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United States Department of Commerce  
Technology Administration  
National Institute of Standards and Technology

*NISTIR 5084*

# Metrology for Radio-Frequency Technology: A Bibliography of NIST Publications

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Ruth Marie Lyons, Editor

August 1999

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# **Metrology for Radio-Frequency Technology: A Bibliography of NIST Publications**

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Ruth Marie Lyons, Editor

Radio-Frequency Technology Division  
Electronics and Electrical Engineering Laboratory  
National Institute of Standards and Technology  
Boulder, Colorado 80303-3328

August 1999



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# METROLOGY FOR RADIO-FREQUENCY TECHNOLOGY

## A BIBLIOGRAPHY OF NIST PUBLICATIONS

Edited by

Ruth Marie Lyons

National Institute of Standards and Technology

Boulder, CO 80303

This bibliography lists the publications by the staff of the Radio-Frequency Technology Division, formerly the Electromagnetic Fields Division, of the National Institute of Standards and Technology for the period January 1970 through July 1999. It supersedes NISTIR 5075, which listed the publications of the Electromagnetic Fields Division from January 1970 through July 1997. Selected earlier publications from the Division's predecessor organizations are included.

Key words: antennas; dielectric measurements; electromagnetic interference; microwave metrology; microwave power, impedance, attenuation; near-field antenna measurements; noise; nonionizing radiation; radiation hazards; standards; time domain; waveform metrology.

### INTRODUCTION

The Radio-Frequency Technology Division was established in 1998 as a result of a programmatic restructuring of the former Electromagnetic Fields Division. The new name more accurately reflects the Division's current technical programs and characterizes its broad mission. Programs include metrology for the fundamental microwave quantities such as power, noise, impedance, and scattering parameters; standards and metrology for wireless systems; gain, pattern, and polarization measurements for antennas; electromagnetic properties of materials; measurements for high speed microelectronics; electromagnetic field characterization and electromagnetic compatibility.

All known work published by the Division staff from January 1970 through July 1999 is included. Work performed by authors before joining this Division or work by authors who have left this Division has been included only when it had special significance. A miscellaneous category includes general publications. A few references are listed in more than one category where appropriate.

Several other information sources may be useful to the reader who is interested in NIST activities connected with electromagnetic metrology. Two companion bibliographies, NISTIR 5085 and NISTIR 5086, list publications of the Electromagnetic Technology Division and the Optoelectronics Division for the same period. Topics include metrology for laser systems, optical fibers, optical communication

equipment, cryoelectronics, superconductors, and other unusual electrical engineering materials. An excellent summary of the whole field of electromagnetic metrology as it stood in 1967 was published as a special issue of the Proceedings of the IEEE (volume 55, June 1967). Advances in the following decades were described in two other special issues of the same journal (volume 66, April 1978, and volume 74, January 1986).

#### A Note on Abbreviations

On August 23, 1988, the National Bureau of Standards (NBS) became the National Institute of Standards and Technology (NIST); therefore, documents with either prefix are considered NIST publications. Most readers are familiar with the commonly used abbreviations for the names of the professional journals that appear in this bibliography. Some publication series are peculiar to NIST and may call for explanation. They are:

NISTIR - NIST Interagency/Internal Report	NBSIR - NBS Interagency/Internal Report
NIST TN - NIST Technical Note	NBS TN - NBS Technical Note
NIST SP - NIST Special Publication	NBS SP - NBS Special Publication
NIST HB - NIST Handbook	NBS HB - NBS Handbook
NIST JRES - NIST Journal of Research	NBS JRES - NBS Journal of Research
NIST MN - NIST Monograph	NBS MN - NBS Monograph

#### Purchase Procedures and Document Availability

NIST (NBS) Technical Notes, Special Publications, Handbooks, Journals of Research, and Monographs may be purchased from the U.S. Government Printing Office (GPO). The GPO website is <http://www.access.gpo.gov/>, and the order desk phone number is 202-512-1800. For a GPO bookstore near you, use the following website address [http://www.access.gpo.gov/su\\_docs/sale/abkst001.html](http://www.access.gpo.gov/su_docs/sale/abkst001.html). The Government Printing Office usually stocks these publications for only a year or two, after which they may be purchased from the National Technical Information Service, whose website for information and ordering is at <http://www.ntis.gov/>. The phone number for ordering from NTIS is 703-487-4650.

Reprints of papers published in non-NIST media may be available in limited quantities from the authors.



## ANTENNAS

**WITTMANN, R. C.; ALPERT, B. K.; FRANCIS, M. H.**

Planar Near-Field Measurements Using Nonideal Measurement Points  
Proc., ESTEC Antenna Wkshp., 10-12 May 1999, Noordwijk, The Netherlands, pp. 153-157  
May 1999

**MUTH, L. A.**

Calibration Standards and Uncertainties in Radar Cross Section Measurements  
Proc., IEEE Radar Conf., Waltham, MA, 20-22 April 1999, pp. 326-331  
April 1999

**MUTH, L. A.; DOMICH, P. D.; WELSH, B. M.; BUTTERBAUGH, A. L. ; KENT, B. M.**

Polarimetric Calibration Standards for Reciprocal Monostatic Radar Systems  
Proc., Antenna Meas. Tech. Assoc. Symp, 25-30 October 1998, Montreal, Canada, pp. 234-239  
October 1998

**WELSH, B. M.; MUTH, L. A.; BUTERBAUGH, A. L.; KENT, B. M.**

Full Polarimetric Calibration for RCS Measurement Ranges: Performance, Analysis and Measurement Results  
Proc., Antenna Meas. Tech. Assoc. Symp, 25-30 October 1998, Montreal, Canada, pp. 100-105  
October 1998

**WITTMANN, R. C.; ALPERT, B. K.; FRANCIS, M. H.**

Near-Field Antenna Measurements Using Nonideal Measurement Locations  
IEEE Trans. Antenna Propagat., Vol. 46, No. 5, 716-722  
May 1998

**SKINNER, J. P.; KENT, B. M.; WITTMANN, R. C.; MENSA, D. L.; ANDERSH, D.**

Normalization and Interpretation of Radar Images  
IEEE Trans. Antenna Propagat., Vol. 46, No. 4, pp. 502-506  
April 1998

**SORGNIT, J.; MORA, P.; MUTH, L. A.; WITTMANN, R. C.**

Uncertainty Analysis Procedures for Dynamic Radar Cross Section Measurements at the Atlantic Test Range  
NISTIR 5073  
February 1998

**FRANCIS, M. H.; MILLIGAN, T.**

Aperture Sampling Effects in Planar Near-Field Measurements  
Proc., Antenna Meas. Tech. Assoc. Symp., 17-20 November 1997, Boston, MA, pp. 79-83  
November 1997

**KENT, B. M.; MUTH, L.A.**

Establishing a Common RCS Page Documentation Standard Based on ANSI/NCSL Z-540-1994-1 and ISO Guide 25  
Proc., Antenna Meas. Tech. Assoc. Symp., 17-20 November 1997, Boston, MA, pp. 291-296  
November 1997

**MUTH, L. A.; WITTMANN, R. C.; KENT, B. M.**

Interlaboratory Comparisons in Radar Cross Section Measurement Assurance  
Proc., Antenna Meas. Tech. Assoc. Symp., 17-21 November 1997, Boston, MA, pp. 297-307  
November 1997

Antennas (cont.)

- SKINNER, J. P.; KENT, B. M.; WITTMANN, R. C.; MENSA, D. L.; ANDERSH, D.**  
Radar Image Normalization and Interpretation  
Proc., Antenna Meas. Tech. Assoc. Symp., 17-20 November 1997, Boston, MA, pp. 303-307  
November 1997
- STUBENRAUCH, C. F.; MACREYNOLDS, K.; NORGARD, J. D.; SEIFERT, M.; CORMACK, R. H.**  
Microwave Antenna Far-Field Patterns Determined from Infrared Holograms  
Proc., Antenna Meas. Tech. Assoc. Symp., 17-21 November 1997, Boston, MA, pp. 125-130  
November 1997
- FRANCIS, M. H.**  
Aperture Sampling Requirements  
IEEE Antennas and Propagat. Magazine, Vol. 39, No. 5, pp. 76-77  
October 1997
- MUTH, L. A.; WITTMANN, R. C.**  
Calibration of Polarimetric Radar Systems  
Dig., Intl. Symp. on Antennas and Propagat., 13-18 July 1997, Montreal, Canada, pp. 830-833  
July 1997
- MUTH, L. A.; WITTMANN, R. C.; KENT, B. M.**  
Measurement Assurance and Certification of Radar Cross Section Measurements  
Proc., NCSL Conf., 27-31 July 1997, Atlanta, GA, pp. 555-566  
July 1997
- WITTMANN, R. C.; BLACK, D. N.**  
Quiet-Zone Evaluation Using a Spherical Synthetic-Aperture  
Dig., Intl. Symp. on Antennas and Propagat., 13-18 July 1997, Montreal, Canada, pp. 148-151  
July 1997
- WITTMANN, R. C.; ALPERT, B. K.; FRANCIS, M. H.**  
Nonideal Measurement Locations in Planar Near-Field Antenna Metrology  
Dig., Intl. Symp. on Antennas and Propagat., 13-18 July 1997, Montreal, Canada, pp. 168-171  
July 1997
- PRICKETT, M. J.; BLOOMFIELD, R. A.; KINZEL, G. A.; WITTMANN, R. C.; MUTH, L. A.**  
Uncertainty Analysis for NRaD Radar Cross Section Measurements  
NISTIR 5061  
April 1997
- STUBENRAUCH, C. F.; NEWELL, A. C.; REPJAR, A. G.; MACREYNOLDS, K.; TAMURA, D. T.;  
HOLMLARSEN, F.; LEMANCZYK, J.; BEHE, R.; PORTIER, G.; ZEHREN, J. C.; HOLLMANN, H.;  
HUNTER, J. D.; GENTLE, D. G.; DEVREEDE, J. P. M.**  
International Intercomparison of Horn Gain at X-Band  
IEEE Trans. Antennas Propagat., Vol. 44, No. 10, pp. 1367-1374  
October 1996
- GUERRIERI, J. R.; MACREYNOLDS, K.; CANALES, S.; TAMURA, D. T.**  
Mismatch Errors in Insertion-Loss Measurements Using Harmonic Mixers  
Proc., Antenna Meas. Tech. Assoc. Symp., 30 Sept.-4 Oct. 1996, Seattle, WA, pp. 377-382  
September 1996

Antennas (cont.)

- MUTH, L. A.; WITTMANN, R. C.; PARNELL, W.**  
Polarimetric Calibration of Nonreciprocal Radar Systems  
Proc., Antenna Meas. Tech. Assoc. Symp., 30 Sept. - 4 Oct. 1996, Seattle, WA, pp. 389-393  
September 1996
- MUTH, L. A.; WITTMANN, R.C.; KENT, B.; TUTTLE, J. D.**  
Radar Cross Section Range Characterization  
Proc., Antenna Meas. Tech. Assoc. Symp., 30 Sept. - 4 Oct. 1996, Seattle, WA, pp. 267-278  
September 1996
- STUBENRAUCH, C. F.; MACREYNOLDS, K.; NEWELL, A. C.; CORMACK, R. H.; WILL, J. E.;  
NORGARD, J. D.**  
Phaseless Measurements of Antenna Near Fields Employing Holographic Phase Retrieval  
Proc., Antenna Meas. Tech. Assoc. Symp., 30 Sept. - 4 Oct. 1996, Seattle, WA, pp. 20-24  
September 1996
- WILL, J. E.; NORGARD, J. D.; SEGA, R. M.; SEIFERT, M.; PESTA, A.; CLEARY, J.; STUBENRAUCH,  
C. F.; MACREYNOLDS, K.**  
Antenna Near Field Phase Data from Infrared Thermograms by Fourier Iterative Plane-to-Plane  
Techniques  
Proc., Antenna Meas. Tech. Assoc. Symp., 30 Sept. - 4 Oct. 1996, Seattle, WA, pp. 198-215  
September 1996
- WITTMANN, R. C.; ALPERT, B. K.; FRANCIS, M. H.**  
Planar Near-Field Antenna Measurements Using Non-Ideal Measurement Locations  
Proc., Antenna Meas. Tech. Assoc. Symp., 30 Sept. - 4 Oct. 1996, Seattle, WA, pp. 74-79  
September 1996
- WITTMANN, R. C.; BLACK, D. N.**  
Antenna/RCS Range Evaluation Using a Spherical Synthetic-Aperture Radar  
Proc., Antenna Meas. Tech. Assoc. Symp., 30 Sept. - 4 Oct. 1996, Seattle, WA, pp. 406-410  
September 1996
- WILL, J. E.; NORGARD, J.D.; SEGA, R. M.; SEIFERT, M.; PESTA, A.; CLEARY, J.; STUBENRAUCH,  
C. F.; MACREYNOLDS, K.**  
Near-Field to Far-Field Antenna Pattern Measurements Using Infrared Imaging and Fourier Interactive  
Plane-to-Plane Techniques  
Proc., 6th Dual-Use Technol. and Apps. Conf., 4-6 June 1996; Syracuse, NY; pp. 266-271  
June 1996
- WILL, J. E.; NORGARD, J. D.; STUBENRAUCH, C. F.; MACREYNOLDS, K.; SEIFERT, M.; SEGA, R.  
M.**  
Phase Measurements of Electromagnetic Fields Using Infrared Imaging Techniques and Microwave  
Holography  
Proc., 10th Intl. AeroSense Symp., 8-12 April 1996; Orlando, FL; Vol. 2766, pp. 323-333  
April 1996
- FRANCIS, M. H.; NEWELL, A. C.; GRIMM, K. R.; HOFFMAN, J.; SCHRANK, H. E.**  
Comparison of Ultralow-Sidelobe Antenna Far-Field Patterns Using the Planar Near-Field Method an the  
Far-Field Method  
IEEE Antennas and Propagat. Magazine, Vol. 37, No. 6, pp. 7-15  
December 1995

**FRANCIS, M. H.**

A Comparison of K-Correction and Taylor-Series Correction for Probe-Position Errors in Planar Near-Field Scanning  
Proc., Antenna Meas. Tech. Assoc. Symp., 13-17 November 1995, Williamsburg, VA, pp. 331-340

November 1995

**GUERRIERI, J. R.; CANALES, S.; MACREYNOLDS, K.; TAMURA, D. T.**

Planar Near-Field Measurements and Microwave Holography for Measuring Aperture Distribution on a 60 GHz Active Array Antenna  
Proc., Antenna Meas. Tech. Assoc. Symp., 13-17 November 1995, Williamsburg, VA, pp. 295-300

November 1995

**MUTH, L. A.; LEWIS, R. L.; WITTMANN, R. C.**

Polarimetric Calibration of Reciprocal-Antenna Radars  
Proc., Antenna Meas. Tech. Assoc. Symp., 13-17 November 1995, Williamsburg, VA, pp. 3-8

November 1995

**LEWIS, R. L.**

Spherical-Wave Source-Scattering Matrix Analysis of Antennas and Antenna-Antenna Interactions  
NIST TN 1373

July 1995

**LEWIS, R. L.; MUTH, L. A.; WITTMANN, R. C.**

Polarimetric Calibration of Reciprocal Antenna Radars: A Study of RCS Polarization Uncertainty Due to Target Depolarization  
NISTIR 5033

March 1995

**LEWIS, R. L.; MUTH, L. A.; WITTMANN, R. C.**

RangeCAD and the NIST RCS Uncertainty Analysis  
NISTIR 5022

December 1994

**FRANCIS, M. H.; KREMER, D. P.; JACOBSON, M. D.; FEDOR, L. S.; HAZEN, D. A.; MADSEN, W. B.**  
A Dual-Frequency Millimeter-Wave Radiometer Antenna for Airborne Remote Sensing of Atmosphere and Ocean

Proc., Antenna Meas. Tech. Assoc. Symp., 3-7 October, 1994 Long Beach, CA, pp. 3-9  
October 1994

**GUERRIERI, J. R.; TAMURA, D. T.**

Effects of Microwave Absorber on Insertion-Loss Measurements  
Proc., Antenna Meas. Tech. Assoc. Symp., 3-7 October 1994, Long Beach, CA, pp. 221-229  
October 1994

**WITTMANN, R. C.; FRANCIS, M. H.; MUTH, L. A.; LEWIS, R. L.**

Proposed Analysis of RCS Measurement Uncertainty  
Proc., Antenna Meas. Tech. Assoc. Symp., 3-7 October, Long Beach, CA, pp. 51-57  
October 1994

Antennas (cont.)

**JACOBSON, M. D.; FEDOR, L. S.; HAZEN, D. A.; MADSEN, W. B.; FRANCIS, M. H.; KREMER, D. P.**  
A Dual-Frequency Millimeter-Wave Radiometer Antenna for Airborne Remote Sensing of Atmosphere  
and Ocean

Microwave J., pp. 24-38  
September 1994

**MUTH, L. A.; GARY, J. M.**

Accurate Computations of Radar Cross Sections of Simple Objects  
Proc., MIKON '94 Microwave Conf. 30 May-2 June 1994, Książ, Poland, pp. 298-302  
June 1994

**FRANCIS, M. H.; NEWELL, A. C.; GRIMM, K. R.; HOFFMAN, J.; SCHRANK, H. E.**

Planar Near-Field Measurements of Low-Sidelobe Antennas  
NIST JRES, Vol. 99, No. 2, pp. 143-167  
March-April 1994

**WITTMANN, R. C.; FRANCIS, M. H.; MUTH, L. A.; LEWIS, R. L.**

Proposed Uncertainty Analysis for RCS Measurements  
NISTIR 5019  
January 1994

**FRANCIS, M. H.; NEWELL, A. C.; GRIMM, K. R.; HOFFMAN, J.; SCHRANK, H. E.**

Planar Near-Field Measurements of Low-Sidelobe Antennas  
Proc., Antenna Meas. Tech. Assoc. Symp., 4-8 October 1993, Dallas, TX, pp. 184-189  
October 1993

**GUERRIERI, J. R.; KREMER, D. P.; RUSYN, T.**

A New Extrapolation/Spherical/Cylindrical Measurement Facility at the National Institute of Standards  
and Technology  
Proc., Antenna Meas. Tech. Assoc. Symp., 4-8 October 1993, Dallas, TX, pp. 343-352  
October 1993

**KREMER, D. P.; NEWELL, A. C.; ROSE, C.; TRABELSI, A.; PINKASI, M.**

Planar Near-Field Alignment  
Proc., Antenna Meas. Tech. Assoc. Symp., 4-8 October 1993, Dallas, TX, pp. 198-204  
October 1993

**FRANCIS, M. H.; MACREYNOLDS, K.; CANALES, S.**

Dual-Port Circularly Polarized Probe Standards at the National Institute of Standards and Technology  
NISTIR 5007  
August 1993

**STUBENRAUCH, C. F.**

Development of Near-Field Test Procedures for Communication Satellite  
Lecture Notes, Antenna Measurement Tech. Assoc. Workshop on Communication Satellite  
Antenna Meas., Ann Arbor, MI, July 2, 1993  
July 1993

**FRANCIS, M. H.; REPJAR, A. G.; KREMER, D. P.**

A Certification Plan for a Planar Near-Field Range Used for High-Performance Phased-Array Testing  
Proc., Antenna Meas. Tech. Assoc. Symp., 19-23 October 1992, Columbus, OH, pp. 8-24  
through 8-30  
October 1992



Antennas (cont.)

**GUERRIERI, J. R.; TAMURA, D. T.; REPJAR, A. G.**

Accurate Planar Near-Field Probe Correction Using Dual-Port Circularly-Polarized Probes  
Proc., Antenna Meas. Tech. Assoc. Symp., 19-23 October 1992, Columbus, OH, pp. 10-17  
through 10-25  
October 1992

**MACREYNOLDS, K.; REPJAR, A. G.; KREMER, D. P.; CANALES, S.**

Phased Array Testing and Diagnostics Using Planar Near-Field Scanning  
Proc., Antenna Meas. Tech. Assoc. Symp., 19-23 October 1992, Columbus, OH, pp. 8-8 through  
8-13  
October 1992

**WITTMANN, R. C.; NEWELL, A. C.; STUBENRAUCH, C. F.; MACREYNOLDS, K.; FRANCIS, M. H.**

Simulation of the Merged-Spectrum Techniques for Aligning Planar Phased-Array Antennas, Part I  
NISTIR 3981  
October 1992

**FRANCIS, M. H.; REPJAR, A. G.; KREMER, D. P.**

A Certification Plan for a Planar Near-Field Range Used for High-Performance Phased-Array Testing  
NISTIR 3991  
July 1992

**MUTH, L. A.**

Probe-Position Error Correction in Planar Near-Field Measurement at 60 GHz: Experimental  
Verification  
NIST JRES, Vol. 97, No. 2, pp. 273-297  
March-April 1992

**WITTMANN, R. C.**

Probe-Corrected Spherical Near-Field Scanning Theory in Acoustics  
IEEE Trans. Instrum. Meas., Vol. IM-41, No. 1, pp. 17-21  
February 1992

**FRANCIS, M. H.; WITTMANN, R. C.**

Swept Frequency Gain Measurements from 33-50 GHz at the National Institute of Standards and  
Technology  
Proc., Antenna Meas. Tech. Assoc. Symp., 7-11 October 1991, Boulder, CO, pp. 1-3 through 1-6  
October 1991

**REPJAR, A. G.; GUERRIERI, J. R.; KREMER, D. P.; CANALES, S.**

Determining Faults on a Flat Phased Array Antenna Using Planar Near-Field Techniques  
Proc., Antenna Meas. Tech. Assoc. Symp., 7-11 October 1991, Boulder, CO, pp. 8-11 through 8-  
19  
October 1991

**WITTMANN, R. C.; YAGHJIAN, A. D.**

Spherical-Wave Expansions of Piston-Radiator Fields  
J. Acoust. Soc. Amer., Vol. 30, No. 3, pp. 1647-1655  
September 1991

**MUTH, L. A.**

General Analytic Correction for Probe-Position Errors in Spherical Near-Field Measurements  
NIST JRES, Vol. 96, No. 4, pp. 391-410  
July-August 1991

Antennas (cont.)

**MUTH, L. A.; LEWIS, R. L.**

Personal Computer Codes for Analysis of Planar Near Fields  
NISTIR 3970  
June 1991

**ESTIN, A. J.; JANEZIC, M. D.**

Improvements in Dielectric Measurements with a Resonant Cavity  
Proc., IEEE Instrum. Meas. Technol. Conf., 14-16 May 1991, Atlanta, GA, pp. 573-579  
May 1991

**WITTMANN, R. C.**

Probe-Corrected Spherical Near-Field Scanning Theory in Acoustics  
Proc., IEEE Instrum. Meas. Technol. Conf., 14-16 May 1991, Atlanta, GA, pp. 283-286  
May 1991

**MUTH, L. A.**

Analytic Correction for Probe-Position Errors in Spherical Near-Field Measurements  
Proc., 7th Intl. Conf. on Antennas and Propagat., 15-18 April 1991, York, England, pp. 762-765  
April 1991

**MUTH, L. A.; LEWIS, R. L.**

A General Technique to Correct Probe Position Errors in Planar Near-Field Measurements to Arbitrary Accuracy  
IEEE Trans. Antennas Propagat., Vol. 38, No. 12, pp. 1925-1932  
December 1990

**FRANCIS, M. H.; MACREYNOLDS, K.**

Evaluation of Dual-Port Circularly Polarized Probes for Planar Near-Field Measurements  
Proc., Antenna Meas. Tech. Assoc. Symp., 8-11 October 1990, Philadelphia, PA, pp. 13-3  
through 13-8  
October 1990

**MUTH, L. A.; NEWELL, A. C.; LEWIS, R. L.; CANALES, S.; KREMER, D. P.**

Experimental and Theoretical Probe Position Error Correction in Near-Field Antenna Measurements  
Proc., Antenna Meas. Tech. Assoc. Symp., 8-11 October 1990, Philadelphia, PA, pp. 13-27  
through 13-30  
October 1990

**KREMER, D. P.; NEWELL, A. C.**

Alignment Fixture for Millimeter Waveguide  
IEEE Trans. Antennas and Propagat., Vol. 32, No. 3, pp. 45-48  
June 1990

**WITTMANN, R. C.**

Spherical Near-Field Scanning: Determining the Incident Field Near a Rotatable Probe  
Proc., IEEE Intl. Symp. Antenna Propagat. Soc., 7-11 May 1990, Dallas, TX, pp. 224-227  
May 1990

**HILL, D. A.; EHRET, R. L.**

Near-Field Gain of Pyramidal Horns from 18 to 40 GHz  
NISTIR 89-3924  
November 1989

Antennas (cont.)

**FRANCIS, M. H.**

Antenna Far-Field Pattern Accuracies at Millimeter Wave Frequencies Using the Planar Near-Field Technique

Proc., Antenna Meas. Tech. Assoc. Symp., 9-13 October 1989, Monterey, CA, pp. 11-16 through 11-21

October 1989

**GUERRIERI, J. R.; KREMER, D. P.**

Automated Multi-Axis Motor Controller and Data Acquisition System for Near-Field Scanners

Proc., Antenna Meas. Tech. Assoc. Symp., 9-13 October 1989, Monterey, CA, pp. 12-24 through 12-28

October 1989

**KREMER, D. P.; NEWELL, A. C.; AGEE, D. A.**

Absorber Characterization

Proc., Antenna Meas. Tech. Assoc. Symp. 9-13 October 1989, Monterey, CA, pp. 13-7 through 13-11.

October 1989

**MUTH, L. A.; LEWIS, R. L.**

Planar Near-Field Codes for Personal Computers

NISTIR 89-3929

October 1989

**NEWELL, A. C.; GUERRIERI, J. R.; PERSINGER, R. R.; STILES, J. A.; MCFARLANE, E. J.**

Comparison of Antenna Boresight Measurements Between Near-Field and Far-Field Ranges

Proc., Antenna Meas. Tech. Assoc. Symp., 9-13 October 1989, Monterey, CA, pp. 1-24 through 1-29

October 1989

**NEWELL, A. C.; KREMER, D. P.; GUERRIERI, J. R.**

Improvements in Polarization Measurements of Circularly Polarized Antennas

Proc., Antenna Meas. Tech. Assoc. Symp., 9-13 October 1989, Monterey, CA, pp. 1-30 through 1-36

October 1989

**MUTH, L. A.; LEWIS, R. L.**

An Iterative Technique to Correct Probe Position Errors in Planar Near-Field to Far-Field Transformations

Proc., 1989 Intl. Symp. on Antennas and Propagat., 22-25 August 1989, Nagoya, Japan, pp. 901-904

August 1989

**WITTMANN, R. C.**

Comments on Spherical Near-Field Antenna Measurements

Review for Antenna Propagat. Soc. Newsletter, Vol. 31, No. 3, pp. 35-36

June 1989

**HILL, D. A.**

Antennas for Geophysical Applications-Antenna Handbook: Theory, Applications and Design (Chapter 3),

U. T. Lo and S. W. Lee, eds., Van Nostrand Reinhold Co., pp. 23-1 through 23-6  
1988



Antennas (cont.)

**MUTH, L. A.; LEWIS, R. L.**

An Iterative Technique to Correct Probe Position Errors in Planar Near-Field to Far-Field Transformations

NISTTN 1323

October 1988

**FRANCIS, M. H.; REPJAR, A. G.; KREMER, D. P.**

Antenna Measurements for Millimeter Waves at the National Bureau of Standards

Proc., Antenna Meas. Tech. Assoc., 12-16 September 1988, Atlanta, GA, pp. 13-13 through 13-17

September 1988

**KREMER, D. P.; REPJAR, A. G.**

Antenna Calibrating Standards Using CW and Pulsed-CW Measurements and the Planar Near-Field Method

Proc., Antenna Meas. Tech. Assoc., 12-16 September 1988, Atlanta, GA, pp. 13-21 through 13-29

September 1988

**NEWELL, A. C.**

Development of Near-Field Test Procedures for Communication Satellite Antennas, Phase I, Part 2

NBSIR 87-3081

August 1988

**WITTMANN, R. C.**

Spherical Wave Operators and the Translation Formulas

IEEE Trans. Antennas Propagat., Vol. 36, No. 8, pp. 1078-1087

August 1988

**BAIRD, R. C.; NEWELL, A. C.; STUBENRAUCH, C. F.**

A Brief History of Near-Field Measurements of Antennas at the National Bureau of Standards

IEEE Trans. Antennas Propagat., Spec. Issue on Near-Field Scanning Technology, Vol. 36, No. 6, pp. 727-733

June 1988

**LEWIS, R. L.; NEWELL, A. C.**

Efficient and Accurate Method for Calculating and Representing Power Density in the Near Zone of Microwave Antennas

IEEE Trans. Antennas Propagat., Spec. Issue on Near-Field Scanning Technology, Vol. 36, No. 6, pp. 890-891

June 1988

**NEWELL, A. C.; STUBENRAUCH, C. F.**

Effect of Random Errors in Planar Near-Field Measurement

IEEE Trans. Antennas Propagat., Spec. Issue on Near-Field Scanning Technology, Vol. 36, No. 6, pp. 769-773

June 1988

**NEWELL, A. C.**

Improved Polarization Measurements Using a Modified Three Antenna Technique

IEEE Trans. Antennas Propagat., Spec. Issue on Near-Field Scanning Technology, Vol. 36, No. 6, pp. 852-854

June 1988

**NEWELL, A. C.**

Error Analysis Techniques for Planar Near-Field Measurements

IEEE Trans. Antennas Propagat., Spec. Issue on Near-Field Scanning Technology, Vol. 36, No. 6, pp. 754-768

June 1988

**REPJAR, A. G.; NEWELL, A. C.; FRANCIS, M. H.**

Accurate Determination of Planar Near-Field Correction Parameters for Linearly Polarized Probes

IEEE Trans. Antenna Propagat., Spec. Issue on Near-Field Meas., Vol. 36, No. 6, pp. 855-868

June 1988

**MUTH, L. A.**

Displacement Errors in Antenna Near-Field Measurements and Their Effect on the Far Field

IEEE Trans. Antennas Propagat., Vol. 36, No. 5, pp. 581-591

May 1988

**FRANCIS, M. H.; STUBENRAUCH, C. F.**

Comparison of Measured and Calculated Antenna Side Lobe Coupling Loss in the Near Field Using Approximate Far-Field Data

IEEE Trans. Antennas Propagat., Vol. 36, No. 3, pp. 438-441

March 1988

**LEWIS, R. L.**

Spherical-Wave Source-Scattering Matrix Analysis of Coupled Antennas; A General System Two-Port Solution

IEEE Trans. Antennas Propagat., Vol. AP-35, No. 12, pp. 1375-1380

December 1987

**LEWIS, R. L.; WITTMANN, R. C.**

Improved Spherical and Hemispherical Scanning Algorithms

IEEE Trans. Antennas Propagat., Vol. AP-35, No. 12, pp. 1381-1388

December 1987

**HILL, D. A.; FRANCIS, M. H.**

Out-of-Band Response of Antenna Arrays

IEEE Trans. Electromagn. Compat., Vol. EMC-29, No. 4, pp. 282-288

November 1987

**FRANCIS, M. H.; HILL, D. A.**

Out-of-Band Response of Array Antennas

Proc., Antenna Meas. Tech. Assoc., 28 September-2 October 1987, Seattle, WA, pp. 14-19

September 1987

**MUTH, L. A.**

Experimental Study of Interpanel Interactions at 3.3 GHz

Proc., Antenna Meas. Tech. Assoc., 28 September-2 October 1987, Seattle, WA, pp. 25-29

September 1987

**HILL, D. A.; FRANCIS, M. H.**

Out-of-Band Response of Antenna Arrays

Proc., 1987 IEEE Intl. Symp. Electromagn. Compat., 25-27 August 1987, Atlanta, GA, pp. 435-438

August 1987

Antennas (cont.)

