

2010 European Microwave Conference

(EuMC 2010)

**Paris, France
28 – 30 September 2010**

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**IEEE Catalog Number: CFP10455-PRT
ISBN: 978-1-4244-7232-1**

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¹Russian Academy of Sciences, Russia; ²Central Research Technological Institute “Technomash”, Russia

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Chair: Christian Person, ENST Bretagne — Co-Chair: Lukasz Greda, Deutsches Zentrum für Luft- und Raumfahrt e.V.

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Chair: Steve Nightingale, COBHAM — Co-Chair: Hideyuki Nosaka, NTT

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¹National Taiwan University, Taiwan; ²National Taiwan Normal University, Taiwan

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Chair: Richard Snyder, RS Microwave — Co-Chair: Serge Verdeyme, XLIM

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Chair: Spartak Gevorgian, Chalmers University of Technology — Co-Chair: Andrei Kozyrev

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¹Universidad Pública de Navarra, Spain; ²INRS-EMT, Canada; ³McGill University, Canada
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¹Royal Military College of Canada, Canada; ²Queen's University at Kingston, Canada

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Chair: Dimitris Pavlidis, Technische Universität Darmstadt, Germany — Co-Chair: Tuami Lasri, IEMN

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Chair: Yuri Kuznetsov, Moscow Aviation — Co-Chair: Magdalena Salazar Palma, Polytechnic of Madrid UPM

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- 361 **Characterization of Resonances by Polar Expansion of Generalized Admittance Matrix**
Sergio Llorente-Romano¹, Benito Gimeno², Vicente E. Boria Esbert³, Magdalena Salazar¹
¹Universidad Carlos III de Madrid, Spain; ²Universitat de València, Spain; ³Universidad Politécnica de Valencia, Spain
- 365 **Calibrated Space-Mapping Approach for the Design of SIW Filters**
Fermín Mira¹, Maurizio Bozzi², Francesco Giuppi², Luca Perregrini², Apostolos Georgiadis¹
¹CTTC, Spain; ²Università di Pavia, Italy
- 369 **Active Learning Method for Microstrip Filter Design**
Payman Rezaee¹, Nasrin Nasr Esfahani¹, Reinhard Knoechel², Majid Tayarani¹
¹Iran University of Science & Technology, Iran; ²Christian-Albrechts-Universität zu Kiel, Germany

EuMC23: Wireless System Applications

Chair: Homayoun Nikookar, Delft University of Technology — Co-Chair: Erik Fledderus, TNO/TU Eindhoven

Venue: Dickens 3/4, 10:50–12:30, Wednesday 29 September 2010

- 373 **Simulated and Experimental Wavelet-Based Detection of Breast Tumor Using a UWB Radar**
A. Lazaro, D. Girbau, R. Villarino, Universitat Rovira i Virgili, Spain
- 377 **An UWB Millimeter-Wave Transceiver Architecture for Wireless Sensor Networks Applications**
Ling Jin, C. Loyez, Nathalie Rolland, Paul-Alain Rolland, IEMN, France
- 381 **A BPSK/QPSK Receiver Architecture Suitable for Low-Cost Ultra-High Rate 60GHz Wireless Communications**
A. Çağrı Ulusoy¹, Gang Liu¹, Michael Peter², Robert Felbecker², Hebat-Allah Y. Abdine³, Hermann Schumacher¹
¹Universität Ulm, Germany; ²Fraunhofer HHI, Germany; ³German University in Cairo, Egypt
- 385 **Successive Interference Cancellation (SIC) in MB-OFDM Receiver with Imperfect Local Oscillator**
Borislav Milevsky¹, Myriam Ariaudo¹, Jean-Luc Gautier¹, Inbar Fijalkow¹, Marin Hristov²
¹ETIS, France; ²Technical University of Sofia, Bulgaria
- 389 **Analog Inverse Fourier Transformer Using Group Delay Engineered C-Section All-Pass Network**
Shulabh Gupta, Christophe Caloz, École Polytechnique de Montréal, Canada

EuMC24: Hybrid and Multichip Modules

Chair: Shmuel Auster, Elta Systems — Co-Chair: Ian D Robertson, University of Leeds

Venue: Dickens 5/6, 10:50–12:30, Wednesday 29 September 2010

- 393 **Visual Observation of Internal Signal Transmissions in a Millimeter-Wave Amplifier Module**
Masahiro Tsuchiya¹, Takahiro Shiozawa²
¹NICT, Japan; ²Kagawa National College of Technology, Japan
- 397 **Microwave Properties of Low Temperature Co-Fired Ceramics for Satellite Communications and Ultra-Wideband Technologies**
Johannes F. Trabert, Stefan Humbla, Jens Müller, Sven Rentsch, Dirk Stöpel, Gabor Vogt, Matthias A. Hein, Technische Universität Ilmenau, Germany
- 401 **Area-Efficient Integrated Antennas for Inter-Chip Communication**
Hristomir Yordanov, Peter Russer, Technische Universität München, Germany
- 405 **E-Band GaAs Antennas Packaged with a Laminated Multi-Chip Module Process**
Thomas Merkle, Stephanie L. Smith, Ken W. Smart, Mei Shen, CSIRO, Australia
- 409 **Biased K-Band LTCC Star Mixer with Substrate-Embedded Dielectrics**
Torben Baras¹, Johannes Müller², Arne F. Jacob²
¹EADS Deutschland GmbH, Germany; ²Technische Universität Hamburg-Harburg, Germany

EuMC25: Integrated Components

Chair: Eric Rius, University of Brest — Co-Chair: Maurizio Bozzi, University of Pavia

Venue: Darwin 3, 10:50 – 12:30, Wednesday 29 September 2010

- 413 **Miniature Bias-Tee Networks Integrated in Micro-Coaxial Lines**
Evan Cullens¹, Kenneth Vanhille², Zoya Popović¹
¹University of Colorado at Boulder, USA; ²Nuvotronics LLC, USA
- 417 **Evaluation of Sub-32nm CMOS Technology for Millimeter Wave Applications**
Y. Morandini¹, F. Giancesello², S. Boret², S. Lasserre¹, D. Gloria², John Pekarik³
¹IBM, France; ²STMicroelectronics, France; ³IBM, USA
- 421 **On-Chip Frequency-Dependent Inductor for Multi-Band Circuit Designs**
*Wayne Woods¹, Hanyi Ding¹, Guoan Wang¹, Pinping Sun¹, Jay Rascoe¹,
Pascal Tannhof², John Pekarik¹*
¹IBM, USA; ²IBM, France
- 425 **A SPDT Switch in a Standard 45nm CMOS Process for 94GHz Applications**
T. Quémerais¹, L. Moquillon², J.-M. Fournier¹, Philippe Benech¹
¹IMEP-LAHC, France; ²STMicroelectronics, France
- 429 **Balanced BPFs Implemented Using IPD (Integrated Passive Devices) Technology**
Jong-Min Yook¹, Je-In Yu², Jong-Chul Park¹, Young-Se Kwon²
¹KETI, Korea; ²KAIST, Korea

EuMC26: CRLH Structures

Chair: Tatsuo Itoh, UCLA — Co-Chair: Valerie Vigneras, IMS Laboratory

Venue: Darwin 4, 10:50 – 12:30, Wednesday 29 September 2010

- 433 **A Super-Compact Dual-Band Wilkinson Power Divider Composed of Multi-Layered CRLH Transmission Lines**
Naohiro Inoue, Takahiro Kawakami, Yasushi Horii, Toshiaki Kitamura, Kansai University, Japan
- 437 **A Compact 6-Bit Phase Shifter with High-Power Capacity Based on Composite Right/Left-Handed Transmission Line**
J. Zhang, S.W. Cheung, T.I. Yuk, University of Hong Kong, China
- 441 **2.14/3.5GHz Novel Dual-Band Negative Group Delay Circuit Design Based on Composite Right/Left Handed Transmission Line**
*Heungjae Choi¹, Sungun Shim¹, Yongchae Jeong¹, Jongsik Lim², Chul Dong Kim³,
Soon-Young Eom⁴, Young-Bae Jung⁴*
¹Chonbuk National University, Korea; ²Soonchunhyang University, Korea; ³Sewon Teletech Inc., Korea; ⁴ETRI, Korea
- 445 **Open-Ended Zeroth-Order Resonators Using Dielectric-Based Metamaterials**
Kousuke Seki¹, Tetsuya Ueda¹, Masahiro Akiyama¹, Tatsuo Itoh²
¹Kyoto Institute of Technology, Japan; ²University of California at Los Angeles, USA
- 449 **Ferrite Supported Steerable Antenna on Metamaterial CRLH Transmission Line**
Gheorghe Sajin, Stefan Simion, Florea Craciunoiu, Alina Cristina Bunea, Adrian Dinescu, Andrei A. Muller, IMT Bucharest, Romania

EuMC28: Reconfigurable and Scanning Antennas

Chair: Lukasz Greda, Deutsches Zentrum für Luft- und Raumfahrt e.V. — Co-Chair: Vincent Fusco, Queen's University Belfast

Venue: Darwin 6, 10:50 – 12:30, Wednesday 29 September 2010

- 453 **A Planar Reconfigurable Yagi-Uda Antenna with Broad Coverage of End-Fire Beam Scan**
Huang-Chu Huang, Powen Hsu, National Taiwan University, Taiwan
- 457 **Electronically Beam Scanning Array Antenna for 5.8GHz ISM Band Application**
Young-Goo Kim¹, Tea-Hong Kim¹, Sang-Gee Kang², Ik-Guen Choi³
¹ETRI, Korea; ²Kunsan National University, Korea; ³Chungbuk National University, Korea
- 461 **Tunable Multiband Antenna with an Active Artificial Magnetic Conductor Ground Plane**
Qi Luo¹, J.R. Pereira², H.M. Salgado¹
¹Universidade do Porto, Portugal; ²Universidade de Aveiro, Portugal
- 465 **in-situ Probes for Antenna Array Calibration**
Alexander Stark, U. Johannsen, Arne F. Jacob, Technische Universität Hamburg-Harburg, Germany
- 469 **Integrated Leaky-Wave Antenna Front-End Using a Ferrite-Loaded Open Waveguide Structure**
Toshiro Kodera, Christophe Caloz, École Polytechnique de Montréal, Canada

EuMC29: Non-Linear Analysis and Behavioral Modelling Techniques

Chair: Anding Zhu, University College Dublin — Co-Chair: Carlos Camacho-Penalosa, University of Malaga

Venue: Dickens 1/2, 13:40 – 15:00, Wednesday 29 September 2010

- 473 **A New Multi-Harmonic and Bilateral Behavioral Model Taking into Account Short Term Memory Effect**
W. Demenitroux¹, C. Maziere¹, Tony Gasseling¹, Bjorn Gustavsen², M. Campovecchio³, R. Quéré³
¹AMCAD Engineering, France; ²SINTEF Energy Research, Norway; ³XLIM, France
- 477 **Automatic Pole-Zero Identification for Multivariable Large-Signal Stability Analysis of RF and Microwave Circuits**
A. Anakabe¹, N. Ayllón¹, Juan-Mari Collantes¹, A. Mallet², G. Soubercaze-Pun², Kumar Narendra³
¹UPV/EHU, Spain; ²CNES, France; ³Motorola Technology, Malaysia
- 481 **Utilization and Validation of HBT Nonlinear Frequency Domain Behavioral Models in the Design and Simulation of Oscillator Circuits**
A.M. Peláez-Pérez¹, A. Rodríguez-Testera², O. Mojón², M. Fernández-Barciela², Paul J. Tasker³, J.I. Alonso¹
¹Universidad Politécnica de Madrid, Spain; ²Universidad de Vigo, Spain; ³Cardiff University, UK
- 485 **On the Significance of Even-Order Nonlinear Terms in Quadrature Modulators and Power Amplifiers**
María J. Madero-Ayora, Michel Allegue-Martínez, Carlos Crespo-Cadenas, Javier Reina-Tosina, Universidad de Sevilla, Spain

EuMC30: Medical Sensing and Imaging

Chair: Andre Vander Vorst, UC Louvain — Co-Chair: Andrew Gibson, University of Manchester

Venue: Dickens 3/4, 13:40 - 15:00, Wednesday 29 September 2010

- 489 **A New Lab-on-Chip Transmitter for the Detection of Proteins Using RNA Aptamers**
Ferhat Tasdemir¹, Samet Zehir¹, Emre Ozeren¹, Javed H. Niazi¹, Anjum Qureshi¹, S. Saravan Kallempudi¹, Mehmet Kaynak², Rene Scholz², Yasar Gurbuz¹
¹Sabancı University, Turkey; ²IHP GmbH, Germany
- 493 **Microwave Sensor for Simultaneous and Nondestructive Determination of Moisture Content and Bulk Density of Granular Materials**
Samir Trabelsi, Stuart O. Nelson, USDA, USA
- 497 **Cosmic Microwave Background Polarization Receivers: QUIJOTE Experiment**
Eduardo Artal¹, Luisa de la Fuente¹, Beatriz Aja¹, Juan L. Cano¹, Enrique Villa¹, Roger Hoyland², J.A. Rubiño-Martin², Ricardo Génova²
¹Universidad de Cantabria, Spain; ²Instituto de Astrofísica de Canarias, Spain
- 501 **Comparative Study of 2.4GHz and 10GHz Vital Signal Sensing Doppler Radars**
Yong-Jun An¹, Young-Pyo Hong¹, Byung-Jun Jang², Jong-Gwan Yook¹
¹Yonsei University, Korea; ²Kookmin University, Korea

