

**TUESDAY,
JUNE 21, 1977**

Cuyamaca Room (A)

Mission Courts North (B)

SOLID STATE SOURCES

SIX PORT NETWORK ANALYSIS

Chairman: Berin Fank, Varian
Organizer: Arye Rosen, RCA

Chairman & Organizer: S. Adam, H.P.

0800	Welcome: D. Rubin Chairman, Steering Committee Keynote: L. Whicker President, MTT-S ADCOM				
0830 A1.1	"High Power W-Band Pulsed Impatt Oscillators" T. Fong, W. Lane, H. Kuno, N. Kramer, Hughes	20	0830 B1.1	"The Six-Port Reflectometer; An Alternative Network Analyzer" G. Engen, NBS	44
0850 A1.2	"Mechanically Tuneable, Cavity-Stabilized Millimeter-Wave Impatt Oscillators" B. Owen, Bell Labs	22	0850 B1.2	"A Network Analyser Using Two 6-Port Reflectometers" C. Hoer, NBS	47
0910 A1.3	"Y-Band (170-260 GHz) Tuneable CW Impatt Diode Oscillators" C. Chao, Hughes R. Bernock, E. Nakaji, R. Ying, K. Weller, D. Lee	26	0910 B1.3	"A Six-Port Automatic Network Analyser" H. Cronson, L. Susman, Sperry Res. Center	50
0930 A1.4	"Ka-Band Solid State Amplifier" F. Bayuk, J. Raue, T.R.W.	29	0930 B1.4	"An Improved Circuit For Implementing the Six-Port Technique of Microwave Measurements" G. Engen, NBS	53
BREAK - 0950-1020			BREAK - 0950-1020		
1020 A1.5	"Computer Aided Time and Frequency Domain Measurements of Trapatt Diode Oscillators" M. Ryken, Jr., Pacific Missile Test Cntr. K. Kotzebue, UCSB	32	1020 B1.5	"An Application of the Six-Port Reflectometer to Precision Measurement of One-Port Parameters" E. Komarek, NBS	56
1040 A1.6	"Amplifier Applications of Millimeter Wave InP Gunn Devices" R. Hamilton, Jr., S. Long, Varian	36	1040 B1.6	"A Semi-Automated Six-Port for Measuring Millimeter Wave Power and Complex Reflection Coefficient" M. Weidman, NBS	58
1100 A1.7	"A New Look at Noise in Transferred Electron Oscillators" H. Gnerlich, J. Ondira, Lehigh Univ.	39			

**TUESDAY
AFTERNOON**

DIODE FREQUENCY CONVERTERS

MICROWAVE MEASUREMENTS

Chairman: John Kuno, Hughes
Organizer: Ayre Rosen, RCA

Chairman & Organizer:
E.L. Komarek, NBS

1330 A2.1	"Broadband Frequency Dividers Using Microwave Varactors" R. Harrison, COM DEV LTD.	80	1330 B2.1	"Microwave Deviation Linearity Test Method" J.C. Caci, N. Comm. Area/EPEGM	104
1350 A2.2	"Parametric Frequency Multiplication and Level Control in Broadband Microwave Signal Source" Y. Kim, R. Kmetovicz, H.P.	83	1350 B2.2	"A Microwave Linearity Test Set" G.L. Heiter, Bell Labs	107
1410 A2.3	"Low Cost X-Band MIC Baritt Doppler Sensor" S. Kwok, K. Weller, Hughes	87	1410 B2.3	"Phase Noise Measurements in the Frequency Domain" A. Lance, W. Seal, F. Mendoza, N. Hudson, TRW	110
1430 A2.4	"K-Band Baritt Doppler Detectors" J. East, P. McCleer, G. Haddad, Univ. of Michigan	88	BREAK - 1430-1500		
BREAK - 1500-1530			1500 B2.4	"Super TSD, Covering N-Port Measurements With Multiple Leakage Paths" R. Speciale, N. Franzen, Consultants	114
1530 A2.5	"FM Distortion in Single Cascaded Injection Locked Diode Oscillators" T. Berceli, Res. Inst. for TELECOM, Budapest, Hungary	92	1520 B2.5	"Probe Measurements of Guide Wavelength in Rectangular Silicon Dielectric Waveguide" H. Jacobs, USAECOM, G. Novick, R. Walter, C. LoCascio, Monmouth College	118
1550 A2.6	"A Simple Quasi-Optical Mixer for 100-120 GHz" A. Kerr, NASA Goddard, P. Siegel, Columbia Univ. R. Mattauach, Univ. of Virginia	96	1540 B2.6	"Determination of Complex Dielectric and Magnetic Properties of Materials Using a Least Square Fit Method Based on Von Hippel's Technique" S. Weisbrod, L. Morgan, L. Hughes, Teledyne Micronetics	121
1610 A2.7	"Quasi Optical Receiver Design" J. Gustincic, Consultant	99	1600 B2.7	"Measurement of Dielectric Properties with Superconducting Resonators: Theory and Practice" W. Meyer, Braunschweig Tech. Univ., W. Germany	124

