

Publications within the KKS-Project “Radio Frequency Measurement Technology for Future Amplifiers and Transmitters”, Dnr 2006/0231. February 2007 – January 2010. Rev J

Dissertations

- [D1] M. Isaksson, "Radio Frequency Power Amplifiers. Behavioral Modeling, Parameter-Reduction, and Digital Predistortion." Doctoral Thesis in Telecommunications, Stockholm: Royal Institute of Technology, 2007.
- [D2] N. Björnsell, "Modeling Analog to Digital Converters at Radio Frequency" Doctoral Thesis in Telecommunications, Stockholm: Royal Institute of Technology, 2007.
- [D3] D. Wisell, "Measurement Techniques for Characterization of Power Amplifiers." Doctoral Thesis in Telecommunications, Stockholm: Royal Institute of Technology 2007.
- [D4] P. Landin, "On Radio Frequency Behavioral Modeling." Licentiate Thesis in Telecommunications, Stockholm: Royal Institute of Technology 2009.

Journal Papers

- [J1] D. Wisell, B. Rudlund, and D. Rönnow, "Characterization of Memory Effects in RF Power Amplifiers Using Digital Two-Tone Measurements," *IEEE Trans. Instrum. Meas.*, vol. 56, no. 6, pp. 2757-2766, 2007.
- [J2] D. Wisell, D. Rönnow, and P. Händel, "A Technique to Extend the Bandwidth of a Power Amplifier Test-bed," *IEEE Trans. Instrum. Meas.*, vol. 56, pp. 1488-1494, 2007.
- [J3] N. Björnsell, P. Händel, "Histogram Tests for Wideband Applications", *IEEE Trans. Instrum. Meas.*, vol. 57(1), pp. 70-75, 2008.
- [J4] N. Björnsell, P. Suchánek, P. Händel, and D. Rönnow, "Measuring Volterra kernels of analog to digital converters using a stepped three-tone scan," *IEEE Trans. Instrum. Meas.*, vol. 57(4), pp. 666-671, 2008.
- [J5] N. Björnsell, P. Händel, "Achievable ADC performance by post-correction utilizing dynamic modeling of the integral nonlinearity", *EURASIP Journal on Advances in Signal Processing* 2008, 2008:10 pages [Online]
- [J6] N. Björnsell, M. Isaksson, P. Händel, and D. Rönnow "Kautz-Volterra Modelling of Analogue-To-Digital Converters," *Computer Standards & Interfaces*, Accepted 2008.
- [J7] C. Luque and N. Björnsell, "Improved Dynamic Range for Multi-Tone Signals Using Model-Based Pre-Distortion," *Metrol. Meas. Syst. Vol. XVI*, No. 1 pp 129-141, 2009.
- [J8] P. Landin, M. Isaksson and P. Händel, "Extraction and Performance Evaluation Method for Increased Performance in RF Power Amplifier Behavioral Modeling," *International Journal of RF and Microwave Computer-Aided Engineering* Accepted 2009.
- [J9] C. Nader, P. Händel and N. Björnsell, "Peak-to-average power reduction of OFDM signals by convex optimization: experimental validation and performance optimization," *IEEE Trans. Instrum. Meas* Accepted 2010.

Conference Papers

- [C1] P. Händel, N. Björnsell and M. Jansson, "Model Based Dynamic Characterization of Analog-Digital-Converters at Radio Frequency --- Invited paper," 2007 International Conference on Signal Processing and its Applications, Sharjah, UAE 2007
- [C2] D. Wisell and P. Händel, "Implementation Considerations on the Use of Zhu's General Sampling Theorem for Characterization of Power Amplifiers," presented at IEEE Instrum. Meas. Tech. Conf., Warsaw, 2007, [#7203].
- [C3] D. Wisell, P. Stenvard, A. Hansebacke and N. Keskitalo, "Considerations when Designing and Using Virtual Instruments as Building Blocks in Flexible Measurement System Solutions," presented at IEEE Instrum. Meas. Tech. Conf., Warsaw, 2007, [#7137].
- [C4] N. Björnsell and P. Händel, "Post-Correction of Under-Sampled Analog to Digital Converters," presented at IEEE Instrum. Meas. Tech. Conf., Warsaw, 2007, [#7032].
- [C5] D. Wisell, M. Isaksson and N. Keskitalo, "A General Evaluation Criteria for Behavioral Power Amplifier Modeling," presented at ARFTG 69, Honolulu, USA, 2007, pp. 251-55.
- [C6] M. Isaksson, D. Wisell, A. Eng and D. Rönnow, "A Study of a Variable-Capacitance Drain Network's Influence on Dynamic Behavioral Modeling of an RF Power Amplifier," presented at ARFTG 69, Honolulu, USA, 2007, pp. 112-116.
- [C7] N. Björnsell, M. Isaksson, P. Händel, and D. Rönnow, "Kautz-Volterra Modelling of an Analogue-to-Digital Converter Using a Stepped Three Tone Excitation," in 12th

