

2011 German Microwave Conference

(GeMiC 2011)

**Darmstadt, Germany
14-16 March 2011**



IEEE Catalog Number: CFP1175F-PRT
ISBN: 978-1-4244-9225-1

TABLE OF CONTENTS

Dispersion Analysis of Periodic Structures by Solving Corresponding Excitation Problems	1
<i>Thomas Eibert, Yvonne Weitsch, Huanlei Chen</i>	
Stochastic Electromagnetic Fields	5
<i>Johannes A. Russer, Peter Russer</i>	
Surface Impedances for Planar Conductors in Volume Discretization Methods without Frequency Limitations	9
<i>Marco Kunze</i>	
Design of a 120 W Balanced GaN Doherty Power Amplifier	13
<i>A. Z. Markos, K. Bathich, A. Al Tanany, D. Gruner, G. Boeck</i>	
An 8 W GaAs Class-AB Amplifier for Operation in Envelope Tracking Systems	17
<i>A. Brückle, M. Ott, S. Heck, M. Berroth</i>	
Efficiency Improvement for RF Power Amplifiers by Employing Harmonic Injection at the Input	21
<i>A. Al Tanany, D. Gruner, F. Goelden, K. Bathich, R. Kahl, G. Boeck</i>	
Transponder and Reader Concept for a HF Locating System	25
<i>Tobias Schüfer, Martin Vossiek</i>	
Triggering UMTS user Equipment Inter-RAT Cell Reselection using Noise Jammers	29
<i>Markus Gardill, Stefan Zorn, Robert Weigel, Alexander Kolpin</i>	
A High Accuracy Direction-Of-Arrival and Misalignment Angle Detector	33
<i>Gabor Vinci, Francesco Barbon, Robert Weigel, Alexander Koelpin</i>	
Doppler Estimation in an OFDM Joint Radar and Communication System	36
<i>Yoke Leen Sit, Christian Sturm, Thomas Zwick</i>	
Particle Swarm Optimization of Minimum-Redundancy MIMO Arrays	40
<i>K. Rezer, W. Gropengießer, A. F. Jacob</i>	
Dispersion Engineering: How to Design a Miniature Coaxial Low-Pass	44
<i>Christoph Neumaier, Martin Lorenz, Natalie Spaeth, Kai H. E. Numssen, Erwin M. Biebl</i>	
LTCC-Integrated Evanescent Mode Cavity Filters at X- to K-Band	48
<i>Benedikt Schulte, Volker Ziegler, Bernhard Schoenlinner, Ulrich Prechtel, Hermann Schumacher</i>	
Broadband Matching of High-permittivity Coatings with Frequency Selective Surfaces	52
<i>Frerk Fitzek, Ralph H. Raßhofer, Erwin M. Biebl</i>	
A Compact Four-Poles Cross-Coupled Square Open Loop Resonator Diplexer	56
<i>Jessada Konpang, Laddawan Thongnoi</i>	
Active Learning Method for External Q Computation	60
<i>Payman Rezaee, Nasrin Nasr Esfahani, Reinhard Knoechel, Majid Tayarani</i>	
Combined Lumped Element Network and Transmission Line Model for Wireless Transmission Links	64
<i>Johannes A. Russer, Andrey Baev, Yury Kuznetsov, Farooq Mukhtar, Hristomir Yordanov, Peter Russer</i>	
Enhanced Investigations of 433 MHz–10GHz Time Invariant Wireless In-Car Communication Channels	68
<i>Arndt T. Ott, Uwe Siart, Thomas F. Eibert, Oliver Klemp, Rainer Steffen</i>	
Brune’s Synthesis of Linear Lossy Distributed One-Port and Symmetric Two-Port Microwave Circuits	72
<i>Farooq Mukhtar, Yury Kuznetsov, Christian Hoffmann, Peter Russer</i>	
Characterization and Impedance Matching of New High Sensitive Planar Schottky Detector Diodes	76
<i>Matthias Hoefle, Katharina Schneider, Andreas Penirschke, Oleg Cojocari, Rolf Jakoby</i>	
Closed-Form Description of Coupled Microstrip Line Step Discontinuities	80
<i>Johannes Müller, Nora Haase, Arne F. Jacob</i>	
110 GHz Characterization of Coplanar Waveguides on GaN-on-Si Substrates	84
<i>Diego Marti, Mathias Vetter, Andreas R. Alt, Liang Liu, Hansruedi Benedickter, C. R. Bolognesi</i>	
Shunting Yard Management using Millimeter Wave Radar	88
<i>H. Essen, G. Biegel, T. Brehm, S. Sieger, U. Thoennessen, C. Schulz</i>	
A 77 GHz Near-Field Probe with Integrated Illuminating Waveguide	91
<i>Sabine Dieter, Zimeng Yang, Wolfgang Menzel</i>	
Passive Wireless Temperature Sensing with BST-Based Chipless Transponder	95
<i>Christian Mandel, Holger Maune, Matthias Maasch, Mohsen Sazegar, Martin Schüßler, Rolf Jakoby</i>	
Efficiency Investigations for Wireless Resonant Energy Links Realized with Resonant Inductive Coils	99
<i>Marco Dionigi, Mauro Mongiardo</i>	