MULTIFUNCTION MICROWAVE MODULES

OPTICS AND SUBMILIMETER WAVES

Moderator: B. Spielman, NRL

I. Review of Fibre & Integrated Optics
 Organizer: D. Anderson, Rockwell
 Chairman: H. Taylor, NOSC (NELC)

0830 Panelists To Be Announced

62

0830 "Light Wave Communications" (invited)
 D1.1 M. DiDomenico, Bell Labs

66

0900 "Single Strand Optical Fibre Systems"
 D1.2 M. Barnoski, Hughes Res. Lab

67

0930 "A Review of Integrated Optics"
 D1.3 WSC Chang, Washington Univ.

68

BREAK — 1010-1040

II. Novel Millimeter Wave Sources
 Chairman: J. Gallagher, Georgia Inst. of Tech.

BREAK — 1000-1030

1040 "Relativistic Electron Beam Interactions for
 D1.4 Generation of High Power at Microwave
 Frequencies" (invited)
 T. Godlove, NRL, V. Granatstein

69

1110 "CW Performance of Optically Pumped Lasers in
 D1.5 the Millimeter Wave Spectral Region"
 F. Foote, D. Hodges, Aerospace

73

1130 "Development and Applications of Millimeter
 D1.6 Wavelength, High Power Optically Pumped Lasers"
 N. Luhmann, Jr., A. Semet, UCLA

76

COMPUTER ORIENTED
MICROWAVE DESIGN AND PRACTICES

HIGH POWER

Chairman: B.S. Perlman, RCA Labs
 Organizer: V.G. Gelinovatch, USAECOM

Chairman: J. Osepchuk, Raytheon
 Organizer: H. Goldie, Westinghouse

1330 "Calculator-Based Synthesis Routine Speeds
 C2.1 Microwave Amplifier Design"
 D. Mellor, G. Pierson, HP

130

1330 "Dielectric Waveguides for Underwater Trans-
 D2.1 mission of high Microwave Power"
 D. Pavlidis, H. Hartnagel,
 Univ. of Newcastle Upon Tyne

156

1350 "Computer-Aided Design of Commensurate and
 C2.2 Non-Commensurate Networks Using State-Space
 Techniques"
 M.I. Sobhy, M.H. Keriakos
 Univ. of Kent at Canterbury

134

1350 "The Selection of High-Power Integrated
 D2.2 Microwave Components for Military Satellite Com-
 munication Terminals"
 F. Johnson, H. Mohr, Varian
 C. Stillings, R. Cushing, NRL

160

1410 "Microwave Circuit Design by Means of a Simple
 C2.3 Simulator with an On-Line Minicomputer"
 M. Parisot, J. Magarshack
 Electronics & Applied Physics Lab, Paris

137

1410 "Further Advances in High-Power Electronically
 D2.3 Tuned Resonators"
 A. Karp, SRI

163

BREAK — 1430-1500

BREAK — 1430-1500

1500 "An Automated Receiver Test Concept"
 C2.4 D. Cooley, R. Hume, IBM

140

1500 "A 1.2 KW L-Band Solid State Power Amplifier
 D2.4 for Spaceborne Synthetic Aperture Radars"
 K. Lee, Westinghouse

166

1520 "Computer-Controlled Infrared Microscope for
 C2.5 Thermal Analysis of Microwave Transistors"
 F. Sechi, B. Perlman, J. Cusack, RCA Labs

