

# **2006 IEEE Annual Wireless and Microwave Technology Conference**

**Clearwater Beach, FL  
December 4-5, 2006**



**IEEE Catalog Number:  
ISBN:**

**06EX1628  
1-4244-0848-2**

# Table of Contents

<b>TAIL-BITING THEORY FOR TURBO CODES .....</b>	<b>1</b>
<i>Ying Wang, Xinjun Du, Hui Li, Xiaoyan Zhu</i>	
<b>Outage Probability of MRC Corrupted by Multiple Unequal-Power Interferers and Correlated Rayleigh Fading .....</b>	<b>5</b>
<i>Xiaodi Zhang, Norman C. Beaulieu</i>	
<b>Compact and simple diversity methods for mitigating severe fading .....</b>	<b>9</b>
<i>R. Ketcham, J. Frolik, B. Zivanovic, S. Melais, T. Weller</i>	
<b>An Optimum Ultra-Wideband (UWB) Bandpass Filter with Spurious Response Suppression .....</b>	<b>14</b>
<i>Hussein Shaman, Jia-Sheng Hong</i>	
<b>Wideband dual-band microstrip antenna for WLAN application using organic magnetic substrate .....</b>	<b>19</b>
<i>Wang encheng, Fang shaojun</i>	
<b>A Methodical Approach to Hybrid PLL Design for High-Speed Wireless Communications .....</b>	<b>22</b>
<i>Yair Linn</i>	
<b>A Multi-Band Stereo-Inverted F Antenna for Cellular Phone Applications.....</b>	<b>31</b>
<i>Sheng-Yi Huang, Jwo-Shiun Sun</i>	
<b>Evaluation of an MLP-based Direction of Arrival System Using Genetic Algorithm for Training.....</b>	<b>35</b>
<i>Hamed Movahedi Pour, Zahra Atlasbaf, Mohammad Hakkak</i>	
<b>A Coaxial Probe Fixture Used for Extracting Complex Permittivity of Thin Layers .....</b>	<b>40</b>
<i>M. MOUKANDA, F. NDAGIJIMANA, J. CHILO, P. SAGUET</i>	
<b>A comparison between different FHSS techniques for use in a multiple access secure wireless sensor network.....</b>	<b>44</b>
<i>Abdellah Chehri, Paul Fortier, Pierre-Martin Tardif</i>	
<b>Multi-Cell Coordinated Radio Resource Management Scheme Using a Cell-Specific Sequence in OFDMA Cellular Systems.....</b>	<b>48</b>
<i>Ki Tae Kim, Seong Keun Oh</i>	
<b>Application of Ad-hoc sensor networks for localization in underground mines .....</b>	<b>53</b>
<i>Abdellah Chehri, Paul Fortier, Pierre-Martin Tardif</i>	
<b>Integrated MicroPhotonic Beamformer for Broadband Adaptive Nulling in Smart Antennas .....</b>	<b>57</b>
<i>No Author listed</i>	
<b>Development of a CMOS Driver Circuit Connected to Transmission Line for High Speed and Low Power Optical Switch .....</b>	<b>58</b>
<i>H. Kanaya, S. Uehara, R. K. Pokharel, K. Yoshida</i>	
<b>Development of a Single-chip Power Amplifier with Transmission Line Based Impedance Matching Circuit.....</b>	<b>62</b>
<i>Haruichi Kanaya, Sangtae Kim, Ramesh K. Pokharel, Keiji Yoshida</i>	
<b>Low Noise Wideband CMOS Voltage Controlled Oscillator Using Mems Switch Technology.....</b>	<b>66</b>
<i>Shumin Zhang, Wansheng Su, Mona E. Zaghoul</i>	
<b>Characterization of Indoor Ultra-wide Band NLOS channel.....</b>	<b>71</b>
<i>Wang Yang, Chen Peipei, Zhi Xinwei, Zhang Qinyu, Zhang Naitong</i>	
<b>Designing a Multiple Access Differential Frequency Hopping System with Variable Frequency Transition Function .....</b>	<b>76</b>
<i>Ali Zibae Nejad, M. Reza Aref</i>	
<b>TACTICAL AD HOC SCENARIOS GENERATOR COUPLED WITH CHANNEL MODELING.....</b>	<b>78</b>
<i>B.L. Agba, F. Gagnon, A. Kouki,</i>	
<b>Precise Wireless Indoor Localization with Trilateration Based on Microwave Backscatter .....</b>	<b>83</b>
<i>Haytham Qasem, Leonhard Reindl</i>	