**REPJAR, A. G.; NEWELL, A. C.; TAMURA, D. T.**

Extrapolation Range Measurements for Determining Antenna Gain and Polarization  
NBS TN 1311  
August 1987

**HILL, D. A.; CAVCEY, K. H.**

Coupling Between Two Antennas Separated by a Planar Interface  
IEEE Trans. Geosci. Remote Sensing, Vol. GE-25, No. 4, pp. 422-431  
July 1987

**DAYWITT, W. C.**

A Simple Technique for Determining Joint Losses on a Coaxial Line from Swept-Frequency Reflection Data  
IEEE Trans. Instrum. Meas., Vol. IM-36, pp. 468-473  
June 1987

**FITZGERRELL, R. G.**

Three PC-Computer Programs for Antenna Calculations Primarily for Use Below 1000 MHz  
IEEE Antenna Propagat. Soc. Newslett., Vol. 29, No. 3, pp. 30-32  
June 1987

**KANDA, M.; ORR, R. D.**

Near-Field Gain of a Horn and an Open-Ended Waveguide; Comparison Between Theory and Experiment  
IEEE Trans. Antennas Propagat., Vol. AP-35, No. 1, pp. 33-40  
January 1987

**LARSEN, E. B.**

Calibration and Meaning of Antenna Factor and Gain for EMI Antennas  
Interference Technology Engineers' Master (ITEM 1986), pp. 113-335  
1986

**HILL, D. A.**

Far-Field Transient Response of an Antenna from Near-Field Data  
NBSIR 86-3063  
December 1986

**HILL, D. A.; KOEPKE, G. H.**

A Near-Field Array of Yagi-Uda Antennas for Electromagnetic Susceptibility Testing  
IEEE Trans. Electromagn. Compat., Vol. EMC-28, No. 4, pp. 273-276  
November 1986

**BAIRD, R. C.; DAYWITT, W. C.; NEWELL, A. C.; PERERA, S.; REPJAR, A. G.; WAIT, D. F.; ESTIN, A. J.**

Calibration Requirements for EHF Satellite Communication Systems  
NBSIR 86-3058  
October 1986

**FITZGERRELL, R. G.**

Standard Linear Antennas, 30 GHz to 1000 MHz  
Proc., 5th Intl. Conf. on Electromagn. Compat., 29 September-2 October 1986, University of York, England, pp. 147-153  
October 1986

Antennas (cont.)

**KANDA, M.; ORR, R. D.**

Near-Field Gain of a Horn and an Open-Ended Waveguide; Comparison Between Theory and Experiment

Proc., 5th Intl. Conf. on Electromagn. Compat., 29 September-2 October 1986, University of York, England, pp. 137-145  
October 1986

**MUTH, L. A.**

Gradient Displacement Errors in Antenna Near-Field Measurements and Their Effects on the Far Field

NBS TN 1306  
October 1986

**HILL, D. A.; FRANCIS, M. H.**

Out-of-Band Response of Antenna Arrays

NBSIR 86-3047  
June 1986

**KANDA, M.; ORR, R. D.**

Near-Field Gain of a Horn and an Open-Ended Waveguide; Comparison Between Theory and Experiment

Proc., 1986 Intl. IEEE Antenna Propagat. Soc. Symp., 8-13 June 1986, Philadelphia, PA, pp. 91-94  
June 1986

**NEWELL, A. C.; STUBENRAUCH, C. F.**

The Effect of Random Errors in Planar Near-Field Measurements

Proc., 1986 Intl. IEEE Antenna Propagat. Soc. Symp., 8-13 June 1986, Philadelphia, PA, pp. 195-198  
June 1986

**FITZGERRELL, R. G.**

Linear Gain - Standard Antennas Below 1000 MHz

NBS TN 1098  
May 1986

**JESCH, R. L.**

Measured Vehicular Antenna Performance

National Institute of Justice, NIJ Report-201-85  
May 1986

**NEWELL, A. C.; STUBENRAUCH, C. F.; BAIRD, R. C.**

Calibration of Microwave Antenna Gain Standards

Proc. IEEE, Spec. Issue on Radio Meas. Methods and Standards, Vol. 74, Vol. 1, pp. 129-132  
January 1986

**MUTH, L. A.**

Interelement Interactions in Phased Arrays: Theory, Methods of Data Analysis, and Theoretical Simulations

NBS TN 1091  
December 1985

**YAGHJIAN, A. D.; WITTMANN, R. C.**

The Receiving Antenna as a Linear Differential Operator: Application to Spherical Near-Field Scanning

IEEE Trans. Antennas Propagat., Vol. AP-33, No. 11, pp. 1175-1185  
November 1985

**NEWELL, A. C.; REPJAR, A. G.**

Development of Near-Field Test Procedures for Communication Satellite Antennas, Phase I, Part 1  
NBSIR 85-3031  
September 1985

A Theory of Mutual Impedances and Multiple Reflections in an N-Element Array Environment  
Proc., 1985 Intl. Symp. Antennas and Electromagn. Theory, 26-28 August 1985, Beijing, China,  
pp. 440-443  
August 1985

**HILL, D. A.; KOEPKE, G. H.**

An Array of Dipoles for Plane Wave Synthesis  
Proc., 1985 Intl. Symp. Antennas and Electromagn. Theory, 26-28 August 1985, Beijing, China,  
pp. 422-427  
August 1985

**MUTH, L. A.**

A Theory of Mutual Impedances and Multiple Reflections in an N-Element Array Environment  
Proc., 1985 Intl. Symp. Antennas Propagat., 20-22 August 1985, Kyoto, Japan, pp. 719-722  
August 1985

**HILL, D. A.; KOEPKE, G. H.**

A Near-Field Array of Yagi-Uda Antennas for Electromagnetic Susceptibility Testing  
NBS TN 1082  
July 1985

**NEWELL, A. C.; FRANCIS, M. H.; KREMER, D. P.; GRIMM, K. R.**

Results of Planar Near-field Testing with Ultralow Sidelobe Antennas  
Dig., Intl. IEEE Antenna Propagat. Soc. Symp. on Antennas and Propagat., 17-21 June 1985,  
University of British Columbia, Vancouver, Canada, pp. 693-698  
June 1985

**JESCH, R. L.**

Measured Vehicular Antenna Performance  
IEEE Trans. Veh. Technol., Vol. VT-34, No. 2, pp. 97-107  
May 1985

**HILL, D. A.**

Out-of-Band Response of Reflector Antennas  
NBSIR 85-3021  
April 1985

**WYSS, J. C.; SHEERAN, S.**

A Passive, Optical Modulator and Link for Antennas  
IEEE J. Lightwave Technol., Vol. LT-3, No. 2, pp. 316-321  
April 1985

**CRUZ, J. E.; LARSEN, E. B.**

Screenroom Measurements of Antenna Factors  
Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March 1985, Tampa, FL, p. 208  
March 1985



Antennas (cont.)

**LARSEN, E. B.; CRUZ, J. E.**

E and H Fields in Transmission Lines and Coils for Susceptibility Testing, Probe Calibration, and RF Exposure Chambers

Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March 1985, Tampa, FL, p. 199  
March 1985

**MUTH, L. A.**

A Theory of Mutual Impedances and Multiple Reflections in an N-Element Array Environment  
NBS TN 1078

February 1985

**KANDA, M.**

Transients in a Resistively Loaded Loop Antenna

Proc., 1984 Intl. Symp. on Electromagn. Compat., 16-18 October 1984, Tokyo, Japan, Vol. 1,  
pp. 286-290

October 1984

**NEWELL, A. C.; FRANCIS, M. H.; KREMER, D. P.**

The Determination of Near-Field Correction Parameters for Circularly Polarized Probes

Proc., 1984 Antenna Meas. Tech. Assoc. Conf., 2-4 October 1984, Atlanta, GA, pp. 3A3-1  
through 3A3-29

October 1984

**STUBENRAUCH, C. F.; FRANCIS, M. H.**

Comparison of Measured and Calculated Mutual Coupling in the Near Field Between Microwave Antennas

Proc., 1984 Antenna Applications Symp., 19-21 September 1984, University of Illinois,  
Urbana-Champaign, IL, pp. 1-21

September 1984

**WYSS, J. C.; ANSON, W. J.; ORR, R. D.**

Building Penetration Project

NBSIR 84-3009

September 1984

**DAYWITT, W. C.**

A Preliminary Investigation into Using the Sun as a Source for G/T Measurements

NBSIR 84-3015

August 1984

**KANDA, M.**

An Electromagnetic Near-Field Sensor for Simultaneous Electric and Magnetic-Field Measurements

IEEE Trans. Electromagn. Compat., Vol. EMC-26, No. 3, pp. 102-110

August 1984

**STUBENRAUCH, C. F.; FRANCIS, M. H.**

Comparison of Measured and Calculated Mutual Coupling in the Near Field Between Microwave Antennas

NBSIR 84-3010

June 1984

**WITTMANN, R. C.**

Probe Correction in Spherical Near-field Scanning Viewed as an Ideal Probe Measuring an Effective Field

Dig., 1984 Intl. Symp. Antenna Propagat., 25-29 June 1984, Boston, MA, pp. 674-677  
June 1984

**FITZGERRELL, R. G.**

A Source of E and H Fields for Antenna-Factor Calibration

IEEE Trans. Electromagn. Compat., Vol. EMC-26, No. 2, pp. 58-65  
May 1984

**DAYWITT, W. C.**

An Error Analysis for the Use of Presently Available Lunar Radio Flux Data in Broadbeam Antenna-System Measurements

NBS TN 1973  
February 1984

**HILL, D. A.**

Theory of Near-Field Phased Arrays for Electromagnetic Susceptibility Testing  
NBS TN 1072

February 1984

**MA, M. T.**

Arrays of Discrete Elements

Antenna Engineering Handbook, Chapter 3, R. C. Johnson and H. Jasik, eds., McGraw-Hill Book Co.

January 1984

**GREENLEE, D. H.; KANDA, M.; CHANG, D. C.**

The Characteristics of Iris-Fed Millimeter Wave Rectangular Microstrip Patch Antennas

NBS TN 1063  
October 1983

**BENSEMA, W. D.**

Handbook for Broadband Isotropic Antenna System Volume 1 - Operations Manual

NBSIR 83-1693  
July 1983

**YAGHJIAN, A. D.**

Approximate Formulas for the Far Field and Gain of Open-Ended Rectangular Waveguide

NBSIR 83-1689  
May 1983

**REPJAR, A. G.; NEWELL, A. C.; BAIRD, R. C.**

Antenna Gain Measurements by an Extended Version of the NBS Extrapolation Method

IEEE Trans. Instrum. Meas., Vol. IM-32, No. 1, pp. 88-91  
March 1983

**WAIT, D. F.**

Precision Measurement of Antenna System Noise Using Radio Stars

IEEE Trans. Instrum. Meas., Vol. IM-32, No. 1, pp. 110-116  
March 1983

Antennas (cont.)

**BAIRD, R. C.; ESTIN, A. J.**

The Orbiting Standards Package: A Recalibratable Satellite Instrument Assembly for Measuring Large Earth Station Antennas  
Proc., 1982 Antenna Meas. Tech. Assoc., 5-7 October 1982, New Mexico State University, Las Cruces, NM, pp. 5-1 through 5-9  
October 1982

**FITZGERRELL, R. G.**

A Partial Loop Source of E and H Fields for Antenna Factor Calibration (A Loop Cell)  
Proc., 1982 Antenna Meas. Tech. Assoc., 5-7 October 1982, New Mexico State University, Las Cruces, NM, pp. 15-1 through 15-22  
October 1982

**FRANCIS, M. H.; YAGHJIAN, A. D.**

Computations of Antenna Side-Lobe Coupling in the Near Field Using Approximate Far-Field Data  
NBSIR 82-1674  
August 1982

**REPJAR, A. G.; NEWELL, A. C.; BAIRD, R. C.**

Antenna Gain Measurements by an Extended Version of the NBS Extrapolation Method  
Dig., 1982 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1982, Boulder, CO, pp. F-7 through F-9  
June 1982

**STUBENRAUCH, C. F.; SPIESS, W.; GALLIANO, P. G.; BABJI, T.**

International Intercomparison of Electric Field Strength at 100 MHz  
Dig., 1982 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1982, Boulder, CO, pp. P-3 through P-4  
June 1982

**WAIT, D. F.**

Precision Measurement of Antenna System Noise Using Radio Stars  
Dig., 1982 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1982, Boulder, CO, p. F-17  
June 1982

**WYSS, J. C.; KANDA, M.; MELQUIST, D. G.; ONDREJKA, A. R.**

Optical Modulator and Link for Broadband Antennas  
Dig., 1982 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1982, Boulder, CO, pp. P-16 through P-17  
June 1982

**KANDA, M.; CHANG, D. C.; GREENLEE, D. H.**

The Characteristics of Iris-Fed Millimeter Wave Rectangular Microstrip Patch Antennas  
Proc., 1982 IEEE Antenna Propagat. Soc. Symp., 24-28 May 1982, University of New Mexico, Albuquerque, NM, pp. 292-295  
May 1982

**KANDA, M.**

The Effects of Resistive Loading on TEM Horns  
IEEE Trans. Electromagn. Compat., Vol. EMC-24, No. 2, pp. 245-255  
May 1982



Antennas (cont.)

**REPJAR, A. G.; KREMER, D. P.**

Accurate Evaluation of a Millimeter Wave Compact Range Using Planar Near-Field Scanning  
IEEE Trans. Antennas Propagat., Vol. AP-30, No. 3, pp. 419-425  
May 1982

**WILSON, P. F.; CHANG, D. C.; MA, M. T.**

Input Impedance of a Probe Antenna Exciting a TEM Cell  
NBS TN 1054  
April 1982

**YAGHJIAN, A. D.**

A Delta-Distribution Derivation of the Electric Field in the Source Region  
J. Electromagn. Soc., Vol. 2, No. 2, pp. 161-167  
April-June 1982

**ESTIN, A. J.; STUBENRAUCH, C. F.; REPJAR, A. G.; NEWELL, A. C.**

Optimized Wavelength-Sized Scalar Horns as Antenna Radiation Standards  
IEEE Trans. Instrum. Meas., Vol. IM-31, No. 1, pp. 53-56  
March 1982

**YAGHJIAN, A. D.**

Efficient Computation of Antenna Coupling and Fields Within the Near-Field Region  
IEEE Trans. Antennas Propagat., Vol. AP-30, No. 1, pp. 113-128  
January 1982

**MA, M. T.**

Synthesis of Broadband Antenna Arrays as Possible Over-the-Horizon Radars Research Topics in EM  
Wave Theory  
Chapter 9, John Wiley Interscience, pp. 188-209  
1981

**TREADO, M. J.; TAGGART, H. E.; NELSON, R. E.; WORKMAN, J. L.**

Fixed and Base Station Antennas  
National Institute of Justice (NIJ) Standard-0204.01 (supersedes National Institute for Law  
Enforcement and Criminal Justice (NILECJ) STD-0204.00, dated November 1977)  
December 1981

**BAIRD, R. C.**

Microwave Antenna Measurement Services at the National Bureau of Standards  
Dig., Antenna Meas. Tech. Assoc. Mtg.  
October 1981

**BENSEMA, W. D.**

Broadband Orthogonal Array Antenna System: Microprocessor Control and Computation  
Record, "EMC '81," 1981 IEEE Intl. Symp. on Electromagn. Compat., 18-20 August 1981,  
Boulder, CO  
August 1981

**REEVE, G. R.**

Synthesized Isotropic Pattern Antennas for EM Field Measurements  
Record, "EMC '81," 1981 IEEE Intl. Symp. on Electromagn. Compat., 18-20 August 1981,  
Boulder, CO  
August 1981

**KERNS, D. M.**

Plane-Wave Scattering Matrix Theory of Antennas and Antenna-Antenna Interactions  
NBS MN 162  
June 1981

**LEWIS, R. L.**

Spherical-Wave Source-Scattering-Matrix Analysis of the Mutual Coupling Between Two Antennas  
Dig., 1981 IEEE Antenna Propagat. Soc. Intl. Symp., pp. 261-264  
June 1981

**LEWIS, R. L.**

Spherical Scanning Data Processing: An Algorithm for Halving the Data Processing Effort when the Radiation into the Back Hemisphere is Negligible  
Dig., 1981 IEEE Antenna Propagat. Soc. Intl. Symp., pp. 247-249  
June 1981

**REEVE, G. R.; WAINWRIGHT, A. E.**

A Frequency Tracking, Tuned, Receiving Monopole  
Dig., 1981 IEEE Antenna Propagat. Soc. Intl. Symp.  
June 1981

**STUBENRAUCH, C. F.; YAGHJIAN, A. D.**

Determination of Mutual Coupling Between Co-Sited Microwave Antennas and Calculation of Near-Zone Electric Field  
NBSIR 81-1630  
June 1981

**YAGHJIAN, A. D.**

A Delta-Distribution Derivation of the Electric Field in the Source Region  
Dig., 1981 IEEE Antenna Propagat. Soc. Intl. Symp., pp. 334-337  
June 1981

**LEWIS, R. L.**

Efficient Computation of the Far-Field Radiated by an Arbitrary Rectangular-Aperture Distribution  
NBSIR 81-1643  
April 1981

**YAGHJIAN, A. D.**

An Approximate Expression for the Principal Beamwidth of Directive Antennas in Terms of Aperture Fields  
NBSIR 81-1644  
March 1981

**REPJAR, A. G.; KREMER, D. P.**

Results of Planar Near-Field Measurements on a Compact Range at 18 and 54 GHz  
Dig., IEEE Antenna Propagat. Soc. Symp.  
1980

**HILL, D. A.; WAIT, J. R.**

Electromagnetic Characteristics of a Coaxial Cable with Periodic Slots  
IEEE Trans. Electromagn. Compat., Vol. EMC-22, No. 4, pp. 303-307  
November 1980

**WAIT, J. R.; HILL, D. A.**

Fields of a Horizontal Loop of Arbitrary Shape Buried in a Two-Layer Earth  
Radio Sci., Vol. 15, No. 5, pp. 903-912  
September-October 1980

**KANDA, M.**

The Characteristics of a Linear Antenna with Tapered Resistive and Capacitive Loading  
Proc., 1980 IEEE Antenna Propagat. Soc. Intl. Symp., 2-6 June 1980, Quebec, Canada, Vol. 2,  
AP. 18-2, pp. 696-699  
June 1980

**KANDA, M.**

Transients in Resistively Loaded Antennas and Their Comparison with Conical Antennas and TEM  
Horns  
IEEE Trans. Antennas Propagat., Vol. AP-28, No. 1, pp. 132-136  
January 1980

**KANDA, M.**

Analytical and Numerical Techniques for Analyzing an Electrically Short Dipole with a Nonlinear Load  
IEEE Trans. Antennas Propagat., Vol. AP-28, No. 1, pp. 71-78  
January 1980

**STUBENRAUCH, C. F.**

Some Recent Near-Field Antenna Measurements  
Proc., 1979 Antenna Application Symp., September, 1979  
September 1979

**KANDA, M.**

The Effects of Resistive Loading on TEM Horns  
NBSIR 79-1601  
August 1979

**MA, M. T.**

A Theoretical Study of Unbalanced Ground Effects on Receiving Dipoles  
NBSIR 79-1605  
May 1979

**KANDA, M.**

The Time Domain Characteristics of a Traveling Wave Linear Antenna with Linear and Non-Linear  
Loads  
NBSIR 78-892 (Restricted)  
February 1979

**WACKER, P. F.**

Plane-Radial Scanning Techniques With Probe Correction; Natural Orthogonalities with Respect to  
Summation on Planar Measurement Lattices  
Dig., IEEE Antenna Propagat. Soc. Symp., pp. 561-564  
February 1979

**WACKER, P. F.**

Qualitative Survey of Near-Field Analysis and Measurement  
NBSIR 79-1602  
January 1979

Antennas (cont.)

**KANDA, M.**

Analytical and Numerical Techniques for Analyzing an Electrically Short Dipole with a Nonlinear Load  
NBSIR 78-898  
November 1978

**LAWTON, R. A.; ONDREJKA, A. R.**

Antennas and the Associated Time Domain Range for the Measurement of Impulsive Fields  
NBS TN 1008  
November 1978

**TAGGART, H. E.; SHAFER, J. F.**

Testing of Electronic Industries Association Land-Mobile Communication Antenna Gain Standards at the National Bureau of Standards  
IEEE Trans. Veh. Technol. Vol. VT-27, pp. 259-264  
November 1978

**DAYWITT, W. C.**

An Error Analysis for the Measurement of Satellite EIRP using a Calibrated Radio Star  
IEEE Trans. Instrum. Meas., Vol. IM-27, No. 3, pp. 253-258  
September 1978

**DOUGHERTY, H. T.; ESTIN, A. J.; MORGAN, W. L.; WOODRUFF, J. J.**

The Orbiting Standards Platform  
Proc., 1978 Antenna Applications Symp., 20-22 September 1978, Urbana-Champaign, IL, pp. 1-9  
September 1978

**ESTIN, A. J.; BAIRD, R. C.**

Feasibility Study of Orbiting Standards Platform  
NBSIR 78-886  
June 1978

**KANDA, M.**

A Relatively Short Cylindrical Broadband Antenna with Tapered Resistive Loading for Picosecond Pulse Measurements  
IEEE Trans. Antennas Propagat., Vol. AP-26, No. 3, pp. 439-447  
May 1978

**KANDA, M.**

A Relatively Short Cylindrical Broadband Antenna with Tapered Resistive Loading for Picosecond Pulse Measurements  
Dig., IEEE Antennas Propagat. Soc., pp. 230-233  
May 1978

**DAYWITT, W. C.**

Atmospheric Propagation Equations Used in the NBS Earth Terminal Measurement System  
NBSIR 78-883  
April 1978

**WAIT, D. F.**

Earth Terminal Measurement System Operations Manual  
NBSIR 78-879  
April 1978

Antennas (cont.)

**DAY, G. W.; STUBENRAUCH, C. F.**

Laser Far-Field Beam-Profile Measurements by the Focal Plane Technique  
NBS TN 1001  
March 1978

**KANDA, M.**

Transients in Resistively Loaded Antennas and Their Comparison with Conical Antennas and TEM Horns  
NBSIR 78-876  
March 1978

**WACKER, P. F.**

Symmetry Analysis Applied to Wave Theory  
Proc., Intl. IEEE Antenna Propagat. Soc. Symp., pp. 169-172  
1977

**WACKER, P. F.**

Symmetry Analysis Applied to Scattering, Inverse Scattering, and Antenna Patterns: Measurements, Moment Method, and Characteristic Modes  
Proc., 1977 Intl. IEEE Antenna Propagat. Soc. Symp., pp. 177-180  
1977

**DAYWITT, W. C.**

Error Equations Used in the NBS Earth-Terminal Measurement System  
NBSIR 78-869  
December 1977

**YAGHJIAN, A. D.**

A Direct Approach to the Derivation of Electric Dyadic Green's Functions  
NBS TN 1000  
December 1977

**DAYWITT, W. C.**

A Precision Earth-Terminal System for Accurate C/KT, G/T, and EIRP Measurements with a Calibrated Radio Star  
Proc., 1977 Intl. Union of Radio Sci. (Union Radio Scientifique Internationale) Symp. on Meas. in Telecommunications, 3-7 October 1977, Lannion, France, pp. 1-4  
October 1977

**MA, M. T.; FITZGERRELL, R. G.**

Design of a Van-Top Low-Profile HF Antenna  
OTR-77-131  
October 1977

**YAGHJIAN, A. D.**

Near-Field Antenna Measurements on a Cylindrical Surface: A Source Scattering-Matrix Formulation  
NBS TN 696  
September 1977

**KANDA, M.**

A Relatively Short Cylindrical Broadband Antenna with Tapered Resistive Loading for Picosecond Pulse Measurements  
NBSIR 77-861  
August 1977

Antennas (cont.)

**LEWIS, R. L.**

The Use of Three Term Recursion Relations for Numerical Computations as Applied to Near-Field Spherical Scanning  
Proc., Intl. Union of Radio Sci. (Union Radio Scientifique Internationale) Intl. Symp., 20-24 June 1977, pp. 224-226  
June 1977

**WACKER, P. F.**

Recent Results with Spherical Near-Field Antenna Scanning at the National Bureau of Standards  
Proc., 1977 European Space Agency Symp., 6-8 June 1977, Noordwijk, Netherlands, pp. 159-164  
June 1977

**WACKER, P. F.; NEWELL, A. C.**

Advantages and Disadvantages of Planar, Circular Cylindrical and Spherical Scanning and Description of the NBS Antenna Scanning Facilities  
Proc., 1977 European Space Agency Symp., 6-8 June 1977, Noordwijk, Netherlands, pp. 115-121  
June 1977

**WAIT, D. F.**

Satellite Earth Terminal G/T Measurements  
Microwave J., Vol. 20, No. 4, pp. 49, 51, 58  
April 1977

**YAGHJIAN, A. D.**

A Direct Approach to the Derivation of Electric Dyadic Green's Functions  
Dig., Antenna Propagat. Soc. Symp., pp. 76-156  
October 1976

**DAYWITT, W. C.**

Error Equations Used in the NBS Precision G/T Measurement System  
NBSIR 76-842  
September 1976

**KANDA, M.**

Study of Error Analysis for Absolute Flux Density Measurements of Cassiopeia  
IEEE Trans. Instrum. Meas., Vol. IM-25, No. 3, pp. 173-182  
September 1976

**LARSEN, E. B.; ANDREWS, J. R.**

Using Fiber Optics in a Broadband, Sensitive, Isotropic Antenna - 15 kHz to 150 MHz  
Proc., IEEE Intl. Symp. on Electromagn. Compat., 13-15 July 1976, Washington, DC, pp. 385-389  
July 1976

**CRAWFORD, M. L.**

Calibration of Broadbeam Antennas Using Planar Near-Field Measurements  
Proc., 1976 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1976, Boulder, CO, pp. 53-56  
June 1976

**NEWELL, A. C.; REPJAR, A. G.**

Results of Spherical Near-Field Measurements on Narrow-Beam Antennas  
Proc., 1976 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1976, Boulder, CO, pp. 382-385  
June 1976



**WACKER, P. F.**

Non-Planar Near-Field Measurements: Spherical Scanning  
NBSIR 75-809  
1975

**YAGHJIAN, A. D.**

Upper-Bound Errors in Far-Field Antenna Parameters Determined from Planar Near-Field Measurements.  
Part 1: Analysis  
NBS TN 667  
October 1975

**DAYWITT, W. C.; KANDA, M.**

G/T Measurement Errors with Radio Stars  
Proc., 1975 IEEE Intl. Antenna and Propagat. Symp., 2-4 June 1975, Urbana-Champaign, IL,  
Session 20, pp. 460-463  
June 1975

**NEWELL, A. C.**

Improved Polarization Measurements Using a Modified Three Antenna Technique  
Proc., 1975 IEEE Intl. Antenna and Propagat. Symp., 2-4 June 1975, Urbana-Champaign, IL,  
Session 15, pp. 337-340  
June 1975

**NEWELL, A. C.; YAGHJIAN, A. D.**

Study of Errors in Planar Near-Field Measurements  
Proc., 1975 IEEE Intl. Antenna and Propagat. Symp., 2-4 June 1975, Urbana-Champaign, IL,  
Session 20, pp. 470-473  
June 1975

**KANDA, M.**

Accuracy Considerations in the Measurement of the Power Gain of a Large Microwave Antenna  
IEEE Trans. Antennas Propagat., Vol. AP-23, No. 3, pp. 407-411  
May 1975

**KERNS, D. M.**

Plane-Wave Scattering Matrix Theory of Antennas and Antenna-Antenna Interactions: Formulation and Applications  
NBSIR 75-824  
January 1975

**MA, M. T.**

Theory and Application of Antenna Arrays  
John Wiley Interscience  
1974

**WACKER, P. F.**

Near-Field Antenna Measurements Using a Spherical Scan: Efficient Data Reduction with Probe Correction  
Dig., Conf. on Prec. Electromagn. Meas., No. 113, pp. 286-288 London, England  
1974

**NEWELL, A. C.; CRAWFORD, M. L.**

Planar Near-Field Measurements on High Performance Array Antennas  
NBSIR 74-380  
July 1974

Antennas (cont.)

