



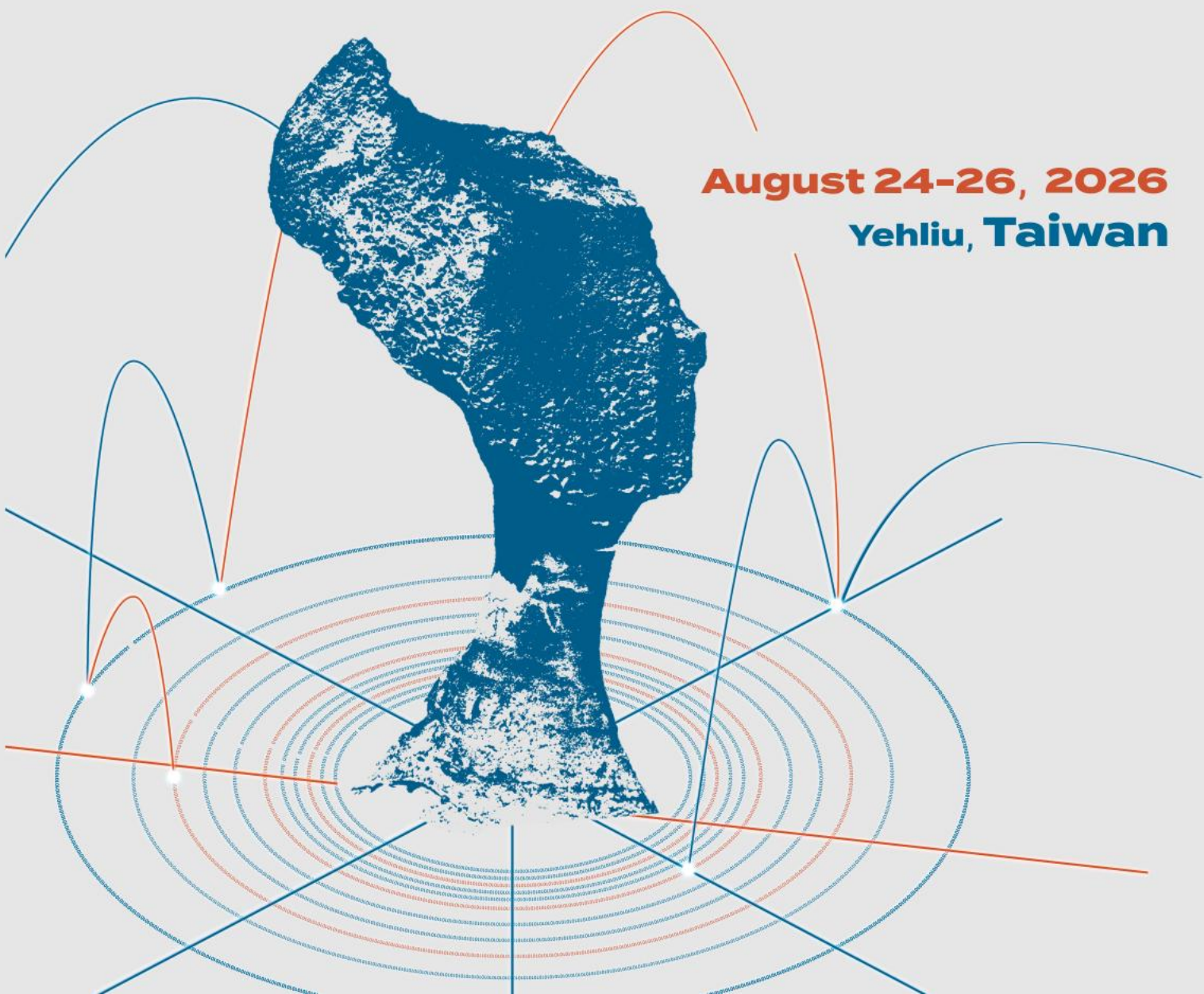
2026 IEEE

**International Symposium
on Radio-Frequency
Integration Technology**

*Advancing RF and mm-Wave Integration
for a Smarter Connected World*

August 24-26, 2026

Yehliu, Taiwan



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GENERAL CHAIR WELCOME MESSAGE



It is my great honor and pleasure to welcome you to the 2026 IEEE International Symposium on Radio-Frequency Integration Technology (RFIT 2026) in Yehliu, Taiwan. On behalf of the Organizing Committee, I sincerely thank all participants, authors, reviewers, speakers, sponsors, and volunteers for their invaluable contributions and support in making RFIT 2026 possible.

Wireless communications and sensing technologies are advancing rapidly, driven by 5G-Advanced, 6G, artificial intelligence, satellite communications, and heterogeneous integration. These emerging applications demand innovative RF and microwave technologies with higher performance, greater energy efficiency, and tighter integration across devices, circuits, packaging, and systems. As these technologies continue to converge, RF integration remains a key enabler of future wireless and sensing applications.

Since its establishment, RFIT has served as a premier international forum for researchers and engineers from academia and industry to exchange ideas and present the latest advances in radio-frequency integration technology. We hope RFIT 2026 will continue this tradition by fostering technical excellence, strengthening international collaboration, and inspiring innovations that shape the future of our field.

Beyond the technical program, we hope you will enjoy the opportunity to reconnect with colleagues, establish new collaborations, and experience the warm hospitality and unique culture of Taiwan. I would like to express my sincere appreciation to the Organizing Committee, the IEEE Microwave Theory and Technology Society (IEEE MTT-S), the Technical Program Committee, our sponsors, supporting organizations, and volunteers for their dedication and hard work.

I wish you a productive, enjoyable, and memorable experience at RFIT 2026.

Hong-Yeh Chang

General Chair, RFIT 2026
National Central University, Taoyuan City, Taiwan

TPC CHAIR WELCOME MESSAGE



On behalf of the Technical Program Committee, I cordially welcome you to attend the 2026 IEEE International Symposium on Radio-Frequency Integration Technology (RFIT 2026) in Yehliu, Taiwan. The Technical Program Committee has worked diligently to assemble a high-quality technical program that reflects the latest advances and emerging trends in radio-frequency integration technology. We sincerely appreciate the outstanding contributions from all authors, reviewers, session organizers, and committee members, whose dedication and expertise have made this program possible.

This year, we received 105 paper submissions from researchers across 15 countries and regions, demonstrating the continued vitality and global impact of the community in the monolithic microwave integrated circuits, 3D heterogeneous integration and systems-in-package, and phased arrays and beamforming. Following a rigorous peer-review process, 85 papers were accepted for presentation, resulting in an acceptance rate of approximately 81%. The technical program features 1 plenary talk, 11 invited talks, 12 regular oral sessions, 2 poster sessions, and 6 workshops and special sessions, providing a comprehensive platform for exchanging new ideas and fostering collaboration between academia and industry.

We hope that the conference offers not only an opportunity to present your latest research but also a forum to establish new collaborations, inspire innovative ideas for future research, and build a professional network throughout the conference.

I would like to express my sincere gratitude to all members of the Technical Program Committee, Organizing Committee, Session Organizers, Invited Speakers, and Reviewers for their tremendous efforts and invaluable support. Their dedication has been essential in ensuring the high technical quality of this conference. I also thank all authors and attendees for your enthusiasm and contributions. Finally, I wish you a productive, inspiring, and enjoyable RFIT 2026, and hope you have a pleasant stay in Yehliu, New Taipei City, Taiwan.

