2026 IEEE MTT-S Radio Frequency Technology and Techniques Symposium (IMS RFTT 2026)

Boston, Massachusetts, USA
7-12 June 2026

IEEE Catalog Number: CFP26MTT-POD
ISBN: 979-8-3315-4767-7

IEEE
Advancing Technology for Humanity

Copyright © 2026, IEEE

All Rights Reserved

Copyright and Reprint Permissions:

Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	CFP26MTT-POD
ISBN (Print-On-Demand):	979-8-3315-4767-7
ISBN (Online):	979-8-3315-4766-0
ISSN:	0149-645X

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA

Phone:	(845) 758-0400
Fax:	(845) 758-2633
E-mail:	curran@proceedings.com
Web:	www.proceedings.com

CURRAN ASSOCIATES INC. proceedings .com

TABLE OF CONTENTS

An Ultra-Compact Inductorless Noise-Canceling LNA with Gain-Boosting and Current Reuse in 16nm FinFET 1
Shuyu Chen, Boxun Yan, Runzhou Chen, Chao-Jen Tien, Mau-Chung Frank Chang

A D-Band 5-Bit Switch-Type Phase Shifter with Low IL and Phase Error Using a Switch-Self-Phase-Shifting Unit 5
Yang Wang, Jixin Chen, Peigen Zhou, Jinben Li, Lingzheng Kong, Zichun Zheng, Qianqi Meng, Dawei Tang Wei Hong

Vector-Sum Phase Shifter Design for Analog Predistortion in an FR3 Band Power Amplifier Using GaAs HBT 9
Shun Beppu, Daisuke Araki, Takashi Soga, Yuuma Noguchi, Kiichiro Takenaka, Masatoshi Hase Satoshi Goto, Hisashi Yamazaki

Design of Reactive Combiners with Enhanced Graceful Degradation 13
Antonio Morini, Marco Farina, Davide Mencarelli, Lino Russo, Oilid Bouzekri, Piero Angeletti Giandomenico Amendola

IDT-Based mmWave Resonator with Large Impedance Ratio and Over-100% Frequency Offset Between Resonance and Anti-Resonance 17
Xingyu Liu, Junyan Zheng, Fangsheng Qian, Zijun Ren, Kai Yang, Yansong Yang

Single-, Dual- and Octa-Core Millimeter-Wave VCOs with -190 dBc/Hz FOMT in 22 nm FDSOI CMOS 21
Matthias Möck, Ahmet Çağrı Ulusoy

Wide-Band Microwave Components for a Tokamak Edge Scanning Reflectometer 25
E. J Kowalski, V. Nikolaeva, Y. Lin, S.G. Baek, D. Hachmeister, R. Zubieta Lupo, K. Rohan, T. Howell M. Silva Sa, M. Reinke

189-GHz-Bandwidth InP-HBT Baseband Amplifier Module with 0.5-mm Coaxial Connectors 29
Ko Hasegawa, Hitoshi Wakita, Teruo Jyo, Munehiko Nagatani, Hiroyuki Takahashi

18-GHz Bi-Layer A3-Mode Acoustic Resonators with Near-Zero TCF and High Electromechanical Coupling 33
Yiming Wang, Fuhong Lin, Zhongbin Dai, Kai Yang, Juan Wang, Jiming Fang, Jie Chen, Meijuan Li Han Qiu, Chengjie Zuo

Generalized Synthesis of Double-Ladder Acoustic Filters with Demonstration of a High-Performance Dual-Band Duplexer on LTOI 37
Hanyu Tian, Junhong Cai, Yuandan Dong

Wideband Bandpass Filter Cell Using a Hybrid BAW-Assisted Topology 41
Santi Cano, Alfred Giménez, Eloi Guerrero, Lluis Acosta, Carlos Caballero, Yazid Yusuf, Jordi Verdú Pedro de Paco

Arbitrarily Configurable Group Delay in Acoustic Devices 45
Daniel R. Holmes, Matthew Ou, Eihab Abdel-Rahman, Raafat R. Mansour

3D Simultaneous Multi-Material Printed RF Signal Processing Wideband Tunable True Time Delay Circuit 49
Muhammad Uzair, Ayesha Naseem, Shehryar Niazi, Hanxiang Zhang, Saeed Zolfaghary Pour, Hao Yan Fei Yan, Powei Liu, Jonathan Casamayor, Mia Reynolds, Bayaner Arigong

A Compact 4-Bit PCM-Based Hybrid Phase Shifter in $0.18-\mu \mathrm{m}$ SiGe BiCMOS for 28 GHz Phased Arrays 53
Hang Yu, Xiaofei Zhang, Slim Boumaiza