# Table of Contents

<b>Comparison of VCO Topology for Wideband Multi-Standard Applications .....</b>	<b>88</b>
<i>Shumin Zhang, Mona E. Zaghoul, Wansheng Su, Radmil Elkis, Chun-li Wu</i>	
<b>Performance Comparisons of UWB Selective Rake and Transmitted Reference Receivers under IEEE802.15.4a Industrial Environments.....</b>	<b>92</b>
<i>Huilong Gong, Hong Nie, Zhizhang (David) Chen</i>	
<b>PECVD Silicon Carbide as a Chemically-Resistant Thin Film Packaging Technology for Microfabricated Antennas.....</b>	<b>97</b>
<i>Maximilian C. Scardelletti, Nickolas C. Varaljay, Daniel R. Oldham</i>	
<b>An impedance-based model for the evaluation of IM3 in commercial amplifiers with memory .....</b>	<b>102</b>
<i>Javier Reina-Tosina, Maria J. Madero-Ayora, Carlos Crespo-Cadenas</i>	
<b>The Novel 3-Way Power Dividers/Combiners Structure and Design .....</b>	<b>106</b>
<i>Guan-Yu Chen, Jwo-Shiun Sun, Sen-Yi Huang</i>	
<b>Impact of Building Environment on the Performance of Dynamic Indoor Localization .....</b>	<b>110</b>
<i>Yiming Ji, Saad Biaz, Shaoen Wu, Bing Qi</i>	
<b>Selective Technique in Code Assignment Strategies for Wideband CDMA OVSF Code Tree Management .....</b>	<b>115</b>
<i>Serveh Rahimi</i>	
<b>Geolocation for UWB Networks in underground mines .....</b>	<b>119</b>
<i>Abdellah Chehri, Paul Fortier, Pierre-Martin Tardif</i>	
<b>A Linearized Cascode CMOS Power Amplifier.....</b>	<b>123</b>
<i>Sangwon Ko, Jenshan Lin</i>	
<b>Ultra-Wideband Printed Disk Monopole Antenna with Dual-Band Notched Functions .....</b>	<b>127</b>
<i>Chien-Ming Lee, Tzong-Chee Yo, Ching-Hsing Luo, Wen-Shan Chen, Chih-Ho Tu, Ying-Zong Juang</i>	
<b>Compact broadband stacked implantable antenna for biotelemetry with medical devices.....</b>	<b>131</b>
<i>Chien-Ming Lee, Tzong-Chee Yo, Ching-Hsing Luo</i>	
<b>Feasibility of EER Transmitters for 3GPP Applications .....</b>	<b>135</b>
<i>Milica Markovic, Hardik Modi</i>	
<b>Emerging Commercial Applications Using the 60 GHz Unlicensed Band: Opportunities and Challenges.....</b>	<b>137</b>
<i>Bruce Bosco, Rudy Emrick, Steve Franson, John Holmes, Steve Rockwell</i>	
<b>AlGaIn/GaN 120W WCDMA Doherty Amplifier with Digital Pre-Distortion Correction.....</b>	<b>141</b>
<i>M. J. Poulton, W. K. Leverich, P. Garber, J. B. Shealy, R. Vetury, J. D. Brown, D. S. Green, S. R. Gibb, D.K.Choi</i>	
<b>Efficient Relaying of Video Packets over Wireless Ad hoc Devices.....</b>	<b>144</b>
<i>Tien Pham Van</i>	
<b>Linearity Limitations of AlGaIn/GaN HFET's.....</b>	<b>149</b>
<i>Y. Liu</i>	
<b>Impedance Anomalies and RF Performance Limitations in AlGaIn/GaN HFET's .....</b>	<b>153</b>
<i>W. Kuang, R.J. Trew, G.L. Bilbro, Y. Liu, H. Yin</i>	
<b>A Fast Sequential Load-Pull Algorithm Implemented to Find Maximum Output Power .....</b>	<b>157</b>
<i>Charles Baylis, Steven Lardizabal, Lawrence Dunleavy</i>	
<b>Development of a New Physics-Based RF Model for AlGaIn/GaN HFETs.....</b>	<b>161</b>
<i>Hong Yin, G.L.Bilbro, R.J.Trew, Y.Liu, W. Kuang</i>	
<b>Frequency-multiplexed Inverted-F Antennas for Multi-band UWB .....</b>	<b>165</b>
<i>Magnus Karlsson, Pär Håkansson, Allan Huynh, Shaofang Gong</i>	
<b>Wireless IPTV over WiMAX: Challenges and Applications .....</b>	<b>168</b>
<i>Francis E. Retnasothie, M. Kemal Odemir, Teyfik Yucek, Hasari Celebi, Joseph Zhang, Ramesh Muththaiah</i>	
<b>MEMS Based Electrostatically Tunable Circular Microstrip Patch Antenna.....</b>	<b>173</b>
<i>Ronald E. Jackson, Jr., Ramesh Ramadoss</i>	

