

WE 3A

WE 4A

Wednesday, June 11, 2003

Co-chair: G. Manes, University of Florence

WE1A-1 8:00 AM	Large-Signal HBT Model with Improved Collector Transit Time Formulation for GaAs and InP Technologies M. Iwamoto, D.E. Root, J.B. Scott, A. Cognata, P.M. Asbeck, B. Hughes, and D. D'Avanzo	635
WE1A-2 8:20 AM	The Thermal Gain Effect in GaAs-Based HBT's W.R. Curtice, V. Hietala, E. Gebara, and J. Laskar	639
WE1A-3 8:30 AM	CMOS Large Signal Model for CAD I.M. Angelov, M. Fernhdal, F. Ingvarson, H. Zirath, and H. Vicks	643
WE1A-4 8:50 AM	Implementation of NQS Effects in Large-Signal BJT Models S.V. Cherepko and J.C.M. Hwang	647
WE1A-5 9:10 AM	Modeling Emitter Breakdown in GaAs-Based HBTs M. Rudolph, F. Schnieder, and W. Heinrich	651
WE1A-6 9:30 AM	Non-linear modeling of microwave PIN diode switches for harmonic and intermodulation distortion simulation V. Cojocaru and F. Sischka	655

Wednesday, June 11, 2003

Co-chair: H. Shigesawa, Doshisha University

WE2A-1 8:00 AM	Leaky Mode Missing From EM Simulators for Planar Circuits H. Shigesawa and M. Tsuji	661
WE2A-2 8:10 AM	Fundamental Properties of Radiation from a Leaky Mode Excited on a Planar Transmission Line W.L. Langston, J.T. Williams, D.R. Jackson, and F. Mesa	665
WE2A-3 8:30 AM	Simple Far-Field Model for Lateral Leakage in Printed Transmission Lines A.H. Kamel and A.S. Omar	669
WE2A-4 8:50 AM	New Interesting Leakage Behavior on Microstrip Lines with a slot on a Ground Plane M. Tsuji and H. Shigesawa	673
WE2A-5 9:10 AM	Modes on the Standard and Inverted Conductor-Backed Slotline J. Zehentner, J. Machac, J. Mrkvica, and C. Tuzi	677
WE2A-6 9:20 AM	Non-Orthogonality Relations Between Complex-Hybrid-Modes: An Application for the Leaky-Wave Analysis of a Laterally-Shielded Top-Open Suspended Microstrip Line J.G. Tornero and A. Melcón	681

Session WE3A

Power Amplifiers and Devices for Wireless Applications

8:00 – 9:40am

Room 204C

Wednesday, June 11, 2003

Chair: P. Zampardi, Skyworks Solutions

Co-chair: C. Weitzel, Motorola, Inc.

WE3A-1	Doherty Amplifier with DSP Control to Improve Performance in CDMA Operation	687
8:00 AM	Y. Zhao, M. Iwamoto, L.E. Larson, and P.M. Asbeck	
WE3A-2	Demonstration of on-chip Appended Power Amplifier for Improved Efficiency at Low Power	691
8:10 AM	Region	
	H-M. Park, S-H. Cheon, J-W. Park, and S. Hong	
WE3A-3	A fully integrated 4.8-6 GHz Power Amplifier with on-chip output balun in 38 GHz-f_T Si-	695
8:30 AM	Bipolar	
	W. Bakalski, W. Simbürger, R. Thüringer, H-D. Wohlmuth, and A.L. Scholtz	
WE3A-4	A High Performance RF Power Amplifier with Protection against Load Mismatches	699
8:50 AM	A. Scuderi, F. Carrara, A. Castorina, and G. Palmisano	
WE3A-5	Enhancement-Mode Power Heterojunction FET utilizing Re-grown P⁺-GaAs Gate with	703
9:10 AM	Negligible Off-state Leakage Current	
	Y. Bito, T. Ishigaki, H. Shimawaki, and Y. Nashimoto	
WE3A-6	High Efficiency 28V Class AB InGaP/GaAs HBT MMIC Amplifier with Integrated Bias Circuit	707
9:20 AM	N.L. Wang, C. Dunnrowicz, X. Chen, W. Ma, H. Chau, X. Sun, Y. Chen, B. Lin, I. Lo, C. Huang, and M.H.T. Yang	
WE3A-7	A Composite-Collector InGaP/GaAs HBT with High Ruggedness for GSM Power Amplifiers	711
9:30 AM	T. Niwa, T. Ishigaki, H. Shimawaki, and Y. Nashimoto	

Session WE4A

Advances in Microwave Oscillators

8:00 – 9:40am

Room 202A

Wednesday, June 11, 2003

Chair: O. Llopis, LAAS-CNRS

Co-chair: T. Ruttan, Intel Corp.

WE4A-1	A 2GHz Voltage Tunable FBAR Oscillator	717
8:00 AM	A. Khanna, E. Gane, and T. Chong	
WE4A-2	Performance comparison of 5GHz VCOs Integrated by CMOS compatible high Q MEMS	721
8:20 AM	inductors	
	E-C. Park, S-H. Baek, T-S. Song, J-B. Yoon, and E. Yoon	
WE4A-3	A 19 GHz Low Phase Noise HFET VCO MMIC	725
8:40 AM	T. Matsuzuka, K. Kawakami, Y. Aihara, T. Ishikawa, M. Komaru, and Y. Matsuda	
WE4A-4	A Low Noise 9.95/10.66GHz PLO For Optical Applications	729
9:00 AM	X.J. Gao, M. Koechlin, C. Lyons, J. Chiesa, G. Guven, and P. Katzin	
WE4A-5	A 1-V 2.4-GHz PLL synthesizer with a fully differential prescaler and a low-off-leakage charge	733
9:20 AM	pump	
	A. Yamagishi, M. Ugajin, and T. Tsukahara	

Session WE5A

Focused Session --Terahertz Technology

8:00 – 9:40am

Room 202B

Wednesday, June 11, 2003

Chair: P.H. Siegel, Caltech/JPL
Co-chair: J. Wiltse, Georgia Tech.