143

1520 "High Power Microwave P-I-N Diode Inductive
 D2.5 Driving"
 G. Georgopoulos, K.A.T.E. — Center of Higher
 Tech Education, Greece

170

1540 "Computer-Aided Tuning of Microwave Circuits"
 C2.6 J. Marquardt, G. Muller, AEG, Telefunken

147

1540 "Graceful Degradation Properties of Matched
 D2.6 N-Port Power Amplifier Combiners"
 R. Ernst, R. Camisa, A. Presser, RCA Labs

174

1610 "A Time-Domain Technique For Characterizing
 C2.7 Leaky Coaxial Cables"
 M. Iskander, M. Hamid, Univ. of Manitoba

151

1600 "A Passive Method for Monitoring Non-Ionizing
 D2.7 Radiation"
 G. Fanslow, Iowa State Univ. D. Stephenson

178

**WEDNESDAY,
JUNE 22, 1977**

Cuyamaca Room (A)			Mission Courts North (B)		
MICROWAVE INTEGRATED CIRCUITS			DIGITAL MICROWAVE SYSTEMS		
Chairman & Organizer: U.H. Gysel, Stanford Res. Inst.			Chairman: M. Yoder, Office of Naval Res. Organizer: G. Chao, Tektronix		
0830 A3.1	"A S-Band High Power Feedback Amplifier" E. Strid, C. Hsieh, Farinon	182	0830 B3.1	"Digital Radio: Systems, Markets and Trends" (invited) H. Sobol, Collins	204
0850 A3.2	"A Low Noise FET Amplifier in Coplanar Waveguide" J. Vokes, W. Barr, J. Dawsey, B. Hughes, J. Shrubbs, Royal Signals and Radar Est., England	185	0900 B3.2	"PSK and QPSK Modulators for Gigabit Data Rates" C.L. Cuccia, E.W. Matthews, Ford Aerospace	208
0910 A3.3	"An MIC Push-Pull FET Amplifier" B. Geller, M. Cohn, Westinghouse	187	0920 B3.3	"Switching Performance of MM-Wave PIN Diodes for Ultra High Data Rates" F. Bosch, O. Petersen, Bell Labs	212
BREAK — 0930-1000			0940 B3.4	"Application of Advanced Technologies to Digital Microwave Systems" D. Claxton, T.R.W.	215
1000 A3.4	"A High Power MIC Passive Diode Receiver Protector with Integral STC Using Variable Basewidth Techniques" M. Gawronski, H. Goldie, Westinghouse	191	BREAK — 1010-1040		
1020 A3.5	"A Low Noise MIC GaAs FET Amplifier for 4 GHz Radio" R. Knerr, C. Swan, Bell Labs	195	1040 B3.5	"Millimeter Wave Impatt Sources for Communication Applications" Y. Chang, J. Hellum, J. Paul, K. Weller, Hughes	216
1040 A3.6	"Ku-Band Front-End Receiver Using MIC Technology" C. Krowne, F. Marki, E. Crescenzi Watkins-Johnson	198	1100 B3.6	"Design of Direct Phase Modulators for High Speed Digital Radio Systems Using MIC Techniques" J. Robinson, A. Husain, Hirst Res. Cntr.	220
			1120 B3.7	"Precision Subnanosecond Delay Measurements of High Speed Digital Integrated Circuits" C. Ryan, M. Leskela, Mich. Tech. Univ.	224

