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Antennas 1

Chair: Thomas Fickenschner

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PAGE 5 14:30	Wideband Aperture Coupled Patch Antenna for 6G Millimeter-Wave Applications <i>(Caroline Sebastian, Samira Faghih-Naini, Torsten Reissland, Robert Weigel, Norman Franchi, Benedict Scheiner)</i>
PAGE 9 14:50	Compact Broadband 27GHz Aperture-Coupled Stacked Patch MIMO Antenna Array <i>(Benjamin Nuss, Linus Hampel, Thomas Zwick)</i>
PAGE 13 15:10	A Modular and Scalable System Concept for Phased Array Antennas in Satellite Constellations <i>(Dominik Starzmann, Christian Arnold, Sabine Klinkner)</i>
N/A 15:30	Electrically Small Super-Directive Microstrip Patch Antenna Covered by Hemispherical Magnetodielectric Material <i>(Ararat Stepanyan, Hovhannes Haroyan, Arsen Hakhoumian)</i>

Focus Session — Packaging

Chair: Krzysztof Nieweglowski

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PAGE 25 14:30	Design of an Antenna-in-Package for 180GHz Chip-to-Chip Communication <i>(Mojtaba Sohrabi, Ran Yin, Bernhard Klein, Krzysztof Nieweglowski, Karlheinz Bock, Dirk Plettemeier)</i>
PAGE 29 14:50	Glass and Structured Glass for High Frequency Electronics Above 10GHz <i>(M. Letz, U. Peuchert, R. Hettler, G. Mittermeier)</i>
PAGE 33 15:10	Package Integrated Series-Feed Antenna Arrays for mmWave Medical Radar Sensors <i>(Sriram Charan Pasupuleti, Thi Huyen Le, Ivan Ndip)</i>

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Chair: Kambiz Jamshidi

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(Abdou E. Shetewy, Weizhong Zhang, Menglong He, Kambiz Jamshidi)
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(Jan Brockmeier, Stephan Kruse, J. Christoph Scheytt)
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15:30 **Energy Efficient Co-Designed High-Speed SiGe Driver for InP Mach-Zehnder Modulator**
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Radar 1

Chair: Peter Knott

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(Jamal Haider, Sohaib Yaqoob Chaudhry)
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Chair: Dirk Heberling

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17:50 **Receiving Patch Antenna of a Phased Array Satellite Communication System**
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Chair: Thomas Schneider

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Passive Components 1

Chair: Christian Damm

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- PAGE 183 **A 434MHz Low-Power Receiver System Based on a Switched Passive Input Network with Surface Acoustic Wave Resonator**
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- PAGE 191 **Compact 100GHz to 300GHz On-Chip Triplexer in SiGe HBT Technique for subTHz Channelization Applications**
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- PAGE 250 **Broadband Dielectric Characterization of Road and Pavement Materials**
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(*Kimmo Rasilainen, Muhammad Ibrahim, Mikko Kokkonen, Sami Myllymäki, Klaus Nevala, Aarno Pärssinen, Marko E. Leinonen*)
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Chair: Thomas Zwick

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(*Al Amin, Alper Turkeli, Ali Kursad Gorur*)
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Chair: Ullrich R. Pfeiffer

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Chair: Thomas Musch

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Passive Components 2

Chair: Alexander Kölpin

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Chair: Armen Harutyunyan

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Chair: Andreas Mai

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Sensors 1

Chair: Markus Gardill

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THz Devices 1

Chair: Patrick Scheele

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Chair: Ilona Rolfes

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Chair: Michael Höft

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(Sinan Doğusan, Mandana Jalali, Jan Taro Svejda, Daniel Erni)
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THz Devices 2

Chair: Ivan Ndip

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(Dhruvin Dhaval Pandya, Cristina Maurette-Blasini, Konstantin Kuliabin, Sandrine Wagner, Rüdiger Quay)
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(Petros Beleniotis, Cristina Andrei, Ulrich L. Rohde, Matthias Rudolph)
- PAGE 455
18:10 **1-Bit Digital Phase Shifter Active RIS Element Based on Dual-Input Ka-Band LNA in 130nm SiGe BiCMOS Technology**
(Giulio Brancali, Roberto Vincenti Gatti, Guendalina Simoncini, Giacomo Schiavolini, Giulia Orecchini, Federico Alimenti)