EuMC31: RF MEMS — Charging and Thermal Aspects

Chair: Derek Smith, OMMIC — Co-Chair: Stepan Lucyszyn, Imperial College London

Venue: Dickens 5/6, 13:40 - 15:00, Wednesday 29 September 2010

- 505 **Effect of Substrate on Temperature Range and Power Capacity of RF MEMS Capacitive Switches**
Cristiano Palego¹, Francesco Solazzi¹, Subrata Halder¹, James C.M. Hwang¹, Paola Farinelli², Roberto Sorrentino², Alessandro Faes³, Viviana Mulloni³, Benno Margesin³
¹Lehigh University, USA; ²RF Microtech, Italy; ³FBK-irst, Italy
- 509 **Comparison of Thermal Characteristics of Novel RF MEMS Dielectric-Block Phase Shifter to Conventional MEMS Phase-Shifter Concepts**
N. Somjit, G. Stemme, Joachim Oberhammer, KTH, Sweden
- 513 **Evidence of Successive Fowler-Nordheim and Frenkel-Poole Conductions in Si₃N₄ Based RF-MEMS Capacitive Switches**
David Mardivirin¹, Stanis Courrèges¹, Aurelian Crunteanu¹, Arnaud Pothier¹, Pierre Blondy¹, Fabio Coccetti², Robert Plana²
¹XLIM, France; ²LAAS, France
- 517 **Pulse Induced Charging Tests in Capacitive RF-MEMS Switches**
Jinyu J. Ruan¹, George J. Papaioannou², David Trémouilles¹, Nicolas Nolhier¹, Fabio Coccetti¹, Robert Plana¹
¹LAAS, France; ²University of Athens, Greece

EuMC32: Low Noise Receiver Components

Chair: Corinne Berland, ESIEE Paris / LaMIPS-CRISMAT — Co-Chair: Patrice Gamand, NXP Semiconductors

Venue: Darwin 3, 13:40 – 15:00, Wednesday 29 September 2010

- 521 **A 160-GHz Low-Noise Downconverter in a SiGe HBT Technology**
Erik Öjefors¹, Franck Pourchon², Pascal Chevalier², Ullrich R. Pfeiffer¹
¹Universität Wuppertal, Germany; ²STMicroelectronics, France
- 525 **G-Band Low Noise Amplifier and Oscillator for Synthetic Aperture Applications**
Guillaume Desruelles, Nathalie Rolland, Paul-Alain Rolland, IEMN, France
- 529 **LNA and Mixer for 122GHz Receiver in SiGe Technology**
W. Winkler¹, W. Debski¹, Klaus Schmalz², J. Borngräber², Ch. Scheytt²
¹Silicon Radar GmbH, Germany; ²IHP GmbH, Germany
- 533 **A New LNA Wide Band Structure for MMIC Applications**
Benoît Mallet-Guy¹, Philippe Duême¹, Yves Mancuso¹, Michel Chaubet², Luc Lapierre²
¹Thales Systèmes Aéroportés, France; ²CNES, France

EuMC33: Special Session — APMC-EuMC

Chair: Heinrich Wolfgang, Ferdinand Braun Institut — Co-Chair: Danielle Vanhoenacker, UC Louvain

Venue: Darwin 4, 13:40 – 15:00, Wednesday 29 September 2010

- 537 **Ultra Wideband Microwave System with Novel Image Reconstruction Strategies for Breast Cancer Detection**
Marek E. Bialkowski, University of Queensland, Australia
- 541 **Advances in Millimeter-Wave Technology for Wireless LAN/PAN Applications**
Kenichi Maruhashi, NEC Corporation, Japan
- 545 **Integral-Equation Based Fast Solvers Developed for Microwave and RF Applications**
Le-Wei Li, National University of Singapore, Singapore

EuMC34: Filters 3

Chair: Serge Verdeyme, XLIM — Co-Chair: Richard Snyder, RS Microwave

Venue: Darwin 5, 13:40 - 15:00, Wednesday 29 September 2010

- 549 **Microstrip Dual-Band Bandpass Filter Based on the Cul-de-Sac Topology**
Edén Corrales, Oscar Menéndez, Pedro de Paco, Mónica Ramírez, Jordi Verdú, Universitat Autònoma de Barcelona, Spain
- 553 **Dual-Band Filters with Frequency-Separated Dual-Path Coupling Scheme**
Yi-Ting Kuo¹, Jhe-Ching Lu², Ching-Ku Liao³, Chi-Yang Chang¹
¹National Chiao Tung University, Taiwan; ²Taiwan Semiconductor Manufacturing Co. Ltd., Taiwan; ³Gemtek Technology Co. Ltd., Taiwan
- 557 **Design of Monolithic Band-Pass Filter Using High Performance Passive and Active Component Technology for WLAN Applications**
Jingfeng Ding¹, Andreas Springer¹, Thomas Bartl², Gernot Hueber³, Richard Hagelauer³
¹Johannes Kepler Universität Linz, Austria; ²Infineon Technologies AG, Germany; ³DICE GmbH & Co KG, Austria
- 561 **Compact Multilayer CPW MMIC Spiral Directional Couplers and Bandpass Filters**
Q. Sun¹, Junyi Yuan¹, J. Lu¹, Ali A. Rezazadeh¹, L. Krishnamuthy², V.T. Vo³
¹University of Manchester, UK; ²Filtronic Broadband Ltd., UK; ³NXP Semiconductors, France

EuMC35: Wave Propagation and Scattering

Chair: Danielle Vanhoenacker, UC Louvain — Co-Chair: Picon Odile, University of Marne-la-Vallee

Venue: Darwin 6, 13:40 - 15:00, Wednesday 29 September 2010

- 565 **Spatial Field Localisation and Data Transfer in a Reverberant Environment Using Analog Real Time Phase Conjugation**
P. Sundaralingam, Vincent Fusco, N.B. Buchanan, Queen's University Belfast, UK
- 569 **Ramp Response Radar Imaging: Analysis of Frequency Parameters**
J. Chauveau, N. de Beauhoudrey, IREENA, France
- 573 **Influence of Windows in Near and Far-Field Regions of a Building with a View to Homogenization**
Shermila Mostarshedi¹, Elodie Richalot¹, Joe Wiart², Odile Picon¹
¹ESYCOM, France; ²Orange Labs, France
- 577 **Inter-Chip and Intra-Chip Pulsed Signal Transfer Between Transmitting and Receiving Loops in Wireless Interconnect Configurations**
Ioan E. Lager, Adrianus T. de Hoop, Technische Universiteit Delft, The Netherlands

EuMC36: EM Numerical Modelling Through FEM and MoM Techniques

Chair: Peter Russer, TU Munich — Co-Chair: Michael Mrozowski, Gdansk University of Technology

Venue: Dickens 1/2, 15:40 - 17:00, Wednesday 29 September 2010

- 581 **Application of Transient Electromagnetic Field Simulation with Finite Elements**
M.H. Vogel, H. Songoro, M.H. Commens, ANSYS Inc., USA
- 585 **Simulations and Measurements of FSS with Fractal Elements**
*Alfrêdo Gomes Neto¹, André N. da Silva¹, Jefferson C. Silva¹, Paulo H. da F. Silva¹,
Adaildo G. D'Assunção²*
¹IFPB, Brazil; ²UFRN, Brazil
- 589 **Modeling of Capacitive FSS with Thick Metal Patches by the MoM/BI-RME Method**
Maurizio Bozzi, Maria Montagna, Luca Perregrini, Università di Pavia, Italy
- 593 **Electromagnetic Analysis of Microwave Devices with Correction of Model Geometric Errors**
A.D. Grigoryev¹, R.V. Salimov², R.I. Tikhonov²
¹St. Petersburg Electrotechnical University, Russia; ²LG Electronics, Russia

EuMC37: New Trends for Packaging in Industrial Applications

Chair: Jean-Francois Villemazet, TAS — Co-Chair: Fabio Coccetti, LAAS

Venue: Dickens 3/4, 15:40 - 17:00, Wednesday 29 September 2010

- 597 **Study of Glob Top Encapsulation on Amplifier and Voltage Controlled Oscillator MMICs**
Sandeep Chaturvedi¹, Sangam Bhalke¹, Vijesh Arora², Shibani Koul³
¹Gallium Arsenide Enabling Technology Center, India; ²Solid State Physics Laboratory, India; ³IIT Delhi, India
- 601 **LCP Device Housing Enables Selective Thermal Management for RF Device Packages**
Andy Longford, RJR Polymers Inc., USA
- 605 **E-Band Microwave Transceiver Using MWgSP Technology for PtP Radio Equipment**
M. Piloni, G. Montiron, A.G. Milani, Nokia Siemens Networks, Italy
- 609 **A Way to Modern and Cost Effective Packaging for RF Frontends for Use from Microwave Through Millimeter Wave Frequencies**
Axel Brokmeier, Thomas Geist, Jürgen Puchinger, EADS Deutschland GmbH, Germany

EuMC38: Modelling, Design and Optimization Techniques

Chair: Ernesto Limiti, University of Rome, Tor Vergata — Co-Chair: Tom Brazil, University College Dublin

Venue: Dickens 5/6, 15:40 – 17:00, Wednesday 29 September 2010

- 612 **Design of a High Power X-Band Frequency Tripler Using a AlGaN/GaN HEMT Device**
Kelvin Yuk, Claudia Wong, G.R. Branner, University of California at Davis, USA
- 616 **Analysis of Direct Phase Modulation with an Injection-Locked Oscillator**
Elena Fernández, Mabel Pontón, Franco Ramírez, Sergio Sancho, Almudena Suárez, Universidad de Cantabria, Spain
- 620 **Multi-Physics Modeling of Electro-Mechanical Oscillators: Comparative Analysis of Colpitts and Cross-Coupled Architectures**
S. Wane¹, P. Philippe¹, B. El-Kassir¹, Olivier Tesson¹, L. Praamsma², O. Giard¹, M. Chapman³, O. Minchin⁴, P. Gamand¹
¹NXP Semiconductors, France; ²NXP Semiconductors, The Netherlands; ³Berkeley Design Automation, UK; ⁴Cadence Design Systems, France
- 624 **Reliable Simulation-Driven Microwave Design Optimization Using Manifold Mapping**
Slawomir Koziel¹, David Echeverría Ciaurri²
¹Reykjavik University, Iceland; ²Stanford University, USA

EuMC39: Switching and Envelope Tracking Power Amplifiers

Chair: Luc Lapierre, CNES France — Co-Chair: Raymond Quéré, XLIM Limoges

Venue: Darwin 3, 15:40 – 17:00, Wednesday 29 September 2010

- 628 **LTE Power Amplifier for Envelope Tracking Polar Transmitters**
Daehyun Kang, Dongsu Kim, Jinsung Choi, Bumman Kim, POSTECH, Korea
- 632 **Highly Efficient Envelope Tracking Transmitter at 3.5-GHz**
Junghwan Son¹, Jungjoon Kim¹, Junghwan Moon¹, Ildu Kim², Seunghoon Jee¹, Bumman Kim¹
¹POSTECH, Korea; ²Samsung Electronics Co. Ltd., Korea
- 636 **Integrated-Schottky-Diode GaN HFETs for High-Efficiency Digital PA MMICs at 2GHz**
Stephan Maroldt¹, Rüdiger Quay¹, Christian Haupt¹, Rudolf Kiefer¹, Dirk Wiegner², Oliver Ambacher¹
¹Fraunhofer IAF, Germany; ²Alcatel-Lucent Bell Labs, Germany
- 640 **A Voltage-Mode Class-S Power Amplifier for the 450MHz Band**
Andreas Wentzel, Chafik Meliani, Wolfgang Heinrich, FBH, Germany

EuMC40: Antennas and Receivers for Wireless Systems

Chair: Bernard Huyart, ENST Paris — Co-Chair: Martine Villegas, ESIEE

Venue: Darwin 4, 15:40 – 17:00, Wednesday 29 September 2010

- 644 **Implementation of a Reconfigurable Parasitic Antenna for Beam-Space BPSK Transmissions**
Julien Perruisseau-Carrier¹, Osama N. Alrabadi², Antonis Kalis²
¹CTTC, Spain; ²AIT, Greece
- 648 **A Fast-Switching Diversity- and Beam-Forming-Circuit for S-Band Satellite Reception in Fading Scenarios**
Simon Senega, D.J. Müller, Leopold M. Reiter, Stefan M. Lindenmeier, Universität der Bundeswehr München, Germany
- 652 **Ultra Low Loss and High Linearity SPMT Antenna Switch Using SOI CMOS Process**
Minsik Ahn¹, Jeongwon Cha², Changhyuck Cho¹, Chang-Ho Lee¹, Joy Laskar²
¹Samsung Design Center, USA; ²Georgia Institute of Technology, USA
- 656 **A Multi-GHz Phase Detector with Auto-Zeroing Scheme for Self-Calibrated Quadrature Generation**
Debesh Bhatta, Kil-Hoon Lee, Hyoung-Soo Kim, Edward Gebara, Joy Laskar, Georgia Institute of Technology, USA

EuMC41: Millimetre-Wave Waveguide Transitions

Chair: Luca Perregrini, University of Pavia — Co-Chair: Laurent Dussopt, CEA-LETI

Venue: Darwin 5, 15:40 – 17:00, Wednesday 29 September 2010

- 660 **A Millimeter-Wave Transition from Microstrip to Waveguide Using a Differential Microstrip Antenna**
Ziqiang Tong, Andreas Stelzer, Johannes Kepler Universität Linz, Austria
- 664 **A 79-GHz LTCC Laminated Waveguide to Metallic Rectangular Waveguide Transition Using High Permittivity Material**
Xin Wang, Andreas Stelzer, Johannes Kepler Universität Linz, Austria
- 668 **A Fully Micromachined W-Band Waveguide-to-Grounded Coplanar Waveguide Transition for 91–113GHz Applications**
Soheil Radiom, Hadi Aliakbarian, Patrick Reynaert, Guy Vandenbosch, Georges Gielen, Katholieke Universiteit Leuven, Belgium
- 671 **Simple Waveguide-to-Suspended Microstrip Transition with Low-Pass Filter**
Krista Dahlberg¹, Tero Kiuru¹, Juha Mallat¹, Antti V. Räsänen¹, Tapani Närhi²
¹Aalto University, Finland; ²European Space Agency, The Netherlands

EuMC42: Antennas for Emerging Applications

Chair: Ioan E. Lager, Delft University of Technology — Co-Chair: Wolfgang Menzel, University of Ulm

