SAN ANTONIO 2027

IMS

2027 IEEE International MTT Symposia
23–28 May 2027
San Antonio, TX

Call for Papers

RIDE THE CURRENT

The IEEE International MTT Symposia (IMS) (www.ims-ieee.org) is the Microwave Theory and Technology Society's flagship symposia and the world's largest industry exhibition highlighting radio frequency (RF) technology, systems and applications. We celebrate the 75th anniversary of the MTT Society in 2027 and look forward to reflecting on our past, present and future, while meeting in San Antonio, Texas.

IMS2027 starts the week with IEEE MTT-S RF Integrated Circuits (RFIC) Symposium and follows with IEEE MTT-S RF Systems & Applications (RFSA) Symposium and IEEE MTT-S RF Technology & Techniques (RFTT) Symposium. The week concludes with the Automatic Radio Frequency Techniques Group (ARFTG) Microwave Measurement Conference.

We continue to partner with IEEE and co-locate with one of the IEEE Hard Tech Venture Summits. Early-stage hardware startup founders are connected with resources and funding from the Hard Tech innovation ecosystem.

The IMS technical program is in its second year of a strategic structural change where RFIC, RFSA and RFTT symposia are streamlined to allow attendees to focus on topics that align with their interests.

IMS workshops and related events occur on Sunday and Monday, IMS Systems and Applications workshops (S&A) will take place on Thursday.

We have the distinct pleasure of IMS2027 occurring during the 75th Anniversary of IEEE MTT-S. MTT-S was established in 1952 to promote the advancement of microwave theory and its applications, including RF, microwave, millimeter-wave, and terahertz technologies. We believe this year's event will allow us to pause and reflect on the innovations that have resulted from not only the Society's inception but also the symposia that have been occurring since 1957.

Our theme Ride the Current brings the symposia to San Antonio, Texas, for the first time. One of the state's oldest cities, San Antonio is home to The Alamo and The River Walk. It was established as a mission in 1718 and is also known for its cultural diversity and being home to one of the largest concentrations of military bases in the U.S. (Military City USA). San Antonio is in the Texas Triangle, one of eleven megaregions of the United States, located entirely within Texas. It contains the state's five largest cities (San Antonio-Austin, Greater Houston and Dallas-Fort Worth) and is home to about two-thirds of the state's population. Historic downtown San Antonio is a walkable entertaining area with the Alamo Mission and River Walk all nestled within a 1.65 square mile area. The symposia will be in the Henry B. González Convention Center, nestled along the banks of the River Walk near local arts, culture, excellent dining experiences and historical sites.

Welcome one and all to IMS2027!

IMS2027 General Co-Chairs

Goutam Chattopadhyay, *NASA-Jet Propulsion Laboratory, California Institute of Technology*

Rashaunda Henderson, *University of Texas at Dallas*

A complete roster of IMS2027 leadership roles can be found at www.ims-ieee.org.

IMS

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
IMS Workshops	**RFIC** Symposium				
		RFSA Symposium		**IMS S&A** Workshops	
	IMS Workshops	**RFTT** Symposium			**ARFTG**
		IMS Exhibition			
RFIC Plenary & Reception	**RFSA** & **RFTT** Session **IMS** Reception	**RFSA** RF Systems Dialogue	**IMS** Industry-Hosted Reception		

