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Power Amplifier

Chair: Prof. I. Kallfass

14:40 – 15:40, Monday March 11th 2024, Philharmonie

PAGE 1 14:40	General Combiner Initialization Workflow for All Types of Active Load Modulation Power Amplifiers (<i>Alexander Deublein, Andreas Illmer, Christian Musolff, Robert Weigel, Georg Fischer</i>)
PAGE 5 15:00	Demonstration of a Drain-Bar-Based Supply Concept for H-Band High Power Amplifiers (<i>Thomas Ufschlag, Benjamin Schoch, Dominik Wrana, Lukas Gebert, Axel Tessmann, Arnulf Leuther, Sandrine Wagner, Ingmar Kallfass</i>)
PAGE 9 15:20	A Method for Improved Phase Characteristics in a GaN PA for Supply Modulation (<i>Anders I. Hagen, Morten Olavsbråten</i>)

Communication

Chair: Prof. F. Gerfers

14:40 – 16:00, Monday March 11th 2024, Tiger & Turtle

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PAGE 17 15:00	Investigations of Multi-Beam SCORE Datarates (<i>Johann Christian Marten, Marwan Younis, Gerhard Krieger</i>)
PAGE 21 15:20	A Gigabit Wireline Transceiver Using Time-Mode-Circuits in 28nm (<i>Tim Lauber, Stefan Voigt, Alexander Kronig, Ralf Wunderlich, Stefan Heinen</i>)
PAGE 25 15:40	Crosstalk Immune High-Speed Photonic Transmitter-Receiver System (<i>Souvaraj De, Ranjan Das, Karanveer Singh, Younus Mandalawi, Thomas Kleine-Ostmann, Thomas Schneider</i>)

Devices

Chair: Prof. N. Weimann

16:20 – 18:00, Monday March 11th 2024, Philharmonie

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PAGE 33 16:40	Experimental Characterization of Drain Current Transient Effects in ‘Buffer-Free’ RF GaN HEMTs (<i>Simone Cangini, Gian Piero Gibiino, Alberto M. Angelotti, Corrado Florian, Alberto Santarelli, Martino Lorenzini</i>)
PAGE 37 17:00	Bias-Dependent Spectrum Analysis of Highly Nonlinear Resonant Tunneling Diode Oscillators (<i>Enes Mutlu, Jonas Watermann, Jonathan Abts, Özgül Tek, Christian Preuss, Robin Kress, Benedikt Sievert, Daniel Erni, Andreas Rennings, Nils Weimann</i>)
PAGE 41 17:20	Investigation of Mutual Injection Locking on Resonant-Tunneling-Diode Oscillators (<i>Robin Kress, Enes Mutlu, Bo Song, Alexander Possberg, Simone Clochiatti, Nils Weimann</i>)
PAGE 45 17:40	Segmented Mach-Zehnder Modulator for Orthogonal Sampling Based High Bandwidth THz Transmitters (<i>Younus Mandalawi, Mohamed I. Hosni, Karanveer Singh, Janosch Meier, Souvaraj De, Ranjan Das, Thomas Schneider</i>)

(3D-) Printing

Chair: Prof. N. Benson

16:20 – 17:40, Monday March 11th 2024, Tiger & Turtle

PAGE 49 16:20	Broadband Terahertz Absorber from 3D-Printed Resin (Tobias Kubiczek , Benedikt Sievert , Daniel Erni , Jan C. Balzer)
PAGE 53 16:40	Ultra-Precise Deposition — XTPL Technology for 3D Printed Broadband Spiral Inductors (Luca Valenziano , Felix Zeh , Georg Gramlich , Thomas Zwick , Akanksha Bhutani)
PAGE 57 17:00	Ultraprecise Printing of D-Band Interconnects Using Dielectric Ramps (Martin Roemhild , Georg Gramlich , Jonathan Wendel , Holger Baur , Thomas Zwick , Norbert Fruehauf)
PAGE 61 17:20	A Highly Flexible and Elastic Low-Cost Stencil-Printed Coplanar Waveguide on Rough Airbag Nylon 66 Textile (Björn Möhring , Philipp Rinklin , Sebastian Schweizer , Uwe Siart , Bernhard Wolfrum , Thomas F. Eibert)