Venue: Darwin 6, 15:40 – 17:00, Wednesday 29 September 2010

- 675 **New Concepts for Fixed Ground Stations Serving Multi-Satellite Missions**
Marco Pasian¹, Marta Cametti¹, Maurizio Bozzi¹, Luca Perregrini¹, Steve Rawson²
¹Università di Pavia, Italy; ²Callisto, France
- 679 **New Method for Back Lobe Suppression of Microstrip Patch Antenna for GPS**
Won-Gyu Lim¹, Hyeong-seok Jang², Jong-Won Yu²
¹KARI, Korea; ²KAIST, Korea
- 683 **Packaged Hybrid Si-IPD Antenna for 60GHz Applications**
C. Calvez¹, C. Person¹, J.P. Coupez¹, F. Gallée¹, F. Giancesello², D. Gloria², D. Belot², H. Ezzeddine²
¹Lab-STICC, France; ²STMicroelectronics, France
- 687 **Broadband Superstrate Aperture Antenna for 60GHz Applications**
Hamsakutty Vettikalladi, Laurent Le Coq, Olivier Lafond, Mohammed Himdi, IETR, France

EuMC43: Focused Session — Nanointerconnects for Advanced RF Packages

Chair: Fabio Coccetti, LAAS — Co-Chair: Luca Pierantoni, Univ. Politecnica Delle Marche

Venue: Dickens 1/2, 08:30 – 10:10, Thursday 30 September 2010

- 691 **Contactless Approaches for RF Characterization of Metallic Nanowires**
Kichul Kim¹, Paul Rice¹, T. Mitch Wallis², Sang-Hyun Lim², Dazhen Gu², Atif Imtiaz², Pavel Kabos², Dejan S. Filipovic¹
¹University of Colorado at Boulder, USA; ²NIST, USA
- 695 **Advanced Polymers for Advanced RF Packaging Applications**
Madhavan Swaminathan, Nevin Altunyurt, Seunghyun Hwang, Georgia Institute of Technology, USA
- 699 ***ab initio* Model of Carbon Nanotubes Growth on Nano-Structured Ni Catalyst in a Nanoporous Al₂O₃ Membrane and Resistance Calculations for Their Junctions with Various Metal Substrates**
S. Bellucci¹, E.A. Kotomin², S. Piskunov², Yu.N. Shunin³, Yu.F. Zhukovskii²
¹INFN-LNF, Italy; ²Institute for Solid State Physics, Latvia; ³Information Systems Management Institute, Latvia
- 703 **Monolithic Integrated Antennas and Nanoantennas for Wireless Sensors and for Wireless Intrachip and Interchip Communication**
Peter Russer¹, Nikolaus Fichtner¹, Paolo Lugli¹, Wolfgang Porod², Hristomir Yordanov¹
¹Technische Universität München, Germany; ²University of Notre Dame, USA
- 707 **CNT Array Capacitive MEM Switches for Reconfigurable Interconnects**
Donatello Acquaviva, Dimitrios Tsamados, Adrian M. Ionescu, EPFL, Switzerland

EuMC44: Linearization Techniques and Modelling

Chair: Jose Carlos Pedro, University of Aveiro — Co-Chair: Jose Angel Garcia, University of Cantabria

Venue: Darwin 3, 08:30 – 10:10, Thursday 30 September 2010

- 711 **Implementation Issues in FPGA-Controlled Polar Transmitters**
Pere L. Gilabert¹, Lorena Cabria², José Ángel García², Gabriel Montoro¹, Eduard Bertran¹
¹Universitat Politècnica de Catalunya, Spain; ²Universidad de Cantabria, Spain
- 715 **Experimental Setup for the Extraction of Power Amplifier Dynamic Volterra Model and Design of Digital Baseband Predistorter**
Christophe Quindroit, Edouard Ngoya, Guillaume Neveux, Jean-Michel Nébus, XLIM, France
- 719 **A Digital Signal Processing Solution for PA Linearization and RF Impairment Correction for Multi-Standard Wireless Transceiver Systems**
Hardik Gandhi, William Abbott, Texas Instruments Inc., USA
- 723 **An Analysis of Performance Degradation of a Memoryless DPD Due to Frequency Response of an Envelope Amplifier in an EER Power Amplifier**
Yuuki Funahashi, Takayuki Kato, Toshihiro Tango, Atsushi Yamaoka, Keiichi Yamaguchi, Yasuhiko Tanabe, Toshiba Corporation, Japan
- 727 **Wideband Digital Feedback Predistortion Employing Segmented Memory Compensation for Linearization of Doherty Amplifier**
Junghwan Moon, Bumman Kim, POSTECH, Korea

EuMC45: Antenna Synthesis and Optimization

Chair: Ioan Lager, Delft University of Technology — Co-Chair: Milos Mazánek, Czech Technical University

Venue: Darwin 4/5, 08:30 – 10:10, Thursday 30 September 2010

- 731 **Design of a Folded Reflectarray Antenna Using Particle Swarm Optimization**
Sabine Dieter, Christoph Fischer, Wolfgang Menzel, Universität Ulm, Germany
- 735 **Superelliptic TEM Horn**
J.A.G. Malherbe, University of Pretoria, South Africa
- 739 **Synthesis of Arbitrary-Shaped Lens Antennas for Beam-Switching Applications**
A.V. Boriskin¹, Ronan Sauleau²
¹National Academy of Sciences of Ukraine, Ukraine; ²IETR, France
- 743 **Two-Shell Circularly-Layered Dielectric Lens Antennas: Design and Characterization**
A.V. Boriskin¹, A. Vorobyov², Ronan Sauleau²
¹National Academy of Sciences of Ukraine, Ukraine; ²IETR, France

EuMC46: Filters 4

Chair: Vesna Crnojevic-Bengin, University of Novi Sad — Co-Chair: Jia-Sheng Hong, Heriot Watt University

Venue: Dupin 1, 08:30 - 10:10, Thursday 30 September 2010

- 747 **Dual-Wideband Bandpass Filter for Ultra Wideband Applications**
Zhang-Cheng Hao, Jia-Sheng Hong, Heriot-Watt University, UK
- 751 **Microstrip Quasi-Elliptic Function Bandpass Filter with Improved Tuning Range**
Wenxing Tang, Jia-Sheng Hong, Heriot-Watt University, UK
- 755 **Highly-Miniaturized Packaged UWB 7th-Order Bandpass Filter**
*Stéphane Cadiou¹, Benjamin Potelon¹, Cédric Quendo¹, Eric Rius¹,
Jean-François Favennec¹, Rémi Segalen², Françoise Mahé²*
¹Université Européenne de Bretagne, France; ²Thales Systèmes Aéroportés, France
- 759 **Second and Third Harmonic Suppression in Parallel Coupled Line Filter Using Sliding Coupling**
*Ana Afkhami¹, Gholamreza Askari¹, Atefeh Kordzadeh²,
Hamid Mirmohammad Sadeghi¹*
¹Isfahan University of Technology, Iran; ²Iran University of Science & Technology, Iran
- 763 **A Reflection-Absorptive Harmonic-Rejection Filter for RF Power Amplifiers**
*Hiromitsu Uchida, Koji Yamanaka, Kazuhisa Yamauchi, Akira Inoue, Yoshihito Hirano,
Mitsubishi Electric Corporation, Japan*

EuMC47: Microwave Measurement Systems

Chair: Lorenz-Peter Schmidt, University of Erlangen — Co-Chair: Dominique Schreurs, Katolieke Universiteit Leuven

Venue: Dupin 2, 08:30 - 10:10, Thursday 30 September 2010

- 767 **Dual-Channel Microwave Scanning Probe Microscopy for Nanotechnology and Molecular Biology**
*Silvia Fabiani, Agnese Lucesoli, Andrea di Donato, Davide Mencarelli, Giuseppe Venanzoni,
Antonio Morini, Tullio Rozzi, Marco Farina, Università Politecnica delle Marche, Italy*
- 771 **Compact Near-Field Microwave Microscope Based on the Multi-Port Technique**
M.M. Wang, K. Haddadi, D. Glay, T. Lasri, IEMN, France
- 775 **A Tuneable Probe for Noncontacting Microwave Measurements**
K. Yhland¹, J. Stenarson¹, K. Andersson²
¹SP Technical Research Institute of Sweden, Sweden; ²Chalmers University of Technology, Sweden
- 779 **Experimental Verification of Ka Band LTCC Antenna**
B. Yang¹, Alexander G. Yarovoy¹, O. Shoykhetbrod², D. Nuessler²
¹Technische Universiteit Delft, The Netherlands; ²Fraunhofer FHR, Germany
- 783 **Sub-Femtofarad MOS Varactor Characterization Tools**
*Romain Debroucke¹, Jean-François Larchanche², Didier Theron¹, D. Ducatteau¹,
Hassan Tanbakuchi³, Christophe Gaquière¹*
¹IEMN, France; ²STMicroelectronics, France; ³Agilent Technologies, USA

EuMC48: Focused Session — Tunable FBAR

Chair: *Gevorgian Spartak, Chalmers University of Technology* — Co-Chair: *Aigner Robert, Triquint*

Venue: *Dickens 1/2, 10:50-12:30, Thursday 30 September 2010*

- 787 **Tunable Acoustic RF-Filters: Discussion of Requirements and Potential Physical Embodiments**
Robert Aigner, TriQuint Semiconductor, USA
- 791 **Switchable FBAR Based on Paraelectric Films**
A. Mikhailov, A. Prudan, S. Ptashnik, T. Samoilova, Andrey Kozyrev, St. Petersburg Electrotechnical University, Russia
- 795 **Tunable FBARS: Frequency Tuning Mechanisms**
Humberto Campanella, CSIC, Spain
- 799 **High Coupling High Overtone Bulk Acoustic Wave Resonator Using (Ba,Sr)TiO₃**
Sylvia Sanchez, G. Le Rhun, Aurélien Suhm, Emmanuel Defaÿ, CEA, France
- 803 **Intrinsically Switchable Ferroelectric BAW Resonators and Filters**
Victor Lee, Seyit A. Sis, Xinen Zhu, Amir Mortazawi, University of Michigan, USA

EuMC49: Waveguide and Planar Components

Chair: *Cedric Quendo, University of Brest* — Co-Chair: *Vincent Boria, Universitat Politecnica de Valencia*

Venue: *Dickens 3/4, 10:50-12:30, Thursday 30 September 2010*

- 807 **Broadband Ortho-Mode Transducer for High Performance Modular Feed Systems**
Uwe Rosenberg¹, Alexander Bradt², Michael Perelshtein³, Patrice Bourbonnais³
¹Rosenberg, Germany; ²Ericsson, Germany; ³Alga Microwave Inc., Canada
- 811 **A Wideband Transition from Substrate Integrated Waveguide to Differential Microstrip Lines in Multilayer Substrates**
Frank Bauer, Wolfgang Menzel, Universität Ulm, Germany
- 814 **An H-Plane Waveguide 180-Degree Hybrid — A Planar Magic-T**
S. Matsumoto¹, Isao Ohta², H. Ikeuchi², Tadashi Kawai², M. Kishihara³, K. Iio¹, T. Kashiwa¹
¹Furuno Electric Co. Ltd., Japan; ²University of Hyogo, Japan; ³Okayama Prefectural University, Japan
- 818 **Loaded-Line Phase Shifter with Enlarged Phase Shift Range and Bandwidth**
Xinyi Tang, Koen Mouthaan, National University of Singapore, Singapore

EuMC50: Reconfigurable Filters for Base Stations and Terminals

Chair: John Papapolymou, Georgia Tech — Co-Chair: Eric Rius, University of Brest

Venue: Dickens 5/6, 10:50–12:30, Thursday 30 September 2010

- 822 **Applications of Vanadium Dioxide (VO₂)-Loaded Electrically Small Resonators in the Design of Tunable Filters**
David Bouyge¹, Aurelian Crunteanu², Oriol Massagué¹, Jean-Christophe Orlianges³, Corinne Champeaux³, Alain Catherinot³, Adolfo Velez¹, Jordi Bonache¹, Ferran Martin¹, Pierre Blondy²
¹Universitat Autònoma de Barcelona, Spain; ²XLIM, France; ³SPCTS, France
- 826 **Reconfigurable Filtering Differential Low Noise Amplifier Using MEMS Tunable Inductor**
L. Collot¹, J. Lintignat¹, B. Viala², D. Morche², J.-P. Michel², Bruno Barelaud¹, B. Jarry¹
¹XLIM, France; ²CEA, France
- 830 **Tunable SIW Bandpass Filters with PIN Diodes**
Marcelino Armendariz, Vikram Sekar, Kamran Entesari, Texas A&M University, USA
- 834 **Compact High Linearity Tunable Dual-Mode Microstrip Filters**
L. Athukorala, D. Bondar, D. Budimir, University of Westminster, UK
- 838 **Tunable Semi-Lumped Dual Response Filter Using Active Capacitor Circuit for Multistandard Systems**
M.R. Lababidi¹, J. Lintignat², D. Lo Hine Tong¹, J.Y. Le Naour¹, J.L. Robert¹, A. Louzir¹, Bruno Barelaud², B. Jarry²
¹Thomson R&D France, France; ²XLIM, France

EuMC51: UWB Antennas

Chair: Milos Mazánek, Czech Technical University — Co-Chair: Tuami Lasri, IEMN

Venue: Darwin 3, 10:50–12:30, Thursday 30 September 2010

- 842 **Triple-Band Antenna with Stubs for PCS/WLAN/UWB Applications**
Sang-Yong Park, Seon-Jeong Oh, Jong-Kweon Park, Jin-Suk Kim, Hanbat National University, Korea
- 846 **Conformal Butterfly Antennas for Ultra-Wideband Radio Direction Finding Applications**
Iñigo Liberal¹, Diego Caratelli¹, Alexander G. Yarovoy¹, Renato Cicchetti², Michele Russo³
¹Technische Universiteit Delft, The Netherlands; ²Università di Roma “La Sapienza”, Italy; ³SenTech s.r.l., Italy
- 850 **A Miniaturised Printed Monopole Antenna with an Extremely Wide Bandwidth**
Jianjun Liu¹, Karu P. Esselle¹, Shunshi Zhong²
¹Macquarie University, Australia; ²Shanghai University, China
- 854 **Omnidirectional, Dual-Orthogonal, Linearly Polarized UWB Antenna**
Grzegorz Adamiuk, Lukasz Zwirello, Stefan Beer, Thomas Zwick, KIT, Germany
- 858 **Synthesis of Notched Band UWB Antennas with a Hybrid PSO-Spline Technique**
Leonardo Lizzi, Giacomo Oliveri, Paolo Rocca, Andrea Massa, Università di Trento, Italy