A 0.14-mm² Mixed-Type True-Time Delay Circuit Based on Slow-Wave Transmission Lines Covering 52.8ps for 5G/B5G Carrier Aggregation 57
Qingbin Li, Yifu Li, Zheng Wang, Xu Luo, Rui Wang, Yuchao Mei, Xinyu Sui, Zhihong Feng, Linsheng Wu Junfa Mao, Jian Pang

A 20-40 GHz MMIC 180° Filtering Phase Shifter with 5° Phase Error in $0.25-\mu \mathrm{m}$ Gaas Technology 61
Na Ji, Guangxu Shen, Yongchun Li, Dingyuan Zeng, Pinhao Zhou, Wenquan Che

A -9.3-dBm Output Power 290-GHz Push-Push Mixer in 28-nm CMOS for Sub-THz Transmitter Applications 65
Ting-Yu Chang, Tian-Wei Huang, Kai-Jie Chuang, Jeng-Han Tsai, Yi-Wen Wang

Digitally Reconfigurable D-Band $\times 7 / \times 9$ Frequency Multiplier Employing an Up/Down-Conversion Single-Sideband Mixer in SiGe 69
Stephan Hauptmeier, Tobias T. Braun, Justin Romstadt, Nils Pohl

A V-Band GaN Oscillator Using an On-Chip High-Q SIW Resonator with an FoM Up to -181.2 dBc/Hz 73
Hao-Luen Chang, Li-Kai Chang, Yin-Cheng Chang, Da-Chiang Chang, Shawn S. H. Hsu

A 10.3-to-11.4GHz 191.2dB FoMA Impedance Boosting Series-Resonance Oscillator Using Inverse-Coupling Transformer and Current-Compressed Transistor Achieving −144.3dBc/Hz PN at 10MHz 77
Meifang Liu, Wen Chen, Xun Luo

Physics-Informed Neural Operator for Solving Electromagnetic Forward and Inverse Scattering Problems 81
Qi-Chang Dong, Zhizhang Chen, Qing Huo Liu, Wen Chen

Efficient and Accurate Method for Separating Variant Components From Invariant Background and Component Model Fusion for Fast RFIC Design Space Exploration 85
Hongyang Liu, Dan Jiao

Efficient and Exact Method for Correcting the Ill-Posedness of the Discrete Maxwell System 89
Runwei Zhou, Dan Jiao

A Data-Driven Implementation of Field Constitutive Relations for the FDTD Simulation of Dispersive Media 93
Tianhui Xu, Costas D. Sarris

Tensor Train Accelerated FDTD Method with Logarithmic Cost of Spatial Operations 97
Chris Nguyen, Vladimir Okhmatovski

A Mode-Reconfigurable Power Amplifier with Hybrid Coupler for Enhanced VSWR Resilience 101
Takuma Torii, Keigo Nakatani, Shuichi Sakata, Shintaro Shinjo

Multi-Band Balanced-to-Doherty Reconfigurable High-Q-Filtering Power Amplifier 105
Alex D. Santiago-Vargas, Mohamed F. Hagag, Dimitrios Peroulis, Kenle Chen

A Gain-Enhanced Outphasing Power Amplifier 109
Ricky Mannion, Benjamin Rautio, Grace Gomez, Taylor Barton

A 10-15 GHz BiCMOS Power Amplifier for 6G NR FR3 Band with 27.3 dBm $\mathrm{P}_{\text {SAT }}$ and 33% PAE 113
Davide Pecile, Alberto Gambarucci, Stefan Kokorovic, Luigi Marzocchella, Andrea Bevilacqua

A 16.5-31.6 GHz Broadband Bidirectional Front-End with 16.1 dBm OP1dB and 26.8% PAEOP₁dB in 40nm Bulk CMOS 117
Zhipu Luo, Junjie Gu, Haoqi Qin, Xi He, Kunpeng Hu, Kefeng Han, Hao Xu, Na Yan

End-to-End AI and Transfer Learning-Based Power Amplifier Synthesis Considering Layout and PVT Effects 121
Luís Mendes, Pedro Paiva, João C. Vaz, Ricardo Martins, Fábio Passos

Redundancy-Guided Active Data Construction for Efficient ML-Assisted Microwave Design 125
Wei Jiang, Mingyang Liu, Li Du, Jiacheng Guo, Yuan Du

Advances in Pixelated 2D Electromagnetic Optimization with Distributed and Lumped Devices for Microwave Circuit Design 129
Wenjun Zhang, Chiara Ramella, Marco Pirola, Qi-Jun Zhang

Scalable and Rapid Design of Pixelated Passive Networks via S-Parameter Matrix Synthesis and Cascaded Deep Learning 133
Jianjia Hu, Pei-Ling Chi, Tao Yang

A 6.4-7.2 GHz Gain-Enhanced GaN MMIC Doherty Power Amplifier Based on Adaptive Power Divider for 6G Applications 137
Shun Wan, Yudi Yang, Guansheng Lv, Wenhua Chen, Zhenghe Feng