Antenna 1

Chair: Prof. D. Heberling

08:40 – 10:20, Tuesday March 12th 2024, Philharmonie

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PAGE 69 09:00	A Dual-Band Dual-Circular Polarised Antenna Array for UAV Detection and Tracking (Wasim Alshrafi , Ulrich Engel , Burak Cihan , Jannik Springer , Guillaume François , Dirk Heberling)
PAGE 73 09:20	Design of a 240GHz Dielectric Resonator Antenna in 130nm SiGe BiCMOS Process (Muhammad Faisal Bashir , Matthias Wietstruck)
PAGE 77 09:40	A Broadband Lens Loaded Vivaldi Antenna for Sub-6GHz/mmWave 5G Applications and Wideband Nondestructive Material Characterization (Berker Colak , Zeynep Ertekin , Mustafa Secmen)
PAGE 81 10:00	Power Normalization for Over the Air Augmented Exposure Assessment (David Schaefer , Benoit Derat , Andreas Lauer , Winfried Simon , Mert Celik , Thorsten Liebig)

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Chair: Prof. A.C. Ulusoy

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PAGE 89 09:00	Battery Powered Compact and Lightweight RTD THz Oscillator Module (Christian Preuss , Enes Mutlu , Ben Daedler , Jonathan Abts , Jonas Watermann , Nils Weimann)
PAGE 93 09:20	A Low Phase Noise 12GHz LO Generation with Quadrature Outputs in 0.13μm SiGe BiCMOS (Meghana Kadam , Yerzhan Kudabay , Paulo Oliveira , Hans-Dieter Wohlmuth , Vadim Issakov)
PAGE 97 09:40	A SiGe Based 60GHz Signal Source MMIC for MIMO Radar Application (Muhammed Ali Yildirim , Jonathan Bott , Florian Vogelsang , Christian Bredendiek , Klaus Aufinger , Nils Pohl)

Antenna 2

Chair: Prof. D. Erni

10:40 – 12:20, Tuesday March 12th 2024, Philharmonie

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PAGE 105 11:00	Empirical Study on the Antenna-Dependent Accuracy of Continuous-Wave Radars (<i>Bartosz Tegowski, Björn Schulz, Alexander Koelpin</i>)
PAGE 109 11:20	Far Field Phase Reconstruction Using Planar Near Field Scanning Techniques (<i>Martin Obermaier, Thomas Deckert, Marc Vanden Bossche, Dirk Plettemeier</i>)
PAGE 113 11:40	A Metal-Only Holographic Leaky-Wave Antenna Based on Spoof Surface Plasmon Polaritons (<i>Mohammad Amin Chaychi Zadeh, Sajjad Zohrevand, Ehsan Farokhipour, Daniel Erni, Nader Komjani</i>)
PAGE 117 12:00	The Occurrence of Parasitic Radiation in Transmission-Reflection Material Characterization Using a Sandwich Antenna-Sample-Antenna Setup (<i>Marvin Degen, Jan Taro Svejda, Mandana Jalali, Andreas Rennings, Daniel Erni</i>)

Bio-Medical Applications

Chair: Dr. M. Jalali

10:40 – 12:20, Tuesday March 12th 2024, Tiger & Turtle

PAGE 121 10:40	Influence of Heavy Metal Contamination on THz Transmission of Plants (<i>Lisa C. Kreuzer, Fabian Brix, Petra Düchting, Sebastian T. Gassel, Niklas Schulz, Carsten Brenner, Milan Deumer, Robert Kohlhaas, Martin R. Hofmann</i>)
PAGE 125 11:00	Experimental Study on K-Band Microwave Monitoring of Laser Ablation in Biological Tissue (<i>Moritz Mälzer, Teresa Slanina, Sebastian Beck, Jochen Moll, Viktor Krozer, Samir Lamrini</i>)
PAGE 129 11:20	Radar Based Heartbeat Estimation in Time Domain (<i>Michelle R. Tchameni, Christian Schiffer, Volker Lücken, Andreas R. Diewald, Udo Schroeder</i>)
PAGE 133 11:40	Gender-Specific Electromagnetic Power Absorption in Human Skin Tissue at 5G/6G Frequencies (<i>Sinan Doğusan, Mandana Jalali, Jan Taro Svejda, Daniel Erni</i>)
PAGE 137 12:00	A Sub-Terahertz Passive Wireless Biosensor Based on Photonic Crystal (<i>Yixiong Zhao, Ali Alhaj Abbas, Masoud Sakaki, Gero Bramlage, Guillaume Delaittre, Niels Benson, Thomas Kaiser, Jan C. Balzer</i>)