EuMC52 : Linear Power Amplifiers

Chair: Bumman Kim, PosTech Korea — Co-Chair: Chafik Meliani, FBH Berlin

Venue: Darwin 6, 10:50 - 12:30, Thursday 30 September 2010

- 862 **Design of an X-Band GaAs MMIC Doherty Amplifier Accounting for Device R_{ON} Resistance**
Luca Piazzon, Paolo Colantonio, Franco Giannini, Rocco Giofrè, Università di Roma "Tor Vergata", Italy
- 866 **Doherty Power Amplifier Design Employing Direct Input Power Dividing for Base Station Applications**
Jungjoon Kim¹, Junghwan Moon¹, Daehyun Kang¹, Seunghoon Jee¹, Young Yun Woo², Bumman Kim¹
¹POSTECH, Korea; ²Samsung Electronics Co. Ltd., Korea
- 870 **Asymmetric Doherty Power Amplifier with Optimized Characteristics in Output Power Back-Off Range Between 6dB and 10dB**
Dong-Hee Jang¹, Jae-Hyoung Choi¹, Jong-Heon Kim²
¹Peopleworks Inc., Korea; ²Kwangwoon University, Korea
- 874 **GaN Doherty High Power Amplifiers at 900MHz, 2.1GHz, and 2.6GHz**
Christopher T. Burns, Bobby Anderson, Michael D. LeFevre, David W. Runton, RF Micro Devices, USA
- 878 **Broadband Linearization of InGaP/GaAs HBT Power Amplifier**
Minghao Koh¹, Grant A. Ellis¹, Chin Soon Teoh²
¹Universiti Teknologi PETRONAS, Malaysia; ²DreamCore Technologies Sdn. Bhd., Malaysia

EuMC53 : Novel Microwave Materials and their Characterization

Chair: Irina Vendik, St Petersburg Electrotechnical University — Co-Chair: Orest Vendik, St Petersburg Electrotechnical University

Venue: Dupin 1, 10:50 - 12:30, Thursday 30 September 2010

- 882 **The Conductivity of Unidirectional and Quasi Isotropic Carbon Fiber Composites**
A. Galehdar, K.J. Nicholson, W.S.T. Rowe, K. Ghorbani, RMIT University, Australia
- 886 **Characterization of Ferroelectric $Ba_{0.6}Sr_{0.4}TiO_3$ Thin Films on Different Substrates for Reconfigurable Microwave Application**
Heba B. El-Shaarawy¹, S. Pacchini¹, Badreddine Ouagague¹, S. Payan², A. Rousseau², M. Maglione², Robert Plana¹
¹LAAS, France; ²ICMCB, France
- 890 **Optimisation of Carbon-Reinforced Absorbing Composites for X and Ku Bands**
Bartłomiej Salski¹, Malgorzata Celuch²
¹QWED, Poland; ²Warsaw University of Technology, Poland
- 894 **Microwave Resistance of Metal-Dielectric Film Nanocomposites $Co_x(SiO_2)_{1-x}$**
A.B. Rinkevich¹, D.V. Perov¹, V.O. Vaskovsky², A.N. Gorkovenko², E.A. Kuznetsov³
¹Russian Academy of Sciences, Russia; ²Ural State University, Russia; ³Niznij Tagil State Socially-Pedagogical Academy, Russia
- 898 **Tunable Microwave Capacitor Structures Based on the Multilayer Barium-Strontium Titanate Film with Reduced Thermal Instability**
Andrey Altyinnikov, Andrey Tumarkin, Alexander Gagarin, Mikhail Gaidukov, Andrey Kozyrev, St. Petersburg Electrotechnical University, Russia

EuMC54: Active Array Antennas and Components

Chair: Giuseppe Di Massa, Università della Calabria — Co-Chair: Volker Ziegler, EADS Innovation Works

Venue: Dupin 2, 10:50 – 12:30, Thursday 30 September 2010

- 902 **A Compact High Performance X-Band Core-Chip with On-Board Serial-to-Parallel Conversion**
W. Ciccognani¹, Mauro Ferrari¹, Giovanni Ghione², Ernesto Limiti¹, P.E. Longhi³, M. Pirola², R. Quaglia²
¹Università di Roma “Tor Vergata”, Italy; ²Politecnico di Torino, Italy; ³Elettronica S.p.A., Italy
- 906 **Heterodyne Array Receiver for Radio Astronomy in the 2mm Band**
Anne-Laure Fontana¹, Bernard Lazareff², Alessandro Navarrini³, Yves Bortolotti¹
¹IRAM, France; ²LAOG, France; ³Cagliari Astronomy Observatory, Italy
- 910 **Design and Implementation of a Planar 4×4 Butler Matrix in SIW Technology for Wideband Applications**
Tarek Djerafi¹, Nelson J.G. Fonseca², Ke Wu¹
¹École Polytechnique de Montréal, Canada; ²CNES, France
- 914 **Implementation of Wideband Digital Beam Forming in the E-Band: Towards a Hybrid Array**
Val Dyadyuk, Xiaojing Huang, Leigh Stokes, Joseph Pathikulangara, CSIRO, Australia
- 918 **Design and Measurements of a 1-Bit Reconfigurable Elementary Cell for Large Electronic Steerable Reflectarrays**
Simone Montori¹, Carsten Fritzsche², Luca Marcaccioli¹, Roberto Vincenti Gatti¹, Rolf Jakoby², Roberto Sorrentino¹
¹Università di Perugia, Italy; ²Technische Universität Darmstadt, Germany

EuMC55: Metamaterial Applications

Chair: Christophe Caloz, École Polytechnique de Montréal — Co-Chair: Georg Fischer, University Erlangen-Nürnberg

Venue: Dupin 3, 10:50 – 12:30, Thursday 30 September 2010

- 922 **A Compact Coplanar Waveguide Metamaterial-Inspired Line and Its Use in Tunable Narrow Bandpass Filters**
A.L. Borja¹, J. Carbonell², Vicente E. Boria Esbert², A. Belenguer¹, D. Lippens³
¹Universidad de Castilla-La Mancha, Spain; ²Universidad Politécnica de Valencia, Spain; ³IEMN, France
- 926 **A Novel Microstrip Forward Directional Coupler Based on an Artificial Substrate**
Sen-Kuei Hsu, Tzong-Lin Wu, National Taiwan University, Taiwan
- 930 **Recursive Active Filter with Metamaterial Unequal Wilkinson Power Dividers**
Francisco Aznar-Ballesta, Oscar García-Pérez, Vicente González-Posadas, Daniel Segovia-Vargas, Universidad Carlos III de Madrid, Spain
- 934 **A Proposal of Wireless Electric Power Transfer System to Object in Motion Using CRLH TL**
Tetsuya Ishida¹, Shinya Yasuda², Ikuo Awai²
¹Daihatsu Techner Co. Ltd., Japan; ²Ryukoku University, Japan
- 938 **Design of a Multi-Functional Metamaterial Inspired Dipole Antenna**
S. Tricarico, F. Bilotti, L. Vegni, Università di Roma Tre, Italy

EuMC56: EBG Structures

Chair: Ferran Martin, University of Barcelona — Co-Chair: Filiberto Bilotti, Università di Roma Tre

Venue: Dickens 3/4, 13:40-15:00, Thursday 30 September 2010

- 942 **Buried EBG Structures for Antenna Array Applications**
Alexander Stark, Sascha Brosius, Arne F. Jacob, Technische Universität Hamburg-Harburg, Germany
- 946 **DMS Harmonic Termination Load Network for High Efficiency Power Amplifier Applications**
Girdhari Chaudhary¹, Yongchae Jeong¹, Jongsik Lim², Chul Dong Kim³, Dongsu Kim⁴, Jun-Chul Kim⁴, Jong-Chul Park⁴
¹Chonbuk National University, Korea; ²Soonchunhyang University, Korea; ³Sewon Teletech Inc., Korea; ⁴KETI, Korea
- 950 **MEMS Based High-Impedance Surface for Millimetre Wave Dielectric Rod Waveguide Phase Shifter**
Dmitry Chicherin¹, Mikael Sterner², Joachim Oberhammer², Sergey Dudorov¹, Dmitri Lioubtchenko¹, Antti J. Niskanen¹, Victor Ovchinnikov¹, Antti V. Räsänen¹
¹Aalto University, Finland; ²KTH, Sweden
- 954 **Conquering Extended Frequency Realms by Periodic Coaxial Structures**
Christoph Neumaier¹, Natalie Spaeth¹, Martin Lorenz¹, Kai H.E. Numssen¹, Erwin M. Biebl²
¹Spinner GmbH, Germany; ²Technische Universität München, Germany

EuMC57: Advances in Cavity Filters Design

Chair: Giuseppe Macchiarella, Polytechnic of Milano — Co-Chair: Alaa Abunjaileh, University of Leeds

Venue: Dickens 5/6, 13:40-15:00, Thursday 30 September 2010

- 958 **Waveguide E-Plane Band Rejection Filters with Lightning-Shape One-Wavelength Conductors**
Atsushi Yamamoto, Tetsu Ohwada, Naofumi Yoneda, Mitsubishi Electric Corporation, Japan
- 962 **Pseudo-Elliptic Direct-Coupled Resonator Filters Based on Transmission-Zero-Generating Irises**
Uwe Rosenberg¹, Smain Amari², Fabien Seyfert³
¹Rosenberg, Germany; ²Royal Military College of Canada, Canada; ³INRIA, France
- 966 **Direct Coupled Waveguide Filters with Generalized Chebyshev Response by Resonating Coupling Structures**
Marco Politi¹, Alessandro Fossati²
¹Politecnico di Milano, Italy; ²ABF Elettronica, Italy
- 970 **Investigation of the Relationship Between Sensitivity and Stored Energy**
Monica Martinez-Mendoza¹, Christoph Ernst¹, Alejandro Alvarez Melcón²
¹European Space Agency, The Netherlands; ²Universidad Politécnica de Cartagena, Spain

EuMC58: Amplifiers for Base Stations and Terminals

Chair: Genevieve Baudoin, ESIEE — Co-Chair: Eric Bergeault, ENST

Venue: Dupin 3, 13:40 – 15:00, Thursday 30 September 2010

- 974 **Analysis of Burst-Mode RF PA with Direct Filter Connection**
Brecht François¹, Patrick Reynaert¹, Andreas Wiesbauer², Peter Singerl²
¹Katholieke Universiteit Leuven, Belgium; ²Infineon Technologies Austria AG, Austria
- 978 **Band-Reconfigurable LDMOS Power Amplifier**
Hossein Mashad Nemati, Jan Grahn, Christian Fager, Chalmers University of Technology, Sweden
- 982 **A Fully-Integrated Dual-Mode Tunable CMOS RF Power Amplifier with Enhanced Low-Power Efficiency**
Youngchang Yoon¹, Hyungwook Kim¹, Kyu Hwan An¹, Jihwan Kim¹, Chang-Ho Lee², Joy Laskar¹
¹Georgia Institute of Technology, USA; ²Samsung Design Center, USA
- 986 **A Miniaturized L-Band 4-Bit Differential VGA Using Resistance-Selectable Bridged-T Attenuators for a Fine Tuning of Gain**
Kazuyoshi Sakamoto, Yasushi Itoh, Shonan Institute of Technology, Japan

EuMC Poster01: Power Amplifiers and Linearizers 1

Venue: Exhibition, 12:30 – 18:00, Tuesday 28 September 2010

- 990 **Cascaded Distributed Power Amplifier with Non-Identical Transistors and Inter-Stage Tapered Impedance**
Kumar Narendra¹, Ernesto Limiti², Claudio Paoloni², Juan-Mari Collantes³, Rolf H. Jansen⁴
¹Motorola Technology, Malaysia; ²Università di Roma "Tor Vergata", Italy; ³UPV/EHU, Spain; ⁴RWTH Aachen University, Germany
- 994 **A 50W Unsymmetrical GaN Doherty Amplifier for LTE Applications**
A.Z. Markos, Khaled Bathich, F. Gölden, Georg Boeck, Technische Universität Berlin, Germany
- 998 **A Polar Modulated Tri-Band Power Amplifier Using Flexible Substrate Based MEMS Switches**
Chung-Min Lai, Tzu-Yuan Chao, Wen-An Tsou, Mei-Fen Chou, Yu-Ting Cheng, Kuei-Ann Wen, National Chiao Tung University, Taiwan
- 1002 **Enhanced Linearity and Efficiency of HBT MMIC Power Amplifiers for WCDMA Applications**
Zeji Gu¹, Shuyun Zhang²
¹Independent Researcher, USA; ²Analog Devices, USA
- 1006 **A Wideband GaN Doherty Amplifier with 35% Fractional Bandwidth**
Khaled Bathich, A.Z. Markos, Georg Boeck, Technische Universität Berlin, Germany
- 1010 **A Power Efficient Companding LINC Architecture**
Bo Shi, Michael Yan Wah Chia, Institute for Infocomm Research, Singapore