Deep Learning-Driven Inverse Design of Doherty Power Amplifiers Using Pixelated Combiners and Dual-State Impedance Synthesis 141
Han Zhou, Haojie Chang, David Widén, Christian Fager

A 140 W Integrated GaN Doherty Power Amplifier Module Based on a Triple-Tuned Design Method for 5G Massive-MIMO Base-Stations 145
Yifei Chen, Seungwon Park, Jooseok Lee, Seungjae Baek, Taewan Kim, Sehyug Jeon, Heedo Kang Ansang Ryu, Sung-Gi Yang

A Broadband Three-Way Continuous-Mode Doherty Power Amplifier with Dual-Resonant Harmonic Injection Network 149
Ruxuan Zhao, Xinyu Zhou, Wing Shing Chan, Shichang Chen

Toward 5G Wearables: An Additively Manufactured, Thermoelectric Powered mmID and Integrated Microfluidic pH Sensor 153
Theodore W. Callis, Marvin Joshi, Genaro Soto-Valle, Manos M. Tentzeris

Redefining Lensing with Adaptive Metastructures: An Ultrawideband Reconfigurable 3D-Printed Metalens for Future Wireless Front-Ends 157
Marvin Joshi, Kexin Hu, Charles A. Lynch, Genaro Soto-Valle, Manos M. Tentzeris

Novel 3D Film Laminate Package for High Efficiency 7 GHz GaN Power Amplifier Module 161
Hayato Shimizu, Tatsuya Hashinaga, Yutaka Moriyama, Takeshi Kawasaki, Hideki Tango

Packaging and Antenna Design for a 46 -Element Dual-Surface Mmwave Active STAR-RIS Built with CMOS RFICs 165
Zijian Shao, Muhamed Allam, Wenkai Fang, Hooman Saeidi, Alexander Stepko, Kaushik Sengupta

A 2-Stage Cascaded Reflection-Type Group Delay Controller with Large Group Delay Range Using Coupled-Line Transformer 169
Hwan-Jae Cho, Byung-Wook Min

BST Based Continuously Tunable Delay Line for Full-Duplex Applications 173
Mehran Golcheshmeh, Gowrish Basavarajappa, Junwen Jiang, Raafat Mansour

A 5 GHz Frequency-Tunable SiGe Active Isolator Using a Varactor-Controlled Phase Network 177
Joseph A. Caezza, Yaw A. Mensah, Christopher R. Snyder, Alessandro Zerbini, Christopher T. Coen John D. Cressler

Full Duplex Filtering Antenna with Nonreciprocal Transmission Characteristic Using SIW and Spatiotemporal Modulation 181
Yuhang Ning, Jingyi Wu, Chengfei Yi, Zhijun Liang, Bin Liu, Pei-Ling Chi, Tao Yang

Frequency Tunable All-Port Reflectionless Nonreciprocal Bandpass Filter Using Spatiotemporal Modulated Resonators 185
Girdhari Chaudhary, Palaystint Thorng, Suyeon Kim, Yongchae Jeong

Analysis of Multistable Superconducting Quantum Interference Devices (Squids) in Keysight Advanced Design System 189
Mohamed Ismail Abdelrahman, Joseph Macauley, Mohamed Awida Hassan

Full-Circuit Modeling and Nonlinear Analysis of Flux-Pumped SQUID Amplifiers in Keysight Advanced Design System (ADS) 193
Mohamed I. Abdelrahman, Saesun Kim, Philip Krantz, Eric T. Holland, Mohamed Awida Hassan

A Physics-Based Temperature-Dependent Scalable Model for CMOS On-Chip Spiral Inductors for Quantum Computing Applications 197
Yu-Ming Yeh, Che-Hao Li, Chang-Sheng Chen, Shyh-Shyuan Sheu, Shih-Chieh Cheng, Chien-Nan Kuo

Empirical Study on the Applicability of the Embedded Wafer Level BGA Package for Cryogenic RF Applications 201
Peter Toth, Jens Philipp, Christian Geissler, Vadim Issakov

Performance Limits and Cryogenic Characterization of a 13-to-18 GHz CMOS Reflective-Type Phase Shifter for Qubit Control 205
Jakob Krause, Hiroki Ishikuro

A Continuous-Mode Harmonic-Tuning Ku-Band GaN MMIC Doherty Power Amplifier with an 18.7% Fractional Bandwidth 209
Po-Yu Lee, Yu-Hsiang Shang, Hsin-Chieh Lin, Yin-Cheng Chang, Da-Chiang Chang, Shawn S.H. Hsu

Ku-Band Doherty Power Amplifier with Differential Power Combiner in an Advanced GaN-on-Si HEMT Technology for 6G FR3 Applications 213
Abdolhamid Noori, Jorge Moreno Rubio, Christoph Wagner, Christian Fager, Gregor Lasser