**BUSSEY, H. E.; LARSEN, E. B.**

Buried Antenna Performance: Development of Small Resonant Buried Antennas  
RADC-TR-74-169M, AD 783274  
June 1974

**KANDA, M.**

Accuracy Considerations in the Measurement of the Power Gain of a Large Microwave Antenna  
Proc., 1974 Intl. Antenna Propagat. Soc. Symp., 10-12 June 1974, Atlanta, GA, pp. 43-45  
June 1974

**NEWELL, A. C.; CRAWFORD, M. L.**

Planar Near-Field Measurements on Phased Array Antennas  
Proc., 1974 Intl. IEEE Antenna Propagat. Soc. Symp., 10-12 June 1974, Atlanta, GA, p. 423  
June 1974

**WACKER, P. F.**

Antenna Measurements at the National Bureau of Standards Near-Field and Extrapolation Techniques  
Proc., 1974 Colloquium on Microwave Communication 24-30 June 1974, Budapest,  
PME-113-114  
June 1974

**BAIRD, R. C.; KERNS, D. M.**

The Accurate Determination of Millimeter-Wave Antenna Characteristics by Deconvolution and  
Extrapolation Techniques  
Proc., 1974 Millimeter-Wave Conf., 26-28 March, 1974, Vol. 2, pp. E 2-1 through E 2-12  
March 1974

**NEWELL, A. C.; BAIRD, R. C.; WACKER, P. F.**

Accurate Measurement of Antenna Gain and Polarization at Reduced Distances by an Extrapolation  
Technique  
IEEE Trans. Antennas Propagat., Vol. AP-21, No. 4, pp. 418-431  
July 1973

**KERNS, D. M.**

Comment on Correction of Errors in Aerial Far-Field Radiation-Pattern Determinations  
Electronics Lett., Vol. 7, No. 24, pp. 706  
December 1971

**NEWELL, A. C.; KERNS, D. M.**

Determination of Both Polarization and Power Gain of Antennas by a Generalized 3-Antenna  
Measurement Method  
Electronics Lett., Vol. 7, No. 3, pp. 68-70  
January 1971



## DIELECTRIC MEASUREMENTS

**GEYER, R. G.**

Complex Permittivity and Permeability of Ferrite Ceramics at Microwave Frequencies  
Trans. Am. Ceramic Soc., Vol. 100, pp. 195-215  
1999

**GEYER, R. G.; KABOS, P.**

Magnetic Switching  
Wiley Encyclopedia of Electrical and Electronics Engineering, Vol. 12, pp. 179-191  
1999

**HOLLOWAY, C. L.; BAKER-JARVIS, J. R.; JOHNK, R. T.; GEYER, R. G.**

Electromagnetic Ferrite Tile Absorber  
Wiley Encyclopedia of Electrical and Electronics Engineering, Vol. 6, pp. 429-440  
1999

**BAKER-JARVIS, J. R.; RIDDLE, B. F.; YOUNG, A.**

Ion Dynamics Near Charged Electrodes with Excluded Volume Effect  
IEEE Trans. Diel. Elect. Insul., Vol. 6, No. 2, pp. 226-235  
April 1999

**BAKER-JARVIS, J. R.; RIDDLE, B. F.; JANEZIC, M. D.**

Dielectric and Magnetic Properties of Printed Wiring Boards and Other Substrate Material  
NIST TN 1512  
March 1999

**JANEZIC, M. D.; JARGON, J. A.**

Complex Permittivity from Propagation Constant Measurements  
IEEE Microwave Guided Wave Lett., Vol. 9, No. 2, pp. 76-78  
February 1999

**BAKER-JARVIS, J. R.; JONES, C. A.; RIDDLE, B. F.**

Electrical Properties and Dielectric Relaxation of DNA in Solution  
NIST TN 1509  
November 1998

**WEIL, C. M.; JANEZIC, M. D.; JONES, C. A.; VANZURA, E. J.**

Measurement Intercomparisons of Dielectric and Magnetic Material Characterizations  
Proc., Conf. Prec. Electromagn. Meas., 6-10 July 1998, Washington, DC, pp. 481-482  
July 1998

**GEYER, R. G.; JONES, C. A.; KRUPKA, J.**

Complex Permeability Measurements of Ferrite Ceramics Used in Wireless Communications  
Advances in Dielectric Ceramic Materials, Vol. 88, pp. 93-113  
May 1998

**GEYER, R. G.; JONES, C. A.; KRUPKA, J.**

Microwave Characterization of Dielectric Ceramics for Wireless Communications  
Advances in Dielectric Ceramic Materials, Vol. 88, pp. 75-91  
May 1998

**GEYER, R. C.; BAKER-JARVIS, J. R.; VANDERAH, T. A.; MANTESE, J. F.**

Complex Permittivity and Permeability Estimation of Composite Electroceramics  
Advances in Dielectric Ceramic Materials, Vol. 88, pp. 115-129  
May 1998

Dielectric Measurements (cont.)

**KRUPKA, J.; WEIL, C. M.**

Recent Advances in Metrology for the Electromagnetic Characterization of Bulk Materials at Microwave Frequencies

Proc., MIXON XII, Intl. Microwave Conf., 20-22 May 1998, Krakow, Poland, pp. 243-253  
May 1998

**BAKER-JARVIS, J. R.; JONES, C. A.; JANEZIC, M. D.**

Shielded Open-Circuited Sample Holder for Very Broadband Measurements of Solids and Liquids

IEEE Trans. Instrum. Meas., Vol. 47, No. 2, pp. 338-344  
April 1998

**WEIL, C. M.; GEYER, R. G.; SENGUPTA, L.**

Microwave Dielectric Characterization of Bulk Ferroelectrics

Special Issue, J. Phys.; 2nd European Mtg. Integrated Ferroelectrics, 29-30 September, 1997,  
Jouy-en-Josas, France, pp. 113-116  
September 1997

**JANEZIC, M. D.; WILLIAMS, D. F.**

Permittivity Characterization from Transmission-Line Measurement

Dig., IEEE 1997 MTT Intl. Symp., 8-12 June 1997, Denver, CO, pp. 1343-1345  
June 1997

**KRUPKA, J.; DERZAKOWSKI, K.; ABRAMOWICZ, A.; TOBAR, M.; GEYER, R. G.**

Complex Permittivity Measurements of Extremely Low Loss Dielectric Materials Using Whispering Gallery Modes

Dig., IEEE 1997 MTT Intl. Symp., 8-12 June 1997, Denver, CO, pp. 1347-1350  
June 1997

**LEWIS, R. L.**

Relative Permittivity Measurement of Rectangular Copper-Laminated Substrates Using the Full-Sheet Resonance Technique

NIST IR 5062  
April 1997

**WEIL, C. M.; JANEZIC, M. D.; VANZURA, E. J.**

Intercomparison of Permeability and Permittivity Measurements Using the Transmission/Reflection Method in 7 and 14 mm Coaxial Air Lines

NIST TN 1386  
March 1997

**LEWIS, R. L.**

Relative Permittivity Measurement of Square Copper-Laminated Substrates Using the Full Sheet Resonance Technique

NISTIR 5053  
January 1997

**BAKER-JARVIS, J. R.; RIDDLE, B. F.**

Dielectric Measurements Using a Reentrant Cavity: Mode-Matching Analysis

NIST TN 1384  
November 1996

Dielectric Measurements (cont.)

**KRUPKA, J.; GEYER, R. G.; BAKER-JARVIS, J. R.; CEREMUGA, J.**

Measurements of the Complex Permittivity of Microwave Circuit Board Substrates Using Split Dielectric Resonator and Reentrant Cavity Techniques

Proc., 7th Intl. Conf. Dielectric Materials Meas. Appl., 23-26 September 1996, Bath, England.

Pub. No. 430, pp. 21-24

September 1996

**GEYER, R. G.; KRUPKA, J.; SENGUPTA, L.; SENGUPTA, S.**

Microwave Properties of Composite Ceramic Phase Shifter Material

Proc., IEEE Intl. Symp. for App. of Ferroelectrics, 18-21 August 1996, East Brunswick, NJ, pp. 851-854

August 1996

**JONES, C. A.; KANTOR, Y.; GROSVENOR, J. H.**

Permittivity Measurements of Low-Loss Dielectric Materials at 60 GHz

Proc., Intl. Conf. Millimeter and Submillimeter Waves Appl., 5-7 August 1996, Denver, CO, pp. 263-273

August 1996

**KRUPKA, J.; BLONDY, P.; CROS, D.; GULLON, P.; GEYER, R. G.**

Whispering-Gallery Modes and Permeability Tensor Measurements in Magnetized Ferrite Resonators

IEEE Microwave Theory Tech., Vol. 44, No. 7, pp. 1097-1102

July 1996

**GEYER, R. G.; KRUPKA, J.**

Microwave Behavior of Ferrites: Theory and Experiment

Dig., 1996 Conf. Prec. Electromagn. Meas., 17-20 June 1996; Braunschweig, Germany; pp. 206-207

June 1996

**KRUPKA, J.; GEYER, R. G.**

Complex Permeability of Demagnetized Microwave Ferrites Near and Above Gyromagnetic Resonance

IEEE Trans. Magn., Vol. 32, No. 3, pp. 1924-1933

May 1996

**KRUPKA, J.; PIETRUSZKO, S.; GEYER, R. G.; BAKER-JARVIS, J. B.; DERZAKOWSKI, K.**

Semiconductors Resistivity Measurements Using Split-Dielectric Resonator Technique

Proc., MIKON XI, Intl. Microwave Conf., 27-30 May 1996, Warsaw, Poland, pp. 361-364

May 1996

**GEYER, R. G.; KRUPKA, J.**

Complex Permeability Measurements of Microwave Ferrites

Proc., Materials Research Soc., 7-12 April 1996, San Francisco, CA, pp. 257-262

April 1996

**BAKER-JARVIS, J. R.; GROSVENOR, J. H.**

Dielectric and Magnetic Measurements at Elevated Temperatures in the Frequency Band 50 MHz to 2 GHz

NISTIR 5045

March 1996

**BAKER-JARVIS, J. R.; JANEZIC, M. D.**

Analysis of a Two-Port Flanged Coaxial Holder for Shielding Effectiveness and Dielectric Measurements of Thin Films and Thin Materials

IEEE Trans. Electromag. Compat., Vol. 38, No. 1, pp. 67-70  
February 1996

**MANTESE, J. F.; MICHELI, A. L.; DUNGAN, D. F.; GEYER, R. G.; BAKER-JARVIS, J. R.; GROSVENOR, J. H.**

Applicability of Effective Medium Theory to Ferroelectric/Ferrimagnetic Composites with Composition and Frequency-Dependent Complex Permittivities and Permeabilities

J. Appl. Phys., Vol. 79, No. 3, pp. 1655-1660  
February 1996

**BAKER-JARVIS, J. R.; JONES, C. A.; RIDDLE, B. F.; JANEZIC, M. D.; GEYER, R. G.; GROSVENOR, J. H.; WEIL, C.M.**

Dielectric and Magnetic Measurements: A Survey of Nondestructive, Quasi-Nondestructive, and Process-Control Techniques

Research in Nondestructive Evaluation, Vol. 7, pp. 117-136  
1995

**VANDERAH, T. A.; HUANG, Q.; WONG-NG, W.; CHAKOUMAKOS, B. C.; GOLDFARB, R. B.; GEYER, R. G.; BAKER-JARVIS, J. R.; ROTH, R. S.; SANTORO, A.**

Preparation, Crystal Structure, Dielectric Properties, and Magnetic Behavior of  $\text{Ba}_2\text{Fe}_2\text{Ti}_4\text{O}_{13}$

J. Solid State Chem., Vol. 120, pp. 121-127  
November 1995

**WEIL, C. M.**

The NIST Metrology Program on Electromagnetic Characterization of Materials

Proc., Symp. on Materials and Processes for Wireless Communication, 15-16 November 1995,  
Boston, MA, pp. 35-48  
November 1995

**BAKER-JARVIS, J. R.; JONES, C. A.**

Dielectric Measurements on Printed-Wiring and Circuit Boards, Thin Films, and Substrates: An Overview

Proc., Materials Res. Soc., April 18, 1995, San Francisco, CA, pp. 153-164  
April 1995

**GEYER, R. G.; KRUPKA, J.**

Microwave Dielectric Properties of Anisotropic Materials at Cryogenic Temperatures

IEEE Trans. Instrum. Meas., Vol. 44, No. 2, pp. 329-331  
April 1995

**CEREMUGA, J.; KRUPKA, J.; GEYER, R. G.; MODELSKI, J.**

Influence of Film Thickness and Air Gaps in Surface Impedance Measurements of High Temperature Superconductors Using the Dielectric Resonator Technique

IEIC Trans. Electron. (Japanese), Vol. E78-C, No. 8, pp. 1106-1110  
December 1994

**VANZURA, E. J.; BAKER-JARVIS, J. R.; GROSVENOR, J. H.; JANEZIC, M. D.**

Intercomparison of Permittivity Measurements Using the Transmission/Reflection Method in 7-mm Coaxial Transmission Lines

IEEE Trans. Microwave Theory Tech., Vol. 42, No. 11, pp. 2063-2070  
November 1994

Dielectric Measurements (cont.)

**BAKER-JARVIS, J. R.; JANEZIC, M. D.; DOMICH, P. D.; GEYER, R. G.**

Analysis of an Open-Ended Coaxial Probe with Lift-Off for Nondestructive Testing  
IEEE Trans. Instrumen. Meas., Vol. 43, No. 5, pp. 711-718  
October 1994

**GEYER, R. G.; KRUPKA, J.; KUHN, M.; HINKEN, J.**

Dielectric Properties of Single Crystals of  $\text{Al}_2\text{O}_3$ ,  $\text{LaAlO}_3$ ,  $\text{NdGaO}_3$ ,  $\text{SrTiO}_3$ , and  $\text{MgO}$  at Cryogenic Temperatures  
IEEE Trans. Microwave Theory Tech., Vol. 42, No. 10, pp. 1886-1889  
October 1994

**GEYER, R. G.; MANTESE, J. F.; BAKER-JARVIS, J. R.**

Effective Medium Theory for Ferrite-Loaded Materials  
NIST TN1371  
October 1994

**JONES, C. A.**

Substrate and Thin Film Measurements  
Proc., 1994 Wireless Workshop, 16-19 October 1994, Phoenix, AZ, pp. 1-13  
October 1994

**BAKER-JARVIS, J. R.; JANEZIC, M. D.**

Distribution of Dielectric Relaxation Times and the Moment Problem  
Dig., 1994 Conf. Prec. Electromagn. Meas., 27 June-1 July, 1994, Boulder, CO, pp. 356-357  
June 1994

**GEYER, R. G.; KRUPKA, J.**

Dielectric Properties of Materials at Cryogenic Temperatures and Microwave Frequencies  
Dig., 1994 Conf. Prec. Electromagn. Meas., 27 June-1 July 1994, Boulder, CO, pp. 350-351  
June 1994

**KRUPKA, J.; GEYER, R. G.; CROS, D.**

Use of Higher-Order  $\text{TE}_{0y6}$  Modes in Dielectric Measurements of Dielectric Rod Resonators  
Proc., MIKON '94 Microwave Conf., 30 May-2 June 1994, Książ, Poland, pp. 567-572  
June 1994

**BAKER-JARVIS, J. R.; JANEZIC, M. D.**

Open-Ended Coaxial Probes for Nondestructive Testing of Substrates and Circuit Boards  
Proc., Mater. Res. Soc., April 4-8, 1994, San Francisco, CA, pp. 215-220  
April 1994

**BAKER-JARVIS, J. R.**

Dielectric and Magnetic Relaxation by Maximum-Entropy Method  
Smart Mater. Struct., Vol. 2, pp. 113-123  
1993

**GROSVENOR, J. H.**

NIST Measurement Service for Electromagnetic Characterization of Materials  
NISTIR 5006  
August 1993



Dielectric Measurements (cont.)

**VANZURA, E. J.; GEYER, R. G.; JANEZIC, M. D.**

The NIST 60-Millimeter Diameter Cylindrical Cavity Resonator: Performance Evaluation for Permittivity Measurements

NIST TN 1354

August 1993

**BAKER-JARVIS, J. R.; JANEZIC, M. D.; STAFFORD, R. B.**

Shielded Open-Circuited Sample Holders for Dielectric and Magnetic Measurements of Liquids and Powders

NISTIR 5001

March 1993

**WEIL, C. M.**

Dielectric and Magnetic Property Measurements: the NIST Methodology Program

Proc., Workshop on Microwave-Absorbing Materials for Accelerators, 22-24 February 1993, Newport News, VA, pp. 296-303

February 1993

**CLARK, A. V.; SCHAPS, S. R.; BAKER-JARVIS, J. R.; GEYER, R. G.**

Development of Electromagnetic Probes for Intelligent Processing of Dielectric Materials

NISTIR 4963, pp. 34-37

November 1992

**BAKER-JARVIS, J. R.; GEYER, R. G.; DOMICH, P. D.**

A Nonlinear Least-Squares Solution with Causality Constraints Applied to Transmission Line Permittivity and Permeability Determination

IEEE Trans. Instrum. Meas., Vol. 41, No. 5, pp. 646-652

October 1992

**BAKER-JARVIS, J. R.**

Dielectric and Magnetic Measurement Methods in Transmission Lines: An Overview

Proc., AMTA Workshop on EM Characterization of Materials for Antenna/RCS Applications, 20-25 July 1992, Chicago, IL, pp. 1-23

July 1992

**GEYER, R. G.; BAKER-JARVIS, J. R.; JANEZIC, M. D.; DOMICH, P. D.**

Spectral Characterization of Ferrites for Use as Magnetic Reference Materials

Dig., 1992 Conf. Prec. Electromagn. Meas., 9-12 June 1992, Paris, France, pp. 107-108

June 1992

**VANZURA, E. J.; WEIL, C. M.; WILLIAMS, D. F.**

Complex Permittivity Measurements of Gallium Arsenide Using a High-Precision Resonant Cavity

Dig., 1992 Conf. Prec. Electromagn. Meas., 9-12 June 1992, Paris, France, pp. 103-104

June 1992

**BAKER-JARVIS, J. R.; JANEZIC, M. D.; GROSVENOR, J. H.; GEYER, R. G.**

Transmission/Reflection and Short-Circuit Line Methods for Measuring Permittivity and Permeability

NIST TN 1355

May 1992

**WEIL, C. M.**

The Electromagnetic Properties of Materials Program at NIST

Proc., Mat. Soc. Symp., 27-30 April 1992, San Francisco, CA, Vol. 269, pp. 517-526

April 1992

Dielectric Measurements (cont.)

**CLARK, A. V.; SCHAPS, S. R.; BAKER-JARVIS, J. R.; GEYER, R. G.;  
CAPOBIANCO, T. E.; AULD, B. A.**

Development of Electromagnetic Probes for Intelligent Processing of Dielectric Materials  
NISTIR 4693, pp. 54-61  
November 1991

**DOMICH, P. D.; BAKER-JARVIS, J. R.; GEYER, R. G.**

Optimization Techniques for Permittivity and Permeability Determination  
NIST JRES, Vol. 96, No. 5, pp. 565-575  
September/October 1991

**DOMICH, P. D.; BAKER-JARVIS, J. R.; GEYER, R. G.**

Optimization Techniques for Permittivity and Permeability Determination  
NISTIR 4571  
June 1991

**JANEZIC, M. D.; GROSVENOR, J. H.**

Improved Technique for Measuring Permittivity of Thin Dielectrics with a Cylindrical Resonant Cavity  
Conf. Record, IEEE Instrum. Meas. Technol. Conf., 14-16 May 1991, Atlanta, GA, pp. 580-584  
May 1991

**VANZURA, E. J.; ROGERS, J. E.**

Evaluation of a Resonant Circuit Model Using Reflected S-Parameter Data  
Record, IEEE Instrum. Meas. Tech. Conf., 14-16 May 1991, Atlanta, GA, pp. 150-155  
May 1991

**WEIL, C. M.; KISSICK, W. A.**

The NIST Electromagnetic Properties of Materials Program  
Conf. Record, IEEE Instrum. Meas. Tech. Conf., 14-16 May 1991, Atlanta, GA, pp. 626-630  
May 1991

**HILL, D. A.**

Electric and Magnetic Dipole Radiation in a Random Medium  
Electromagnetics, Vol. 10, pp. 279-292  
1990

**BAKER-JARVIS, J. R.; VANZURA, E. J.; KISSICK, W. A.**

Improved Technique for Determining Complex Permittivity with the Transmission/Reflection Method  
IEEE Trans. Microwave Theory Tech., Vol. 38, No. 8, pp. 1096-1103  
August 1990

**BAKER-JARVIS, J. R.**

Transmission/Reflection and Short-Circuit Line Permittivity Measurement Methods  
NIST TN 1341  
July 1990

**BAKER-JARVIS, J. R.; GEYER, R. G.**

Improvements in Transmission Line Permittivity and Permeability Measurements  
Dig., Conf. Prec. Electromagn. Meas., 11-14 June 1990, Ottawa, Canada, pp. 232-233  
June 1990

**GEYER, R. G.; WEIL, C. M.; KISSICK, W. A.**

Precision Dielectric Measurements Using a Mode-Filtered Cylindrical Cavity Resonator  
Dig., Conf. Prec. Electromagn. Meas., 11-14 June 1990, Ottawa, Canada, pp. 174-175  
June 1990

Dielectric Measurements (cont.)

**GEYER, R. G.**

Dielectric Characterization and Reference Materials  
NIST TN 1338  
April 1990

**GEYER, R. G.**

Electrodynamics of Materials for Dielectric Measurement Standardization  
Record, Instrum. Meas. Tech. (IMTC) Conf., 13-15 February 1990, San Jose, CA, pp. 2-7  
February 1990

**GEYER, R. G.; JANEZIC, M. D.; KISSICK, W. A.; BAKER-JARVIS, J. R.**

Preliminary Microwave Complex Permittivity Measurements of Heavy-Metal Fluoride Glasses  
Proc., Third DoD Symp. on Electromagnetic Windows, 14-16 November 1989, Redstone  
Arsenal, Huntsville, AL, pp. 116-141  
November 1989

**HILL, D. A.**

Near-Field Detection of Buried Dielectric Objects  
IEEE Trans. Geosci. Remote Sensing, Vol. GE-27, No. 4, pp. 364-368  
July 1989

**VANZURA, E. J.; KISSICK, W. A.**

Advances in NIST Dielectric Measurement Capability Using a Mode-Filtered Cylindrical Cavity  
Proc., 1989 IEEE MTT-S Intl. Microwave Symp., 13-15 June 1989, Long Beach, CA, pp.  
901-904  
June 1989

**JESCH, R. L.**

Measurement of Shielding Effectiveness of Different Cable and Shielding Configurations by  
Mode-Stirred Techniques  
IEEE Trans. Electromagn. Compat., Vol. EMC-30, pp. 222-228  
August 1988

**GEYER, R. G.**

Dielectric Mixing Rules for Background Test Soils  
NBSIR 88-3095  
June 1988

**LAWTON, R. A.; ANDERSON, W. T.**

Two Layer Dielectric Microstrip Line Structure: SiO<sub>2</sub> on Si and GaAs on Si: Modeling and Measurement  
IEEE Trans. Microwave Theory Tech., Vol. MTT-36, No. 4, pp. 785-789  
April 1988

**DAYWITT, W. C.**

Complex Permittivity of Beryllium Oxide Between 100 and 300 Kelvins at 9.3 Gigahertz  
IEEE Trans. Instrum. Meas., Vol. IM-34, No. 1, pp. 98-99  
March 1985

**JESCH, R. L.**

Dielectric Measurements of Oil Shale as Functions of Temperature and Frequency  
IEEE Trans. Geosci. Remote Sensing, Vol. GE-22, No. 2, pp. 99-105  
March 1984



Dielectric Measurements (cont.)

**BUSSEY, H. E.**

Dielectric Measurements in a Shielded Open Circuit Coaxial Line  
IEEE Trans. Instrum. Meas., Vol. IM-29, No. 2, pp. 120-124  
June 1980

**BUSSEY, H. E.**

Open Circuited Coaxial Resonator for High Sensitivity Dielectric Measurements, Application to Lunar Soil 70051-20  
Proc., 1979 Lunar and Planetary Science Conf. (10th) Natl. Aeronautics and Space Administration, 19-23 March 1979, Lyndon B. Johnson Space Center, Houston, TX  
March 1979

**BUSSEY, H. E.**

Dielectric Measurements of Lunar Soil  
Proc., 1979 Lunar and Planetary Science Conf. (10th) Natl. Aeronautics and Space Administration, 19-23 March 1979, Lyndon B. Johnson Space Center, Houston, TX  
March 1979

**JESCH, R. L.**

Dielectric Measurements of Five Different Soil Textural Types as Functions of Frequency and Moisture Content  
NBSIR 78-896  
1978

**BENNETT, W. S.; TAGGART, H. E.**

Characteristics of A CISPR/VDE Far-Field EMI Test Site with Ground Screen  
Proc., Third Rotterdam Electromagn. Compat. Symp.,  
December 1978

**JONES, R. N.; BUSSEY, H. E.; LITTLE, W. E.; METZKER, R. F.**

Electrical Characteristics of Corn, Wheat, and Soya in the 1-200 MHz Range  
NBSIR 78-897  
October 1978

**ELLERBRUCH, D. A.; LITTLE, W. E.; BOYNE, H. S.; BACHMAN, D. D.**

Microwave Characteristics of Snow  
Proc., 1977 Western Snow Conf., 18-21 April 1977, Albuquerque, NM, p 7  
April 1977

**BUSSEY, H. E.; RICHMOND, J. H.**

Scattering by a Lossy Dielectric Circular Cylindrical Multilayer, Numerical Values  
IEEE Trans. Antennas Propagat., Vol. 23, No. 5, pp. 723-725  
September 1975

**BUSSEY, H. E.; MORRIS, D.; ZALTSMAN, E. B.**

International Comparison of Complex Permittivity Measurement at 9 GHz  
IEEE Trans. Instrum. Meas., Vol. IM-23, No. 3, pp. 235-239  
September 1974

**LAWTON, R. A.**

Autocorrelation and Power Measurement with Pyroelectric and Dielectric Bolometers  
IEEE Trans. Instrum. Meas., IM-22, pp. 299-306  
December 1973

Dielectric Measurements (cont.)