EuMC Poster02 : Power Amplifiers and Linearizers 2

Venue: Exhibition, 12:30 - 18:00, Tuesday 28 September 2010

- 1014 **Characterization of the Power Amplifier Group Delay by Using Predistortive Cancellation Technique**
Heungjae Choi¹, Girdhari Chardhary¹, Youggyu Kim¹, Yongchae Jeong¹, Chul Dong Kim²
¹Chonbuk National University, Korea; ²Sewon Teletech Inc., Korea
- 1018 **Mixed Time and Frequency-Domain Identification of Radio Frequency Power Amplifiers**
Nicuser Calinoiu, Smail Bachir, Claude Duvanaud, LAII, France
- 1022 **Generic Pre-Distortion of a Class-J Power Amplifier**
S. Bensmida¹, K. Morris¹, M. Akmal², J. Lees², P. Wright², Johannes Benedikt², Paul J. Tasker², J. McGeehan¹, M. Beach¹
¹University of Bristol, UK; ²Cardiff University, UK
- 1026 **Modeling and Linearization of a Parametric Power Upconverting Amplifier**
M. Masood¹, B. Gray¹, R. Melville², M. Omer¹, J.H. Chen³, J.S. Kenney¹
¹Georgia Institute of Technology, USA; ²NSF Office of Polar Programs, Antarctica;
³National Taiwan University, Taiwan
- 1030 **Second Order Extension of Power Amplifiers Behavioral Models for Accuracy Improvements**
Georges Zakka El Nashef, François Torrès, Sébastien Mons, Tibault Reveyrand, Thierry Monédière, Edouard Ngoya, R. Quéré, XLIM, France

EuMC Poster03 : Modelling, Simulation and Characterizations of Devices and Circuits

Venue: Exhibition, 12:30 - 18:00, Tuesday 28 September 2010

- 1034 **Calculation of Feedforward Amplifier Transfer Function Considering Loops Imbalances**
M.M. Rahmati, Abdolali Abdipour, A. Mohammadi, Gholamreza Moradi, Amirkabir University of Technology, Iran
- 1038 **A Novel Mixed-Mode LINC Architecture for Efficiency Enhancement**
Sungho Lee¹, Joontae Park¹, Yonghoon Song², Sangwook Nam¹
¹Seoul National University, Korea; ²Samsung Electronics Co. Ltd., Korea
- 1042 **Efficiency Enhanced Class-E Power Amplifier Using the Second Harmonic Injection at the Feedback Loop**
Hyo Rim Bae, Choon Sik Cho, Jae W. Lee, Korea Aerospace University, Korea
- 1046 **The Effect of Baseband Impedance Termination on the Linearity of GaN HEMTs**
M. Akmal¹, J. Lees¹, S. Bensmida², S. Woodington¹, V. Carrubba¹, S.C. Cripps¹, Johannes Benedikt¹, K. Morris², M. Beach², J. McGeehan², Paul J. Tasker¹
¹Cardiff University, UK; ²University of Bristol, UK
- 1050 **An Efficient Envelope Transient Simulation of S-Parameters Circuits in System Simulator**
H. Mehdi, A. Bennadji, Sébastien Mons, Edouard Ngoya, R. Quéré, XLIM, France

EuMC Poster04: Low-Noise and Communication Receivers 1

Venue: Exhibition, 12:30 - 18:00, Tuesday 28 September 2010

- 1054 **Phase Noise Optimization of CMOS VCO with Double-Harmonic-Tuned LC Tank**
Muh-Dey Wei, Sheng-Fuh Chang, Xu-Wei Liu, Gyn-Wei Ko, National Chung Cheng University, Taiwan
- 1058 **A 35–45GHz Low Power Direct-Conversion Gilbert-Cell Mixer in 0.13 μ m GaAs pHEMT Technology**
Antoine Khy, Bernard Huyart, LTCI, France
- 1062 **An Integrated 6 \times 4mm² LTCC Front End Module for WLAN Radio Applications**
Abid Hussain, Eric Gray, Valter Karavanic, Shih Hsu, Dan Donoghue, Anadigics Inc., USA
- 1066 **Impulse UWB T/R MMIC Modules for Baseband Digital Signals**
Ryo Ishikawa, Kazuhiko Honjo, University of Electro-Communications, Japan
- 1070 **SiGe BiCMOS Wideband Low Noise Amplifiers for Application in Digital Beam-Forming Receivers**
Sébastien Chartier¹, Peter Lohmiller², Jochen Dederer¹, Hermann Schumacher², Martin Oppermann¹
¹EADS Deutschland GmbH, Germany; ²Universität Ulm, Germany

EuMC Poster05: Low-Noise and Communication Receivers 2

Venue: Exhibition, 12:30 - 18:00, Tuesday 28 September 2010

- 1074 **Four-Channel Ku-Band Downconverter MMIC**
Gijs van der Bent, Peter de Hek, Raymond van Dijk, Frank E. van Vliet, TNO Defence, The Netherlands
- 1078 **Sub 0.15dB Noise Figure Room Temperature GaAs LNA for Next Generation Radio Telescope**
R.H. Witvers, J.G. Bij de Vaate, E.E.M. Woestenburg, ASTRON, The Netherlands
- 1082 **Integrated X-Band FMCW Front-End in SiGe BiCMOS**
Erwin Suijker¹, Lex de Boer¹, Guido Visser¹, Raymond van Dijk¹, Michael Poschmann², Frank E. van Vliet¹
¹TNO Defence, The Netherlands; ²Infineon Technologies AG, Germany

EuMC Poster06 : RFID and Sensors

Venue: Exhibition, 12:30 - 18:00, Tuesday 28 September 2010

- 1086 **Chip and Antenna Impedance Measurement for the Design of Passive UHF RFID Tag**
A. Ghiotto¹, T.P. Vuong², Ke Wu¹
¹École Polytechnique de Montréal, Canada; ²IMEP-LAHC, France
- 1090 **RFID Tag Antennas with Stable Impedance to Mounted Material**
T. Deleruyelle, P. Pannier, J. Alarcon, M. Egels, E. Bergeret, IM2NP, France
- 1094 **Multi-Standard Mono-Chip HF-UHF RFID Tag Antenna**
T. Deleruyelle, P. Pannier, J. Alarcon, M. Egels, E. Bergeret, IM2NP, France
- 1098 **Active UHF Antennas for Demanding RFID Applications**
Premysl Hudec, Milan Svanda, Milan Polivka, Czech Technical University in Prague, Czech Republic
- 1102 **RFID Reader's Synchronization to Get a Coordinated Beam Direction for Warehouse Application**
Charles Anssens, Nathalie Rolland, Paul-Alain Rolland, IEMN, France
- 1106 **Original Identification Technique of Passive EM Sensors Using Loaded Transmission Delay Lines**
Mohamed Mehdi Jatlaoui, Franck Chebila, Sofiene Bouaziz, Patrick Pons, Hervé Aubert, LAAS, France

EuMC Poster07 : Wireless Systems and Signal Processing (SDR, MIMO, UWB ...)

Venue: Exhibition, 12:30 - 18:00, Tuesday 28 September 2010

- 1110 **Three Octave Six-Port Network for a Broadband Software Radio Receiver**
Cristina de la Morena-Álvarez-Palencia, Mateo Burgos-García, David Rodríguez-Aparicio, Universidad Politécnica de Madrid, Spain
- 1114 **A Temperature Insensitive DC-Contact RF-MEMS Switch**
Songbin Gong, Theodore Reck, N. Scott Barker, University of Virginia, USA
- 1118 **A 0.8-1.5GHz Multi-Standard WCDMA Receiver with an Inter-Stage Tunable Notch Filter**
Toshihiko Ito, Masaki Kanemaru, Satoshi Furuya, Dong Ngoc Huy Ta, Kenichi Okada, Akira Matsuzawa, Tokyo Institute of Technology, Japan
- 1122 **Novel Reconfigurable Fundamental/Harmonic Matching Network for Enhancing the Efficiency of Power Amplifiers**
Ahmed M. Mahmoud Mohamed, Slim Boumaiza, Raafat R. Mansour, University of Waterloo, Canada
- 1126 **High-Q MEMS-Reconfigurable Waveguide Filters**
Luca Pelliccia, Simone Bastioli, Federico Casini, Roberto Sorrentino, Università di Perugia, Italy
- 1130 **A Single-Sideband Mixer with Band Selection Through an Output Switching Quad**
Yu-Tsung Lo, Jean-Fu Kiang, National Taiwan University, Taiwan
- 1134 **A 380-420MHz Two-Pole Tunable Filter Using New Ferroelectric Composite Capacitors**
F.A. Houndonougbo¹, R. Costes¹, J. Fan¹, Aurelian Crunteanu¹, V. Madrangeas¹, D. Cros¹, M. Pate², J.P. Ganne², P. Monteil³
¹XLIM, France; ²Thales Research & Technology, France; ³Chelton Telecom & Microwave, France

EuMC Poster08 : Linear and Nonlinear CAD Techniques

Venue: Exhibition, 12:30 - 18:00, Tuesday 28 September 2010

- 1138 **Study of a Power Amplifier Behavioral Model with Nonlinear Thermal Effects**
Carlos Crespo-Cadenas, Javier Reina-Tosina, María J. Madero-Ayora, Universidad de Sevilla, Spain
- 1142 **Design of Signal Component Separator in Mode-Multiplexing LINC Transmitter Using Stochastic Analysis**
Jonggyun Lim, Hyunchul Ku, Konkuk University, Korea
- 1146 **New Small-Signal Modelling Method for W-Band MHEMT-Based Amplifier Design**
Sung-Woon Moon, Yong-Hyun Baek, Jung-Hun Oh, Min Han, Jin-Koo Rhee, Sam Dong Kim, Dongguk University, Korea
- 1150 **A Novel in-situ Impedance Probing Method for Multistage Power Amplifier Analysis and Design**
Thomas A. Winslow, M/A-COM Technology Solutions, USA
- 1154 **Tunnel Diode Microwave Oscillators Employing a Novel Power Combining Circuit Topology**
Liquan Wang, Edward Wasige, University of Glasgow, UK

EuMC Poster09 : Passive Components 1

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1158 **A Balanced Antenna Design for Six-Port Receiver Architecture**
Han Lim Lee¹, Dong-Zo Kim¹, Hyun-Sung Tae¹, Moon-Que Lee², Jong-Won Yu¹
¹KAIST, Korea; ²University of Seoul, Korea
- 1162 **Broadband Small-Size LTCC Directional Couplers**
Pavel Turalchuk¹, Irina Munina¹, Polina Kapitanova¹, Dmitry Kholodnyak¹, Dirk Stöpel², Stefan Humbla², Jens Müller², Matthias A. Hein², Irina Vendik¹
¹St. Petersburg Electrotechnical University, Russia; ²Technische Universität Ilmenau, Germany
- 1166 **UWB Phase Shifter with Parallel Stubs Terminated with Virtual Short and Ground Slots**
Yifan Wang, Marek E. Bialkowski, University of Queensland, Australia
- 1170 **Broadband Branch-Line Coupler with Arbitrary Power Split Ratio Utilizing Microstrip Series Stubs**
Tadashi Kawai, Hiroki Taniguchi, Isao Ohta, Akira Enokihara, University of Hyogo, Japan
- 1174 **Design and Analysis of a High Directivity Directional Coupler Using Synthetic Coupled Lines in CMOS Technology**
Kun-Hung Tsai, Ching-Kuang Clive Tzuang, National Taiwan University, Taiwan
- 1178 **Compact Substrate Integrated Waveguide Directional Couplers in Ku and K Bands**
F. Carrera¹, D.V. Navarro-Méndez¹, M. Baquero-Escudero², V.M. Rodrigo-Peñarrocha²
¹Escuela Politécnica Nacional, Ecuador; ²Universidad Politécnica de Valencia, Spain

EuMC Poster10: Passive Components 2

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1182 **Skin Effect Suppression in Multilayer Thin-Film Spiral Inductor Taking Advantage of Negative Permeability of Magnetic Film Beyond FMR Frequency**
Masahiro Yamaguchi, Noriyuki Sato, Yasushi Endo, Tohoku University, Japan
- 1186 **Design Optimization of Microwave Circuits Through Fast Embedded Tuning Space Mapping**
Slawomir Koziel¹, John W. Bandler², Qingsha S. Cheng²
¹Reykjavik University, Iceland; ²McMaster University, Canada
- 1190 **Design Guidelines for High Performance Slow-Wave Transmission Lines with Optimized Floating Shield Dimensions**
Anne-Laure Franc, Emmanuel Pistono, Philippe Ferrari, IMEP-LAHC, France
- 1194 **Multi-Layer Multi-Permittivity Dielectric Resonator: A New Approach for Improved Spurious Free Window**
Raghvendra Kumar Chaudhary, Vishwa V. Mishra, Kumar Vaibhav Srivastava, Animesh Biswas, IIT Kanpur, India
- 1198 **Performances of Different Load Tolerant External Matching Units for the FAST-ICRH System**
Gian Luca Ravera¹, Riccardo Maggiora², Francesco Mirizzi¹, Angelo A. Tuccillo¹
¹ENEA, Italy; ²Politecnico di Torino, Italy
- 1202 **Performance Improvements of KTN Ferroelectric Thin Films for Microwave Tunable Devices**
Ling yan Zhang, Quentin Simon, Paul Laurent, Noham Martin, Valérie Bouquet, Stéphanie Députier, Maryline Guilloux-Viry, Gérard Tanné, Université Européenne de Bretagne, France
- 1206 **Broadband Resistive-Inductive Compensated GaN-HEMT Single-FET Switch**
Andrea Bentini, Sergio Colangeli, Mauro Ferrari, Ernesto Limiti, Università di Roma "Tor Vergata", Italy