A 29.6 dBm, 47.96% DE Intra-Cell IQ Generation SCPA Using Time-Domain Charge Redistribution 217
Jiayi Zhao, Hongxin Tang, Xun Luo

A 17–32 GHz Bidirectional Amplitude-Phase Control Circuit for Multibeam Phased Array Transceivers in 40-nm CMOS 221
Jialiang Sun, Junjie Gu, Jiheng Wang, Kunpeng Hu, Kefeng Han, Hao Xu, Na Yan

An Ultra-Compact 34-42GHz Hybrid-Type Phase-Invariant dB-Linear Variable-Gain Amplifier Achieving <1.7° RMS Phase Error 225
Niccolò Villaggi, Basem Abdelaziz Abdelmagid, Yuqi Liu, Thomas Burger, Tzu-Yuan Huang, Hua Wang

A Ultrawideband Phase-Invariant VGA with Core-Matching Network Co-Design Achieving $ RMS Phase Error 229
Namun Hwang, Hokeun Lee, Hyo-Ryeong Jeon, Nhat Minh Nguyen, Minhye Kim, Sang-Gug Lee Kyung-Sik Choi

A Compact Switchless Bidirectional Variable Gain Amplifier for IF Distribution in 6G Phased Arrays in a 130-nm BiCMOS Technology 233
Alexander Tiefenbach, Klaus Aufinger, Dietmar Kissinger

Synthesis of Junction-Less Duplexers 237
Giuseppe Macchiarella, Matteo Oldoni, Stefano Tamiazzo

Compact Band-Stop Filters Based on Single Ridge Waveguide Lines, Resonators, and Coupling Elements 241
Mohamed M. Fahmi, Jorge A. Ruiz-Cruz, Raafat R. Mansour

A Compact Wideband Diplexer Covering X- and Ku-Bands with Enhanced Higher-Order Mode Suppression 245
Mohamed M. Fahmi, Jorge A. Ruiz-Cruz, Raafat R. Mansour

A 2.5-5 GHz Cryogenic GaAs pHEMT MMIC LNA with an Average Noise Temperature of 2.5 K 249
Wenyi He, Shaoxuan Zhang, Zhe Wang, Ruihao Yin, Hua Chen

A 16 – 50 GHz Cryogenic LNA MMIC with 11.2 K Average Noise Temperature for Radio Astronomy 253
Felix Heinz, Fabian Thome, Patrick Pütz, Gundolf Wieching, Arnulf Leuther

Adaptive Tracking Digital Predistortion for RF Power Amplifiers Under Variable Bandwidth and Power Transmission 257
Huanhuan Jia, Xin Liu, Tong Shen, Xin Wei, Qihao Shi, Yang Lu, Wenhua Chen, Xiaohua Ma

Low-Rank Adaptation-Based Digital Predistortion of RF Power Amplifiers for Dynamic Scenarios 261
Jiaxuan Zhu, Jun Peng, Yuchen Bian, Tianyang Zhong, Min Xiong, Junfu Guo, Xinyu Wang, Chenrui Liang Haozhe Zeng, Jikai Ye

Joint Optimization of Guard-Band-Confined Peak Reduction and DPD for Boosting PA Average Output Power 265
Donghun Kang, Uichan Park, Jungsuek Oh

A Segment-Refined Digital Predistortion with Residual-Driven Structural Enhancement for RF Power Amplifiers 269
Haozhe Zeng, Jun Peng, Tianyang Zhong, Jiaxuan Zhu, Jikai Ye, Yuchen Bian, Min Xiong, Xinyu Wang Chenrui Liang

A 24 GHz Self-Biased Class-F_{3} Voltage-Controlled Oscillator for High-Speed Wireline Transceivers in 12 nm FinFET Technology 273
Alexander Berwald, Konstantin Vilyuk, Jonas Weninger, Andre Engelmann, Kai Scheller, Robert Weigel Norman Franchi

A Low-Jitter Dual-Edge Sampling PLL Based on Joint Optimization of Injection and Ring-VCO 277
Lei Zhao, Xiaoxiong Zhang, Weimin Xue, Yiyang Shu, Xun Luo

A 0.384 mm² Ka-Band 4-Bit True Time Delay Phase-Shifter using BiCMOS Integrated Phase Change Material Switches 281
Pierre Blondy, Julien Lintignat, Lucas Henrique De Araujo, Damien Passerieux

An 8-27 GHz PCM Switched Reflective-Type Phase Shifter in 180nm SiGe BiCMOS Process for X, Ku and K Band Beamforming Applications 285
Ahmed. M. Hegazy, Raafat. R. Mansour

