

19th Wroclaw International Symposium on EMC 2008

Definitive program

1st Day, Wednesday, June 11

9 ⁰⁰ - 9 ³⁰	Opening Ceremony (Room 10A/C)		
9 ³⁰ - 10 ⁰⁰	<u>Plenary Session I</u> (Room 10A/C) INTERNATIONAL SPECTRUM MANAGEMENT AND THE ITU "WRC-07 TO WRC-11" Valery Timofeev, International Telecommunication Union Radiocommunication Bureau(ITU-R)		
10 ⁰⁰ - 10 ⁴⁵	<u>Plenary Session II</u> (Room 10A/C) "PARASITIC EXTRACTION AND OPTIMIZATION FOR EFFICIENT MICROELECTRONIC SYSTEM DESIGN AND APPLICATION" Werner John, Fraunhofer Institute of Reliability and Microintegration, Advanced System Engineering, Paderborn, Germany		
10 ⁴⁵ - 11 ¹⁵	Coffee Break (Hall)		
	Room 10A/C	Room 10B	Room 10D
11 ¹⁵ - 13 ⁰⁰	<u>Session A</u> Microelectronic System Modelling and Validation	<u>Session B</u> EMC Measurement Techniques, Test Facilities & Instrumentation (1)	<u>Session C</u> Regulatory Aspects: Directives, Standards and Specifications in EMC
13 ⁰⁰ - 14 ⁰⁰	Lunch (Canteen)		
14 ⁰⁰ - 15 ³⁰	<u>Session D</u> Spectrum Congestion, Management and Monitoring (1)	<u>Session E</u> EMC Measurement Techniques, Test Facilities & Instrumentation (2)	<u>WS 1</u> Measurement and Analysis of Harmonic Current, Voltage Fluctuations and Flickers According the Newest IEC/EN Standards
15 ³⁰ - 16 ⁰⁰	Coffee Break (Hall)		
16 ⁰⁰ - 17 ³⁰	<u>Session F</u> Spectrum Congestion, Management and Monitoring (2)	<u>Session G</u> Computational Electromagnetic Modelling	<u>CP1</u> Company Presentations 1
17 ³⁰ - 18 ⁰⁰			
20 ⁰⁰ - 23 ⁰⁰	Welcome Party		

P1: Plenary session 1

Chairman: RYSZARD STRUŻAK, Telecommunication Institute, Wrocław, Poland

Time: Wednesday, 11/06/2008: 9:30am - 10:00am

P1: 1

INTERNATIONAL SPECTRUM MANAGEMENT AND THE ITU "WRC-07 TO WRC-11"

Valery Timofeev¹

P2: Plenary session 2

Chairman: RYSZARD STRUŻAK, Telecommunication Institute, Wrocław, Poland

Time: Wednesday, 11/06/2008: 10:00am - 10:45am

P2: 1

PARASITIC EXTRACTION AND OPTIMIZATION FOR EFFICIENT MICROELECTRONIC SYSTEM DESIGN AND APPLICATION

Werner John¹

Fraunhofer Institute of Reliability and Microintegration, Advanced System Engineering, Paderborn, Germany; werner.john@pb.izm.fraunhofer.de

A: Microelectronic System Modelling and Validation

Chairman/Organizer: WERNER JOHN, Fraunhofer IZM ASE Paderborn, Germany

Time: Wednesday, 11/06/2008: 11:15am - 1:00pm

A: 1

OVERVIEW OF MAJOR CHALLENGES AND APPLICATIONS FOR VECTOR EMI SCANNER SYSTEM

Adam Tankielun^{1,2}, Thomas Mager¹, Goeran Schubert³, Thomas Steinecke⁴, Werner John¹ and Heyno Garbe²

¹Fraunhofer IZM ASE Paderborn, Germany; ²Leibniz University of Hannover, Germany; ³Continental Automotive Systems, Nuremberg, Germany; ⁴Infineon Technologies AG, Munich, Germany; tankielun@pb.izm.fhg.de

A: 2

MODELLING SWITCHING BEHAVIOUR IN MIXED-SIGNAL DEVICES VIA RBF-NETS

Christoph Fischer^{1,2}, Christopher Wiegand^{1,2}, Christian Hedayat^{1,2}, Werner John¹ and Ulrich Hilleringmann²

¹Fraunhofer Institute of Reliability and Microintegration, Advanced System Engineering, Paderborn, Germany; ²University of Paderborn; werner.john@pb.izm.fraunhofer.de

A: 3

COMPARISON OF ORDER REDUCTION ALGORITHMS FOR IC EMISSION MODELS

Ljubica Radic-Weissenfeld^{1,2}, Stefan Ludwig^{1,2}, Wolfgang Mathis¹ and Werner John²

¹Leibniz Universität Hannover, Institute of Electromagnetic Theory, Hannover, Germany; ²Fraunhofer Institute for Reliability and Microintegration, Advanced System Engineering, Paderborn, Germany; radic@tet.uni-hannover.de

A: 4

NOISE PROPAGATION PATHS AT PCB-LEVEL: A SIMULATION TOOL

Mohamed Taki^{1,2}, Christian Hedayat^{1,2}, Werner John¹ and Ulrich Hilleringmann²

¹Fraunhofer Institute for Reliability and Microintegration, Department Advanced System Engineering, Germany; ²University of Paderborn, Paderborn, Germany; werner.john@pb.izm.fraunhofer.de

A: 5

EFFICIENT DESCRIPTION AND IMPLEMENTATION OF ELECTRICAL NETWORKS OF EMC-MACROMODELS FOR MODEL ORDER REDUCTION

Stefan Ludwig^{1,2}, Ljubica Radic-Weissenfeld^{1,2}, Wolfgang Mathis¹ and Werner John²

¹Leibniz Universität Hannover, Institute of Electromagnetic Theory, Hannover, Germany; ²Fraunhofer Institute for Reliability and Microintegration, Advanced System Engineering, Paderborn, Germany; ludwig@tet.uni-hannover.de

B: EMC Measurement Techniques, Test Facilities & Instrumentation (1)