WE5A-1	Microfabrication of 3D Terahertz Circuitry	739
8:00 AM	C. Mann, P. de Maagt, G. McBride, F. van de Water, D. Castiglione, A. McCalden, L. Deias, J. O'Neill, A. Laisne, J. Teniente-Vallinas, I. Ederra, D. Haskett, D. Jenkins, A. Zinn, M. Ferlet, and R. Edeson	
WE5A-2	Terahertz Quantum Cascade Semiconductor lasers	743
8:20 AM	G. Davies and E. Linfield	
WE5A-3	A Planar-Diode Frequency Tripler at 1.9THz	747
8:40 AM	A.E. Maestrini, J. Ward, J. Gill, G. Chattopadhyay, F. Maiwald, K. Ellis, H. Javadi, and I. Mehdi	
WE5A-4	A 1.5 THz Hot-Electron Bolometer Mixer Operated by a Planar Diode Based Local Oscillator	751
8:50 AM	C-Y.E. Tong, D. Meledin, D. Loudkov, R. Blundell, N. Erickson, J. Kawamura, I. Mehdi, and G. Goltsman	
WE5A-5	Realization of a 150GHz to 450GHz Tripler Circuit Based on a Thin Dielectric HMDS-N-Membrane	755
9:00 AM	K. Duwe and J. Müller	
WE5A-6	A 5 Element 450 GHz HBV Frequency Tripler	759
9:10 AM	B. Schumann, M. Hoeft, M. Saglam, H.L. Hartnagel, and R. Judaschke	
WE5A-7	Terahertz-Frequency Remote-Sensing of Biological Warfare Agents	763
9:20 AM	D.L. Woolard, E.R. Brown, A.C. Samuels, J.O. Jensen, T. Globus, B. Gelmont, and M. Wolski	



Session WE1B

Non-Linear Device and System Simulation Techniques

10:10 – 11:50am

Room 201A

Wednesday, June 11, 2003

Chair: D. Root, Aglient Technologies
Co-chair: R. Mailavarpu, Raytheon

WE1B-1	A Novel Behavioral Model Of Power Amplifier Based On A Dynamic Envelope Gain Approach For The System Level Simulation And Design	769
10:10 AM	C. Maziere, T. Reveyrand, S. Mons, D. Barataud, J. Nebus, R. Quere, A. Mallet, L. Lapierre, and A.J. Sombrin	
WE1B-2	Characterization and Modeling of Intermodulation Distortion Asymmetry in HBT Using Large-Signal Model	773
10:30 AM	H-M. Park and S. Hong	
WE1B-3	Extraction of Conversion Matrices for P-HEMTs based on Vectorial Large Signal Measurements	777
10:50 AM	A. Cidronali, K. Gupta, J. Jargon, K.A. Remley, D. DeGroot, and G. Manes	
WE1B-4	Implication of Baseband Impedance and Bias for FET Amplifier Linearization	781
11:10 AM	J. Brinkhoff and A.E. Parker	

Session WE2B

Behavioral Modeling for Nonlinear Microwave Components

10:10 – 11:50am

Room 201C

Wednesday, June 11, 2003

Chair: S. Kenney, Georgia Institute of Technology
Co-chair: P. Draxler, Qualcomm, Inc.

WE2B-1	An Efficient Volterra-Based Behavioral Model for Wideband RF Power Amplifiers	787
10:10 AM	A. Zhu, M. Wren, and T.J. Brazil	
WE2B-2	The Behavioral Modeling of Microwave/RF ICs using Non-Linear Time Series Analysis	791
10:30 AM	J. Wood and D.E. Root	
WE2B-3	Measurement Based Modeling of Power Amplifiers for Reliable Design of Modern	795
10:50 AM	Communication Systems	
	A. Soury, E. Ngoya, J-M. Nébus, and T. Reveyrand	
WE2B-4	Behavioral Modeling of RF Power Amplifiers Considering IMD and Spectral Regrowth	799
11:10 AM	Asymmetries	
	H. Ku and J. Kenney	
WE2B-5	Time Domain Characterization of Power Amplifiers with Memory Effects	803
11:30 AM	P. Draxler, I. Langmore, T-P. Hung, and P.M. Asbeck	

Session WE3B

Guided Wave Structures and New Effects

10:10 – 11:50am

Room 204A

Wednesday, June 11, 2003

Chair: J. Zehentner, Czech Technical University
Co-chair: G. Whitman, New Jersey Institute of Technology