**BUSSEY, H. E.**

Wavelength of a Slotted Rectangular Line Containing Two Dielectrics  
NBSIR 73-326  
July 1973

**BUSSEY, H. E.**

Rapport sur la Comparaison Int'l des Mesures de Permittivite Complexe a 9 GHz (Intl. Comparison of Complex Permittivity Measurement at 9 GHz)  
Proc., Comite Consultatif, D'Electricite Comite, Bureau Intl. des Poids et Mesures, 12-13  
October 1972, Sevres, France, pp. 124-137  
October 1972

## ELECTROMAGNETIC INTERFERENCE

**HILL, D. A.**

Radiowave Propagation Ground Effects

Wiley Encyclopedia of Electrical and Electronic Engineering, Vol. 18, pp. 187-204  
1999

**KANDA, M.**

Electromagnetic Field Measurements

Wiley Encyclopedia of Electrical and Electronic Engineering, Vol. 6, pp. 440-450  
1999

**KANDA, M. ; KWALKO, S. F.**

Near-Zone Gain of 500 MHz to 2.6 GHz Rectangular Standard Pyramidal Horns

IEEE Trans. Electromagn. Compat., Vol. 41, No. 2, pp. 85-92  
May 1999

**HILL, D. A.; KANDA, M.**

Electric Field Strength

The Measurement, Instrumentation and Sensors Handbook, CRC Press, Chapter 47, pp. 1-13  
January 1999

**LADBURY, J. M.; KOEPKE, G. H.; CAMELL, D. G.**

Evaluation of the NASA Langley Research Center Mode-Stirred Chamber Facility

NIST TN 1508

January 1999

**HILL, D. A.; CAVCEY, K. H.**

Characterization of Weak, Electrically Small Emitters from TEM-Cell Measurements

NISTIR 5079

December 1998

**HILL, D. A.**

Electromagnetic Theory of Reverberation Chambers

NIST TN 1506

December 1998

**CAMELL, D. G.**

Uncertainty Assessment for Standard Antenna Measurements on the Open Area Site

NIST TN 1507

September 1998

**CAVCEY, K. H.; CAMELL, D. G.**

Scanning Height for ANSI C63.5 Calibrations

Proc., IEEE Intl Electromagn. Compat. Symp., 24-28 August 1998, Denver, CO, Vol. 2,  
pp. 935-938

August 1998

**HILL, D. A.**

Plane Wave Integral Representation for Fields in Reverberation Chambers

IEEE Trans. Electromagn. Compat., Vol. 40, No. 3, pp. 209-217

August 1998

**HILL, D. A.**

Spherical-Wave Characterization of Interior and Exterior Sources

Proc., IEEE Intl Electromagn. Compat. Symp., 24-28 August 1998, Denver, CO, Vol. 2, pp. 848-853

August 1998

**JOHNK, R. T.; ONDREJKA, A. R.; HOLLOWAY, C. L.**

Time-Domain Free-Space Evaluations of Urethane Slabs with Finite-Difference Time-Domain Computer Simulations

Proc., IEEE Intl. Electromagn. Compat. Symp., 24-28 August 1998, Denver, CO, Vol. 2, pp. 290-295

August 1998

**JOHNK, R. T.; ONDREJKA, A. R.; MEDLEY, H. W.**

Low-Frequency RF Absorber Performance Evaluation Using In Situ and Moveable Sample Techniques

Proc., IEEE Intl. Electromagn. Compat. Symp., 24-28 August 1998, Denver, CO, Vol. 2, pp. 8-13

August 1998

**MASTERSON, K. D.; NOVOTNY, D. R.**

Transmission Cross Sections of Optical-Fiber Feedthroughs for Suppression of Electromagnetic Interference

Proc., IEEE Intl Electromagn. Compat. Symp., 24-28 August 1998, Denver, CO, Vol. 2, pp. 745-750

August 1998

**HILL, D. A.**

Spherical-Wave Characterization of Interior and Exterior Sources

NIST IR 5072

December 1997

**BUTLER, C. M.; HILL, D. A.; NOVOTNY, D. R.; KANDA, M.**

EMI/EMC Metrology Challenges for Industry: A Workshop on Measurements, Standards, Calibrations and Accreditation

NISTIR 5068

November 1997

**KWALKO, S. F.; KANDA, M.**

The Near-Zone Gain of Open-Ended Rectangular Waveguides

IEEE Trans. Electromagn. Compat., Vol. 39, No. 4, pp. 408-413

November 1997

**KWALKO, S. F.; KANDA, M.**

The Effective Length and Input Impedance of the NIST Standard Dipole

IEEE Trans. Electromagn. Compat., Vol. 39, No. 4, pp. 404-408

November 1997

**LADBURY, J. M.; KOEPKE, G. H.; CAMELL, D. G.**

Improvements in the CW Evaluation of Mode-Stirred Chambers

Proc., IEEE Electromagn. Compat. Symp., 18-22 August 1997, Austin TX, pp. 33-37

August 1997

**BAIRD, R. C.; KANDA, M.**

Measurement Related Issues, Problems and Requirements Associated with Electromagnetic Compatibility: Results of a Limited Survey

NIST IR 5049

July 1997

**MASTERSON, K. D.; NOVOTNY, D. R.; KOEPKE, G. H.**

Electromagnetic Shielding Characteristics of Optical-Fiber Connectors

NIST TN 1383

April 1997

**HILL, D. A.; KANDA, M.**

Measurement Uncertainty of Radiated Emissions

NIST TN 1389

March 1997

**HOLLOWAY, C. L.; DELYSER, R. R.; GERMAN, R. F.; MCKENNA, P.; KANDA, M.**

Evaluation and Comparison of Electromagnetic Absorbers Used in Anechoic and Semi-Anechoic Chambers for Emissions and Immunity Testing of Commercial Equipment

IEEE Trans. Electromagn. Compat., Vol. 39, No. 1, pp. 33-47

February 1997

**DELYSER, R. R.; HOLLOWAY, C. L.; JOHNK, R. T.; ONDREJKA, A. R.; KANDA, M.**

A New Measure of Quality Factor for Low-Frequency Anechoic Chamber Based on Absorber Reflection Coefficients

IEEE Trans. Electromagn. Compat., Vol. 38, No. 4, pp. 576-584

November 1996

**HILL, D. A.**

A Reflection Coefficient Derivation for the Q of a Reverberation Chamber

IEEE Trans. Electromagn. Comp., Vol. 38, No. 4, pp. 591-592

November 1996

**KODALI, V. P.; KANDA, M.**

EMC/EMI Selected Readings

IEEE Press, Piscataway, NJ

November 1996

**JOHNK, R. T.; RANDA, J.**

Low Frequency Representation of Radio-Frequency Absorbers

Proc., IEEE Intl. Electromagn. Compat. Symp., 19-23 August 1996, Santa Clara, CA, pp. 174-179

August 1996

**TOFANI, S.; OSSOLA, P.; D'AMORE, G.; ANGLISIO, L.; KANDA, M.; NOVOTNY, D. R.**

A Three-Loop Antenna System for Performing Near Field Measurements of Electric and Magnetic Fields from Video Display Terminals (VDTs)

IEEE Trans. Electromagn. Compat., Vol. 38, No. 3, pp. 341-347

August 1996

**LADBURY, J. M.; JOHNK, R. T.; ONDREJKA, A. R.**

Rapid Evaluation of Mode-Stirred Chambers Using Impulsive Waveforms

NIST TN 1381

June 1996

Electromagnetic Interference (cont.)

**LADBURY, J. M.; JOHNK, R. T.; ONDREJKA, A. R.**

Rapid Evaluation of Mode-Stirred Chambers Using Impulsive Waveforms  
NIST TN 1381  
June 1996

**CAMELL, D. G.; KOEPKE, G. H.; SMITH, R. B.; RAKOSKI, B.**

A Standard Source Method for Reducing Antenna Factor Errors in Shielded Room Measurements  
NIST TN 1382  
March 1996

**HILL, D.A.**

Electromagnetic Shielding Characterization of Gaskets  
NIST IR 5032  
February 1996

**CRAWFORD, M. L.; RIDDLE, B. F.; CAMELL, D. G.**

TEM/Reverberating Chamber Electromagnetic Radiation Test Facility at Rome Laboratory  
NISTIR 5002  
January 1996

**CRAWFORD, M. L.; LOUGHRY, T. A.; HATFIELD, M. O.; FREYER, G. J.**

Band-Limited White Gaussian Noise Excitation for Reverberation Chambers and Applications to Radiated Susceptibility Testing  
NIST TN 1375  
January 1996

**CRAWFORD, M. L.**

Alternative EMC Compliance Test Facilities  
Chapter 18 in Electromagnetic Compatibility Handbook, Academic Press, San Diego, CA  
1995

**HILL, D. A.**

Electric Dipole Excitation of a Long Conductor in a Lossy Medium  
Electromagnetics, Vol. 15, pp. 301-319  
1995

**KANDA, M.**

Methodology for Electromagnetic Interference Measurements  
Chapter 15 in Electromagnetic Compatibility Handbook, Academic Press, San Diego, CA  
1995

**KANDA, M.**

Standard Antennas for Electromagnetic Field Measurements  
Chapter 16 in Electromagnetic Compatibility Handbook, Academic Press, San Diego, CA  
1995

**CAMELL, D. G.; MA, M. T.**

Data Evaluation of a Linear System by a Second Order Transfer Function  
Proc., IEEE EMC Symp., 14-18 August 1995, Atlanta, GA, pp. 511-515  
August 1995

**HILL, D. A.; CAMELL, D. G.; CAVCEY, K. H.; KOEPKE, G. H.**

Radiated Emissions and Immunity of Microstrip Transmission Lines: Theory and Measurements  
TN 1377  
July 1995



**RANDA, J.**

A Low-Frequency Model for Radio-Frequency Absorber  
NIST JRES, Vol. 100, No. 3, pp. 257-267  
May-June 1995

**HILL, D. A.**

Spatial Correlation Function for Fields in a Reverberation Chamber  
IEEE Trans. Electromagn. Compat. (Correspondence), Vol. 37, No. 1, p. 1  
February 1995

**RANDA, J.; GILLILAND, D.; GJERTSON, W.; LAUBER, W.; McINERNEY, M.**

Catalogue of Electromagnetic Environment Measurements, 30 to 300 Hz  
IEEE Trans. Electromagn. Compat., Vol. 37, No. 1, pp. 26-33  
February 1995

**HILL, D. A.**

Gradiometer Antennas for Detection of Long Subsurface Conductors  
J. Electromagn. Waves Appl., Vol. 8, No. 2, pp. 237-248  
1994

**KOEPKE, G. H.; RANDA, J.**

Screen-Room Measurements on the NIST Spherical-Dipole Standard Radiator  
NIST JRES, Vol. 99, No. 6, pp. 737-749  
November/December 1994

**HILL, D. A.**

Electronic Mode Stirring for Reverberation Chambers  
IEEE Trans. Electromagn. Compat., Vol. 36, No. 4, pp. 294-299  
November 1994

**HILL, D. A.; CAVCEY, K. H.; JOHNK, R. T.**

Crosstalk Between Microstrip Transmission Lines  
IEEE Trans. Electromagn. Compat., Vol. 36, No. 4, pp. 314-321  
November 1994

**KANDA, M.**

Standard Antennas for Electromagnetic Interference Measurements and Methods to Calibrate Them  
IEEE Trans. Electromagn. Compat., Vol. 36, No. 4, pp. 261-273  
November 1994

**CAMELL, D. G.; MA, M. T.**

Assessment of Particular Measurement Data by a Linear Transfer Function Technique  
NIST TN 1372  
October 1994

**HILL, D. A.; MA, M. T.; ONDREJKA, A. R.; RIDDLE, B. F.; CRAWFORD, M. L.; JOHNK, R. T.**

Aperture Excitation of Electrically Large, Lossy Cavities  
IEEE Trans. Electromagn. Compat., Vol. 36, No. 3, pp. 169-178  
August 1994

**HILL, D. A.; CRAWFORD, M. L.; JOHNK, R. T.; ONDREJKA, A. R.; CAMELL, D. G.**

Measurements of Shielding Effectiveness and Cavity Characteristics of Airplanes  
NISTIR 5023  
July 1994



Electromagnetic Interference (cont.)

**JOHNK, R. T.; KANDA, M. T.**

Alternative Contour Technique for the Efficient Computation of the Effective Length of an Antenna  
IEEE Trans. Antennas Propagat., Vol. 42, No. 5, pp. 747-749  
May 1994

**HILL, D. A.; CAVCEY, K. H.; JOHNK, R. T.**

Crosstalk between Microstrip Transmission Lines  
NISTIR 5015  
December 1993

**KANDA, M.**

Standard Probes for Electromagnetic Field Measurements  
IEEE Trans. Antennas Propagat., Vol. 41, No. 10, pp. 1349-1364  
October 1993

**RANDA, J.; KOEPKE, G. H.**

Results of Screened-Room Measurements on NIST Standard Radiators  
NISTIR 5010  
October 1993

**HILL, D. A.; ADAMS, J. W.; MA, M. T.; ONDREJKA, A. R.; RIDDLE, B. F.; CRAWFORD, M. L.; JOHNK, R. T.**

Aperture Excitation of Electrically Large, Lossy Cavities  
NIST TN 1361  
September 1993

**MA, M. T.; ADAMS, J. W.**

Characterization of Unknown Linear Systems Based on Measured CW Amplitude  
Record, IEEE Intl. Symp. on Electromagn. Compat., 9-13 August 1993, Dallas, TX, pp. 78-82  
August 1993

**NOVOTNY, D. R.; MASTERSON, K. D.; KANDA, M.**

An Optically Linked Three-Loop Antenna System for Determining the Radiation Characteristics of an Electrically Small Source  
Record, IEEE Intl. Symp. on Electromagn. Compat., 9-13 August 1993, Dallas, TX, pp. 300-304  
August 1993

**RANDA, J.; GILLILAND, D.; GJERTSON, W.; LAUBER, W.; McINERNEY, M.**

Condensed Catalogue of Electromagnetic Environment Measurements, 30-300 Hz  
Record, IEEE Intl. Symp. on Electromagn. Compat., 9-13 August 1993, Dallas, TX, pp. 126-131  
August 1993

**MA, M. T.**

Selected EMC Standards and Regulations: A Summary  
NISTIR 5005  
July 1993

**MA, M. T.; ADAMS, J. W.**

Characteristics of Unknown Linear Systems Deduced from Measured CW Magnitude  
NIST JRES, Vol. 93, No. 3, pp. 297-319  
May-June 1993

**HILL, D. A.**

Gradiometer Antennas for Tunnel Detection

Proc., 4th Tunnel Detection Symp. on Subsurface Exploration Technology, April 26-29, 1993,  
Golden, CO

April 1993

**HILL, D. A.; CRAWFORD, M. L.; KANDA, M.**

Aperture Coupling to Shielded Transmission Lines: Theory and Experiment

Proc. 10th Intl. Symp. on EMC, 9-11 March 1993, Zurich, Switzerland, pp. 569-571

March 1993

**HILL, D. A.; CRAWFORD, M. L.; KANDA, M.; WU, D. I.**

Aperture Coupling to a Coaxial Air Line: Theory and Experiment

IEEE Trans. Electromagn. Compat., Vol. 35, No. 1, pp. 69-74

February 1993

**RANDA, J.**

Correction Factor for Nonplanar Incident Field in Monopole Calibrations

IEEE Trans. Electromagn. Compat., Vol. 35, No. 1, pp. 94-96

February 1993

**HILL, D. A.**

Electromagnetic Scattering by a Periodic Surface with a Wedge Profile

Electromagnetics, Vol. 12, pp. 247-264

1992

**HILL, D. A.**

Currents Induced on Multiconductor Transmission Lines by Radiation and Injection

IEEE Trans. Electromagn. Compat., Vol. 34, No. 4, pp. 445-450

November 1992

**ADAMS, J. W.**

Electromagnetic Shielding of RF Gaskets Measured by Two Methods

Record, 1992 IEEE Intl. Electromagn. Compat. Symp., 17-21 August 1992, Anaheim, CA, pp.  
154-157

August 1992

**ADAMS, J. W.; CRUZ, J. E.; MELQUIST, D. G.**

Comparison Measurements of Currents Induced by Radiation and Injection

IEEE Trans. Electromagn. Compat., Vol. 34, No. 3, pp. 360-362

August 1992

**CRAWFORD, M. L.; RIDDLE, B. F.**

A Reverberating Asymmetric TEM Cell for Radiated EMC/V and SE Testing, 10 kHz-18 GHz

Record, 1992 IEEE Intl. Electromagn. Compat. Symp., 17-21 August 1992, Anaheim, CA, pp.  
206-213

August 1992

**KOEPKE, G. H.; DRIVER, L. D.; CAVCEY, K. H.; MASTERSON, K. D.; JOHNK, R. T.; KANDA, M.**

New Spherical Dipole Source

Record, 1992 IEEE Intl. Electromagn. Compat. Symp., 17-21 August 1992, Anaheim, CA, pp.  
98-105

August 1992

**RANDA, J.; KANDA, M.; ORR, R. D.**

Optimized Thermo-Optic Electric-Field Probes for Microwaves and Millimeter Waves  
Record, 1992 IEEE Intl. Electromagn. Compat. Symp., 17-21 August 1992, Anaheim, CA, pp.  
200-203  
August 1992

**TOFANI, S.; ONDREJKA, A. R.; KANDA, M.; HILL, D. A.**

Bistatic Scattering of Absorbing Materials from 30 to 1000 MHz  
IEEE Trans. Electromagn. Compat., Vol. 34, No. 3, pp. 304-307  
August 1992

**HILL, D. A.**

Gradiometer Antennas for Tunnel Detection  
NISTIR 3990  
June 1992

**MA, M. T.**

EMC Standards and Regulations: A Brief Review  
NISTIR 3989  
May 1992

**MA, M. T.; ADAMS, J. W.**

System Response to Pulsed Excitations Estimated from Measurement of CW Amplitudes  
Proc., Intl. Symp. on Electromagn. Compat., 25-27 May 1992, Beijing, China, pp. 29-32  
May 1992

**HILL, D. A.; CRAWFORD, M. L.; KANDA, M.; WU, D. I.**

Aperture Coupling to Shielded Transmission Lines: Theory and Experiment  
NISTIR 3988  
April 1992

**KANDA, M.; HILL, D. A.**

A Three-Loop Method for Determining the Radiation Characteristics of an Electrically Small Source  
IEEE Trans. Electromagn. Compat., Vol. EMC-34, No. 1, pp. 1-3  
February 1992

**KANDA, M.; MASTERSON, K. D.**

Optically Sensed EM-Field Probes for Pulsed Fields  
Proc., IEEE Spec. Issue on Antennas, Vol. 80, No. 1, pp. 209-215  
January 1992

**KOEPKE, G. H.; DRIVER, L. D.; CAVCEY, K. H.; MASTERSON, K. D.; JOHNK, R. T.; KANDA, M.**

A Standard Spherical Dipole Source  
NIST TN 1351  
December 1991

**MA, M. T.; LARSEN, E. B.; CRAWFORD, M. L.**

Electromagnetic Fields with Arbitrary Wave Impedances Generated Inside a TEM Cell  
IEEE Trans. Electromagn. Compat., Vol. EMC-33, No. 4, pp. 358-362  
November 1991

Electromagnetic Interference (cont.)

**MA, M. T.; ADAMS, J. W.**

Phase Characteristics and Time Responses of Unknown Linear Systems Determined from Measured CW Amplitude Data

NIST TN 1349

November 1991

**RANDA, J.; KANDA, M.; ORR, R. D.**

Thermo-Optic Designs for Electromagnetic Field Probes for Microwaves and Millimeter Waves

IEEE Trans. Electromagn. Compat., Vol. EMC-33, No. 3, pp. 205-314

August 1991

**RANDA, J.; KANDA, M.; ORR, R. D.**

Resistively-Tapered-Dipole Electric-Field Probes up to 40 GHz

Proc., IEEE Intl. Electromagn. Compat. Symp. 13-15 August 1991 Cherry Hill, NJ, pp. 265-266

August 1991

**HILL, D. A.**

Diffraction by a Half Plane in a Lossy Medium

J. Appl. Phys., Vol. 69, No. 12, pp. 8405-8407

June 1991

**ONDREJKA, A. R.; KANDA, M.**

A Time-Domain Method for Measuring the Reflection Coefficient of Microwave Absorbers at Frequencies Below 1 GHz

Dig., 1991 Antenna Prop. Soc. Symp., 24-28 June 1991, London, Ontario, Canada, Vol. 3, pp. 1656-1663

June 1991

**CRAWFORD, M. L.; RIDDLE, B. F.**

A Proposed TEM Driven Mode-Stirred Chamber for Large System Radiated EMC/V Testing 10 kHz-40 GHz

Proc., 9th Intl. Symp. on Electromagn. Compat. 12-14 March 1991, Zurich, Switzerland, pp. 431-437

March 1991

**KANDA, M.; RANDA, J.**

Estimation of Electromagnetic Fields in Complex Environments

Proc., 9th Intl. Symp. on Electromagn. Compat., 12-14 March 1991, Zurich, Switzerland, pp. 337-342

March 1991

**RANDA, J.**

Simultaneous vs. Independent Injection Testing of Nonlinear Multiport Systems

Proc., 9th Intl. Symp. on Electromagn. Compat., 12-14 March 1991, Zurich, Switzerland, pp. 71-74

March 1991

**HILL, D. A.**

A Generalization of the Cornu Spiral for Lossy Media

J. Appl. Phys., Vol. 69, No. 3, pp. 1772-1774

February 1991

Electromagnetic Interference (cont.)

**WILSON, P. F.; MA, M. T.**

Fields Radiated by Electrostatic Discharges  
IEEE Trans. Electromagn. Compat., Vol. EMC-33, No. 1, pp. 10-18  
February 1991

**CAMELL, D. G.; LARSEN, E. B.; CRUZ, J. E.; HILL, D. A.**

NIST Calibration Procedure for Vertically Polarized Monopole Antennas, 30 kHz to 300 MHz  
NIST TN 1347  
January 1991

**RANDA, J.**

Theoretical Considerations for a Thermo-Optic Microwave Electric-Field Probe  
J. Microwave Power Electromagn. Energy, Vol. 25, No. 3, pp. 133-140  
1990

**HILL, D. A.**

Near-Field and Far-Field Excitation of a Long Conductor in a Lossy Medium  
NISTIR 3954  
September 1990

**CRAWFORD, M. L.; MA, M. T.; LADBURY, J. M.; RIDDLE, B. F.**

Measurement and Evaluation of a TEM/Reverberating Chamber  
NIST TN 1342  
July 1990

**HILL, D. A.**

Quasi-Static Analysis of a Two-Wire Transmission Line Located at an Interface  
Radio Sci., Vol. 25, No. 4, pp. 435-440  
July-August 1990

**CRAWFORD, M. L.; LADBURY, J. M.; RIDDLE, B. F.; LARSEN, E. B.**

Electromagnetic Radiation Test Facilities: Evaluation of a Small Reverberating Chamber Located at  
RADC, Griffiss AFB, Rome, NY  
NISTIR 90-3939  
June 1990

**MASTERSON, K. D.; KANDA, M.**

Broadband, Photonic Electric Field Sensors for EMP and HPM Applications  
Proc., Fifth Natl. Conf. on High Power Microwave Technology (DoD), 10-15 June 1990, West  
Point, NY, pp. 388-391  
June 1990

**ADAMS, J. W.; WU, D. I.; BUDLONG, A.**

Measurement of Electric Field Strength Near Higher-Powered Personal Transceivers  
NISTIR 90-3938  
May 1990

**HILL, D. A.; KANDA, M.; LARSEN, E. B.; KOEPKE, G. H.; ORR, R. D.**

Generating Standard Reference Electromagnetic Fields in the NIST Anechoic Chamber, 0.2 to 40 GHz  
NIST TN 1335  
March 1990

Electromagnetic Interference (cont.)

**KANDA, M.**

A Microstrip Patch Antenna as a Standard Transmitting and Receiving Antenna.  
IEEE Trans. Electromagn. Compat., Vol. 32, No. 1, pp. 5-8  
February 1990

**MA, M. T.; CRAWFORD, M. L.**

Facilities for Improving Evaluations of Electromagnetic Susceptibilities of Weapon Systems and Electronic Equipment  
NISTIR 89-3928  
November 1989

**WU, D. I.; KANDA, M.**

Comparison of Theoretical and Experimental Data for the Near-Field of an Open Ended Rectangular Waveguide  
IEEE Trans. Electromagn. Compat., Vol. EMC-31, No. 4, pp. 353-358  
November 1989

**KANDA, M.**

A Microstrip Patch Antenna as a Standard Transmitting and Receiving Antenna  
Dig., 1989 Intl. Symp. on Electromagn. Compat., 8-10 September 1989, Nagoya, Japan, pp. 460-462  
September 1989

**MASTERSON, K. D.; DRIVER, L. D.**

A Broadband, Isotropic, Photonic Electric Field Probe for Measurements from 10 kHz to Above 1 GHz  
Proc., High Bandwidth Analog Applications of Photonics II, SPIE - Intl. Soc. of Optical Engineers, Vol. 987 8-9 September 1988, Boston, MA, pp. 107-118  
September 1989

**CRAWFORD, M. L.**

TEM/Reverberating Chamber Design/Concept Study: A Single Facility for Large System Radiated EMC Testing, 10 kHz-40 GHz?  
Proc., EMC EXPO, 1-3 August 1989, Washington, DC, pp. B6.22-B6.29  
August 1989

**FITZGERRELL, R. G.**

Monopole Impedance and Gain Measurements of Finite Ground Planes  
National Institute of Justice Report, 200-87  
May 1989

**LARSEN, E. B.; EHRET, R. L.; CAMELL, D. G.; KOEPKE, G. H.**

Calibration of Antenna Factor at a Ground Screen Field Site Using an Automatic Network Analyzer  
Proc., IEEE 1989 Natl. Symp. on Electromagn. Compat., 23-25 May 1989, Denver, CO, pp. 19-24  
May 1989

**MASTERSON, K. D.; DRIVER, L. D.; KANDA, M.**

Photonic Probes for the Measurement of Electromagnetic Fields over Broad Bandwidths  
Proc., IEEE 1989 Natl. Symp. on Electromagn. Compat., 23-25 May 1989, Denver, CO, pp. 1-6  
May 1989



Electromagnetic Interference (cont.)

- RANDA, J.; KANDA, M.; MELQUIST, D. G.; ORR, R. D.**  
Thermo-optic Designs for Microwave and Millimeter-wave Electric-Field Probes  
Proc., IEEE 1989 Natl. Symp. on Electromagn. Compat., 23-25 May 1989, Denver, CO, pp.  
7-11  
May 1989
- WU, D. I.; CHANG, D. C.**  
The Effect of an Electrically Large Stirrer in a Mode-Stirred Chamber  
IEEE Trans. Electromagn. Compat., Vol. EMC-31, No. 2, pp. 164-169  
May 1989
- KOEPKE, G. H.; MA, M. T.; BENSEMA, W. D.**  
Implementation of an Automated System for Measuring Radiated Emissions Using a TEM cell  
IEEE Trans. Instrum. Meas., Vol. IM-38, No. 2, pp. 473-479  
April 1989
- CRUZ, J. E.; LARSEN, E. B.**  
Alternative Techniques for Some Typical MIL-STD-461/462 Types of Measurements  
NIST TN 1320  
March 1989
- MA, M. T.**  
How High is the Level of Electromagnetic Fields Radiated by an ESD?  
Proc., 8th Intl. Symp. on Electromagn. Compat., 7-9 March 1989, Zurich, Switzerland, pp.  
361-365  
March 1989
- CAVCEY, K. H.**  
Transmission Loss Through 6061 T-6 Aluminum Using a Pulsed Eddy Current Source  
"Materials Evaluation," American Society for Nondestructive Testing, Vol. 47, No. 2, pp.  
216-218  
February 1989
- HILL, D. A.**  
Clutter Models for Subsurface Electromagnetic Applications  
NISTIR 89-3909  
February 1989
- HILL, D. A.**  
Reflection Coefficient of a Waveguide with Slightly Uneven Walls  
IEEE Trans. Microwave Theory Tech., Vol MTT-37, No. 1, pp. 244-252  
January 1989
- KOEPKE, G. H.; MA, M. T.; BENSEMA, W. D.**  
Theory and Measurements of Radiated Emissions Using a TEM Cell  
NIST TN 1326  
January 1989
- ADAMS, J. W.; FRIDAY, D. S.**  
Measurement Procedures for Electromagnetic Compatibility Assessment of Electroexplosive Devices  
IEEE Trans. Electromagn. Compat., Vol. EMC-30, No. 4, pp. 484-494  
November 1988

**DRIVER, L. D.; KANDA, M.**

An Optically Linked Electric and Magnetic Field Sensor for Poynting Vector Measurements in the Near Fields of Radiating Sources

IEEE Trans. Electromagn. Compat., Vol. EMC-30, No. 4, pp. 495-503  
November 1988

**REEVE, G. R.**

Proficiency Testing for MIL-STD 462 NVLAP Laboratories

Dig., EMC EXPO '88, 10-12 May 1988, Washington, DC, pp. T33.13 through T33.15  
September 1988

**WU, D. I.; CHANG, D. C.**

A Hybrid Representation of the Green's Function in an Over-Moded Rectangular Cavity

IEEE Trans. Microwave Theory Tech., Vol. MTT-36, No. 9, pp. 1334-1342  
September 1988

**CAMELL, D. G.; LARSEN, E. B.; ANSON, W. J.**

NBS Calibration Procedures for Horizontal Dipole Antennas (25 to 100 MHz)

Proc. IEEE Intl. Symp. on Electromagn. Compat., 2-4 August 1988, Seattle, WA, pp. 390-394  
August 1988

**CRAWFORD, M. L.; LADBURY, J. M.**

Mode-Stirred Chamber for Measuring Shielding Effectiveness of Cables and Connectors an Assessment of MIL-STD 1344A Method 3008

Proc., 1988 IEEE Intl. Symp. on Electromagn. Compat., 1-5 August 1988, Seattle, WA, pp. 30-36

August 1988

**JESCH, R. L.**

Measurement of Shielding Effectiveness of Different Cable and Shielding Configurations by Mode-Stirred Techniques

IEEE Trans. Electromagn. Compat., Vol. EMC-30, pp. 222-228  
August 1988

**KANDA, M.; ORR, R. D.**

Generation of Standard Electromagnetic Fields in a TEM Cell

NBS TN 1319

August 1988

**WILSON, P. F.; MA, M. T.**

Techniques for Measuring the Electromagnetic Shielding Effectiveness of Materials: Part II -- Near-Field Source Simulation

IEEE Trans. Electromagn. Compat., Vol. EMC-30, No. 3, pp. 251-259  
August 1988

**WILSON, P. F.; MA, M. T.; ADAMS, J. W.**

Techniques for Measuring the Electromagnetic Shielding Effectiveness of Materials: Part I -- Far-Field Source Simulation

IEEE Trans. Electromagn. Compat., Vol. EMC-30, No. 3, pp. 239-250  
August 1988

**WILSON, P. F.; MA, M. T.; ONDREJKA, A. R.**

Fields Radiated by Electrostatic Discharges

Proc., IEEE Intl. Symp. on Electromagn. Compat., 2-4 August 1988, Seattle, WA, pp. 179-183  
August 1988

Electromagnetic Interference (cont.)