Pei-Ling Chi

Technical Program Committee Chair, RFIT 2026
National Yang Ming Chiao Tung University, Hsinchu, Taiwan

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Wen-Jie Lin, NTOU, Taiwan

Conference Secretariat

Chiu-Chih Chou, NCU, Taiwan

PROGRAM-AT-A-GLANCE

Time/ Venue	August 24 (Mon)		August 25 (Tue)		August 26 (Wed)	
	Room1	Room2	Room1	Room2	Room1	Room2
	B1-Inhouse	2F-Fisherman	B1-Inhouse	2F-Fisherman	B1-Inhouse	2F-Fisherman
08:20 08:50	Registration		Opening		Oral Session: WE1A	Oral Session: WE1B
08:50 10:00			Plenary			
10:00 10:20			Break		Break	
10:20 12:00	Workshop 1	Special Session	Oral Session: TU1A	Oral Session: TU1B	Oral Session: WE2A	Oral Session: WE2B
12:00 13:30	Lunch		Lunch		Lunch	
13:30 15:10	Workshop 1	Workshop2	POSTER: TUPO	Oral Session: TU2B	POSTER: WEPO	Oral Session: WE3B
15:10 15:50	Break		Break		Break	
15:50 17:30	Workshop 1	Workshop2	Oral Session: TU3A	Oral Session: TU3B	Oral Session: WE4A	Oral Session: WE4B
17:30 18:00					Closing/ Awards	
18:00 21:00	Welcome reception @ RF-skyline		Banquet @ RF-skyline			

DAILY PROGRAM – AUGUST 24

Workshop & Special Session

	Room1 - B1-Inhouse	Room2 - 2F-Fisherman
	Session Chair : Prof. Kang-Chun Peng (NKUST) Prof. Chao-Hsiung Tseng (NYCU)	Session Chair : Prof. Chung-Tse Michael Wu (NTU)
	Workshop1 (Biomedical)	Special Session 1 (Quantum Computing)
10:20 11:10	Human-Centric Radar Sensing for Noncontact Physiological Monitoring <i>Prof. Takuya Sakamoto (Kyoto University)</i>	Thermal insulation techniques of the cryogenic microwave measurement for superconducting quantum computers <i>Dr. Hiroyuki Kayano (AIST)</i>
11:10 12:00	Standardization Progress of Integrated Sensing and Communication (ISAC): Developments in 3GPP and IEEE Systems <i>Prof. Tzyy-Seng Horng (NSYSU)</i>	Semiconductor Quantum Technology: Microwave Interfaces and Opportunities <i>Prof. Tomohiro OTSUKA (Tohoku University)</i>
12:00 13:30	Lunch	
	Workshop1 (Biomedical)	Workshop2 (Metamaterials)
13:30 14:20	Title : Advanced RF Microfluidic Dielectric Sensing : From Oscillator-Based to Self- Injection-Locked Architectures <i>Prof. Chao-Hsiung Tseng (NYCU)</i>	Title : RF Scaling Bottlenecks in Modular Superconducting Qubit Systems <i>Dr. Wen-Sen Lu (PsiQuantum)</i>
14:20 15:10	Title : Virtual Element Enhanced FMCW Radar for High-Resolution Indoor Localization and Hand Gesture Trajectory Sensing in SIMO and MIMO Systems <i>Dr. Ju-Yin Shih (SignalPro Tech. Co.)</i>	Title : Chip-scale beam shaping and steering enabled by metasurface-integrated silicon photonics <i>Prof. You-Chia Chang (NYCU)</i>
15:10 15:50	Break	

	Room1 - B1-Inhouse	Room2 - 2F-Fisherman
	Workshop1 (Biomedical)	Workshop2 (Metamaterials)
15:50 16:40	Title : Contact and Non-Contact Physiological Sensing via Microwave Sensors and Doppler Radar for Healthcare Applications <i>Prof. Chin-Lung Yang (NCKU)</i>	Title : Metamaterials: from invisibility cloak to future smart electromagnetic environment <i>Prof. Pai-Yen Chen (UIC)</i>
16:40 17:30		Title : Passive time-varying metasurfaces and their applications <i>Dr. Hiroki Wakatsuchi (Nagoya Institute of Technology)</i>

From Microwave Sensors to ISAC Radar: Emerging Biomedical Sensing Technologies for Next-Generation Healthcare

10:20-11:10

Human-Centric Radar Sensing for Noncontact Physiological Monitoring

Prof. Takuya Sakamoto

Department of Electrical Engineering, Graduate School of Engineering, Kyoto University

In this talk, we present recent advances in radar-based noncontact human sensing technologies, with a particular focus on wireless measurement of physiological signals such as respiration and heartbeat. Unlike conventional wearable sensors, these technologies have the potential to fundamentally transform health monitoring, medical checkups, and entertainment applications. We introduce our recent developments, including high-precision radar-based heartbeat measurement, simultaneous monitoring of respiration and heartbeat from multiple individuals, and simulation techniques for human body shape and motion. In addition, high-resolution human imaging and pedestrian tracking are presented. A key aspect of these technologies is mathematical modeling that bridges measurement and signal processing. By explicitly modeling the unique characteristics of the human body as a sensing target, advanced capabilities such as signal separation and multimodal data integration can be achieved, leading to significant improvements in accuracy and robustness. We also present various applications, including sleep apnea detection, multi-person physiological monitoring, and radar-based personal identification, and briefly discuss the development of ethical guidelines for noncontact monitoring systems.

11:10-12:00

Standardization Progress of Integrated Sensing and Communication (ISAC): Developments in 3GPP and IEEE Systems

Mohammed Nurain Mustaque¹, Kang-Yu Teng¹, Po-Jui Huang¹, Tzzy-Sheng Horng¹, Yu-Ming Chen², Chieh-Lung Lin², and Cheng-Han Wu²

¹*Department of Electrical Engineering, National Sun Yat-sen University, Kaohsiung Taiwan*

²*Telecom Technology Center, Kaohsiung, Taiwan*

Integrated Sensing and Communication (ISAC) is emerging as a key enabling paradigm for next-generation wireless systems, enabling the seamless integration of data transmission and environmental sensing within a unified framework. Recent standardization efforts by the 3rd Generation Partnership Project (3GPP) and the Institute of Electrical and Electronics Engineers (IEEE) have accelerated ISAC development, particularly in 3GPP Releases 19 and 20 and IEEE 802.11bf. This talk provides an overview of ongoing ISAC standardization activities, highlighting representative use cases such as human activity recognition, indoor localization, and unmanned aerial vehicle (UAV) detection. It further discusses key physical-layer design considerations, including OFDM waveform reuse, reference signal design, CSI-based sensing, and MIMO-enabled spatial resolution enhancement.

The talk also presents a comparative perspective on cellular-based (3GPP) and Wi-Fi-based (IEEE) ISAC frameworks, emphasizing differences in system design, waveform flexibility, and synchronization mechanisms. In addition, practical implementation challenges—such as sensing-communication trade-offs, pilot overhead, hardware calibration, and synchronization accuracy—are addressed. Finally, future research directions toward 6G ISAC are outlined, focusing on integrated system design and the realization of high-resolution sensing with efficient spectrum utilization.

13:30-14:20

Advanced RF Microfluidic Dielectric Sensing: From Oscillator-Based to Self-Injection-Locked Architectures

Chao-Hsiung Tseng

*Institute of Space Systems Engineering and Department of Mechanical Engineering,
National Yang Ming Chiao Tung University, Hsin Chu, Taiwan*

Microfluidic devices have gained significant attention for their ability to precisely manipulate microliter-scale fluids, with broad applications in biomedical diagnostics and environmental monitoring. This workshop presentation explores the integration of two cutting-edge radio frequency (RF) microfluidic dielectric sensing technologies. We focus on designing high-sensitivity, miniaturized, and standalone sensing systems that eliminate the need for bulky and expensive laboratory equipment, such as Vector Network Analyzers (VNAs).

The session will highlight two primary technical evolutions:

1. **Microwave Oscillator-Based Microfluidic Sensors:** Introducing a compact architecture that utilizes a T-shaped LC Resonator (TLCR) to reduce circuit size, minimize required sample volume, and convert dielectric properties directly into processable voltages.
2. **Self-Injection-Locked (SIL) Sensing Technology:** Discussing an advanced system that incorporates an injection-locked feedback loop to overcome the frequency drift of free-running oscillators, thereby dramatically enhancing system stability and measurement accuracy.