WE3B-1	An Accurate Analytical Representation of the Continuous Spectrum Excited on Multilayer	809
10:10 AM	Stripline Structures in Spectral-Gap Regions	
	P. Baccarelli, P. Burghignoli, F. Frezza, A. Galli, G. Lovat, and S. Paulotto	
WE3B-2	High Frequency Crosstalk Between Two Microstrip Lines	813
10:30 AM	J. Bernal, F. Mesa, R. Rodriguez-Berral, and D.R. Jackson	
WE3B-3	Coupled Mode Analysis of Multi-conductor Transmission Lines Including Backward Coupling	817
10:50 AM	D. Chen, Z. Shen, and Z. Shao	
WE3B-4	Wave Propagation Characteristics of a Reactively Loaded Microstrip	821
11:00 AM	K.M. Noujeim	
WE3B-5	Fractal two-dimensional electromagnetic band-gap structures	825
11:10 AM	F. Frezza, L. Pajewski, and G. Schettini	
WE3B-6	Properties of Spatial Harmonics Selection in Pseudoperiodic Waveguides	829
11:20 AM	V.A. Solntsev	
WE3B-7	Ferrite-Loaded Waveguides - A Perturbation Theory Approach	833
11:30 AM	R. Pietig and M. Cao	
WE3B-8	Closed-form Formula For Frequency Dependent Bonding Pad Characterization	837
11:40 AM	X. Zeng, M. Abdulla, and Q-l. Chen	

Session WE6B

Millimeter Wave Generation and Amplification

10:10 – 11:50am

Room 202B

Wednesday, June 11, 2003

Chair: E.C. Niehenke, Niehenke Consulting

Co-chair: D. Choudhury, HRL Laboratories

WE6B-1	A Low Cost Fixed Tuned F-band HBV Frequency Tripler	899
10:10 AM	A.Ø. Olsen, M. Ingvarson, and J. Stake	
WE6B-2	Low Phase-Noise Monolithic GaInP/GaAs-HBT VCO for 77 GHz	903
10:20 AM	F. Lenk, M. Schott, J. Hilsenbeck, J. Würfl, and W. Heinrich	
WE6B-3	Theoretical and Experimental Comparison of Optimized Doping Profiles for High-Performance	907
10:40 AM	InP Gunn Devices at 220-500 GHz	
	R. Kamoua and H. Eisele	
WE6B-4	High Conversion Gain V-band Quadruple Subharmonic Mixer Using Cascode Structure	911
10:50 AM	D. An, S. Kim, W. Sul, H. Han, H. Lee, W. Uhm, H. Park, S. Kim, D. Shin, and J. Rhee	
WE6B-5	Integrated Power Amplifier for 60 GHz Wireless Applications	915
11:10 AM	M. Varonen, M. Kärkkäinen, P. Kangaslahti, and V. Porra	
WE6B-6	75 GHz 80 mW InP DHBT Power Amplifier	919
11:30 AM	Y. Wei, M. Urteaga, Z. Griffith, D. Scott, S. Xie, V. Paidi, N. Parthasarathy, and M. Rodwell	
WE6B-7	A 0.1 - 50 GHz SiGe HBT Distributed Amplifier Employing Constant-k m-Derived Sections	923
11:40 AM	J.A. Aguirre and C. Plett	

Session WE1C

Cavity Filters and Multiplexers

1:20 – 3:00pm

Room 201A

Wednesday, June 11, 2003

Chair: J. Modelski, Warsaw University of Technology

Co-chair: C. Wang, Orbital Sciences

WE1C-1	Novel Adaptive Predistortion Technique for Cross Coupled Filters	929
1:20 PM	M. Yu, V. Dokas, W.C. Tang, and R. Cameron	
WE1C-2	2GHz Band Quadruple Mode Dielectric Resonator Filter For Cellular Base Station	933
1:40 PM	J. Hattori, T. Wada, H. Kubo, and Y. Ishikawa	
WE1C-3	Analysis and Design of Three Transmission Zeros Bandpass Filter Utilizing Triple-Mode	937
2:00 PM	Dielectric Loaded Cubical Cavity	
	L.H. Chua and D. Mirshekar-Syahkal	
WE1C-5	Metal-Plated Plastic Waveguide Filter Using Injection Molding Process	941
2:20 PM	H. Asao, N. Yoneda, M. Mukuda, K. Yamasaki, O. Kamohara, Y. Yoshino, and K. Henmi	
WE1C-6	Inductive Iris Band-Pass Filter Integrating Floating Inserts for Pseudo-Elliptic Response	945
2:30 PM	C. Guguen and D. Lo Hine Tong	
WE1C-7	Compact E-Plane and Ridge Waveguide Filters/Diplexers With Pseudo-Elliptic Response	949
2:40 PM	E. Ofli, R. Vahldieck, and S. Amari	
WE1C-8	Compact Ridged Waveguide Filters with Improved Stopband Performance	953
2:50 PM	G. Goussetis and D. Budimir	

Session WE2C

Si Transmission Lines

1:20 – 3:00pm

Room 201C

Wednesday, June 11, 2003

Chair: C. Wen, CPW Consulting

Co-chair: C-K Tzuang, National Chaio Tung University

WE2C-1	Minimization of Passive Circuits Losses realized on Low Resistivity Silicon Using Micro-	959
1:20 PM	Machining Techniques and Thick Polymer Layers	
	F. Bouchriha, K. Grenier, D. Dubuc, P. Pons, R. Plana, and J. Graffeuil	
WE2C-2	Low RF loss and noise of transmission lines on Si substrates using an improved ion implantation	963
1:40 PM	process	
	K-T. Chan, A. Chin, S. McAlister, C. Chang, C. Tseng, V. Liang, J. Chen, S. Chien, D. Duh, and W. Lin	
WE2C-3	High-Performance and Area-Efficient Stacked Transformers for RF CMOS Integrated Circuits	967
2:00 PM	N. Fong, J-O. Plouchart, N. Zamdmer, J. Kim, K. Jenkins, C. Plett, and G. Tarr	
WE2C-4	Experimental Analysis of Reduced-Sized Coplanar Waveguide Transmission Lines	971
2:20 PM	G.E. Ponchak	