A 4–18 GHz Tunable Magnetostatic Surface Wave Nonreciprocal Filter with Zero-Static-Power Consumption Optimized for High Out-of-Band Rejection 289
Xingyu Du, Shun Yao, Yixiao Ding, Dengyang Lu, Shuxian Wu, Chin-Yu Chang, Mark G. Allen Roy H. Olsson

Planar Ferrite Isolator Combining Edge-Guided Mode and Gyro-Resonance Absorption 293
S. Khim, T. Monediere, H. Parvery, B. Frigui, D. Passerieux, J.L. Valdes, L. Huitema

A DC-40GHz Grounded Coplanar Waveguide SP4T RF MEMS Switch in Hermetic Package 297
Xu Zhu, Nicholas Yost

A Compact D-Band 32-Way 28.2 dBm Power Amplifier in InP HBT 301
Munkyo Seo, Jeongho Jang, Navneet Sharma, Won-Suk Choi, Gary Xu

A 70-170-GHz InP Differential Non-Uniform Distributed Amplifier Using Tapered Output Coupled Line for High Output Power 305
Phat T. Nguyen, Anthony Pham, Viet-Anh Ngo, Natalie Wagner, Alexander Stameroff, Anh-Vu Pham

A 0.48 W/mm² High-Power-Density D-Band Power Amplifier in 250-nm InP HBT Process 309
Gunwoo Park, Sanggeun Jeon

A CMOS E/W-Band Power Amplifier with 53% Bandwidth Using an Over-Neutralized Active Core for Dielectric Waveguide Interconnects 313
Sungjun Lee, Younghan Lee, Kyubin Choi, Wooyeol Choi

A D-Band Passive-Mixer-First Receiver Front-End for an IF-Beamforming Phased Array in 45nm RFSOI 317
Meijun Tian, Liwen Zhong, Wooram Lee

A 22 to 44 GHz Broadband Passive Mixer-First Receiver Achieving 9.3 dB NF in 45nm RFSOI 321
Michael Artlip, Alexander Stepko, Liwen Zhong, Daniel S. Hostetler, Wooram Lee

A 7–15 GHz IF Reflectionless Receiver with Tri-Coupled Transformer Based LNA and 43.8–76.3 ns Settling Time Automatic Gain Control 325
Qingxian Li, Bingzheng Yang, Aoran Han, Yiyang Shu, Xun Luo

A Compact 11–27.3 GHz CMOS LNA Employing a 5-in-1 Transformer Feedback for Wideband Operation 329
Liang-Chen Tsai, Liang-Hung Lu

A D-Band Wideband Low-Noise Amplifier in 40-nm Bulk CMOS Technology with Doubly-Tuned Transformer Networks 333
Yu-Te Chang, Jeng-Han Tsai

High Density MIMCAPs in a 300mm Silicon Interposer using High-k Dielectric and 3D Oxide-studs for mm-Wave Applications 337
Ilker Comart, Philip Nolmans, Shuo Kang, Rana ElKashlan, Alfredo Sanchez Ramos, Luc Pauwels Nele Van Hoovels, Siddhartha Sinha, Xiao Sun, Andy Miller, Eric Beyne, Nadine Collaert

Integration of Passive D-Band Components Within the AFSIW Technological Platform for Future Systems on Substrate 341
Samir Lagoug, Soazig Le Bihan, Eric Kerhervé, Abdelaziz Hamani, Jose-Luis Gonzalez Jimenez Anthony Ghiotto

A Structurally Reused Hybrid Integrated Ridged–Air-Filled Substrate Integrated Waveguide for Large-Frequency-Ratio $X-K$- and E-Band Cross-Band Operation 345
Bojie Lei, Jin Li, Tao Yuan

A Highly Isolated Dual-Band Substrate Integrated Waveguide Phase Shifter with Large Phase Tuning Range 349
Zhihua Wei, Yu Li, Jianjia Hu, Huaizong Shao, Pei-Ling Chi, Tao Yang

A Fully Differential Ultra-Compact Broadband Rat-Race Coupler Using Folded Inverted Coupled-Lines in 180-nm CMOS 353
Qingfeng Zhang, Xiaoning Zhang, Shiqi Wang, Chenxi Zhao, Yunqiu Wu, Huihua Liu, Wenyan Yin Kai Kang

Ultra-Wideband, Low-Loss, and High-Isolation Wilkinson Power Divider Using the Multiple Resonant Technique 357
Kai-Wei Mao, Chia-Chen Kuo, Kun-You Lin

Miniaturized 150-GHz Branch-Line Coupler Using Capacitive Compensation in Quartz-IPD Technology 361
Zi-Wei Shao, Chien-Nan Kuo

A 265–317-GHz Frequency Doubler with an Asymmetric Marchand Balun Achieving >40-dBc Fundamental Rejection in 65-nm CMOS 365
Wooyong Keum, Junghwan Yoo, Jaeman Lee, Minseok Choi, Jae-Sung Rieh