EuMC Poster11 : Passive Components and Circuits 1

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1210 **Impact of the Electrodes on the Tunability of Paraelectric BST Film Based FBARs**
S. Gevorgian, A. Vorobiev, Chalmers University of Technology, Sweden
- 1214 **Compact On-Chip 90° and 180° Splitters/Combiners in Silicon Technology for 24GHz Applications**
Vadim Issakov¹, Herbert Knapp², Winfried Bakalski², Maciej Wojnowski², Andreas Thiede¹, Werner Simbürger²
¹Universität Paderborn, Germany; ²Infineon Technologies AG, Germany
- 1218 **Loaded Miniature Transmission Lines Compatible with Low Cost Substrates: Q-Factor Improvement**
H. Issa¹, Jean-Marc Duchamp¹, S. Abou-Chahine², Philippe Ferrari¹
¹IMEP-LAHC, France; ²Beirut Arab University, Lebanon
- 1222 **Microfluidic-Based Tunable RF True-Time Delay Line**
David Dubuc, Katia Grenier, LAAS, France
- 1225 **A Micromachined WR-3 Waveguide with Embedded Bends for Direct Flange Connections**
Talal Skaik, Yi Wang, Maolong Ke, Shilong Qian, Michael Lancaster, University of Birmingham, UK
- 1229 **Building Blocks for a Ka Band Switch Matrix Using MEMS and Printed Circuit Board Technology**
D. Névo¹, Olivier Vendier¹, B. Bonnet¹, A. Renel¹, J.-L. Cazaux¹, Arnaud Pothier², Pierre Blondy², W. Tschannun³, C. Fillit⁴, R. Fortunier⁴, F. Courtade⁵, A. Broue⁶, J. Dhennin⁶, P. Heeb⁷
¹Thales Alenia Space, France; ²XLIM, France; ³Reinhardt Microtech, Switzerland; ⁴ENSM-SE, France; ⁵CNES, France; ⁶NovaMEMS, France; ⁷NTB, Switzerland

EuMC Poster12: Filters 1

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1233 **Liquid-Crystal-Based mm-Wave Tunable Resonator**
*M. Yazdanpanahi¹, S. Bulja¹, D. Mirshekar-Syahkal¹, R. James², S.E. Day²,
F.A. Fernández²*
¹University of Essex, UK; ²University College London, UK
- 1237 **Accurate Circuit Synthesis of Low-Pass Corrugated Waveguide Filters**
*O. Monerri¹, P. Soto¹, S. Cogollos¹, Vicente E. Boria Esbert¹, J. Gil¹, C. Vicente¹,
Benito Gimeno²*
¹Universidad Politécnica de Valencia, Spain; ²Universitat de València, Spain
- 1241 **Nonlinear Nodal Analysis of Varactor-Tuned Microwave Filters**
Vikram Sekar, Kamran Entesari, Texas A&M University, USA
- 1245 **Multilayer Dual-Mode Dual-Band Filter Using Square Loop Resonators**
Vasa Radonić, Vesna Crnojević-Bengin, University of Novi Sad, Serbia
- 1249 **Extreme Broadband Waveguide Diplexer Design for High Performance Antenna Feed Systems**
Uwe Rosenberg¹, Alexander Bradt², Michael Perelshtein³, Patrice Bourbonnais³
¹Rosenberg, Germany; ²Ericsson, Germany; ³Alga Microwave Inc., Canada
- 1253 **Compact E-Plane Doublet Structures for Modular Filter Design**
O. Glubokov, D. Budimir, University of Westminster, UK
- 1257 **1-Chip Balanced FBAR Filter for Wireless Handsets**
*Jea-shik Shin¹, Yun-kwon Park¹, Young-Il Kim¹, Chul-Soo Kim¹, Jae-Chun Lee¹,
Duck-Hwan Kim¹, Hyung-rak Kim¹, Sung-woo Hwang², In-sang Song¹*
¹SAIT, Korea; ²Korea University, Korea

EuMC Poster13: Filters 2

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1261 **3-Resonator Filter Using Complex Resonance Structures**
Andriy Gordiyenko¹, Roman Kravchenko²
¹eVision Systems GmbH, Germany; ²EPCOS, Austria
- 1265 **Cross Coupled Wiggly Line Hairpin Filters with High Selectivity and Spurious Suppression**
Hakan P. Partal, Anaren Microwave Inc., USA
- 1269 **A Compact HPF with Attenuation Poles by Using Quasi-Lumped Elements**
Takenori Yasuzumi, Osamu Hashimoto, Tomoki Uwano, Aoyama Gakuin University, Japan
- 1273 **Wideband Bandpass Filter with Multiple Reconfigurable Bandwidth States**
Alexander Miller, Jia-Sheng Hong, Heriot-Watt University, UK
- 1277 **Passivity Enforcement in the Synthesis of Lossy Filters**
Matteo Oldoni¹, Giuseppe Macchiarella¹, Fabien Seyfert²
¹Politecnico di Milano, Italy; ²INRIA, France
- 1281 **Pseudo-Time Domain Filter Characterization Using EVM Parameter**
Walaa Sahyoun, Philippe Benech, Jean-Marc Duchamp, IMEP-LAHC, France

EuMC Poster14: Electromagnetic Compatibility

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1285 **Measurement Magnetic Field Level of Radiated Emissions from Military Equipment**
Rafał Przesmycki, Leszek Nowosielski, Marian Wnuk, Roman Kubacki, Military University of Technology, Poland
- 1289 **Design Optimization of Automotive Electronic Control Unit Using the Analysis of Common-Mode Current by Fast Electromagnetic Field Solver**
Yuji Okazaki¹, Masaki Unno¹, Takanori Uno², Hideki Asai¹
¹Shizuoka University, Japan; ²DENSO Corporation, Japan
- 1293 **Effect of Nonlinear Port Impedances on Distributed Passive Intermodulation in Printed Lines**
Alexey Shitvov, Dmitry Zelenchuk, Alexander Schuchinsky, Queen's University Belfast, UK

EuMC Poster15 : EM Field Theory and Numerical Techniques

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1297 **Analysis of Accuracy and Stability of FDTD Subgridding Schemes**
Yong Wang, Scott Langdon, Chris Penney, Remcom Inc., USA
- 1301 **Complex 2D Discontinuities Analysis Using Hybrid Finite Element Method and a Modified Multimodal Variational Formulation-Application to Filter Design**
Mohamed Yahia¹, Jun W. Tao², Hafedh Benzina¹, Mohamed N. Abdelkrim¹
¹ENIG, Tunisia; ²LAPLACE, France
- 1305 **Jacobi and Gauss-Seidel Preconditioned Complex Conjugate Gradient Method with GPU Acceleration for Finite Element Method**
Adam Dziekonski, Adam Lamecki, Michal Mrozowski, Gdansk University of Technology, Poland
- 1309 **Interaction of Low Frequency Magnetic Fields with Thin 3D Sheets of Combined Resistive and Magnetic Properties**
R. Jobava¹, A. Gheonjian¹, D. Karkashadze¹, J. Hippeli²
¹EMCoS, Georgia; ²AUDI AG, Germany
- 1313 **A Theory of Hybrid Electromagnetic-Spin Waves Propagation in Ferrite-Ferroelectric Thin Film Multilayered Structure**
A. Nikitin, A. Semenov, P. Belyavskiy, St. Petersburg Electrotechnical University, Russia
- 1317 **MoL Analysis of the Mechanical Behaviour of Acoustic Mirrors**
Amirali Taghavi, Larissa Vietzorreck, Technische Universität München, Germany

EuMC Poster16: Wave Propagation and Scattering

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1321 **Time Reversal of UWB Waves in Random Media with Anisotropic Disorder**
Gregory Samelsohn, Holon Institute of Technology, Israel
- 1325 **UAPO Solution for the Field Diffracted by a Metamaterial Layer with PEC Backing**
G. Gennarelli, G. Riccio, Università di Salerno, Italy
- 1329 **Analyses of Some Relations Among Received Signal Levels, Effective Earth-Radius Factors and Weather States**
Vaclav Kvicera¹, Martin Grabner¹, Pavel Pechac²
¹Czech Metrology Institute, Czech Republic; ²Czech Technical University in Prague, Czech Republic
- 1333 **Dual-Band Polarimetric Coherent Atmospheric Transmission Experiment for Precipitation Observation**
Christian Chwala¹, Uwe Siart², Susanne Hipp², Thomas F. Eibert², Harald Kunstmann¹
¹KIT, Germany; ²Technische Universität München, Germany
- 1337 **Experiments of UWB Radio-Wave Diffraction in a Building Enhanced by a Dielectric Cylinder on the Edge of an Obstacle**
Toyokatsu Miyashita, Toshitaka Kato, Ayumu Kashihara, Yangjun Zhang, Ryukoku University, Japan
- 1341 **One-Dimensional Profile Reconstruction Using Cosine Fourier and Cubic B-Spline Expansions**
Abbas Semnani¹, Ioannis T. Rekanos², Manoochehr Kamyab¹
¹K.N. Toosi University of Technology, Iran; ²Aristotle University of Thessaloniki, Greece

EuMC Poster17: THz Technology and Other Emerging Microwave Technologies

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1345 **Quasi-Optical Scanning Antenna at THz Band**
W.B. Dou, H.F. Meng, B. Nie, Z.X. Wang, F. Yang, Southeast University, China
- 1349 **Sub-THz Printed Log-Periodic Dipole Array Antenna for Enhanced Bandwidth and High Gain**
Seung Yoon Yang, Choon Sik Cho, Jae W. Lee, Korea Aerospace University, Korea
- 1353 **Tapered Parallel-Plate Waveguide Without Silicon Lens**
San-Hoon Kim, Eui Su Lee, Young Bin Ji, Tae-In Jeon, Korea Maritime University, Korea
- 1357 **EH-Impedance Tuner with Dielectric-Based Backshorts for Millimetre Wave Diode Testing**
Tero Kiuru¹, Krista Dahlberg¹, Juha Mallat¹, Antti V. Räsänen¹, Tapani Närhi²
¹Aalto University, Finland; ²European Space Agency, The Netherlands
- 1361 **Quarter-Wave Plate Polariser Based on Frequency Selective Surface**
Ghaffer I. Kiani, Val Dyadyuk, CSIRO, Australia
- 1365 **Multi-Harmonic Submillimeter-Wave DC-Bias Network Based on an Arbitrarily Width-Modulated Microstrip Line**
G. Hotopan, S. Ver Hoeye, C. Vázquez, R. Camblor, M. Fernández, F. Las Heras, Universidad de Oviedo, Spain

EuMC Poster18: New and Emerging Technologies and Materials

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1369 **Electromagnetic Wave Scattering by an Optically Controlled Rectangular Groove Grating**
Kazuo Nishimura, Ryukoku University, Japan
- 1373 **Tuneable High-Q Microwave Photonic Bandpass Filter Without Coherent Interference Limitations**
E.H.W. Chan, R.A. Minasian, University of Sydney, Australia
- 1377 **Microwave Dielectric Properties of Strontium Barium Cerium Niobate Ferroelectric Ceramics Using Cavity Perturbation Technique**
Jaimon Yohannan, Ullas G. Kalappura, K. Vasudevan, K.T. Mathew, Cochin University of Science & Technology, India
- 1381 **An Experimental Evaluation of Surrounding RF Energy Harvesting Devices**
D. Bouchouicha¹, M. Latrach², F. Dupont¹, L. Ventura³
¹STMicroelectronics, France; ²ESEO, France; ³LMP (EA3246), France
- 1385 **Metallic Rings in a Self-Rolled Micro-Tube for Magnetic Field Mapping Applications**
G. Monti¹, R. De Paolis¹, L. Corchia¹, L. Tarricone¹, M.T. Todaro², M. De Vittorio², A. Passaseo²
¹Università del Salento, Italy; ²CNR-INFM, Italy
- 1389 **Thermal Image and Analysis of a 28.3THz 0.18 μ m CMOS Detector**
Li Su, Sin Han Yang, I Chun Huang, Ching-Kuang Clive Tzuang, National Taiwan University, Taiwan

EuMC Poster19: Meta-Materials and Photonic Bandgap Structures 1

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1393 **Millimeter Wave Metamaterial Band-Pass Filter by Femtosecond Laser Ablation**
Gheorghe Sajin¹, Stefan Simion¹, Florea Craciunoiu¹, Alina Cristina Bunea¹, Adrian Dinescu¹, Marian Zamfirescu², Liviu Neagu², Razvan Dabu²
¹IMT Bucharest, Romania; ²NILPRP, Romania
- 1397 **Analysis of the Impact of Statistical Variations on Transmission-Line Based Metamaterial Structures**
Juan S. Ochoa, Andreas C. Cangellaris, University of Illinois at Urbana-Champaign, USA
- 1401 **Metamaterial Matching of High-Permittivity Coatings for 79GHz Radar Sensors**
Frerk Fitzek¹, Ralph H. Rasshofer¹, Erwin M. Biebl²
¹BMW Group Research and Technology, Germany; ²Technische Universität München, Germany
- 1405 **Reconfigurable CRLH Cells with New Open-End Stub and RF MEMS Switches on Silicon Technology**
Badreddine Ouagague, Fabio Coccetti, Christina Villeneuve, Tonio Idda, Robert Plana, LAAS, France
- 1409 **A Super-Compact 0dB/3dB Forward Coupler Composed of Multi-Layered CRLH Transmission Lines with Double Left-Handed Shunt-Inductors**
Takahiro Kawakami, Naohiro Inoue, Yasushi Horii, Toshiaki Kitamura, Kansai University, Japan

EuMC Poster20: Meta-Materials and Photonic Bandgap Structures 2

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1413 **A Resonant Particle for a Volumetric DNG Metamaterial**
Michal Blaha, Lukas Jelinek, Jan Machac, Czech Technical University in Prague, Czech Republic
- 1417 **Simplified Computation of Photonic Crystal Multimode Interference Devices Using TD-Beam-Propagation Method**
Junya Takahashi¹, Chun-Ping Chen¹, Ryouhei Inuma¹, Tetsuo Anada¹, Zhewang Ma², C. Christopoulos³
¹Kanagawa University, Japan; ²Saitama University, Japan; ³University of Nottingham, UK
- 1421 **Microwave Properties of the Magnetic Periodic Multilayered Structures**
A.A. Girich, M.K. Khodzitsky, O.V. Shramkova, S.I. Tarapov, National Academy of Sciences of Ukraine, Ukraine
- 1425 **Analysis of the Radiation Properties of a Point Source on a Uniaxially Anisotropic Meta-Substrate and the Application to a High-Efficiency Antenna**
Attieh Shahvarpour¹, Alejandro Alvarez Melcón², Christophe Caloz¹
¹École Polytechnique de Montréal, Canada; ²Universidad Politécnica de Cartagena, Spain
- 1429 **Hybridisation of 2D Frequency Domain TLM with the MoM-Discretised 2D-EFIE**
Michael Zedler, George V. Eleftheriades, University of Toronto, Canada

