Space Microwave Week

12th – 16th May 2025

ESA/ESTEC, Noordwijk, The Netherlands

In association with EuMA

Preliminary Programme

ESA Conference Bureau / ATPI Corporate Events

(esaconferencebureau@atpi.com)

ESA-ESTEC, Keplerlaan 1
2201 AZ Noordwijk, The Netherlands

In association with: www.eumwa.org

EuMA

Programme at a Glance

Space Microwave Week, 12th - 16th May 2025, ESA-ESTEC

Monday 12th May		Tuesday 13th May			Wednesday 14th May			Thursday 15th May			Friday 16th May	
Time	Newton 1 + 2	Time	Newton 1	Newton 2	Time	Newton 1	Newton 2	Time	Newton 1	Newton 2	Time	Newton 1
		09:00 - 10:45	Active Array Technology & Techniques	Frequency and Time Generation	09:00 - 10:45	Low Noise Amplification	Filters and Multiplexers (I)	09:00 - 10:45	Transversal Technologies: mm-Wave & Photonics	Filters and Multiplexers (III)	09:00 - 11:05	Equipment & Technology for Remote Sensing (II)
		10:45 - 11:15	*Coffee Break*		10:45 - 11:15	*Coffee Break*		10:45 - 11:15	*Coffee Break*		11:05 - 11:25	*Coffee Break*
10:30 - 13:30	*Registration*	11:15 - 13:00	Telecom Equipment & Technology (II)	GaN Technology for Space Applications	11:15 - 13:00	Silicon RF Technologies (II)	Filters and Multiplexers (II)	11:15 - 13:00	Transversal Technologies: Advanced Manufacturing (I)	Passive Technologies for Space	11:25 - 13:00	*SMW '23 Closing Ceremony*
		13:00 - 14:00	*Lunch Break*		13:00 - 14:00	*Lunch Break*		13:00 - 14:00	*Lunch Break*			
13:30 - 15:00	*SMW '23 Opening Ceremony*	14:00 - 15:45	Silicon RF Technologies (I)	RF Active Design Solutions	14:00 - 15:05	Silicon RF Technologies (III)	Advanced Integration and Packaging	14:00 - 15:45	Transversal Technologies: Advanced Manufacturing (II)			
15:00- 15:30	*Coffee Break*	15:25 - 15:55	*Coffee Break*		15:05 - 15:35	*Coffee Break*		15:45 - 16:15	*Coffee Break*			
15:30 - 17:35	Telecom Equipment & Technology (I)	16:15 - 17:30	Silicon Technologies Panel Session		15:35 - 17:00	Measurements & Characterization	Multipactor Prediction and Mitigation	16:15 - 17:20	Equipment & Technology for Remote Sensing (I)			
18:00 - 20:00	Welcome Reception				18:00 - 22:00	SMW '23 Gala Dinner						

Monday 12th May 2025

Monday							
12/05/2023				Rooms Newton 1 & 2			
10:30	03:00	13:30		***Registration***			
13:30	00:15	13:45		***Conference Opening***			Welcome address by ESA and EuMA
13:45	00:15	14:00					Conference Introduction (ESA)
14:00	00:30	14:30					Plenary - BIOMASS: ESA's P-band Radar Mission - Michael Fehringer (ESA)
14:30	00:30	15:00					Plenary - IRIS 2 - Piero Angeletti (ESA)
15:00	00:30	15:30		Coffee Break			
				Session MON01			
				Telecom Equipment & Technology (I)			
15:30	00:25	15:55	102	**New Space, New Solutions - Optimising design for speed, scalability and affordability**	**Tudor Williams**	**Filtronic**	
15:55	00:20	16:15	25	GaN MMIC Based Solid State Power Amplifier for X Band for Long Range High Capacity Communication	Benoit Lefebvre	Thales Alenia Space	
16:15	00:20	16:35	111	Characterization of a V-Ka band receiver module with ultra low noise figure, high gain and linearity for geostationary satellite communication	Sascha Krause	Kongsberg	
16:35	00:20	16:55	4	Mars Connect: Surface-Orbital radio-communication system on Mars. Design and Testing.	José Raimundo Ruiz Carrasco	INTA	
16:55	00:20	17:15	97	Space Qualified Millimeter Wave TWTAs	Richard Kowalczyk	Elve Inc	
17:15	00:20	17:35	55	Autonomous RF Power Amplifier Control based on Machine Learning	Olof Bengtsson	Ferdinand-Braun-Institut (FBH)	
17:35	00:25	18:00		End of Day / Split Newton 1 & Newton 2			
18:00	02:00	20:00		***Welcome Reception (Erasmus)***			