# Table of Contents

<b>X-Band MEMS Capacitive Shunt Switches with Metal-Insulator-Metal Contacts for Improved Isolation</b> .....	177
<i>T. Ketterl, T. Weller</i>	
<b>The Usage of Dielectric Resonator Filters in Microwave Frequency Synthesizers</b> .....	182
<i>Hakan P. Partal</i>	
<b>Capacity of Network Coding for Wireless Multicasting</b> .....	186
<i>Ali Eslami, Babak H. Khalaj</i>	
<b>Modeling of 3.1-10.6 GHz CMOS Filter-Based Low Noise Amplifier for Ultra-Wideband Receivers</b> .....	191
<i>Tamer Ragheb, Arthur Nieuwoudt, Yehia Massoud</i>	
<b>Piezo-Electric Energy Harvesting for Wireless Sensor Networks</b> .....	196
<i>Michael P. Buric, Dr. George Kusic, Dr. William Clark, Thomas Johnson</i>	
<b>Demonstration of Compact Microwave Photonic Crystal Channelizers and Displacement Tunable Filters</b> .....	201
<i>Chunchen Lin, Zhaolin Lu, Dennis W. Prather</i>	
<b>MEMS Based 3-D Micro Coaxial Transmission Lines</b> .....	205
<i>Saravana P. Natarajan, Thomas M. Weller</i>	
<b>Hardware Architecture Study for NASA's Space Software Defined Radios</b> .....	208
<i>Richard C. Reinhart, Maximilian C. Scardelletti, Dale J. Mortensen, Thomas Kacpura, Monty Andro, Carl Smith, John Liebetreu, Allen Farrington</i>	
<b>Experimental Investigation of Four Transmit Antenna Space-Time Block Codes</b> .....	213
<i>Ali Koc, Balkan Kecicioglu, Douglas Kim, Murat Torlak</i>	
<b>On the Design of Integrated Waveguides using a Dielectric-Metal Substrate Structure for On-Chip Optical Communication</b> .....	218
<i>Arthur Nieuwoudt, Amir Hosseini, Yehia Massoud</i>	
<b>Performance Evaluation of the Active-set Algorithm for Peak to Average Ratio Reduction in Wireless OFDM Communication Systems</b> .....	223
<i>Kamran Haider, Abbas Mohammed, Robert Baldemair</i>	
<b>Mitigating the Impact of Component Variations on Narrow-Band Low Noise Amplifiers for System-on-Chip Applications</b> .....	228
<i>Arthur Nieuwoudt, Tamer Ragheb, Yehia Massoud</i>	
<b>On the Intelligent Eavesdropping of Differential Frequency Hopping</b> .....	233
<i>Ali Zibae Nejad, Mohammad Reza Aref</i>	
<b>Source-Initiated Geographical Data Flow for Wireless Ad Hoc and Sensor Networks</b> .....	238
<i>Mujdat Soy Turk, Turgay Altılar</i>	
<b>A Novel Stateless Energy-Efficient Routing Algorithm for Large-Scale Wireless Sensor Networks with Multiple Sinks</b> .....	243
<i>Mujdat Soy Turk, Turgay Altılar</i>	
<b>Parasitic-Aware Analytical Modeling of Fully Integrated Switchable Narrow-Band CMOS Low Noise Amplifiers</b> .....	248
<i>Tamer Ragheb, Hamid Nejati, Arthur Nieuwoudt, Yehia Massoud</i>	
<b>Optimal Tapering Factor for Maximum Bandwidth RF Cascaded Amplifiers</b> .....	253
<i>Mohamed Elnozahi, Yehia Massoud</i>	
<b>Optimizing the Design of Tunable Spiral Inductors for On-Chip Wireless Applications</b> .....	257
<i>Arthur Nieuwoudt, Yehia Massoud</i>	
<b>The Transparent Monopole Antenna for WCDMA and WLAN</b> .....	262
<i>Chen-Tin Lee, Chien-Ming Lee, Ching-Hsing Luo</i>	
<b>A Medium Range Low-Cost Monopulse Radar System for Azimuth and Range Detection at 24GHz</b> .....	265
<i>Vicentiu Cojocar</i>	