Helix-shaped CRLH-TL Sensor for Inhomogeneties Detection for Pneumatic Conveyed Pulverized Solids	103
<i>Aleksandar Angelovski , Andreas Penirschke, Rolf Jakoby</i>	
Conceptual Design of a Procedure for Density Monitoring of Pulverized Fuels in Pneumatic Conveying Systems with Microwaves (8-12 GHz)	107
<i>C. Baer, T. Musch, M. Gerding, M. Vogt</i>	
An IQ-Modulator Based Heterodyne 77-GHz FMCW Radar	111
<i>Reinhard Feger, Christoph Wagner, Andreas Stelzer</i>	
Element-Space Spatially Waveform Diverse FMCW Radar Distributed on Naval Formation	115
<i>Thomas Fickenscher, Anshu Gupta</i>	
Frequency Estimation Algorithm for an Extended FMCW Radar System with Additional Phase Evaluation	119
<i>Serdal Ayhan, Philipp Pahl, Thorsten Kayser, Mario Pauli, Thomas Zwick</i>	
Application of FMCW Radar Principle for Fast Inhomogeneity Identification on Transmission Lines	123
<i>Fengqing Bao, Lionel Arend, Sebastian Bertl, Jurgen Dettlefsen</i>	
Bandpass Filter with Tunable Bandwidth and Center Frequency based on Varactor Diodes	127
<i>Christoph Reck, Ralph Trommer, Lorenz-Peter Schmidt</i>	
Compact Cascaded Directional Couplers with Continuously Tuneable Coupling Ratios	131
<i>H. Mextorf, T. Lehmann, R. Knöchel</i>	
Adaptive Matching Networks for MIMO RF-frontends	135
<i>Arndt Ulbrich, Jorg Pamp, Dirk Heberling</i>	
Varactor Loaded Tunable Split Ring Resonators with Simple Biasing Network	138
<i>Matthias Maasch, Christian Damm, Martin Schußler, Erick Gonzalez-Rodriguez, Rolf Jakoby</i>	
Compact Tunable Loaded Line Phase Shifter based on Screen Printed BST Thick Film	142
<i>Mohsen Sazegar, Arshad Mehmood, Yuliang Zheng, Holger Maune, Xianghui Zhou, Joachim Binder, Rolf Jakoby</i>	
Power Divider Based on Grounded Dielectric Slab Waveguide Operating in E_x¹¹ Mode	146
<i>Nemat Dolatsha, Jan Hesselbarth</i>	
RF Pulse Compressor for kW-Pulse Power	150
<i>Klaus Solbach</i>	
Phase Error Corrections for Microstrip 8×8 Butler Matrix Used in 7 Tesla MRI	155
<i>Pedram Yazdanbakhsh, Klaus Solbach</i>	
Ultra-Wideband Coplanar Microstrip Transitions for Connectorizing Microwave Photonic Components Based on Thin Polymer and Driven by Microstrip Electrode	159
<i>Mohammed El-Gibari, Yann Mahe, Dominique Averty, Cyril Lupi, Hongwu Li</i>	
Different Inline Transitions Between Rectangular Wave Guides and Planar Waveguides	163
<i>Georg Strauss, Christoph Spranger</i>	
Phased Array for Maritime Satcom Applications	167
<i>M. Geissler, F. Woetzel, M. Böttcher, S. Korthoff, A. Lauer, M. Eube, M. Wleklinski</i>	
Branch-line Couplers for Satellite Antenna Systems	171
<i>Michael Schneider, Enrico Reiche, Helmut Wolf</i>	
Broadband Array Element with Polarization Multiplexing at K-Band	175
<i>Alexander Stark, Arne F. Jacob</i>	
Design of a Disc-Cone Antenna for Passive Radar in the DVB-T Frequency Range	179
<i>Peter Knott, Tomasz Nowicki, Heiner Kuschel</i>	
Design and Fabrication of a Dual Electrically Small MIMO Antenna System for 4G Terminals	183
<i>Mohammad S. Sharawi, Yanal S. Faouri, Sheikh S. Iqbal</i>	
An Analog Synchronous QPSK Demodulator for Ultra-High Rate Wireless Communications	187
<i>A. Cagri Ulusoy, Gang Liu, Andreas Trasser, Hermann Schumacher</i>	
Performance Analysis of a Hyperbola Fitting Algorithm to Determine the Position of Objects in the Near Field of a UWB Detection System	191
<i>Martin Pohlmann, Tobias Zibold, Dorothea Sturtz, Jan Brosi, Heiko Braun, Klaus Solbach</i>	
LTR Analysis for Fast Concealed Weapon Detection	195
<i>Averkios Vasalos, Ioannis Vasalos, Heung-Gyoon Ryu, Stavroula-Evita Fotinea</i>	
An Octave Bandwidth Finline Frequency Tripler	199
<i>Michael Hrobak, Michael Sterns, Wadim Stein, Marcus Schramm, Lorenz-Peter Schmidt</i>	
A VCO with Wide Tuning Range and Output Switch for Pulsed Frequency Modulated UWB Signal Generation	203
<i>Alexander Esswein, Robert Weigel</i>	
Power Back-Off Behaviour of High-Efficiency Power-Combining Class-E Amplifier	207
<i>Mury Tian, Vincent Fusco</i>	
High-Efficiency Low-Voltage-Stress Class-EF PA with Extended Maximum Operating Frequency	211
<i>Mury Tian, Vincent Fusco</i>	