Together, these subtopics demonstrate the progression from basic oscillator configurations to sophisticated, high-precision feedback-locked systems, paving the way for future portable IoT sensing applications.

14:20-15:10

Title: Virtual Element Enhanced FMCW Radar for High-Resolution Indoor Localization and Hand Gesture Trajectory Sensing in SIMO and MIMO Systems

JuYin Shih

SignalPro Technology Co.

High-resolution spatial sensing is becoming increasingly important for indoor radar applications, including multi-target localization, human position tracking, and hand gesture trajectory sensing. However, the angular resolution of compact FMCW radar systems is often constrained by the limited number of physical antenna elements, making it difficult to distinguish closely spaced targets without increasing hardware complexity, cost, and power consumption. This talk presents a virtual element (VE) approach to enhance the effective aperture of compact SIMO and MIMO FMCW radar systems, thereby

improving spatial resolution in indoor environments. By reconstructing equivalent array elements in the signal domain, the proposed method achieves sharper beamforming and finer angular discrimination without requiring additional physical antennas. Beyond localization, VE also shows strong potential for fine motion sensing, such as gesture trajectory tracking, where subtle spatial variations must be captured reliably over time. Overall, VE provides a practical, hardware-efficient, and scalable solution for high-resolution indoor radar sensing, making it a promising approach for next-generation radar sensing platforms.

15:50-16:40

Contact and Non-Contact Physiological Sensing via Microwave Sensors and Doppler Radar for Healthcare Applications

Chin-Lung Yang

Department of Electrical Engineering, National Cheng Kung University

Continuous monitoring of vital signs using noninvasive microwave technologies offers high sensitivity, deep penetration, and seamless integration, but practical deployment remains constrained by low signal-to-noise ratio (SNR), respiratory interference, and hardware distortions. This work presents a scalable, multi-distance framework combining microwave sensors and Doppler radar for accurate physiological monitoring. For near-field contact sensing, a circular substrate integrated waveguide (SIW) wrist pulse sensor is developed. By integrating an interdigitated capacitor (IDC)-loaded complementary split ring resonator (CSRR) with an axial capacitive extension (ACE), strong electric-field confinement is achieved, yielding a dielectric sensitivity of 5.85%. The sensor captures capillary-induced permittivity variations via low-cost demodulation, achieving a heart rate error of 0.35% versus clinical references. To bridge toward contactless operation, a mid-range sensing approach is introduced for in-vehicle use. An extensive design to enhance near field is demonstrated. For long-range monitoring, Doppler radar techniques are optimized for Doppler cardiogram (DCG) reconstruction under low SNR. A low-IF continuous-wave radar with chord-based demodulation and principal component analysis (PCA) mitigates DC offsets and I/Q imbalance without complex calibration. A SIMO CW radar further enhances performance using beamforming and frequency-domain processing to suppress respiratory interference. Experimental results show strong agreement with ECG references, with R-R interval errors of 5.23% and 7.53% for the low-IF and SIMO systems, respectively. Together, these approaches establish a versatile and accurate framework for continuous, noninvasive monitoring across contact and fully remote scenarios.

August 24 | Room2 (2F-Fisherman) Special session & Workshop Abstracts

10:20-11:10

Thermal insulation techniques of the cryogenic microwave measurement for superconducting quantum computers

Hiroyuki Kayano

Advanced Industrial Science and Technology (AIST)

Superconducting quantum computers are expected to be used for computation in various fields as next-generation computers. Because the signals from these quantum computers are extremely weak, signal reception in low-temperature environments for low-noise is necessary. Receiving these weak signals requires many low-temperature microwave circuits, and the development of these devices necessitates microwave measurement systems for low-temperature environments. This presentation introduces a technology for low-temperature microwave measurement using thermal insulation technology.

11:10-12:00

Semiconductor Quantum Technology: Microwave Interfaces and Opportunities

Tomohiro Otsuka

AIMR, RIEC, Tohoku University

Recent advances in quantum technologies, including quantum computing, have attracted attention. Among various platforms, semiconductor-based quantum systems, such as semiconductor qubits, have emerged as a promising approach due to their potential for scalability and integration using established semiconductor technologies. In this talk, I will provide an overview of semiconductor quantum technology based on quantum dots, with a particular focus on its interfaces with microwave technologies. Specifically, I will introduce RF reflectometry techniques used for qubit readout, as well as high-frequency circuits for qubit control. I will also discuss potential opportunities for future interdisciplinary research at the interface between semiconductor quantum systems and microwave engineering.

13:30-15:10

RF Scaling Bottlenecks in Modular Superconducting Qubit Systems

Wen-Sen Lu

PsiQuantum

As superconducting qubit platforms based on microwave control—such as transmon and fluxonium systems—scale toward modular and chiplet-based architectures, RF packaging and interconnect present increasingly important system-level design challenges. Relevant considerations include resonator footprint and routing density (e.g., mm-scale CPWs), dense control interconnects that may introduce parasitic coupling, heterogeneous RF transitions across wafer and package interfaces, and 3D enclosure strategies that mitigate cavity modes while potentially enabling seam and slotline resonances.

These effects can become more pronounced in modular assemblies and complicate conventional RF design workflows, where full-wave electromagnetic simulation at system scale is often impractical and cross-module coupling pathways may only emerge at higher levels of integration. This talk provides a high-level technical overview of RF packaging considerations in microwave-driven superconducting qubit systems and discusses hierarchical abstraction and modular co-simulation approaches.

14:20-15:10

Chip-scale beam shaping and steering enabled by metasurface-integrated silicon photonics

You-Chia Chang

Department of Photonics, National Yang Ming Chiao Tung University

Silicon photonics has enabled chip-scale devices capable of delivering free-space beams for the detection and manipulation of external objects. Key applications include LiDAR, free-space optical communication (FSO), microscopy, and trapped-ion quantum computing.

In the first part of this talk, I will present beam shaping using metasurfaces monolithically integrated with silicon photonic integrated circuits. We experimentally demonstrate diffraction-limited beam focusing and holographic image projection above the silicon photonic chip. Our demonstrations span both the telecommunication wavelength range using the Si platform and the visible wavelength range using the SiN platform.

In the second part, I will present a silicon photonic beam steerer based on a metalens focal plane array (FPA) and thermo-optic prisms, producing a steerable collimated beam for LiDAR and FSO systems. It features high beam quality, compact footprint, and robust calibration, achieving continuous steering over a large field of view of 62° and an average sidelobe suppression ratio of 19 dB. We demonstrate applications of this beam steerer in ranging and FSO.

15:50-16:40

Metamaterials: from invisibility cloak to future smart electromagnetic environment

Pai-Yen Chen

Department of Electrical and Computer Engineering, University of Illinois Chicago

Metamaterials and artificial electromagnetic media that are structured on the subwavelength scale have become a paradigm for engineering electromagnetic waves and ultimately controlling the amplitude, phase, spatial, spectral and temporal properties of signals. The research agenda is now shifting towards the metamaterial-devices ("meta-devices") or even metamaterial-systems ("meta-systems"), which achieve the unique and useful switching, nonlinear, sensing, and data processing functionalities on the subwavelength scale. I will describe some recent advancements on meta-devices made of metamaterials and metasurfaces, and practical uses and applications in invisibility, camouflaging (i.e., RCS reduction), electrically-small antennas, reconfigurable intelligent surfaces, and smart electromagnetic environments. I will present various passive and active metamaterial architectures designed for operation across diverse spectral regimes. I will summarize current commercialization activities and future prospects of metamaterials and metasurfaces in sensing, communication, imaging, and wireless power transfer, as well as beamforming and spatial-multiplexing for next-generation wireless networks with low latency, high channel capacity and high data rate.

