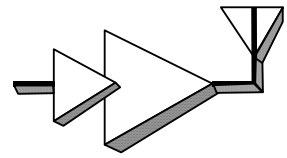


# 2008 IEEE Topical Symposium on Power Amplifiers for Wireless Communications Advance Program

**Monday, January 21, 2008**

- 7:30 am Registration and Continental Breakfast
- 8.15–10.00 **Session 1: Doherty and Outphasing Power Amplifiers**
- 8:15 Introduction and Welcome by Paul Draxler, Symposium Chair
- 8:30 1.1 "Microwave Doherty Power Amplifier for High Efficiency and Linearity"  
*(Invited)*  
Bumman Kim, Jangheon Kim, and Junghwan Moon,  
*Pohang University of Science and Technology (POSTECH), Pohang Korea*
- 9:00 1.2 "200W GaN Broadband, Quick-turn Doherty Amplifier"  
David W. Runton, Michael LeFevre, *RF Micro Devices, Chandler, AZ*
- 9:20 1.3 "A Practical Technique for Doherty Circuit Design"  
R. Sweeney, *RF Division, Freescale Semiconductor Inc, Tempe, AZ*
- 9:40 1.4 "Experimental Analysis of Efficiency vs. Linearity in LINC Amplifiers with  
Chireix Combiner"  
M. El-Asmar, W. Hamdane, A. Birafane and A. B. Kouki,  
*Ecole de Technologie Supérieure LACIME, Montréal, Canada*
- 10:00 **Coffee Break**
- 10.20–12.00 **Session 2: Power Amplifier Modeling**
- 10:20 2.1 "X-Parameters: Extending S-parameters for Measurement, Modeling, and  
Simulation of Nonlinear Components"  
Jason Horn, Loren Betts, Chad Gillease, Dan Gunyan, Jianjun Xu, Jan Verspecht,  
and David E. Root,  
*Agilent Technologies, Inc., Santa Rosa, CA, & Jan Verspecht, b.v.b.a., Belgium*
- 10:40 2.2 "Physically-based Behavioral Modeling of Power Amplifiers"  
Nima Safari, Terje Røste, J. Stevenson Kenney,  
*Department of Electronics and Telecommunications, NTNU, Norway, and the  
School of ECE, Georgia Institute of Technology, Atlanta, GA*



- 11:00 2.3 "Pseudo-independent Improvement of IM3 and IM5 in Power Amplifiers"  
Senad Bulja and Dariush Mirshekar-Syahkal,  
*Dept of Computing and Electronic Systems, University of Essex, Colchester, UK*
- 11:20 2.4 "Phase Distortion Mechanisms in Polar Modulators"  
Pavlo Fedorenko, Daniel Savio and J. Stevenson Kenney  
*School of ECE, Georgia Institute of Technology, Atlanta, GA*
- 11:40 2.5 "Peak to Average Power Ratio (PAPR) Reduction Technique for OFDM in Polar Transmitters with a Sigma Delta Modulator"  
Carole Devlin, J. Stevenson Kenney, Anding Zhu and Thomas J. Brazil  
*University College Dublin, Ireland, & Georgia Institute of Technology, Atlanta, GA*

12:00 **Lunch**

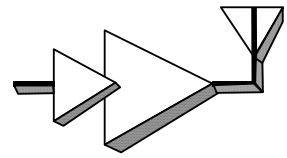
1.30–3.00 **Session 3: Microwave and Broadband Power Amplifiers**

- 1:30 3.1 "Wideband and Millimeter-wave Power Amplifiers for Aerospace/Defense Applications" (*Invited*)  
James J. Komiak, *Electronics & Integrated Solutions, BAE Systems, Nashua, NH*
- 2:00 3.2 "Issues in the Implementation of a 60-GHz Power Amplifier based on a 0.13- $\mu\text{m}$  CMOS Process for use in a WPAN Integrated Transceiver"  
Byron Wicks, Efstratios Skafidas, Rob Evans, and Iven Mareels,  
*National ICT and University of Melbourne, Australia*
- 2:20 3.3 "Tunable Power Stage for Multi-band High Efficiency Power Amplifier"  
Pascal Reynier, Alexandre Giry, Denis Pache, Jacques Verdier, and Christian Gontrand, *STMicroelectronics, Crolles, France, & INSA, Villeurbanne, France*
- 2:40 3.4 "Distributed Feedback Architecture and Analysis for Digitally Pre-distorted MCPA"  
Liang Hung and Mike Hodgetts, *Alcatel-Lucent, Whippany, NJ*

3:00 **Coffee break**

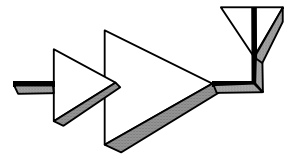
3.30–5.30 **Interactive Forum – Poster Session**

- P1 "A Practical Hybrid Class E Amplifier Design"  
Gayle Collins, John Wood, Mario Bokatius, Monte Miller,  
*RF Division, Freescale Semiconductor, Inc. Tempe, AZ*
- P2 "Second Harmonic Reduction in Broadband Parallel-Circuit Class E RF Power Amplifier"  
Kumar Narendra1, Lokesh Anand, and Arturo Mediano,



*Motorola Technology, Penang, Malaysia, University Science Malaysia, Penang, Malaysia, and University of Zaragoza, Spain*

