

CONTENTS

Invited lectures

THE EXTENSION OF MICROWAVE TECHNOLOGY TO TERAHERTZ FREQUENCIES <i>Thomas W. Crowe, University of Virginia</i>	1
METHODS FOR THE ANALYSIS AND SIMULATION REGARDING THE ELECTROMAGNETIC COMPATIBILITY OF ELECTRONIC PRODUCTS <i>Marco Leone, Siemens AG, Germany</i>	2
AZIMUTH, ELEVATION AND TIME DELAY DISTRIBUTION IN URBAN WIRELESS COMMUNICATION CHANNELS FOR SMART ANTENNA APPLICATIONS <i>Nathan Blaunstein, Ben Gurion University of the Negev, Beer Sheva, Israel.</i>	3
POSSIBLE APPLICATIONS OF CYLINDRICAL STRATIFIED STRUCTURES LOADED WITH COMPLEX MATERIALS <i>Alessandro Toscano, Lucio Vigni, University "Roma Tre", Italy.</i>	26
AP 1-1 Antennas and propagation	
NEAR-FIELD OF THE PHASE ARRAY RADAR ANTENNA <i>Bartolic, J., Šipuš, Z., Bonefačić, D.</i>	32
AN ULTRA-WIDEBAND PRINTED SQUARE MONOPOLE ANTENNA WITH SEMI-CIRCULAR BASE <i>Zagriatski, S., Padhi, S. K., Crozier, S., Bialkowski, M. E.</i>	36
EFFICIENCY IMPROVEMENT IN SYMMETRIC DUAL-REFLECTOR ANTENNAS BY FEED OPTIMIZATION AND BLOCKAGE MINIMIZATION <i>Karimkashi, S., Rashed-Mohassel, J.</i>	40
DUALBAND QUARTERWAVELENGTH PATCH ANTENNA LOADED BY A PAIR OF SPIRAL NOTCHES <i>Polívka, M., Čvela, M.</i>	44
MINIATURE MICROSTRIP FRACTAL PATCH ANTENNA FED BY J-PROBE <i>Hazdra, P., Mazánek, M., Pankrác, V.</i>	48
APPLICATION OF LOSSY PHASE SHIFTERS FOR MICROSTRIP REFLECTARRAY ANTENNAS <i>Oraizi, H., Keyghobad, K., Hosseinzadeh, S.</i>	52
LINK BUDGET PERFORMANCE FOR VARIOUS OUTDOOR SCENARIOS TAKING INTO ACCOUNT FADING PHENOMENA <i>Blaunstein N., Yarkoni N., Katz D.</i>	56
STUDY OF UMTS IN URBAN MACRO AND MICROCELLULAR ENVIRONMENT <i>Holiš, J., Pecháč, P.</i>	60

DEVELOPMENT OF ULTRA WIDEBAND ELECTROMAGNETIC PHANTOM MATERIALS FOR ANTENNAS AND PROPAGATION STUDIES	64
<i>Hara, D., Kobayashi, T.</i>	
IB 1-1 Industrial and biomedical applications	
EQUIPMENT AND PROCEDURES FOR MICROWAVE NONDESTRUCTIVE EVALUATION OF LAPIDEOUS MATERIALS	
<i>Bozzi, E., Chimenti, M., Genovesi, S., Salerno, E., Zucchelli, A.</i>	68
EXPERIMENTAL INVESTIGATION OF ELECTROMAGNETIC ACTIVITY OF YEAST CELLS AT MILLIMETER WAVES	
<i>Jelínek, F., Pokorný, J., Šaroch, J.</i>	72
MC 2-1 Passive and active microwave circuits	
A NOVEL BULK LEFT-HANDED STRUCTURE	
<i>Buchar, P., Macháč, J., Zehentner, J.</i>	76
MICROWAVE 32-STATE PHASE SHIFTER	
<i>Gryglewski, D., Morawski T., Sedek, E., Zborowska, J.</i>	80
INTERCONNECTS AND CHIP MODULES FOR BROADBAND DIGITAL SYSTEMS WITH BITRATES UP TO 80GB/S	
<i>Nisznansky, M., Ziegler, Ch., Martius, S., Schmidt, P.</i>	84
ON THE DESIGN OF A BROADBAND RAT-RACE COUPLER IN BROADSIDE LINE TECHNIQUE	
<i>Gruszczyński, S., Wincza, K., Sachse, K.</i>	91
INVESTIGATIONS ON A STRIP TRANSMISSION-LINE CROSSOVER FOR BUTLER MATRIX APPLICATIONS	
<i>Wincza, K., Gruszczyński, S., Sachse, K.</i>	95
CN 2-1 Communication and navigation	
PASSIVE COHERENT LOCATION SYSTEM SIMULATION AND EVALUATION	
<i>Slezák, L., Kvasnička, M., Pelant, M., Vávra, J., Plšek, R.</i>	99
WIRELESS INDOOR COMMUNICATIONS APPLYING AN OPTICAL BACKBONE	
<i>Berceli, T.</i>	107
MOBILE NETWORK UPGRADE FOR EDGE IN HUNGARY	
<i>Petrás, P., Hilt, A., Suuronen, M.</i>	111
MC 2-2 Passive and active microwave circuits	
POWER DIVIDERS WITH PRESCRIBED AMPLITUDE AND PHASE BALANCE	
<i>Page, J., E.</i>	115