16:40-17:30

Passive time-varying metasurfaces and their applications

Hiroki Wakatsuchi

Nagoya Institute of Technology

Metasurfaces allow us to tailor electromagnetic waves and fields at will via subwavelength elements, achieving exotic properties and phenomena such as negative refraction, artificial stop bands, subwavelength imaging, cloaking, and wavefront shaping. While these capabilities offer a high degree of freedom in addressing electromagnetic problems, the response of a conventional metasurface remains fixed at a given frequency. In this talk, we present circuit-based metasurfaces that respond differently even at a constant frequency, depending on the incoming waveform—more specifically, the pulse width. In particular, compared to conventional time-varying metasurfaces, our metasurfaces operate as passive structures that require no external power source other than the incident wave, thereby broadening their applicability to diverse conditions. We explain how such a passive time-varying mechanism is realized through equivalent-circuit models, and how it can be applied to specific application scenarios.

DAILY PROGRAM – AUGUST 25

Plenary Talk -

Heterogeneous Integrated Sub-THz Transceiver Frontend

Date/Time: August 25, 2026 | 08:50-10:00

Room: B1-Inhouse

Session Chair(s): Prof. Pei-Ling Chi (National Yang Ming Chiao Tung University, Taiwan)

Speaker: Prof. James C. M. Hwang (Cornell University, USA)

Heterogeneous integration of different kinds of chiplets on an interposer has been developed for digital and memory applications. Heterogeneous integration for RF applications is just emerging. In this case, with only a few input/output channels, there is plenty of room in the bulk of the interposer for passives such as combiners, filters, duplexers, and antennas that are much more efficient than their thin-film counterparts. This makes it possible to have a complete RF frontend on an interposer. In particular, at sub-THz frequencies (100-300 GHz), substrate-integrated waveguides (SIWs) can have much lower loss than microstrip or coplanar transmission lines. With the signal fully enclosed in the SIW, transmit and receive channels can be placed next to each other without crosstalk. Thus, a linear phased array, with each transceiver confined to a half wavelength, can be fabricated on the same interposer. In turn, the interposers can be stacked to form a 2D end-firing array. These points will be illustrated through the GaN-on-SiC technology. However, similar heterogeneous integration approaches are applicable to other device technologies and interposer materials.

DAILY PROGRAM – AUGUST 25

Session: TU1A - Phased Arrays

Date/Time: August 25, 2026 | 10:20 ~ 12:00

Room: B1-Inhouse

Session Chair(s):

Prof. Li-Chi Chang (National Taiwan Ocean University, Taiwan)

Prof. Liang-Yu Ou Yang (National Central University, Taiwan)

- 1571276563 (Invited) A $\lambda/2$ -Pitch Full-Fed Transceiver for 300-GHz CMOS Phased Arrays
Authors : Minoru Fujishima (Hiroshima University, Japan)
- 1571276551 High-Gain Planar Circularly Polarized ME Dipole Array with Wide Axial Ratio and Impedance Bandwidth for Millimeter-wave Applications
Authors : Arpan Desai and Nirbhay Bhojani (Pandit Deendayal Energy University, India); Yi-Fan Tsao and Heng-Tung Hsu (National Yang Ming Chiao Tung University, Taiwan)
- 1571285764 Design of an Air-Filled Cavity Duplexing 1x2 Patch Antenna Array Utilizing Slot Decoupling Fed for 5G/B5G Applications
Authors : Jyun-Hua Chen and Li-Chi Chang (National Taiwan Ocean University, Taiwan)
- 1571286884 Spatially Selective RIS Antenna Array Frontend with Neutralization Line Decoupling
Authors : Zhan-Rui Wang and Chia-Yi Yeh (National Taiwan University, Taiwan)
- 1571286804 Wideband 4 by 4 Microstrip Antenna Array with H-Slot Coupling for Ka-Band LEO Satellite Communications
Authors : Pei-Hsuan Yang and Chien-Chang Huang (Yuan Ze University, Taiwan)

Session: TU1B – Rectifiers and Energy Harvesting

Date/Time: August 25, 2026 | 10:20 ~ 12:00

Room: 2F-Fisherman

Session Chair(s):

Prof. Chin-Chun Meng (National Yang Ming Chiao Tung University, Taiwan)

Prof. Kenjiro Nishikawa (Kagoshima University, Japan)

(Invited) From Heaviside's Distortionless Line to Standard Silicon IC Technology: A Renaissance After More than a Century

Authors : Chin chun Meng (National Yang Ming Chiao Tung university, Taiwan)

1571275788 A 920 MHz Single-Shunt Rectifier Considering Metal Surface Irregularities Caused by Inkjet Printing

Authors : Hiroto Sakaki (Mitsubishi Electric Corporation, Japan); Shin Yokomura (University of Kagoshima, Japan); Daisuke Yasunobu and Kenjiro Nishikawa (Kagoshima University, Japan)

1571276807 Performance Optimization of RF Energy Harvesting IoT Systems Operating Within Cast-Iron Box

Authors : Yuta Ide (Hinode Holdings Ltd., Japan); Hayato Tanaka and Kaito Nakabuchi (Kyushu University, Japan); Tatsuya Yamaguchi (HINODE, Ltd., Japan); Eiichi Tateishi (Hinode Holdings Co. Ltd., Japan); Haruichi Kanaya (Kyushu University, Japan); Nobuhiro Kai (Hinode Holdings Ltd., Japan)

1571286158 An Analytical Harmonic-Aware Model for Predicting Diode Loss and Output Power in RF Rectifiers

Authors : Qingkun Lyu (Kagoshima University, Japan); Hiroto Sakaki (Mitsubishi Electric Corporation, Japan); Kenjiro Nishikawa (Kagoshima University, Japan)

1571287101 A Broadband High-Efficiency Rectifier With a T-Type Impedance-Compression Matching Network

Authors : Jianwei Jing and Naoki Shinohara (Kyoto University, Japan)

Session: TUPO - POSTER

Date/Time: August 25, 2026 | 13:30 ~ 15:10

Room: B1-Inhouse

Session Chair(s): Prof. Kun-You Lin (National Taiwan University, Taiwan)

- 1571266185 Simulation of a Broadband Calibration Fixture for Testing Cable Characterizations up to 56 GHz
Authors : Mei-Hui Wang (National Taiwan University of Science and Technology & BizLink International Corporation, Taiwan); Ding-Bing Lin (National Taiwan University of Science and Technology, Taiwan)
- 1571270914 A High-Selectivity Quad-Mode Stub-Loaded Resonator Bandpass Filter with Enhanced Transmission Zeros
Authors : Shu-kuang Lin, Chi-Feng Chen, Chung-Ting Liu, Kuan-Chih Chen and Mind-Ze Wu (Tunghai University, Taiwan)
- 1571274816 A 21-28 GHz Full 360° Reflection-Type Phase Shifter with a Biphasic Modulator
Authors : Yu-Teng Chang and Kuo-Chih Chou (National Taiwan Normal University, Taiwan)
- 1571274931 A 6-Watt GaN Power Amplifier for K-band Satellite Communication Systems
Authors : Yi-Fan Tsao and Heng-Tung Hsu (National Yang Ming Chiao Tung University, Taiwan); Oliver Hilt (FBH, Germany); Serguei Chevtchenko (Ferdinand-Braun-Institut, Leibniz-Institut für
- 1571275798 Miniaturized Printed Monopole with Tri-Band Operation for Wi-Fi 7 and 6G Upper Mid-Band Applications
Authors : Saou-Wen Su, Yu-Jung Chueh, Chun-Yu Liu, Yen-Lin Chen and Kang-Chun Peng (National Kaohsiung University of Science and Technology, Taiwan)
- 1571276881 A Novel Design Approach for Broadband PAs Based on Fundamental Impedance Matching with Suppressed Load Variation
Authors : Tatsuya Itoh and Shinichi Tanaka (Shibaura Institute of Technology, Japan)
- 1571277298 Efficient Multi-Beam Network Design Using Simplified Rotman Lens Model for TE₁₀ Operation at W-Band Frequencies
Authors : Wei Wang (China); Xun Jiang (Nanjing University of Aeronautics and Astronautics, China); Zhongliang Li (Southeast University, China); Yu Yang (University of Electronic Science and Technology of China, China); Guixiang Jin and Weifeng Sun (Southeast University, China); Zhongyuan Fang (Southeast University, Singapore)
- 1571280345 A Galinstan-Based Reconfigurable Reflectarray for Wide-Angle and Broadband Terahertz Beam Scanning
Authors : Liang-Yu Ou Yang, Siang-Cyun Liao and Quan-Hai Wu (National Central University, Taiwan)
- 1571280489 Planar Lens with Phase-shifting Surface for Enhancing Antenna Array Performance in Low-orbit Satellite Communication
Authors : Mon-Li Chang, Ding-Bing Lin and Hunhung Kao (National Taiwan University of Science and Technology, Taiwan)
- 1571281334 X/Ku Band VCO Using the Current Reuse Technique to Integrate a Frequency Doubler and Positive Feedback Loop
Authors : Kun-Jie Sun and Yu-Teng Chang (National Taiwan Normal University, Taiwan)

