

IEEE CAT. NO. 93CH3277-1

ISSN 0149-645X

**1993**  
**IEEE MTT-S**  
**INTERNATIONAL MICROWAVE**  
**SYMPOSIUM DIGEST**

**Volume 3**

**June 14–18, 1993**  
**Georgia World Congress Center**  
**Atlanta, Georgia**

**WAYMOND R. SCOTT, JR.**  
**PUBLICATIONS CHAIRMAN**

*Responsibility for the contents of the papers published in this Digest rests upon the authors and not upon IEEE or any of its members.*

***Additional copies of this Digest are available from:***

The Institute of Electrical and Electronic Engineers, Inc.  
Publication Order Department  
445 Hoes Lane  
Piscataway, NJ 08855-1331

IEEE Catalog Number 93CH3277-1  
ISBN 0-7803-1209-0 (softbound)  
ISBN 0-7803-1210-4 (casebound)  
ISBN 0-7803-1211-2 (microfiche)  
Library of Congress Number 77-645125  
ISSN 0149-645X

***IEEE MTT-S International Microwave Symposium***

IEEE MTT-S International Microwave Symposium Digest 1977  
New York, Institute of Electrical and Electronics Engineers

v. III. 28 cm. annual.

Continues: IEEE MTT-S International Microwave Symposium Digest of technical papers, ISSN 0149-6298.

Key title: IEEE MTT-S International Microwave Symposium Digest, ISSN 0149-645X

1. Microwaves—Congress. 2. Microwave devices—Congresses. I. Institute of Electrical and Electronics Engineers. II. IEEE MTT-S International Microwave Symposium Digest.

TK7876.I184	621.381'3	77-645125
Library of Congress	78	MARC-S

***Copyright and Reprint Permission***

*Abstracting is permitted with credit to the sources. Libraries are permitted to photocopy beyond the limits of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through the Copyright Clearance Center; 27 Congress Street, Salem, MA 01970. For other copying, reprint, or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331. All rights reserved.*

*Copyright © 1993 by The Institute of Electrical and Electronic Engineers, Inc.*

Front Cover: *Georgia World Congress Center, photograph courtesy of the Georgia World Congress Center*

Back Cover: *Upper left—Microwave Communication Dishes, photograph courtesy of the Turner Broadcasting System, Inc.; Upper right—Stone Mountain Park Laser Show, photograph courtesy of the Atlanta Convention and Visitors Bureau; Lower left—Marriot Marquis Interior, photograph by Atlanta Stock Associates; Lower right—Atlanta Fulton County Stadium, photograph courtesy of the Atlanta Convention and Visitors Bureau.*