Mode Continua for Inverse Class-F RF Power Amplifiers	215
<i>Christian Friesicke, Arne F. Jacob</i>	
Distributed Amplifier with Multiple Power Modes for Linear Mobile Phone Application.....	219
<i>Wei Wang, Georg Fischer, Leon Van den Oever, Christian Korden, Robert Weigel</i>	
Phase Shifter Based Tunable Bandpass Filters	223
<i>Azadeh Taslimi, Koen Mouthaan</i>	
Digitally Controlled 3 GHz 360° Phase Modulator in an 1.2V 65 nm CMOS Technology	227
<i>Bjorn Thorsten Thiel, Renato Negra</i>	
Motion Compensation with One-axis Gyroscope and Two-axis Accelerometer for Automotive SAR	231
<i>Huaming Wu, Lukasz Zwirello, Xuyang Li, Lars Reichardt, Thomas Zwick</i>	
A GSM-Network for Mobile Phone Localization in Disaster Scenarios.....	235
<i>Richard Rose, Christian Meier, Stefan Zorn, Alexander Goetz, Robert Weigel</i>	
A Sparse Synthetic Aperture-Based UWB Medical Imaging System.....	239
<i>Malyhe Jalilvand, Elena Pancera, Xuyang Li, Thomas Zwick, Werner Wiesbeck</i>	
UWB Antennas Optimization for In-Body Radiation.....	243
<i>Elena Pancera, Hernan Barba, Xuyang Li, Malyhe Jalilvand, Thomas Zwick</i>	
Liquid Crystal with High THz Birefringence.....	247
<i>Mohammad Khaled Shakfa, Nico Vieweg, Martin Koch</i>	
Study About TEM Horn Size Reduction for Ultra-Wideband Radar Application	250
<i>Ahmed Abbas H. Ameri, Günter Kompa, Axel Bangert</i>	
MetaBeam: Multi-layer CRLH Antennas for 24 GHz Sensor Applications Based on Low Cost PCBs	254
<i>Q. Yuan, Z. Chen, S. Otto, S. Held, K. Solbach, D. Erni, A. Rennings</i>	
Photoresist-based Resonator Antenna Array	258
<i>D. M. Klymyshyn, M. Tayfeh Aligodarz, A. Rashidian, M. Börner, J. Mohr</i>	
Spatial Filtering and Equalization for SSR Signal Detection in a Multipath Environment	261
<i>Christoph Reck, Max S. Reuther, Ulrich Berold, Lorenz-Peter Schmidt</i>	
Active Frequency Multiplier-by-Nine MMIC for Millimeter-Wave Signal Generation.....	265
<i>U. Lewark, A. Tessmann, H. Massler, A. Leuther, I. Kallfass</i>	
A 60 GHz Down-Conversion Mixer with 6.6 dB Gain and 11 GHz IF Bandwidth in an 80 GHz SiGe HBT Technology	269
<i>Gang Liu, A. Cagri Ulusoy, Andreas Trasser, Hermann Schumacher</i>	
2.2 GHz LC VCO for RFID on a 0.5-μm Digital Gate-array Designed for Ultra-thin Silicon Substrates	273
<i>Mohamed S. Abdelfattah, Damir Ferenci, Markus Groezing, Manfred Berroth, Cor Scherjon, Joachim Burghartz</i>	