- 1571281681 Wideband Transition Between Rectangular Waveguide and Substrate Integrated Waveguide for D-Band Applications
Authors : Bing-Hong Liu and Ding-Bing Lin (National Taiwan University of Science and Technology, Taiwan); Wei-Hsiu Tsai and Tzu-Fang Tseng (BizLink International Corporation, Taiwan)
- 1571281870 A Modified Bandpass Filter Applicable to Relatively Narrowband Designs
Authors : Kuo-Lun Sun and Pu-Hua Deng (National University of Kaohsiung, Taiwan)
- 1571281901 Switchable Low-Pass/Bandpass Filter
Authors : Kuo-Lun Sun and Pu-Hua Deng (National University of Kaohsiung, Taiwan)
- 1571281915 A Reconfigurable Power Divider with Inter-Port Isolation and Unequal Power-Division Modes
Authors : Kuo-Lun Sun and Pu-Hua Deng (National University of Kaohsiung, Taiwan)
- 1571282054 A Switchable Power Divider With Consideration of the Parasitic Effects of PIN Diodes
Authors : Chun-Yu Sun, Chih-Chi Liang and Pu-Hua Deng (National University of Kaohsiung, Taiwan)

Session: TU2B - Power Amplifiers

Date/Time: August 25, 2026 | 13:30 ~ 15:10

Room: 2F-Fisherman

Session Chair(s):

Prof. Yu-Teng Chang (National Taiwan Normal University, Taiwan)

Prof. Jeng-Han Tsai (National Taiwan University, Taiwan)

- 1571276620 (Invited) Powering the Future of Wireless: From Analog Amplifiers to Fully Digital RF
Authors : Anding Zhu (University College Dublin, Ireland)
- 1571285630 (Invited) An AI-Assisted E-Band CMOS Power Amplifier with Transformer-Based Matching
Authors : Pei-Hsiang Wang, Yunshan Wang and Huei Wang (National Taiwan University, Taiwan)
- 1571277300 A 1.8-2.7 GHz 400 W Sequential LMBA Using a Novel Reference Impedance Optimization Method
Authors : Hirotaka Asami, Seiji Fujiwara and Takashi Maehata (Sumitomo Electric Industries, Ltd., Japan)
- 1571280977 A Broad K-Band Two-Stage Darlington Power Amplifier in 0.12-um GaN HEMT Technology
Authors : Pei-Ling Chi and Shao-Wei Huang (National Yang Ming Chiao Tung University, Taiwan); Tao Yang (IEEE, USA)
- 1571284591 A 37-40 GHz 0.12-μm GaN Compact Doherty Power Amplifier Using a Miniaturized Wilkinson Divider
Authors : Hsin-Yu Chen, Tai-An Chen, Wan Hsuan Chang and Hong-Yeh Chang (National Central University, Taiwan)

Session: TU3A – Passive Circuits

Date/Time: August 25, 2026 | 15:50 ~ 17:30

Room: B1-Inhouse

Session Chair(s):

Prof. Xi Zhu (University of Technology Sydney, Australia)

Prof. Tao Yang (University of Electronic Science and Technology of China, China)

- 1571294154 (Invited) Reconfigurable and Multi-functional RF Front-End Chip Design for Wireless System
Authors : Tao Yang (University of Electronic Science and Technology of China, China)
- 1571282234 A D-band Low Insertion Loss Miniature Wilkinson Power Divider in 65 nm CMOS Technology
Authors : Zi-Wei Shao, Chen-Ping Hung, Chen-Yu Wang and Chien-Nan Kuo (National Yang Ming Chiao Tung University, Taiwan)
- 1571287509 Automated Bandwidth-Maximization Synthesis of RF Lumped-Element Bandpass Filters
Authors : Tianqi Chen, Wei Huang, Xu Cheng and Xi Zhu (University of Technology Sydney, Australia)
- 1571284810 Study on a Low-Loss Single-Coupler 360° Phase Shifter for 5.8 GHz Wireless Power Transfer
Authors : Tomoki Yoshida, Naoki Shinohara and Tomohiko Mitani (Kyoto University, Japan); Bo Yang (Xidian University, China)
- 1571295134 Wideband Decoupling Circuit Design for Radio Frequency Interference Suppression in High-Speed Connector System
Authors : Hong-Ru, Wu, Chih-Yu Fang and Tzong-Lin Wu (National Taiwan University, Taiwan)

Session: TU3B - Advanced mmWave Research in Compound Semiconductor Technologies

Date/Time: August 25, 2026 | 15:50 ~ 17:30

Room: 2F-Fisherman

Session Chair(s):

Dr. Yin-Cheng Chang (Taiwan Semiconductor Research Institute, Taiwan)

Prof. Wen-Jie Lin (National Taiwan Ocean University, Taiwan)

- 1571286367 **Toward Highly Integrated Sub-THz RF Front-Ends: Insights from IPD-Based Antenna, Filter, and Transition Designs**
Authors : Ta-Yeh Lin, Shuw-Guann Lin, Chaoping Hsieh, Ping-Yeh Yin and Da-Chiang Chang (Taiwan Semiconductor Research Institute, National Institutes of Applied Research, Taiwan)
- 1571287065 **High-Efficiency GaN MMIC Power Amplifiers: Harmonic-Tuning, Continuous-Mode, and mm-Wave Design Techniques**
Authors : Pei-Xuan Lin (National Tsing Hua University, Taiwan); Sih-Han Li (Industrial Technology Research Institute, Taiwan); Yu-Hsiang Shang and Po-Yu Lee (National Tsing Hua University, Taiwan); Hsin-Chieh Lin and Da-Chiang Chang (Taiwan Semiconductor Research Institute, Taiwan); Shawn S. H. Hsu (National Tsing Hua University, Taiwan)
- 1571287074 **Large Language Model-Enabled Synthesis of GaAs pHEMT Distributed Amplifiers**
Authors : Ting-Pin Hsu and Xu Jiang (National Taiwan University, Taiwan); Austin Chen (University of California, Santa Cruz, USA); Chung-Tse Michael Wu (National Taiwan University, Taiwan)
- 1571287205 **Comparative Analysis of Alloy and Epitaxial Regrowth Ohmic Contacts in GaN-on-Si HEMTs for RF Applications**
Authors : Tsung-Lin Lee, Po-Yen Huang, Shawn S. H. Hsu and King-Yuen Wong (National Tsing Hua University, Taiwan)
- 1571287269 **Recess-Free Ultra-Thin InAlGa/GaN HEMTs on Si for Millimeter-Wave Low-Noise Applications**
Authors : Hsuan-Yao Huang, Po-Wei Chen and You-Chen Weng (National Yang Ming Chiao Tung University, Taiwan); Huan-Chung Wang (National Chiao Tung University, Taiwan); Fitriyadi, Jui-Sheng Wu and Cheng-Jun Huang (National Yang Ming Chiao Tung University, Taiwan); Tai-Ping Sun (National Chi Nan University, Taiwan); Edward-Yi Chang (National Yang Ming Chiao Tung University, Taiwan)

