



TARGET DAYS 2006

Programme

Date:

16-18 October 2006

Location:

Villa Mondragone
Via Frascati, 51
00040 Monte Porzio Catone
(Roma)
Italy



General Programme

Time	Monday, 16/10/06	Tuesday, 17/10/06	Wednesday, 18/10/06
09:00 – 10:15	Registration	<u>Session:</u> Device Modelling I	<u>Session:</u> Behavioural Modelling
10:15 – 10:45		<i>Coffee Break</i>	<i>Coffee Break</i>
10:45 – 12:00	Opening Session (10:30 – 12:00)	<u>Session:</u> Device Modelling II	<u>Session:</u> Wireless Systems and Components
12:00 – 13:30	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch (12:25-13:55)</i>
13:30 – 15:35	<u>Session:</u> Semiconductor Materials & Devices	<u>Session:</u> PA Design I	
15:35 – 16:05	<i>Coffee Break</i>	<i>Coffee Break</i>	
16:05 – 18:10	<u>Session:</u> RF Characterisation	<u>Session:</u> PA Design II	
19:30 – ...		Social Dinner	

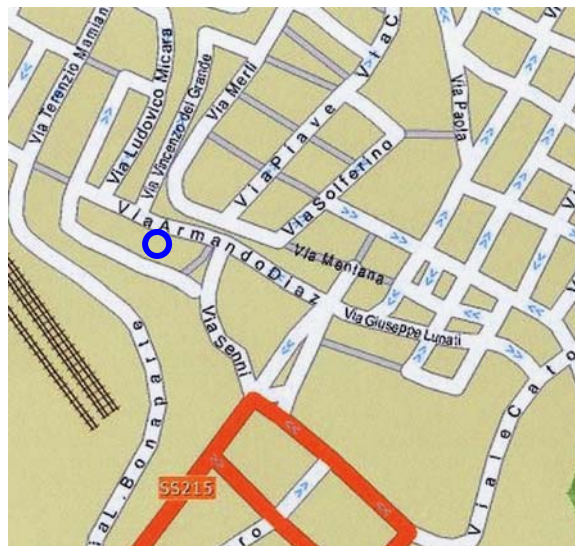
Social Dinner

Tuesday, 17 October 2006, 19:30

Ristorante Cacciani

Via Armando Diaz 13 – 00044 Frascati (Roma)

Tel. +39.06.9420378, +39.06.9401991 Fax +39.06.9420440





Monday, 16 October 2006, AM

10:30 – 12:00 Opening Session – Invited Papers

10:30 – 10:45 **Welcome Note**

Gottfried Magerl, TARGET Scientific Co-ordinator
Vienna University of Technology, Austria

10:45 – 11:10 **Trends and Challenges in European ICT RTD Policy for Industry and Academia**

Erich Prem
eutema, Austria

11:10 – 11:35 **Future Trends and Requirements of Wireless Communication Systems**

Wolfgang Bösch
Filtronic, UK

11:35 – 12:00 **RF Power Amplifier Linearisation – an Overview**

M. O'Droma¹, A.A. Goacher¹, E. Aschbacher², E. Bertran³, P. Colantonio⁴, S. Donati Guerrieri⁵, F. Filicori⁶, M. Gadringer², J. Luger⁷, A. Meazza⁸, M. Olavsbråten⁹, J. Portilla¹⁰, R. Quay¹¹, A. Zhu¹², K. Aamo⁹, J. Berenguer³, V. Camarchia⁵, N. Carpenzano⁶, F. J. Casas¹⁰, A. Cesare¹³, J. M. Collantes¹⁰, C. Devlin¹², G. Ghione⁵, P.L. Gilabert³, J. Jugo¹⁰, Y. Lei¹, T. Mathiesen⁹, N. Mgebrishvili¹, G. Montoro³, T. Parra¹³, M. Pirola⁵, M. Rossi⁴, J. Santiago¹⁰, T.J. Brazil¹², G. Magerl²