**KANDA, M.; DRIVER, L. D.**

An Optically Linked Electric and Magnetic Field Sensor for Poynting Vector Measurements in the Near Field of Radiating Sources

Dig., Conf. on Prec. Electromagn. Meas., 7-10 June 1988, Tsukuba Science City, Japan, pp. 32-33

June 1988

**MA, M. T.**

Theory and Measurements of Unintentional Radiators

Dig., Conf. on Prec. Electromagn. Meas., 7-10 June 1988, Tsukuba Science City, Japan, pp. 30-31

June 1988

**RANDA, J.; KANDA, M.; MELQUIST, D. G.; SEGA, R. M.; NORGDARD, J. D.**

High Frequency Electric Field Probe Development

Proc., EMC EXPO '88, Intl. Conf. on Electromagn. Compat., 10-12 May 1988, Washington, DC, pp. T15.31 through T15.37

May 1988

**VANZURA, E. J.**

Automated System for Electromagnetic Field Generation and Immunity Testing

Proc., 1988 IEEE Instrum. Meas. Technol. Conf., 19-22 April 1988, San Diego, CA, pp. 3-10

April 1988

**FITZGERRELL, R. G.**

Monopole Impedance and Gain Measurements on Finite Ground Planes

IEEE Trans. Antennas Propagat., Vol. 36, No. 3, pp. 431-438

March 1988

**MA, M. T.**

Understanding Reverberating Chambers as an Alternative Facility for EMC Testing

J. Electromagn. Waves Appl., Vol. 2, pp. 339-351

March/April 1988

**WU, D. I.; CHANG, D. C.**

The Effect of a Large Rotating Scatterer in a Rectangular Cavity

NBS TN 1317

March 1988

**HILL, D. A.**

A Circular Array for Plane-Wave Synthesis

IEEE Trans. Electromagn. Compat., Vol. EMC-30, No. 1, pp. 3-8

February 1988

**RANDA, J.; KANDA, M.; MELQUIST, D. G.**

Possible Designs for Electric-Field Strength-Probes for Millimeter Waves

NBSIR 88-3084

February 1988

**WILSON, P. F.; ONDREJKA, A. R.; MA, M. T.; LADBURY, J. M.**

Electromagnetic Fields Radiated From Electrostatic Discharges - Theory and Experiment

NBS TN 1314

February 1988

**WILSON, P. F.**

A Comparison Between Near-Field Shielding Effectiveness Measurements Based on Coaxial Dipoles and on Electrically Small Apertures

IEEE Trans. Electromagn. Compat., Vol. EMC-30, No. 1, pp. 23-28  
February 1988

**CAVCEY, K. H.; FRIDAY, D. S.**

Aircraft Field Degradation and Electromagnetic Compatibility

NBSIR 88-3083  
January 1988

**HILL, D. A.**

Electromagnetic Detection of Long Conductors in Tunnels

Proc., Third Tunnel Detection Symp., 12-15 January 1988, Golden, CO, pp. 518-537  
January 1988

**HILL, D. A.**

Effect of a Thin Conducting Sheet on the Fields of a Buried Magnetic Dipole

Electromagnetics, pp. 71-79  
1987

**CRAWFORD, M. L.; KOEPKE, G. H.; LADBURY, J. M.**

EMR Test Facilities Evaluation of Reverberating Chamber Located at RADC, Griffiss, AFB, Rome, New York

NBSIR 87-3080  
December 1987

**RANDA, J.; KANDA, M.**

A New Approach to Volumes Irradiated by Unknown Sources

IEEE Trans. Electromagn. Compat., Vol. EMC-29, No. 4, pp. 273-281  
November 1987

**VANZURA, E. J.; ADAMS, J. W.**

Generating Constant Electromagnetic Fields Inside a Partially-Loaded Shielded Room

Test and Meas. World, pp. 72-83  
November 1987

**JESCH, R. L.**

Measurement of Shielding Effectiveness of Different Cable and Shielding Configurations by Mode-Stirred Techniques

NBSIR 87-3076  
October 1987

**MA, M. T.**

Characterization of Unknown RF Leakage Sources: Problems, Solutions and Practical Implications

Union Radio Scientifique Internationale XXII General Assembly, 24 August - 2 September  
1987, Tel Aviv, Israel  
September 1987

**WU, D. I.; CHANG, D. C.**

An Investigation of a Ray-Mode Representation of the Green's Function in a Rectangular Cavity

NBS TN 1312  
September 1987

Electromagnetic Interference (cont.)

**CRAWFORD, M. L.**

A TEM Driven Reverberating Chamber: A Single Facility for Radiated EMS/V Testing, 10 kHz - 18 GHz?

Proc., EMC Expo 1987, Intl. Conf. on Electromagn. Compat., 19-21 May 1987, San Diego, CA, pp. T11.18 through T11.28  
May 1987

**MA, M. T.; BENSEMA, W. D.**

Automated TEM Cell for Measuring Unintentional EM Emissions

Proc., EMC Expo 1987, Intl. Conf. on Electromagn. Compat., 19-21 May 1987, San Diego, CA, pp. T11.1 through T11.12  
May 1987

**CRAWFORD, M. L.; KOEPKE, G. H.**

Performing EM Susceptibility/Vulnerability Measurements Using a Reverberation Chamber

Proc., 7th Intl. Symp. on Electromagn. Compat., 3-5 March 1987, Zurich, Switzerland, pp. 121-126  
March 1987

**MARTZLOFF, F. D.; WILSON, P. F.**

Fast Transient Tests - Trivial or Terminal Pursuit?

Proc., 7th Intl. Symp. on Electromagn. Compat., 3-5 March 1987, Zurich, Switzerland, pp. 283-288  
March 1987

**RANDA, J.; KANDA, M.**

A Lattice Approach to Environments Irradiated by Unknown Sources

Proc., 7th Intl. Symp. Electromagn. Compat., 3-5 March 1987, Zurich, Switzerland, pp. 191-195  
March 1987

**WILSON, P. F.; MA, M. T.**

Techniques for Measuring the Shielding Effectiveness of Materials

Proc., 7th Intl. Symp. on Electromagn. Compat., 3-5 March 1987, Zurich, Switzerland, pp. 547-552  
March 1987

**KANDA, M.; DRIVER, L. D.**

An Isotropic, Electric-Field Probe with Tapered Resistive Dipoles for Broadband Use, 100 kHz - 18 GHz

IEEE Trans. Microwave Theory Tech., Vol. MTT-35, No. 2, pp. 124-130  
February 1987

**HILL, D. A.**

Radio-Wave Propagation from a Forest to a Clearing

Electromagnetics, pp. 217-228  
1986

**LARSEN, E. B.**

Calibration and Meaning of Antenna Factor and Gain for EMI Antennas

Interference Technology Engineers' Master (ITEM 1986), pp. 113-335  
1986

**MASTERSON, K. D.**

A Photonic Electric Field Probe for Frequencies up to 2 GHz

Proc., Soc. for Photo-Optical Instrumentation Engineers (SPIE), Vol. 720, p. 100  
1986



Electromagnetic Interference (cont.)

**CRAWFORD, M. L.; BEAN, J. L.**

NSWC Reverberating Chamber: A High Power Microwave Exposure Chamber  
Proc., 3rd Natl. High Power Microwave Technical Conf., 1-5 December 1986, Kirtland AFB,  
NM, p. 5  
December 1986

**HILL, D. A.; KOEPKE, G. H.**

A Near-Field Array of Yagi-Uda Antennas for Electromagnetic Susceptibility Testing  
IEEE Trans. Electromagn. Compat., Vol. EMC-28, No. 4, pp. 273-276  
November 1986

**HILL, D. A.**

An Error Bound for Near-Field Array Synthesis  
IEEE Trans. Electromagn. Compat., Vol. EMC-28, No. 4, pp. 273-276  
November 1986

**BENSEMA, W. D.; KOEPKE, G. H.; MEDLEY, H. W.**

Handbook for NBS Multisensor Automated EM Field Measurement System  
NBSIR 86-3056  
October 1986

**CRUZ, J. E.; LARSEN, E. B.**

Assessment of Errors for MIL-STD-461/462  
NBS TN 1300  
October 1986

**JESCH, R. L.**

A Survey of Triaxial and Mode-Stirred Techniques for Measuring the Shielding Effectiveness of  
Connectors and Cables  
NBSIR 86-3060  
October 1986

**KANDA, M.; WYSS, J. C.**

Evaluation of Off-Axis Measurements Performed in an Anechoic Chamber  
NBS TN 1305  
October 1986

**RANDA, J.; KANDA, M.**

A Lattice Approach to Volumes Irradiated by Unknown Sources  
NBS TN 1303  
October 1986

**ADAMS, J. W.; VANZURA, E. J.**

Shielding Effectiveness Measurements of Plastics  
EMC Technology and Interference Control News, pp. 39-44  
September-October 1986

**CRAWFORD, M. L.; KOEPKE, G. H.**

Preliminary Evaluation of Reverberation Chamber Method for Pulsed RF Immunity Testing  
Record, IEEE Intl. Symp. on Electromagn. Compat., 16-18 September 1986, San Diego, CA, pp.  
270-278  
September 1986



Electromagnetic Interference (cont.)

**KANDA, M.; DRIVER, L. D.**

An Isotropic, Electric-Field Probe with Tapered Resistive Dipoles for Broadband Use, 100 kHz - 18 GHz  
Record, IEEE Intl. Symp. on Electromagn. Compat., 16-18 September 1986, San Diego, CA, pp.  
256-261

September 1986

**KANDA, M.; ORR, R. D.**

Near-Field Gain of a Horn and an Open-Ended Waveguide: Comparison Between Theory and  
Experiment

Proc., 5th Intl. Conf. on Electromagn. Compat., 29 September-2 October 1986, University of  
York, England, pp. 137-145

September 1986

**MA, M. T.; KANDA, M.; CRAWFORD, M. L.; LARSEN, E. B.**

Measuring Electromagnetic Interference, Part I, Open-Field Sites and TEM Cells; Part II, Reverberating  
Chambers; Part III, Anechoic Chambers and Field Probes

Test and Measurement World, Part I, pp. 72-88, February 1986; Part II, pp. 74-90, May 1986,  
Part III, pp. 81-99, September 1986

September 1986

**RANDA, J.; KANDA, M.**

A Lattice Approach to Complex Electromagnetic Environments

Record, IEEE Intl. Symp. on Electromagn. Compat., 16-18 September 1986, San Diego, CA, pp.  
329-331

September 1986

**WILSON, P. F.; MA, M. T.**

Shielding Effectiveness Measurements Using an Apertured TEM Cell in a Reverberation Chamber

Record, IEEE Intl. Symp. on Electromagn. Compat., 16-18 September 1986, San Diego, CA, pp.  
265-269

September 1986

**HILL, D. A.**

Out-of-Band Response of a Coax-to-Waveguide Adapter

IEEE Trans. Electromagn. Compat., Vol. EMC-28, No. 3, pp. 156-158

August 1986

**WILSON, P. F.; MA, M. T.**

Simple Approximate Expressions for Higher-Order Mode Cut Off and Resonant Frequencies in TEM  
Cells

IEEE Trans. Electromagn. Compat., Vol. EMC-28, No. 3, pp. 125-130

August 1986

**HILL, D. A.; WAIT, J. R.**

Anomalous Vertical Magnetic Field for Electromagnetic Induction in a Laterally Varying Thin  
Conductive Sheet

Radio Sci., Vol. 21, No. 4, pp. 617-621

July-August 1986

**MA, M. T.; KANDA, M.**

Electromagnetic Compatibility and Interference Metrology

NBS TN 1099

July 1986

**CRAWFORD, M. L.; KOEPKE, G. H.**

Performing EM Susceptibility/Vulnerability Measurements Using a Reverberation Chamber  
Proc., EMC EXPO 1986, Intl. Conf. on Electromagn. Compat., 16-19 June 1986, Washington,  
DC, pp. T28.7 through T28.14  
June 1986

**CRAWFORD, M. L.; KOEPKE, G. H.**

EMR Test Facilities - Evaluation of Reverberation Chambers Located at NSWC, Dahlgren, VA  
NBSIR 86-3051  
June 1986

**KANDA, M.; DRIVER, L. D.**

A Broadband, Electric-Field Probe Using Resistively Tapered Dipoles, 100 kHz - 18 GHz  
Proc., 1986 IEEE/MTT/S Intl. Microwave Symp. Dig., 2-4 June 1986, Baltimore, MD, pp.  
621-624  
June 1986

**REEVE, G. R.**

Alternate EMI Measurement Techniques for Microelectronic Circuits  
Proc., EMC EXPO 1986, Intl. Conf. on Electromagn. Compat., 16-19 June 1986, Washington,  
DC, pp. T26.1 through T26.4  
June 1986

**WILSON, P. F.; MA, M. T.**

Methods for Measuring the Near-Field and Far-Field Shielding Effectiveness of Materials  
Proc., EMC Expo 1986 Intl. Conf. on Electromagn. Compat., 16-19 June 1986, Washington,  
DC, pp. T28.1-T28.6  
June 1986

**FRIDAY, D. S.; ADAMS, J. W.**

A Statistical Characterization of Electroexplosive Devices Relevant to Electromagnetic Compatibility  
NBS TN 1094  
May 1986

**JESCH, R. L.**

Susceptibility of Emergency Vehicle Sirens to External Radiated Electromagnetic Fields  
National Institute of Justice Technology Program, NIJ Report-200-85  
May 1986

**WILSON, P. F.; MA, M. T.**

A Study of Techniques for Measuring the Electromagnetic Shielding Effectiveness of Materials  
NBS TN 1095  
May 1986

**CRAWFORD, M. L.; KOEPKE, G. H.**

Design, Evaluation and Use of a Reverberation Chamber for Performing Electromagnetic  
Susceptibility/Vulnerability Measurements  
NBS TN 1092  
April 1986

**KUFFEL, J.; MALEWSKI, R.; VAN HEESWIJK, R.; LAWTON, R. A.**

Dynamic Performance of Digital Recorders Used for Monitoring High-Voltage Impulse Tests  
Proc., IEEE Instrum. Meas. Technol. Conf., 25-27 March 1986, Boulder, CO, Vol. IM-35, No.  
4, pp. 591-595  
March 1986

Electromagnetic Interference (cont.)

**FITZGERRELL, R. G.**

Site Attenuation

IEEE Trans. Electromagn. Compat., Vol. EMC-28, No. 1, pp. 38-40  
February 1986

**HILL, D. A.**

Electromagnetic Wave Propagation in an Asymmetrical Coal Seam

IEEE Trans. Antennas Propagat., Vol. AP-34, No. 2, pp. 244-247  
February 1986

**WILSON, P. F.; MA, M. T.**

Electromagnetic Shielding Effectiveness: Measurement Techniques and Interpretations

1986 IEEE Regional Conf. and Exhib. on Electromagn. Compat., 6 February 1986, Anaheim,  
CA, pp. 1-14

February 1986

**ADAMS, J. W.; VANZURA, E. J.**

Shielding Effectiveness Measurements of Plastics

NBSIR 85-3035

January 1986

**FRIDAY, D. S.**

Methodology for Statistical Control of the Anechoic Chamber Field Generation System

NBSIR 85-3033

January 1986

**KANDA, M.; LARSEN, E. B.; BORSERO, M.; GALLIANO, P. G.; YODOSHIMA, I.; NAHMAN, N. S.**

Standards for Electromagnetic Fields Measurements

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 74, No. 1, pp. 120-128

January 1986

**MA, M. T.**

Measurements of Unintentional Electromagnetic Emissions

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 74, No. 1, pp. 110-111

January 1986

**WILSON, P. F.; MA, M. T.**

Measurements of Electromagnetic Shielding Capabilities of Materials

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 74, No. 1, pp. 112-115

January 1986

**NAHMAN, N. S.; KANDA, M.; LARSEN, E. B.; CRAWFORD, M. L.**

Methodology for Standard Electromagnetic Field Measurements

IEEE Trans. Instrum. Meas., Vol. IM-34, No. 4, pp. 490-503

December 1985

**FITZGERRELL, R. G.**

Site Attenuation

NBS TN 1089

November 1985

**HILL, D. A.**

A Numerical Method for Near-Field Array Synthesis

IEEE Trans. Electromagn. Compat., Vol. EMC-27, No. 4, pp. 201-211

November 1985

**CRUZ, J. E.; DRIVER, L. D.; KANDA, M.**

Design of the National Bureau of Standards Isotropic Magnetic Field Meter (MFM-10) 300 kHz to 100 MHz

NBS TN 1085

October 1985

**WILSON, P. F.; CHANG, D. C.**

Mode Coupling by a Longitudinal Slot for a Class of Planar Waveguiding Structures: Part I - Theory  
IEEE Trans. Microwave Theory Tech., Vol. MTT-33, No. 10, pp. 981-987

October 1985

**WILSON, P. F.; CHANG, D. C.**

Mode Coupling by a Longitudinal Slot for a Class of Planar Waveguiding Structures: Part II - Applications

IEEE Trans. Microwave Theory Tech., Vol. MTT-33, No. 10, pp. 988-993

October 1985

**CRAWFORD, M. L.; KOEPKE, G. H.**

Comparing EM Susceptibility Measurement Results Between Reverberation and Anechoic Chambers  
Record, IEEE 1985 Intl. Symp. on Electromagn. Compat., 20-22 August 1985, Wakefield, MA,  
pp. 200-202

August 1985

**FITZGERRELL, R. G.**

Site Attenuation

Record, IEEE 1985 Intl. Symp. on Electromagn. Compat., 20-22 August 1985, Wakefield, MA,  
pp. 612-617

August 1985

**HILL, D. A.; KOEPKE, G. H.**

An Array of Dipoles for Plane Wave Synthesis

Proc., 1985 Intl. Symp. on Antennas and Propagat., 20-22 August 1985, Kyoto, Japan, pp.  
177-180

August 1985

**KANDA, M.; ORR, R. D.**

A Radio-Frequency Power Delivery System: Procedures for Error Analysis and Self-Calibration

NBS TN 1083

August 1985

**RANDA, J.; KANDA, M.**

Directional Scanning of Complex Electromagnetic Environments

Proc., 1985 Intl. Symp. on Antennas and Propagat., 20-22 August 1985, Kyoto, Japan, pp.  
899-902

August 1985

**RANDA, J.; KANDA, M.**

High Frequency Errors of an Electric-field-meter in Complicated Environments

Record, IEEE 1985 Intl. Symp. on Electromagn. Compat., 20-22 August 1985, Wakefield, MA,  
pp. 618-621

August 1985

Electromagnetic Interference (cont.)

**RANDA, J.; KANDA, M.**

A Finite-Element Action Approach to the Characterization of Complex Electromagnetic Environments  
Proc., 1985 Intl. Symp. on Antennas and EM Theory, 26-28 August 1985, Beijing, China, pp. 48-53

August 1985

**WILSON, P. F.; MA, M. T.**

Shielding Effectiveness Measurements in a Dual TEM Cell  
IEEE Trans. Electromagn. Compat., Vol. EMC-27, No. 3, pp. 137-142

August 1985

**WILSON, P. F.; MA, M. T.**

Factors Influencing Material Shielding Effectiveness Measurements  
Record, IEEE 1985 Intl. Symp. on Electromagn. Compat., 20-22 August 1985, Wakefield, MA, pp. 29-33

August 1985

**HILL, D. A.; KOEPKE, G. H.**

A Near-field Array of Yagi-Uda Antennas for Electromagnetic Susceptibility Testing  
NBS TN 1082

July 1985

**RANDA, J.; KANDA, M.**

A Directional Scanning Technique for Characterization of Complex Electromagnetic Environments  
Dig., 1985 IEEE Antenna Propagat. Soc. Symp., 17-21 June 1985, University of British Columbia, Vancouver, BC, Canada, pp. 521-524

June 1985

**WYSS, J. C.; SHEERAN, S.**

A Passive, Optical Modulator and Link for Antennas  
IEEE J. Lightwave Technol., Vol. LT-3, No. 2, pp. 316-321

April 1985

**BENSEMA, W. D.; REEVE, G. R.; KOEPKE, G. H.**

A Multisensor Automated EM Field Measurement System  
Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March 1985, Tampa, FL, pp. 200-202

March 1985

**CRUZ, J. E.; LARSEN, E. B.**

Screenroom Measurements of Antenna Factors  
Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March 1985, Tampa, FL, p. 208

March 1985

**KANDA, M.; NAHMAN, N. S.**

Standards for Measurement of Electromagnetic Fields  
Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March 1985, Tampa, FL, pp. 20-23

March 1985

**KANDA, M.; RANDA, J.; NAHMAN, N. S.**

Possible Estimation Methodologies for Electromagnetic Field Distributions in Complex Environments  
NBS TN 1081

March 1985



Electromagnetic Interference (cont.)

**KANDA, M.**

A Methodology for Evaluating Microwave Anechoic Chamber Measurements  
Proc., 1985 Symp. and Technical Exhib. on Electromagn. Compat., 5-7 March 1985, Zurich,  
Switzerland, pp. 69-74  
March 1985

**LARSEN, E. B.; CRUZ, J. E.**

E and H Fields in Transmission Lines and Coils for Susceptibility Testing, Probe Calibration, and RF  
Exposure Chambers  
Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March 1985, Tampa, FL, p. 199  
March 1985

**MA, M. T.; KANDA, M.; CRAWFORD, M. L.; LARSEN, E. B.**

A Review of Electromagnetic Compatibility/Interference Measurement Methodologies  
Proc., IEEE, Vol. 73, No. 3, pp. 388-411  
March 1985

**RANDA, J.; KANDA, M.**

Multiple-Source, Multiple-Frequency Error of an Electric Field Meter  
IEEE Trans. Antennas Propagat., Vol. AP-33, No. 1, pp. 2-9  
January 1985

**SHAFER, J. F.**

Field Strength Levels in Vehicles Resulting from Communications Transmitters  
National Institute of Justice Report, 200-83  
1984

**WILSON, P. F.; MA, M. T.**

Input Impedance of a Probe Antenna in a TEM Cell  
IEEE Trans. Electromagn. Compat., Vol. EMC-26, No. 4, pp. 154-161  
November 1984

**KANDA, M.**

Error Analysis of Radiation Characteristics of an Unknown Interference Source Based on Power  
Measurements  
Proc., 1984 Intl. Symp. on Electromagn. Compat., 16-18 October 1984, Tokyo, Japan, pp. 39-44  
October 1984

**WILSON, P. F.; MA, M. T.**

Small Aperture Analysis of the Dual TEM Cell and an Investigation of Test Object Scattering in a Single  
TEM Cell  
NBS TN 1076  
October 1984

**WILSON, P. F.; MA, M. T.**

Small Obstacle Loading in a TEM Cell  
Proc., 1984 Intl. Symp. on Electromagn. Compat., 16-18 October 1984, Tokyo, Japan, pp. 30-35  
October 1984

**WYSS, J. C.; ANSON, W. J.; ORR, R. D.**

Building Penetration Project  
NBSIR 84-3009  
September 1984



Electromagnetic Interference (cont.)

**ONDREJKA, A. R.; ADAMS, J. W.**

Shielding Effectiveness (SE) Measurement Techniques

Proc., 1984 EMI/RFI Technical Conf., The Soc. of Plastics Engineers, Inc., 18-20 June 1984,  
Chicago, IL, pp. 19-26  
June 1984

**WILSON, P. F.; MA, M. T.**

Some Problems Associated with Interpreting Shielding Effectiveness Measurement Results

Proc., 1984 EMI/RFI Technical Conf., The Soc. of Plastics Eng., Inc., 18-20 June 1984,  
Chicago, IL, pp. 9-18  
June 1984

**FITZGERRELL, R. G.**

A Source of E and H Fields for Antenna-Factor Calibration

IEEE Trans. Electromagn. Compat., Vol. EMC-26, No. 2, pp. 58-65  
May 1984

**CRAWFORD, M. L.; KOEPKE, G. H.**

Operational Considerations of a Reverberation Chamber for EMC Immunity Measurements, Some  
Experimental Results

Proc., 1984 IEEE Natl. Symp. on Electromagn. Compat., 24-26 April 1984, San Antonio, TX,  
pp. 47-54  
April 1984

**DRIVER, L. D.; REEVE, G. R.**

Application of a Systematic Approach to an Investigation of HF Interference to a Shipboard Radar Set

Proc., 1984 IEEE Natl. Symp. on Electromagn. Compat., 24-26 April 1984, San Antonio, TX,  
pp. 211-218  
April 1984

**ONDREJKA, A. R.; ADAMS, J. W.**

Shielding Effectiveness (SE) Measurement Techniques

Proc., 1984 IEEE Natl. Symp. on Electromagn. Compat., 24-26 April 1984, San Antonio, TX,  
pp. 249-256  
April 1984

**WILSON, P. F.; MA, M. T.**

Small Aperture Analysis of the Dual TEM Cell

Proc., 1984 IEEE Natl. Symp. on Electromagn. Compat., 24-26 April 1984, San Antonio, TX,  
pp. 365-369  
April 1984

**HILL, D. A.**

Theory of Near-Field Phased Arrays for Electromagnetic Susceptibility Testing

NBS TN 1072  
February 1984

**ALSPACH, W. J.; MILLER, C. K. S.; REEVE, G. R.**

An Assessment of Electromagnetic Interference (EMI) and Electromagnetic Compatibility (EMC)

Measurement Practices to Meet U.S. Army Aviation Research and Development Command EMI/EMC  
Requirements

NBSIR 84-1698 (Restricted)  
January 1984

Electromagnetic Interference (cont.)

**KANDA, M.**

Arrays of Discrete Elements

Antenna Engineering Handbook, Chapter 3, R. C. Johnson and H. Jasik, eds., McGraw-Hill  
Book Co.

January 1984

**CRAWFORD, M. L.**

Comparison of Open-Field, Anechoic Chamber and TEM Cell Facilities/Techniques for Performing  
Electromagnetic Radiated Emissions Measurements

Record, IEEE 1983 Intl. Symp. on Electromagn. Compat., 23-25 August 1983, Arlington, VA,  
pp. 413-418

August 1983

**FITZGERRELL, R. G.**

E-Fields Over Ground

Record, IEEE 1983 Intl. Symp. on Electromagn. Compat., 23-25 August 1983, Arlington, VA,  
pp. 6-9

August 1983

**LIU, B. H.; CHANG, D. C.; MA, M. T.**

Design Consideration of Reverberating Chambers for Electromagnetic Interference Measurements

Record, IEEE 1983 Intl. Symp. on Electromagn. Compat., 23-25 August 1983, Arlington, VA,  
pp. 508-512

August 1983

**LIU, B. H.; CHANG, D. C.; MA, M. T.**

Eigenmodes and the Composite Quality Factor of a Reverberating Chamber

NBS TN 1066

August 1983

**WILSON, P. F.; CHANG, D. C.; MA, M. T.; CRAWFORD, M. L.**

Theoretical and Experimental Analysis of Coupling Characteristics of Dual TEM Cells

Record, IEEE 1983 Intl. Symp. on Electromagn. Compat., 23-25 August 1983, Arlington, VA,  
pp. 513-517

August 1983

**BENSEMA, W. D.**

Handbook for Broadband Isotropic Antenna System

Volume 1 - Operations Manual NBSIR 83-1693

July 1983

**MA, M. T.; KOEPKE, G. H.**

Uncertainties in Extracting Radiation Parameters for an Unknown Interference Source Based on Power  
and Phase Measurements

NBS TN 1064

June 1983

**KANDA, M.; RIES, F. X.**

Time Domain Sensors for Radiated Impulsive Measurements

IEEE Trans. Antennas Propagat., Vol. AP-31, No. 3, pp. 438-444

May 1983

Electromagnetic Interference (cont.)

**KANDA, M.**

An Electric and Magnetic Field Sensor for Simultaneous Electromagnetic Near-Field Measurements - Theory

NBS TN 1062

April 1983

**CRAWFORD, M. L.**

Evaluation of Shielded Enclosure for EMI/EMC Measurements Without and With RF Anechoic Material Proc., 1983 Electromagn. Compat. Symp. and Exhib., 8-10 March 1983, Zurich, Switzerland, pp. 397-402

March 1983

**CRAWFORD, M. L.**

Improving the Repeatability of EM Susceptibility Measurements of Electronic Components When Using TEM Cells

SAE Technical Paper Series, 830607, International Congress and Exposition, 28 February-4

March 1983, Detroit, MI, pp. 1-8

March 1983

**KANDA, M.; RIES, F. X.; DRIVER, L. D.; ORR, R. D.**

An Electric and Magnetic Field Sensor Concept for Simultaneous Near-Field Electromagnetic Components When Using TEM Cells

Proc., 1983 Electromagn. Compat. Symp. and Exhib., 8-10 March 1983, Zurich, Switzerland, pp. 263-266

March 1983

**KOEPKE, G. H.; MA, M. T.**

A New Method for Determining the Emission Characteristics of an Unknown Interference Source

Proc., 1983 Electromagn. Compat. Symp. and Exhib., 8-10 March 1983, Zurich, Switzerland, pp. 263-266

March 1983

**STUBENRAUCH, C. F.; SPIESS, W.; GALLIANO, P. G.; BABJI, T.**

International Intercomparison of Electric Field Strength at 100 MHz

IEEE Trans. Instrum. Meas., Vol. IM-32, No. 1, pp. 235-237

March 1983

**MILLER, C. K. S.**

The EMI Measurement Challenge

Proc., 1983 Meas. Sci. Conf., 20-21 January 1983, Palo Alto, CA, pp. 189-197

January 1983

**FITZGERRELL, R. G.**

A Partial Loop Source of E and H Fields for Antenna Factor Calibration (A Loop Cell)

Proc., 1982 Antenna Meas. Techniques Assoc., 5-7 October 1982, New Mexico State University, Las Cruces, NM, pp. 15-1 through 15-22

October 1982

**MA, M. T.; KOEPKE, G. H.**

A Method to Quantify Radiation Characteristics of an Unknown Interference Source

NBS TN 1059

October 1982

Electromagnetic Interference (cont.)

