Aleksandr Ovechkin¹, Brian Leeman¹, Dries Vanoost¹, Tim Claeys¹, Marcel Verhoeven², Davy Pissoort¹

¹KU Leuven, Belgium; ²CNH Industrial

On the Impact of Spread Spectrum EMI on Communication Performance

Erik Axell¹, Thomas Ranström^{1,2}, Sara Linder¹, Kia Wiklundh¹, Karina Fors¹

¹Swedish Defence Research Agency, Sweden; ²University of South Florida, FL

EMC challenges with 6G

Kia Wiklundh, Peter Stenumgaard

FOI, Sweden

Session

OS-02A: Shielding and filtering

Time:

Location: G3

Tuesday, 06/Sept/2022:

2:30pm - 3:50pm

Presentations

Efficient Measurement Techniques and Modelling of Printed Circuit Board Shields

Andy Marvin, John Dawson
University of York, United Kingdom

Impact of the Bonding Design Parameters on the Shielding Effectiveness of Board-Level Shields at Microwave frequencies

Pavithrkrishnan Radhakrishnan, Tim Claeys, Johan Catrysse, Davy Pisssoort
KU Leuven, Belgium

Shielding Effectiveness of Cabinets using IEEE 299 and 299.1 and Effect of Loading

Hans Schipper¹, Chris Clemens³, Frank Leferink^{1,2}
¹THALES, Hengelo, the Netherlands; ²University of Twente, the Netherlands; ³Ministry of the Interior and Kingdom Relations Zoetermeer the Netherlands

Auto-activated Electromagnetic Shield Upon High Intensity Radiated Field Illumination

Quentin Tricas^{1,2}, Xavier Castel², Claire Le Paven², Thomas Eudes¹, Patrice Foutrel¹, Jérôme Sol², Philippe Besnier²
¹Safran Electronics & Defense; ²Univ Rennes, INSA Rennes, CNRS, IETR - UMR 6164

Session

SS-01B: Modelling and measurement of LF EMI

Time:

Location: G1

Tuesday, 06/Sept/2022:

4:20pm - 5:40pm

Presentations

Effects of the Switching Frequency of Random Modulated Power Converter on the G3 Power Line Communication System

Abduselam Hamid Beshir¹, Waseem El Sayed², Amr Madi², Lu Wan¹, Flavia Grassi¹, Paolo S. Crovetto³, Xinglong Wu¹, Xiaokang Liu¹, Robert Smolenski³, Sergio A. Pignari¹
¹Politecnico di milano; ²University of Zielona Gora; ³Politecnico di Torino

Standardized Impedance: Microgrid Perspective for Inrush Current Compliance

Alexander Matthee¹, Niek Moonen¹, Frank Leferink^{1,2}
¹University of Twente, Enschede, The Netherlands; ²Thales, Hengelo, The Netherlands

Influence of Impedance Interaction & Comparability on Spectral Aggregation (2-150 kHz) in DC Grids

Arun Dilip Khilnani¹, Angel Eduardo Pena-Quintal¹, Erjon Ballukja¹, Mark Sumner¹, David William Prince Thomas¹, Leonardo Sandrolini², Andrea Mariscotti³
¹The University of Nottingham, United Kingdom; ²Università di Bologna, Italy; ³University of Geneva, Italy

Measurement-Based Equivalent Circuit Model for Time-Domain Simulation of EMI Filters

Simone Negri, Giordano Spadacini, Flavia Grassi, Sergio Amedeo Pignari
Politecnico di Milano, Italy

Session

OS-01B: Wireless technologies

Time:

Location: G2

Tuesday, 06/Sept/2022:

4:20pm - 5:40pm

Presentations

Electromagnetic Noise as Entropy Source for Cryptographic System

Jan Nemeč, Stanislav Kovar, Iva Kavankova, Jan Valouch
Tomas Bata University in Zlin, Czech Republic

Detailed Investigation of the Vulnerability of an OFDM based WLAN Connection to CW Signal Interference

Henrik Brech, Heyno Garbe
Leibniz University Hannover, Germany

The Impact from Covid-19 Pandemic Lockdown on the Electromagnetic Interference in the GPS frequency band

Karina Fors, Mikael Alexandersson, Peter Stenumgaard
Swedish Defense Research Agency FOI, Sweden

Measuring Radiated Spurious Emissions from a 5G Device in a Reverberation Chamber

Sara Nadine Catteau
Bluetest AB, Sweden

Session

OS-02B: Shielding and filtering

Time:

Location: G3

Tuesday, 06/Sept/2022:

4:20pm - 5:40pm

Presentations

Multichannel EMI filter performance assessment

Daria Nemashkalo¹, Patrick Koch¹, Niek Moonen¹, Frank Leferink^{1,2}
¹University of Twente, the Netherlands; ²Thales Nederland, B.V., Hengelo, the Netherlands

Board-level shielding with magnetic absorber sheet

Jorge Victoria¹, Adrian Suarez², Pedro A. Martinez², Antonio Alcarria¹, Andrea Amaro¹, Jose Torres²
¹Würth Elektronik eiSos, Germany; ²Department of Electronic Engineering, University of Valencia, Spain

EMC Study On Aged Shielded Cables

Henrik Wiebe¹, Matthias Spägele²
¹Huber Automotive AG, Germany; ²Huber Automotive AG, Germany

Analysis of the PDN Induced Crosstalk Impacts on the High-Speed Signaling in Ultra-Thin and High Permittivity Substrates

Taiki Kitazawa¹, Yuichi Hayashi¹, Yoshi Fukada², Yougwoo Kim¹
¹Nara Institute of Science and Technology, Nara, Japan; ²TechDream, Inc, San Jose, CA, USA