



IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES

MARCH 1972

VOLUME MTT-20

NUMBER 3

Published Monthly



EDITORIAL

MTT Editorial Policy Statement.....	<i>F. J. Rosenbaum</i>	201
-------------------------------------	------------------------	-----

PAPERS

Iterated Solid-State Microwave Power Amplifier.....	<i>S. F. Paik</i>	202
Modes of Propagation in a Coaxial Waveguide with Lossless Reactive Guiding Surfaces.....	<i>R. K. Arora, S. Vijayaraghavan, and R. Madhavan</i>	210
An Ordered Array of Terminated Metallic Posts as an Embedding Network for Lumped Microwave Devices.....	<i>R. J. Gutmann and K. E. Mortenson</i>	215
Synthesis of Mixed Lumped and Distributed Impedance-Transforming Filters.....	<i>R. Levy</i>	223

SHORT PAPERS

Measurement of Dielectric Materials Using a Cutoff Circular-Waveguide Cavity.....	<i>J. Hanfling and L. Botte</i>	233
A Study of Microwave Leakage Through Perforated Flat Plates.....	<i>T. Y. Otoshi</i>	235
Hybrid-Frequency Cutoffs in Gyrotropic Waveguides.....	<i>P. de Santis and G. Franceschetti</i>	237
Tunable Frequency Range and Mismatch Adjustment for Comb-Line Bandpass Filters.....	<i>G. D. O'Clock, Jr.</i>	238

CONTRIBUTORS.....		240
-------------------	--	-----

FOREIGN ABSTRACTS.....		241
------------------------	--	-----



IEEE MICROWAVE THEORY AND TECHNIQUES GROUP

The Microwave Theory and Techniques Group is an organization, within the framework of the IEEE, of members with principal professional interest in the field of microwave theory and techniques. All members of the IEEE are eligible for membership in the Group and will receive this TRANSACTIONS upon payment of the annual Group membership fee of \$6.00. Affiliate membership is available upon payment of the annual affiliate fee of \$16.00. For information on joining write to the IEEE at the address below

ADMINISTRATIVE COMMITTEE

<i>A. CLAVIN, President</i>		<i>J. B. HORTON, Vice President</i>		<i>D. PARKER, Secretary-Treasurer</i>	
F. R. ARAMS	H. W. COOPER	N. LIPETZ	G. P. RODRIQUE	E. N. TORGOW	
R. W. BEATTY	R. V. GARVER	S. OKWIT*	F. J. ROSENBAUM	A. WEXLER	
J. H. BRYANT*	G. I. HADDAD	J. M. OSEPCHUK	S. W. ROSENTHAL	L. R. WHICKER	
	D. B. LEESON	R. A. RIVERS	H. SOBOL	L. YOUNG*	

* *Ex officio (past chairmen)*

Honorary Life Members

A. C. BECK	A. G. CLAVIER	W. W. MUMFORD	G. C. SOUTHWORTH
------------	---------------	---------------	------------------

G-MTT Chapters

Atlanta	T. J. LYON	Houston	H. C. BOURNE, JR.	Phoenix	M. D. SIRKIS
Baltimore	B. A. SICHELSTIEL	Huntsville	M. D. FAHEY	St. Louis	W. E. HORD
Boston	H. HOWE, JR.	Long Island	J. GOLDBERG	San Diego	D. G. KILLION
Buffalo		Los Angeles	N. PELNER	San Francisco	P. M. LATOURRETTE
Central N. C.	T. R. SCHILLER	Milwaukee	R. W. LADE	Schenectady	J. B. UNDERWOOD
Chicago	A. W. RUDGE	Montreal	E. F. MORRIS	Seattle	F. P. CARLSON
Columbus	R. T. COMPTON, JR.	N. J. Coast	R. W. BENJAMIN	S. E. Michigan	C. P. TRESSLIT
Connecticut	R. MASTROIANNI	New Hampshire	W. J. WILSON	Syracuse	B. L. BOWLER
Dallas	D. N. BOWYER	New York		Tokyo, Japan	S. OKAMURA
Denver	M. T. DECKER	North Jersey	K. C. O'BRIEN	Toronto	S. DIMITREWSKI
Florida-W. Coast	B. E. SIGMON	Orange Co.	D. K. WAINEO	Tucson	E. P. PIERCE
Foothills, Calif.	H. P. JOHNSON	Orlando	J. M. SCHUCHARDT	Washington, D.C.	C. E. EDWARD
		Philadelphia	W. H. SCHAEDELA		

IEEE TRANSACTIONS® ON MICROWAVE THEORY AND TECHNIQUES

Editor

F. J. ROSENBAUM

S. OKWIT

(Institutional Listings)

Associate Editors

F. G. R. WARREN

(Foreign Abstracts)

J. W. BANDLER

(Computer Program Descriptions)

Address all manuscripts to the Editor, F. J. Rosenbaum, Dep. Elec. Eng., Washington Univ., St. Louis, Mo. 63130. Submission of three copies of manuscripts, including figures, will expedite the review.

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC.

Officers

ROBERT H. TANNER, *President*

HAROLD CHESTNUT, *Vice President*

JOSEPH K. DILLARD, *Vice President, Technical Activities*

CLARENCE L. COATES, JR., *Vice President, Publication Activities*

ARTHUR P. STERN, *Secretary*

RAYMOND W. SEARS, *Treasurer*

Headquarters Staff

DONALD G. FINK, *General Manager*

ELWOOD K. GANNETT, *Director, Editorial Services*

WILLIAM J. HILTY, *Director, Convention and Publishing Services*

WILLIAM J. KEYES, *Director, Administrative Services*

JOHN M. KINN, *Director, Educational Services*

CHARLES F. STEWART, JR., *Director, Member Services*

BETTY J. STILLMAN, *Executive Assistant to the General Manager*

RICHARD M. EMBERSON, *Director, Technical Services*

EDWIN D. MACDONALD, *Conference Services*

SAVA I. SHERR, *Standards*

Editorial Department

H. JAMES CARTER, *Managing Editor, Transactions*

Senior Editors: ANDRÉE ABRAMOFF, ANN H. BURGMAYER, CAROLYNE ELENOWITZ, GAIL S. FERENC

Associate Editors: NANCY B. BUDDE, HELEN S. GOLDMAN, MARY M. HALL, RUTH MELNICK

IEEE TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES is published monthly by The Institute of Electrical and Electronics Engineers, Inc., 345 East 47 Street, New York, N. Y. 10017. Responsibility for the contents rests upon the authors and not upon the IEEE, the Group, or its members. This journal is available in either microfiche or printed form. Individual copies may be purchased at \$3.00 (first copy only) by IEEE members and \$6.00 per copy by nonmembers. Annual subscription price: IEEE members, dues plus Group fee. Price for nonmembers available on request. Abstracting is permitted with mention of source. All rights, including translation, are reserved by the IEEE. Requests for republication permission should be addressed to the IEEE Editorial Department, 345 East 47 Street, New York, N. Y. 10017. Copyright © 1972 by The Institute of Electrical and Electronics Engineers, Inc. Printed in U.S.A. Second-class postage paid at New York, N. Y. and at additional mailing offices.