DAILY PROGRAM – AUGUST 26

Session: WE1A – Antennas and Arrays II

Date/Time: August 26, 2026 | 08:20 ~ 10:00

Room: B1-Inhouse

Session Chair(s):

Prof. Chien-Nan Kuo (National Yang Ming Chiao Tung University, Taiwan)

Su-Wei Chang (Founder & President of TMYTEK)

(Invited) Frequency Reuse Satellite Communication Integrated Antenna

Authors : Ching-Kuang C. Tzuang (National Taiwan University, Taiwan)

1571285889 A Dual-Port Slot Antenna with DGS Design for Isolation and Bandwidth Enhancement

Authors : Yi-Chen Tsai and Li-Chi Chang (National Taiwan Ocean University, Taiwan)

1571283312 A Scalable Q-band DBF Array Antenna Integrated Tx Module Using NRZ 1-Bit BPDSM with Reduced Spurious Emission

Authors : Ryosei Miyagawa, Yuki Fujiya, Tomoyuki Furuichi, Satoshi Tsukamoto and Noriharu Suematsu (Tohoku University, Japan)

1571283889 An Active Retrodirective Backscattering Array with BPSK Modulation

Authors : Emma Rong (The Bishop's School, USA); Zhuo Xu and Jun Yin (University of Macau, Macao)

Shaping the 6G & NTN Era: Accelerating System Validation via Ready-to-Use FR2/FR3 Experimental Platforms and SATCOM Phased Array Antennas (PAA)

Speaker: Su-Wei Chang, Founder & President of TMYTEK

Session: WE1B – VCOs and Mixers

Date/Time: August 26, 2026 | 08:20 ~ 10:00

Room: 2F-Fisherman

Session Chair(s): Prof. Ho-Chang Lee (Chung Yuan Christian University, Taiwan)

- 1571285540 290 GHz Push-Push VCO with Body Voltage Control and Source Degeneration
Authors : Yu-Yun Cheng and Yu-Hsiang Cheng (National Taiwan University, Taiwan)
- 1571286734 A Low-Phase-Noise X-Band LC-VCO with Gate-Inductive Biasing and a Compact Trifilar Transformer
Authors : Ho-Chang Lee and Huang Yu-Ying (Chung Yuan Christian University, Taiwan)
- 1571287056 A 24–44 GHz CMOS Up-Conversion Mixer with Linearization Technique
Authors : Jeng-Han Tsai, Sheng-Cyuan Ding and Wen-Hung Liu (National Taiwan Normal University, Taiwan)
- 1571287394 A 2.03-mW VCO-ILFT Frequency Tripler Using a Monolithic Figure-Eight Transformer for Near-Ideal Phase Noise Preservation
Authors : Ho-Chang Lee and Sin Chen (Chung Yuan Christian University, Taiwan)

Session: WE2A – Transceiver and LNAs

Date/Time: August 26, 2026 | 10:20 ~ 12:00

Room: B1-Inhouse

Session Chair(s):

Prof. Jia-Shiang Fu (National Central University, Taiwan)

Dr. Yunshan Wang (National Taiwan University, Taiwan)

- 1571281916 Wi-Fi 7 Triple-Band Multi-LO Transceiver for IoT Applications
Authors : Pei-Si Wu (Sirius Wireless, Taiwan)
- 1571282259 A Full X-Band GaN Low-Noise Amplifier MMIC with sub 1.8 dB Noise Figure
Authors : Po-Pin Huang, Jia-Wei Ye, Yi-Qi Lin and Kun-You Lin (National Taiwan University, Taiwan)
- 1571285949 A Ka-Band Variable Gain Low Noise Amplifier with Three-Winding Transformer Technique
Authors : Hsuan-Wei Huang, Yunshan Wang and Huei Wang (National Taiwan University, Taiwan)
- 1571285951 A 24–43 GHz Low-Power Broadband LNA Utilizing Pole-Converging Technique for 5G Applications
Authors : Chiu Hsin Ya, Yunshan Wang and Huei Wang (National Taiwan University, Taiwan)
- 1571286700 A W-Band High-Gain Low Noise Amplifier Using Darlington Cascode Technique in 65-nm CMOS
Authors : Chun-Wei Hsu, Yunshan Wang and Huei Wang (National Taiwan University, Taiwan)

Session: WE2B – Radar and Sensing

Date/Time: August 26, 2026 | 10:20 ~ 12:00

Room: 2F-Fisherman

Session Chair(s): Prof. Chung-Tse Michael Wu (National Taiwan University, Taiwan)

- 1571282665 (Invited) Printable Nonlinear Tags and Handheld Devices for Clutter-Resilient Contactless Monitoring and Tracking
Authors : Changzhi Li and Leya Zeng (Texas Tech University, USA)
- 1571279972 Non-Invasive Microwave Sensing for Dental Caries Detection and Depth Estimation
Authors : Evelyn Ren (General Microwave Technologies, Inc., USA); Chien-Hsun Chen (Electric Connector Technology-US, USA)
- 1571284221 CSI-Based FR3 MIMO-OFDM ISAC Prototype for High-Resolution Sensing: Simulation and Experimental Validation
Authors : Mohammed Nurain Mustaque, Kang-Yu Teng, Po-Jui Huang, Chinmaya Tripathy and Tzyy-Sheng Jason Horng (National Sun Yat-sen University, Taiwan); Yu-Ming Chen, Chieh-Lung Lin and Cheng-Han Wu (Telecom Technology Center, Taiwan)
- 1571275961 Non-Invasive Affective Computing via Millimeter Wave Radar and EEG Signals
Authors : Samagra Singh (Mercedes-Benz R&D India, India); Nehal Parekh, Anushka Vagerwal and Gita Ramona Ghosh (Mercedes Benz R&D India, India)
- 1571283012 Flexible Magnetic-Induction Carotid Patch for Stenosis Monitoring
Authors : Ruo-Yin Wu, Hsin-Tung Lin and Ting-Wei Wang (National Tsing Hua University, Taiwan)

Session: WEPO – POSTER

Date/Time: August 26, 2026 | 13:30 ~ 15:10

Room: B1-Inhouse

Session Chair(s): Prof. Kun-You Lin (National Taiwan University, Taiwan)

- 1571287084 A K/Ka-Band Compact Dual-Band Balanced Power Divider with High Common-Mode Rejection
Authors : Wei-Chih Chang and Yo-Shen Lin (National Central University, Taiwan)
- 1571282951 A Switchable Patch Antenna Using PIN Diodes for 2.45-GHz and 5.8-GHz ISM Bands
Authors : Che-Ting Yeh (Google Taiwan); Jia-Shiang Fu (National Central University, Taiwan)
- 1571283164 A 31-45 GHz Wideband Cascode Doubly Neutralized CMOS Power Amplifier for 256-QAM Modulation
Authors : Tsai-Yun Liu, Guan-Min Li, Wan Hsuan Chang and Hong-Yeh Chang (National Central University, Taiwan)
- 1571283774 Field-Replaceable Waveguide Connectors Reaching 110 GHz
Authors : Alexander Chen and Yonghui Shu (Eravant, USA)