A $1-\mathrm{V}$, 19.2-mW, 308-GHz Push–Push Balanced Colpitts Oscillator in $70-$\text{nm}$ GaAs pHEMT Technology 369
Chih-Ju Wu, Yu-Chun Lin, Xu Jiang, Jung-Tao Chung, Li-Cheng Chang, Lung-Yi Tseng Austin Ying-Kuang Chen, Chung-Tse Michael Wu

A 480-530 GHz Balanced Frequency Quadrupler Based on Schottky Varactor Diodes Integrated on a Micromachined Silicon Membrane 373
Richard Zhou, Yusuf Cetin, Christopher M. Moore, Michael Cyberey, Matthew Bauwens, N. Scott Barker Arthur Lichtenberger, Robert M. Weikle

Metallized 3D Printed THz Hollow Waveguide Components 377
Alejandro Garcia-Tejero, Rico Weber, Seymen Yolcu, Dmitrij Ievlev, Dirk Götzl, Marco Buhmann Francesco Merli

High-Efficiency VHF Class-Φ_{2} Power Amplifier with a GaN Sinusoidal Resonant Gate Driver 381
Yixuan Huang, Jingyun Bi, Xinyu Zhou, Shichang Chen, Wing Shing Chan

A Frequency-Tunable GaN Switching Power Amplifier with Digital Pulse Encoding 385
Gabriel Ehlert, Jan Philipp Wiedemann, Michael Loose, Alexander Deublein, David Riess, Norman Franchi Georg Fischer

Towards Solid-State High-Power 13.56 MHz Impedance Matching Using Self-Biased SiC-MOSFET-Switched Capacitors 389
Niklas Schwab, Piet Vennemann, Roland Gesche, Christian Carlowitz, Martin Vossiek

Passband Flatness Optimization of Low-Q Filters via Direct Lossy Coupling Matrix Synthesis 393
Chengfei Yi, Bin Liu, Yuhang Ning, Pei-Ling Chi, Tao Yang

Bandpass Filter with Wideband Flat Group Delay Based on Tapped Feeding and Short-Stub-Loaded Unequal-Length Coupled Lines 397
Sangwook Kim, Donghyun Lee, Byung-Wook Min

Beyond Conventional Transmission Zero Allocation: Synthesis of Acoustic Wave Ladder Filters via Out-of-Band Complex Reflection Zeros 401
Yi Zeng, Ziyang Luo, Ming Yu

Substrate-Dependent Loss in High-Stacked Switch Branches in 28 nm FD-SOI CMOS on Standard and High-Resistivity Substrates 405
M. Rack, M. Nabet, D. Lederer, A. Cathelin, J.-P. Raskin

Low-Loss 25 GHz RF Switches in 300 mm GaN-on-Si Technology with 0.4 dB Insertion Loss and $70 \text{fs} \mathrm{R}_{\text{on }} \times \mathrm{C}_{\text{off }}$ 409
Seahee Hwangbo, Qiang Yu, Ibukun Momson, Said Rami, Heli Vora, Prafful Golani, Michael Beumer Pratik Koirala, Ahmad Zubair, Samuel Bader, Marko Radosavljevic, Han Wui Then

GaN Non-Volatile RF Switch Based on Bipolar Charge Trapping for Reconfigurable RF FEMs 413
Yichen Liu, Yuanke Zhang, Tao Chen, Yan Cheng, Yat Hon Ng, Longge Deng, Yutao Geng, Zheng Wu Liuqing Gao, Kevin J. Chen

Highly Linear AlN/GaN/AlGaN HEMTs Demonstrated Using 40-GHz Two-Tone Active Load-Pull with Record PAE at 30 dBc C/IM3 417
Lyes Ben Hammou, François Grandpierron, Elodie Carneiro, Katir Ziouche, Etienne Okada Farid Medjdoub

GaN Power Bars for Microwave Power: Modeling and Validation 421
Valeria Vadalà, Antonio Raffo, Ryuichi Namba, Gianni Bosi, Ken Kikuchi, Mauro Marchetti Hiroshi Yamamoto, Giorgio Vannini

Load-Modulated Hexagonal-Coupler-Based Power Amplifier (LMHA) for Extended Power-Back-Off Range 425
Morteza Sedaghat, Pingzhu Gong, Kenle Chen

A 0.7–4.9 GHz Multi-Octave Broadband Power Amplifier Based on the Bandwidth Extension of the Quarterwave Transmission Line 429
Young Chan Choi, Yoonjung Lee, Yunhyung Ju, Soohyun Bin, Kyungdong Bae, Minseok Ahn, Youngoo Yang