Chairman: TADEUSZ W. WIĘCKOWSKI, Wrocław University of Technology, Wrocław, Poland

Time: Wednesday, 11/06/2008: 11:15am - 1:00pm

B: 1

MEASUREMENT INSTRUMENTATION UNCERTAINTY OF CONDUCTED DISTURBANCES DUE TO AMN - RECEIVER TRANSMISSION

Jan Sroka¹ and Robert Bębka²

¹EMC-TESTCENTER ZÜRICH AG, Switzerland; ²Zakład Elektronicznych Urządzeń Pomiarowych POZYTON, Częstochowa; j.sroka@emc-testcenter.com

B: 2

MEASUREMENT INSTRUMENTATION UNCERTAINTY OF RADIATED DISTURBANCES DUE TO ANTENNA - RECEIVER TRANSMISSION

Jan Sroka¹

EMC-TestcenterZurichAG, Zurich, Switzerland; j.sroka@emc-testcenter.com

B: 3

MEASUREMENT OF RADIATED EMISSIONS FROM MILITARY EQUIPMENT IN ACCORDANCE WITH THE NO-06-A500 STANDARD

Leszek Nowosielski¹, Rafał Przesmycki¹ and Marian Wnuk¹

Military University of Technology, Electronic Faculty, Warsaw, Poland; LNowosielski@wel.wat.edu.pl

B: 4

MEASUREMENT OF CONDUCTED EMISSIONS FROM MILITARY EQUIPMENT IN ACCORDANCE WITH THE NO-06-A500 STANDARD

Leszek Nowosielski¹, Rafał Przesmycki¹ and Marian Wnuk¹

Military University of Technology, Electronic Faculty, Warsaw, Poland; LNowosielski@wel.wat.edu.pl

C: Regulatory Aspects: Directives, Standards and Specifications in EMC

Chairman: RYSZARD J. ZIELINSKI, Wrocław University of Technology, Wrocław, Poland

Time: Wednesday, 11/06/2008: 11:15am - 1:00pm

C: 1 (at author's request this paper will be presented in session H)

AN UPDATE ON INTERNATIONAL POWER LINE IMMUNITY AND EMISSION STANDARDS

Mathieu R. W. van den Bergh

CNS Inc., Poway California, United States of America; mathieu-van-den-bergh@cox.net

C: 2

CONFORMITY ASSESSMENT FOR WIDE BAND DATA TRANSMISSION EQUIPMENT UNDER EU MRAS

Uwe Kartmann

CETECOM ICT Services GmbH, Germany; uwe.kartmann@ict.cetecom.de

C: 3

EMC REGULATIONS AND STANDARDISATION FOR RADIO AND TELECOMMUNICATION EQUIPMENT

Alina Karwowska-Lamparska¹

National Institute of Telecommunications, Poland; a.karwowska@itl.waw.pl

C: 4

EMC REQUIREMENTS FOR TELECOMMUNICATIONS PRODUCTS IN BRAZIL

Davison Gonzaga da Silva¹, Maximiliano Salvadori Martinhao² and Haroldo Pazzini Motta¹

¹Anatel, Certification Management, Brasília (DF), Brazil; ²Anatel, General Management for Certification and Spectrum Engineering, Brasília (DF), Brazil.; hmotta@anatel.gov.br

D: Spectrum Congestion, Management and Monitoring (1)

Chairman: WILLIAM A. LUTHER, ASRC Management Services, USA

Time: Wednesday, 11/06/2008: 2:00pm - 3:30pm

D: 1

NETWORK SPECTRUM AND RELATED SHARING ISSUES FOR LUNAR AND MARTIAN SPACE MISSIONS

William Luther¹

ASRC Management Services, United States of America; William.Luther@asrcms.com

D: 2

OVERVIEW OF SEAMCAT USAGE AND ITS OFDMA EVOLUTION

Jean-Philippe Kermaal¹, Marc Le Devendec¹, Christian Petersen² and Arturas Medeisis³

¹European Radiocommunications Office (ERO), Denmark; ²iPeople Aps; ³Vilnius Gediminas Technical University, Lithuania; kemaal@ero.dk

D: 3

THE METHODOICAL APPROACH TO EVALUATION OF SPECTRUM USE AND REALLOCATION EFFICIENCY IN MOBILE COMMUNICATIONS

Alexander Bessilin¹, Elena Volodina² and Evgeny Devyatkin¹

¹Radio Research &Development Institute (NIIR), Russian Federation; ²Moscow Technical University of Communications and Informatics (MTUCI), Russian Federation; deugene@list.ru

D: 4

TECHNIQUE FOR DETERMINATION OF USER FEE FOR RADIO SPECTRUM

Vyacheslav Veerpalu¹, Evgeny Devyatkin¹, Nikolay Kharitonov¹ and Nikolay Khokhlachev²

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E: EMC Measurement Techniques, Test Facilities & Instrumentation (2)

Chairman: ANDRZEJ A. KUCHARSKI, Wrocław University of Technology, Wrocław, Poland

Time: Wednesday, 11/06/2008: 2:00pm - 3:30pm

E: 1

PROPAGATION MEASUREMENTS IN DVB-H SYSTEM DESIGN

Jaroslav Szóstka

Poznań University of Technology, Poland; szostka@et.put.poznan.pl

E: 2

IMPLEMENTATION AND CALIBRATION OF MULTI-CHANNEL RECEIVER PLATFORM FOR PHASED-ARRAY RECEPTION

Benjamin Babjak^{1,2}, Imre Biro², Andras Magori² and Bertalan Eged²

¹Budapest University of Technology and Economics, Hungary; ²Sagax Communication Ltd, Hungary; babjak.b@gmail.com

E: 3

MULTI-FREQUENCY COHERENT SIGNAL IN MEASUREMENT TECHNOLOGY

Jan Duchiewicz¹, Andrzej E. Sowa¹, Jerzy S. Witkowski¹ and Tomasz Duchiewicz¹

Wrocław University of Technology, Poland; Jan.Duchiewicz@pwr.wroc.pl

E: 4

THE LABVIEW PROGRAMMING ENVIRONMENT FOR EMC TESTING

Krzysztof Sieczkarek¹ and Maćkowiak Adam¹

Institute of Logistics and Warehousing, Poland; krzysztof.sieczkarek@ilim.poznan.pl