- Workshop on ADC Modeling and Testing Iasi, Romania, 2007.
- [C8] D. Wisell and M. Isaksson, "Derivation of a Behavioral RF Power Amplifier Model with Low Normalized Mean-Square Error", in *Proc. 37th European Microwave Conference (EuMC)*, Munich, Germany, 2007, pp. 1283-1286.
- [C9] D. Wisell, J. Jalden and P. Händel, "Behavioral Power Amplifier Modeling Using the LASSO", presented at IEEE Instrum. Meas. Tech. Conf., Victoria, Canada, 2008, pp. 1864-1867.
- [C10] P. Landin, M. Isaksson and P. Händel, "Comparison of Evaluation Criteria for Power Amplifier Behavioral Modeling," in *IEEE MTT-S Int. Microwave Symp. Dig.*, Atlanta, GA, 2008, pp. 1441-1444.
- [C11] O. Andersen, D. Wisell and N. Keskitalo "Measurement of ACLR with High Dynamic Range," in *IEEE MTT-S Int. Microwave Symp. Dig.*, Atlanta, GA, 2008, pp. 273-277.
- [C12] C. Luque and N. Björnsell, "Improved dynamic range for multi-tone signal using model-based pre-distortion," in 13th Workshop on ADC Modeling and Testing Florence, Italy, pp. 1003-1007, 2008
- [C13] E. Zenteno, M. Isaksson, D. Wisell, N. Keskitalo and O. Andersen, "An Envelope Domain Measurement Test Setup to Acquire Linear Scattering Parameters," in 72nd ARFTG Conf. Dig., Portland, OR, 2008, pp. 54-57.
- [C14] E. Zenteno, O. Andersen, M. Isaksson, N. Keskitalo and D. Wisell, "Nonlinear Network Analysis for Modern Communication Devices," in 72nd ARFTG Conf. Dig., Portland, OR, 2008, pp. 64-68.
- [C15] P. Landin, C. Fager, M. Isaksson, and K. Andersson "Power Amplifier Behavioral Modeling Performance Comparison of the LSNA and the Modulation-Domain System," in 72nd ARFTG Conf. Dig., Portland, OR, 2008, pp. 73-78.
- [C16] P. Landin, M. Isaksson, N. Keskitalo, and O. Tornblad, "Study of Memory Effects of RF Power LDMOS before and after Digital Predistortion," in *Proc. WAMICON 2009*, Clearwater, FL, USA, 2009.
- [C17] O. Andersen, N. Björnsell, and N. Keskitalo, "A Test-Bed Designed to Utilize Zhu's General Sampling Theorem to Characterize Power Amplifiers," in *I2MTC 09*, Singapore, 2009, pp. 201 – 204.
- [C18] C. Nader, H. Altahir, O. Andersen, N. Björnsell, E. Condo, N. Keskitalo, and H. d. I. Rosa, "Automated Multidimensional Characterization of Power Amplifier for Design and Production," in *I2MTC 09*, Singapore, 2009, pp. 144 – 147.
- [C19] P. N. Landin, C. Nader, N. Björnsell, M. Isaksson, D. Wisell, P. Händel, O. Andersen, and N. Keskitalo, "Wideband Characterization of Power Amplifiers Using Undersampling," in *IEEE MTT-S Int. Microwave Symp. Dig.*, Boston, MA, USA, 2009, pp. 1365-1368.
- [C20] P. N. Landin, O. Bengtsson, and M. Isaksson, "Power Amplifier Behavioural Model Mismatch Sensitivity and the Impact on Digital Predistortion Performance," in Proc. 39th European Microwave Conference (EuMC), Rome, Italy, 2009, 338-341.