A Broadband Inverse-Balun Load-Modulated Power Amplifier (IBMA) Covering 1.3–3.3 GHz 433
Pingzhu Gong, Niteesh Bharadwaj Vangipurapu, Shadman Fuad Bin Faruquee, Kenle Chen

Digital Post-Distortion for MIMO Receiver Linearization Under Strong Same-Frequency Interference 437
Shipra, Homa Taherisefat, Koen Buisman, Thomas Eriksson

Over-the-Air Linearization of Phased Array Transmitters under Load Modulation: One-Stage LUT-Aided Approach 441
Joel Fernandez, Lauri Anttila, Yurui Wang, Koen Buisman, Arne Fischer-Bühner, Björn Jelonnek Mikko Valkama

A Broadband Linearization Technique for Doherty Power Amplifiers Using Adaptive Impedance Compensation 445
Jiaqi Wang, Ximing Lv, Songbai He, Chuan Li

Piecewise Diode-Based Analog Predistorter for High-Accuracy Wideband RF Power Amplifier Linearization 449
Md. Samiul Islam Borno, Tommaso Cappello

Carbon Coating to Mitigate Multipactor Effect in Microwave Filters 453
E. Rius, J. Benedicto, J-F. Favennec, A. Buitrago Bernal, C. H. Oh, Al. Palaniappan, S. H. Tsang E. H. T. Teo, M. Belhaj, S. Dadouch, N. Fil

Liquid Metal-Enabled Waveguide Coupler with Continuously-Tunable Power Division Ratio 457
Bryan Edward Esteves, Dimitra Psychogiou

A Hybrid Semi-Lumped/Cavity Multimode Resonator and Application to Sensing Based on Symmetry Truncation 461
Karl Adolphs-Saura, Ferran Paredes, Amirhossein Karami-Horestani, Ferran Martín

Mixed-Mode Distributed Equivalent Circuit Model of PCIe 7.0 Connector for Accelerating 128 GT/S PAM4 Signal Integrity Analysis 465
Kewei Song, Yulin He, Joseph Wang, Milton Feng

Near-End Crosstalk Suppression in Coupled Contra-Directional Chern Topological Edge Modes 469
Mostafa M. Elesawy, Alex D. Santiago-Vargas, Mohamed F. Hagag, Hany M. Mohamed, Dimitrios Peroulis Ahmed Abdelraheem

Experimental Validation of Surface Roughness Effects on Effective Conductivity and Related Applications 473
Felix Sepaintner, Franz Xaver Roehrl, Jerzy Cuper, Marzena Olszewska-Placha, Werner Bogner Stefan Zorn

Modeling and Experimental Verification of Time-Varying Ferrite-Based Microstrip Line 477
S. Hossein Hosseini Biuki, Mehrdad Rezaei Golghand, Mohammad Memarian, Behzad Rejaei Joachim Oberhammer

Blind-Scan Angle Estimation for Surface-Mounted Antenna Arrays Using a Quasi-Analytical Approach 481
Omar Wadah, Islam A. Eshrah

A Novel Compact Schiffman Phase Shifter With 92% Fractional Bandwidth Enabled by Quasi-0-Degree Phase Inverter 485
Pingzhu Gong, Kenle Chen

A 18:1 Bandwidth 180° Coupler with Wideband Common-Mode Rejection Balun 489
Hanxiang Zhang, Hao Yan, Fei Yan, Powei Liu, Saeed Zolfaghary Pour, Muhammad Uzair, Shehryar Niazi Ayesha Naseem, Jonathan Casamayor, Bayaner Arigong

Super Cavity Region Substrate Integrated Waveguide Bandpass Filter 493
Zahra Manzoor, Dimitrios Peroulis

Compact D-Band Differential Single-Inductor Power Divider with 0.0059 mm² Silicon Area and 0.35-dB Minimum Insertion Loss 497
Aniello Franzese, Rakesh Sinha, Seyyid Dilek, Batuhan Sutbas, Corrado Carta

Optically Excited Vanadium Dioxide Switches with DC-330 GHz Bandwidth and Sub-Microsecond Switching Time 501
David L. West, Brett L. Ringel, John D. Cressler, Nima Ghalichechian

Low-Loss, Flat-Passband, 6-31 GHz Tunable Magnetostatic Surface Wave Filter with Zero Static Power Consumption 505
Shun Yao, Shuxian Wu, Yixiao Ding, Dengyang Lu, Xingyu Du, Tao Wang, Chin-Yu Chang, Mark Allen Roy H. Olsson III

D-Band SIW Transitions in GaAs IPD Technology: Triple-Stack Vertical Flip-Chip and WR-06 Interconnects 509
Ta-Yeh Lin, Shuw-Guann Lin, Yin-Cheng Chang, Chaoping Hsieh, Da-Chiang Chang