Session WE3C

Time-Domain Methods and Applications

1:20 – 3:00pm

Room 204A

Wednesday, June 11, 2003

Chair: E. Tentzeris, Georgia Institute of Technology

Co-chair: M. Celuch, Warsaw University of Technology

WE3C-1	Locally Conformal Cell for Two-Dimensional TLM	977
1:20 PM	P.P.M. So and W.J.R. Hoefer	
WE3C-2	Finite Element Time Domain Method Using Laguerre Polynomials	981
1:40 PM	Y-s. Chung, T.K. Sarkar, S. Llorente-Romano, and M. Salazar-Palma	
WE3C-3	Finite-Volume Time-Domain (FVTD) Method and its Application to the Analysis of	985
2:00 PM	Hemispherical Dielectric-Resonator Antennas	
	D. Baumann, C. Fumeaux, P. Leuchtman, and R. Vahldieck	
WE3C-4	Electromagnetic Wave Effects On Closely Packed Microwave Transistors Using A Fast Time-	989
2:20 PM	Domain Simulation Approach	
	Y.A. Hussein, S.M. El-Ghazaly, and S.M. Goodnick	
WE3C-5	Using of Transmission Line Matrix Method and Mode Matching Approach for Simulation of	993
2:40 PM	MMICs	
	D. Lukashevich, B. Broido, and P. Russer	

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Session WE4C

Linear Modeling and Passive Devices

1:20 – 3:00pm

Room 204C

Wednesday, June 11, 2003

Chair: M. Megahed, Skyworks Solutions
Co-chair: J. Tauritz, University of Twente

WE4C-1	Passive Macromodels of Microwave Subnetworks Characterized by Measured/Simulated Data	999
1:20 PM	D. Saraswat, R. Achar, and M. Nakhla	
WE4C-2	EM-Based Surrogate Modeling and Design Exploiting Implicit, Frequency and Output Space Mappings	1003
1:40 PM	J.W. Bandler, Q. Cheng, D.H. Gebre-Mariam, K. Madsen, F. Pedersen, and J. Søndergaard	
WE4C-3	A New Scalable Model for Spiral Inductors on Lossy Silicon Substrate	1007
2:00 PM	D. Melendy and A. Weisshaar	
WE4C-4	Wide-Band Distributed Modeling of Spiral Inductors in RFICs	1011
2:20 PM	A. Watson, P. Francis, K. Hwang, and A. Weisshaar	
WE4C-5	A Novel Modified-T Equivalent Circuit for Modeling LTCC Embedded Inductors with a Large Bandwidth	1015
2:30 PM	T-S. Horng, J. Wu, L. Yang, and S. Fang	
WE4C-6	Determining the HBT base-collector elements directly from S-parameter data	1019
2:40 PM	E. Wasige	
WE4C-7	A New RF Model for the Accumulation-Mode MOS Varactor	1023
2:50 PM	S-S. Song and H. Shin	

Session WE5C

System Level Packaging

1:20 – 3:00pm

Room 202A

Wednesday, June 11, 2003

Chair: B. Kopp, Johns Hopkins University
Co-chair: J. Laskar, Georgia Institute of Technology

WE5C-1	A 100-GHz Distributed Amplifier in Chip-size Package	1029
1:20 PM	S. Masuda, K. Kobayashi, H. Kira, M. Kitajima, M. Takesue, Y. Kamiya, and K. Joshin	
WE5C-2	Wafer Level Integration of a 24GHz and 34GHz Differential SiGe-MMIC Oscillator with a Loop Antenna on a BCB Membrane	1033
1:40 PM	P. Abele, J. K�nle, D. Behammer, E. S�nmez, K-B. Schad, A. Trasser, and H. Schumacher	
WE5C-3	Single-package 5GHz WLAN RF module with embedded patch antenna and 20dBm power amplifier	1037
2:00 PM	J. Ryckaert, S. Brebels, B. Come, W. Diels, D. Hauspie, S. Stoukatch, K. Vaesen, W. De Raedt, and S. Donnay	
WE5C-4	Novel LTCC-/BGA-Modules for Highly Integrated Millimeter-Wave Transceivers	1041
2:20 PM	J.E. Heyen, T.V. Kerssenbrock, A. Chernyakov, P. Heide, and A.F. Jacob	
WE5C-5	Small-size 72-GHz-band Transceiver Modules Utilizing IF Self-heterodyne Transmission Technology	1045
2:40 PM	K. Maruhashi, K. Ohata, H. Shimawaki, Y. Shoji, and H. Ogawa	

Session WE6C

Focused Session – Software Radio

1:20 – 3:00pm

Room 202B

Wednesday, June 11, 2003

Chair: J.F. Luy, Daimler-Chrysler AG
Co-chair: J. Tsui, AFRL/SNRP WPAFB

WE6C-1	Cognitive INFOSEC	1051
1:20 PM	D. Mitola III	
WE6C-2	Sampling Architectures	1055
1:40 PM	E.M. Biebl	
WE6C-3	Software Defined Radio Receiver Based on Six-Port Technology	1059
2:00 PM	X. Xu, K. Wu, and R.G. Bosisio	
WE6C-4	An 8-GHz Continuous-Time Σ-Δ Analog-Digital Converter in an InP-based DHBT Technology	1063
2:20 PM	S. Krishnan, D. Scott, M. Urteaga, Z. Griffith, Y. Wei, M. Dahlstrom, N. Parthasarathy, and M. Rodwell	
WE6C-5	86 GHz Static and 110 GHz Dynamic Frequency Dividers in SiGe Bipolar Technology	1067
2:40 PM	H. Knapp, M. Wurzer, T. Meister, K. Aufinger, J. Böck, S. Boguth, and H. Schäfer	