Amplifiers 2

Chair: Matthias Rudolph

08:30 – 10:10, Wednesday March 19th 2025, Hörsaal 4

- PAGE 459
08:30 **A V-Band Power Amplifier in 22-nm FD-SOI Supporting Instantaneous Broadband Data Transmission at 20Gb/s**
(Tsung-Ching Tsai, Ahmet Çağrı Ulusoy)
- PAGE 463
08:50 **K-Band 27dB Gain Inverted Doherty Power Amplifier Using Real Frequency Technique in GaN Technology**
(Adrian Arnold, Muh-Dey Wei, Renato Negra)
- PAGE 467
09:10 **A 120-GHz Sub-6dB NF and 19dB Gain Low Noise Amplifier in 22-nm FDSOI**
(Kaiwen Feng, Quang Huy Le, Thomas Kämpfe, Dietmar Kissinger)
- PAGE 471
09:30 **A Low Power BiCMOS UWB LNA with Reduced Chip Area for Sustainable IoT Electronics**
(Toni Günter Stenzel, Franz Alwin Dürrwald, Naglaa El Agroudy, Frank Ellinger)
- PAGE 475
09:50 **AI-Assisted Complex Load Mismatch Prediction by mm-Wave Reconfigurable Doherty Power Amplifier and Input/Output Power Sensors**
(Filippo Svelto, Chenhao Chu, Edward Liu, Hua Wang)
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Focus Session — Body Area Communications

Chair: Ilangko Balasingham

08:30 – 10:10, Wednesday March 19th 2025, Raum 401

- PAGE 479
08:30 **Assessing Cardiac Dynamics Through RF Sensing for Hemodynamic Monitoring in Pacemakers**
(A. Khaleghi, J. Bergsland, Ilangko Balasingham)
- PAGE 483
08:50 **MMSE Pre-Emphasis Incorporating Spatial Diversity for Wideband Implant Communications**
(Lijia Liu, Kota Miyazaki, Jianqing Wang)
- PAGE 486
09:10 **Harmonic Backscattering and Wireless Power Transfer for Deep In-Body Implantable Wireless Sensors: A Novel Approach**
(Aminolah Hasanvand, Ilangko Balasingham)
- PAGE 490
09:30 **From Microwave Measurement to Application: Enhancement of Fat-Intrabody Communication by Advanced Computational Techniques**
(Prمود K.B. Rangaiah, B.P. Pradeep Kumar, Robin Augustine)
- PAGE 494
09:50 **Health-Care Based on Near Field Inter-Body Coupling Communication: Modeling and Analysis of Characteristics**
(Xu Zhang, Yong Song, Maoyuan Li, Ya Zhou, Yu Chen, Meng Zheng, Chang Yang, Yizhu Ma)

Focus Session — Joint Communication and Sensing

Chair: Sen Padmanava

08:30–10:10, Wednesday March 19th 2025, Raum 403

- PAGE 498
08:30 **Polarization-Agile MIMO Antenna Design for Next-Generation mm-Wave Joint Communication and Sensing Applications**
(Muhammad Sajjad Ahmad, Muhammad Umar, Padmanava Sen)
- PAGE 502
08:50 **MIMO Patch-Dipole Antenna Arrangement for 3D ISAC in 6G-V2X**
(Shahab Ehsanfar, Mojtaba Sohrabi, Klaus Mößner, Dirk Plettemeier)
- PAGE 506
09:10 **Bistatic Micro-Doppler Analysis of a Vertical Takeoff and Landing (VTOL) Drone in ICAS Framework**
(Heraldo Cesar Alves Costa, Saw James Myint, Carsten Andrich, Sebastian W. Giehl, Dieter Novotny, Julia Beuster, Christian Schneider, Reiner S. Thomä)
- PAGE 510
09:30 **Improving Fractional Bandwidth and Isolation Between Tx and Rx Antennas Using EBGs at X-Band**
(Nafis Hasnayan, Mehrab Ramzan, Swad Al Nahiyen, Padmanava Sen)
- PAGE 514
09:50 **Sparse Semantic Encoding for Reduced Data Load in Vision-Position Aided mmWave Beam Prediction**
(Sina Tavakolian, Nhan Nguyen, Markku Juntti)
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Semiconductor and Packaging Technology

Chair: Kambiz Jamshidi

08:30–10:10, Wednesday March 19th 2025, Hörsaal 3

- PAGE 518
08:30 **Evolution and Optimization of a Low-Cost Coaxial-Waveguide-Transition**
(Marius Falk, Volker Lücken, Andreas R. Diewald)
- PAGE 522
08:50 **Pretreatments for Electroless Silver Plating of D-Band Plastic Rectangular Waveguides**
(Alexander Quint, Fabian Hochberg, Maximilian Eckl, Andreas Frölich, Thomas Zwick, Akanksha Bhutani)
- PAGE 526
09:10 **Indium Bump Flip-Chip Process on Gold-Plated and Laser-Structured Alumina Substrate**
(Marius Kretschmann, Katarzyna Holc, Arnulf Leuther, Thomas Zwick)
- PAGE 530
09:30 **High Linearity and Low Noise Au-Free Ohmic Contact AlGaN/GaN HEMT Using Patterned Ohmic Recess for Ka-Band Applications**
(Howie Tseng, Ying-Ciao Chen, Yueh-Chin Lin, Edward Yi Chang)