Tuesday 13th May 2025

Tuesday 13/05/2023												
				Room Newton 1					Room Newton 2			
				Session TUE11					***Session TUE21***			
				Active Array Technology & Techniques					***Frequency and Time Generation***			
09:00	00:25	09:25	7	**Q-band Front End Radiating Module for next generation active antennas at Thales Alenia Space**	**Vincent Oullion**	**Thales Alenia Space**		63	**A compact two-photon Rb clock for ground applications with long-term stability below 1E-15**	**Sylvain Karlen**	**CSEM SA**
09:25	00:20	09:45	3	Ka-band HPA MMIC for active antenna front-end for secure communication services	Mario Ramírez-Torres	Airbus Defence and Space		88	Low phase noise millimetre-wave Voltage Controlled Oscillators based on electromagnetic bandgap resonators	Indra Ghosh	Imst Gmbh
09:45	00:20	10:05	38	High efficiency Ka-band Differential Radiating Front-End using GaN HPA MMICs and Dipole Waveguide Feeds	Marc van Heijningen	TNO		30	CW (Sub-)Millimetre Wave Clinotrons and Clinotron-Multipliers	Kostyantyn Ilyenko	IRE NAS of Ukraine
10:05	00:20	10:25	86	Statistical Analysis of Spectral Regrowth in Direct Radiating Arrays Considering Antenna Crosstalk for Multi-Beam Applications	Aymeric Cailleux	Thales Alenia Space		110	Microwave and THz Self-Oscillators in Vacuum Electron Devices and Avalanche Diodes	Kostyantyn LUKIN	IRE-NASU
10:25	00:20	10:45	51	Digital Predistortion in Digital Beamforming Transmitters for Satellite Communications	Pere L. Gilabert	Universitat Politècnica de Catalunya		76	High frequency, thermally stable dielectric resonator oscillators for new space applications	Przemyslaw Kant	Spaceforest
10:45	**00:30**	**11:15**	**Coffee Break**									
				Session TUE12					***Session TUE22***			
				Telecom Equipment & Technology (II)					***GaN Technology for Space Applications***			
11:15	00:25	11:40	92	**Optimisation of Earth Observation Downlink System Performance Using Analogue Lineariser in X band**	**Suat Ayoz**	**Honeywell International, Inc.**		901	**Sponsor Keynote - MACOM**	**Charles Edoua Kacou**	**MACOM**
11:40	00:20	12:00	67	Integration of a Ka-band satellite receiver system based on COTS components	Nieves García Alcaide	ALTER TECHNOLOGY TÜV NORD		2	Highly-Efficient High-Power GaN SSPA for VHF Space Radar Systems	Rocco Giofrè	University of Rome Tor Vergata
12:00	00:20	12:20	40	In-Orbit Demonstration of a Transponder and Antenna for K/Ka Band SATCOM	Francesco Adamo	University Of Trento		6	High Power Quad-Channel C-Band T/R Module for Spaceborne SAR Instruments	Andreas Fleckenstein	HENSOLDT Sensors GmbH
12:20	00:20	12:40	57	X-band TX/RX Adaptative Arrays for Small Portable Terminals	Lisa Berretti	IETR, INSA Rennes, France		98	C/X dual-band MMIC GaN HPA MMIC for Earth observation satellites	Patrick Longhi	Università Di Roma Tor Vergata
12:40	00:20	13:00	79	W-band Meander Line Slow Wave Structure for Compact Satellite Traveling Wave Tube	Claudio Paoloni	Lancaster University		54	MMIC Power amplifiers and LNAs in 100-nm GaN on SiC EU based technology for Q/V band VHTS and constellations.	Jordi Verdu	Universitat Autònoma De Barcelona
13:00	**01:00**	**14:00**	**Lunch Break**									
				Session TUE13					***Session TUE23***			
				Silicon RF Technologies (I)					***RF Active Design Solutions***			
14:00	00:25	14:25	87	**SiGe BiCMOS Technology for LEO SATCOM User Terminals: Current Status & Perspectives**	**Pascal Chevalier**	**STMicroelectronics**		96	**Evaluating RF Circuit Synthesis Methods: Insights from RapidIP for LNA and PA Design Across Wide Frequency Ranges**	**Florian Dietrich**	**High Frequency Electronics Chair, RWTH Aachen University**
14:25	00:20	14:45	104	Beamforming ICs in SOI Technology for Ku/Ka-band User Terminals and Payloads	Erik Öjefors	Sivers Semiconductors Ab		95	Simulating the effect of a Baseband Cancellation Network on Wideband Doherty Linearity using the Iterative Envelope Simulator	Indy Van Den Heuvel	Cardiff University
14:45	00:20	15:05	90	A distributed digital beamformer IC for Ka and Ku-band flat-panel arrays	Paul Morris	Ensilica plc		48	Power Amplifier Design for Integrated Multi-beam Active Antenna Arrays	Haijun Fan	Heriot-watt University
15:05	00:20	15:25	65	Exploring Hybrid True-Time-Delay and Phase-Shifter Based Beamformers for Wideband Large-Scale SATCOM Arrays	Basem Abdelaziz Abdelmagid	ETH Zürich		43	Mitigating High VSWR in Large-Scale Millimeter-Wave Phased Arrays: A Review of Power Amplifier Design Challenges and Topological Tradeoffs	Mohamed Eleraky	Swiss Federal Institute of Technology, ETH Zurich
15:25	00:20	15:45	801	SiGe foundry talk TBC		TBC		36	Wideband Matching Network Design for GaN Power Amplifiers Using Phase Optimization	Sergio Lopez de Pablo Oya	Universitat Autonoma de Barcelona
15:45	**00:30**	**16:15**	**Coffee Break / Open Newton 1 & Newton 2**									
				Rooms Newton 1 & 2								
				Session TUE04								
16:15	01:15	17:30		***Silicon Technologies Panel Session***								
				TBA								
17:30			**End of Day / Split Newton 1 & Newton 2**									