An Additively Manufactured Camera-Lens-Inspired 4D/Shape-Reconfigurable Circular Phased Array for Multi-Octave Ultrawideband, Squint-Free, and Pattern-Invariant Beamforming 513
Hani Al Jamal, Manos M. Tentzeris

ECAM-Fabricated Low-Loss 3D Feed Network and Antenna for 6G Backhaul 517
Nicholas Sanford, Ravi Challa

Selective Laser Melting Design-to-Manufacturing Method for Integrated W-Band 3-D-Printed Feeds 521
Gines Garcia-Contreras, Corentin Lattion, Stefano Sirci, Erwan Guenier, Esteban Menargues Alban Mourier, Vaclav Pejchal, Maria Garcia-Vigueras

4-Pole 20-nm InGaAs HEMT-on-Silicon Technology for Enhanced Breakdown Voltage Achieving Fmax > 650 GHz 525
Maxime Moulin, Arnulf Leuther, Sayed Ali Albahrani, Felix Heinz, Konstantin Kuliabin, Sébastien Chartier Alen Sebastian, Antony Abel Kunnath, Roger Lozar, Rüdiger Quay

A Novel Compact 200 MHz GaN DC/DC Converter Module for Highly-Efficient PoL Supply 529
Thomas Hoffmann, Aron Barber, Lars Schellhase, Deguang Sun, Andreas Wentzel

Double Balanced Parametric and Resistive Millimeter-Wave Mixers with more than 100 GHz RF-Bandwidth 533
Patrick Umbach, Fabian Thome, Arnulf Leuther, Rüdiger Quay

Distributed Resistive Up-Converter GaN HEMT MMIC with High LO Suppression for Wideband Applications Up to D-Band 537
Cristina Maurette-Blasini, Sébastien Chartier, Sandrine Wagner, Peter Brückner, Rüdiger Quay

A 33-39-GHz Compact Low-Power Low-PN VCO Achieving 205-dBc/Hz FOMTA with Overlapping Symmetrical Folded Tail Inductors for FMCW Radars 541
Jin Zhang, Miao Yu, Fenglin Yuan, Kaixue Ma

K-Band MMIC Quasi-Elliptic Filtering Amplifier Isolator 545
Kexin Li, Dimitra Psychogiou

8-27 GHz Compact, Low-Power CMOS Active Power Divider Using CG-SF Topology and Inductor Array 549
Byeong-Chan Lee, Jeong-Taek Son, Joon-Hyung Kim, Jae-Eun Lee, Choul-Young Kim

Novel GaN-Based Digital Class-E Doherty PA with High 12dB OBO Efficiency 553
Giulia Bartolotti, Anna Piacibello, Vittorio Camarchia, Deguang Sun, Thomas Hoffmann, Andreas Wentzel

An Efficient Load-Modulated Outphasing Energy Recovery Amplifier with High Linearity Using a Complex-Impedance Rectifier 557
Baihua Zeng, Pei-Wen Shu, Yufei Pan, Shaoyong Zheng, Wing Shing Chan, Xinyu Zhou

A 25 dBm 95–115 GHz Coupler-Based Traveling-Wave MMIC Power Amplifier in GaAs pHEMT Technology 561
Göksu Kaval, Mingquan Bao, Gregor Lasser, Marcus Gavell, Christian Fager

A 26-40 GHz GaN Doherty Power Amplifier with >20% PAE at 6-dB Back-Off Supporting Multi-Band 5G mm-Wave Applications 565
Moïse Safari Mugisho, Christian Friesicke, Peter Brückner, Rüdiger Quay

0.5-to-52 GHz High Power Nonuniform Distributed Amplifier in 60 nm GaN/Si Process 569
Anthony S. Pham, Anh-Vu Pham

Dual Input Characterization of an Asymmetric Orthogonal Load Modulated Balanced Amplifier for Enhanced Linear Performance 573
Jean-Baptiste Urvoy, Angela Ciutat, Roberto Quaglia, Gabriel Montoro, Pere L. Gilabert

Rotman Lens Design Using Factorization Machine and Quantum Annealing 577
Yoonhee Son, Eungkyu Lee, Sanghoek Kim

Quantum Random Phased Array for Physical Layer Security in Covert Communication 581
Jonathan Casamayor, Fei Yan, Mia Reynolds, Bayaner Arigong

Quantum Transport in RF Applications: Ab Initio Investigations, Circuit Modeling, and Experimental Validation of Ferroelectric Diodes 585
Martino Aldrigo, Eleonora Pavoni, Leonardo Zappelli, Giorgio Biagetti, Paolo Crippa
Hardly Joseph Christopher, Catalin Parvulescu, Florin Nastase, Paola Russo, Emiliano Laudadio
Davide Mencarelli, Luca Pierantoni

Compact Tune-Free Dual-Band Filter Using Metal Insert 589
Anatoly Deleniv, Patrícia Bouça, Thanh Do