E: 5

MAGNETIC - FIELD DIAGNOSTICS IN LOCALIZED VOLUME

Hrytskiv Zenon¹ and Ivan Prudyus¹

Lviv Polytechnic National University, Institute of Telecommunications, Radionics and Electronic Technoques, Lviv, Ukraine;

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WS1: Measurement and Analysis of Harmonic Current, Voltage Fluctuations and Flickers According the Newest IEC/EN Standards

Chairman: ZBIGNIEW M. JOSKIEWICZ, Wrocław University of Technology, Wrocław, Poland

Time: Wednesday, 11/06/2008: 2:00pm - 3:30pm

WS1: 1

IEC 61000-3-12 HARMONIC CURRENT BY EQUIPMENT CONNECTED TO PUBLIC LOW-VOLTAGE SYSTEMS WITH INPUT CURRENT >16A AND 75A PER PHASE

Markus Fuhrer

EM TEST, Switzerland;

WS1: 2

IEC 61000-3-11 LIMITATION OF VOLTAGE CHANGES, VOLTAGE FLUCTUATIONS AND FLICKER IN PUBLIC LOW-VOLTAGE SYSTEMS EQUIPMENT WITH A RATED CURRENT >16 A AND 75 A PER PHASE AND SUBJECT TO CONDITIONAL CONNECTION

Markus Fuhrer

EM TEST, Switzerland;

WS1: 3

EM TEST - COMPANY PRESENTATION

Uwe Flor

EM TEST, Deutschland

F: Spectrum Congestion, Management and Monitoring (2)

Chairman: WILLIAM A. LUTHER, ASRC Management Services, USA

Time: Wednesday, 11/06/2008: 4:00pm - 5:30pm

F: 1

VISUALIZATION OF COVERAGE AREAS OF VHF/UHF SPECTRUM MONITORING STATIONS IN THE COURSE OF THEIR ROUTINE OPERATIONS

Konstantin Vladimirovith Bondarenko¹, Olga Evgenievna Krutova² and Alexander Pavlovitch Pavlyuk²

¹Former State Communications Inspection (SCI) of Tajikistan, Dushanbe; ²Radio Research & Development Institute (NIIR), Moscow, Russian Federation; alexander.pavlyuk@ties.itu.int

F: 2

EXPERIENCE IN PLANNING OF LOCAL SPECTRUM MONITORING NETWORKS OF THE REPUBLIC OF TAJIKISTAN BASED ON ADVANCED PLANNING TOOLS

Konstantin Vladimirovitch Bondarenko¹, Olga Evgenievna Krutova² and Alexander Pavlovitch Pavlyuk²

¹Former State Communication Inspection (SCI) of Tajikistan, Dushanbe; ²Radio Research & Development Institute (NIIR), Moscow, Russian Federation; alexander.pavlyuk@ties.itu.int

F: 3

PROMINENT FEATURES OF THE NEW NATIONAL FREQUENCY PLAN OF THE KINGDOM OF SAUDI ARABIA

Alexander Pavlovitch Pavlyuk¹

Radio Research & Development Institute (NIIR), Moscow, Russian Federation; alexander.pavlyuk@ties.itu.int

F: 4

SPECTRUM MANAGEMENT AND POLICY REFORMATION FOR NEXT GENERATION WIRELESS SERVICES IN INDIA

Anjana Jain¹, Prakash Vyavahare¹ and Sandhya Charhate¹

S.G.S.I.T.S., India; anjana_jain67@yahoo.co.in

G: Computational Electromagnetic Modelling

CONTRIBUTION FROM THE SILESIAN UNIVERSITY OF TECHNOLOGY, GLIWICE, POLAND

Chairman/Organizer: ANDRZEJ KARWOWSKI, Silesian University of Technology, Gliwice, Poland

Time: Wednesday, 11/06/2008: 4:00pm - 5:30pm

G: 1

FAST HYBRID MM-PO METHOD FOR WIDE-BAND ANALYSIS OF ELECTRICALLY LARGE RADIATING STRUCTURES

Artur Noga¹ and Andrzej Karwowski¹

Silesian University of Technology, Poland; artur.noga@polsl.pl

G: 2

COMPUTATIONALLY EFFICIENT HYBRID MoM-FDTD TECHNIQUE FOR ELECTROMAGNETIC ANALYSIS

Tomasz Topa¹ and Andrzej Karwowski¹

Silesian University of Technology, Poland; ttopa@polsl.pl

G: 3

EFFICIENT MoM-BASED TECHNIQUES FOR BROADBAND ANALYSIS OF SCATTERING AND RADIATING OBJECTS

Maciej Surma¹ and Andrzej Karwowski¹

Silesian University of Technology, Poland; anoga@polsl.pl

G: 4

PREDICTION OF EXPOSURE CONDITION IN VICINITY OF CELLULAR TELEPHONY BASE STATION ANTENNAS

Dariusz Wójcik¹ and Andrzej Karwowski¹

Silesian University of Technology, Poland; dwojcik@polsl.pl

CP1: Company Presentations 1

Chairman: ZBIGNIEW M. JÓSKIEWICZ, Wrocław University of Technology, Wrocław, Poland

Time: Wednesday, 11/06/2008: 4:00pm - 6:00pm

CP1: 1

DEMANDS ON EMC / RF TEST SYSTEMS FOR MODERN ELECTRONIC PRODUCTS

(45 min.)

Rohde & Schwarz Osterreich Sp. z o.o., Warszawa, Poland

CP1: 2

EMI AND THERMALL PRODUCTS OF LAIRD TECHNOLOGIES

(20 min.)

ABC Elektronik Sp. z o.o., Gorlice, Poland

CP1: 3

COMPANY PRESENTATION

(45 min.)