IMS2027 Week-at-a-Glance Overview

IEEE

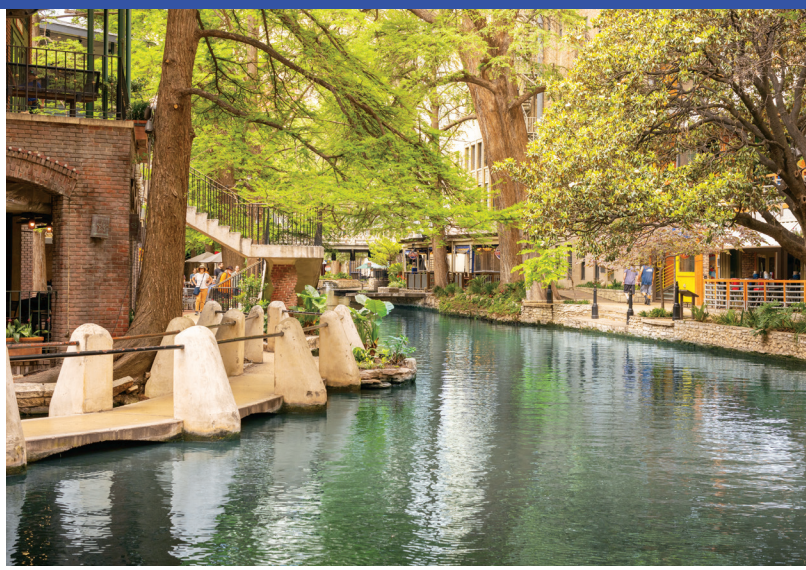
MTT-S IEEE MICROWAVE THEORY & TECHNOLOGY SOCIETY

Paper Submission Deadline: **13 January 2027**

RFIC

Radio Frequency Integrated Circuits

23–25 May 2027



The IEEE MTT-S RF Integrated Circuits (RFIC) Symposium traces its roots to the IEEE Microwave and Millimeter-Wave Monolithic Circuits Symposium (MMWMC, 1982–1996) and has long been a cornerstone of IMS for monolithic integrated circuit innovation. Today, the RFIC Symposium remains the premier forum dedicated exclusively to presenting the latest advances in RF, millimeter-wave, sub-THz, and THz integrated circuits and systems.

RFIC2027 spans both foundational RFIC building blocks and integrated RFIC subsystems. On the building-block side, the symposium features power amplifiers, transmitter circuits, front-end modules, low-noise amplifiers, oscillators, frequency synthesizers, data converters, mixed-signal circuits, and high-speed interconnects. On the integrated-subsystem side, the symposium focuses on fully integrated solutions operating from sub-GHz to THz frequencies, leveraging SiGe, CMOS, SOI, and compound-semiconductor technologies, and often incorporating on-chip digital processing, calibration, control, and memory subsystems.

The symposium welcomes papers not only on monolithic systems, but also on heterogeneously integrated and advanced-packaged implementations spanning a broad range of applications. Application areas include 5G/6G wireless, radar, satellite communications, sensing, imaging, IoT, wireline and optical links, quantum and cryogenic systems, biomedical platforms, and AI-assisted RFIC design.

The symposium solicits papers describing original work in all areas related to RF, mm-Wave, THz, and wireless systems and ICs. Work must be demonstrated through IC hardware results and measurements.

Our dedicated track for Industry and Startup papers highlights impactful, application-driven innovations, measured commercial technologies, and new concepts with strong potential for real-world deployment.

We look forward to seeing your latest RFIC research in San Antonio in May 2027!

Symposium Chair: Bodhisatwa (Bodhi) Sadhu, *IBM Research*
TPC Chair: Debopriyo (Debo) Chowdhury, *Broadcom*
TPC Vice Chair: Steven Turner, *BAE Systems*

A complete roster of RFIC2027 leadership roles and author information can be found at www.ims-ieee.org.

RFIC Technical Areas

RFIC1: Industry and Startups — RFIC and millimeter-wave circuit and system design innovations and demonstrations for commercial applications, including product-oriented R&D, productization, and start-up concepts targeting commercial deployment.

RFIC2: Sub-D Band Millimeter-wave Circuits — 20-110 GHz circuits for wireless communication, including phase shifters, phased arrays, beamformers, MIMO transceivers, and other systems for 5G applications.

RFIC3: D-band Circuits — >110 GHz circuits and SoCs for wireless communication, including transceivers, transmitters, and other systems for 6G applications.