**TAGGART, H. E.**

Radiated EMI Instrumentation Errors  
EMC Technology Magazine, Vol. 1, No. 4, pp. 26-35  
October 1982

**DRIVER, L. D.; CRUZ, J. E.**

Development of the NBS Isotropic Magnetic-Field Meter (MFM-10), 300 kHz to 100 MHz  
Proc., 1982 Intl. Symp. on Electromagn. Compat., 8-10 September 1982, Santa Clara, CA, pp.  
460-467  
September 1982

**KANDA, M.; RIES, F. X.**

Time Domain Sensors for Radiated Impulsive Measurements  
Proc., IEEE 1982 Intl. Symp. on Electromagn. Compat., 8-10 September 1982, Santa Clara, CA,  
pp. 296-301  
September 1982

**KOEPKE, G. H.; MA, M. T.**

A New Method for Determining the Emission Characteristics of an Unknown Interference Source  
Proc., IEEE 1982 Intl. Symp. on Electromagn. Compat., 8-10 September 1982, Santa Clara, CA,  
pp. 151-156  
September 1982

**ADAMS, J. W.**

Measurement of Electromagnetic Radiation from Electric Rail Cars  
NBSIR 82-1669  
August 1982

**FITZGERRELL, R. G.**

Free-Space Transmission Loss for Anechoic Chamber Performance Evaluation  
IEEE Trans. Electromagn. Compat., Vol. EMC-24, No. 3, pp. 356-358  
August 1982

**KANDA, M.; RIES, F. X.; DRIVER, L. D.; ORR, R. D.**

Design Considerations for Broadband Magnetic-Field Sensors  
Dig., 1982 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1982, Boulder, CO, pp. P-11  
through P-13  
June 1982

**WYSS, J. C.; KANDA, M.; MELQUIST, D. G.; ONDREJKA, A. R.**

Optical Modulator and Link for Broadband Antennas  
Dig., 1982 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1982, Boulder, CO, pp. P-16  
through P-17  
June 1982

**KANDA, M.**

The Effects of Resistive Loading on TEM Horns  
IEEE Trans. Electromagn. Compat., Vol. EMC-24, No. 2, pp. 245-255  
May 1982

**ARTHUR, M. G.; ORR, R. D.; REEVE, G. R.**

Planning Guidance for Future EMI Measurement Instrumentation  
NBSIR 82-1662  
April 1982

Electromagnetic Interference (cont.)

**WILSON, P. F.; CHANG, D. C.; MA, M. T.**

Input Impedance of a Probe Antenna Exciting a TEM Cell  
NBS TN 1054  
April 1982

**MA, M. T.; ARTHUR, M. G.**

A Study of Distribution of Electromagnetic Fields Inside Buildings with Apertures Excited by an External Source  
NBSIR 82-1659  
February 1982

**RIES, F. X.; MILLER, C. K. S.**

Influence of Electromagnetic Interference on Electronic Devices Bulletin  
OIML Seminar  
December 1981

**TAGGART, H. E.**

Methods of Suppressing Automotive Interference  
NBS SP 480-44  
November 1981

**BENSEMA, W. D.**

Broadband Orthogonal Array Antenna System: Microprocessor Control and Computation  
Record, "EMC '81," 1981 IEEE Intl. Symp. on Electromagn. Compat., 18-20 August 1981,  
Boulder, CO  
August 1981

**CRUZ, J. E.**

Design, Construction, and Calibration of the Broadband Electric Field Monitor (EFM-5)  
Record, "EMC '81," 1981 IEEE Intl. Symp. on Electromagn. Compat., 18-20 August 1981,  
Boulder, CO  
August 1981

**FITZGERRELL, R. G.**

Free-Space Transmission Loss for Anechoic Chamber Performance Evaluation  
Record, "EMC '81," 1981 IEEE Intl. Symp. on Electromagn. Compat., 18-20 August 1981,  
Boulder, CO  
August 1981

**LARSEN, E. B.**

Background and Present Status of RF Probe Development at NBS  
Record, "EMC '81," 1981 IEEE Intl. Symp. on Electromagn. Compat., 18-20 August 1981,  
Boulder, CO  
August 1981

**REEVE, G. R.**

Synthesized Isotropic Pattern Antennas for EM Field Measurements  
Record, "EMC '81," 1981 IEEE Intl. Symp. on Electromagn. Compat., 18-20 August 1981,  
Boulder, CO  
August 1981

**SREENIVASIAH, I.; CHANG, D. C.; MA, M. T.**

Emission Characteristics of Electrically Small Radiating Sources from Tests Inside a TEM Cell  
IEEE Trans. Electromagn. Compat., Vol. EMC-23, No. 3, pp. 113-121  
August 1981



Electromagnetic Interference (cont.)

**SREENIVASIAH, I.; CHANG, D. C.; MA, M. T.**

A Critical Study of Emission and Susceptibility Levels of Electrically Small Objects from Tests Inside a TEM Cell

Record, "EMC '81," 1981 IEEE Intl. Symp. on Electromagn. Compat., 18-20 August 1981, Boulder, CO

August 1981

**CLARK, H. E.**

Requirements for an Effective National Nonionizing Radiation Measurement System

NBS SP 613

June 1981

**REEVE, G. R.; WAINWRIGHT, A. E.**

A Frequency Tracking, Tuned, Receiving Monopole

Record, IEEE/APS Symp., June 1981

June 1981

**KANDA, M.**

Theoretical and Experimental Investigations of Electromagnetic Field Distortion Due to a Perfectly Conducting Rectangular Cylinder in a Transverse Electromagnetic Cell

NBS TN 1028

April 1981

**MA, M. T.; CHANG, D. C.; SREENIVASIAH, I.**

A Method of Determining the Emission and Susceptibility Levels of Electrically Small Objects Using a TEM Cell

NBS TN 1040

April 1981

**CRAWFORD, M. L.**

Options to Open-Field and Shielded Enclosure Electromagnetic Compatibility Measurements

Proc., 4th Symp. Electromagn. Compat., 10-12 March 1981, Zurich, Switzerland

March 1981

**KANDA, M.**

Theoretical and Experimental Investigations of Loading Effects Due to a Perfectly Conducting Rectangular Cylinder in a Transverse Electromagnetic Cell

Proc., 4th Symp. Electromagn. Compat., 10-12 March 1981, Zurich, Switzerland

March 1981

**LARSEN, E. B.; RIES, F. X.**

Design and Calibration of the NBS Isotropic Electric-Field Monitor (EFM-5), 0.2 to 1000 MHz

NBS TN 1033

March 1981

**MA, M. T.; WILSON, P. F.; CHANG, D. C.**

Excitation of a TEM Cell by a Vertical Electric Hertzian Dipole

NBS TN 1037

March 1981

**CRAWFORD, M. L.**

Evaluation of a Reverberation Chamber Facility for Performing EM Radiated Fields Susceptibility Measurements

NBSIR 81-1638

February 1981



**BOWMAN, R. R.**

A Temperature Probe for Radio-Frequency Heated Material  
NBSIR 81-1634  
January 1981

**CRAWFORD, M. L.; WORKMAN, J. L.**

Predicting Free-Space Radiated Emissions from Electronic Equipment Using TEM Cell and Open-Field Site Measurements  
Record, 1980 Intl. Electromagn. Compat. Symp.  
1980

**HILL, D. A.; WAIT, J. R.**

Electromagnetic Characteristics of a Coaxial Cable with Periodic Slots  
IEEE Trans. Electromagn. Compat., Vol. EMC-22, No. 4, pp. 303-307  
November 1980

**MILLER, C. K. S.**

Challenges of EMI Measurements  
Proc., Natl. Conf. of Standards Laboratories, 22-25 September 1980, pp. 8-1 through 8-17  
September 1980

**CRAWFORD, M. L.; WORKMAN, J. L.**

Spherical Dipole for Radiating Standard Fields  
Dig., 1980 Conf. on Prec. Electromagn. Meas., 23-27 June 1980, Braunschweig, FDR, pp. 424-429  
June 1980

**KANDA, M.**

The Characteristics of a Linear Antenna with Tapered Resistive and Capacitive Loading  
Proc., IEEE Antenna Propagat. Soc. Symp., 2-6 June 1980, Quebec, Canada, Vol. 2, AP. 18-2, pp. 696-699  
June 1980

**KANDA, M.**

The Time-Domain Characteristics of a Traveling-Wave Linear Antenna with Linear and Nonlinear Parallel Loads  
IEEE Trans. Antennas Propagat., Vol. AP-28, No. 2, pp. 267-276  
March 1980

**SREENIVASIAH, I.; CHANG, D. C.; MA, M. T.**

Characterization of Electrically Small Radiating Sources by Tests Inside a Transmission Line Cell  
NBS TN 1017  
March 1980

**HILL, D. A.; WAIT, J. R.**

Propagation Along a Coaxial Cable with a Helical Shield  
IEEE Trans. Microwave Theory Tech., Vol. MTT-28, No. 2, pp. 84-89  
February 1980

**KANDA, M.**

Transients in Resistively Loaded Antennas and Their Comparison with Conical Antennas and a TEM Horn  
IEEE Trans. Antennas Propagat., Vol. AP-28, No. 1, pp. 132-136  
January 1980

Electromagnetic Interference (cont.)

**KANDA, M.**

Analytical and Numerical Techniques for Analyzing an Electrically Short Dipole with a Nonlinear Load  
IEEE Trans. Antennas Propagat., Vol. AP-28, No. 1, pp. 71-78  
January 1980

**KANDA, M.; RIES, F. X.; BELSHER, D. R.**

A Broadband Isotropic, Real-Time, Electric Field Sensor (BIRES) Using Resistively Loaded Dipoles  
NBSIR 79-1622  
December 1979

**KANDA, M.**

The Effects of Resistive Loading on TEM Horns  
NBSIR 79-1601  
August 1979

**ARTHUR, M. G.**

Impulse Spectral Intensity -- What is it?  
Proc., 1978 Electromagn. Interference Workshop NBS SP 551  
July 1979

**TIPPET, J. C.; CHANG, D. C.**

Dispersion and Attenuation Characteristics of Modes in a TEM Cell with a Lossy Dielectric Slab  
NBSIR 79-1615  
July 1979

**CRAWFORD, M. L.**

Comparison and Selection of Techniques for Measuring EM Radiated Emissions and Susceptibility of Large Equipment  
Proc., 1979 Symp. and Technical Exhib. on Electromagn. Compat. (3rd), 1-3 May 1979, Rotterdam, Netherlands, pp. 115-122  
May 1979

**MA, M. T.**

A Theoretical Study of Unbalanced Ground Effects on Receiving Dipoles  
NBSIR 79-1605  
May 1979

**SREENIVASIAH, I.; CHANG, D. C.**

Variational Expression for the Scattering Matrix of a Coaxial Line Step Discontinuity and its Application to an Over Moded Coaxial TEM Cell  
NBSIR 79-1606  
May 1979

**CRAWFORD, M. L.; WORKMAN, J. L.**

Using a TEM Cell for EMC Measurements of Electronic Equipment  
NBS TN 1013  
April 1979

**DECKER, W. F.; CRAWFORD, M. L.; WILSON, W. A.**

Construction of a Large Transverse Electromagnetic Cell  
NBS TN 1011  
February 1979

Electromagnetic Interference (cont.)

**KANDA, M.**

The Time Domain Characteristics of a Traveling Wave Linear Antenna with Linear and Non-Linear Loads

NBSIR 78-892 (Restricted)  
February 1979

**KANDA, M.**

The Characteristics of a Traveling-Wave, Linear Antenna with a Nonlinear Load  
Dig. Abstract, 1979 IEEE Antenna Propagat. Soc. Symp.

January 1979

**MILLER, C. K. S.**

EMI - A Problem of Growing Concern

Report of the 63rd Natl. Conf. on Weights and Measures NBS SP 532  
1978

**KANDA, M.**

Analytical and Numerical Techniques for Analyzing an Electrically Short Dipole with a Nonlinear Load

NBSIR 78-898  
November 1978

**LAWTON, R. A.; ONDREJKA, A. R.**

Antennas and the Associated Time Domain Range for the Measurement of Impulsive Fields

NBS TN 1008  
November 1978

**TIPPET, J. C.; CHANG, D. C.**

Characteristic Impedance of a Rectangular Coaxial Line With Offset Inner Conductor

IEEE Trans. Microwave Theory Technol., Vol. MTT-26, No. 11, pp. 876-883  
November 1978

**CRAWFORD, M. L.; WORKMAN, J. L.; THOMAS, C. L.**

Expanding the Bandwidth of TEM Cells for EMC Measurements

IEEE Trans. Electromagn. Compat., Vol. EMC-20, No. 3, pp. 368-375  
August 1978

**ANDREWS, J. R.; BALDWIN, E. E.**

SHF Impulse Generator

NBSIR 78-888  
June 1978

**CRAWFORD, M. L.; WORKMAN, J. L.**

Asymmetric Versus Symmetric TEM Cells for EMI Measurements

Proc., 1978 IEEE Intl. Symp. on Electromagn. Compat., 20-22 June 1978, Atlanta, GA, pp. 204-210

June 1978

**ANDREWS, J. R.; BALDWIN, E. E.**

UHF Impulse Generator

NBSIR 78-880  
April 1978

Electromagnetic Interference (cont.)

**KANDA, M.**

Transients in Resistively Loaded Antennas and Their Comparison with Conical Antennas and TEM Horns

NBSIR 78-876

March 1978

**TIPPET, J. C.; CHANG, D. C.**

Higher Order Modes in Rectangular Coaxial Line with Infinitely Thin Inner Conductor

NBSIR 78-873

March 1978

**ADAMS, J. W.; TAGGART, H. E.**

Electromagnetic Compatibility Evaluation of Seven Electronic Brake Systems

NBSIR 78-872

February 1978

**FLANIGAN, W. F. Jr.; BOWMAN, R. R.; LOWELL, W. R.**

Nonmetallic Electrode System for Recording EEG and ECG in Electromagnetic Fields

Physiology and Behavior, Vol. 18, No. 3, pp. 531-533

1977

**KANDA, M.**

A Relatively Short Cylindrical Broadband Antenna with Tapered Resistive Loading for Picosecond Pulse Measurements

IEEE Trans. Antennas Propagat., Vol. AP-26, No. 3, pp. 439-447

1977

**LARSEN, E. B.; SHAFER, J. F.**

Surveys of Electromagnetic Field Intensities Near Representative Higher-Power FAA Transmitting Antennas

FAA-RD-77

December 1977

**KANDA, M.**

The Characteristics of Broadband, Isotropic Electrical Field and Magnetic Field Probes

NBSIR 77-868

November 1977

**ANDREWS, J. R.; ARTHUR, M. G.**

Spectrum Amplitude--Definition, Generation and Measurement

NBS TN 699

October 1977

**CRAWFORD, M. L.; WORKMAN, J. L.; THOMAS, C. L.**

Generation of EM Susceptibility Test Fields Using a Large Absorber-Loaded TEM Cell

IEEE Trans. Instrum. Meas., Vol. IM-26, No. 3, pp. 336-343

September 1977

**ADAMS, J. W.; KANDA, M.; SHAFER, J. F.; WU, Y.**

Near-Field Electric Field Strength Levels of EM Environments Applicable to Automotive Systems

Proc., 1977 IEEE Intl. Symp. on Electromagn. Compat., 2-4 August 1977, Seattle, WA, pp. 336-343

August 1977

**CRAWFORD, M. L.; THOMAS, C. L.**

Converting a Rectangular Shielded Enclosure into a TEM Transmission Cell for EMI Measurements  
Proc., 1977 IEEE Intl. Symp. on Electromagn. Compat., 2-4 August 1977, Seattle, WA, pp. 1-6  
August 1977

**KANDA, M.**

A Relatively Short Cylindrical Broadband Antenna with Tapered Resistive Loading for Picosecond Pulse  
Measurements  
NBSIR 77-861  
August 1977

**KANDA, M.**

A Broadband Antenna with Tapered Resistive Loading for EMI Measurements  
Proc., 1977 IEEE Intl. Symp. on Electromagn. Compat., 2-4 August 1977, Seattle, WA, pp.  
13-18  
August 1977

**BENSEMA, W. D.**

Amplitude, Time, and Frequency Statistics of Quasi-Impulsive Noise  
Proc., 1977 Electromagn. Compat. Symp., 18-30 June 1977, Montreux, Switzerland, pp.  
347-352  
June 1977

**KANDA, M.**

The Characteristics of a Relatively Short Broadband Linear Antenna with Tapered Resistive Loading  
Proc., Intl. Symp. Antenna Propagat. Soc., 20-22 June 1977, pp. 230-233  
June 1977

**BENSEMA, W. D.**

A Noise Spectrum Measurement System Using the Fast Fourier Transform  
IEEE Trans. Electromagn. Compat., Vol. EMC-19, No. 2, pp. 37-43  
May 1977

**ANDREWS, J. R.**

Impulse Generator Spectrum Amplitude Measurement Techniques  
IEEE Trans. Instrum. Meas., Vol. IM-25, No. 4, pp. 380-384  
December 1976

**GREENE, F. M.**

Measurement of RF Power-Absorption in Biological Specimens (10 to 100 MHz)  
NBS TN 687  
November 1976

**LARSEN, E. B.; ANDREWS, J. R.; BALDWIN, E. E.**

Sensitive Isotropic Antenna with Fiber-Optic Link to a Conventional Receiver  
NBSIR 75-819  
September 1976

**TIPPET, J. C.; CHANG, D. C.**

A New Approximation for the Capacitance of a Rectangular, Coaxial, Strip Transmission Line  
IEEE Trans. Microwave Theory Tech., pp. 602-604  
September 1976

Electromagnetic Interference (cont.)

**CRAWFORD, M. L.**

Improved Techniques and Instrumentation for EMC Measurements  
IEEE 1976 Intl. Symp. on Electromagn. Compat., 13-15 July 1976, Washington, DC  
July 1976

**LARSEN, E. B.; ANDREWS, J. R.**

Using Fiber Optics in A Broadband, Sensitive, Isotropic Antenna - 15 KHz to 150 MHz  
Proc., 1976 IEEE Intl. Symp. on Electromagn. Compat., 13-15 July 1976, Washington, DC  
July 1976

**CRAWFORD, M. L.**

Experimental Evaluation of the Radiation Characteristics of Dipole Sources Enclosed in a TEM  
Transmission Cell  
Proc., 1976 Conf. on Precision Electromagn. Meas., 28 June-1 July 1976, Boulder, CO, pp.  
57-59  
June 1976

**REEVE, G. R.**

A Standard Percent Modulation Measurement System  
Dig. 1976 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1976, Boulder, CO, pp. 165-166  
June 1976

**TIPPET, J. C.; CHANG, D. C.; CRAWFORD, M. L.**

An Analytical and Experimental Determination of the Cutoff Frequencies of Higher-Order TE Modes in a  
TEM Cell  
NBSIR 76-841  
June 1976

**BOWMAN, R. R.**

Calibration Techniques for Electromagnetic Hazard Meters: 500 MHz To 20 GHz  
NBSIR 75-805  
April 1976

**ADAMS, J. W.; CRAWFORD, M. L.; SHAFER, J. F.**

Electromagnetic Interference (EMI) Measurements for Automotive Applications  
Proc., 1976 SAE Automotive Congress Conf., 23-27 February 1976, Detroit, MI, pp. 1-6  
February 1976

**BOWMAN, R. R.**

A Probe for Measuring Temperature in Radio-Frequency-Heated Material  
IEEE Trans. Microwave Theory Technol., Vol. MTT-24, No. 1, pp. 43-45  
January 1976

**TIPPET, J. C.; CHANG, D. C.**

Radiation Characteristics of Dipole Sources Located Inside a Rectangular, Coaxial Transmission Line  
NBSIR 75-829  
January 1976

**FITZGERRELL, R. G.**

Experimental RF Field Polarization Meter  
FAA-RD-74-188  
1975



Electromagnetic Interference (cont.)

**CRAWFORD, M. L.**

Techniques for Measurement of Electromagnetic Radiation and Susceptibility of Electronic Equipment  
Proc., 1975 Symp. and Technical Exhib. on Electromagn. Compat. (1st), 20-22 May 1975,  
Montreux, Switzerland, pp. 38-44  
May 1975

**KANDA, M.; ADAMS, J. W.**

Amplitude Statistics of Electromagnetic Noise in Coal Mines  
Dig., Intl. Union of Radio Sci. (Union Radio Scientifique Internationale), IEEE Trans. Antennas  
Propagat.  
May 1975

**BELSHER, D. R.**

Development of Near-Field Electric Energy Density Meter Model EDM-2  
Department of Health, Education, and Welfare, Publ. No. (NIOSH) 75-140  
March 1975

**CRAWFORD, M. L.**

Generation of Standard EM Fields for Calibration of Power Density Meters 20 kHz to 1000 MHz  
NBSIR 75-804  
January 1975

**GREENE, F. M.**

Development of Electric and Magnetic Near-Field Probes  
NBS TN 658  
January 1975

**ANDREWS, J. R.**

Picosecond Pulse Generators Using Microminiature Mercury Switches  
NBSIR 74-377  
1974

**SCOTT, W. W., Jr.; ADAMS, J. W.; BENSEMA, W. D.; DOBROSKI, H.**

Electromagnetic Noise in Lucky Friday Mine  
NBSIR 74-391  
1974

**CRAWFORD, M. L.**

Generation of Standard EM Fields Using TEM Transmission Cells  
IEEE Trans. Electromagn. Compat., Vol. EMC-16, No. 4, pp. 189-195  
November 1974

**KANDA, M.**

Time and Amplitude Statistics for Electromagnetic Noise in Mines  
NBSIR 74-378  
July 1974

**NEWELL, A. C.; CRAWFORD, M. L.**

Planar Near-Field Measurements on High Performance Array Antennas  
NBSIR 74-380  
July 1974

Electromagnetic Interference (cont.)

**ADAMS, J. W.; BENSEMA, W. D.; TOMOEDA, N. C.**

Surface Magnetic Field Noise Measurements at Geneva Mine

NBSIR 74-369

June 1974

**ADAMS, J. W.; BENSEMA, W. D.; KANDA, M.**

Electromagnetic Noise in Grace Mine

NBSIR 74-388

June 1974

**BENSEMA, W. D.; KANDA, M.; ADAMS, J. W.**

Electromagnetic Noise in Itmann Mine

NBSIR 74-390

June 1974

**CRAWFORD, M. L.**

Evaluation of Reflectivity Level of Anechoic Chambers Using Isotropic, 3-Dimensional Probing

Proc., 1974 Intl. IEEE Antenna Propagat. Soc. Symp., 10-12 June 1974, Atlanta, GA, pp. 28-34

June 1974

**HUDSON, P. A.; MELQUIST, D. G.; ONDREJKA, A. R.; WERNER, P. E.**

Completion of the Program to Evaluate/Improve Instrumentation and Test Methods for Electroexplosive Device Safety Qualification

NBSIR 74-379

June 1974

**KANDA, M.; ADAMS, J. W.; BENSEMA, W. D.**

Electromagnetic Noise in McElroy Mine

NBSIR 74-389

June 1974

**SIMPSON, P. A.**

Broadband Pulsed/CW Calibration Signal Standard for Field Intensity Meter (FIM) Receivers

NBSIR 74-371

June 1974

**ARTHUR, M. G.**

Impulse Spectral Intensity -- What is it?

NBSIR 74-365

May 1974

**GREENE, F. M.**

Development and Construction of an Electromagnetic Near-Field Synthesizer

NBS TN 652

May 1974

**BENSEMA, W. D.; KANDA, M.; ADAMS, J. W.**

Electromagnetic Noise in Robena No. 4 Coal Mine

NBS TN 654

April 1974

**REEVE, G. R.**

Calibration of Impulse Noise Generators

NBSIR 73-343

1973

**BAIRD, R. C.**

Methods of Calibrating Microwave Hazard Meters  
Proc., 1973 Intl. Symp on Biological Effects and Health Hazards of Microwave Radiation,  
15-18 October 1973, Warsaw, Poland, pp. 228-236  
October 1973

**BOWMAN, R. R.**

Some Recent Developments in the Characterization and Measurement of Hazardous Electromagnetic  
Fields  
Proc., 1973 Intl. Symp. on Biological Effects and Health Hazards of Microwave Radiation,  
15-18 October 1973, Warsaw, Poland, pp. 217-227  
October 1973

**LARSEN, E. B.**

Calibration of Radio Receivers to Measure Broadband Interference  
NBSIR 73-335  
September 1973

**KANDA, M.; ADAMS, J. W.**

Amplitude Statistics of Electromagnetic Noise in Coal Mines  
Proc., 1973 Thru-the-Earth Electromagn. Workshop, 15-17 August 1973, Colorado School of  
Mines, Golden, CO, pp. 156-160  
August 1973

**HUDSON, P. A.; MELQUIST, D. G.; ONDREJKA, A. R.; WERNER, P. E.**

A Program to Evaluate/Improve Instrumentation and Test Methods for Electroexplosive Device Safety  
Qualification  
NBSIR 73-323  
June 1973

**NAHMAN, N. S.**

Miniature Superconductive Coaxial Transmission Lines  
Proc., IEEE, Vol. 61, pp. 76-79  
January 1973

**BENSEMA, W. D.**

Coal Mine Magnetic-Field Noise Measurements  
Proc., 1972 W. Virginia Conf. on Coal Mine Electrotechnology (1st), 2-4 August 1972, West  
Virginia Univ., Morgantown, WV, pp. XII-1 through XII-12  
August 1972

**ADAMS, J. W.; TAGGART, H. E.; SPAULDING, A. D.**

Survey Report of the U.S. Bureau of Mines Electromagnetic Noise Measurement Program  
NBS Rept. 10723  
November 1971

**WACKER, P. F.; BOWMAN, R. R.**

Quantifying Hazardous Electromagnetic Fields: Scientific Basis and Practical Considerations  
IEEE Trans. Microwave Theory Tech., Vol. MTT-19, No. 22  
February 1971

Electromagnetic Interference (cont.)