AM Technologies Polska Sp. z o.o., Warszawa, Poland

2nd Day, Thursday, June 12

9 ⁰⁰ - 9 ⁴⁵	Plenary Session III (Room 10A/C) "HOW TO HANDLE LARGE MACHINERY: ALTERNATIVE METHODOLOGIES FOR THE EVALUATION OF THEIR EMC BEHAVIOUR" Johan Catrysse, Katholieke Hogeschool Brugge-Oostende, Belgium		
9 ⁴⁵ - 10 ¹⁵	Coffee Break		
	Room 10A/C	Room 10B	Room 10D
10 ¹⁵ - 11 ⁴⁵	<u>Session ITU 1</u> Efficient Use of Orbit/Spectrum by Satellite Systems (1)	<u>Session H</u> EMC Measurement Techniques, Test Facilities & Instrumentation (3)	<u>Session I</u> ESD, Lightning and Transients (1)
11 ⁴⁵ - 12 ⁰⁰	Break		
12 ⁰⁰ - 13 ³⁰	<u>Session ITU 2</u> Efficient Use of Orbit/Spectrum by Satellite Systems (2)	<u>Session J</u> Technical Aspects of Biological Effects of EM Radiation and EM Environment Natural and Man-made	<u>Session K</u> ESD, Lightning and Transients (2)
13 ³⁰ - 14 ³⁰	Lunch (Canteen)		
14 ³⁰ - 16 ⁰⁰	<u>Session ITU 3</u> Efficient Use of Orbit/Spectrum by Satellite Systems (3)	<u>Session L</u> EMC Analysis, Modelling and Prediction (1)	<u>WS 2</u> Verification of The ESD Current Pulse According to EN 61000-4-2
16 ⁰⁰ - 16 ³⁰	Coffee Break (Hall)		
16 ³⁰ - 18 ⁰⁰	<u>Session ITU 4</u> Efficient Use of Orbit/Spectrum by Satellite Systems (4)	<u>Session M</u> EMC Analysis, Modelling and Prediction (2)	<u>CP2:</u> Company Presentations 2
	EMC-S Polish Chapter meeting (room 105, building C-5)		
19 ³⁰ - 23 ⁰⁰	Picnic		

P3: Plenary session 3

Chairman: TADEUSZ W. WIĘCKOWSKI, Wrocław University of Technology, Wrocław, Poland

Time: Thursday, 12/06/2008: 9:00am - 9:45am

P3: 1

HOW TO HANDLE LARGE MACHINERY: ALTERNATIVE METHODOLOGIES FOR THE EVALUATION OF THEIR EMC BEHAVIOUR

Johan Catrysse¹, Filip Vanhee², Jos Knockaert², Ivan Hendrickx² and Véronique Beauvois³

¹Katholieke Hogeschool Brugge-Oostende, Flanders Mechatronics Engineering Center, Belgium; ²MICAS/ESAT, KULeuven, Belgium; ³EMC Lab, Applied & Computational Electromagnetics, University of Liege, Belgium; johan.catrysse@khbo.be

ITU 1: Efficient Use of Orbit/Spectrum by Satellite Systems

Chairman: YVON HENRI, International Telecommunication Union Radiocommunication Bureau, Switzerland

Time: Thursday, 12/06/2008: 10:15am - 11:45am

ITU1: 1

Yvon Henri

Head, Space Service Department Radiocommunication Bureau International Telecommunication Union, Switzerland; yvon.henri@itu.int

ITU1: 2

HOW ITU AND THE SATELLITE COMMUNITIES CONTRIBUTE TO EFFICIENT USE OF THE ORBIT/SPECTRUM RESOURCES

William Luther

USA

ITU1: 3

EFFICIENT SPECTRUM USAGE, ITU AND SATELLITE SYSTEMS

Per Hovstad

Spectrum Management, Asia Satellite Telecommunications Co. Ltd ;

H: EMC Measurement Techniques, Test Facilities & Instrumentation (3)

Chairman: ANDRZEJ A. KUCHARSKI, Wrocław University of Technology, Wrocław, Poland

Time: Thursday, 12/06/2008: 10:15am - 11:45am

H: 1

EXPERIMENTAL EVALUATION OF THE GAIN IN SENSITIVITY USING THE VIDEO ANALYSIS

Frank Schroeder¹ and Karl-Heinz Gonschorek¹

Fakultät Elektrotechnik und Informationstechnik, Lehrstuhl und Laboratorium für Theoretische Elektrotechnik und Elektromagnetische Verträglichkeit, Technische Universität Dresden, Germany; fs_emv@web.de

H: 2 (at authors' request this paper will be presented in session U)

LOW FREQUENCY LOW-NOISE INDUCTION SENSORS FOR EMC CERTIFICATION

Vitalij Nichoga^{1,2}, Eugeniusz Grudziński³, Petro Dub¹ and Vira Pronenko⁴

¹Physico-Mechanical Institute of the National Academy of Sciences of Ukraine, Ukraine; ²Lviv Polytechnic National University, Institute of Telecommunications, Radioelectronics and Electronic Engineering, Lviv, Ukraine; ³Wrocław University of Technology, Electromagnetic Environment Protection Laboratory, Wrocław, Poland; ⁴Lviv Centre of Institute of Space Research of the National Academy of Sciences of Ukraine and the National Space Agency of Ukraine, Laboratory for Electromagnetic Investigations, Lviv, Ukraine; nich@ipm.lviv.ua

H: 3

STUDY OF FUNCTIONAL BEHAVIOR OF AN ELECTRONIC SYSTEM PLACED IN HOSTILE ELECTROMAGNETIC ENVIRONMENT

Laurent Guibert¹, J. Poly² and I. Junqua¹

¹ONERA Centre de Toulouse, France; ²Département Electronique de l'Université de Poitiers, France; laurent.guibert@oncert.fr

H: 4

ABOUT THE INFLUENCE OF THE TRANSMITTING ANTENNA POSITION TO THE ELECTRIC FIELD COUPLED INTO A SHIELDING CASING

Tobias Dyballa¹ and Jan Luiken ter Haseborg¹

Hamburg University of Technology, Institute of Measurement Technology and Electromagnetic Compatibility, Germany; t.dyballa@tu-harburg.de

H: 5 (paper moved from session C at author's request)