EuMC Poster21 : Microwave Exposure and Sensors

Venue: Exhibition, 12:30 - 18:00, Wednesday 29 September 2010

- 1433 **Design of Wearable Communication Device for Body Protection from EM Wave Using the EBG Structure**
Sang il Kwak, Dong-Uk Sim, Jong Hwa Kwon, Hyung Do Choi, ETRI, Korea
- 1437 **Optimal Geometry and Capacitors Distribution of 7T MRI Surface Coils**
A. Hassan, I. Elabyed, J. Mallow, T. Herrmann, J. Bernarding, A. Omar, OvG Universität Magdeburg, Germany
- 1441 **New Microwave Heating Methodology with Noninvasive Temperature Measurement Using Magnetic Resonance Equipment**
Akira Ishikawa, Yoshio Nikawa, Kokushikan University, Japan
- 1445 **Near-Field Modal Decomposition Using Huygens' Principle and Equivalent Sources**
O. Aiouaz¹, D. Lautru², M.-F. Wong¹, A. Gati¹, Joe Wiart¹, V. Fouad Hanna²
¹WHIST Lab, France; ²L2E, France
- 1449 **Investigation on Residential Exposure to Electromagnetic Radiation in the Proximity of Mobile Phone Base Stations**
C. Goiceanu, R. Danulescu, E. Danulescu, Institute of Public Health Iasi, Romania

EuMC Poster22 : Antenna Design, Modelling and Measurements 1

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

- 1453 **Reduction of the Coupling Between Microstrip Arrays Antennas Using High Impedance Surface (HIS) Structures**
Cuong Tran Manh¹, Xiaoke Han¹, H. Hafdallah Ouslimani¹, Alain Priou¹, Aurélien Marteau², Gérard Collignon²
¹LEME (EA4416), France; ²INEO Defense, France
- 1457 **Wideband Microstrip Antenna Array Featuring a Single Thin Substrate Layer**
Shailesh Raut, Aldo Petosa, Communications Research Centre Canada, Canada
- 1461 **A Novel Feeding System for the Design of Ultrawideband Miniaturized Microstrip Patch Antennas**
Homayoon Oraizi, Mehdi Hamidkhani, Iran University of Science & Technology, Iran
- 1465 **Compact Circular Polarized Antenna for Mobile Reception of Radio Signals Transmitted by Geostationary Satellites**
Gerd Saala, Stefan M. Lindenmeier, Universität der Bundeswehr München, Germany
- 1469 **Printed Square Quadrifilar Helix Antenna (QHA) for XM Satellite Radio Receiver**
Hyun-Sung Tae¹, Wang-Ik Son¹, Moon-Que Lee², Sang-Bo Min³, Jong-Won Yu¹
¹KAIST, Korea; ²University of Seoul, Korea; ³Actenna Corporation, Korea
- 1472 **Wideband ENG Zeroth-Order Resonant Antenna Having Mushroom Shape with Multiple Vias**
Gunyoung Kim, Bomson Lee, Kyung Hee University, Korea

EuMC Poster23: Antenna Design, Modelling and Measurements 2

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

- 1476 **A Non-Thermal Soldering Technique to Improve Polymer Based Antenna Performance**
T. Peter¹, R. Nilavalan¹, H.F. AbuTarboush¹, S.W. Cheung²
¹Brunel University, UK; ²University of Hong Kong, China
- 1480 **A Compact Broadband Omnidirectional Vertically Polarized VHF Antenna for Aircraft**
*T.J. Yuan¹, L.Y. Zhou¹, H. Hafdallah Ouslimani¹, Alain Priou¹, P. Besnard²,
G rard Collignon², Aur lien Marteau²*
¹LEME (EA4416), France; ²INEO Defense, France
- 1484 **A New Type of Cone-Shaped High Gain Circularly Polarized Antenna for PCB Integration**
Chang-Chih Liu, Li-Chi Chang, Chang-Sheng Chen, Kuo-Chiang Chin, ITRI, Taiwan
- 1488 **Influence on Unwanted Dielectric Slab Modes Generated in Slit Array Planer Antenna Supported by Copper-Coated Dielectric Substrate at 60GHz**
Futoshi Kuroki, Motonori Nakamura, Makoto Okiyokota, Kure National College of Technology, Japan
- 1492 **Two Layer Slot-Antenna Array in SIW Technology**
D.V. Navarro-M endez¹, F. Carrera¹, M. Baquero-Escudero², V.M. Rodrigo-Pe arrocha²
¹Escuela Polit cnica Nacional, Ecuador; ²Universidad Polit cnica de Valencia, Spain

EuMC Poster24: Antenna Design, Modelling and Measurements 3

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

- 1496 **Flared Monopole Antennas for 10 m Energy Harvesting**
*Michele Midrio¹, Stefano Boscolo¹, Andrea Locatelli², Daniele Modotto²,
Costantino De Angelis², A.D. Capobianco³*
¹Universit  di Udine, Italy; ²Universit  di Brescia, Italy; ³Universit  di Padova, Italy
- 1500 **UWB Performance of Single and Multi Layer Dielectric Vivaldi Antenna Using Cubic Spline and Exponential Taper Profile**
Khabat Ebnabbasi¹, Carey Rappaport¹, Heinrich Foltz², James Mclean³
¹Northeastern University, USA; ²University of Texas Pan-American, USA; ³TDK R&D Corporation, USA
- 1504 **Quarter-Elliptical Antenna with a Complementary Ground Slot for Wideband Applications**
Ashkan Boldaji, Marek E. Bialkowski, University of Queensland, Australia
- 1508 **Joint TOA Estimation and NLOS Identification Based on UWB Energy Detection**
Abdelmadjid Maali¹, Hassane Mimoun², Genevi ve Baudoin², Abdelaziz Ouldali¹
¹Military Polytechnic School, Algeria; ²ESYCOM, France
- 1512 **A Method for Reduction of TDOA Measurement Error in UWB Leading Edge Detection Receiver**
Jerzy Kolakowski, Warsaw University of Technology, Poland

EuMC Poster25: Characterization of Material Parameters

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

- 1516 **Design, Realization and Application of a Satellite Simulator in a TWSTFT Station**
Joseph Achkar, LNE-SYRTE, France
- 1520 **Imaging of Pulsed Watt-Scale Millimeter Waves Using Visible Continuum from a Cs-Xe Discharge**
M.S. Gitlin, A.I. Tsvetkov, Russian Academy of Sciences, Russia
- 1524 **New Method Suitable for Relative Short Distance Measurement**
Karel Hoffmann, Zbyněk Škvor, Czech Technical University in Prague, Czech Republic
- 1528 **Electric Field Effect on the Permittivity of Various BST Composites Thin Films Materials**
Hussein Kassem, Valérie Vignerat, Guillaume Lunet, Laboratoire IMS, France
- 1532 **High Loss Liquids Permittivity Measurement Using Millimeter Wave Differential Dielectrometer**
Zoya Eremenko, Valery Skresanov, National Academy of Sciences of Ukraine, Ukraine

EuMC Poster26: Active Array Antennas and Components

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

- 1536 **Linear and Circular Polarization Transmit-Arrays in V-Band**
Hamza Kaouach¹, Laurent Dussopt¹, Jérôme Lantéri¹, Ronan Sauleau², Thierry Koleck³
¹CEA, France; ²IETR, France; ³CNES, France
- 1540 **T/R-Module Technologies Today and Future Trends**
P. Schuh, H. Sledzik, R. Reber, K. Widmer, A. Fleckenstein, B. Schweizer, Martin Oppermann, EADS Deutschland GmbH, Germany
- 1544 **An Integrated C-Band SiGe Variable Gain Amplifier and Reflected Type Phase Shifter for Phased Array T/R Modules**
K. Hettak¹, G.A. Morin²
¹Communications Research Centre Canada, Canada; ²Defence R&D Canada, Canada
- 1548 **A Scalable Two Elements CMOS Phased Array Receiver Front-End for 60GHz Channel**
M.R. Nezhad-Ahamdi, Behzad Biglarbegan, A. Taeb, Mohammad Fakharzadeh, Safieddin Safavi-Naeini, University of Waterloo, Canada
- 1552 **Optical Beamforming for Receiver Phased Array Systems Using Periodic Slow-Wave Structures**
Mohammad Fakharzadeh, Sujeet K. Chaudhuri, Safieddin Safavi-Naeini, University of Waterloo, Canada
- 1556 **MEMS-Based Reflective-Type Phase-Shifter for Emerging Millimeter-Wave Communication Systems**
Behzad Biglarbegan, Maher Bakri-Kassem, Raafat R. Mansour, Safieddin Safavi-Naeini, University of Waterloo, Canada

EuMC Poster27: Microwave Measurements

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

- 1560 **A Method for Estimating the Electromagnetic Power Delivered by the Front-End Module Used to Investigate the Ratchet Effect in Two-Dimensional Electron Gas System Under Microwave Radiation**
A. Takacs, D. Medhat, Hervé Aubert, J.-C. Portal, LAAS, France
- 1564 **Miniature Dual Six-Port Millimeter-Wave Network Analyzer on Alumina Ceramic Substrate**
K. Haddadi, M.M. Wang, K. Ziouche, D. Glay, T. Lasri, IEMN, France
- 1568 **ACP and IMD3 Measurement and Comparison Using a Novel Load-Pull System**
B. Wittwer, E.R. Srinidhi, Günter Kompa, A. Bangert, Universität Kassel, Germany
- 1572 **Simplified Fourier Transform Microwave Spectrometer**
Petr Cerny, Stanislav Zvanovec, Petr Piksa, Tomas Korinek, Milos Mazanek, Czech Technical University in Prague, Czech Republic
- 1575 **A Millimeter Wave Six-Port Reflectometer for Active Load-Pull Characterization**
Reda Mohellebi¹, Eric Bergeault¹, Ghalid Idir Abib², Bernard Huyart¹
¹LTCI, France; ²Telecom & Management SudParis, France

EuMC Poster28: Microwave Characterization of Material Parameters

Venue: Exhibition, 12:30 - 16:00, Thursday 30 September 2010

- 1579 **Microwave Characterization of PZT/ZrO₂ Thin Films**
Deokki Min¹, Nils Hoivik¹, Geir Uri Jensen², Ulrik Hanke¹
¹Vestfold University College, Norway; ²SINTEF ICT, Norway
- 1583 **Dielectric Characterisation of PCB Materials Using Substrate Integrated Waveguide Resonators**
Dmitry Zelenchuk, Vincent Fusco, Queen's University Belfast, UK
- 1587 **Free Space Transmission Loss Measurement of Magneto-Dielectric Materials: Solution Uniqueness and Measurement Tolerance Tradeoffs**
Aleksey Solovey¹, Mark Wasson¹, R. Mittra²
¹L-3 Communications, USA; ²Pennsylvania State University, USA
- 1591 **Precise Broadband Microwave Material Characterization of Liquids**
Onur Hamza Karabey, Felix Goelden, Alexander Gaebler, Rolf Jakoby, Technische Universität Darmstadt, Germany
- 1595 **New Method for Dielectric Properties Characterization of Powder Materials: Application to Silicon Carbide**
Q. Lu, L. Dubois, E. Paleczny, J.-F. Legier, P.-Y. Cresson, T. Lasri, IEMN, France

EuMC/EuMIC/EuWiT01 : Design of Multiband and Reconfigurable Voltage Controlled Oscillators

Chair: Jean Christophe Nallatamby, XLIM — Co-Chair: Robert Weigel, University of Erlangen

Venue: Dickens 3/4, 08:30 - 10:10, Tuesday 28 September 2010

- 1599 **A Low Phase-Noise SiGe Colpitts VCO with Wide Tuning Range for UWB Applications**
Alexander Esswein¹, Gunther Dehm-Andone¹, Robert Weigel¹, Anna Aleksieieva², Martin Vossiek²
¹Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany; ²Technische Universität Clausthal, Germany
- 1603 **A Triple-Band SiGe HBT Differential VCO Using a Reconfigurable Multi-Band Resonator**
Yasushi Itoh, Shota Tanaka, Shonan Institute of Technology, Japan
- 1607 **A Dual-Tapped Microstrip Resonator VCO**
Masaomi Tsuru, Kazuhiro Nishida, Kenji Kawakami, Daisuke Yamaguchi, Masahiko Komaki, Morishige Hieda, Ryoji Hayashi, Yoshihito Hirano, Mitsubishi Electric Corporation, Japan
- 1611 **Low-Phase-Noise Wide-Frequency-Range Differential Ring-VCO with Non-Integral Subharmonic Locking in 0.18 μ m CMOS**
Sang_yeop Lee, Shuhei Amakawa, Noboru Ishihara, Kazuya Masu, Tokyo Institute of Technology, Japan
- 1615 **A 484- μ m² 21-GHz LC-VCO Beneath a Stacked-Spiral Inductor**
Rui Murakami, Kenichi Okada, Akira Matsuzawa, Tokyo Institute of Technology, Japan

EuMC/EuMIC01 : Modelling of Passive Integrated Devices from Microwaves to THz

Chair: Giovanni Ghione, Polytechnic of Turin — Co-Chair: Gottfried Magerl, TU Wien