**BOWMAN, R. R.**

Quantifying Hazardous Electromagnetic Microwave Fields: Practical Considerations  
Proc., 1969 Symp. Biological Effects and Health Implications of Microwave Radiation, 17-19  
September 1969, Richmond, VA., BRH/DBE 70-2, U.S. Dept. of Health, Education, and  
Welfare, Rockville, MD, pp. 204-209  
June 1970

**WACKER, P. F.**

Quantifying Hazardous Microwave Fields: Analysis  
Proc., 1969 Symp. on Biological Effects and Health Implications of Microwave Radiation,  
17-19 September 1969, Richmond, VA, BRH/DBE 70-2, U.S. Dept. of Health Education, and  
Welfare, Rockville, MD pp. 197-203  
June 1970

**LAWTON, R. A.**

A New Standard for Electric Field Strength  
IEEE Trans. Instrum. Meas., Vol. IM-19, pp. 45-51  
February 1970

## MICROWAVE METROLOGY

**RANDA, J.; WIATR, W.; BILLINGER, R. L.**

Comparison of Methods for Adapter Characterization

Dig., IEEE MTT-S 1999, Intl. Microwave Symp., 13-19 June 1999, Anaheim, CA,  
pp. 1881-1884

June 1999

**JUDISH, R. M.; SPLETT, J.**

Robust Statistical Analysis of Vector Network Analyzer Intercomparisons

Proc., IEEE Instrum. Meas. Tech. Conf., 24-26 May 1999, Venice, Italy, pp. 1320-1324

May 1999

**WILLIAMS, D. F.; ALPERT, B. K.**

Characteristic Impedance, Power and Causality

IEEE Microwave Guided Wave Lett., Vol. 9, No. 5, pp. 181-182

May 1999

**WILLIAMS, D. F.; ALPERT, B. K.**

Characteristic Impedance, Causality, and Microwave Circuit Theory

Proc., IEEE Sig. Propagation Interconnects Workshop, 19-21 May 1999, Titisee-Neustadt,  
Germany, pp. 1-2

May 1999

**WILLIAMS, D. F.; WALKER, D. K.**

0.1-10 GHz CMOS Voltage Standard

Proc., IEEE Sig. Propagation Interconnects Workshop, 19-21 May 1999, Titisee-Neustadt,  
Germany

May 1999

**MARKS, R. B.**

The IEEE 802.16 Working Group on Broadband Wireless

IEEE Network, Vol. 13, No. 2, pp. 4-5

March/April 1999

**ALLEN, J. W.; CLAGUE, F. R.; LARSEN, N. T.; WEIDMAN, M. P**

The NIST Microwave Power Standards in Waveguide

NIST TN 1511

February 1999

**MARKS, R. B.**

The National Wireless Electronic Systems Testbed and its Initial Development

Private Cable and Wireless Cable

February 1999

**MARKS, R. B.**

Standards Make Wireless Work

Applied Microwaves and Wireless, pp. 101-102

February 1999

**WILLIAMS, D. F.**

Metal-Insulator-Semiconductor Transmission Lines

IEEE Trans. Microwave TheoryTech., Vol. 47, No. 2, pp. 176-181

February 1999

**ALLEN, J. W.**

NIST's Switched Coupler High Power Measurement Service  
Proc., Meas. Sci. Conf., 28-29 January 1999, Anaheim, CA, pp. 116-119  
January 1999

**GINLEY, R. A.**

Microwave Network Analyzers - A Discussion of Verification Methods  
Proc., Meas. Sci. Conf., 28-29 January 1999, Anaheim, CA, pp. 120-125  
January 1999

**JARGON, J. A.; DEGROOT, D. C.; REED, K. L.**

NIST Passive Intermodulation Measurement Comparison for Wireless Base-Station Equipment  
Dig., 52nd Auto. RF Tech. Group Conf. 3-4 December 1998, Rohnert Park, CA, pp. 128-139  
December 1998

**MARKS, R. B.**

The National Wireless Electronic Systems Testbed and its Initial Development  
Dig., 52nd Auto. RF Tech. Group Conf., 3-4 December 1998, Rohnert Park, CA, pp. 95-100  
December 1998

**DEGROOT, D. C.; WILLIAMS, D. F.**

National Institute of Standards and Technology Programs in Electrical Measurements for Electronic Interconnections  
Proc., Electrical Performance of Electronic Packaging Conf., 25-28 October 1998, West Point, NY, pp. 45-49  
October 1998

**MARKS, R. B.**

On-Wafer Millimeter-Wave Characterization  
Proc., European GAAS 98 Symp., 5-6 October 1998, Amsterdam, The Netherlands, pp. 21-26  
October 1998

**WILLIAMS, D. F.**

High Frequency Limitations of the JEDEC 123 Guideline  
Proc., Electrical Performance of Electronic Packaging Conf., 25-28 October 1998, West Point, NY, pp. 45-49  
October 1998

**JUROSHEK, J. R.; WANG, C. M.; McCABE, G. P.**

Statistical Analysis of Network Analyzer Measurements  
Cal Lab  
May/June 1998

**MARKS, R. B.; JARGON, J. A.; RYTTING, D. K.**

Accuracy of Lumped-Element Calibrations for Four-Sampler Vector Network Analyzers  
Dig., IEEE MTT Intl. Symp., 7-12 June 1998, Baltimore, MD, pp. 1487-1490  
June 1998

**WALKER, D. K.; WILLIAMS, D. F.**

Comparison of SOLR and TRL Calibrations  
Dig., 51st Auto. RF Tech. Group Conf., 7-12 June 1998, Baltimore, MD, pp. 83-87  
June 1998



**WILLIAMS, D. F.; WALKER, D. K.**

Lumped-Element Impedance Standards

Dig., 51st Auto. RF Tech Group Conf., 7-12 June 1998, Baltimore, MD, pp. 91-93  
June 1998

**WILLIAMS, D. F.**

Metal-Insulator-Semiconductor Transmission Line Model

Dig., 51st Auto. RF Tech. Group Conf., 7-12 June 1998, Baltimore, MD, pp. 65-71  
June 1998

**WILLIAMS, D. F.; ARZ, U.; GRABINSKI, H.**

Accurate Characteristic Impedance Measurement on Silicon

Dig., '98 IEEE MTT, Intl. Microwave Symp., 7-12 June 1998, Baltimore, MD, pp. 1917-1920  
June 1998

**WILLIAMS, D. F.; WALKER, D. K.**

In-Line Multiport Calibration

Dig., 51st Auto. RF Tech. Group Conf., 7-12 June 1998, Baltimore, MD, pp. 88-90  
June 1998

**MILANOVIC, V.; OZGUR, M.; DEGROOT, D. C.; JARGON, J. A.; GAITAN, M.; ZAGHLOUL, M.**

Characterization of Broad-Band Transmission for Coplanar Waveguides on CMOS Silicon Substrates

IEEE Trans. Microwave Theory Tech., Vol. 46, No. 5, pp. 632-640  
May 1998

**JARGON, J. A.**

Revised Uncertainty of the NIST 30 MHz Phase Shifter Measurement Service

Proc., Meas. Sci. Conf., 5-6 February 1998, Pasadena, CA (no page numbers)  
February 1998

**DEGROOT, D. C.; MARKS, R. B.; JARGON, J. A.**

A Method for Comparing Vector Network Analyzers

Dig., Auto. RF Tech. Group Conf., 4-5 December 1997, Portland, OR, pp. 107-114  
December 1997

**DEGROOT, D. C.; JARGON, J. A.**

RF and Microwave Device Measurements Using a Digital Sampling Oscilloscope

Instrum. Newsletter, Vol. 9, No. 4, pp. T1-4  
December 1997

**MARKS, R. B.; HEUTMAKER, M. S.**

The 1997 Wireless Communications Conference

NIST JRES, Vol. 102, No. 6, p. 697  
November/December 1997

**MARKS, R. B.; ALLEY, G. D.**

The Automatic Radio Frequency Techniques Group Conference on Characterization of Broadband Telecommunications Components and Systems

NIST JRES, Vol. 102, No. 6, p. 703  
November/December 1997

**MARKS, R. B.**

Formulations of the Basic Vector Network Analyzer Error Model Including Switch Terms

Dig., Auto. RF Tech. Group Conf., 4-5 December 1997, Portland, OR, pp. 115-126  
December 1997

**WILLIAMS, D. F.; WALKER, D. K.**

Series-Resistor Calibration

Dig., Auto. RF Tech. Group Conf., 4-5 December 1997, Portland, OR, pp. 131-137  
December 1997

**JUROSHEK, J. R.**

A Direct Calibration Method for Measuring Equivalent Source Mismatch

Microwave Journal, pp. 106-118  
October 1997

**WILLIAMS, D. F.; JANEZIC, M.D.; RALSTON, A.**

Quasi-TEM Model for Coplanar Waveguide on Silicon

Dig., Electrical Performance of Electronic Packaging Conf., 27-29 October 1997, San Jose, CA,  
pp. 225-228  
October 1997

**RANDA, J.; TERRELL, L. A.**

Noise-Temperature Measurement System for the WR-28 Band  
NIST TN 1395

August 1997

**WILLIAMS, D. F.; MARKS, R. B.; HAYDEN, L. A.**

A Complete Multinode Equivalent-circuit Theory for Electrical Design

NIST JRES, Vol. 102, No. 4, pp. 405-423  
July/August 1997

**STORK, F.J.B.; BEALL, J. A.; ROSHKO, A.; DEGROOT, D. C.; RUDMAN, D. A.; ONO, R. H.**

Microwave Characterization of Coplanar Waveguide Transmission Lines Fabricated by Ion Implantation  
Patterning of  $YBa_2Cu_3O_{7-\delta}$

IEEE Trans. Appl. Supercondt., Vol. 7, No. 2, pp. 2780-2783  
June 1997

**WILLIAMS, D. F.**

Characterization of Embedded Multiconductor Transmission Lines

Dig., IEEE 1997 MTT Intl. Symp., 8-12 June 1997, Denver, CO, pp. 1773-1776  
June 1997

**GINLEY, R. A.**

Line-Reflect-Match (LRM) Calibration Technique for the Dual Six-Port ANA

IEEE Trans. Instrum. Meas., Vol. 46, No. 2, pp. 523-526  
April 1997

**WALKER, D. K.; WILLIAMS, D. F.**

Compensation for Geometrical Variations in Coplanar Waveguide Probe-Tip Calibration

IEEE Microwave Guided Wave Lett., Vol. 7, No. 4, pp. 97-99  
April 1997

**MARKS, R. B.; JARGON, J. A.; JUROSHEK, J. R.**

Calibration Comparison Method for Vector Network Analyzers

Dig., 48th Auto. RF Tech. Group Conf., 5-6 December 1996, Clearwater, FL, pp. 38-45  
December 1996

**WILLIAMS, D. F.**

Calibration in Multiconductor Transmission Lines

Dig., 48th Auto. RF Tech. Group Conf., 5-6 December 1996, Clearwater, FL, pp. 46-53  
December 1996

**WILLIAMS, D. F.; OLYSLAGER, F.**

Modal Cross Power in Quasi-TEM Transmission Lines

IEEE Microwave Guided Wave Lett., Vol 6., No. 11, pp. 413-415  
November 1996

**DEGROOT, D. C.; WALKER, D. K.; MARKS, R. B.**

Impedance Mismatch Effects on Propagation Constant Measurements

Proc., 5th Topical Mtg. Electrical Performance of Electronic Packaging Conf., 28-30 October  
1996, Napa, CA, pp. 141-143  
October 1996

**DEGROOT, D. C.; RUDMAN, D. A.; ZANG, K.; MA, Q. V.; KATO, H.; JAEGER, N. A. F.**

Planar Microwave Devices Fabricated by Ion-Implantation Patterning of High-Temperature  
Superconductors

Appl. Phys. Lett., Vol. 69, No. 14, pp. 2119-2121  
September 1996

**MARKS, R. B.; WILLIAMS, D. F.**

Electrical Characterization Methods for High-Speed Interconnects

Intl. J. Microcircuits Electronic Packaging, Vol. 18, No. 3, pp. 207-216  
August 1996

**MASTERSON, K. D.; NOVOTNY, D. R.; CAVCEY, K. H.**

Standard Antennas Designed with Electrooptic Modulators and Optical-Fiber Linkage

Proc., SPIE Intense Microwave Pulses IV Conf., 4-9 August 1996, Denver, CO, Vol. 2843,  
pp. 188-196  
August 1996

**WILLIAMS, D. F.**

Thermal Noise in Lossy Waveguides

IEEE Trans. Microwave Theory Tech., Vol. 44, No. 7, pp. 1067-1073  
July 1996

**GINLEY, R. A.**

Calibrating a Dual Six Port ANA With a Single Impedance Standard

Proc., 1996 Conf. on Prec. Electromagn. Meas., 17-20 June 1996, Braunschweig, Germany,  
pp. 532-533  
June 1996

**HUANG, D. X.; REBULDELA, G.; HARPER, J.**

RF-DC Differences of Micropotentiometers

Proc., 1996 Conf. on Prec. Electromagn. Meas., 17-20 June 1996, Braunschweig, Germany,  
pp. 460-461  
June 1996

**WILLIAMS, D. F.; BELQUIN, J.; DAMBRINE, G.; FENTON, R.**

On-Wafer Measurement at Millimeter Wave Frequencies

Proc., 1996 IEEE MTT Intl. Microwave Symp., 17-21 June 1996, San Francisco, CA,  
pp. 1683-1686  
June 1996

**WEIDMAN, M. P.**

Direct Comparison Transfer of Microwave Power Sensor Calibrations  
NIST TN 1379  
January 1996

**JARGON, J. A.; MARKS, R. B.**

Two-Tier Multiline TRL for Calibration of Low-Cost Network Analyzers  
Dig., 46th Auto. RF Tech. Group Conf. 30 November - 1 December 1995, Scottsdale, AZ,  
pp. 1-8  
December 1995

**WILLIAMS, D. F.; SCHAPPACHER, J. B.**

Line-Reflect-Match Calibrations with Nonideal Microstrip Standards  
Dig., 46th Auto. RF Tech. Group Conf., 30 November - 1 December 1995, Scottsdale, AZ,  
pp. 35-38  
December 1995

**JARGON, J. A.; MARKS, R. B.; WILLIAMS, D. F.**

Coaxial Line-Reflect-Match Calibration  
Proc., Asia-Pacific Microwave Conf., 10-13 October 1995, Taejon, Korea, Vol. 1, pp. 86-89  
October 1995

**JARGON, J. A.**

A 30 MHz Comparison Receiver  
Proc., Asia-Pacific Microwave Conf., 10-13 October 1995, Taejon, Korea, Vol. 1, pp. 94-96  
October 1995

**MARKS, R. B.; JARGON, J. A.; PAO, C. K.; WEN, C. P.**

Electrical Measurements of Microwave Flip-Chip Interconnections  
Proc., Intl. Symp on Microelectronics, 24-26 October 1995, Los Angeles, CA, pp. 424-429  
October 1995

**CLAGUE, F. R.**

A Calibration Service for Coaxial Reference Standards for Microwave Power  
NIST TN 1374  
May 1995

**MARKS, R. B.; JARGON, J. A.; PAO, C. K.; WEN, C. P.; SHIH, Y. C.**

Microwave Characterization of Flip-Chip MMIC Components  
Proc., 1995 Electronic Components and Tech. Conf. 21-24 May 1995, Las Vegas, NV,  
pp. 343-350  
May 1995

**MARKS, R. B.; JARGON, J. A.; PAO, C. K.; WEN, C. P.**

Microwave Characterization of Flip-Chip MMIC Interconnections  
Proc., 1995 IEEE MMT-S Intl. Microwave Symp., 15-16 May 1995, Orlando, FL,  
pp. 1463-1466  
May 1995

**PUCIC, S. P.; DAYWITT, W. C.**

Single-Port Technique for Adaptor Efficiency Evaluation  
Proc., Auto. RF Tech. Group Conf., 15 May 1995, Orlando, FL, pp. 113-118  
May 1995

**MARKS, R. B.; WILLIAMS, D. F.**

Comments on "Conversation Between S, Z, Y, h, ABCD, and T Parameters Which are Valid for Complex Source and Load Impedances"

IEEE Trans. Microwave Theory Tech., Vol. 43, No. 4, pp. 914-915

April 1995

**WILLIAMS, D. F.; MARKS, R. B.**

LRM Probe-Tip Calibrations Using Nonideal Standards

IEEE Trans. Microwave Theory Tech., Vol. 43, No. 2, pp. 466-469

February 1995

**WILLIAMS, D. F.; MARKS, R. B.**

Compensation for Substrate Permittivity in Probe-Tip Calibration

Proc., 44th Auto. RF Tech. Group Conf., 1-2 December 1994, Boulder, CO, pp. 20-30

December 1994

**MARKS, R. B.; WILLIAMS, D. F.**

Accurate Electrical Characterization of High-Speed Interconnections

Proc., Intl. Symp on Microelectronics, 14-17 November 1994, Boston, MA, pp. 96-101

November 1994

**CLAGUE, F. R.; SPLETT, J. D.**

Developing a NIST Coaxial Microwave Power Standard at 1 mW

Proc., NCSL Conf., 3 August 1994, Chicago, IL, pp. 291-298

August 1994

**CLAGUE, F. R.**

A Method to Determine the Calorimetric Equivalence Correction for a Coaxial Microwave Microcalorimeter

IEEE Trans. Instrumen. Meas., Vol. 43, No. 3, pp. 421-425

June 1994

**MARKS, R. B.; WILLIAMS, D. F.**

Microwave Characterization of Printed Circuit Transmission Lines

Proc., Natl. Electronic Packaging and Production Conf., June 16, 1994, Boston, MA, pp. 520-527

June 1994

**WILLIAMS, D. F.; MARKS, R. B.**

On-Wafer Impedance Measurement on Lossy Substrates

IEEE Microwave Guided Wave Lett., Vol. 4, No. 6, pp. 175-176

June 1994

**ENGEN, G. F.; JUDISH, R. M.; JUROSHEK, J. R.**

The Multi-State Two-Port: An Alternative Transfer Standard

Dig, 43rd Auto. RF Tech. Group Conf., 27 May 1994, San Diego, CA, pp. 11-18

May 1994

**JUROSHEK, J. R.; FREE, G. M.**

Measurements of the Characteristic Impedance of Coaxial Air Line Standards

IEEE Trans. Microwave Theory Tech., Vol. 42, No. 2, pp. 186-191

February 1994



**JARGON, J. A.**

A Revised Uncertainty Analysis for the NIST 30-MHz Attenuation Calibration System  
1994 Meas. Sci. Conf., 27-28 January 1994, Pasadena, CA (no page numbers)  
January 1994

**JARGON, J. A.; GINLEY, R. A.; SUTTON, D. D.**

The NIST 30 MHz Linear Measurement System  
NIST JRES, Vol. 99, No. 1, pp. 19-30  
January-February 1994

**CLAGUE, F. R.**

NIST Model PM2 Power Measurement System for 1 mW at 1 GHz  
NISTIR 5016  
December 1993

**MARKS, R. B.; WILLIAMS, D. F.**

Verification of Commercial Probe-Tip Calibrations  
Dig., 42nd Auto. RF Tech. Group Conf., 2-3 December 1993, San Jose, CA, pp. 37-41  
December 1993

**WILLIAMS, D. F.; MARKS, R. B.**

LRM Probe-Tip Calibrations with Imperfect Resistors and Loss Lines  
Dig., 42nd Auto. RF Tech. Group Conf., 2-3 December 1993, San Jose, CA, pp. 32-36  
December 1993

**CLAGUE, F. R.**

Microcalorimeter for 7 mm Coaxial Transmission Line  
NIST TN 1358  
August 1993

**WILLIAMS, D. F.; MARKS, R. B.**

Accurate Transmission Line Characterization  
IEEE Microwave Guided Wave Lett., Vol. 3, No. 8, pp. 247-249  
August 1993

**WILLIAMS, D. F.; MARKS, R. B.**

Reciprocity Relations in Waveguide Junctions  
IEEE Trans. Microwave Theory Tech., Vol. 41, No. 6/7, pp. 1105-1110  
June/July 1993

**CLAGUE, F. R.; VORIS, P. C.**

Coaxial Reference Standard for Microwave Power  
NIST TN 1357  
April 1993

**MARKS, R. B.**

Comments on "Protecting EFIE-Based Scattering Computations from Effects of Interior Resonances"  
IEEE Trans. Antennas Propagat., Vol. 41, No. 3, pp. 387-389  
March 1993

**JARGON, J. A.; REBULDELA, G.**

Measurement Service for High-Power CW Wattmeters at the National Institute of Standards and Technology  
Proc., Meas. Sci. Conf., 20-22 January 1993, Anaheim, CA, Session 5-B (no page numbers)  
January 1993



**SHERWOOD, G. V.**

Dimensional Characterization of Precision Coaxial Transmission Line Standards  
Proc., Meas. Sci. Conf., 20-22 January 1993, Anaheim, CA, pp. 1-10  
January 1993

**MARKS, R. B.; WILLIAMS, D. F.**

Interconnection Transmission Line Parameter Characterization  
Dig., 40th Auto. RF Tech. Group Conf., 3-4 December 1992, Orlando, FL, pp. 88-95  
December 1992

**WALKER, D. K.; WILLIAMS, D. F.; MORGAN, J. M.**

Planar Resistors for Probe Station Calibration  
Dig., 40th Auto. RF Tech. Group Conf., 3-4 December 1992, Orlando, FL, pp. 1-9  
December 1992

**WILLIAMS, D. F.; MARKS, R. B.**

Calibrating On-Wafer Probes to the Probe Tips  
Dig., 40th Auto. RF Tech. Group Conf., 3-4 December 1992, Orlando, FL, pp. 136-143  
December 1992

**REBULDELA, G.; JARGON, J. A.**

High Power CW Wattmeter Calibration at NIST  
NIST JRes, Vol. 97, No. 6, pp. 673-687  
November-December 1992

**WILLIAMS, D. F.; MARKS, R. B.; WALKER, D. K.; CLAGUE, F. R.**

Wafer Probe Transducer Efficiency  
IEEE Microwave and Guided Wave Lett., Vol. 2, No. 10, pp. 388-390  
October 1992

**MARKS, R. B.; WILLIAMS, D. F.**

A General Waveguide Circuit Theory  
NIST JRES, Vol. 97, No. 5, pp. 533-562  
September-October 1992

**HUANG, D. X.; REBULDELA, G.**

High-Frequency Response of Micropotentiometers  
Proc., NCSL, 2-6 August 1992, Washington, DC, pp. 547-555  
August 1992

**MARKS, R. B.; WILLIAMS, D. F.**

Accurate Experimental Characterization of Interconnects: A Discussion of "Experimental Electrical Characterization of Interconnects and Discontinuities in High-Speed Digital Systems"  
IEEE Trans. Components, Hybrids, and Manufacturing Technol., Vol. 15, No. 4, pp. 601-604  
August 1992

**WILLIAMS, D. F.; MARKS, R. B.**

Comments on "Characterization of Resistive Transmission Lines by Short-Pulse Propagation"  
IEEE Microwave Guided Wave Lett., Vol. 2, No. 8, p. 346  
August 1992

**CLAGUE, F. R.**

A New Coaxial Microwave Microcalorimeter Evaluation Technique  
Dig., 1992 Conf. on Prec. Electromagn. Meas., 9-12 June 1992, Paris, France, pp. 387-388  
June 1992

**MARKS, R. B.; WILLIAMS, D. F.**

Traceability for On-Wafer MMIC Measurements

Dig., 1992 Conf. on Prec. Electromagn. Meas., 9-12 June 1992, Paris, France, pp. 91-92  
June 1992

**REBULDELA, G.; JARGON, J. A.**

High Power CW Wattmeter Calibration at NIST

Dig., 1992 Conf. on Prec. Electromagn. Meas., 9-12 June 1992, Paris, France, pp. 381-382  
June 1992

**WILLIAMS, D. F.; MARKS, R. B.**

Verification of Scattering Parameter Measurements

Dig., 1992 Conf. on Prec. Electromagn. Meas., 9-12 June 1992, Paris, France, pp. 371-372  
June 1992

**ESTIN, A. J.; JUROSHEK, J. R.; MARKS, R. B.; CLAGUE, F. R.; ALLEN, J. W.**

Basic RF and Microwave Measurements: A Review of Selected Programs

Metrologia, Vol. 29, No. 2, pp. 135-151  
May 1992

**MARKS, R. B.**

Comments on "Rapid Pulsed Microwave Propagation"

IEEE Microwave Guided Wave Lett., Vol. 2, No. 5, p. 204  
May 1992

**WILLIAMS, D. F.; MARKS, R. B.**

Frequency-Dependent Transmission Line Parameters

Dig., IEEE Topical Meeting on Electrical Performance of Electronic Packaging, 22-24 April  
1992, Tucson, AZ, pp. 125-127  
April 1992

**FREE, G. M.; JONES, R. N.**

Calibration Service for Low-Loss, Three-Terminal Capacitance Standards at 100 kHz and 1 MHz  
NIST TN 1348

February 1992

**FURLOW, R.; SHIMODA, R. Y.; WILLIAMS, D. F.; MARKS, R. B.; GUPTA, K. C.**

Benchmark for the Verification of Microwave CAD Software

Proc., 38th Auto. RF Tech. Group Conf., 5-6 December 1991, San Diego, CA, pp. 97-106  
December 1991

**MARKS, R. B.; WILLIAMS, D. F.**

Reciprocity Relations for On-Wafer Power Measurements

Proc., 38th Auto. RF Tech. Group Conf., 5-6 December 1991, San Diego, CA, pp. 82-89  
December 1991

**WILLIAMS, D. F.; MARKS, R. B.; DAVIDSON, A.**

Comparison of On-Wafer Calibrations

Proc., 38th Auto. RF Tech. Group Conf., 5-6 December 1991, San Diego, CA, pp. 68-81  
December 1991

**MARKS, R. B.; WILLIAMS, D. F.**

Transmission Line Capacitance Measurement

IEEE Microwave Guided Wave Lett., Vol. 1, No. 9, pp. 243-245  
September 1991

**REEVE, G. R.**

Millimeter Wave Metrology at the National Institute of Standards and Technology  
Proc., 1991 NCSL Workshop and Symp., 18-22 August 1991, Albuquerque, NM, pp. 183-195  
August 1991

**MARKS, R. B.**

A Multi-Line Method of Network Analyzer Calibration  
IEEE Trans. Microwave Theory Tech., Vol. MTT-39, No. 7, p. 1205-1215  
July 1991

**MARKS, R. B.; WILLIAMS, D. F.**

Characteristic Impedance Determination Using Propagation Constant Measurement  
IEEE Microwave Guided Wave Lett., Vol. 1, No. 6, p. 141-143  
June 1991

**JUDISH, R. M.; BURNS, J. G.**

Measurement Program Compares Automatic Vector Analyzers  
Microwaves and RF, pp. 203-206  
May 1991

**WILLIAMS, D. F.; MARKS, R. B.; PHILLIPS, K. R.**

Translate LRL and LRM Calibrations  
Microwaves and RF, pp. 78-84  
February 1991

**SHERWOOD, G. V.**

Air Gage Size Measurement of Microwave Standards  
Proc., 1991 Measurement Science Conf. 31 Jan.-1 Feb. 1991, Anaheim, CA, pp. 1-10  
January 1991

**REEVE, G. R.; MARKS, R. B.; BLACKBURN, D.**

Microwave Monolithic Integrated Circuit-Related Metrology at the National Institute of Standards and  
Technology  
IEEE Trans. Instrum. Meas., Vol. IM-39, No. 6, pp. 958-961  
December 1990

**CLAGUE, F. R.**

Power Measurement System for 1 mW at 1 GHz  
NIST TN 1345  
November 1990

**MARKS, R. B.**

Multi-Line Calibration for MMIC Measurement  
Dig., 36th Auto. RF Tech. Group Conf., 29-30 November 1990, Monterey, CA, pp. 47-55  
November 1990

**PHILLIPS, K. R.; WILLIAMS, D. F.**

MMIC Package Characterization with Active Loads  
Dig., 36th Auto. RF Tech. Group Conf., 29-30 November 1990, Monterey, CA, pp. 64-72  
November 1990

**WILLIAMS, D. F.; MARKS, R. B.; PHILLIPS, K. R.; MIERS, T.**

Progress Toward MMIC On-Wafer Standards  
Dig., 36th Auto. RF Tech. Group Conf., 29-30 November 1990, Monterey, CA, pp. 73-83  
November 1990

**WILLIAMS, D. F.; MARKS, R. B.**

The Interpretation and Use of S-Parameters in Lossy Lines

Dig., 36th Auto. RF Tech. Group Conf., 29-30 November 1990, Monterey, CA, pp. 84-89  
November 1990

**HOLT, D. R.**

Determination of Scattering Parameters with Respect to the Characteristic Impedance of Precision Coaxial Air-Line Standards

Dig., Conf. on Prec. Electromagn. Meas., 11-14 June 1990, Ottawa, Canada, pp. 282-283  
June 1990

**MARKS, R. B.**

Comments on "Improved Calibration and Measurement of the Scattering Parameters of Microwave Integrated Circuits"

IEEE Trans. Microwave Theory Tech., Vol. MTT-38, No. 4, p.453  
April 1990

**MARKS, R. B.; PHILLIPS, K. R.**

Wafer-Level ANA Calibrations at NIST

Dig., 34th Auto. RF Tech. Group Conf., 30 November-1 December 1989, Ft. Lauderdale, FL,  
pp. 11-25

December 1989

**WILLIAMS, D. F.**

Development of On-Wafer Microwave Standards at NIST

Dig., 34th Auto. RF Tech. Group Conf., 30 November-1 December 1989, Ft. Lauderdale, FL,  
pp. 5-10

December 1989

**ADAIR, R. T.; LIVINGSTON, E. M.**

Coaxial "Intrinsic" Impedance Standards

NIST TN 1333

October 1989

**JUROSHEK, J. R.; HOER, C. A.; KAISER, R. K. F.**

Calibrating Network Analyzers with Imperfect Test Ports

IEEE Trans. Instrum. Meas., Vol. 38, No. 4, pp. 898-901

August 1989

**HOER, C. A.**

Systematic Errors in Power Measurements Made with a Dual Six Port ANA;

NIST TN 1332

July 1989

**WEIL, C. M.; MARLER, F. E.; MAJOR, J. R.; WEIDMAN, M. P.; RUSSELL, D. H.**

Dual Six-Port Reflectometer Systems Using Waveguide in the Frequency Range 18-50 GHz.