AN UPDATE ON INTERNATIONAL POWER LINE IMMUNITY AND EMISSION STANDARDS

Mathieu R. W. van den Bergh

CNS Inc., Poway California, United States of America; mathieu-van-den-bergh@cox.net

I: ESD, Lightning and Transients (1)

Chairman: KAROL ANISEROWICZ, Białystok Technical University, Białystok, Poland

Time: Thursday, 12/06/2008: 10:15am - 11:45am

I: 1

EXPERIMENTAL VERIFICATION OF SPARK-RESISTANCE FORMULA FOR MICRO-GAP ESD DUE TO CHARGED HUMAN

Yoshinori Taka¹ and Osamu Fujiwara¹

Graduate School of Engineering, Nagoya Institute of Technology, Gokiso-cho Showa-ku Nagoya, Japan.; taka.yoshinori@nitech.ac.jp

I: 2

VOLTAGE AND APPROACH SPEED DEPENDENCE OF DISCHARGE PARAMETERS IN HUMAN BODY AIR DISCHARGE THROUGH A SMALL METAL ROD

Fang-ming Ruan^{1,3}, Yoshinori Taka², Osamu Fujiwara², You-gang Gao³ and Dan Shi³

¹Department of Electronics & Information Engineering, Guizhou Normal University, Guizhou, Peoples Republic of China; ²Graduate School of Engineering, Nagoya Institute of Technology, Japan; ³Research Institute of EMC, Beijing University of Post & Telecommunication, Beijing, Peoples Republic of China; ruan200145@yahoo.com

I: 3

RELATION BETWEEN BREAKDOWN FIELD AND RADIATED ELECTROMAGNETIC FIELD STRENGTH DUE TO MICRO GAP DISCHARGE

Ken Kawamata¹, Shigeki Minegishi², Akira Haga² and Osamu Fujiwara³

¹Department of Electronic Intelligence and Systems, Hachinohe Institute of Technology, Japan; ²Department of Electrical and Communication Engineering, Tohoku Gakuin University, Japan; ³Nagoya Institute of Technology, Japan; kawamata@hi-tech.ac.jp

I: 4

EXPERIMENTAL RESULTS FOR EFFECT OF COMMON GROUNDING IN TT POWER DISTRIBUTION SYSTEM AT CUSTOMER PREMISES

Jun Kato¹, Akira Asakawa² and Shoichi Kuramoto³

¹Nippon Telegraph and Telephone Corporation, Environment and Energy Systems Laboratories, Tokyo, Japan; ²Central Research Institute of the Power Industry, Japan; ³NTT East, Tokyo, Japan; kato.i@lab.ntt.co.jp

ITU 2: Efficient Use of Orbit/Spectrum by Satellite Systems

Chairman: YVON HENRI, International Telecommunication Union Radiocommunication Bureau, Switzerland

Time: Thursday, 12/06/2008: 12:00pm - 1:30pm

ITU2: 1

REGULATORY HARMONISATION FOR EARTH STATIONS: WHAT IS THE BEST LEVEL?

Alexander Vallet

Vice-Chairman, ITU-R Study Group 4, Agence Nationale des Fréquences, France;

ITU2: 2

GLOBAL COVERAGE 24HR PER DAY FROM INCLINED CIRCULAR ORBITS

Henry J. Meyerhoff

Space Spectrum Coordination Consultants Ltd;

ITU2: 3

EMC BETWEEN BWA AND FSS AT 4 GHz

European Satellite Action Plan Regulatory Group;

J: Technical Aspects of Biological Effects of EM Radiation and EM Environment Natural and Man-made

Chairman: BERND JAEKEL, Siemens AG, EMC Center, Erlangen, Germany

Time: Thursday, 12/06/2008: 12:00pm - 1:30pm

J: 1

DEVELOPMENTS IN THE DESCRIPTION OF ELECTROMAGNETIC ENVIRONMENTS

Bernd Jaekel

Siemens AG, Sector Industry, EMC Center, Erlangen, Germany; bernd.jaekel@siemens.com

J: 2

AN EFFICIENT METHOD OF THE REDUCTION OF THE RADIATION LEVEL IN THE AREAS ACCESSIBLE TO PEOPLE

Fryderyk Lewicki¹

Polish Telecom (TPSA), R & D Division (TP R&D), Wroclaw, Poland; fryderyk.lewicki@telekomunikacja.pl

J: 3

SELECTED ASPECTS OF UNCONTROLLED EXPOSURE TO EMF IN THE LIVING ENVIRONMENT

Halina Aniołczyk¹, Piotr Politanski¹ and Pawel Mamrot¹

Nofer Institute of Occupational Medicine, Physical Hazards Department, Electromagnetic Hazards Laboratory, Lodz, Poland;

h_aniol@imp.lodz.pl

J: 4

ON BIOLOGICAL EFFECTS OF DIFFERENTLY POLARIZED MICROWAVE RADIATION

Yuriy Shckorbatov¹, Vladimir Pasiuga¹, Viktor Bykov², Valentin Grabina³, Dmitry Ivanchenko² and Nikolay Kolchigin²

¹Kharkiv National University, Institute of Biology, Ukraine; ²Kharkiv National University, Department of Theoretic Radiophysics, Ukraine; ³Kharkiv National University, Laboratory of Quantum Biology, Ukraine; Yury.G.Shckorbatov@univer.kharkov.ua

K: ESD, Lightning and Transients (2)

Chairman: OSAMU FUJIWARA, Nagoya Institute of Technology, Nagoya, Japan

Time: Thursday, 12/06/2008: 12:00pm - 1:30pm

K: 1

COMPARISON OF LEMP-INDUCED CURRENT SIMULATION WITH THE USE OF DIFFERENT COMPUTER CODES

Karol Anisierowicz¹ and Tomasz Maksimowicz¹

Bialystok Technical University, Faculty of Electrical Engineering, Bialystok, Poland; aniser@pb.edu.pl

K: 2

INVESTIGATION METHODS OF LEMP EFFECT ON RADIO BASE STATIONS

Renata Markowska¹ and Andrzej Witold Sowa¹

Bialystok Technical University, Electrical Department, Bialystok, Poland; andrzejsowa@ochrona.net.pl

