

IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES

A PUBLICATION OF THE IEEE MICROWAVE THEORY AND TECHNIQUES SOCIETY



JANUARY 2002

VOLUME 50

NUMBER 1

IETMAB

(ISSN 0018-9480)

PART I OF TWO PARTS

MINI-SPECIAL ISSUE ON 1999 INTERNATIONAL MICROWAVE AND OPTOELECTRONICS CONFERENCE (IMOC'99)

Guest Editors' Overview	<i>H. E. Hernández-Figueroa, P. H. P. de Carvalho, A. C. Bordonalli, and F. J. S. Moreira</i>	1
MINI-SPECIAL ISSUE PAPERS		
GaN-Based High Electron-Mobility Transistors for Microwave and RF Control Applications	<i>N. V. Drozdovski and R. H. Caverly</i>	4
Design and Fabrication of SiO ₂ /Si ₃ N ₄ Integrated-Optics Waveguides on Silicon Substrates	<i>D. A. P. Bulla, B.-H. V. Borges, M. A. Romero, N. I. Morimoto, and L. Gonçalves Neto</i>	9
Security System for Optical Communication Signals With Fiber Bragg Gratings	<i>P. Torres, L. C. G. Valente, and M. C. R. Carvalho</i>	13
A Circuit-Fed Tile-Approach Configuration for Millimeter-Wave Spatial Power Combining	<i>M. A. Gouker, J. T. Delisle, and S. M. Duffy</i>	17
A Dynamic Model for Printed Apertures in Anisotropic Stripline Structures	<i>J. C. da S. Lacava, A. V. Proaño De la Torre, and L. Cividanes</i>	22
Theoretical Investigation of Compact Microstrip Resonators With Stubs for Patch Antennas ...	<i>V. A. Dmitriev and J. C. W. A. Costa</i>	27
Split-Field and Anisotropic-Medium PML-FDTD Implementations for Inhomogeneous Media	<i>F. L. Teixeira, C. D. Moss, W. C. Chew, and J. A. Kong</i>	30
An Innovative Fast Powerful Method for Tackling Electromagnetic Eigenvalue Problems for Multistrip Transmission Lines	<i>A. Casanueva and J. L. García</i>	36
Characteristics of Rain Fading on <i>K</i> -Band Satellite-Earth Links in a Pacific Maritime Climate	<i>C. Amaya and D. V. Rogers</i>	41
A Generalized Solution for Diversity Combining Techniques in Fading Channels	<i>C. R. C. M. da Silva and M. D. Yacoub</i>	46
Monolithic Transistors SPST Switch for <i>L</i> -Band	<i>J. A. Torres and J. C. Freire</i>	51
A New Model For Enhancement-Mode Power pHEMT	<i>C.-J. Wei, Y. A. Tkachenko, and D. Bartle</i>	57
High-Speed MSM/HEMT and p-i-n/HEMT Monolithic Photoreceivers	<i>P. Fay, C. Caneau, and I. Adesida</i>	62
Barrier Enhancement Mechanisms in Heterodimensional Contacts and Their Effect on Current Transport	<i>A. Anwar and B. Nabet</i>	68
Scattering by FSS on Anisotropic Substrate for TE and TM Excitation	<i>A. L. P. S. Campos, A. G. d'Assunção, and L. M. de Mendonça</i>	72

(Contents Continued on Back Cover)



Carrier Reuse With Gain Compression and Feed-Forward Semiconductor Optical Amplifiers	77
..... <i>E. Conforti, C. M. Gallep, S. H. Ho, A. C. Bordonalli, and S.-M. Kang</i>	
A Novel Gold-Coated Multimode Fiber Sensor	82
..... <i>E. Fontana</i>	
System Impact of the Physical Length of Unapodized Chirped Fiber Bragg Gratings on Dispersion Compensation	
..... <i>M. L. Rocha, R. Kashyap, R. F. Souza, A. Paradisi, M. R. X. Barros, and C. Coral</i>	88

