Free to Attend in the MicroApps Theatre
Located in the exhibition hall, MicroApps are free to attend for all exhibition visitors and conference attendees.

TUESDAY | OCTOBER 1
10:00 KEYNOTE: Facts and Fallacies in RFPA Waveform Engineering – Dr. Steve C. Cripps, Cardinal University
12:00 Industry Workshop: Best Practices for Wafer Throughput the Spectrum – Gavin Fisher, Formfactor
13:00 3GP5 5G NR gNB Multi-Channel Test Techniques – Randall Becker, Keysight
13:20 First Field Instrument Providing 3D Indoor and Outdoor Coverage Mapping for 5G NR – Ferdinand Gerhardies, Anritsu
13:40 5G NR gNB OTA Conformance Testing – Matthias Winhacker, Rohde & Schwarz
14:00 OTA Test Challenges – Alejandro Bustica, NXL
14:20 From Prototyping to Mass Production: How to Cut Your Lead Time by Months – Olaf Nolke, Premix
14:40 The Impact of Glass-Weave Effects on Millimeter-Wave PCBs – John Coonrod, Rogers Corporation
15:00 Industry Workshop: Design of Antenna Matching-Circuit for IoT Devices – Jaume Anguera, Fractus Antennas
15:20 Approaching mmWave Filters: Options and Recommendations – Tim Boucher, Knowles
16:00 Forms of Printed Reflection and Reflectionless Thin Film Lumped-Elements (TLEs) for Various Types of Filters – Rafi Hershtig, K&L Microwave
16:40 A Waveform Alignment Technique Enabling Broadband GaN Power Amplifier Design – Janis Geng, Amplicity
17:00 10-40 GHz Chipset for mmWave Imaging and Other Wideband Receive Applications – Eamon Nash, Analog Devices

TUESDAY KEYNOTE
Facts and Fallacies in RFPA Waveform Engineering
Waveform engineering has been an important concept in RF power amplifier (RFPA) design, resulting in the definition of important new PA modes. The concept can, however, be taken too far. A set of voltage and current waveforms can be used to define an impedance environment, but that environment will not guarantee that the same waveforms can be reproduced in a practical implementation. The impedance environment is a necessary, but not a sufficient, condition for a specific waveform realization. Widely-touted switch modes are one example of this frequently misunderstood principle. This talk will illustrate this using various design examples, including both switched and analog-aeous.

Presented by Dr. Steve C. Cripps, Cardinal University

TUESDAY WORKSHOPS
Design, Optimization, and Integration of Antenna Arrays for Next-Generation Communication Systems
This workshop introduces the MATLAB Antenna Toolbox for the design of massive MIMO (mMIMO) antenna systems, which uses a parameterized library of elements and full-wave MIMX technology. This workshop will show how multi-antenna circuit envelope simulation can be used to develop phased-array algorithms for applications such as hybrid beamforming by trading off algorithmic complexity and impairments.

Presented by Giorgia Zucchelli, The MathWorks

Best Practices for Wafer Throughput the Spectrum
This workshop will highlight the best methods for setting up, calibrating, and evaluating measurement performance in ccausal up to 145 GHz and in wafer-scale bands spanning WR1 (110 GHz) to WR4 (1100 GHz). The relative merits of both manual and semi-automated wafer probe systems will be discussed, and compromises will be presented involving performance. A novel means will be presented in which a directly-connected wafer probe can still be used for reliable over-temperature testing on a semi-automated wafer probe.

Presented by Gavin Fisher, Formfactor

Design of Antenna Matching-Circuit for IoT Devices
Designing a multi-band antenna system is now as simple as building a matching network. Join this workshop and experience how to design an antenna for your IoT device using a new generation of miniature, off-the-shelf chip components called ground-plane boosters. These miniature boosters are multi-band, so they work easily with any standard or frequency (RF, IoT, LoRa, Sigfox, Wi-Fi, GPS, 4G, 5G...) and even work simultaneously with multiple standards. Attendees will learn how to design IoT devices from scratch more simply, quickly, and cost-effectively using Microwave Office circuit design software, part of the N AWR Design Environment portfolio.