K: 3

SURGE CURRENT WAVEFORMS AT THE TOP AND BASE OF A COMMUNICATION TOWER DURING DIRECT LIGHTNING STRIKE

Renata Markowska

Bialystok Technical University, Electrical Department, Bialystok, Poland; remark@pb.edu.pl

K: 4

CURRENT CHARACTERISTICS OF CN TOWER LIGHTNING

Ali M. Hussein¹ and Mariusz Milewski¹

Ryerson University, Canada; mmilewsk@ryerson.ca

ITU 3: Efficient Use of Orbit/Spectrum by Satellite Systems

Chairman: YVON HENRI, International Telecommunication Union Radiocommunication Bureau, Switzerland

Time: Thursday, 12/06/2008: 2:30pm - 4:00pm

ITU3: 1

Joaquin G. Restrepo

Asesor Asuntos Internacionales Ministerio de Comunicaciones Colombia

ITU3: 2

EUROPEAN REGULATORY APPROACH TO ORBITAL / SPECTRUM REGISTRATIONS 

Gerald Oberst

Hogan & Hartson LLP, Belgium

L: EMC Analysis, Modelling and Prediction (1)

Chairman: WOJCIECH MACHCZYŃSKI, Poznań University of Technology, Poznań, Poland

Time: Thursday, 12/06/2008: 2:30pm - 4:00pm

L: 1

AWE-BASED WIDEBAND COMPUTATION OF ELECTROMAGNETIC TRANSMISSION THROUGH A DIELECTRIC COVERED APERTURE

Andrzej Antoni Kucharski

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L: 2

EMC MODELLING OF LOADED ENCLOSURES WITH APERTURE BY HYBRID MOM/FEM ANALYSIS

Sibel Yenikaya

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L: 3

ELECTROMAGNETIC FIELD SHIELDING STUDY OF A THIN PLATE CONTAINING APERTURES

Fayçal Tahar Belkacem¹, M. Djennah¹, A. Loui² and B. Mazari²

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L: 4

NAVAL ELECTROMAGNETIC COMPATIBILITY INVESTIGATIONS BY USE OF TOPOLOGICAL MODEL

Rafał Namiotko¹, Ryszard J. Katulski² and Krzysztof Dymarkowski¹

¹R&D Marine Technology Centre Gdynia, Poland; ²Gdansk University of Technology, Poland; rafal.namiotko@ctm.gdynia.pl

L: 5

METHODS OF CALCULATING THE MEAN AND VARIANCE OF POWER SUMS WITH LOG-NORMAL COMPONENTS

Dariusz P. Więcek¹ and Jacek W. Wroński¹

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WS2: Verification of the ESD Current Pulse According to EN 61000-4-2

Chairman: JAROSŁAW J. JANISZEWSKI, Wrocław University of Technology, Wrocław, Poland

Time: Thursday, 12/06/2008: 2:30pm - 4:00pm

WS2: 1

VERIFICATION OF THE ESD CURRENT PULSE ACCORDING TO EN 61000-4-2

Jan Sroka

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ITU 4: Efficient Use of Orbit/Spectrum by Satellite Systems

Chairman: YVON HENRI, International Telecommunication Union Radiocommunication Bureau, Switzerland

Time: Thursday, 12/06/2008: 4:30pm - 6:00pm

ITU4: 1

MONITORING AND ENFORCING THE ORBITAL SPECTRUM

Jan Verduijn

Chairman, ITU-R Working Group 1C Spectrum Research Consultancy Netherlands;

ITU4: 2

SATELLITE MONITORING IN THE FRAMEWORK OF CEPT COMPATIBILITY STUDIES

Jean-Philippe Kermaol

European Radiocommunications Office;

ITU4: 3

ADVANCED METHODS OF SPECTRUM MANAGEMENT FOR SATELLITE SYSTEMS

Vadim Nozdrin

Space Service Department Radiocommunication Bureau International Telecommunication;

M: EMC Analysis, Modelling and Prediction (2)

Chairman: FRANZ SCHLAGENHAUFER, Western Australian Telecommunications Research Institute (WATRI), Nedlands, Australia

Time: Thursday, 12/06/2008: 4:30pm - 6:00pm

M: 1

ANALYSIS OF SIMILAR INTERFERENCES INFLUENCE TO RECEIVERS SYNC DEVICES

Bohdan Mandzij^{1,2}, Andriy Bondarev² and Ivan Maksymiv²

¹The College of Computer Science, Łódź, Poland; ²Lviv Polytechnic National University, Telecommunication Department, Ukraine;

bondap@ukr.net

M: 2

SWITCHING NOISE CHARACTERIZATION AND MODELING INVESTIGATION FOR POWER TRANSISTORS APPLICATIONS

Emmanuel Batista¹ and Jean-Marc Dienot²

¹Power Electronics Associated Research Laboratory - ALSTOM, Sémeac, France; ²LabCeem, University Institute of Technology, Tarbes, France; emmanuel.batista@transport.alstom.com

M: 3

HIGH RESOLUTION SCAN OF THE E-FIELD DISTRIBUTION OF NON TEM MODES INSIDE A GTEM CELL

Kai Haake and Jan Luiken ter Haseborg

Institute of Measurement Technology and Electromagnetic Compatibility, Hamburg University of Technology, Germany; k.haake@tu-harburg.de

M: 4

RFI MITIGATION AND REDUCTION OF IONOSPHERE EFFECTS AT RADIOINTERFEROMETRY OBSERVATIONS OF SPACE RADIOSOURCES

Volodymyr Koshovyy¹, Andriy Lozynskyy¹ and Oleg Ivantyshyn¹

Karpenko Physico-Mechanical Institute of the National Academy of Sciences of Ukraine, Ukraine; koshovyy@ipm.lviv.ua

M: 5

SMALL REVERBERATION CHAMBER AS A TOOL FOR INVESTIGATION OF MOBILE COMMUNICATION HANDSETS

Wojciech Jan Krzysztofik¹ and Szymon Wolny²

¹Wrocław University of Technology, Faculty of Electronic Engineering, Wrocław, Poland; ²NOKIA SIEMENS Network, Wrocław, Poland;

wojciech.krzysztofik@pwr.wroc.pl

CP2: Company Presentations 2

Chairman: JAROSŁAW J. JANISZEWSKI, Wrocław University of Technology, Wrocław, Poland

Time: Thursday, 12/06/2008: 4:30pm - 6:00pm

CP2: 1

CST - COMPANY PRESENTATION

(45 min.)