NOVEL SYMMETRICAL DIFFERENTIAL INDUCTOR WITH HIGHER SELF-RESONANCE FREQUENCY	
<i>Minerva, V.</i>	119
CLASS F HIGH POWER AMPLIFIER FOR X-BAND APPLICATIONS	
<i>Colantonio, P., Giannini, F., Giofrè, J., Limiti, E., Lanzieri, C., Lavanga, S.</i>	123
A MODIFIED DUAL-MODE BAND-PASS FILTER WITH DEFECTED GROUND STRUCTURE DGS	
<i>Oskouei, D., Atlasbaf, Z.</i>	127
RESONANT TERAHERTZ HETROSTRUCTURE PHOTOMIXER WITH LATERAL SCHOTTKY JUNCTION	
<i>Khmyrova, I., Ryzhii, M., Shur, M., Ryzhii, V.</i>	131
GAAS MMIC chipset for focal plane array	
<i>Limiti, E., Ciccognani, W., Paolo, F., Longhi, P.E., Serino, A.</i>	135
MC 3-3 Passive and active microwave circuits, CAD	
DETERMINATION OF THE EQUIVALENT CIRCUIT OF THE LEFT-HANDED COPLANAR WAVEGUIDE	
<i>Hudlička, M., Macháč, J., Zehentner, J.</i>	139
A NEURAL ARCHITECTURE FOR FAST APPROXIMATION OF DIFFRACTED FIELDS	
<i>Manara, G., Nepa, P., Pelosi, G., Pinto, A., Selleri, S.</i>	143
DESIGN AND MODELING OF A TUNABLE MEMS FILTER	
<i>Nosal, Z., Abramowicz, A.</i>	147
EMC 3-1 Electromagnetic compatibility and packaging	
INVESTIGATION OF SIGNIFICANT UNCERTAINTIES IN EMC MEASUREMENT	
<i>Valtr, P., Zvánovec, S., Pecháč, P.</i>	151
RADIATED EMISSION MEASUREMENT OF PRINTED CIRCUIT BOARDS IN THE GTEM CELL AND GTEM-TO-OATS CORRELATION FACTOR	
<i>Válek, M., Leone, M.</i>	155
PEDS RADIATED EMISSION EVALUATION FOR THEIR DETECTION INSIDE AN AIRCRAFT	
<i>Leo, R., Primiani, V. M.</i>	159
MM 3-1 Microwave measurement	
POWER ASPECT OF WIRELESS COMMUNICATION BY LIGHT	
<i>Wilfert, O., Kolka, Z.</i>	163
MEASUREMENT OF CAMOUFLAGE SCREEN PROPERTIES BY W-BAND FMCW RADAR	
<i>Šostronek, M., Marko, J., Kůs, J.</i>	167