- 1571283790 **A State-of-the-Art G-Band Noise Source and Cryogenic Calibration Method for Sub-THz Noise Figure Measurement (140-220 GHz)**
Authors : Zi Wang and Yonghui Shu (Eravant, USA)
- 1571284519 **A Reconfigurable Liquid Reflective Metasurface for Microwave Beam Steering**
Authors : Yi-Zhen Chen, Jun-You Lin, Yu-Jun Wang and Liang-Yu Ou Yang (National Central University, Taiwan)
- 1571284932 **A 4.5-12.6 GHz Wideband Low-Power CMOS LNA Using Inverter-Based Resistive Feedback and Transformer-Coupled Matching in 0.18- μ m CMOS Technology**
Authors : Hui-Chih Lai and Hsin-Chieh Lin (Taiwan Semiconductor Research Institute, Taiwan); Ping-Yeh Yin (Taiwan Semiconductor Research Institute, National Institutes of Applied Research, Taiwan); Hwann-Kaeo Chiou (National Central University, Taiwan)
- 1571285757 **A 24-33 GHz Low Loss Asymmetric Traveling-Wave SPDT Switch Using 150 nm-GaN Technology**
Authors : Qu Zhang, Yunxu Zhao, Hanghai Du and Weichuan Xing (Xidian University, China); Hong Zhou (Xidian University, Xi'an, China); Yi Pei (Dynax, USA); Zhihong Liu, Jincheng Zhang and Hao Yue (Xidian University, China)
- 1571286276 **A Wideband GaN MMIC Power Amplifier**
Authors : Po-Pin Huang, Jia-Wei Ye and Kun-You Lin (National Taiwan University, Taiwan)
- 1571286335 **Beam Selection via Alternating Optimization for Sum Rate Maximization in Multi User Massive MIMO OFDM Systems**
Authors : Bo-Cheng Su and Yung-Fang Chen (National Central University, Taiwan)
- 1571286786 **50GHz RF Bonding Method Using EIA 01005 Surface Mount Devices**
Authors : Yu-Shao Jerry Shiao, Wen-Lin Chen and Kun-Ming Chen (Taiwan Semiconductor Research Institute, Taiwan); Guo-Wei Huang (Taiwan Semiconductor Research Institute & National Yang Ming Chiao Tung University, Taiwan)
- 1571287040 **Augmented Real-Valued MLP-Based Digital Predistortion for Microwave PAs in ILA Framework**
Authors : Yan-Chen Yu-Wen, Hong-Ming Huang and Hong-Yeh Chang (National Central University, Taiwan)
- 1571287058 **A 40-GHz Low-Noise Amplifier with 2.13-dB Noise Figure in 120-nm GaN HEMT Technology**
Authors : Shao-Ping Lo (Foxconn, Taiwan); Min-Hung Tseng and Jia-Shiang Fu (National Central University, Taiwan)
- 1571282099 **Phase-Aware Field Reconstruction for Enhanced Trilinear and Nonlinear Interpolation in Robotic 3D Near-Field Electromagnetic Mapping**
Authors : Zhen Lin (ISEN Yncrea Méditerranée, France); Anthony Volpellièrre, Baptiste Devau, Erwann Lubrano and Nathan Gorga (ISEN, France)

Session: WE3B – Radar Systems

Date/Time: August 26, 2026 | 13:30 ~ 15:10

Room: 2F-Fisherman

Session Chair(s):

Prof. Changzhi Li (Texas Tech University, USA)

Prof. Men-Tzung Lo (National Central University, Taiwan)

- 1571276231 (Invited) ISAC 4D Sensing for Human-Centric Applications: From Standardization to Prototype Development and Coverage Extension
Authors : Tzyy-Sheng Jason Horng (National Sun Yat-sen University, Taiwan)
- 1571284987 Coexistence-Friendly Fractional-N PQSIL Radar with Low Interference to Communication Systems for Noncontact Vital Sign Sensing
Authors : Iou Heng Chen, Ming-Huan Hsu, Zong-You Wu and Fu-Kang Wang (National Sun Yat-sen University, Taiwan)
- 1571287165 Cosine-Transform-Based Frequency-Estimation Algorithm (CTB-FEA) with Distributed MIMO Radar Systems for Multi-User Localization
Authors : Ming-Huan Hsu, Iou Heng Chen and Fu-Kang Wang (National Sun Yat-sen University, Taiwan)
- 1571295675 MIMO mmWave Radar-Derived Seismocardiography for Contactless Cardiac Dynamics Monitoring
Authors : Yi-Je Lin (National Yang Ming Chiao Tung University, Taiwan); Ruei-Jhe Chang, You-Lin Chen and Chen Lin Chen-Lin (National Central University, Taiwan); Geng-Shi Jeng (National Yang Ming Chiao Tung University, Taiwan); Men-Tzung Lo (National Central University, Taiwan)
- 1571295511 Acoustic-Optical SLAM: Persistent Glass Detection via Ultrasound-LiDAR Fusion
Authors : Xu Zhang, Tsung-Hung Chien, Kang-Lun Fong, Lan-Tien Liang and Geng-Shi Jeng (National Yang Ming Chiao Tung University, Taiwan)

Session: WE4A – Frequency Multipliers and Amplifiers

Date/Time: August 26, 2026 | 15:50 ~ 17:30

Room: B1-Inhouse

Session Chair(s):

Dr. Chau-Ching Chiong (Academia Sinica Institute of Astronomy and Astrophysics, Taiwan)

Prof. Chin-Lung Yang (National Cheng-Kung University, Taiwan)

1571294437 (Invited) A 65-nm CMOS W-Band Receiver Front-End with Low Phase Variation VGA and I/Q Imbalance Controlled Down-Conversion Mixer

Authors : Tian-Wei Huang, Shao-Chen Huang, I. Wang, Ting-Yu Chang, Yi-Wen Wang and Kai-Jie Chuang (National Taiwan University, Taiwan); Jeng-Han Tsai (National Taiwan Normal University, Taiwan)

1571278250 A 280-GHz 16.3-dB-gain sub-THz amplifier in 65-nm CMOS

Authors : Ming-Han He and Chun-Hsing Li (National Taiwan University, Taiwan)

1571285878 A 65nm CMOS D-Band Power Amplifier Achieving 10.6% Peak PAE and 25.2dB Peak Gain

Authors : Jui-Chun Lan and Jeng-Han Tsai (National Taiwan Normal University, Taiwan)

1571283027 Synthesizer with Differential Dual-edge Sub sampling and Phase Detector Combining Integer-N Modes of Fractional-N

Authors : Wen Cheng Lai (National Taiwan University of Science and Technology, Taiwan)

1571283093 An X-Band Wide-Ratio High-Order Injection-Locked Frequency Multiplier Using Waveform Shaping

Authors : Bang-Wei Wu, Cheng-En Tsai and Hong-Yeh Chang (National Central University, Taiwan)

Session: WE4B – System Applications

Date/Time: August 26, 2026 | 15:50 ~ 17:30

Room: 2F-Fisherman

Session Chair(s):

Prof. Chiu-Chih Chou (National Central University, Taiwan)

Seiji Fujiwara (Sumitomo Electric Industries, Ltd., Japan)

(Invited) RF Fully connected network (FCN) and concurrent multi-beam forming

Authors : Hojin Song (POSTECH, Korea); Inho Choi (POSTECH)

(Invited) Integrating Sustainable RF Engineering

Authors : Sulekha Chattopadhyay (California State Government, USA)

1571283585 Seasonal, longitudinal, and solar cycle dependence of equatorial plasma bubbles using the FormoSat7/COSMIC2 data

Authors : Lung-Chih Tsai (National Central University, Taiwan); Jun-Xian Lv (NCU, Taiwan)

1571286097 DDR to Antenna Coupling Path Visualization in Computer System via CC Method

Authors : Chung-Tzu Hsu and Chiu-Chih Chou (National Central University, Taiwan); YiShang Huang (MSI, Taiwan); Kuan-Hsueh Tseng (Micro-Star INTL CO., LTD, Taiwan)