CST - Computer Simulation Technology, Darmstadt, Germany

CP2: 2

KITIGAWA GLOBAL ACTIVITIES

(45 min.)

KITIGAWA GmbH, Germany

3rd Day, Friday, June 13

	Room 10A/C	Room 10B	Room 10D
9 ⁰⁰ - 10 ³⁰	<u>Session N</u> Antennas and Propagation, EMC Aspects (1)	<u>Session O</u> EMC in Power Systems	<u>Session R</u> Immunity and Emissions
10 ³⁰ - 11 ⁰⁰	Coffee Break (hall)		
11 ⁰⁰ - 12 ³⁰	<u>Session S</u> Antennas and Propagation, EMC Aspects (2)	<u>Session T</u> EMC in Power Electronics	<u>Session U</u> Other EMC aspects
12 ³⁰ - 12 ⁴⁵	Closing ceremony (Room 10A/C)		
12 ⁴⁵ - 14 ⁰⁰	Lunch (Canteen)		
14 ⁰⁰ - 15 ⁰⁰	Symposium Program & Organizing Committee Meeting (Room 105, building C-5)		

N: Antennas and Propagation, EMC Aspects (1)

Chairman: DANIEL J. BEM, Wrocław University of Technology, Wrocław, Poland

Time: Friday, 13/06/2008: 9:00am - 10:30am

N: 1

EMC ANALYSIS OF PLANAR TWO-ELEMENT UWB ANTENNA FOR RADIOCOMMUNICATION SYSTEMS

Marek Garbaruk¹ and Gennadij Chavka¹

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N: 2

THE RECIPROCITY THEOREM FOR A REFLECTARRAY

Boris M. Levin

Lod, Israel; levinpaker@hotmail.com

N: 3

EMC ANALYSIS OF PLANAR ULTRA-WIDEBAND MICROSTRIP AND STRIPLINE ANTENNAS

Marek Garbaruk¹

Technical University of Białystok, Faculty of Electrical Engineering, Białystok, Poland; mgarbaruk@pb.edu.pl

N: 4

DESIGN OF ELECTRICALLY SMALL LINEAR ANTENNA

Katarzyna Jagodzińska¹ and Maciej Walkowiak¹

Koszalin University of Technology, Poland; kasik@ie.tu.koszalin.pl

N: 5

ANALYSIS OF ANTENNA ARRAY USING NEW SCATTERING MATRIX

Gennadij Chavka

Technical University of Białystok, Faculty of Electrical Engineering, Poland; gqc@pb.edu.pl

O: EMC in Power Systems

Chairman: FRANZ SCHLAGENHAUFER, Western Australian Telecommunications Research Institute (WATRI), Nedlands, Australia

Time: Friday, 13/06/2008: 9:00am - 10:30am

O: 1

EMISSIONS FROM BPL EQUIPMENT IN DOMESTIC POWER NETWORKS

Ray Garrett¹, Paul Kay² and Franz Schlagenhauser³

¹EMC Services, Epping, Australia; ²University of South Australia, Department of Electrical and Electronic Engineering, Australia; ³University of Western Australia, Western Australian Telecommunications Research Institute (WATRI), Australia; franz-s@watri.org.au

O: 2

ANALYSES OF THE GRID RESISTANCE MEASUREMENT OF AN OPERATING TRANSFORMER STATION

József Ladányi¹ and György Varjú¹

Budapest University of Technology and Economics, Department of Electric Power Engineering, Power Systems and Environment Group, Hungary; ladanyi.jozsef@vet.bme.hu

O: 3

ANALYSIS OF CONDUCTED EMISSIONS OF SWITCHED-MODE POWER SUPPLIES USING SOFT-SWITCHING TECHNIQUES

Reinhard Doebbelin, Wolfgang Fischer, Sebastian Schulz and Andreas Lindemann

Otto-von-Guericke-University Magdeburg, Germany; reinhard.doebbelin@et.uni-magdeburg.de

O: 4

HIGH FREQUENCY BEHAVIOURAL MODELING METHOD OF THE ADJUSTABLE SPEED DRIVE SYSTEMS

Maxime Moreau¹, Nadir Idir¹, Philippe Le Moigne² and Xavier Margueron¹

¹Université des Sciences et Technologies de Lille, Bat P2, France; ²Ecole Centrale de Lille, France; nadir.idir@univ-lille1.fr

R: Immunity and Emissions

Chairman: RYSZARD J. ZIELINSKI, Wrocław University of Technology, Wrocław, Poland

Time: Friday, 13/06/2008: 9:00am - 10:30am

R: 1

INFLUENCE OF NON-DESTRUCTIVE SHORTENING OF LONG CABLES UPON REPEATABILITY OF EMC IMMUNITY TESTS

Karol Kovac¹, Jozef Hallon¹ and Mikulas Bittera¹

Slovak University of Technology, Slovakia; karol.kovac@stuba.sk

R: 2

TESTING OF IMMUNITY OF DIGITAL ICs AGAINST ELECTROMAGNETIC DISTURBANCES

Jerzy F. Kołodziejcki¹, Tomasz Daniluk², Dariusz Markowski³, Juliusz Szczyński¹ and Michał Szermer³

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R: 3

EMC INVESTIGATIONS OF NARROWBAND AND BROADBAND INTERFERENCES OF 2.4-GHZ-WLAN APPLICATIONS ON CRUISE AND CONTAINER VESSELS

Tobias Pilsak¹ and Jan Luiken ter Haseborg¹

Hamburg University of Technology, Germany; Pilsak@tuhh.de

R: 4

DIGITAL DISPERSIONAL SPECTRUM ANALYZER IN THE SOLUTION OF EMS RADIO ELECTRONIC MEAN PROBLEMS

Volodymyr Antonyuk¹, Mykola Kalyuzhnyi¹, Mykailo Lobur¹, Anatolij Semenyk¹, Ivan Prudyus², Vitalij Nichoga², Volodymyr Storozh² and Eugeniusz Grudzinski³