Session WE1D

Planar Technologies for Filters and Multiplexers

3:30 – 5:10pm

Room 201A

Wednesday, June 11, 2003

Chair: H. Yao, Orbital Communications
Co-chair: W-C Tang, Orbital Sciences Corp. and COM DEV

WE1D-1	Bandstop Filter Design Using Evanescent Mode Resonators	1073
3:30 PM	R.V. Snyder, S. Shin, and K. Keck	
WE1D-2	A New Compact Microstrip Stacked-SIR Bandpass Filters with Transmission Zeros	1077
3:50 PM	E. Shih and J-T. Kuo	
WE1D-3	Novel Band-Pass Filter Utilizing S-shaped Slot Line Resonators	1081
4:00 PM	A.N. Deleniv, M. Gashinova, A. Eriksson, and A. Kalabuchov	
WE1D-5	An Artificial Dielectric Material of Huge Permittivity with Novel Anisotropy and its Application to a Microwave BPF	1085
4:30 PM	I. Awai, H. Kubo, T. Iribe, D. Wakamiya, and A. Sanada	
WE1D-6	SMD-type 42 GHz waveguide filter	1089
4:40 PM	T.J. Mueller	
WE1D-7	An Original Topology of Dual-Band Filter with Transmission Zeros.	1093
4:50 PM	C. Quendo, E. Rius, and C. Person	



Session WE2D

Novel Waveguide Structures, Discontinuities and Transitions

3:30 – 5:10pm

Room 201C

Wednesday, June 11, 2003

Chair: M. Dydyk, Motorola, Inc.
Co-chair: K. Wu, University of Montreal

WE2D-1	Miniaturized Synthetic Rectangular Waveguide	1099
3:30 PM	H-S. Wu and C-K.C. Tzuang	
WE2D-2	Substrate Integrated Slab Waveguide (SISW) for Wideband Microwave Applications	1103
3:50 PM	D. Deslandes, M. Bozzi, P. Arcioni, and K. Wu	
WE2D-3	Investigation into Broadband PBG using a Butterfly-Radial Slot (BRS)	1107
4:10 PM	B. Tan, J. Yu, S. Koh, and S. Teck Chew	
WE2D-4	Analysis of stripline T-junction with rectangular cut based on eigenmode expansion method and Foster-type equivalent network	1111
4:20 PM	T. Takenaka, T. Hiraoka, and J-P. Hsu	
WE2D-5	New Dielectric-Covered Waveguide-to-Microstrip Transitions for Ka-band Transceivers	1115
4:30 PM	K. Kim, C-H. Na, and D-S. Woo	

Session WE3D

Advances in Time-Domain Techniques

3:30 – 5:10pm

Room 204A

Wednesday, June 11, 2003

Chair: V.F. Hanna, University of Paris
Co-chair: L. Roselli, University of Pergola

WE3D-1	An Adjoint Variable Method for Time Domain TLM with Fixed Structured Grids	1121
3:30 PM	M.H. Bakr and N.K. Nikolova	
WE3D-2	Transmission Line Matrix Method Reduced Order Modeling	1125
3:50 PM	D. Lukashovich, A. Cangellaris, and P. Russer	
WE3D-3	Performance of Nonlinear Dispersive APML in High-Order FDTD Schemes	1129
4:10 PM	M. Fujii, M.M. Tentzeris, and P. Russer	
WE3D-4	Efficient Computation of Thin-layer Structures with the Unconditionally Stable ADI-FDTD Method	1133
4:20 PM	C. Yuan and Z. Chen	
WE3D-5	Local Stereoscopic Field Singularity Models for FDTD Analysis of Guided Wave Problems	1137
4:30 PM	M. Celuch-Marcysiak	
WE3D-6	FDTD Modeling of Transient Microwave Signals in Dispersive and Lossy Bi-Isotropic Media.	1141
4:50 PM	A.M. Grande, I. Barba, A.C. L. Cabeceira, J. Represa, P.P.M. So, and W.J.R. Hoefer	

Session WE4D

Enabling Packaging Technologies

3:30 – 5:10pm

Room 202A

Wednesday, June 11, 2003

Chair: R. Drayton, University of Minnesota

Co-chair: E. Strid, Cascade Microtech, Inc.

WE4D-1	Via Arrays for Grounding in Multilayer Packaging - Frequency Limits and Design Rules	1147
3:30 PM	T. Tischler, M. Rudolph, A. Kilk, and W. Heinrich	
WE4D-2	Multi-Layer Thin-Film MCM-D for the Realization of Q- and V-band Functions	1151
3:50 PM	G.J. Carchon, S. Brebels, O. Vendier, and W. De Raedt	
WE4D-3	Liquid Crystal Polymer-based Integrated Passive Development for RF Applications	1155
4:10 PM	M.F. Davis, S. Yoon, S. Pinel, K. Lim, and J. Laskar	
WE4D-4	Surface mountable liquid crystal polymer package with vertical via transition compensating wire inductance up to V-band	1159
4:20 PM	H. Kanno, H. Ogura, and K. Takahashi	
WE4D-5	An Alignment Insensitive Separable Electromagnetic Coupler for High Speed Digital Multidrop Bus Applications	1163
4:40 PM	J.R. Benham, R. Amirtharajah, J. Critchlow, T. Simon, and T. Knight	
WE4D-6	40 GHz Hot-Via Flip-Chip Interconnects	1167
5:00 PM	F.J. Schmueckle, A. Jentzsch, C. Gässler, P. Marschall, D. Geiger, and W. Heinrich	

Session WE5D

ICs for Optical Communication at 40 Gb/s & Beyond

3:30 – 5:10pm

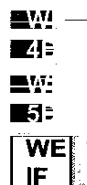
Room 202B

Wednesday, June 11, 2003

Chair: L.J. Kushner, Kenet, Inc.