Poster Session 2

Chair: Dirk Plettemeier

11:10 – 13:10, Wednesday March 19th 2025, Raum 405

- PAGE 534 **Reduced Hysteresis and Low-Frequency 1/f Noise in Metal Insulator Graphene Diodes for RF & THz Rectification**
(*Naveen Kolluru, Christian Tückmantel, Zhuang Miao, Alexander Löwen, Thomas Riedl, Daniel Neumaier*)
- PAGE 538 **A Flexible Data Set for Radar-Based Gesture Recognition**
(*Theresa Antes, Elizabeth Bekker, Akanksha Bhutani, Thomas Zwick*)
- PAGE 542 **A Thermoelectric Cooler Reused as Harvester to Power a 434MHz Wireless Wakeup Receiver from a 10K Ambient Temperature Gradient**
(*Lucas Ott, Georg Meller, Jens Wagner, Frank Ellinger*)
- PAGE 546 **Blind Maximum Ratio Combining Using the Constant Modulus Criterion**
(*Constantin Wimmer, Marco Krondorf, Steffen Bittner*)
- PAGE 550 **Analysis of Impedance Characteristics for Electrically Small Implantable Antennas in Lossy Medium**
(*Zhengji Li, Xiao Fang, Chuanjie Zhang, Dirk Plettemeier*)
- PAGE 554 **Compact N-Way Recombining Wilkinson Power Dividers for SatCom Applications**
(*Dennis Pfrommer, Christian Waldschmidt, Martin Hitzler*)
- PAGE 558 **FR4-Based Microstrip Anti-Aliasing Filters for Ultra-High-Speed Analog-to-Digital Converters**
(*Christian D. Matthus, Anton Lorenz, Frank Ellinger*)
- PAGE 562 **A Waveguide-to-Balanced-Line Transition with Embedded Balun for mm-Wave Measurement Setups**
(*Muhammad Umar, Martin Laabs, Niels Neumann, Dirk Plettemeier*)
- PAGE 566 **Resolution and Limitations of a SAR System at Close Range**
(*Florian Grabs, Martin Laabs, Martin Obermaier, Evgeny Zakutin, Dirk Plettemeier*)
- PAGE 570 **Harmonic Mixing Using Self-Oscillating Signal of a Resonant-Tunneling-Diode Oscillator Operating in the 900GHz Range**
(*Mingxuan Yang, Adrian Dobroiu, Hiroki Tanaka, Safumi Suzuki*)
- PAGE 573 **Multifrequency WGM Resonator Approach for Study of DNA Solutions with Reduced Microwave Screening**
(*Valeriia A. Chekubasheva, Alexey I. Gubin, Alexander A. Barannik, Dmytro Zhulai, Oleg V. Glukhov, Nikolay T. Cherpak, Svetlana Vitusevich*)
- PAGE 577 **Investigating Carboxymethyl Cellulose in Aerosol Jet Printed Microwave Humidity Sensors**
(*Madhawa Basnayaka, Riku Jäntti, Kalle Ruttik, Juho Kerminen, Katherine Gallegos-Rosas, Caterina Soldano*)
- PAGE 581 **Highly Efficient WR4 Signal Sources and Transceiver for CW Radar Applications**
(*Isabel Kraus, Herbert Knapp, Nils Pohl*)
- PAGE 585 **Power Calibration Methods for Frequency Extenders Aided Modulated Measurements at Sub-THz/THz**
(*Sumit Pratap Singh, Piyaphat Phukphan, Timo Rahkonen, Aarno Pärssinen, Marko E. Leinonen*)
- PAGE 589 **A Varactor-Based LC-Resonant 3.6GHz LNA for 5G Base Station Applications**
(*Vaibhav Choudhary, Sankaran Aniruddhan*)
- PAGE 593 **A Dual-Band Frequency Selective Surface Design for Enhanced Spatial Filtering in C-Band**
(*Hussnain Mohiud Din, Sohaib Yaqoob Chaudhry, Jamal Haider, Hidayatullah, Nabeel Awan, Waqar Ahmad Malik*)