**WEDNESDAY
AFTERNOON**

FET DEVICES AND CIRCUITS			FILTERS I		
Chairman: B. Berson, H.P. Organizer: A. Rosen, RCA			Chairman: S.B. Cohn, S.B. Cohn Assoc. Organizer: R. Levy, MDL		
1330 A4.1	"X-Band GaAs FET _{ig} Tuned Oscillator" T. Ruttan, Avantek	264	1330 B4.1	"Microwave Dielectric Resonator Filters Utilizing Ba ₂ TiO ₂ Ceramics" J. Plourde, D. Linn, Bell Labs	290
1350 A4.2	"Wide-Band Varactor-Tuned GaAs MESFET Oscillators at X and Ku-Bands" H. Tserng, H.M. Macksey, Texas Inst.	267	1350 B4.2	"New Application of Evanescent Mode Waveguide to Filter Design" R. Snyder, Freq. Eng. Lab	294
1410 A4.3	"Design of GaAs MESFET Oscillator Using Large Signal S-Parameters" Y. Mitsui, S. Mitsui	270	1410 B4.3	"Multi-Octave Combine Filter Multiplexers" P. LaTourrette, Acronetics	298
1430 A4.4	"A Dielectric Resonator Oscillator With 5 PPM Long Term Stability at 4 GHz" J. Plourde, D. Linn, I. Tatsuguchi, C. Swan Bell Labs	273	1430 B4.4	"TEM Bandpass Filters Having Eighth-Wavelength Coupled Stubs" M. Horton, Horton Assoc.	302
BREAK — 1450-1520			BREAK — 1450-1520		
1520 A4.5	"A Half-Micron Gate Low Noise GaAs MESFET and Amplifiers" H. Kadera, Y. Kaneko, H. Sato, Hitachi	277	1520 B4.5	"The Design of Ladder Networks Containing Lumped and Distributed Elements" M. Sobhy, M. Safi, Univ. of Kent at Canterbury	305
1540 A4.6	"High Power Microwave Static Induction Transistor" K. Kajiwara, Y. Yukimoto, K. Shirahata, Mitsubishi	281	1540 B4.6	"On the Design of Matched Equalizers of Prescribed Gain Versus Frequency Profiles" D. Mellor, H.P.	308
1600 A4.7	"An Experimental Evaluation of X-Band GaAs FET Mixers Using Single and Dual-Gate Devices" S. Cripps, O. Nielsen, D. Parker, J. Turner, Plessey	285	1600 B4.7	"Exact Synthesis of Interstage Matching Network for Broadband Microwave GaAs FET Amplifiers" W. Ku, Naval Postgraduate School	312

Mission Courts South (C)

Victoria Room (D)

MICROWAVE & MM WAVE SOLID STATE
CIRCUIT DEVELOPMENT IN JAPANAPPLICATIONS TO
CANCER TREATMENT IChairman: Y. Nakamura, Nippon Tel.
Organizer: S. Saito, Univ. of TokyoChairman: A. Ecker, Scientific Atlantic
Organizer: W. Guy, Univ. of Washington

0830 C3.1	"4-W Impatt Amplifiers for 6-8 GHz 1800 Channel FM Radio Systems" M. Noguchi, T. Hayasaka, K. Sakamoto Nippon Elec.	228	0830 D3.1	"Microwave Thermography as a Diagnostic Tool for the Detection of Cancer" (invited) A. Barrett, P. Myers, MIT	250
0850 C3.2	"High Power GaAs Impatt Amplifiers" K. Nishitani, H. Sawano, T. Ishii, S. Mitsui Mitsubishi	231	0900 D3.2	"Hyperthermia Dose Definition" E.R. Atkinson (invited), Nat. Cancer Inst.	251
0910 C3.3	"Injection Locking of an Impatt Diode Oscillator by Using a Low-Frequency Signal Parametric Injection Locking" H. Okamoto, Nippon Tel., M. Ikeda	234	0930 D3.3	"Selective Heating of Cutaneous Human Tumors at 27.12 MHz" P. Antich, N. Tokita, J. Kim, E. Hahn Slone-Kettering Cancer Cntr.	254
0930 C3.4	"Schottky-Barrier Diode Converters in the Short Millimeter Wavelengths Region" M. Akaike, Yokosuka Elec.	237	BREAK - 0950-1020		
BREAK - 1000-1030					
1030 C3.5	"A New Microwave Amplitude Limiter Using GaAs Field Effect Transistor" S. Fukuda, M. Kitamura, Y. Ara, I. Haga Nippon Elec.	240	1020 D3.4	"Hyperthermia: Healing and Hazard in Tumor Bearing Rats" H. Moroson, S. Stowe, M. Schechter N.Y. Medical Cntr.	255
1050 C3.6	"A 7 GHz FM Transmitter Utilizing GaAs Power MESFETS" H. Komizo, Y. Arai, T. Saito, Fujitsu Labs.	243	1040 D3.5	"Changes in Tumor Blood Flow Produced by Microwave-Induced Hyperthermia" C. Sutton, F. Carroll, Univ. of Miami	258
1110 C3.7	"20 GHz Band GaAs-FET Waveguide-Type Amplifier" H. Tohyama, Nippon Tel.	246	1100 D3.6	"Increase in X-Ray Sensitivity of Cancer After Exposure to 434 MHz Electromagnetic Radiation" J.A.G. Holt Radiotherapy Cntr., Australia	259

