



University of Pavia
Ph.D. School in Electronics, Computer Science and Electrical Engineering
Ph.D. School in Microelectronics

SEMINAR

Challenges in mm-wave test and measurement: from the device to the product

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Room: E7

Abstract: The spectrum portion between 60 and 110 GHz is gaining importance year by year mainly driven by the 5G paradigm. In the terrestrial scenario, V-band (40-75 GHz) is suitable for short-range communications while E-band (71-86 GHz) offers the widest channels for point-to-point (P2P) wireless links. Systems for the detection of space debris and high-speed space data links, instead, heavily rely on W-band, which spans from 75 to 110 GHz. To keep pace with these applications, high-performance components with enhanced reliability are urgently needed. The design of such systems is only part of the job of engineers: once the prototype has been manufactured, the DUT validation is mandatory to deliver a working product with the intended performance. In the mm-wave spectrum, the lack of standard commercial devices leads to the necessity of custom testing socket, transitions and mechanical assembly, which have to be carefully designed to primary privilege measurement reliability and avoid any performance drop. This seminar will cover the validation aspects of mm-wave systems, starting from the MMIC, to the waveguide assembly, to the final carrier-grade product.

Bio: Stefano Moscato was born in Pavia, Italy in 1988. He received the Ph.D. degree in electronics engineering from the University of Pavia, Italy, in 2016. He was a visiting Ph.D. student at Georgia Tech, Atlanta, GA, USA, in early 2015. He became part of the R&D microwave group of SIAE Microelettronica in May 2017. His research activities have been focused on RF-to-mm-wave passive component. From September 2022, Dr. Moscato is the head of the 1337 R&D group devoted to the design and validation of mm-wave passive components, antennas and sub-systems. He is involved in innovation programs and founded researches for microwave backhauling, O-RAN equipment, and space-oriented assemblies. He was a recipient of an IEEE MTTS Undergraduate/Pre-Graduate Scholarship in 2012, author of more than 40 papers on international journals and conferences. He has been the Chair of the IEEE Student Branch, University of Pavia, from 2013 to 2016.

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Seminar in English

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