Co-chair: Y. Umeda, NTT Corp.

WE5D-1	A 100-Gbit/s 2:1 Multiplexer in InP HEMT Technology	1173
3:30 PM	T. Suzuki, Y. Nakasha, T. Sakoda, K. Sawada, T. Takahashi, K. Makiyama, T. Hirose, and M. Takigawa	
WE5D-2	Design and Measurements of Very High Speed Digital ICs Fabricated in InP HBT Technology	1177
3:50 PM	A.D. Konczykowska, S. Blayac, F. Jorge, M. Riet, V. Puyal, and J. Godin	
WE5D-3	1.4-W 50-Gbit/s InP HEMT 1:4 Demultiplexer IC with a Multi-phase Clock Architecture	1181
4:10 PM	K. Sano, K. Murata, H. Kitabayashi, S. Sugitani, H. Sugahara, and T. Enoki	
WE5D-4	A 40/43-Gb/s CDR/DEMUX and MUX Chipset Integrated on a MCM-ceramic with 3R-regeneration functionality	1185
4:20 PM	M. Reinhold, T. Winkler-von-Mohrensels, F. Kunz, E. Rose, A. Eismann, M. Kukiela, C. Wolf, F. Znidarsic, C. Dorschky, and G. Röhl	
WE5D-5	40 Gb/s TDM System Using InP HBT IC Technology	1189
4:40 PM	K. Krishnamurthy, R. Vetury, J. Xu, A. Shou, S. Jaganathan, K. Cheng, J. Chow, D. Mensa, L. Zhang, I. Gontijo, S. Vu, C. Winczewski, Y-z. Liu, R. Pullela, and M. Rodwell	
WE5D-6	Single ended to differential MHEMT Transimpedance Amplifier with 66 dB-Ω differential Transimpedance and 50 GHz bandwidth	1193
5:00 PM	P. Roux, Y. Baeyens, V. Houtsma, A. Leven, J. Weiner, A. Benz, and Y-K. Chen	



Session WEIF

Wednesday Interactive Forum

1:30 – 4:30pm

Grand Hall

Wednesday, June 11, 2003

Chair: A. Katz, The College of New Jersey

Co-chair: Z. Turski, Sarnoff Corp.

WEIF-1	Determination by the BI-RME Method of Entire-Domain Basis Functions for the Analysis of	1199
1:30 PM	Microstrip Circuits	
	M. Repossi, P. Arcioni, M. Bozzi, M. Bressan, and L. Perregrini	
WEIF-2	Inductance Extraction for Planar Spiral Inductor by Domain Decomposition Method for	1203
1:30 PM	Conformal Modules	
	J. Zhao and J-F. Mao	
WEIF-3	CAD of Magic Tee with Interior Stepped Post for High Performance Designs	1207
1:30 PM	R. Beyer and U. Rosenberg	
WEIF-4	Signal Integrity evaluation of a 10 Gbit/sec Optoelectronic interconnect	1211
1:30 PM	M. Kahrs, S.P. Levitan, D.M. Chiarulli, T.P. Kurzweg, J.A. Martinez, J. Boles, A.J. Davare, E. Jackson, C. Windish, F. Kiamilev, A. Bhaduri, M. Taufik, X. Wang, A.S. Morris, III, J. Repke, J. Kruchowski, and B.K. Gilbert	
WEIF-5	Automated design of waveguide filters using Aggressive Space Mapping with a segmentation	1215
1:30 PM	strategy and hybrid optimization techniques	
	J. Morro, H. Esteban Gonzalez, P. Soto, V.E. Boria, C. Bachiller, S. Cogollos, and B. Gimeno	
WEIF-6	Hybrid EM-Simulator Based Optimization of Microwave and Millimeter Wave Diplexers and	1219
1:30 PM	Multiplexers	
	G. Tudosie, E. Ofli, and R. Vahldieck	
WEIF-7	Efficient CAD of a Class of Waveguide Discontinuities via an Hybrid Finite-Element/Mode-	1223
1:30 PM	Matching and Modified Transverse-Resonance Analysis	
	V. Crino', M. Mongiardo, and C. Tomassoni	
WEIF-8	Octave-Bandwidth High-Directivity Microstrip Codirectional Couplers	1227
1:30 PM	M.A. Morgan and S. Weinreb	
WEIF-9	Optimisation and Comparison of Three diplexers Based on a New Slot to Microstrip Junction	1231
1:30 PM	P. Gouget, G. Duchamp, and J. Pistré	
WEIF-10	Design and Characterization of Integrated Passive Elements on High Ohmic Silicon	1235
1:30 PM	E. Valletta, J. Van Beek, A. Den Dekker, N. Pulsford, H. Jos, L. de Vreede, L. Nanver, and J. Burghartz	
WEIF-11	Impedance-transforming, coupled-line 180° hybrid rings with frequency independent	1239
1:30 PM	characteristics	
	K. Ang, Y. Leong, and C. Lee	
WEIF-12	Compact Rectangular Ring Unequal Power Divider	1243
1:30 PM	S. Ray and G. Kumar	
WEIF-13	Modeling and measurements of novel high k monolithic transformers	1247
1:30 PM	A.H. Aly and B. Elsharawy	
WEIF-14	A broadside-edge-coupled vialess balun	1251
1:30 PM	R.K. Settaluri and A. Weisshaar	
WEIF-15	Enhanced Miniaturized Wilkinson Power divider	1255
1:30 PM	B. Piernas and M. Hirata	
WEIF-16	Shape Memory Alloy Temperature Compensation for Resonators	1259
1:30 PM	B.F. Keats, R.R. Mansour, and R.B. Gorbet	
WEIF-17	Broadband EM-Wave Absorber Based on Integrated Circuit Concept	1263
1:30 PM	Y. Kotsuka and M. Amano	