MICROWAVE ACOUSTICS

APPLICATIONS TO
CANCER TREATMENT IIChairman: T.W. Bristol, Hughes
Organizer: R.C. Williamson, MITChairman: R. Atkinson, Nat. Cancer Inst.
Organizer: W. Guy, Univ. of Washington

1330 C4.1	"Surface Acoustic Wave Slanted Correlators for Linear FM Pulse-Compressors" B. Potter, TI	318	1330 D4.1	"Preliminary In-Vivo Probe Measurements of the Electrical Properties of Tumors in Mice" E. Burdette, J. Seals, J. Toler, F. Cain R. Magin, Nat. Cancer Inst.	344
1350 C4.2	"A Saw Pulse Compression Filter Using the Reflective Dot Array" H. van de Vaart, L. Solie, Sperry Res. Center	321	1350 D4.2	"Non-Perturbing Microprobes for Measurement in Electromagnetic Fields" A. Priou, A. Deficis, O.N.E.R.A., France	348
1410 C4.3	"Real Time Wideband Cepstrum Analysis Based on Saw Devices" J. Jack, P. Grant, J. Collins, Univ. of Edinburgh	324	1410 D4.3	"Near Zone Microwave Exposure of a Biological Sphere" K. Al-Badwaihy, S. Hafiz, Cairo Univ., Egypt	352
BREAK - 1430-1500					
1500 C4.4	"Synthesis of Acoustic-Surface-Wave-Resonator Filters Using Any of Various Coupling Mechanics" C. Matthaei, E. Savage, F. Barman, UCSB	328	1430 D4.4	"Effect of Surface Cooling and Blood Flow on the Electromagnetic Heating of Tissue" H. Kritikos, K. Foster, H. Schwan, Univ. of Penn.	354
BREAK - 1450-1520					
1520 C4.5	"Microwave Devices Based on Magnetostatic Wave Reflecting Arrays" J. Collins, J. Owens, C. Smith, U. of Texas J. Adam, M. Bardai, U. of Edinburgh	332	1520 D4.5	"Bolusing Technique for Batch Microwave Irradiation of Tumors in the Far Field" A. Cheung, D. McCulloch, J. Robinson, G. Samaras Univ. of Maryland Hospital	357
1540 C4.6	"Actively Controlled SAW Multistrip Coupler" J. Crowley, J. Weller, T. Giallorenzi, NRL	336	1540 D4.6	"A System for Developing Microwave Induced Hyperthermia in Small Animals" R. Baker, V. Smith, L. Kobe, T. Phillips, UCSF L. Kane, L. Kobe, T. Phillips, UCSF	360
1600 C4.7	"X-Band Bulk Wave Delay Line Stabilized Oscillator" Y. Amblard, A. Peyrat, Tohmson, CSF	339	1600 D4.7	"The Design and Performance of a Circularly Polarized Direct Contact Applicator for Microwave Diathermy" G. Kantor, D. Witters, J. Greiser, HEW	364