¹University of Limerick, Ireland, ²Technische Universität Wien, Austria, ³Universitat Politècnica de Catalunya, Spain, ⁴Università di Roma - 'Tor Vergata', Italy, ⁵Politecnico di Torino, Italy, ⁶Università di Bologna, Italy, ⁷Universität Stuttgart, Germany, ⁸CoRiTel, Italy, ⁹NTNU, Norway, ¹⁰University of the Basque Country, Spain, ¹¹FhG/IAF, Germany, ¹²UCD, Ireland; ¹³LAAS, France



Monday, 16 October 2006, PM

13:30 – 15:10 Semiconductor Materials and Devices Chair: Wolfgang Bösch

13:30 – 13:55 **Very High Power, Low-Cost Field-Plate GaAs PHEMTs for X-band Applications**

G. Ghione¹, C. Lanzieri², M. Peroni², S. Lavanga², A. Chini³, G. Verzellesi³, V. Camarchia¹, F. Cappelluti¹, A. Angelini¹, E. Limiti⁴, A. Serino⁴

¹Politecnico di Torino, Italy, ²SELEX – Sistemi Integrati, Italy, ³Università di Modena e Reggio Emilia, Italy, ⁴Università di Roma “Tor Vergata”, Italy

13:55 – 14:20 **Compound Semiconductors Two-terminal Devices Technology for Millimeter and Submillimeter Frequencies**

H.L. Hartnagel, Technische Universität Darmstadt, Germany

14:20 – 14:45 **Field Plate Approach to AlGaIn/GaN HEMTs for High Voltage Operation**

P. Romanini¹, M. Peroni¹, C. Lanzieri¹, A. Bettidi¹, L. Mariucci², A. Minotti², A. Chini³, E. Limiti⁴, A. Serino⁴

¹SELEX – Sistemi Integrati, Italy, ²Università di Modena e Reggio Emilia, Italy, ³CNR- Istituto di Fotonica e Nanotecnologie, Italy, ⁴Università di Roma “Tor Vergata”, Italy

14:45 – 15:10 **GaAs/GaN Foundry Approach to High-Performance and Solid State Microwave Power Technology**

C. Lanzieri, A. Bettidi, M. Calori, M. Cicolani, F. Corsaro, C. Costrini, S. Lavanga, L. Marescialli, M. Peroni, P. Romanini
SELEX – Sistemi Integrati, Italy

15:10 – 15:35 **Thermal Characterization of HF Power FETs**

D. Pogany¹, J. Kuzmik^{1,*}, S. Bychikhin¹, E. Pichonat², C. Gaquière³, K. Andersson⁴, C. Fager⁴, J.P. Teyssier⁵, J. Würfl⁶, M.A. di Forte-Poission⁷

¹Vienna University of Technology, Austria, ²Microwave LASIR UMR 8516 USTL, France, ³IEMN/TIGER Cite Scientifique, France, ⁴Chalmers University of Technology, Sweden, ⁵University of Limoges, ⁶Ferdinand-Braun Institut für Höchstfrequenztechnik, Germany, ⁷Alcatel/Thales, III-V Lab/TIGER, France, *also with Institute of Electrical Engineering, Slovakia

16:05 – 18:10 RF Characterisation Chair: Angel Mediavilla

16:05 – 16:30 **Advances in Load Pulling**

M. Mayer¹, H. Arthaber¹, G. Magerl¹, D. Köther², J. Lees³, J. Benedikt³, P.J. Tasker³

¹Vienna University of Technology, Austria, ²IMST, Germany, ³Cardiff University, UK