WEIF-18	Tunable Ferroelectric Filter-Phase Shifter	1267
1:30 PM	A.N. Deleniv, S. Abadei, and S. Gevorgian	
WEIF-19	MSW resonators on micromachined silicon membrane	1271
1:30 PM	G. Sajin, R. Marcelli, F. Craciunoiu, and A. Cismaru	
WEIF-20	Design of A 20-to-40GHz Bandpass MMIC Amplifier	1275
1:30 PM	J-L. Chen, S-F. Chang, C-C. Liu, and H-W. Kuo	
WEIF-21	InP/InGaAs HBTs using crystallographically defined emitter contact technology	1279
1:30 PM	M. Kim, S-K. Jeon, S-H. Shin, K. Yang, and Y-S. Kwon	
WEIF-22	Characterization and Model of High Quality Factor and Broadband Integrated Inductor on Si-Substrate	1283
1:30 PM	M-T. Yang, T-J. Yeh, M. Lin, H-M. Hsu, P. Ho, Y-J. Wang, Y-T. Chia, and D. Tang	
WEIF-23	High-Q RF Inductors on Standard Silicon Realized using Wafer-Level Packaging Techniques	1287
1:30 PM	G. Carchon, S. Jenei, L. Carbonell, M. Van Hove, S. Decoutere, W. De Raedt, K. Maex, and E. Beyne	
WEIF-25	Wide-band Variable Transversal Phase-shifter	1291
1:30 PM	L.A. Bui, A. Mitchell, G. Slade, and T-H. Chio	
WEIF-26	Millimeter-wave MMIC Switches with pHEMT Cells Reduced Parasitic Inductance.	1295
1:30 PM	Y. Tsukahara, T. Katoh, Y. Notani, T. Ishida, T. Ishikawa, M. Komaru, and Y. Matsuda	
WEIF-27	GSM and DCS SiGe BiCMOS Mixer ICs with Wide LO Power Range	1299
1:30 PM	M.P. Kovacevic and M. Madihian	
WEIF-28	C-band Linear Resistive Wide Bandgap FET Mixers	1303
1:30 PM	K. Andersson, V. Desmaris, J. Eriksson, N. Rorsman, and H. Zirath	
WEIF-29	Low-Loss High-Isolation 60-80 GHz GaAs SPST PIN Switch	1307
1:30 PM	T. Buber, N. Kinayman, Y-H. Yun, and J. Brogle	
WEIF-30	A Zero-Bias Single-Device Balanced E-PHEMT Mixer with Conversion Gain for RFID Applications	1311
1:30 PM	J. Garcia, E. Malaver, and L. Cabria	
WEIF-31	44.5 GHz Direct I&Q MMIC Modulator in Coplanar Waveguide Technology for an EHF Satcom Terminal Phased Array	1315
1:30 PM	K. Hettak, P. Béland, C. Verver, M. Stubbs, and G. Morin	
WEIF-32	A High Performance V-band Monolithic Quadruple Sub-harmonic Mixer	1319
1:30 PM	W. Uhm, W. Sul, H. Han, S. Kim, H. Lee, D. An, S. Kim, D. Shin, H. Park, and J. Rhee	
WEIF-33	Novel DSP Algorithms For Adaptive Feed-forward Power Amplifier Design	1323
1:30 PM	K-P. Chan and K-K.M. Cheng	
WEIF-34	An Improved Kahn Transmitter Architecture Based on Delta-Sigma Modulation	1327
1:30 PM	Y. Wang	
WEIF-35	THz Radiation using Compact Folded Waveguide TWT Oscillators	1331
1:30 PM	S. Bhattacharjee, J.H. Booske, C.L. Kory, D.W. van der Weide, S. Limbach, M. Lopez, R.M. Gilgenbach, S. Gallagher, A. Stevens, and M. Genack	
WEIF-36	An Analog Compensation Method for Asymmetric IMD Characteristics of a Power Amplifier	1335
1:30 PM	K-J. Cho, J-C. Choi, J-H. Kim, B-J. Lee, N-Y. Kim, J-C. Lee, and S.P. Stapleton	
WEIF-37	New Predistortion Method Using Phase Modulation With Envelope Signal	1339
1:30 PM	H. Jang, H. Jeong, C. Kim, and I. Chang	
WEIF-38	Multimode Fiber Link Equalization by Mode Filtering Via a Multisegment Photodetector	1343
1:30 PM	K.M. Patel and S.E. Ralph	
WEIF-39	40 GHz MMIC Driver of Electro-Absorption Modulator for high-speed optical pulse generation	1347
1:30 PM	S. Dellier, F. Blache, M. Campovecchio, D. de La Grandière, S. Vuye, R. Quéré, and J-R. Burie	
WEIF-40	Improved Microwave-Optical Reception	1351
1:30 PM	T. Berceli	
WEIF-41	Photonic Microwave Filter Using a Broadband Source Sliced by a Birefringent Optical Fiber-Based Interferometer	1355
1:30 PM	H. Gouraud, P. Di Bin, L. Billonnet, P. Faugeras, and B. Jarry	