RFIC4: Transmitters and Power Amplifiers — RF through millimeter-wave and beyond power amplifiers, drivers, modulators, digital transmitters, advanced TX circuits, linearization, and efficiency enhancement techniques.

RFIC5: Front-End Circuits — LNAs, mixers, VGAs, T/R switches, integrated FEM, amplifiers, filters, and demodulators.

RFIC6: Wireline, Optical, Mixed-Signal and High-Speed Interconnect Circuits — Baseband and RF converters (ADC/DAC), sub-sampling/over-sampling circuits, converters for digital beamforming or emerging architectures, high-speed electrical links (e.g., SerDes, I/O transceivers, and CDRs), silicon photonics and co-packaged optical interconnects, die-to-die and chiplet communication interfaces, and short-range millimeter-wave/sub-THz wireless links.

RFIC7: Oscillators and Frequency Synthesizers — RF through millimeter-wave to D-band and higher VCOs, injection-locking frequency dividers/multipliers, PLLs, DLLs, MDLLs, DDS, LO drivers, and frequency dividers.

RFIC8: Device/Packaging/Modeling and Testing Technologies — RF device technology (both silicon and compound semiconductors), MEMs, integrated passives, photonic technologies, reliability, packaging, modeling and testing, EM modeling/co-simulation, built-in-self-test (BIST), 3D ICs, and novel THz solutions.

RFIC9: Wireless Radios and Systems-on-Chip — Innovative circuit and system-on-chip concepts related to software-defined radio, interference cancellation, full-duplex, cellular/WiFi, GPS, low-power radio circuits for sensors, IoT and biomedical applications, radio architectures suitable for energy harvesting, wake-up receivers, etc.

RFIC10: Radar, Imager, and Sensor — Integrated and vehicular radar, imaging, spectroscopy, MEMs-based sensors and actuators, and sensing circuits at RF through THz frequencies.

RFIC11: RFICs in System Context — RFICs driving system-level innovations in 5G/6G, radar, imaging, satellite communications, terahertz, quantum computing, cryogenic, biomedical, optoelectronic systems and hardware security. May include interactive demonstration and presentation of complete systems based on new or previously published chips.

RFIC12: AI-Assisted RF and RFIC Design — Inverse circuit design, AI-generated non-intuitive RF topologies, RF passive and active block synthesis, surrogate modeling for RFIC design, including EM-aware circuit and layout optimization, signal-chain optimization, and AI-driven biasing, calibration, and configuration. Emphasis on methodologies demonstrated with measured silicon performance or hardware validation, including gains in performance, efficiency, or design productivity in RF/millimeter-wave/sub-THz circuits.

Paper Submission Deadline: **8 December 2026**

RFSA

Radio Frequency Systems & Applications

24-27 May 2027

We are excited to announce the second IEEE MTT-S RF Systems & Applications (RFSA) Symposium, which will be a part of IMS2027 after its successful introduction last year. This symposium is dedicated to fostering discussions on emerging topics in microwave systems and applications, covering frequencies from MHz to THz. Recognizing the increasing importance of these areas, RFSA aims to become a hub for creative exchange and groundbreaking ideas in system-level research and innovation, closely integrated with circuit-focused research at RFIC and component-related research at RFTT.

RF systems innovation focuses on integrating components and subsystems to achieve application goals within the constraints of available signal-processing techniques and digital processing hardware. Novel application contexts introduce new challenges for hardware and signal processing solutions, driving innovation in both communication and sensing technologies. RFSA invites contributions across a wide range of fields, including radars, communications radios, biomedical applications, phased arrays, and imagers. RFSA also invites papers discussing innovations in emerging applications where microwave technology plays a crucial role, such as non-terrestrial communications on the move and integrated sensing and communications applications.

The symposium will feature technical sessions, an interactive forum, S&A workshops, panels, and plenary sessions. A highlight of RFSA2027 will be the RF System Dialogue, a special event designed to facilitate deep interactions between industry and academia, fostering collaboration and innovation.