Voltage Controlled Oscillator with Frequency Tripler in MHMIC Technology for V-Band Applications.....	277
<i>Maximilian Hofmann, Simone Winkler, Ke Wu, Robert Weigel, Alexander Koelpin</i>	
650 W Pulse Generator for Ultra-Wideband (UWB) Radar Application	281
<i>Ahmed Abbas H. Ameri, Günter Kompa, Axel Bangert</i>	
Wireless Measurement System for Extracting Open Loop Micro Coils Parameters.....	284
<i>Adnan Yousaf, Ing Thomas Jeager, L. Reindl</i>	
Load-Pull Investigation of GaN-HEMT for Supply Modulated Applications	288
<i>Olof Bengtsson, Serguei A. Chevtchenko, Ralf Doerner, Paul Kurpas, Wolfgang Heinrich</i>	
Custom-Made Calibration Standards for Measurements of Multilayer Substrates	292
<i>Miroslav Kotzev, Christian Schuster</i>	
Non Destructive Complex Permittivity Determination of Glass Material with Planar and Convex Surface.....	296
<i>Amir Cenanovic', Siegfried Martius, Andreas Kilian, Jan Schur, Lorenz-Peter Schmidt</i>	
Calibration of Waveguide Adapter for Multimodal Measurement of Material Characteristics	300
<i>Samaneh Shooshtary, Mahdi Abbasi, Abbas S. Omar</i>	
Inherent Resolution Limit Analysis for Millimeter-wave Indirect Holographic Imaging	304
<i>Julian Adametz, Frank Gumbmann, Lorenz-Peter Schmidt</i>	
3-D Imaging by Hierarchical Disaggregation.....	308
<i>Georg Schnattinger, Carsten H. Schmidt, Thomas F. Eibert</i>	
Analytical Investigation of Mutual Interference Between Automotive FMCW Radar Sensors	312
<i>M. Goppelt, H.-L. Blöcher, W. Menzel</i>	
Correlation Based Novel Detection Scheme for HF Surface Wave Radar.....	316
<i>A. Gupta, Th. Fickenscher</i>	
EOSAR – A Tool for the Blending of Real Objects into SAR Scenes.....	320
<i>Sergei Bokaderov, Marcel Laubach, Harmut Schimpf, Peter Wellig</i>	
A Time-Domain System for EMI Measurements above 1 GHz with High Sensitivity	324
<i>Christian Hoffmann, Peter Russer</i>	

A Prototype for a Time-Domain EMI Measurement System using Pipelined Time-Interleaved ADCs up to 4 GHz	328
<i>Hassan Hani Slim, Peter Russer</i>	
Suppression of Power Level Fluctuations at Leaky Coaxial Cable Ends using Ferrite Cores	332
<i>Julia Engelbrecht, Ralf Collmann, Ulrich Birkel, Mark Weber</i>	
Efficient Desegmentation Technique for Analysis of Planar Circuits	336
<i>Elnaz Abaei, Esfandiar Mehrshahi</i>	
Study of Electromagnetic Field Stress Impact on AlGaIn/GaN HEMT Transistor Performances	340
<i>S. Khemiri, M. Kadi, A. Louis, B. Mazari</i>	

Author Index