

SESSION C1.

MULTIFUNCTION MICROWAVE MODULES

PANEL MODERATOR: B. Spielman  
NRL

0830 - 1200

Tuesday Morning, June 21, 1977

Mission Courts South

SHERATON - HARBOR ISLAND HOTEL

SESSION C1

MULTI-FUNCTION MICROWAVE ASSEMBLIES  
(PANEL)

SPONSORED BY THE MTT-6 COMMITTEE ON MICROWAVE  
AND MILLIMETER WAVE INTEGRATED CIRCUITS  
(R.KNERR, CHAIRMAN)

B.E.SPIELMAN, ORGANIZER  
NAVAL RESEARCH LABORATORY  
WASHINGTON, DC 20375

TUESDAY, JUNE 21, 1977  
0830-1100 MISSION COURTS SOUTH (C)  
SHERATON HARBOR ISLAND HOTEL

This session will discuss the collection of research-and-development and production-fabrication problems associated with the successful implementation of multi-function microwave assemblies. The challenge of this implementation is to incorporate all circuit functions needed to satisfy some transfer characteristic into a single compact enclosure, using transmission line techniques that not only perform well, but that are also cost-effective and amenable to high-volume production. Topics to be addressed include:

- . Feed-thru and interconnection problems
- . Approaches for minimizing the number of components for a given number of functions
- . Assessment of relative importance of size, cost, weight
- . Trade-offs in employing single transmission medium vs. multiple-transmission media approach
- . Advantages and disadvantages of various transmission lines
- . Techniques for treating higher-order moding and inter-component isolation
- . Scale-of-integration limitations
- . Packaging techniques
- . Manufacturing-related problems
- . Military specifications
- . Standardization of components for multi-function assemblies
- . Cost trade-offs in multi-function vs. single-function packaging
- . Impact of single-package contents on system testing, field or factory repairability, yield, and tune-up ease for various operating frequencies

The session will begin with a brief overview of this technological area given by the keynote speaker. Each panel member will then make a short statement highlighting important aspects of this technology from his vantage point. The session will then move into a discussion phase amongst both panel members and interested audience participants.

Panel Moderator: Barry E. Spielman, Naval  
Research Laboratory,  
Washington, DC 20375

Keynote Speaker: Richard C. Van Wagoner,  
NRL/NAVMAT, Washington,  
DC 20360

Panel Members: Thomas R. Rose, Raytheon Co., Spec.  
MW Devices Operation, Waltham, MA  
H. Warren Cooper, Westinghouse Elec.  
Corp., Advanced Tech. Lab., Balto., MD  
Harlan G. Howe, Jr., MW Associates, Inc.,  
Corporate Eng. Staff, Burlington, MA  
Lee A. Meadows, Raytheon Co., Manager,  
Advanced Systems Dept., Goleta, CA  
Vic Kiveat, Westinghouse Elec. Corp.,  
EW Group, System Dev. Div., Balto., MD  
George Scherer, ITT, Avionics Div.,  
Nutley, NJ