16:30 – 16:55 **A Network Analyzer System for Pulse Profile Measurements**

T. Bednorz, Rhode & Schwarz, Germany

16:55 – 17:20 **Nonlinear Characterization of Advanced GaN HEMT Devices**

V. Camarchia, V. Teppati, S. Donati Guerrieri, M. Pirola, G. Ghione, C.U. Naldi
Politecnico di Torino, Italy

17:20 – 17:45 **Multi-Tone Based AM-AM and AM-PM PA Characterization**

E.R. Srinidhi, B. Bunz, B. Wittwer, G. Kompa
Universität Kassel, Germany

17:45 – 18:10 **A Polynomial Fitting Based BIST Approach for RF PAs**

J. Machado da Silva, P.F. Mota, G. Pinho
INESC Porto, Portugal

09:00 – 10:15 Device Modelling I

Chair: Carlos Carmacho-Peñalosa

09:00 – 09:25 **Dynamic Electrothermal Modeling of GaN HEMTs as a Tool for Technology Assessment**

A. Angelini, F. Bonani, V. Camarchia, F. Cappelluti, S. Donati Guerrieri, G. Ghione, M. Pirola
Politecnico di Torino, Torino, Italy

09:25 – 09:50 **Accurate Small- and Large-Signal Predictions Using a Simple, Non-Quasi-Static, Empirical Model**

V. Di Giacomo¹, A. Santarelli², A. Raffo^{1,3}, P. A. Traverso², G. Vannini¹, F. Filicori²
¹University of Ferrara, Italy, ²University of Bologna, Italy, ³CoRiTel, Italy

09:50 – 10:15 **Impact of PA Long Term Memory Effects in Spatial Derivative Superposition Systems**

L. Cabria¹, J. A. Garcia¹, T. R. Cunha², A. Mediavilla¹ and J. C. Pedro²
¹Universidad de Cantabria, Spain, ²Instituto de Telecomunicações – Universidade de Aveiro, Portugal

10:45 – 12:00 Device Modelling II

Chair: Giovanni Ghione

10:45 – 11:10 **Device Level CAD Tools for Power Amplifier Design**

A. Gutiérrez¹, A. Mediavilla¹, T. Fernández¹, A. Tazón¹, J.A. García¹, G. Vanini², F. Filicori³, C. Camacho⁴, E. Márquez⁴, V. Comino⁴
¹Universidad de Cantabria, Spain, ²Università de Ferrara, Italy, ³Università di Bologna, Italy, ⁴Universidad de Málaga, Spain

11:10 – 11:35 **Novel Extraction Technique for Microwave Packages**

J.M. Zamanillo, C. Perez-Vega, A. Mediavilla
Universidad de Cantabria, Spain

11:35 – 12:00 **Two-Dimensional Numerical Simulation of AlGaIn/GaN HEMTs**

S. Vitanov¹, V. Palankovski¹, R. Quay², and E. Langer¹
¹Vienna University of Technology, Austria, ²Fraunhofer Inst. for Solid-State Physics (IAF), Germany

13:30 – 15:35 Power Amplifier Design I Chair: Franco Giannini

13:30 – 13:55 **Trend for Future WiMAX Base Station Power Amplifier**

J.C. Nanan¹, P. Gola¹, D. Sardin²

¹Freescale Semiconductor SAS, France, ²Limoges University, France

13:55 – 14:20 **Multiband and Reconfigurable PAs for Mobile Communications - Evaluation of Criteria**

Dietmar Köther¹, Alessandro Cidronali²

¹IMST, Germany, ²University of Florence, Italy

14:20 – 14:45 **Power Amplifier Processes and Devices for Space: From Discrete to Micromodules Through MEMS – Status and Future Outlook**

M. C. Comparini

Alcatel Alenia Space, Italy

14:45 – 15:10 **A 2.6W AlGaIn/GaN Based Symmetrical Doherty Amplifier Design**

A.Z. Markos, G. Kompa

Universität Kassel, Germany

15:10 – 15:35 **1.8GHz-2.5GHz LDMOS Push-Pull Integrated PA**

G. Bouisse

Freescale Semiconductor SAS, France

16:05 – 18:10 Power Amplifier Design II Chair: Dietmar Köther

16:05 – 16:30 **Design of 4W 6-18 GHz Highly Dense MMIC Power Amplifier Chip**

A. Manna¹, B. Orobello¹, G. Giolo¹, S. Lavanga², P. Romanini²

¹ELETTRONICA S.p.A., Italy, ²SELEX – Sistemi Integrati, Italy

16:30 – 16:55 **Gain and Noise Performance of Dual Band Distributed Amplifiers based on Composite Right/Left-Handed Transmission Lines**