We invite researchers and industry professionals to contribute their latest findings and insights to RFSA2027. Join us in shaping the future of RF systems and applications!

Symposium Chair: Christian Waldschmidt, *University of Ulm*
TPC Chair: Jeffrey Nanzer, *Michigan State University*
TPC Vice Chair: Olga Boric-Lubecke, *University of Hawaii*

A complete roster of RFSA2027 leadership roles and author information can be found at www.ims-ieee.org.

RFSA Technical Areas

RFSA1: Instrumentation and Measurement Techniques — Measurement techniques from MHz to THz for materials, linear and nonlinear devices, circuits, and systems; calibration and de-embedding techniques, measurement uncertainty, and over-the-air measurement methods and novel instrumentation.

RFSA2: Integrated Transceivers and Phased Arrays — Design and characterization of complex III-V ICs, silicon ICs, heterogenous systems in the RF to millimeter-wave range and including narrowband and wideband designs; innovative circuits and sub-systems for communications, radar, imaging, and sensing applications; Integrated on-chip and on-package antennas and antenna systems.

RFSA3: Microwave and Terahertz Photonics, THz systems — Photonic techniques for the generation, processing, control, and distribution of microwave, millimeter-wave, and THz signals, Radio-over-fiber links; design and characterization of microwave photonic and THz circuits; interaction between microwaves, THz waves, and optical waves; THz circuits and systems for communications, radar, imaging, and sensing applications.

RFSA4: Wireless Power Transmission — Energy harvesting systems and applications, rectifiers, self-biased systems, combined data and power transfer systems.

RFSA5: Sensing and RFID Systems — Short range wireless and RFID sensors, gas and fluidic sensors; passive and active tags from HF to millimeter-wave frequencies; RFID systems including wearables and ultra-low-power.

RFSA6: Microwave and Millimeter-wave Wireless Subsystems and Systems — Microwave/millimeter-wave subsystems such as beamformers; microwave and millimeter-wave (<300 GHz) communication systems, including 5G/6G, with hardware implementation for terrestrial, vehicular, and indoor applications, point-to-point links, cognitive and software-defined radios, MIMO, full-duplex technologies, shared and novel spectrum use, novel modulation schemes, and channel modeling.

RFSA7: Radar and Imaging Systems — RF, millimeter-wave, and sub-THz radar and imaging systems, automotive radars, sensors for intelligent vehicular highway systems, UWB and broadband radar, remote sensing, radiometers, passive and active imaging systems, radar detection techniques, and related signal processing.

RFSA8: UAV, Airborne and Space Systems — Sub-systems and systems for remote sensing for earth observation; positioning, navigation, and timing; space exploration, human spaceflight and space transportation; satellite communications including 5G/6G applications involving aerospace platforms; communication and sensor system for UAVs, high altitude platforms, airplanes, and satellites; UAV-borne sensing and communications; UAV detection and sensing.

RFSA9: MHz-to-THz Devices, Circuits and Systems for Biological and Healthcare Applications — Electromagnetic field interaction at molecular, cellular, tissue and living systems levels; devices, circuits, and systems for characterizations of biological samples; microwave-enhanced chemistry; radar-based physiological sensors and their application; instrumentation and systems for biomedical diagnostic and therapeutic applications, including MRI and microwave imaging; wireless, wearable, and implantable devices for health monitoring.

RFSA10: AI/ML for RF to Millimeter-wave — AI/ML for RF applications; algorithm implementations for solving microwave problems; new design strategies and approaches; novel datasets and data augmentation; digital twins; AI-based signal processing for sensing and communications; calibration, linearization, and system identification; edge AI for RF applications; robust and explainable AI for RF systems.