**THURSDAY,
JUNE 23, 1977**

Cuyamaca Room (A)			Mission Courts North (B)		
MICROWAVE AND MILLIMETER WAVE INTEGRATED CIRCUITS			FILTERS II		
Chairman: R.H. Knerr, Bell Labs			Chairman: A.E. Williams, COMSAT Organizer: S.B. Cohn, S.B. Cohn Assoc.		
0830 A5.1	"Interdigitated Couplers on Fuzed Silica" W. Childs, P. Carlton, COMSAT	370	0830 B5.1	"Low Loss Linear Phase Filters" S. Kallianteris, COM DEV LTD.	394
0850 A5.2	"Wide-Band Frequency Discriminator with High Linearity" U. Geysel, J. Watjen, SRI	373	0850 B5.2	"Dual Mode Canonical Waveguide Filters" A. Atia, A. Williams, COMSAT	397
0910 A5.3	"Components for Microwave Integrated Circuits With Evanescent Mode Resonators" K. Schunemann, R. Knochel, G. Begemann Univ., West Germany	377	0910 B5.3	"An Exact Solution for a Six-Cavity Dual-Mode Elliptic Bandpass Filter" G. Pfitzenmaier, Siemens	400
BREAK — 0930-1000			0930 B5.4	"All GFEC Dual-Mode Quasi-Elliptic Multiplexers for Satellite Transponders" C. Mok, N. Epstein, RCA Spar Tech. Ltd.	404
1000 A5.4	"Calculation of Quasi-Planar Lines for MM-Wave Application" H. Hofmann, AEG-Telefunken, W. Germany	381	BREAK — 0950-1020		
1020 A5.5	"Planar Multiport Millimeter Integrated Circuits" P. Meier, AIL	385	1020 B5.5	"Tuning Procedure for Symmetric Coupled- Resonator Filters" H. Bell, Jr., WAVECOM	407
1040 A5.6	"Subharmonically Pumped Millimeter Wave Mixers Built with Notch-Front and Beam-Lead Diodes" T. McMaster, E. Carlson, M. Schneider, Bell Labs	389	1040 B5.6	"Short Circuit Tuning Method for Singly Terminated Filters" H. Chen, COMSAT	409
			1110 B5.7	"Measurement Systems to Display $\text{Re}(Z_{s,t})$ of Singly Terminated Filters" W. Erlinger, Wenzel/Erlinger Assoc.	412
			1130 B5.8	"Loss Mechanisms in Coupled Cavity Filters" H. Thal, Jr., G.E.	415

**THURSDAY
AFTERNOON**

LOW NOISE COMPONENTS AND TECHNIQUES			PASSIVE COMPONENTS		
Chairman: J. Whelehan, AIL Organizers: J. Honda, TRW, H. Chait, Aerospace			Chairman: M.C. Horton, Horton Assoc. Organizer: S.B. Cohn, S.B. Cohn Assoc.		
1330 A6.1	"Low Noise and Linear FET Amplifiers for Satellite Communications" P. Mercer, D. Cowan, A. Bell, Spar Tech Ltd.	468	1330 B6.1	"Experimental Attenuation of Rectangular Wave- guides at Millimeter-Wavelength" F. Tischer, N. Carolina State Univ.	492
1350 A6.2	"An Environmentalized Low-Noise Parametric Amplifier" E. Niehenke, Westinghouse	472	1350 B6.2	"High Directivity CTL-Couplers and a New Technique for the Measurement of CTL-Coupler Parameters" S. Rehnmark, Anaren	495
1410 A6.3	"Broadbanding an Electronically Switched Two- Channel Ka-Band Parametric Amplifier" S. Nussbaum, E. Sard, AIL	476	1410 B6.3	"A Broadband Planar N-Way Combiner/Divider" Z. Galani, S. Temple, Raytheon	499
BREAK — 1430-1500			1430 B6.4	"New N-Way Hybrid Power Dividers" N. Nagai, E. Maekawa, K. Ono, Hokkaido Univ.	503
1500 A6.4	"Low Noise Octave Bandwidth Waveguide Mixer" L. Yuan, TRW	480	1450 B6.5	"A New Odd Number N-Way Power Combiner/ Divider" C. Chao, TRW	506
1520 A6.5	"Analysis of Noise in Room-Temperature Millimeter-Wave Mixers" D. Held, A. Kerr, NASA Goddard	483			
1540 A6.6	"Image Conversion Effects in Diode Mixers" M. Hines, MA	487			

Mission Courts South (C)

Victoria Room (D)

SATELLITE COMMUNICATIONS
SYSTEMSWAVEGUIDES AND TRANSMISSION
LINESChairman: R. Hicks, Collins
Organizer: J. Horton, G.E.Chairmen & Organizers: T. Itoh, SRI
D.M. Bolle, Brown Univ.

