

IRE Transactions

on

Microwave Theory and Techniques

Published by the Professional Group on Microwave Theory and Techniques

Volume MTT-5

APRIL, 1957

Number 2

TABLE OF CONTENTS

A Message from the Editor.....	<i>Theodore S. Saad</i>	80
Frontispiece.....	<i>Alfred C. Beck</i>	81
Communication Superhighways.....	<i>Alfred C. Beck</i>	82

Report of Advances in Microwave Theory and Techniques—1956.....	<i>Donald D. King</i>	83
---	-----------------------	----

CONTRIBUTIONS

Coupled Strip Transmission Lines with Rectangular Inner Conductors.....	<i>James D. Horgan</i>	92
The Impedance of a Wire Grid Parallel to a Dielectric Interface.....	<i>James R. Wait</i>	99
Semicircular Ridges in Rectangular Waveguides.....	<i>J. Van Bladel and O. Von Rohr, Jr.</i>	103
Synthesis of a Class of Microwave Filters.....	<i>Harold Seidel</i>	107
Single Slab Arbitrary Polarization Surface Wave Structure.....	<i>Robert C. Hansen</i>	115
The Effects of Reflections from Randomly Spaced Discontinuities in Transmission Lines...	<i>Richard K. Moore</i>	121
The Statistical Prediction of Voltage Standing-Wave Ratio.....	<i>J. A. Mullen and W. L. Pritchard</i>	127
Performance of Three-Millimeter Harmonic Generators and Crystal Detectors.....	<i>J. M. Richardson and R. B. Riley</i>	131
Circularly Polarized Microwave Cavity Filters.....	<i>Conrad E. Nelson</i>	136
Reference Cavity Design Considerations.....	<i>William A. Gerard</i>	148
The Relationship of Physical Applications of Fourier Transforms in Various Fields of Wave Theory and Circuitry.....	<i>E. Folke Bolinder</i>	153
A Variant in the Measurement of Two-Port Junctions.....	<i>Georges Deschamps</i>	159

CORRESPONDENCE

WESCON Papers' Deadline Set for May 1.....		161
The IRE "Affiliate" Plan—A New Venture in Engineering Society Structure and Service.....	<i>W. R. G. Baker</i>	161
Matching the Sides of a Parallel-Plate Region.....	<i>Arthur C. Hudson</i>	161
A Method of Analysis of Symmetrical Four-Port Networks.....	<i>John Reed</i>	162
Miniature Waveguide Flanges Unpressurized Contact Type.....	<i>Tore N. Anderson</i>	162
Criteria for the Design of Loop-Type Directional Couplers for the L Band.....	<i>Richard F. Schwartz</i>	162
Planar Transmission Lines—Parts III and IV.....	<i>K. S. Packard, Jr. and D. Park</i>	163
A Low VSWR Matching Technique.....	<i>L. Goldstone and P. A. Rizzi</i>	163
A Broad-Band Microwave Circulator.....	<i>A. Clavin and E. A. Ohm</i>	164
On Symmetrical Matching.....	<i>J. Reed and H. F. Mathis</i>	165
The Available Power of a Matched Generator from the Measured Load Power in the Presence of Small Dissipation and Mismatch of the Connecting Network.....	<i>L. O. Sweet and M. Sucher</i>	167
Contributors.....		169