Amplifiers 3

Chair: Corrado Carta

11:30 – 13:10, Wednesday March 19th 2025, Hörsaal 4

- PAGE 597
11:30 **A 5G FR1 43.5dBm GaN Hybrid Doherty Power Amplifier with Dynamic Auxiliary Gate Voltage for Enhanced Gain at Saturation**
(Abdolhamid Noori, Jorge Julian Moreno Rubio, Christian Fager, Gregor Lasser)
- PAGE 601
11:50 **Broadband and Compact 112Gbit/s Transimpedance Amplifier in a SiGe Copper Backend Technology**
(Festim Iseini, Andrea Malignaggi, Falk Korndörfer, Corrado Carta, Gerhard Kahmen)
- PAGE 605
12:10 **A D-Band 23.5dB High Gain 0.8V Low-Power Transformer Matched LNA in 22nm FDSOI CMOS**
(Peter Wagner, Aditya Gupta, Deniz Tas, Marco Dietz, Amelie Hagelauer)
- PAGE 608
12:30 **Study of Hybrid Schottky-Ohmic Source and Drain AlGaIn/GaN HEMTs for Low Noise Application**
(Neng-Da Li, Ho-Hsin Chang, Chih-Hao Yang, Yueh-Chin Lin, Edward Yi Chang)
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Focus Session — THz Communication

Chair: Meik Dörpinghaus

11:30 – 13:10, Wednesday March 19th 2025, Raum 403

- PAGE 611
11:30 **Array-Fed RIS: Validation of Friis-Based Modeling Using Full-Wave Simulations**
(Krishan K. Tiwari, Thomas Flisgen, Wolfgang Heinrich, Giuseppe Caire)
- PAGE 615
11:50 **Large Fractional Bandwidth D-Band Power Amplifier for 6G Communications in 130-nm SiGe BiCMOS Technology**
(Mohammed K. Ali, Thiemo Herbel, Goran Panic, Dietmar Kissinger)
- PAGE 619
12:10 **Design of a Scannable Multi-Lens Quasi-Optical System for THz Near-Field Backhaul Communication**
(Huasheng Zhang, Alexandros Bechrakis Triantafyllos, Nuria Llombart, Maria Alonso-delPino)
- PAGE 622
12:30 **Improving Power Amplifier Efficiency of Zero-Crossing Modulation at Sub-THz Frequencies**
(Florian Gast, Kejian Xu, Meik Dörpinghaus, Gerhard P. Fettweis)
- PAGE 626
12:50 **Waveguide Fed PCB-Based Broadband Antenna Array for 6G Sub-THz Wireless Communication**
(Alexander Gäbler, Uwe Maaß, Ivan Ndip)

Radar 3

Chair: Tobias Weber

11:30 – 13:10, Wednesday March 19th 2025, Hörsaal 3

- PAGE 630
11:30 **Automotive Radar Processing with Neuromorphic Hardware: A Case Study from the KI-ASIC Project**
(Bernhard Vogginger, Chen Liu, Felix Kreutz, Florian Kelber, Seifeddine Saadani, Klaus Knobloch, Alfred Höß, Cyprian Grassmann, Christian Mayr)
- PAGE 634
11:50 **Functional Testing of Radar Based ADAS/AD Along the Vehicle Life Cycle**
(Andreas Himmler, Patrizio Agostinelli)
- PAGE 638
12:10 **CitRad: A Low-Cost Open-Source Citizen Science Radar System to Democratize Urban Traffic Monitoring**
(Nanu Frechen, Marcus Knaack, Markus Gardill)
- PAGE 642
12:30 **Aperture Efficiency of Active and Passive Radar Targets in Cluttered Environments**
(Simon Heining, Reinhard Feger, Christoph Wagner, Andreas Stelzer)
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Transmitter

Chair: Nils Pohl

11:30 – 13:10, Wednesday March 19th 2025, Raum 401

- PAGE 646
11:30 **Compact and Broadband Up and Down Conversion Mixers for Frequency Interleaving Systems**
(Christoph Herold, Mykyta-Illia Kravchenko, Andrea Malignaggi, Corrado Carta)
- PAGE 650
11:50 **A Compact Broadband Differential 20–120GHz Amplifier in a 130-nm SiGe BiCMOS Technology**
(Thiemo Herbel, Dietmar Kissinger)
- PAGE 653
12:10 **Low and Stable Phase Noise W-Band Capacitive Cross Coupled VCO Across Tuning Range in 90nm SiGe BiCMOS Technology**
(Shuvadip Ghosh, Hao Li, Nils Pohl)
- PAGE 657
12:30 **100GS/s Equivalent Time Sampling Receiver for UWB Radar Applications**
(Marco Mütze, Petr Schaffer, Armin Bakkal, Michael Bärhold, João Vítor Possamai de Menezes, Peter Birkholz, Dirk Plettmeier)
- PAGE 661
12:50 **A 4-Bit 40GS/s Power Efficient DAC for 6G Communication Systems**
(Ahmed S. Elsayed, Philip Ostrovsky, Corrado Carta)