Presented by Dr. Jaume Anguera, Fractus Antennas

THANK YOU SPONSORS

WEDNESDAY | OCTOBER 2
10:00 Industry Workshop: BICMOS Technology for 5G Applications – Andrey Gadjia, Jesus Gutierrez Taner, Nebojsa Maleic, HIQ Solutions and Erik Olofsson, Sivers IMS
11:00 Industry Workshop: Accurate EM-Circuit Co-Design of Antenna Systems – Jons Lappalainen, Optenni
12:00 A New Wave of Simulation for Electromagnetics and Design Optimization – Katshiko Kinoshita, Murata Software
12:40 S Band RADAR Power Amplifier – Markus Meyer, Anritsu
13:00 Scalable Planar Array (SPAR) Tile Innovations for AESA Radar – Alan Noll, MACOM Technology Solutions
13:20 Tackling Emerging Millimeter-Wave Applications Beyond 50 GHz (822.3, 5G NR – Greg Rue, Keysight
13:40 Wi-Fi 6 Extended Frequency Coverage and Test Challenges – Alejandro Bustica, NXL
14:00 Benefits of Noise Sources for Over the Air Testing With Envelope – Mathew Diener, Notcom
14:40 Why Are Peak Power Meters Essential for Characterizing Pulsed Power Amplifiers? – Wiel Stiekstra, Boontec
15:00 Power Distribution Network Testing Through Impedance Analysis – Andreas D’Aquino, Rohde & Schwarz
15:40 Assessing the Accuracy of Keysight S-Parameters and NI AWR Software VSS AMP F Models – Eamon Nash, Analog Devices
16:00 Designing a Narrowband Bandpass Filter for 5G Applications – David Vye, AWR Group, NXL
16:20 Spanning 70 KHz to 220 GHz for Single Swoop VNA Measurements Utilizing Nonlinear Transmission Line Technology – Steve Reyes, Anritsu
17:00 Latest Digital-to-Analog Converter Developments: 12-bit 8 GSPS DAC Enabling Signal Generation up to the K-Band (Ramon Pardo, Telefonia delle)

WEDNESDAY WORKSHOP
BICMOS Technology for 5G Applications
This workshop consists of two parts, the first of which will highlight a high-performance 130 nm SiGe BICMOS technology with hetero-bipolar transistors up to 500 GHz maximum oscillation frequency. The second part of the workshop will demonstrate a series of planned and field trials that are only possible due to the BICMOS technology, as well as the Sivers IMS SG 18-16 beamforming transceiver that is designed within HPG/35 technology.

Presented by Dr. Andrey Gadjia, Dr. Jesus Gutierrez Taner, and Nebojsa Maleic, HIQ Solutions and Erik Olofsson, Sivers IMS

Accurate EM-Circuit Co-Design of Antenna Systems
This workshop presents a design process in which multi-antenna EM simulation is coupled with matching-circuit synthesis, including layout effects, enabling accurate system radiation efficiency calculation and total efficiency optimization. The loss contributions in the antenna system are identified and quantified, including return loss, component losses, coupling losses, and radiator losses. The active input impedance, radiation pattern, and total efficiency of small and medium-sized antenna arrays are analyzed through matching circuits for any port excitation vector.

Presented by Jons Lappalainen, Optenni

THURSDAY | OCTOBER 3
10:00 Industry Workshop: Automated 3D PEC Scan Solution for EMC Analysis of Physical Layout Effects – Alexander Demurov and Ilona Daneliyan, EMC3S
11:00 SMD Component Test System – Yulya Pavlenko, Copper Mountain Technologies
11:20 MACOM P-I-N Diode Modules and MMICs Enable 5G Implementation – James J. Bradle, MACOM Technology Solutions
11:40 Critical Material Properties for 5G PCB Applications – John Coonrod, Rogers Corporation
12:00 Transition Zone Considerations - New Filter Approach Solution for Control of Rf and Reducing the Ringing Levels of TD Signals – Rafi Hershtig, K&L Microwave
12:20 Wideband High Resolution Phase-Amplitude Controlled Modules/Networks and Their Applications in 5G – Hiro Liu, Hitachi
12:40 Improvements to Heteroelastic Microwave Integrated Circuits – Timothy Bates, MACOM Technology Solutions
13:00 Thanks to Spuma RS FR, No More Challenging Installations of Low-Loss RF Cables in Restricted Environments – Marco Fiore, LEANFA
13:20 How Distributed Software Systems Boost Solid-State Microwave Technology – Mathias Vetter, HUBER+SUHNER
13:40 Optical Oscillator for RADAR Applications Which Solves Century Old Stability Problems – Pawel Najecki, PYS Laser

THURSDAY WORKSHOP
Automated 3D PEC Solution for EMC Analysis of Physical Layout Effects in Electronic Circuit Design Process
This innovative 3D PEC solution for the analysis of EMC problems in electronic circuit design process is based on a new formulation that focuses on performance by employing the idea of clusters of triangles on a discretized surface, each of which represents a single partial element. The main aspects and advantages of 3D PEC solutions will be discussed, and an interactive demonstration of the EMC3S 3D PEC solution will be presented. An EMC analysis of an led backlight circuit developed in accordance with CISPR25 standard will be shown.

Presented by Alexander Demurov and Ilona Daneliyan, EMC3S