0830 C5.1	"A TV Satellite Broadcast System for the Public Broadcasting Service" (invited) J. Moore, Collins Commercial Comm.	420	0830 D5.1	"Q Factors of Free and Shielded Cylindrical Dielectric Resonators" P. Guillon, Y. Garault, Lab of Microwave Electronics, France	434
0900 C5.2	"Public Service Satellite Communications Opportunities" E. Wolff, NASA, Goddard	421	0850 D5.2	"Radiation From Triangular and Circular Resonators in Microstrip" M. Cuhaci, D. James, Comm. Res. Centre, Ottawa	438
0930 C5.3	"The Centimeter Wave Beacon of the Comstar Domestic Communications Satellites" W. Getsinger, COMSAT	424	0910 D5.3	"Theoretical Analysis of a Ridged-Waveguide Mounting Structure" S. Mizushima, N. Kuwabara, H. Kondoh, Shizuoka Univ., Japan	442
	BREAK — 0950-1020		0930 D5.4	"Analysis of Waveguide Junctions by Rank Reduction" D. Zuckerman, Bell Labs P. Diamant, Columbia U.	445
1020 C5.4	"A 12 GHz Low Cost Earth Terminal for Direct TV Reception from Broadcast Satellites" R. Douville, Comm. Res. Centre, Ottawa	427	0950 D5.5	"Fields in Nonuniform Transmission Lines" P. McGovern, Univ. of Newcastle, Australia	449
1040 C5.5	"A Cost-Effective Modular Down-Converter for S-Band WEFAX Reception" H.P. Shuch, Micro Comm.	430		BREAK — 1010-1040	
			1040 D5.6	"Propagating Modes Along a Thin Wire Located Near a Grounded Dielectric Slab" E. Kuester, D. Chang, Univ. of Colorado	453
			1100 D5.7	"The Electromagnetic Fields and the Phase Constants of Dielectric Image Lines" I. Wolff, K. Solbach, Univ. of Duisburg, W. Germany	456
			1120 D5.8	"Analysis of Dispersion in Arbitrarily Configured Dielectric-Loaded Transmission Structures" A. Ganguly, B. Spielman, NRL	459
			1140 D5.9	"Infrared Detection of Surface Charge and Current Distributions" R. Burton, J. Selim, Nval Postgraduate School	463

FERRITES

ANTENNAS AND COMPONENTS

Chairman & Organizer: F.J. Rosenbaum, Wash. Univ.

Chairman & Organizer: D.C. Chang, Univ. of Colorado

1330 C6.1	"Conical Representation and Figure of Merit of Circulator" K. Araki, Y. Naito, Tokyo Inst. of Tech.	512	1330 D6.1	"Leaky-Wave Antenna and Band-Reject Filter for Millimeter-Wave Integrated Circuits" T. Itoh, SRI	538
1350 C6.2	"Diplexer and Broadbanding Operations of Stripline Y-Junction Circulators" T. Nagao, Nat. Defence Academy, Japan	516	1350 D6.2	"Millimetre-Wave Insular-Guide Frequency-Scanned Array" N. Williams, A. Rudge, ERA—IITRI, S. Gibbs, RRE	542
1410 C6.3	"The Modal Spectrum of Ferrite-Loaded Striplines" D. Bolle, Brown, Univ.	519	1410 D6.3	"2-GHz Feed for Horn-Reflector Antenna Utilizing Evanescent Mode Filter" C. Ren, H. Wang, Bell Labs	545
1430 C6.4	"Longitudinally Magnetized Ferrite Phase Shifters Using Reduced Height Rectangular Waveguide" B.C. Lint, A. Priou, Toulouse Res. Centre	523	1430 D6.4	"Propagation and Radiation Behaviour of Dielectric Coated E-Plane Sectoral Horn" S. Gupta, A. Kamal, R. Nair, Univ. of Roorkee, India	547
	BREAK — 1450-1520		1450 D6.5	"Reduction of Rain-Crosspolarization by Its Dependence on Polarization Directions" L. Lee, EDUTEL	550
1520 C6.5	"Band Stop Filter Using LPE-YIG Films" T. Tsai, J. Sethares, Rome Air Dev. Center	526			
1540 C6.6	"A High Power X-Band Frequency Selective Passive YIG Limiter" S. Sitzer, P. Carter, Jr., H. Goldie, Westinghouse	528			
1610 C6.7	"Microwave Applications of Thin Magnetic Resistive Sheets" K. Suetake, Y. Shimizu, Tokyo Inst. of Tech. Y. Kotsuka, Tokai Univ.; K. Ishino, Y. Hashimoto, TDK Electronics Co. Ltd.	532			