# Table of Contents

<b>A Cross-Layer Design Technique for QoS over Optimized Route in MIP .....</b>	<b>268</b>
<i>Azimeh Sefidcon, Ferhat Khendek</i>	
<b>Balunless Microstrip to Waveguide Transition for X Band.....</b>	<b>273</b>
<i>Boro M. Reljic</i>	
<b>Ranging in the IEEE 802.15.4a Standard.....</b>	<b>276</b>
<i>Zafer Sahinoglu, Sinan Gezici</i>	
<b>Network Discovery with Directional Antennas .....</b>	<b>281</b>
<i>Thomas Heffner, Philip Huang, David Xia</i>	
<b>An Analog Mixed Signal Fourier Transform Pre-Processor for OFDM Receivers.....</b>	<b>293</b>
<i>Mark Lehne, Sanjay Raman</i>	
<b>An Overview of Volterra Series Based Behavioral Modeling of RF/Microwave Power Amplifiers .....</b>	<b>298</b>
<i>Anding Zhu, Thomas J. Brazil</i>	
<b>Achievements of European Research Cooperation on Microwave Amplifiers in the TARGET Network .....</b>	<b>303</b>
<i>Gottfried Magerl, Thomas J. Brazil</i>	
<b>TETRA Outdoor Large- Scale Received Signal Prediction Model in Riyadh City-Saudi Arabia.....</b>	<b>307</b>
<i>Faihan D. Alotaibi, Adel A. Ali</i>	
<b>The Impact of Base Current or Voltage Biasing On Characterization and Modeling of HBTs .....</b>	<b>312</b>
<i>B. Lee, L.P. Dunleavy, W. Clausen, D.P. Markell</i>	
<b>A Method for Deembedding Mixed-Mode Power and Reflection Coefficient Measurements .....</b>	<b>316</b>
<i>Alberto Rodriguez, Lawrence Dunleavy</i>	