MICROWAVE MEASUREMENTS OF RADIO INTERFERENCE FILTERS <i>Hoffmann, K., Škvor, Z.</i>	171
7 STATE PTP FOR VECTOR NETWORK ANALYZER <i>Závodný, V., Hoffmann, K.</i>	175
MICROWAVE PHASE SHIFTERS IN MULTIPORT S-MATRIX MEASURING SYSTEM <i>Morawski T., Zborowska J., Bury M., Kozłowski S.</i>	179
PO Poster session	
UNIVERSAL MULTISWITCH UNIT <i>Pokorný, M.</i>	183
APPLICATION OF NARROW-BAND AND WIDEBAND INTERDIGITAL BAND PASS FILTERS IN MICROWAVE CIRCUITS <i>Baabuei, J.M., Hafezi, H.M., Haydari, T., Saeedi, S.</i>	187
HIGH Q TRANSMISSION LINE STRUCTURE IN LOSSY SILICON TECHNOLOGY <i>Kitlinski, K., Donig, G., Wolmuth, H-D., Bakalski, W., Weigel, R.</i>	191
INTERFERENCE SIMULATION FOR ULTRA WIDEBAND SIGNAL <i>Petrek J.</i>	195
MEASUREMENT CIRCUIT FOR FIELD STABILIZATION SYSTEM IN SC CAVITY OF LINEAR ACCELERATOR <i>Filipek T.A.</i>	199
FULL WAVE FEM ANALYSIS OF COPLANAR TO COPLANAR WAVEGUIDE TRANSITIONS FOR FLIP-CHIP INTERCONNETS <i>Agastra, E., Limiti, E., Pelosi, G., Selleri, S.</i>	203
INDUCTOR DESIGN FLOW FOR MICROWAVE INTEGRATED POWER AMPLIFIERS <i>Kitlinski, K., Büyüktas, K., Montiel-Montoya, R., Weigel, R.</i>	207
CHAOTIC SURFACE STATISTICS RECOVERY FROM INTERFERENCE COHERENT BISTATIC MEASUREMENTS <i>Zhuravlev, A., Andreev, G.</i>	211
TECHNICAL EQUIPMENT FOR RESEARCH ON EM FIELD AND BIOLOGICAL SYSTEMS INTERACTIONS <i>Vrba, J., Vannucci, L., Peschke, P., Vožeh, F. et al.</i>	215
APPLICATOR FOR THE TREATMENT OF THE DEEP SEATED TUMOURS – NUMERICAL SIMULATIONS <i>Trefná, H., Vrba, J.</i>	219

FEASIBILITY STUDY OF MICROSTRIP RING APPLICATOR FOR MICROWAVE THERMOTHERAPY <i>Dříždal, T., Vrba, J., Zajíček, R.</i>	223
MICROWAVE APPLICATOR FOR DEEP LOCAL MICROWAVE THERMOTHERAPY: AGREEMENT BETWEEN "SAR" NUMERICAL SIMULATIONS AND MEASUREMENTS <i>Herza, J., Vrba, J., Cvek, J., Chovanec, R.</i>	227
MEASUREMENT OF RADIATION PATTERNS OF OPTICAL APPLICATORS IN THE AIR AND WATER PHANTOM <i>Martan, T., Herza, H.</i>	231
NORMALIZED SITE ATTENUATION MEASUREMENT ABOVE 1 GHZ <i>Bártik, H., Hradecký, Z., Zvánovec, S., Pankrác, V.</i>	235
STUDY OF MULTIPATH FADING RAY PARAMETERS IN TWO-LAYER MODEL OF ATMOSPHERE <i>Grábner, M., Kvičera, V.</i>	239
ANTENNA FOR SECONDARY SURVEILLANCE RADAR DEVICES <i>Chyba, M.</i>	243
MOBILE OMNIDIRECTIONAL ANTENNA FOR THE BAND UP TO 1000 MHZ FOR THE EVALUATION OF VIDEOPROCESSING DEVICES RADIATION <i>Hajach, P., Kudják, V., Podhoranský, P., Zemanovič, J.</i>	247
INVESTIGATIONS INTO ELLIPTICALLY SHAPED PRINTED MONOPOLE ANTENNAS FOR ULTRA-WIDEBAND APPLICATIONS <i>Zagriatski, S., Padhi, S. K., Crozier, S., Bialkowski, M. E.</i>	251
AN EXTENDING OF A SLOT-FIELD IN THE PLANE SELF-COMPLEMENTARY SPIRAL ANTENNA <i>Piksa, P.</i>	255
CROSS-POLARIZATION REDUCTION OF PATCH ARRAYS <i>Schejbal, V., Kovařík, V.</i>	259
SIMULATION AND REALIZATION OF PLANAR FIVE-ELEMENT YAGI-UDA ANTENNA <i>Kořínek, T., Polívka, M.</i>	263
RADIATED IMPULSE MEASUREMENT OF ULTRA WIDEBAND MONOPOLE ANTENNAS <i>Černý, P., Mazánek, M.</i>	267
PRECISE LEVEL MEASUREMENT <i>Kopecký, T.</i>	271