RFSA11: Microwave Field-matter Interaction, Material Sensing and High Power Applications — Industrial and scientific applications of microwave energy (e.g., chemistry, metallurgy, ceramic sintering, plasma generation, waste treatment, green materials, energy converters); MHz-to-THz sensing (from microwave microscopy to large surface/volume imaging) of materials for electronics and energy applications; multiphysics modeling of materials processing and characterization.

RFSA12: Integrated Sensing and Communications — Joint RF-to-THz architectures that combine radar/sensing and communications in the same hardware; full-duplex and hardware-constrained waveform design; signal-integrity and interference limits; phased-array and reconfigurable-intelligent-surface front-ends; synchronized, coherent multi-perspective sensor networks; AI-assisted signal processing and resource management; ISAC-enabled applications such as UAV detection, environmental monitoring, and physiological sensing.

RFSA13: Additional Innovative MHz-to-THz Systems and Applications — Submissions that describe innovative contributions in new and emerging areas of interest to the MTT community not falling under the above categories are encouraged.

Paper Submission Deadline: **8 December 2026**

RFTT

Radio Frequency Technology & Techniques

24–27 May 2027

We are pleased to announce the IEEE MTT-S RF Technology & Techniques (RFTT) Symposium as part of the IMS for 2027. Following its successful introduction in 2026, RFTT will be held for the second time in this format. The symposium comprises much of the traditional IMS technical content, including microwave passive components, packaging, active devices, discrete microwave circuits, computer aided design (CAD), and computational EM, representing approximately half of the IMS technical content.

RFTT continues to focus on key topics in RF technology and techniques, including planar, non-planar, and integrated filters and passive circuits; MEMS, acoustic, ferrite, ferroelectric, and phase-change components; heterogeneous packaging, MCMs, and 3D manufacturing; Si and III-V semiconductor device technologies; blocks and circuits up to complete receivers and transmitters, including signal generation, modulators, and frequency conversion; low-noise amplifiers; power amplifiers and linearization techniques; quantum engineering circuits; and sub-THz to THz circuits.

The symposium will continue to feature the technical sessions, interactive forum, workshops, panels, plenary sessions and late breaking news papers that the community has come to expect. We invite researchers and industry professionals to contribute their latest findings and insights to RFTT2027. Join us in continuing the long tradition of presenting emerging RF technologies and techniques.

Symposium Chair: Joe Bardin, *Google/UMass Amherst*
TPC Chair: Steve Bowers, *University of Virginia*
TPC Vice Chair: Jasmin Grosinger, *University of Siegen*

A complete roster of RFTT2027 leadership roles and author information can be found at www.ims-ieee.org.

RFTT Technical Areas

RFTT1: Field Analysis, Guided Waves and Computational EM — Novel guiding, radiating, and electromagnetic structures; new analytical techniques and numerical methods for such structures, and new computational EM methods, including EM-coupled multiphysics modeling.

RFTT2: Circuit and System CAD — Linear and nonlinear simulation, design optimization, behavioral modeling, statistical analysis, space mapping, model order reduction, uncertainty quantification, stability analysis, non-EM multiphysics simulation, and design automation.

RFTT3: AI-Enabled EM and Circuit Design — Design, optimization, and modeling of electromagnetic structures, circuits, and subsystems using AI/ML techniques, including inverse design, surrogate and data-driven modeling, generative methods, and algorithmic co-optimization across EM and active domains.

RFTT4: Planar Passive Components and Circuits, Excluding Filters — Novel planar transmission-line components; artificial transmission lines, metamaterial structures, and high-impedance surfaces; planar couplers, dividers/ combiners, multiplexers, resonators, and lumped-element approaches.

RFTT5: Planar Filters — Planar passive filters, including lumped elements, silicon or III-V integrated circuits, integrated passive devices (IPDs), theoretical filter and multiplexer synthesis methods.

RFTT6: Non-planar Passive Components, Filters, and Other Devices — Transmission line components, resonators, filters and multiplexers based on dielectric, waveguide, coaxial, or other non-planar structures.