¹Lviv Radio Engineering Research Institute, Ukraine; ²Lviv Polytechnic National University, Ukraine; ³Wrocław University of Technology, Poland; avp-lviv@i.ua

R: 5

THE MEASUREMENT METHOD OF COMPLEX COEFFICIENT OF MIRROR REFLECTION FROM ENVIRONMENT BOUNDARY

Volodymyr Antonyuk¹, Mykailo Lobur¹, Anatolij Semenyk¹, Ivan Prudyus², Vitalij Nichoga² and Volodymyr Storozh²

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S: Antennas and Propagation, EMC Aspects (2)

Chairman: DANIEL J. BEM, Wrocław University of Technology, Wrocław, Poland

Time: Friday, 13/06/2008: 11:00am - 12:30pm

S: 1

FIELD EXTRAPOLATION TO TEST LARGE RADIATORS IN THE NEAR FIELD REGION

Wolfram Sorge

Signalion GmbH, Germany; wolfram.sorge@signalion.com

S: 2

ESTIMATION OF NEAR-FIELD DISTRIBUTION OF MICROWAVE ANTENNAS USING THE CONCEPT OF FRESNEL APPROXIMATION

Roman Kubacki¹, Marian Wnuk¹ and Grzegorz Róžański¹

Military University of Technology, Poland; romankubacki@onet.pl

S: 3

PROPAGATION ON MODERN SATELLITE PATHS

Jan Bogucki, Jacek Jarkowski and Ewa Wielowieyska

National Institute of Telecommunications, Warszawa, Poland; J.Bogucki@itl.waw.pl

S: 4

INFLUENCE OF POLAR IONOSPHERE ON TRANSIONOSPHERIC PROPAGATION OF GPS SIGNALS

Irk Ibragimovich Shagimuratov¹, Andrzej Krankowski², Irina Zakharenkova¹, Ivan Ephishov¹ and Nadezda Tepenitsyna¹

¹West Department IZMIRAN, Russian Federation; ²University of Warmia and Mazury, Olsztyn, Poland; Shagimuratov@mail.ru

S: 5

CALCULATION OF THE CHARACTERISTICS OF TWO-WIRE LINES IN MULTICONDUCTOR CABLES

Boris M. Levin

Lod, Israel; levinpaker@hotmail.com

T: EMC in Power Electronics

Chairman/Organizer: VOLODYMYR PILINSKY, National Technical University of Ukraine "Kiev Polytechnic Institute", Kiev, Ukraine

Time: Friday, 13/06/2008: 11:00am - 12:30pm

T: 1

SPECTRAL STRUCTURE OF EMI CAUSED BY POWER ELECTRONIC UNITS

Alizadeh Abdolhadi¹, Volodymyr Pilinsky¹, Volodymyr Shvaichenko¹ and Igor Shypkov¹

National Technical University of Ukraine "Kiev Polytechnic Institute", Department of Audio engineering and data loggings, Kiev, Ukraine; pilinsky@ztri.ntu-kpi.kiev.ua

T: 2

DIAGNOSTICS OF SEMICONDUCTOR CONVERTERS ON THE BASE OF WAVELET TRANSFORMATION WITH m-ARY ARGUMENT

Julia Petergerya¹ and Tetyana Khizhnyak¹

National Technical University of Ukraine "KPI", Department of Industrial Electronics, Ukraine; petergerya@yahoo.com

T: 3

METHODS OF SYNCHRONIZATION IN CDMA SYSTEMS FOR INDUSTRIAL AUTOMATION

Julia Petergerya¹ and Yuriy Khokhlov¹

National Technical University of Ukraine "KPI", Department of Industrial Electronics, Kyiv, Ukraine., Ukraine; ykhokhlov@gmail.com

T: 4

ELECTROACOUSTIC EFFECTS AS MOTIVE OF POWER ELECTRONICS UNITS EMI GENERATION

Oleg Petrishchev¹, Maria Rodionova¹, Volodymyr Pilinsky² and Volodymyr Shvaichenko²

¹National Technical University of Ukraine "Kiev Polytechnic Institute", Department of Acoustics and Acoustoelectronics, Kiev, Ukraine; ²National Technical University of Ukraine "Kiev Polytechnic Institute", Department of Audio Engineering and Data Logging, Kiev, Ukraine; pilinsky@ztri.ntu-kpi.kiev.ua

U: Other EMC aspects

Chairman: RYSZARD KATULSKI, Gdańsk University of Technology, Gdańsk, Poland

Time: Friday, 13/06/2008: 11:00am - 12:30pm

U: 1

RESOLVING INTERNAL AND EXTERNAL ELECTROMAGNETIC COMPATIBILITY ISSUES FOR AN EPR SPECTROMETER- AN EXAMPLE

Jan Duchiewicz¹, Andrzej L. Dobrucki¹, Andrzej Francik¹, Andrzej E. Sowa¹, Jerzy S. Witkowski¹ and Tomasz Duchiewicz¹

Wroclaw University of Technology, Poland; Jan.Duchiewicz@pwr.wroc.pl

U: 2

NARROWBAND INTERFERENCE SUPPRESSION IN IEEE 802.15.4a ULTRAWIDEBAND RECEIVER

Jarosław Sadowski¹ and Ryszard Katulski¹

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U: 3

"EMC-ANALYZER" EXPERT SYSTEM: IMPROVEMENT OF IEMCAP MODELS

Vladimir Mordachev¹ and Eugene Sinkevich¹

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U: 4

GENERALIZED EMC CHARACTERISTICS OF RADIO RECEIVING SYSTEMS

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U: 5 (paper moved from session H at authors' request)

LOW FREQUENCY LOW-NOISE INDUCTION SENSORS FOR EMC CERTIFICATION

Vitalij Nichoga^{1,2}, Eugeniusz Grudziński³, Petro Dub¹ and Vira Pronenko⁴

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