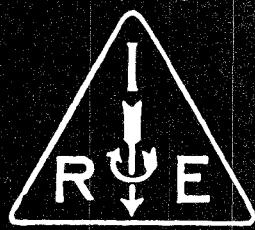


IRE Transactions

on Microwave Theory and Techniques



Volume MTT-10

SEPTEMBER, 1962

Number 5

Published Bimonthly

In This Issue

Broad-Band TEM Diode Limiting

Light Modulators of the Traveling-Wave Type

Waveguides with Wall Impedance

Three-Cavity Circularly Polarized Waveguide Directional Filter

Power Transmission Through Uniform Waveguides

Fabry-Perot Type Resonators

Stepped-Impedance Transformers

In-Line Waveguide Calorimeter

Scattering of Surface Waves

Surface Waves on Radially Inhomogeneous Cylinders

A Plasma Controlled Directional Coupler

PUBLISHED BY THE

Professional Group on Microwave Theory and Techniques

IRE PROFESSIONAL GROUP ON MICROWAVE THEORY AND TECHNIQUES

The Professional Group on Microwave Theory and Techniques is an association of IRE members with professional interest in the field of Microwave Theory and Techniques. All IRE members are eligible for membership and will receive all Group publications upon payment of the prescribed annual fee of \$4.00. Members of the American Physical Society and the Institution of Electrical Engineers of Great Britain may become affiliated with PGM TT and receive all Group publications upon payment of the Affiliate fee of \$7.50 per year.

Administrative Committee

Chairman

S. B. COHN

Vice Chairman

D. D. KING

Secretary-Treasurer

E. N. TORGOW

B. D. AARON

R. C. HANSEN

T. S. SAAD

H. M. ALTSCHULER

G. L. MATTIAEI

G. SHAPIRO

T. N. ANDERSON

W. W. MUMFORD

K. TOMIYASU

R. W. BEATTY

A. A. OLINER

R. D. WENGENROTH

A. C. BECK

R. A. RIVERS

J. L. YEN

S. W. ROSENTHAL

Honorary Life Members

G. C. SOUTHWORTH

A. G. CLAVIER

Editor

DONALD D. KING

PGMTT Chapters

Albuquerque-Los Alamos

D. C. Thorn

Omaha-Lincoln

R. K. Ghormley

Baltimore

F. C. Ogg, Jr.

Orange Belt

C. E. Dunn

Boston

R. Tennenholz

Orlando

R. E. Johnson

Buffalo-Niagara

D. J. Leonard

Philadelphia

L. E. Radburn

Chicago

H. Zucker

San Diego

Harley Babbitz

Columbus

W. D. Stuart

San Francisco

P. D. Strum

Denver-Boulder

R. W. Beatty

Santa Ana

D. S. Sabih

Detroit

J. H. Bryant

Seattle

A. Ishimara

Florida-W. Coast

R. C. Aucremann

Schenectady

C. B. Mayer

Long Island

L. W. Forker

Syracuse

H. G. Totten

Los Angeles

A. Clavin

Tokyo, Japan

Kiyoshi Morita

Montreal

Charles Sankey

Toronto

J. L. Yen

New York

S. Hollander

Washington, D.C.

J. A. Kaiser, Jr.

Northern N.J.

R. S. McCarter

IRE TRANSACTIONS® on Microwave Theory and Techniques

Published by The Institute of Radio Engineers, Inc., for the Professional Group on Microwave Theory and Techniques, at 1 East 79 Street, New York 21, N.Y. Responsibility for the contents rests upon the authors, and not upon the IRE, the Group, or its members. Individual copies of this issue may be purchased at the following prices: IRE members (one copy) \$2.25, libraries and colleges \$3.25, all others \$4.50. Annual subscription price: non-members, \$17.00; college and public libraries, \$12.75.

Address all manuscripts to Robert W. Beatty, PGM TT Editor, National Bureau of Standards, Boulder, Co. Submission of three copies of manuscripts, including figures, will expedite the review.

COPYRIGHT © 1962—THE INSTITUTE OF RADIO ENGINEERS, INC.

Printed in U.S.A.

All rights, including translations, are reserved by the IRE. Requests for republication privileges should be addressed to the Institute of Radio Engineers, 1 E. 79 St., New York 21, N.Y.