Wednesday 14th May 2025

Wednesday 14/05/2023			Room Newton 1				Room Newton 2			
				Session WED11				***Session WED21***		
				Low Noise Amplification				***Filters and Multiplexers (I)***		
09:00	00:25	09:25	10	**An Integrated W-Band Dual-Polarization Receiver Front-End Featuring Ultra-Low Noise Figure**	**Philipp Neininger**	**Fraunhofer Institute for Applied Solid State Physics IAF**	20	**Substrate embedded filters for microwave equipment**	**Markku Lahti**	**Vtt Technical Research Centre Of Finland**
09:25	00:20	09:45	91	Monolithic Integration of State-of-the-Art W-Band Low-Noise Amplifiers and Switches Using a 50-nm InGaAs mHEMT Technology	Fabian Thome	Fraunhofer IAF	21	Substrate-Embedded Filters for On-Board Microwave Equipment	Paolo Vallerotonda	RF Microtech
09:45	00:20	10:05	74	Ku- and Ka- Band GaN Low Noise Amplifiers for Earth Observation Systems	Beatriz Aja	Universidad de Cantabria	39	Software tool for designing electro-acoustic filters for space applications	Edgar Navarro-Gessé	Universitat Politècnica De Catalunya
10:05	00:20	10:25	89	Ultra-Low Voltage Ka-Band Amplifiers for Energy-Efficient SATCOM Systems	Sergio Colangeli	University of Roma Tor Vergata	23	EXTREMELY WIDEBAND AND PHASE LINEAR SURFACE ACOUSTIC WAVE (SAW) FILTERS USING SLANTED INTERDIGITAL TRANSDUCERS	Tormod Bjørnetun Haugen	Kongsberg Defence & Aerospace, Space Products
10:25	00:20	10:45	28	A 1.6 dB NF X-band LNA on 55 nm BiCMOS technology for SatCom applications	Mohammed Wehbi	Asygn Sas	5	Tunable acoustic filters for space applications	Jordi Mateu	Upc
10:45	**00:30**	**11:15**	**Cofffee Break**							
				Session WED12				***Session WED22***		
				Silicon RF Technologies (II)				***Filters and Multiplexers (II)***		
11:15	00:25	11:40	903	**Sponsor Keynote - Texas Instruments**	**Jason Clark**	**Texas Instruments**	19	**TM010 mode Dielectric-loaded S-band Diplexer for Small Satellite TT&C Applications**	**Paolo Vallerotonda**	**RF Microtech**
11:40	00:20	12:00	13	A 33 GHz Bandwidth 12.8 GSps 10-bit Analog-to-Digital Converter for Space and Ground Applications Enabling Direct Ka-band Conversion	Victoria Nasserddine	Teledyne e2v	83	Three- and four-sections coaxial stepped impedance resonators for Tx filters	Eric Rius	Lab-STICC/UBO
12:00	00:20	12:20	84	Technology Advancements in Europe regarding Beam Forming on Satellite Up-Link V-Band	Paolo Tabacco	Digimimic	27	Design of an L-Band Diplexer with Ceramic Coaxial Resonators for Space Applications	Laia Garcia	Universitat Autònoma De Barcelona
12:20	00:20	12:40	99	Taking a Leap in Integration Density for Radio Telescopes With a SiGe based Single-Chip LO Generation	Tobias T. Braun	Ruhr University Bochum	46	Integration of ceramic inserts for the production of compact Ku & Ka-band Tx filters	Hassan Kotaich	Xlim