Waveguides 1

Chair: Prof. H. Maune

14:30 – 15:30, Tuesday March 12th 2024, Philharmonie

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14:30 | Normalized Design Charts for Low-Loss and Dispersion-Minimized Circular Dielectric Waveguides for Millimeter Waves
<i>(Martin Schneider, André Meyer)</i> |
| PAGE 144
14:50 | Discrete Tuned Millimeter Wave SIW Resonators in GaAs and on PCB
<i>(Edward A. Ball, Sumin David Joseph)</i> |
| PAGE 148
15:10 | Width-Constrained Multilayer SIW Components Based on Adjoined Folded SIW Transitions
<i>(Bartosz Tegowski, Thomas Jaschke, Anton Sieganschin, Arne F. Jacob, Alexander Koelpin)</i> |
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Measurement Techniques 1

Chair: Prof. A. Kölpin

14:30 – 15:30, Tuesday March 12th 2024, Zoo Duisburg

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| PAGE 152
14:30 | Terahertz Measurements Through Water Enabled by a Compact and Cost-Efficient THz-TDS System
<i>(Vladyslav Cherniak, Tobias Kubiczek, Kevin Kolpatzeck, Jan C. Balzer)</i> |
| PAGE 155
14:50 | Density-Independent Measurement of High Moisture Contents Using Appropriate Frequencies
<i>(Florian Stern, Wolfgang Taute, Michael Höft)</i> |
| PAGE 159
15:10 | Thermal Isolation in Microcalorimeter Measurements
<i>(Windi Kurnia Perangin-Angin, Karsten Kuhlmann, Jürgen Rühaak)</i> |
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Waveguides 2

Chair: Prof. J. Balzer

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15:50 | Contactless Transition for Wideband Double-Ridge Waveguides
<i>(Omar Jabi, Nico Weiss, Georg Frederik Riemschneider, Ralf Riedinger, Alexander Kölpin)</i> |
| PAGE 167
16:10 | S-Parameter Characterization Based on Dielectric Waveguides in D-Band
<i>(Kerstin Orend, Thomas Musch)</i> |
| PAGE 171
16:30 | Dual-Polarized Polymer Dielectric Rod Waveguide for 60GHz Band
<i>(Yizhang Li, Jan Hesselbarth)</i> |
| PAGE 175
16:50 | Design and Simulation of a Waveguide-to-Microstripline Transition for Planar Slow Wave Structures
<i>(G. Ullisse, Viktor Krozer)</i> |
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Measurement Techniques 2

Chair: Dr. J. Barowski

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16:10 | Complex Near-Field Measurement using On-The-Fly Scan with In-Phase and Quadrature Demodulation
<i>(Cheng Yang, Christian Adam, Sebastian Götschel)</i> |

Radar

Chair: Prof. P. Knott

08:20 – 10:00, Wednesday March 13th 2024, Philharmonie

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PAGE 189 08:40	A Synthetic Aperture Imaging Concept for a Sequential Sampling Impulse Radar (Lena Krabbe , Niklas Haberberger , Michael Stelzig , Markus Hehn , Martin Vossiek)
PAGE 193 09:00	An Improved Stepped-Frequency PMCW Waveform for Automotive Radar Applications (Moritz Kahlert , Tai Fei , Claas Tebruegge , Markus Gardill)
PAGE 197 09:20	A Range-Doppler Processing Based Calibration Method for Short-Range Millimeterwave FMCW Radar Imaging (Jan Barowski , Ilona Rolfes)
PAGE 201 09:40	Analysis and Simulation of a Photonic Multiband FMCW Radar Sensor System Using Nyquist Pulses (Stephan Kruse , Tobias Schwabe , Pascal Kneuper , Heiko G. Kurz , Marc-Michael Meinecke , J. Christoph Scheytt)

Filter

Chair: Prof. C. Damm

08:20 – 09:40, Wednesday March 13th 2024, Tiger & Turtle

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PAGE 209 08:40	Compact E-Band SIW Filters Targeting PCB-Based MMIC Hetero-Integration (Dominik Wrana , Marc Guenter , Simon Haussmann , Ingmar Kallfass)
PAGE 213 09:00	Compact WR-3 Filter with Improved Rejection Properties by Double Source-Load Cross-Coupling (Daniel Miek , Kennet Braasch , Fynn Kamrath , Patrick Boe , Michael Höft)
PAGE 217 09:20	Reconfigurable Waveguide Bandpass Filter with Piezoelectric Motors in the W-Band (Fynn Kamrath , Patrick Boe , Kennet Braasch , Daniel Bruhn , Daniel Miek , Michael Höft)