CLINICAL EXPERIENCE WITH LOCAL MICROWAVE HYPERTERMIA <i>Oppl, L., Vrba, J., Kubeš, J., Kvěch, J.</i>	275
MODIFICATIONS OF THE WAVEGUIDE-HORN APPLICATOR FOR MICROWAVE THERMOTHERAPY <i>Dříždal, T., Vrba, J.</i>	279
SHIELDING EFFICIENCY MEASUREMENT POSSIBILITIES <i>Hradecký, Z., Pecháč, P., Mazánek, M.</i>	283
A SELECTIVE I/Q DEMODULATOR WITH HIGH DYNAMIC RANGE FOR MICROWAVE INTERFEROMETER <i>Zela, J., Hoffmann, K., Hudec, P.</i>	287
SHIELDING EFFECTIVENESS MEASUREMENT ISSUES FOR SMALL ENCLOSURES <i>Zvárnovec, S., Hazdra, P., Pecháč, P., Mazánek, M.</i>	291
OPTIMIZE TUNING OF REZONANT CAVITY IN APPLICATOR FOR MICROWAVE DRYING OF TEXTILE <i>Pourová, M., Vrba, J.</i>	295
COMPARISON OF APPLICATORS FOR MICROWAVE DRYING OF TEXTILE MATERIALS <i>Pourová, M., Žák, O., Vrba, J., Herza, J.</i>	299
KU-BAND RESISTIVE FET MIXER WITH VERY LOW IMD3 <i>Eskandari, A.R., Ezoji, M.</i>	303
NON-CARTESIAN TLM-CELL AND BLOCK MESHING FOR WAVEGUIDE DISCONTINUITY CHARACTERIZATION WITH ARBITRARY GEOMETRY <i>Li, Z., Maguer, S., Ney, M.M.</i>	307
INVESTIGATION OF FM-BAND TRANSMITTERS AMPLITUDE VARIATIONS <i>Plšek, R., Slezák, L.</i>	311
ERRORS ESTIMATION IN TIME-INTERLEAVED ANALOG-TO-DIGITAL CONVERTERS <i>Plšek, R.</i>	316
MICROWAVE NETWORK ANALYSIS EXTENDED TO OPTICAL SYSTEMS <i>Hilt, A., Berceli, T., Udvary, E.</i>	320
NEAR AND FAR-FIELD TIME DOMAIN MEASUREMENT SYSTEM CHARACTERIZATION FOR TARGET IDENTIFICATION <i>Mah, F.S.J., Shuley, N.V.</i>	324
UWB HORN ANTENNA FOR TARGET IDENTIFICATION PURPOSES USING TIME DOMAIN TECHNIQUES <i>Mah, F.S.J., Shuley, N.V.</i>	328

A NOVEL DISCRIMINATOR-AIDED PHASE-FREQUENCY DETECTOR FOR
PHASE-LOCKED LOOP-BASED FREQUENCY SYNTHESIZER

Liu, L. Li, B. 332

IMPLEMENTATION OF SAMPLE-AND-HOLD TECHNIQUE FOR SIGMA-
DELTA FRACTIONAL-N PHASE-LOCKED LOOP

Liu, L. Li, B. 336