12:40	00:20	13:00	108	Rad-Hard 32 GHz PLL/VCO Development at SAPHYRION	Yuval Bar Yossef	Saphyrion Sagl	93	A miniature surface mounted and temperature stable Ka band LMST filter for telecommunication satellite	Nicolas Delhote	Xlim
13:00	**01:00**	**14:00**	**Lunch Break**							
				Session WED13				***Session WED23***		
				Silicon RF Technologies (III)				***Advanced Integration and Packaging***		
14:00	00:25	14:25	196	**Efficient, Linear and Watt-Level Millimeter-Wave Amplifiers in Silicon-Germanium**	**Ahmet Cagri Ulusoy**	**Karlsruhe Institute of Technology**	68	**D-Band Phased Array Antenna for Miniaturised Inter Satellite Links**	**Adrian Gomez Torrent**	**Terasi**
14:25	00:20	14:45	107	Integrated Multiple Switch Beam Array Antenna for Resilient Communication Link M2m/Iot Applications	Emilio Arnieri	University Of Calabria	100	Advanced High Power Hermetic Sealed Package for Space Applications	Benajmin Falk	Tesat-Spacecom GmbH & Co. KG
14:45	00:20	15:05	52	D-band MMIC Chipsets: Challenges, Solutions, and Strategic Roadmap	Farshad Eshghabadi	VIPER RF Limited	106	Advanced Materials with tailored properties for packaging application	Erich Neubauer	Rhp-technology Gmbh
15:05	**00:30**	**15:35**	**Coffee Break**							
				Session WED14				***Session WED24***		
				Measurements & Characterization				***Multipactor Prediction and Mitigation***		
15:35	00:25	16:00	53	**Autonomous measurements and optimization of µW power transistors based on machine learning (ML)**	**Olof Bengtsson**	**Ferdinand-Braun-Institut (FBH)**	16	**Holistic Prediction Techniques for the Estimation of the Multipactor Power Threshold with Modulated Signals in Narrow-Band RF Devices.**	**Raúl Cervera-Marín**	**Val Space Consortium**
16:00	00:20	16:20	44	Characterization method for a GaN based Amplifier, controlled in amplitude and phase through IQ modulator and drain bias regulation.	Fabrizio Marrese	Leonardo Spa	17	Analysis and Configuration of a Fast Coarse Method for Multipactor Power Threshold Estimation in Passive RF Components under Modulated Signal Excitation	Miguel Rodríguez	Val Space Consortium
16:20	00:20	16:40	64	A Low-Cost Phase Noise Measurement Setup Based on Six-Port Architecture	Prabhav Manchanda	Brandenburg University Of Technology Cottbus-senftenberg	18	Uncertainty budget for multipactor and corona testing	Martin García-Patrón	INTA (Spain)
16:40	00:20	17:00	103	Evaluation of heavy ions radiation hardness of a 10 W Ka-Band Power Amplifiier using 100nm GaN on Si	Charles Edoua Kacou	Macom	12	On the Impact of Envelope Variations on Power Handling for a Short-End λg/2 Four-Section Two-Order Filter for Space Applications	Karim Kouny	Lab-STICC UMR CNRS 6285
17:00	01:00	18:00	**End / Travel to Gala Dinner**							
18:00	**04:00**	**22:00**	***SMW Gala Dinner***							