1571294778 Low-Velocity CSI-Based Wi-Fi Sensing for Device-Free Respiratory Monitoring

Authors : Ching-En Hsu (National Taiwan University, Taiwan); Po-Hsien Chang and Yu-Hong Chen (National Central University, Taiwan); Chih-Ting Lin (National Taiwan University, Taiwan); Chen Lin Chen-Lin and Men-Tzung Lo (National Central University, Taiwan)

Closing/Awards

Date/Time: August 26, 2026 | 17:30~18:00

Room: B1-Inhouse

Session Chair(s): Prof. Chung-Tse Michael Wu (National Taiwan University, Taiwan)

MEMO



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透過高達 8 GHz 的即時頻寬、高動態範圍、低相位雜訊和高達 67 GHz 的頻率覆蓋範圍，擷取嚴苛的寬頻訊號。Keysight XA6 訊號分析儀專為需要更深入了解寬頻訊號行為的高頻驗證工作流程而設計。

- 高達 8 GHz 的分析頻寬
- 無雜散量測（預選至 67 GHz）
- GPU 加速量測

認識專業級 XA5 訊號分析儀

透過雙通道擷取、高達 2 GHz 的分析頻寬和快速掃描量測，更快地驗證複雜的 RF 訊號。Keysight XA5 訊號分析儀專為需要更寬廣可視範圍、精確 EVM 效能和更少設定變更的 RF 驗證工作流程而設計。

- 高達 2 GHz 的分析頻寬
- 雙通道擷取
- 快速掃描量測



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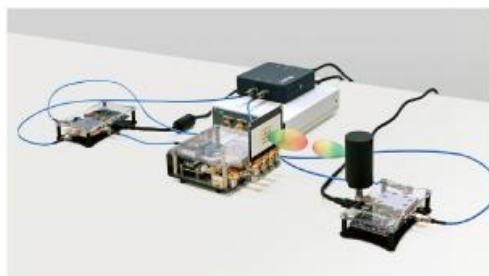
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- 調變頻寬：內部基頻提供高達 2 GHz 的 RF 調變頻寬
- 衰落模擬：內建一體化衰落模擬功能, 最高支援 800 MHz 頻寬 (同步模擬高達 64 個邏輯通道)
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- 直觀操作：高解析度觸控螢幕以動態「方塊圖 (Block Diagram)」為核心, 清晰呈現複雜信號流



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- 低雜訊與高線性度：軌跡雜訊低於 0.001 dB, 接收機線性度優於 0.03 dB
- 智能簡化校準：獨家 R&S SMARTerCal 技術, 連線一次功率感測器即可推導其他端口, 巨幅節省時間
- 變頻相位量測：得益於相干數位源, 量測混頻器時完全不需要外部參考混頻器

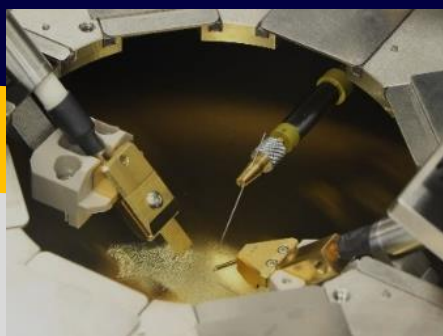
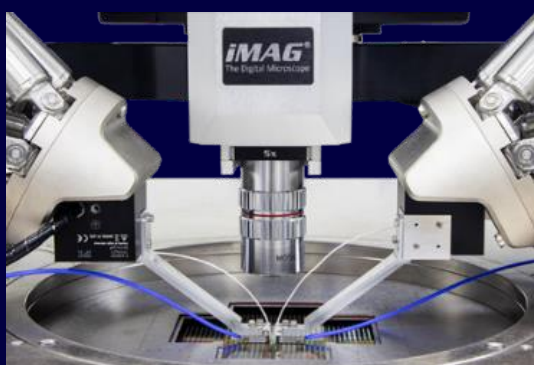


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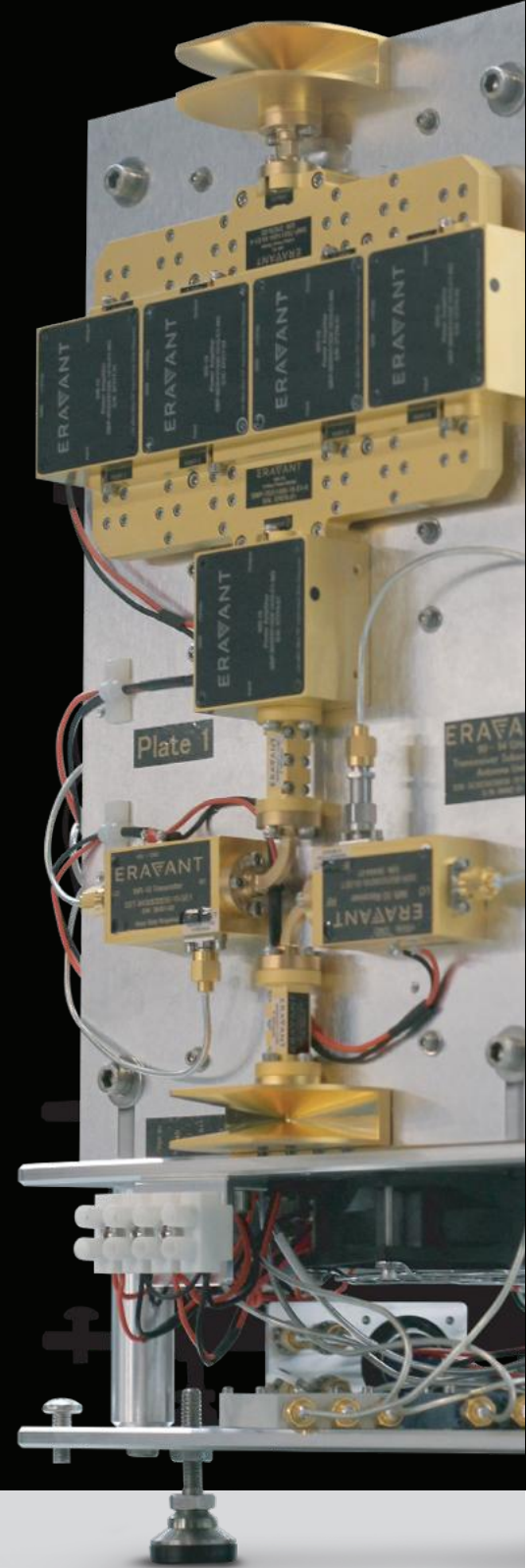
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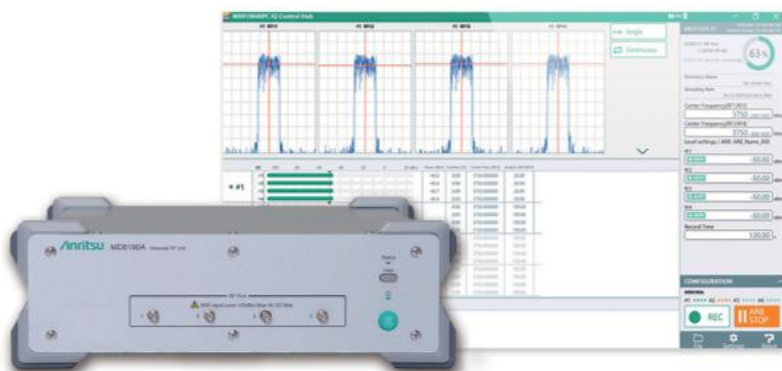


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設計與模擬



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- 真實 RF 擷取測試
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- 擷取訊號可直接載入 MATLAB 進行分析
- 具備多種操作模式，適用於室內及戶外動態量測
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