- P3 "A SiGe Power Amplifier Dedicated to Power Management for 802.11n / 802.16e Standards"  
L. Leysenne, E. Kerhervé, Y. Deval, N. Deltimple, and Didier Belot,  
*CNRS, Bordeaux, France, and ST Microelectronics, Crolles, France*
- P4 "WCDMA Power Amplifier Front End Module for AWS-1 Band"  
Xiaofang Mu, Shiaw Chang, Gary Zhang,  
*Skyworks Solutions Inc., Newbury Park, CA*
- P5 "On-chip, Scaled Power Combining for Efficient, Wide Dynamic Range CMOS Power Amplifiers"  
Andrew Pye and Mona M. Hella, *Rensselaer Polytechnic Institute, Troy, NY*
- P6 "Signal Integrity and Efficiency Enhancement in Dynamically Biased SiGe HBT Power Amplifiers"  
A. Cidronali, I. Magrini, R. Fagotti, G. Manes, *University of Florence, Italy*
- P7 "Germanium Base Profile Optimization to Improve  $f_T$  Characteristics at High Injection in RF Power SiGe:C HBTs"  
P.M. Mans, S. Jouan, A. Pakfar, S. Fregonese, F. Brossard, A. Perrotin,  
C. Maneux, and T. Zimmer,  
*STMicroelectronics, Crolles, France, & Université Bordeaux, Talence, France*
- P8 "An EER transmitter with burst-width envelope modulation"  
Toshiro Koderu, Nobuhiko Ando, and Makoto Taromaruatr,  
*Wave Engineering Laboratories, Kyoto Japan*
- P9 "Design and Implementation of a 2KW S-Band Solid-State Amplifier for LINAC"  
Hamid Pahlevaninezhad, Davood Shekari Beyragh, Reza Motahari, Majid Pahlevaninezhad,  
*Information and Communication Technology Institute, Isfahan University of Technology*
- P10 "Digital and FPGA Techniques for RF PreDistortion"  
Mark Sterling, Mark Bocko, *University of Rochester, NY*
- P11 "Third-order Kernel Extraction of a Behavioral Model for Wideband RF Amplifiers"  
Javier Reina-Tosina, Mar'ia J. Madero-Ayora, and Carlos Crespo-Cadenas,  
*University of Seville, Sevilla, Spain*



- P12 "Performance Trade-offs in Applying Digital Predistortion Correction and Crest Factor Reduction to Enhance the Efficiency of GaN Linear Amplifiers"  
PremSwaroop, Walter Nagy, and Kevin G. Gard,  
*North Carolina State University, Raleigh, NC, & Nitronex Corporation, Durham, NC*
- P13 "Concurrent Dual-Band GaN Power Amplifier with Compact Micro-strip Matching Network"  
D. Bespalko, N. Messaoudi and S. Boumaiza  
*EmRG Research Group, University of Waterloo, Canada*

5:30 ***Reception***

6:30 ***Banquet***

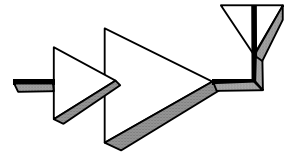
## Tuesday, January 22, 2008

8.00–10.00 **RWS Plenary Session**

10:00 ***Coffee Break***

10.30–12.00 **Session 4: High Efficiency Power Amplifiers**

- 10.30 4.1 "250W HVHBT Doherty with 57% WCDMA Efficiency Linearized to -55dBc for 2c11 6.5dB PAR" (***Invited***)  
C. Steinbeiser, T. Landon, and C. Suckling,  
*TriQuint Semiconductor, Richardson, TX*
- 11.00 4.2 "A 1.8GHz High Efficiency 30dBm LDMOS PA with Integrated Power Transformer and HBT Driver for EER applications"  
Alexandre Giry, Pascal Reynier, Christophe Arricastres, Denis Pache,  
*STMicroelectronics, Crolles, France*
- 11.20 4.3 "High efficiency envelope tracking overdriven class-A LDMOS power amplifier for base station applications"  
C. Hsia, D. Kimball, P. Draxler, J. J. Yan, J. Kinney, E. Toulouse, J. Wood, and P. M. Asbeck, *University of California, San Diego, La Jolla, CA & Freescale Semiconductor, Tempe, AZ*
- 11.40 4.4 "66% PAE envelope tracking GaN power amplifier for EDGE base stations applications"  
D. Kimball, C. Hsia, P. Draxler, J. Yan, P. Asbeck,  
*University of California, San Diego, La Jolla, CA*



12:00		<b><i>Lunch</i></b>
1.30–3.30		<b>Session 5: TU3C: Basestation Power Amplifiers</b> Joint Session with RWS
3:30		<b><i>Coffee break</i></b>
4.00–5.20		<b>Session 6: Handset Power Amplifiers</b>
4.00	6.1	"Multi-mode Push-pull BiCMOS Power Amplifier Design for the 824-915 MHz Cellular Band" M. P. van der Heijden, I. Volokhine, and P. N. Whatmough <i>NXP Semiconductors Research, Eindhoven, NL and Redhill, UK</i>
4.20	6.2	"Transistor Design Considerations for Power Amplifier Applications" Peter J. Zampardi, Juntao Hu, Cristian Cismaru, and Vijay Vijayakumar, <i>Skyworks Solutions Inc., Newbury Park, CA</i>
4.40	6.3	"Using Statistical Simulation to Guide Handset PA Design" Yingying Yang, Jane Xu, Pete J. Zampardi, and Mats Fredriksson, <i>Skyworks Solutions, Inc., Newbury Park, CA</i>
5.00	6.4	"Cellular Handset Power Amplifiers Based On Bulk Silicon and Silicon-On-Insulator (SOI) Technologies" Ali Tombak, Robert J. Baeten, and Jon D. Jorgenson, <i>R&amp;D Department, RFMD Inc. Greensboro, NC</i>
5:20		<b><i>Conclusion of Symposium</i></b>