RFTT7: Reconfigurable, Integrated and Active Filters, Phase Shifters and Couplers — Advances in reconfigurable filters, phase shifters and coupler designs and implementations, with features such as tunable bandwidth, shape, etc. Realized in various fabrication technologies (IC, PCB, 3D printing, etc.)

RFTT8: Microwave Acoustic, Ferrite, Ferroelectric, Phase-change and MEMS Components — Surface and bulk acoustic wave devices including FBAR devices, bulk and thin-film ferrite components, ferroelectric-based devices, and phase-change devices and components. RF microelectromechanical and micromachined components and subsystems.

RFTT9: Packaging, MCMs and 3D Manufacturing Technologies — Component and subsystem packaging, assembly methods, multi-chip modules, wafer stacking, heterogeneous integration and chiplet-based RF components and sub-systems, 3D interconnect, and integrated cooling; package characterization; novel processes related to inkjet printing, 3D printing, or other additive manufacturing techniques.

RFTT10: Semiconductor Device Technologies and Modeling — RF to THz devices on III-V, silicon, and other emerging technologies, including 2D devices; MMIC and Si RFIC manufacturing, reliability, failure analysis, yield, and cost; linear and nonlinear device modeling (CAD, compact, physics-based, empirical) including characterization, parameter extraction, and validation.

RFTT11: Transmitters, Receivers and TX/RX Building Blocks — RF-to-THz full transmitters, receivers and transceiver building blocks, including front-end architectures, channel-select and interface circuitry, and switching functions.

RFTT12: Signal Generation, Modulators and Frequency Conversion — Signal sources, oscillators, synthesizers, modulators, mixers, frequency multipliers/dividers, and frequency-conversion circuits in silicon and III-V processes.

RFTT13: RF and Millimeter-wave Low Noise Circuits — Microwave and millimeter-wave low-noise amplifiers, variable-gain amplifiers — LNAs, VGAs, detectors, integrated radiometers, and low-noise circuit characterization.

RFTT14: Quantum Computing, Devices, Circuits and Microwave Cryogenic Technologies — Quantum computing, devices and circuits using microwave and photonics circuits operating at cryogenic temperatures.

RFTT15: HF/VHF/UHF Circuits and Technologies — Advances in passive and active circuits (including PAs), components, and technologies that operate in the HF, VHF, and UHF frequency ranges (<1 GHz).

RFTT16: Linearization and Transmitter Techniques for Power Amplifiers — Power amplifier behavioral modeling; linearization and pre-distortion techniques; envelope-tracking, outphasing, and Doherty transmitters for III-V and silicon technologies, MIMO.

RFTT17: Low-power (<10 W) RF and Microwave Amplifiers, Below 30 GHz — Advances in discrete and integrated power amplifier devices and design techniques based on Si and III-V devices, demonstrating improved power, efficiency, and linearity performance for the microwave band (1-30 GHz).

RFTT18: High-power (≥10 W) RF and Microwave Amplifiers, Below 30 GHz — Advances in discrete and IC power amplifier devices and design techniques based on III-V and LD-MOS devices, demonstrating improved power, efficiency, and linearity for the microwave band (1-30 GHz); power-combining techniques for SSPA and vacuum electronics.

RFTT19: Millimeter-wave and THz Power Amplifiers — Advances in IC power amplifier circuits, design techniques, and power combining based on Si and III-V compound semiconductor devices demonstrating improved power, efficiency, and linearity for millimeter-wave and THz bands; vacuum electronics for millimeter-wave.

RFTT20: Millimeter-wave, Terahertz and Photonic Circuits Excluding PAs — Monolithic/hybrid ICs in silicon, III-V, and emerging platforms; sources, detectors, multipliers, mixers, waveguides, quasi-optics, microwave photonic circuits, electronically controlled antennas, reconfigurable intelligent surfaces, packaging, integration, and measurement techniques for next-generation sensing and communications.