CONTRIBUTED PAPERS

Evolution of Leaky Modes on Printed-Circuit Lines	94
..... <i>F. M. Mesa, D. R. Jackson, and M. J. Freire</i>	
Analysis and Optimization of a Phase Shifter Controlled by a Piezoelectric Transducer	105
..... <i>T.-Y. Yun and K. Chang</i>	
Dyadic Green's Function Modifications for Obtaining Attenuation in Microstrip Transmission Layered Structures With Complex Media	112
..... <i>C. M. Krowne</i>	
Active Microwave Imaging I—2-D Forward and Inverse Scattering Methods	
..... <i>Q. H. Liu, Z. Q. Zhang, T. T. Wang, J. A. Bryan, G. A. Ybarra, L. W. Nolte, and W. T. Joines</i>	123
On the Effect of IF Power Nulls in Schottky Diode Harmonic Mixers ...	134
..... <i>R. Feinäugle, H.-W. Hübers, H. P. Röser, and J. L. Hesler</i>	
Experimental Confirmation of the Dynamics of Coupled-Oscillator Arrays and Implications for Angle-Based Modulation	143
..... <i>R. J. Pogorzelski</i>	
A Miniaturized MMIC Analog Phase Shifter Using Two Quarter-Wave-Length Transmission Lines	
..... <i>H. Hayashi, T. Nakagawa, and K. Araki</i>	150
Method for the Calculation of Mutual Coupling Between Discontinuities in Planar Circuits	
..... <i>B. L. A. Van Thielen and G. A. E. Vandenbosch</i>	155
Design Considerations of Engraved NRD Guide for Millimeter-Wave Integrated Circuits	165
..... <i>Y. Cassivi, D. Deslandes, and K. Wu</i>	
A Simple Method to Design Wide-Band Electronically Tunable Combline Filters	
..... <i>G. Torregrosa-Penalva, G. López-Risueño, and J. I. Alonso</i>	172
Compact Monolithic Integrated Resistive Mixers With Low Distortion for HIPERLAN	178
..... <i>F. Ellinger, R. Vogt, and W. Bächtold</i>	
Investigation of the Longitudinal Multiconductor Transmission Line Functions for Symmetric Coupled-Microstrip Systems	183
..... <i>J. G. Nickel and J. E. Schutt-Ainé</i>	
Analysis of the Coaxial Helical-Groove Slow-Wave Structure	191
..... <i>G. Yu, W. Wang, Y. Wei, and S. Liu</i>	
Phase-Locked-Loop Control of Active Microstrip Patch Antennas	201
..... <i>J. W. Andrews and P. S. Hall</i>	

CONTRIBUTED SHORT PAPERS

Efficient Optical Control of Millimeter Waves in a Slot Line on Semiconductor Plasma Substrate	
..... <i>S. K. Dana, H. Shimasaki, and M. Tsutsumi</i>	207
A Completely Integrated 1.9-GHz Receiver Front-End With Monolithic Image-Reject Filter and VCO	
..... <i>J. W. M. Rogers, J. A. Macedo, and C. Plett</i>	210
The Summation-by-Parts Algorithm—A New Efficient Technique for the Rapid Calculation of Certain Series Arising in Shielded Planar Structures	215
..... <i>J. R. Mosig and A. A. Melcón</i>	
Direct Extraction of Linear HBT-Model Parameters Using Nine Analytical Expression Blocks	
..... <i>A. Ouslimani, J. Gaubert, H. Hafdallah, A. Birafane, P. Pouvil, and H. Leier</i>	218
A Z-Transform-Based Absorbing Boundary Conditions for 3-D TLM-SCN Method	222
..... <i>Z. Shao, W. Hong, and H. Wu</i>	

LETTERS

Comments on “General Oscillator Characterization Using Linear Open-Loop S-Parameters”	226
..... <i>L. Cascio</i>	
Authors' Reply	227
..... <i>M. Randall and T. Hock</i>	
Corrections on “Improvement of Third-Order Intermodulation Product of RF and Microwave Amplifiers by Injection”	
..... <i>C. S. Aitchison, M. Mbabele, M. R. Moazzam, D. Budimir, and F. Ali</i>	229

Information for Authors	230
-------------------------------	-----

IEEE COPYRIGHT FORM	231
---------------------------	-----