Receivers

Chair: Prof. M. Rudolph

10:50 – 12:10, Wednesday March 13th 2024, Philharmonie

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(<i>Shuya Iwamatsu, Daniel Headland, Israa Mohammad, Masayuki Fujita, Andreas Stöhr</i>) |
| PAGE 225
11:10 | A Robust High-Linear 76–81GHz Automotive Radar IQ Receiver Frontend in 22nm FD-SOI CMOS
(<i>Jidan Al-Eryani, Miguel Chanca, Rainer Blechschmidt, Guenter Vogel</i>) |
| PAGE 229
11:30 | A Multi-Mode Direct Conversion Receiver for Joint Communication and Radar Sensing
(<i>Sandra George, Padmanava Sen, Corrado Carta</i>) |
| PAGE 233
11:50 | A Wide Band High Linearity CT-$\Sigma\Delta$ Converter for Receivers Reaching 1.75Gb/s Using 16384 QAM
(<i>Julius Edler, Patrick James Artz, Enne Wittenhagen, Friedel Gerfers</i>) |
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Applications

Chair: Prof. I. Rolfes

10:50 – 11:50, Wednesday March 13th 2024, Philharmonie

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(<i>Tobias Karrer, Markus Peichl, Stephan Dill</i>) |
| PAGE 241
11:10 | Terahertz Insights into Fabric Look-Through
(<i>Andreas Prokscha, Fawad Sheikh, Kevin Kolpatzeck, Yamen Zantah, Dien Lessy, Jan C. Balzer, Andreas Czyłwik, Thomas Kaiser</i>) |
| PAGE 245
11:30 | Steering-Layer: A Hybrid DSP-Machine Learning Layer for Sensor DoA Estimation
(<i>Cândido Vieira, Volker Lücken, Andreas R. Diewald, Hans-Peter Beise</i>) |

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PAGE 253	A Robust and Cost-Effective Process Control Monitor Concept to Verify Quality Characteristics of Printed Circuit Boards up to 40GHz (<i>Felix Sepaintner, Andreas Scharl, Johannes Jakob, Franz Röhr, Werner Bogner, Stefan Zorn</i>)
PAGE 257	Single Snapshot Array Interpolation for Angular Estimation in Automotive Radar Applications (<i>Alisa Jauch, Frank Meinl, Holger Blume</i>)
PAGE 261	Limitation of Asymptotic RF Simulation Method in Presence of Periodic Structures of Close-to-Wavelength Size (<i>Abdul Rehman Waseem Mir, Markus Clemens, Alexander Ioffe, Markus Stefer</i>)
PAGE 265	Graphene-Based Balanced Nonlinear Transmission-Line Frequency Doubler (<i>Abdelrahman Elgamal, Paula Palacios, Renato Negra, Thomas Dallmann</i>)
PAGE 269	Two-Dimensional Resonant-Tunneling-Diode Oscillator Array for Quasi-Plane Terahertz Radiation (<i>Zhenling Tang, Safumi Suzuki</i>)
PAGE 272	In-Package Characterization of Dielectrics Using Ring Resonators and Adaptive 3D EM-Simulations Around 77GHz (<i>Pascal Stadler, Tobias T. Braun, Christian Geissler, Philipp Scheibe, Tanja Braun, Ole Hölck, Justin Romstadt, Nils Pohl</i>)
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PAGE 280	RF Characterization of Flexible Printed Circuits up to 40GHz (<i>Andreas E. Olk, Palak Dave, Pascal Schmalen</i>)
PAGE 284	Evaluation of Control Link Impacts on the IRS Assisted Communication System with Hardware-in-the-Loop Simulation (<i>Xianshi Zeng, Jonas Buehlmeyer, Robert Weigel, Florian Irnstorfer</i>)
PAGE 288	Optimising the Image Rejection in Phase-Only Multilevel LINC Transmitters (<i>Stefan Mueller, Renato Negra</i>)
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PAGE 296	Rectangular Waveguide to Coplanar Waveguide Transition for 110 to 170GHz (<i>Konrad Mueller, Christian Preuss, Robin Kress, Enes Mutlu, Nils Weimann</i>)
PAGE 300	THz Optoelectronic 2-D Beam Steering Transmitter for Short-Range Communications (<i>Thomas Haddad, Jonas Tebart, Carlos Biurrun-Que, Peng Lu, Andreas Stöhr</i>)
PAGE 304	Subharmonically Pumped H-Band Resistive IQ-Mixer with Gate Bias Above Threshold Voltage (<i>Lukas Gebert, Benjamin Schoch, Dominik Wrana, Simon Haussmann, Thomas Ufschlag, Axel Tessmann, Sandrine Wagner, Ingmar Kallfass</i>)
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