Thursday 15th May 2025

Thursday 15/05/2023												
				Room Newton 1					**Room Newton 2**			
				Session THU11					***Session THU21***			
				Transversal Technologies: mm-Wave & Photonics					***Filters and Multiplexers (III)***			
09:00	00:25	09:25	37	**Development of high power ≈100 GHz waveguide photomixer sources.**	**Peter Huggard**	**Millimetre Wave Technology Group, RAL Space**	58	**Ultra-Narrowband 0.66 THz Waveguide Filter With Wide Spurious-Free Window for Space Sounders and Imagers**	**Lu Qian**	**University Of Birmingham**
09:25	00:20	09:45	31	Spectral Tailoring of Electro-Optic Comb for Tunable THz wave Generation and MWP RF Filter	Sanghoon CHIN	CSEM	35	Advances on Compact Realizations of Wideband Filters in Microstrip Technology	Carlos Pons	Universitat Politècnica De València
09:45	00:20	10:05	47	Performance Evaluation of Polymer Microwave Fibers Under Twisting Conditions	Samir Lagoug	Bordeaux Inp / Ims Laboratory	24	3D-Printed Coaxial-Line Filters for Earth Observation applications	Michal Baranowski	Gdansk University Of Technology
10:05	00:20	10:25	101	Graphene-based high-speed optoelectronic sampling at 1.55 µm	Delphine Pommier	Thales Research And Technology	34	High-Performance 3D-Printed Copper Waveguide Bandpass Filter for Q-band Ground Station Application	Lu Qian	University Of Birmingham
10:25	00:20	10:45	66	Design of a Thin-Film Lithium Niobate PIC for a Photonic-based Radiometer part of a 12U CubeSat System	Jessica César-Cuello	University Carlos III Of Madrid	9	Very Compact High Power Broadband Filter Design Satisfying High Rejection Demands Tight to Passband and Over a Wide Frequency Range	Mustafa Bakr	University of Oxford/St Peter
10:45	**00:30**	**11:15**	**Cofffee Break**									
				Session THU12					***Session THU22***			
				Transversal Technologies: Advanced Manufacturing (I)					***Passive Technologies for Space***			
11:15	00:25	11:40	14	**Additive manufacturing of fully metallic dual polarized leaky-wave antennas array for polarimetric radar application**	**Valentin Lourenço Martins**	**Onera**	81	**High-Power Feeding Network for Deployable VHF Band Antenna**	**Jorge Daniel Martínez**	**Universitat Politècnica De València**
11:40	00:20	12:00	42	Evaluation of LPBF Printed TE011 Mode Cylindrical Cavity Resonators	Emelia Hayward	University Of Birmingham	94	Design of Reactive Combiners to Enhance Graceful Degradation	Antonio Morini	Dipartimento Ingegneria Dell'informazione
12:00	00:20	12:20	72	Micro-metal Additive Manufacturing technology for High-Frequency Applications	Hiba Lahlimi Alami	Xlim Laboratory - Limoges University	11	Waveguide Switch based on friction free mechanism	Angel Iglesias	Almatech SA
12:20	00:20	12:40	49	Abrasive Flow Machining for Enhancing Surface Quality of 3D-Printed Millimetre-Wave Waveguides	Lu Qian	University Of Birmingham	8	Compact and mass-producible low-power cross-polarization load for Active Antennas	Christian Arnold	Tesat
12:40	00:20	13:00	85	THz antennas – enabled by silicon micromachining	Joachim Oberhammer	Kth Royal Institute Of Technology	69	Novel Broadband Low-Loss WR28-to-AFSIW Transition	Jean-Charles HENRION	IMS Bordeaux
13:00	**01:00**	**14:00**	**Lunch Break / Open Newton 1 & Newton 2**									
				Rooms Newton 1 & 2								
				Session THU03								
				Transversal Technologies: Advanced Manufacturing (II)								
14:00	00:25	14:25	902	**Sponsor Keynote - Progress of metal 3D printing in space antennas and RF components at SWISSto12**	**TBC**	**Swissto12**						
14:25	00:20	14:45	60	INWAVE Project: High-Resolution Additive Manufacturing for Integrated Q, V, and W Band Passive RF Hardware	Vaclav Pejchal	Csem						
14:45	00:20	15:05	26	INWAVE Project: Design and High-Resolution Additive Manufacturing of Q, V, and W Band Waveguide Components for Highly Integrated RF Front-Ends	Gines Garcia-contreras	Univ Rennes, INSA Rennes, CNRS, IETR						
15:05	00:20	15:25	77	Q/V-band Metal 3D-Printed Integrated Passive Feed Chain for Ground Segment Gateways	Yi Wang	University Of Birmingham						
15:25	00:20	15:45	56	Development of a Q/V-band Triangular-Waveguide Antenna-Feed Chain through Additive Manufacturing	Oscar Antonio Peverini	CNR-IEIIT						
15:45	**00:30**	**16:15**	**Coffee Break**									
				Session THU04								
				Equipment & Technology for Remote Sensing (I)								
16:15	00:25	16:40	22	**Development of RF front-ends and novel internal calibrators for Copernicus Imaging Microwave Radiometer**	**Petri Piironen**	**ESA**						
16:40	00:20	17:00	59	Characterisation of Absorbing Materials for a Supra-Terahertz Calibration Target using Terahertz Time Domain Spectroscopy	Mikko Kotiranta	University Of Bern						
17:00	00:20	17:20	61	Noise Sources for Internal Calibration Sub-Systems at mm-Waves	Bersant Gashi	Fraunhofer Institute for Applied Solid State Physics IAF						
17:20			**End of Day**									