Working Papers

- [W1] D. Wisell, P. Stenvard, A. Hansebacke and N. Keskitalo, "Considerations when Designing Virtual Instruments," Working Paper No 41, University of Gävle, Gävle Sweden, 2009.
- [W2] D. Wisell and P. Händel, "Simultaneous Measurement of Transmitter and Receiver Amplitude and Phase Ripple" Working Paper No 42, University of Gävle, Gävle Sweden, 2009.

Diploma Works

- [DW1] C. Luge, "Model-based pre-distortion for signal generators" Master's Thesis in Telecommunication, University of Gävle , ITB/Electronics, 2007
- [DW2] R. Rodriguez, "Network analyzer" Master's Thesis in Telecommunication, University of Gävle , ITB/Electronics, 2007.
- [DW3] E. Zenteno Bolanos, "Characterisation of Devices Using Scattering Parameters in Time Domain Measurements" Master's Thesis in Telecommunication, University of Gävle , ITB/Electronics, 2008.
- [DW4] Hibah, Al-Tahir, "Multidimensional Measurements on RF Power Amplifiers" Master's Thesis in Telecommunication, University of Gävle , ITB/Electronics, 2008.
- [DW5] Edith Graciela Condo Neira, "Multidimensional Measurements on RF Power Amplifiers" Master's Thesis in Telecommunication, University of Gävle , ITB/Electronics, 2008.
- [DW6] Suzan Jawdat, "Dynamic Nonlinear Pre-Distortion of Signal Generators for Improved Dynamic Range" Master's Thesis in Telecommunication, University of Gävle , ITB/Electronics, 2009.

Other Presentations/Publications

- [O1] D. Wisell and M. Isaksson, "Validation of Behavioral Radio Frequency Power Amplifier Models," presented at RF Measurement Technology Conference, Gävle 11th-12th of September, 2007.
- [O2] M. Isaksson, "Parameter-Reduction for Volterra Models in Radio Frequency Power Amplifier Applications," presented at RF Measurement Technology Conference, Gävle 11th-12th of September, 2007.
- [O3] Peter Händel, Niclas Björzell, Magnus Jansson and Samer Medawar, "Modeling of the Dynamics of Analog-Digital-Converters at Radio Frequency," presented at RF Measurement Technology Conference, Gävle 11th-12th of September, 2007.
- [O4] P. Landin and M. Isaksson, "A Review of Validation Criteria for Behavioral Power Amplifier Models," presented at GigaHertz Symposium, Gothenburg 5th-6th of March, 2008.
- [O5] C. Luque and N. Björzell, "Model-Based Pre-Distortion for Signal Generators," presented at GigaHertz Symposium, Gothenburg 5th-6th of March, 2008.
- [O6] C. Nader, H. Altahir, O. Andersen, N. Björzell, E. Condo, N. Keskitalo and H. de la Rosa, "Automated Multidimensional Characterization of Power Amplifier for Design and Production" presented at RFTCG (Ericsson Workshop) 5th-6th of March, 2008.
- [O7] P. Landin and M. Isaksson, "Model evaluation," presented at RFTCG (Ericsson Workshop) 5th-6th of February, 2009.
- [O8] M. Isaksson, "SVNA," presented at RFTCG (Ericsson Workshop) 5th-6th of February, 2009.
- [O9] P. Landin, M. Isaksson, N. Keskitalo, and O. Tornblad, "Sideband asymmetries in RF Power LDMOS Before and After Digital Predistortion," presented at RF Measurement Technology Conference, Gävle 6th-7th of October, 2009.
- [O10] C. Nader, P. Landin, N. Björzell, M. Isaksson, D. Wisell, P. Händel, O. Andersen and N. Keskitalo, "Wideband Power Amplifiers Characterization by Undersampling: Zhu-Frank Sampling Theorem," presented at RF Measurement Technology Conference, Gävle 6th-7th of October, 2009.

Publications about the Project

- [PP1] Gunnar Lilliesköld, "Gävle satte avancerad radioteknik på kartan," *Elektronik i Norden*, Nr. 14, p. 10, 2007.
- [PP2] Adam Edström, "Det goda exemplet i Gävle," *Elektroniktidningen*, Nr. 11, p. 11, 2007.
- [PP3] Per Henricsson, "Mätgurun i Gävle," *Elektroniktidningen*, Nr. 11, pp. 32-35, 2007.