WEIF-42 1:30 PM	Frequency Conversion Using a Moving Plasma Front Generated Optically in Transmission Lines -Theoretical Analyses- J. Bae and K. Mizuno	1359
WEIF-43 1:30 PM	Optical-Microwave Converter:Superconductor/Photomixer Hybrid System T. Kiwa and M. Tonouchi	1363
WEIF-44 1:30 PM	Peripheral Coupled Waveguide Traveling-Wave Electroabsorption Modulator Y. Zhuang, Y. Wu, W. Chang, P. Yu, S. Mathai, M. Wu, D. Tishinin, and K.Y. Liou	1367
WEIF-45 1:30 PM	Influence of the Chirp Effect of DFB Laser in Phase-to-Intensity Noise Conversion in RF-Modulated Optical Links M. Salehi, B. Cabon, and Y. Le Guennec	1371
WEIF-46 1:30 PM	Rigorous Analysis of Traveling Wave Photodetectors under High-Power Illumination D. Pasalic, R. Vahldieck, and A. Aste	1375
WEIF-47 1:30 PM	High-Speed Microwave-Photonic Vector Modulator (MPVM) with Wideband Carrier Tuning and Spectral Control G. Wang and W.D. Jemison	1379
WEIF-48 1:30 PM	A Millimeter-wave Harmonic Optoelectronic Mixer based on InAlAs/InGaAs Metamorphic HEMT C-S. Choi, W-Y. Choi, D-H. Kim, and K-S. Seo	1383
WEIF-49 1:30 PM	A 46-GHz Distributed Transimpedance Amplifier using SiGe Bipolar Technology S. Kudszus, A. Shahani, S. Pavan, D.K. Shaeffer, and M. Tarsia	1387
WEIF-50 1:30 PM	Optically generated dynamically tunable, low noise millimeter wave signals using microchip solid state lasers Y. Li, S. Goldwasser, and P.R. Herzfeld	1391
WEIF-51 1:30 PM	MM Wave Mixing in a Quantum Well IR Photo Detector P.D. Grant, H. Liu, and R. Dudek	1395
WEIF-52 1:30 PM	Photonic Tunable Microwave Transversal Filter based on Optical Switches and Fiber Dispersion B. Vidal, V. Polo, J. Corral, and J. Martí	1399
WEIF-53 1:30 PM	Improved Radio Over Fiber Performance Using Predistortion Linearization A. Katz, W. Jemison, M. Kubak, and J. Dragone	1403
WEIF-54 1:30 PM	Assessment of random and systematic errors in millimeter wave dielectric measurement - Open resonator system, Fourier Transform Spectroscopy, W-band Spectrometer and broadband Free-Space measurements M.N. Afsar, A. Moonshiram, and Y. Wang	1407
WEIF-55 1:30 PM	Envelope Domain Analysis of Measured Time Domain Voltage and Current Waveforms Provide for Improved Understanding of Factors Effecting Linearity D.J. Williams, J. Leckey, and P.J. Tasker	1411
WEIF-56 1:30 PM	Coherent Addition of Intermodulation Distortion in Spectrum Analyzers P. Stepanek, D. Kurtz, and J. Gorin	1415
WEIF-57 1:30 PM	Combined Analysis of Sytematic and Random Uncertainties for Different Noise-Figure Characterization Methodologies A. Collado, J-M. Collantes, L. De la Fuente, N. Otegi, L. Perea, and M. Sayed	1419
WEIF-58 1:30 PM	Influence of Sample Insertion Hole on Resonant Cavity Perturbation Measuring Method M. Ikeda, T. Fukunaga, and T. Miura	1423
WEIF-59 1:30 PM	Development of a Quantum Based Microwave Power Measurement T. Crowley, E. Donley, T. Heavner, J. Juroshek, and B. Riddle	1427
WEIF-60 1:30 PM	Frequency Spectrum Investigations on Detection of Radiofrequency Electromagnetic Fields by Biological Cells F. Apollonio, M. Liberti, A. Paffi, and G. d'Inzeo	1431
WEIF-61 1:30 PM	A Novel Vector Control Active Patch for Beamsteering with Linearity Enhancement Capability L. Cabria, J. Garcia, A. Tazon, and A. Mediavilla	1435

WEIF-62	A Compact Millimeter-Wave Slotted-Waveguide Spatial Array Power Combiner	1439
1:30 PM	E. Channabasappa, T. Hongsmatip, N. Kinayman, R. Anderson, and B. Ziegner	
WEIF-63	An Ultra-Wideband Microwave Radar Sensor for Characterizing Pavement Subsurface	1443
1:30 PM	J. Park and C. Nguyen	
WEIF-64	A Radar Target Transceiver Using a Full Duplex Capable Retrodirective Array System	1447
1:30 PM	K.M.K.H. Leong, Y. Wang, and T. Itoh	