Friday 16th May 2025

Friday 16/05/2023					Rooms Newton 1 & 2		
					Session FRI01		
					Equipment & Technology for Remote Sensing (II)		
09:00	00:25	09:25		80	**COWVR: Long-Term In-Space Assessment of a New Low-Cost Conical Microwave Polarimetric Imager Design**	**Shannon Brown**	**Jet Propulsion Laboratory**
09:25	00:20	09:45		45	From Concept to Standard: The 89GHz Direct Detection Evolution	Matthias Hoefle	ACST GmbH
09:45	00:20	10:05		15	Multifrequency MM-Wave Radar for Advancing Atmospheric Science	Raquel Rodriguez Monje	Jet Propulsion Laboratory
10:05	00:20	10:25		71	TERACUBE: SUB-MILLIMETER HETERODYNE INSTRUMENT CONCEPT AND INVESTIGATION FOR CUBESAT IN VENUSIAN ENVIRONMENT	Jeanne Treuttel	Observatoire De Paris
10:25	00:20	10:45		82	Results from the Electrojet Zeeman Imaging Explorer (EZIE) mission	Sidharth Misra	Jpl-nasa, Caltech
10:45	00:20	11:05		73	GAAS SCHOTTKY MMIC MIXERS FOR TERAHERTZ SIGNAL DETECTION	Lina Gatilova	LERMA, Observatoire De Paris
11:05	**00:20**	**11:25**			**Cofffee Break**		
11:25	00:30	11:55			***Conference Closing***		Plenary - Arctic Weather Satellite - Daniele Gherardi (ESA)
11:55	00:30	12:25					Plenary - Rydberg Atom-Based Sensors - James Shaffer (CTO, WaveRyde Instruments)
12:25	00:15	12:40					Awards: Best Student paper and Young Scientist awards
12:40	00:20	13:00					Closing Remarks