Venue: Darwin 3, 08:30 - 10:10, Tuesday 28 September 2010

- 1619 **Electromagnetic Propagation in Graphene in the mm-Wave Frequency Range**
Dan Neculoiu¹, George Deligeorgis², Mircea Dragoman¹, Daniela Dragoman³, George Konstantinidis², Alina Cismaru¹, Robert Plana⁴
¹IMT Bucharest, Romania; ²FORTH, Greece; ³University of Bucharest, Romania; ⁴LAAS, France
- 1623 **Terahertz Three-Dimensional Plasma Resonances in InGaAs Diodes: A Hydrodynamic Study**
Pierre Ziadé¹, Christophe Palermo², Hugues Marinchio², Thibault Laurent², Giulio Sabatini², Philippe Nouvel², Ziad Kallassy¹, Luca Varani²
¹Lebanese University, Lebanon; ²IES (UMR5214), France
- 1627 **Material Adaptation and Optimisation of Passive Ka-Band Multilayer Circuit Designs Using an Efficient Modular Design Strategy**
Gabor Vogt, Stefan Humbla, Jens Müller, Ralf Stephan, Dirk Stöpel, Johannes F. Trabert, Matthias A. Hein, Technische Universität Ilmenau, Germany
- 1631 **Simulation and Measurement of Back Side Etched Inductors**
Falk Korndörfer¹, Mehmet Kaynak¹, Volker Mühlhaus²
¹IHP GmbH, Germany; ²Dr. Mühlhaus Consulting & Software GmbH, Germany
- 1635 **Extraction of Parametric Circuit Models from Scattering Parameters of Passive RF Components**
Piero Triverio¹, Michel Nakhla², Stefano Grivet-Talocia¹
¹Politecnico di Torino, Italy; ²Carleton University, Canada

EuMC/EuMIC02: Power Amplifier Developments in Industry

Chair: Klaus Beilenhoff, UMS GmbH — Co-Chair: Sylvain Delage, AT III-V Lab

Venue: Darwin 4, 08:30-10:10, Tuesday 28 September 2010

- 1639 **A Single Bias 20W S-Band HPA for Radar Applications**
A. Bettidi, A. Cetronio, S. Lavanga, Antonio Nanni, SELEX Sistemi Integrati S.p.A., Italy
- 1643 **8W 2-8GHz Solid State Amplifier for Phased Array**
R. Diciomma, E. Ciaccia, G. Giolo, D. Baccello, B. Orobello, V. Alleva, Elettronica S.p.A., Italy
- 1646 **HPA Module for Active Antenna Applications**
D. Lopez¹, L. Bortoli¹, J.-P. Frayssé¹, D. Langrez¹, J.-F. Villemazet¹, J.-L. Cazaux¹, G. Soubercaze-Pun², Luc Lapierre²
¹Thales Alenia Space, France; ²CNES, France
- 1650 **50W X-Band GaN MMIC HPA: Effective Power Capability and Transient Thermal Analysis**
C. Costrini¹, A. Cetronio¹, P. Romanini¹, G. Breglio², A. Irace², M. Riccio²
¹SELEX Sistemi Integrati S.p.A., Italy; ²Università di Napoli "Federico II", Italy
- 1654 **High Power, Fully Integrated SMT Amplifiers with +47dBm OIP3 at 15GHz and 6W, 38% Efficiency at 30GHz Using Low Cost, High Volume PHEMT**
Henrik Morkner¹, Kohei Fujii², Brent Ostermann²
¹M/A-COM Technology Solutions, USA; ²Avago Technologies Inc., USA

EuMC/EuMIC03: High Efficiency and Broadband PAs

Chair: Almudena Suarez, University of Cantabria — Co-Chair: Ruediger Quay, FhG-IAF

Venue: Dupin 2, 08:30-10:10, Tuesday 28 September 2010

- 1658 **GaN Based Power Amplifiers for Broadband Applications from 2GHz to 6GHz**
H. Sledzik¹, R. Reber¹, B. Bunz¹, P. Schuh¹, Martin Oppermann¹, M. Mußer², M. Seelmann-Eggebert², Rüdiger Quay²
¹EADS Deutschland GmbH, Germany; ²Fraunhofer IAF, Germany
- 1662 **A High Efficiency and Multi-Band/Multi-Mode Power Amplifier Using a Distributed Second Harmonic Termination**
Jangheon Kim¹, Farouk Mkaem², Slim Boumaiza²
¹Samsung Electronics Co. Ltd., Korea; ²University of Waterloo, Canada
- 1666 **A Broadband, Efficient, Overdriven Class-J RF Power Amplifier for Burst Mode Operation**
Dristy Rahul Parveg¹, Peter Singerl¹, Andreas Wiesbauer¹, Hossein Mashad Nemati², Christian Fager²
¹Infineon Technologies Austria AG, Austria; ²Chalmers University of Technology, Sweden
- 1670 **Theoretical and Experimental Comparison of Class F vs. Class F⁻¹ PAs**
Elisa Cipriani, Paolo Colantonio, Franco Giannini, Rocco Giofrè, Università di Roma "Tor Vergata", Italy
- 1674 **The Continuous Class-F Mode Power Amplifier**
V. Carrubba, A.L. Clarke, M. Akmal, J. Lees, Johannes Benedikt, Paul J. Tasker, S.C. Cripps, Cardiff University, UK

EuMC/EuMIC04: Power Amplifiers on Silicon

Chair: Georg Boeck, Technical University of Berlin — Co-Chair: Eric Kerhervé, IMS Bordeaux

Venue: Dickens 5/6, 13:40-15:00, Tuesday 28 September 2010

- 1678 **An X-Band, 23.8-dBm Fully Integrated Power Amplifier with 25.8% PAE in 0.18- μ m CMOS Technology**
Ping-Sung Chi, Zuo-Min Tsai, Jing-Lin Kuo, Kun-You Lin, Huei Wang, National Taiwan University, Taiwan
- 1682 **K-Band CMOS-Based Power Amplifier Module with MEMS Tunable Bandpass Filter**
Kazukiyo Joshin¹, Yoichi Kawano¹, Xiaoyu Mi¹, Osamu Toyoda², Toshihide Suzuki¹, Tatsuya Hirose¹, Satoshi Ueda¹
¹Fujitsu Ltd., Japan; ²Fujitsu Laboratories Ltd., Japan
- 1686 **A 60GHz 18dBm Power Amplifier Utilizing 0.25 μ m SiGe HBT**
Amin Hamidian¹, Viswanathan Subramanian¹, Ralf Doerner², Georg Boeck¹
¹Technische Universität Berlin, Germany; ²FBH, Germany
- 1690 **79GHz BiCMOS Single-Ended and Differential Power Amplifiers**
Nejdat Demirel¹, Eric Kerhervé², Robert Plana³, Denis Pache¹
¹STMicroelectronics, France; ²Laboratoire IMS, France; ³LAAS, France

EuMC/EuRAD01: Radar and Microwave Developments

Chair: Peter Hoogeboom, Delft University of Technology — Co-Chair: Adriano Meta, German Aerospace Center

Venue: Dickens 1/2, 13:40-15:00, Thursday 30 September 2010

- 1694 **A High Resolution 2D Omnidirectional Synthetic Aperture Radar Scanner at K Band**
Faiza Ali, Alexander Urban, Martin Vossiek, Technische Universität Clausthal, Germany
- 1698 **A Modular 24GHz Radar Sensor for Digital Beamforming on Transmit and Receive**
Marlene Harter¹, Andreas Kornbichler², Thomas Zwick¹
¹KIT, Germany; ²Siemens AG, Germany
- 1702 **Spatial (Aperture) Noise Generators**
I.V. Bragin, V.P. Sgibnev, I.V. Istuakov, B.N. Savin, E.L. Elizavetova, OKB MEI, Russia
- 1706 **A Complete Indoor Positioning System Implementing Six-Port Interferometers**
S.F. Peik, F. Monsees, C. Meyer, R. Szczuka, T. Pötsch, Hochschule Bremen, Germany

EuMC/EuRAD02 : Radar Antennas

Chair: Wolfgang Menzel, University of Ulm — Co-Chair: Ioan E. Lager, Delft University of Technology

Venue: Darwin 3, 13:40-15:00, Thursday 30 September 2010

- 1710 **Design of Two Flare UWB Antenna dedicated to the Research of Alive Buried Victims**
*J.M. Denoual¹, J.M. Floc'h¹, J.P. Mutzig², P. Massaloux³, F. Ducasse³, P. Minvielle³,
C. Labarthe²*
¹IETR, France; ²MARTEC, France; ³CEA, France
- 1714 **Dual Frequency & Dual-Linear Polarization Integrated Antenna Array for application
in Synthetic Aperture Radar**
Grzegorz Jaworski¹, Tomasz Maleszka¹, Sławomir Gruszczyński², Krzysztof Wincza²
*¹Wroclaw University of Technology, Poland; ²AGH University of Science & Technology,
Poland*
- 1718 **Circular Polarization Selectivity of Space-Fed Arrays Using Element Rotation**
Rudi H. Phillion, Michal Okoniewski, University of Calgary, Canada
- 1722 **Accurate Time-Domain Modelling of MEMS Antennas for Wireless Telemetry Systems**
Diego Caratelli¹, Alessandro Massaro², Alexander G. Yarovoy¹, Roberto Cingolani²
¹Technische Universiteit Delft, The Netherlands; ²IIT, Italy

EuMC/EuWiT01 : Wireless Antennas

Chair: Dirk Heberling, RWTH Aachen — Co-Chair: Alessandra Costanzo, University of Bologna

Venue: Amphi Goethe, 08:30-10:10, Tuesday 28 September 2010

- 1726 **An Azimuth of Arrival Detector Based on a Compact Complementary Antenna System**
Stefano Maddio, Alessandro Cidronali, Gianfranco Manes, Università di Firenze, Italy
- 1730 **Modeling of Planar Dual-Band Microstrip Patch Antenna Using Gaussian Process
Regression**
J.P. Jacobs¹, J.P. de Villiers²
¹University of Pretoria, South Africa; ²CSIR, South Africa
- 1734 **Gain Enhancement of a Circularly Polarized Microstrip Patch Antenna Surrounded by
a Circular Mushroom-Like Substrate**
Halim Boutayeb, Tarek Djerafi, Ke Wu, École Polytechnique de Montréal, Canada
- 1738 **The Detuning Effects of a Wrist-Worn Antenna and Design of a Custom Antenna
Measurement System**
John Buckley¹, Kevin G. McCarthy², Brendan O'Flynn¹, Cian O'Mathuna¹
¹Tyndall National Institute, Ireland; ²University College Cork, Ireland
- 1742 **Total Multi-Port Return Loss as a Figure of Merit for MIMO Antenna Systems**
Werner L. Schroeder, Aleksander Krewski, Hochschule RheinMain, Germany

EuMC/EuWiT02: UHF RFID Technologies and Applications

Chair: Laurent Dussopt, CEA — Co-Chair: Manos Tentzeris, Georgia Tech

Venue: Dupin 1, 08:30 – 10:10, Tuesday 28 September 2010

- 1746 **4th Generation Multiresonator-Based Chipless RFID Tag Utilizing Spiral EBGs**
Stevan Preradovic, Nemai Karmakar, Monash University, Australia
- 1750 **An UHF RFID Tag Emulator for Precise Emulation of the Physical Layer**
Michael Winkler, Thomas Faseth, Holger Arthaber, Gottfried Magerl, Technische Universität Wien, Austria
- 1754 **A Testbed for Precision Impedance Measurements of Planar Symmetrical RFID Antennas**
J. Meyer, R. Herschmann, B. Geck, Leibniz Universität Hannover, Germany
- 1758 **SAR-Like Localization of RFID Tags for Non-Uniform Trajectory**
Sebastian Kunkel¹, Ming-Shih Huang², Robert Bieber³, Martin Vossiek¹
¹Technische Universität Clausthal, Germany; ²Pennsylvania State University, USA;
³Independent Researcher, Germany
- 1762 **WSN-Based Solutions for Security and Surveillance**
F. Viani, Giacomo Oliveri, M. Donelli, Leonardo Lizzi, Paolo Rocca, Andrea Massa, Università di Trento, Italy

EuMC/EuWiT03: Microwave Techniques for Wireless

Chair: Jozef Modelski, Warsaw University of Technology — Co-Chair: Jan Machac, CVUT

Venue: Amphi Goethe, 13:40 – 15:00, Tuesday 28 September 2010

- 1766 **Experimental Evaluation of Phase Noise Compensation for 60-GHz Single Carrier Systems**
Satoshi Suyama, Yusuke Miyai, Hiroshi Suzuki, Kazuhiko Fukawa, Tokyo Institute of Technology, Japan
- 1770 **Construction of Optimal Bases for Wavelet Packet Modulation Under Phase Offset Errors**
M.K. Lakshmanan, H. Nikookar, Technische Universiteit Delft, The Netherlands
- 1774 **Frequency-Independent Active Phase Shifters for UWB Applications**
Blaise Ravelo¹, Marc Le Roy², André Pérennec²
¹IRSEEM, France; ²Lab-STICC, France
- 1778 **A Positive Feedback Pilot System for a Wide Bandwidth Feedforward Amplifier**
R. Neil Braithwaite¹, Matthew J. Hunton²
¹Powerwave Technologies, USA; ²Consultant, USA

EuMW/EuMC01 : EuMW/EuMC Opening Session

Chair: Gilles Dambrine, EuMW2010 General Chair — Co-Chair: Danielle Vanhoenacker-Janvier, EuMC2010 Chair

Venue: Amphi Goethe, 10:50 - 12:30, Tuesday 28 September 2010

- 1782 **A Look at Real-World Metamaterial Applications: A Practitioner's Viewpoint**
R. Mittra, Pennsylvania State University, USA
- 1786 **Payloads Units for Future Telecommunication Satellites — A Thales Perspective**
Ph. Voisin, Ph. Ginestet, E. Tonello, O. Maillet, Thales Alenia Space, France

EuMW/EuMC02 : EuMW/EuMC Closing Session

Chair: Wolfgang Heinrich, EuMA President — Co-Chair: Gilles Dambrine, EuMW2010 General Chair

Venue: Darwin 4/5, 15:40 - 17:00, Thursday 30 September 2010

- 1790 **The Galileo Project and Scientific Applications**
Bertram Arbesser-Rastburg, Guenter Hein, ESA, The Netherlands
- 1794 **Monolithic Integration Within PMR Products**
Herve Mokrani, EADS, France
- .
- 1796 **Book of Abstracts**