T.M. Martín-Guerrero, J. Mata-Contreras, S. Pérez-Parras, C. Camacho-Peñalosa

Universidad de Málaga, Spain

16:55 – 17:20 **Design of a Single-Chip, Dual-Band (2.4-2.5 GHz -WLAN and 3.3-3.9 GHz -WiMAX), Class – A Power Amplifier using 0.25µm-SiGe HBT Technology**

M. Kaynak, I. Tekin, Y. Gurbuz

Sabanci University, Turkey

17:20 – 17:45 **The Latest Advances in Simulation and Design Flow Automation in Power Amplifiers Design**

M. Capodiferro, C. Gozzi

Ansoft Corporation, Italy

17:45 – 18:10 **Design Solution for Harmonic Matching Networks**

P. Colantonio, F. Giannini and L. Scucchia

Università di Roma "Tor Vergata", Italy

09:00 – 10:20 Behavioural Modelling Chair: Máirtín O'Droma

09:00 – 09:25 **Comparison of RF Power Amplifier Behavioural Models Estimated from Shared Measurement Data**

D. Silveira¹, M. Gadringer¹, P. L. Gilabert², G. Montoro², Y. Lei³, E.R. Srinidhi⁴, E. G. Lima⁵, V. Camarchia⁵, M. Pirola⁵, G. Magerl¹, E. Bertran², A.A. Goacher³, M. O'Droma³, G. Kompa⁴, S. Donati⁵
¹Vienna University of Technology, Austria; ²Technical University of Catalonia, Spain, ³University of Limerick, Ireland, ⁴University of Kassel, Germany, ⁵Politecnico di Torino, Italy

09:25 – 09:50 **Study of 3rd-Order Intermodulation Distortion in FET-Based Power Amplifier Circuits**

J. Santiago¹, J. Portilla¹, T. Fernández²
¹University of the Basque Country (UPV/EHU), Spain, ²University of Cantabria, Spain

09:50 – 10:15 **Lowpass Equivalent Behavioural Model for a Microwave Mixer**

P.M. Lavrador, J.C. Pedro, N.B. Carvalho
Instituto de Telecomunicações – Universidade de Aveiro, Portugal

10:15 – 10:45 Wireless Systems and Components Chair: Vitor Tavares

10:45 – 11:10 **Multiband and Reconfigurable Transmitter Architectures for Mobile Communications - Evaluation of Criteria**

I. Magrini¹, R. Fagotti¹, A.Cidronali¹, G. Manes¹, E. Bertran², P. Gilabert², D. Köther³
¹University of Florence, Italy, ²Technical University of Catalonia, Spain, ³IMST GmbH, Germany

11:10 – 11:35 **Integrated Components for Microwave Digital Radio**

M. Pagani
Ericsson Lab, Italy

11:35 – 12:00 **High Power Ku-Band T/R Flat Antenna with Polarization Adjustment**

L. Russo
Space Engineering, Italy

12:00 – 12:25 **Integrated Four Channel Receiver for Radar**

V. Dainelli, G. Pisano, L. Ricci, F. Serrano
Oerlikon Contraves, Italy

Sponsors



GAAS®



ALCATEL ALENIA SPACE
An Alcatel/Finmeccanica company



ANSOFT



SELEX
Sistemi Integrati



Space Engineering



Anritsu
Discover What's Possible™



ELETTRONICA S.p.A.



ROHDE & SCHWARZ



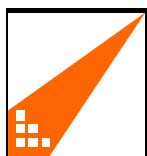
**OERLIKON
CONTRAVES**



freescale
semiconductor



ERICSSON



Top Amplifier Research Groups in a European Team
ftw. Forschungszentrum Telekommunikation Wien Betriebs-GmbH
Donau-City-Straße 1 | A - 1220 Vienna | Austria