Dig., 33rd Auto. RF Tech. Group Conf., 15-16 June 1989, Long Beach, CA, pp. 76-87

June 1989

**HOLT, D. R.**

Scattering Parameters Representing Imperfections in Precision Coaxial Air Lines

NIST JRES, Vol. 94, No. 2, pp. 117-133

March-April 1989

**CLAGUE, F. R.**

The NIST Automated Coaxial Microwave Power Standard  
Proc., 1989 Measurement Science Conf., 26-27 January 1989, Anaheim, CA, pp. 1C-1 through  
1C-14  
January 1989

**LIVINGSTON, E. M.; ADAIR, R. T.**

Performance Evaluation of Radiofrequency, Microwave and Millimeter Wave Power Meters  
NIST TN 1310  
December 1988

**COUNAS, G. J.; YATES, B. C.**

Measurement of Adapter Loss, Mismatch, and Efficiency Using the Dual Six-Port  
NBSIR 88-3095  
July 1988

**HOER, C. A.**

An Equivalent Circuit for Imperfect Transmission Line Connectors  
Dig., Conf. on Prec. Electromagn. Meas., 7-10 June 1988, Tsukuba Science City, Japan,  
pp. 264-265  
June 1988

**HOLT, D. R.**

Determination of Scattering Parameters from Precision Coaxial Air-Line Standards  
Dig., Conf. on Prec. Electromagn. Meas., 7-10 June 1988, Tsukuba Science City, Japan, p. 263  
June 1988

**ADAIR, R. T.; RUSSELL, D. H.**

A Calibration Service for 30 MHz Attenuation and Phase Shift  
NBS SP 250-32  
April 1988

**LARSEN, N. T.**

Microwave Power Standards at the National Bureau of Standards  
1987 NCSL Workshop and Symp., 12-16 July 1987, Denver, CO, pp. 34-1 through 34-7  
July 1987

**ENGEN, G. F.**

On-Line Accuracy Assessment for the Dual Six-Port ANA: Background and Theory  
IEEE Trans. Instrum. Meas., Vol. IM-36, No. 2, pp. 501-506  
June 1987

**HOER, C. A.**

Some Questions and Answers Concerning Air Lines as Impedance Standards  
Dig., 29th Auto. RF Tech. Group Conf., 12-13 June 1987, Las Vegas, NV, pp. 161-173  
June 1987

**HOER, C. A.**

On-Line Accuracy Assessment for the Dual Six-Port ANA; Treatment of Systematic Errors  
IEEE Trans. Instrum. Meas., Vol. IM-36, No. 2, pp. 514-519  
June 1987



**JUDISH, R. M.; ENGEN, G. F.**

On-Line Accuracy Assessment for the Dual Six-Port ANA: Statistical Methods for Random Errors  
IEEE Trans. Instrum. Meas., Vol. IM-36, No. 2, pp. 507-513  
June 1987

**JUROSHEK, J. R.**

On-Line Accuracy Assessment for the Dual Six-Port ANA: Experimental Results  
IEEE Trans. Instrum. Meas., Vol. IM-36, No. 2, pp. 520-523  
June 1987

**JUROSHEK, J. R.**

A Study of Measurement of Connector Repeatability Using Highly Reflecting Loads  
IEEE Trans. Microwave Theory Tech., Vol. MTT-35, No. 4, pp. 457-460  
April 1987

**ADAIR, R. T.; REEVE, G. R.; GATTERER, L. E.**

The Expanding Need for Microwave and Millimeter Wave Calibration Services  
NCSL Newsletter, Vol. 27, No. 1, pp. 21-31  
January 1987

**SAULSBERY, L. F.; ADAIR, R. T.**

ANA Measurement Results on the Auto. RF Tech. Group Traveling Experiment  
Conf. Dig., 28th Auto. RF Tech. Group Conf., 4-5 December 1986, St. Petersburg Beach, FL,  
pp. 65-78  
January 1987

**HOER, C. A.**

Multiport Network Analyzers  
McGraw-Hill Yearbook of Science and Technol., pp. 289-292  
1986

**CLAGUE, F. R.; LARSEN, N. T.**

A Transient Response Error in Microwave Power Meters Using Thermistor Detectors  
Dig., 28th Auto. RF Tech. Group Conf., 4-5 December 1986, St. Petersburg Beach, FL,  
pp. 79-89  
December 1986

**ENGEN, G. F.**

On-Line Accuracy Assessment for the Dual Six-Port ANA: Background and Theory  
Dig., 1986 Conf. on Prec. Electromagn. Meas., 23-27 June 1986, NBS/Gaithersburg, MD, p. 236  
June 1986

**ENGEN, G. F.**

In Search of a More Realistic Accuracy Statement for Microwave Metrology  
Dig., 27th Auto. RF Techniques Group, 5-6 June 1986, Baltimore, MD, pp. 181-183  
June 1986

**HOER, C. A.; ENGEN, G. F.**

Calibrating a Dual Six-Port or Four-Port for Measuring Two-Ports with Any Connectors  
Dig., 1986 IEEE Microwave Theory Tech. Symp., 2-4 June 1986, Baltimore, MD, pp. 665-668  
June 1986



**HOER, C. A.**

On-Line Accuracy Assessment for the Dual Six-Port ANA; Treatment of Systematic Errors  
Dig., 1986 Conf. on Prec. Electromagn. Meas., 23-27 June 1986, NBS, Gaithersburg, MD,  
pp. 238-239  
June 1986

**HOER, C. A.; ENGEN, G. F.**

On-Line Accuracy Assessment for the Dual Six-Port ANA: Extension to Non-Mating Connectors  
Dig., 1986 Conf. on Prec. Electromagn. Meas., 23-27 June 1986, NBS, Gaithersburg, MD  
pp. 241-242  
June 1986

**JUDISH, R. M.**

On-Line Accuracy Assessment for the Dual Six-Port ANA: Statistical Methods for Random Errors  
Dig., 1986 Electromagn. Meas., 23-27 June 1986, NBS, Gaithersburg, MD, p. 237  
June 1986

**JUROSHEK, J. R.**

On-Line Accuracy Assessment for the Dual Six-Port ANA: Experimental Results  
Dig., 1986 Conf. on Prec. Electromagn. Meas., 23-27 June 1986, NBS, Gaithersburg, MD,  
p. 240  
June 1986

**ADAIR, R. T.; REEVE, G. R.; GATTERER, L. E.**

Millimeter Wave Standards: An Emerging Need  
Proc., IEEE Instrum. and Meas. Technol. Conf., 25-27 March 1986, Boulder, CO, Vol. IM-35,  
No. 4, pp. 376-382  
March 1986

**GINLEY, R. A.; ALLRED, C. M.**

1.25 MHz Attenuation Measurement System  
Proc., IEEE Instrum. and Meas. Technol. Conf., 25-27 March 1986, Boulder, CO, Vol. IM-35,  
No. 4, pp. 463-466  
March 1986

**MAJOR, J. R.; LIVINGSTON, E. M.; ADAIR, R. T.**

Automatic Frequency Response of Frequency Modulated Generators Using the Bessel Null Method  
NBS TN 1093  
March 1986

**JUDISH, R. M.**

Quality Control of Measurements—Measurement Assurance  
Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 74, No. 1, pp. 23-25  
January 1986

**SLADEK, M. J.; JESCH, R. L.**

Standardization of Coaxial Connections in the IEC  
Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, pp. 14-18  
January 1986

**HOLT, D. R.; HOER, C. A.**

Estimation of True Power Ratios in Six-port Network Analyzers Using Diode Detectors  
IEEE Trans. Instrum. Meas., Vol. IM-34, No. 4, pp. 558-563  
December 1985

**WEIDMAN, M. P.**

Finline Diode Six-Port: Fundamentals and Design Information  
NBS TN 1090  
December 1985

**SEQUEIRA, H. B.; YATES, B. C.**

Approach for Evaluating Effects of Wall Losses on Quarter-Wave Losses on Quarter-Wave Short-Circuit Impedance Standards  
IEEE Trans. Microwave Theory Tech., Vol. MTT-33, No. 11, pp. 1106-1109  
November 1985

**JUROSHEK, J. R.; HOER, C. A.**

A Technique for Extending the Dynamic Range of the Dual Six-Port Network Analyzer  
IEEE Trans. Microwave Theory Tech., Vol. MTT-33, No. 6, pp. 453-459  
June 1985

**MAJOR, J. R.; LIVINGSTON, E. M.; ADAIR, R. T.**

Automatic Frequency Response of Frequency Modulated Generators Using the Bessel Null Method  
Proc., 1985 Test and Measurement World Expo, 14-16 May 1985, San Jose, CA, pp. 78-100  
May 1985

**HOLT, D. R.; HOER, C. A.**

Estimation of True Power Ratios in Six-port Network Analyzers Using Diode Detectors  
Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March 1985, Tampa, FL, pp. 140-141  
March 1985

**REEVE, G. R.; MILLER, C. K. S.**

Current NBS Metrology Capabilities and Limitations at Millimeter Wave Frequencies  
Proc., 1985 Meas. Science Conf., 17-18 January 1985, Santa Clara, CA, pp. 296-314  
January 1985

**MAJOR, J. R.; LIVINGSTON, E. M.; ADAIR, R. T.**

Automatic Frequency Response of Frequency Modulated Generators Using the Bessel Null Method  
Dig., 24th Auto. RF Tech. Group Conf., 5-6 December 1984, Columbia, MD, pp. 131-153  
December 1984

**JUDISH, R. M.; JONES, R. N.**

A Generalized Method for the Calibration of Four-Terminal-Pair Type Digital Impedance Meters  
NBSIR 84-3016  
August 1984

**JUROSHEK, J. R.; HOER, C. A.**

A High-Power Automatic Network Analyzer for Measuring the RF Power Absorbed by Biological Samples in a TEM Cell  
IEEE Trans. Microwave Theory Tech., Vol. MTT-32, No. 8, pp. 818-824  
August 1984

**JUROSHEK, J. R.; HOER, C. A.**

A Dual Six-Port Network Analyzer Using Diode Detectors  
IEEE Trans. Microwave Theory Tech., Vol. MTT-32, No. 1, pp. 78-82  
January 1984

**KAMPER, R. A.; HOER, C. A.**

Millimeter Wave Standards at the National Bureau of Standards (NBS)  
Proc., The Intl. Soc. for Optical Engineering (SPIE), 23-24 August 1983, San Diego, CA,  
Vol. 423, pp. 144-146  
August 1983

**ENGEN, G. F.**

Redundancy: A Monitor of Six-Port Performance  
Dig., IEEE 1983 Colloquium on Advances in S-Parameter Measurement at Microwave Lengths,  
23 May 1983, Savoy Place, London, England, No. 1983/53, pp. 4-1 through 4-2  
May 1983

**HOER, C. A.**

Choosing Line Lengths for Calibrating Network Analyzers  
IEEE, Trans. Microwave Theory Tech., Vol. MTT-31, No. 2, pp. 76-78  
January 1983

**KAMPER, R. A.**

Current Trends in NBS Calibration Services  
NCSL Newsletter, Vol. 22, No. 1, pp. 38-39  
March 1982

**EBBESSEN, H.; ENGEN, G. F.**

Singularities in Calibration of Six-Port Network Analyzers  
Dig., 1981 IEEE MTT-S Intl. Microwave Symp., p. 149  
1981

**HOER, C. A.**

A High Power Dual Six-Port Automatic Network Analyzer Used in Determining Biological Effects of RF  
and Microwave Radiation  
IEEE Trans. Microwave Theory Tech., Vol. MTT-29, pp. 157-159  
December 1981

**WEIDMAN, M. P.**

WR-10 Single Six-Port Measurement System  
NBSIR 81-1650  
September 1981

**WEIDMAN, M. P.; HUDSON, P. A.**

WR-10 Millimeter Wave Microcalorimeter  
NBS TN 1044  
June 1981

**ENGEN, G. F.**

A Least Squares Solution for Use in Six-Port Measurement Technique  
IEEE Trans. Microwave Theory Tech., Vol. MTT-28, No. 12, pp. 1473-1477  
December 1980

**JONES, R. N.**

Evaluation of Three-Terminal and Four-Terminal Pair Capacitors at High Frequencies  
NBS TN 1024  
September 1980

**HILL, D. A.; WAIT, J. R.**

Electromagnetic Theory of the Loosely Braided Coaxial Cable: Part II - Numerical Results  
IEEE Trans. Microwave Theory Tech., Vol. MTT-28, No. 4, pp. 326-331  
April 1980

**HILL, D. A.; WAIT, J. R.**

Propagation Along a Coaxial Cable with a Helical Shield  
IEEE Trans. Microwave Theory Tech., Vol. MTT-28, No. 2, pp. 84-89  
February 1980

**ENGEN, G. F.; HOER, C. A.**

Through-Load-Delay: An Improved Technique for Calibrating the Dual Six-Port Automatic Network Analyzer  
Dig., Intl. Microwave Symp., Orlando, FL, p. 53  
1979

**REEVE, G. R.; ARTHUR, M. G.**

A Standard for RF Modulation Factors  
NBS TN 1016  
September 1979

**HOER, C. A.**

Performance of a Dual Six-Port Automatic Network Analyzer  
Proc., IEEE MTT-S 1979, Intl. Microwave Symp.: The World of Microwaves, 3 April-2 May  
1979, Orlando, FL, IEEE Cat. No. 79CHI439-9 MTT-S  
April 1979

**JONES, R. N.**

A Comparison of Centrifuge and Freezing Calorimeter Methods for Measuring Free Water in Snow  
NBSIR 79-1604  
April 1979

**HOER, C. A.**

Calibrating a Six-Port Reflectometer with Four Impedance Standards  
NBS TN 1012  
March 1979

**ENGEN, G. F.; HOER, C. A.; SPECIALE, R. A.**

The Application of "Through-Short-Delay" to the Calibration of the Dual Six-port  
IEEE Intl. Microwave Symp. Dig., pp. 184-185  
1978

**KOMAREK, E. L.**

Advantages of the Six-port Reflectometer for RF/Microwave Power Measurement in Operational Systems  
Government Micro-Circuit Applications Conf. Dig.  
1978

**DRIVER, L. D.; RIES, F. X.; REBULDELA, G.**

NBS RF Voltage Comparator  
NBSIR 78-871  
December 1978

**ENGEN, G. F.**

Calibrating the Six-Port Reflectometer by Means of Sliding Terminations  
IEEE Trans. Microwave Theory Tech., Vol. MTT-26, No. 12, pp. 951-957  
December 1978

**KAMPER, R. A.**

Status of RF and Microwave Calibration Services at NBS  
Natl. Conf. of Standards Laboratories Newsletter, Vol. 18, No. 3, p. 40  
December 1978

**HOER, C. A.**

Calibrating Two Six-Port Reflectometers with Only One Impedance Standard  
NBS TN 1004  
June 1978

**HOER, C. A.**

Calibrating Two Six-Port Reflectometers With an Unknown Length of Precision Transmission Line  
Proc., 1978 IEEE MTT-S Intl. Microwave Symp., 27-29 June 1978, Ottawa, Canada,  
pp. 176-178  
June 1978

**ENGEN, G. F.**

The Six-Port Measurement Technique: A Status Report  
Microwave J., Vol. 21, pp. 18, 21-22, 24, 84, 87, 89  
May 1978

**ENGEN, G. F.**

Advances in Microwave Measurement Science  
Proc., IEEE, Vol. 66, pp. 374-384  
April 1978

**ENGEN, G. F.**

Instrumentation: Six Ports Simplify Network  
Microwave Syst. News, pp. 54-55  
January 1978

**ENGEN, G. F.**

An Improved Circuit for Implementing the Six-Port Technique of Microwave Measurements  
IEEE Trans. Microwave Theory Tech., Vol. MTT-25, No. 12, pp. 1080-1083  
December 1977

**HOER, C. A.**

A Network Analyzer Incorporating Two 6-Port Reflectometers  
IEEE Trans. Microwave Theory Tech., Vol. MIT-25, No. 12, pp. 1070-1074  
December 1977

**JESCH, R. L.**

Evaluation of Low-Loss/Low-Reflection Two-Port Devices or Adapters by Automated Measurement  
Techniques  
NBSIR 78-870  
December 1977

**KOMAREK, E. L.**

Performance Characteristics of an Automated Broad-Band Bolometer Unit Calibration System  
IEEE Trans. Microwave Theory, Vol. MTT-25, No. 12, pp. 1122-1127  
December 1977

**WEIDMAN, M. P.**

A Semi-Automated Six-Port for Measuring Millimeter Wave Power and Complex Reflection Coefficient  
IEEE Trans. Microwave Theory Technol., Vol. MTT-25, No. 12, pp. 1083-1085  
December 1977

**LARSEN, N. T.**

NBS Type IV RF Power Meter Operation and Maintenance  
NBSIR 77-866  
October 1977

**ENGEN, G. F.**

Design Considerations for Automatic Network Analyzers Based on the Six-Port Concept  
Proc., IEE Euromas 1977 Conf., 1-9 September 1977, Sussex, England; London, England,  
pp. 110-111  
September 1977

**ENGEN, G. F.**

An Improved Circuit for Implementing the Six-Port Technique of Microwave Measurements  
1977 IEEE-MTT-S Intl. Microwave Symp., 21-23 June 1977, San Diego, CA, pp. 53-55  
June 1977

**ENGEN, G. F.**

The Six-Port Reflectometer: An Alternative Network Analyzer  
Proc., 1977 IEEE-MTT-S Intl. Microwave Symp., 21-23 June 1977, San Diego, CA, pp. 44-46  
June 1977

**HOER, C. A.**

A Microwave Network Analyzer Using Two 6-Port Reflectometers;  
Proc., 1977 IEEE-MTT-S Intl. Microwave Symp., 21-23 June 1977, San Diego, CA, pp. 47-49  
June 1977

**KAMPER, R. A.**

The National Electromagnetic Measurement System  
NBSIR 75-936  
June 1977

**KOMAREK, E. L.**

An Application of the Six-Port Junction to Precision Measurement of Microwave One-Port Parameters  
Proc., 1977 IEEE-MTT-S Intl. Microwave Symp., 21-23 June 1977, San Diego, CA, pp. 56-57  
June 1977

**WEIDMAN, M. P.**

A Semi-Automated Six-Port for Measuring Millimeter Wave Power and Complex Reflection Coefficient  
Proc., 1977 IEEE-MTT-S Intl. Microwave Symp., 21-23 June 1977, San Diego, CA, pp. 58-60  
June 1977

**ENGEN, G. F.**

Determination of Microwave Phase and Amplitude from Power Measurements  
IEEE Trans. Instrum. Meas., Vol. IM-25, pp. 414-418  
December 1976



- ESTIN, A. J.**  
Scattering Parameters of SMA Coaxial Connectors  
IEEE Trans. Instrum. Meas., Vol. IM-25, No. 4, pp. 329-334  
December 1976
- JESCH, R. L.**  
Repeatability of SMA Coaxial Connectors  
IEEE Trans. Instrum. Meas., Vol. IM-25, No. 4, pp. 314-320  
December 1976
- LARSEN, N. T.**  
A New Self-Balancing DC-Substitution RF Power Meter  
IEEE Trans. Instrum. Meas., Vol. IM-25, No. 4, pp. 343-347  
December 1976
- RIES, F. X.**  
An International Intercomparison of Voltage Standards at 1 GHz in Coaxial Transmission Line  
IEEE Trans. Instrum. Meas., Vol. IM-25, No. 3, pp. 254-255  
September 1976
- ROE, K. C.; HOER, C. A.**  
A Microwave Vector Voltmeter System  
NBSIR 76-844  
August 1976
- SIMPSON, P. A.; HUDSON, P. A.**  
Implementation of the Notch Technique as an RF Peak Pulse Power Standard  
NBS TN 682  
July 1976
- ENGEN, G. F.**  
Measurement of Complex Microwave Circuit Parameters Using Only Power Detectors  
Proc., 1976 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1976, Boulder, CO, p. 171  
June 1976
- HOER, C. A.; ROE, K. C.; ALLRED, C. M.**  
Measuring and Minimizing Diode Detector Nonlinearity  
Proc., 1976 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1976, Boulder, CO, pp. 108-109  
June 1976
- KOMAREK, E. L.**  
An Automated Broadband System for Measurement of One-Port Microwave Parameters  
Proc., 1976 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1976, Boulder, CO, pp. 167-170  
June 1976
- LARSEN, N. T.**  
A New Self-Balancing DC-Substitution RF Power Meter  
Proc., 1976 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1976, Boulder, CO, pp. 203-205  
June 1976
- LITTLE, W. E.; WAKEFIELD, J. P.; HEIM, L.; ALLRED, C. M.; ZAPF, T. L.**  
An NBS Developed Automatic Network Analyzer  
Proc., 1976 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1976, Boulder, CO, pp. 382-385  
June 1976

**LITTLE, W. E.; YATES, B. C.**

Reflection Coefficient Standards for Automated Network Analyzers

Proc., 1976 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1976, Boulder, CO, pp. 128-129  
June 1976

**ALLRED, C. M.; MANNEY, C. H.**

The Calibration and Use of Directional Couplers Without Standards

IEEE Trans. Instrum. Meas., Vol. IM-25, No. 1, pp. 84-89  
March 1976

**HUDSON, P. A.**

The National Measurement System for Medical Ultrasonics

NBSIR 75-937  
February 1976

**ADAIR, R. T.**

A Precision 30 MHz Waveguide-Below-Cutoff Attenuator with an Absolute Electronic Readout, NBS Model XII

NBSIR 76-833  
January 1976

**ENGEN, G. F.**

Automated Calibration of Directional-Coupler-Bolometer-Mount Assemblies

IEEE Trans. Microwave Theory Tech., Vol. MTT-23, No. 12, pp. 984-990  
December 1975

**HOER, C. A.; ROE, K. C.**

Using an Arbitrary Six-Port Junction to Measure Complex Voltage Ratios

IEEE Trans. Microwave Theory Tech., Vol. MTT-23, No. 12, pp. 978-984  
December 1975

**HOER, C. A.**

Using Six-Port and Eight-Port Junctions to Measure Active and Passive Circuit Parameters

NBS TN 673  
September 1975

**KANDA, M.; MAY, W. G.**

A Millimeter Wave Reflection Beam Isolator

IEEE Trans. Microwave Theory Tech., Vol. MTT-23, No. 6, pp. 506-508  
June 1975

**ENGEN, G. F.**

Automated Calibration of Directional-Coupler-Bolometer-Mount Assemblies

Proc., 1975 IEEE Microwave Theory and Technique Symp. Int., 12-14 May 1975, Palo Alto, CA, pp. 98-99  
May 1975

**JESCH, R. L.; HOER, C. A.**

Characterization of a High Frequency Probe Assembly for Integrated Circuit Measurements

NBS TN 663  
January 1975

**ENGEN, G. F.**

Calibration Technique for Automated Network Analyzers with Application to Adapter Evaluation  
IEEE Trans. Microwave Theory Tech. Part II, 1974 Symp. Issue, Vol. MTT-22, pp. 1255-1260  
December 1974

**KOMAREK, E. L.; TRYON, P. V.**

An Application of the Power Equation Concept and Automation Techniques to Precision Bolometer Unit Calibration  
IEEE Trans. Microwave Theory Tech. Part II, 1974 Symp. Issue, Vol. MTT-22, pp. 1260-1267  
December 1974

**ENGEN, G. F.**

An Alternative Calibration Technique for Automated Network Analyzers with Application to Adapter Evaluation  
Proc., 1974 IEEE S-MTT Intl. Microwave Symp., 12-14 June 1974, Atlanta, GA, pp. 261-262  
June 1974

**HUDSON, P. A.; MELQUIST, D. G.; ONDREJKA, A. R.; WERNER, P. E.**

Completion of the Program to Evaluate/Improve Instrumentation and Test Methods for Electroexplosive Device Safety Qualification  
NBSIR 74-379  
June 1974

**JONES, R. N.**

The Measurement of Lumped Parameter Impedance  
NBS MN 141  
June 1974

**KOMAREK, E. L.**

An Application of the Power Equation Concept and Automation Techniques to Precision Bolometer Unit Calibration  
Proc., 1974 IEEE S-MTT Intl. Microwave Symp., 12-14 June 1974, Atlanta, GA, pp. 263-265  
June 1974

**SIMPSON, P. A.**

Broadband Pulsed/CW Calibration Signal Standard for Field Intensity Meter (FIM) Receivers  
NBSIR 74-371  
June 1974

**ENGEN, G. F.**

Comments on Practical Analysis of Reflectometers and Power Equation Concepts  
IEEE Trans. Instrum. Meas., Vol. IM-23, pp. 104-105  
March 1974

**LARSON, W.; CAMPBELL, E.**

Microwave Attenuation Measurement System (Series Substitution)  
NBS TN 647  
February 1974

**ENGEN, G. F.**

Calibration of an Arbitrary Six-Port Junction for Measurement of Active and Passive Circuit Parameters  
IEEE Trans. Instrum. Meas., Vol. IM-22, pp. 295-299  
December 1973

**WEIDMAN, M. P.; ENGEN, G. F.**

Application of a Non-Ideal Sliding Short to Two-Port Loss Measurement  
NBS TN 644  
October 1973

**YATES, B. C.; COUNAS, G. J.**

Summary of WR15 Flange Evaluation at 60 GHz  
NBS TN 642  
October 1973

**ENGEN, G. F.**

Mismatch Considerations in Evaluating Amplifier Noise Performance  
IEEE Trans. Instrum. Meas., Vol. IM-22, pp. 274-278  
September 1973

**ALLRED, C. M.; MANNEY, C. H.**

Self-Calibration of Complex Ratio Measuring System  
Proc., 1973 Intl. Conf. Meas. and Instrum., 17-23 June 1973, Dresden, Germany, Acta Imeko,  
Vol. 1, pp. 157-166  
June 1973

**HOER, C. A.; ENGEN, G. F.**

Analysis of a Six-Port Junction for Measuring, V, I, A, B, Z, Gamma, and Phase  
Proc., 1973 Intl. Conf. Meas. and Instrum., 17-23 June 1973, Dresden, Germany, Acta Imeko,  
Vol. 1, pp. 213-222  
June 1973

**ENGEN, G. F.**

Theory of UHF and Microwave Measurements Using the Power Equation Concept  
NBS TN 637  
April 1973

**NAHMAN, N. S.**

A Note on the Transition (Rise) Time Versus Line Length in Coaxial Cables  
IEEE Trans. Circuit Theory, Vol. CT-20, pp. 165-167  
March 1973

**ENGEN, G. F.; HOER, C. A.**

Application of an 'Arbitrary' 6-Port Junction to Power Measurement Problems  
IEEE Trans. Instrum. Meas., Vol. IM-21, pp. 470-474  
November 1972

**HOER, C. A.**

The Six-Port Coupler: A New Approach to Measuring Voltage, Current, Power, Impedance, and Phase  
IEEE Trans. Instrum. Meas., Vol. IM-21, pp. 466-470  
November 1972

**FOOTE, W. J.; HUNTER, R. D.**

Improved Gearing for Rotary-Vane Attenuators  
Rev. Scientific Instrum., Vol. 43, No. 7, pp. 1042-1043  
July 1972

**YATES, B. C.; LARSON, W.**

Millimeter Attenuation and Reflection Coefficient Measurement System  
NBS TN 619  
July 1972

**ENGEN, G. F.; HOER, C. A.**

Application of an 'Arbitrary' 6-Port Junction to Power Measurement Problems  
Proc., 1972 Conf. on Prec. Electromagn. Meas., 26-29 June 1972, Boulder, CO, pp. 100-101  
June 1972

**ESTIN, A. J.**

A Calculable Microwave Attenuation Standard: The High Q Cavity  
Proc., 1972 Conf. on Prec. Electromagn. Meas., 26-29 June 1972, Boulder, CO, pp. 100-101  
June 1972

**HOER, C. A.**

The Six-Port Coupler; A New Approach to Measuring V, I, P, Z, and Theta  
Dig., 1972 Conf. on Prec. Electromagn. Meas., 26-29 June 1972, Boulder, CO, pp. 6-29  
June 1972

**HUDSON, P. A.; SAULSBERY, L. F.**

An Adjustable-Slot-Length UHF Coaxial Coupler with Decade Bandwidth  
IEEE Trans. Microwave Theory Tech., Vol. MTT-19, pp. 781-783  
September 1971

**ENGEN, G. F.; HUDSON, P. A.**

International Intercomparison of Power Standards at 3 GHz  
IEEE Trans. Microwave Theory Tech., Vol. MTT-19, pp. 411-413  
April 1971

**COOK, C. C.; ALLRED, C. M.**

An Excitation System for Piston Attenuators  
IEEE Trans. Instrum. Meas., Vol. IM-20, pp. 10-16  
February 1971

**ENGEN, G. F.**

Theorem Giving Limits for  $S_{22}$  When  $S_{11}$  and the Two-Port Efficiency are Known  
IEEE Trans. Instrum. Meas., Vol. IM-20, p. 78  
February 1971

**ENGEN, G. F.**

Power Equations: A New Concept in the Description and Evaluation of Microwave Systems  
IEEE Trans. Instrum. Meas., Vol. IM-20, pp. 49-57  
February 1971

**ENGEN, G. F.**

A New Method of Characterizing Amplifier Noise Performance  
IEEE Trans. Instrum. Meas., Vol. IM-19, pp. 344-349  
November 1970

**HOER, C. A.; AGY, D. L.**

Broad-Band Resistive-Divider-Type Directional Coupler  
IEEE Trans. Instrum. Meas., Vol. IM-19, pp. 336-343  
November 1970

**CRAWFORD, M. L.; SMART, G. R.**

New Coaxial Thermistor Mounts for Use as Precision Transfer Standards  
Proc., 1970 Instrument Soc. of America Conf., 26-29 October 1970, Philadelphia, PA, N708-70,  
pp. 1-6  
October 1970

**SIMPSON, P. A.; ONDREJKA, A. R.**

Improvements to the NBS RF Peak-Pulse Power Standard  
1970 Instrument Soc. of America Silver Jubilee Intl. Conf. and Exhibit, October 1970,  
Philadelphia, PA, Paper 709-70, pp. 1-7  
October 1970

**WEIDMAN, M. P.; CAMPBELL, E.**

A Method for Designing Multi-Screw Waveguide Tuners  
NBS TN 393  
October 1970

**AGY, D. L.; NELSON, R. E.**

An Immittance Transcomparator  
1970 Annual Precision Measurement Association Metrology Conf. (3rd), 17-18 June 1970,  
Gaithersburg, MD, Vol. 1, pp. 147-154  
June 1970

**SCOTT, W. W., Jr.**

A New Coaxial RF-DC Ammeter  
Proc., 1970 Conf. on Prec. Electromagn. Meas., 2-5 June 1970, Boulder, CO, Spec. Issue Conf.  
on Prec. Electromagn. Meas., p. 13  
June 1970

**JONES, R. N.; HUNTLEY, L. E.**

A Precision, High Frequency Calibration Facility for Coaxial Capacitance Standards  
NBS TN 386  
March 1970

**LAWTON, R. A.; ALLRED, C. M.; HUDSON, P. A.**

A Wide Range CW Power Measurement Technique  
IEEE Trans. Instrum. Meas., Vol. IM-19, pp. 28-34  
February 1970

**ENGEN, G. F.**

An Introduction to the Description and Evaluation of Microwave Systems Using Terminal Invariant  
Parameters  
NBS MN 112  
October 1969

**BEATTY, R. W.**

Impedance Measurements and Standards for Uniconductor Waveguide  
Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 55, No. 6, pp. 933-941  
June 1967

**ELLERBRUCH, D. A.**

UHF and Microwave Phase-Shift Measurements  
Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 55, No. 6, pp. 960-969  
June 1967



**HUDSON, P. A.**

Measurement of RF Peak Pulse Power

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 55, No. 6, pp. 851-855  
June 1967

**HUNTLEY, L. E.; JONES, R. N.**

Lumped Parameter Impedance Measurements

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 55, No. 6, pp. 900-911  
June 1967

**JESCH, R. L.**

Impedance Measurements in Coaxial Waveguide Systems

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 55, No. 6, pp. 912-923  
June 1967

**KERNS, D. M.**

Definitions of  $v$ ,  $i$ ,  $Z$ ,  $Y$ ,  $a$ ,  $b$ ,  $\Gamma$ , and  $S$

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 55, No. 6, pp. 892-900  
June 1967

**ONDREJKA, A. R.**

Peak Pulse Voltage Measurement (Baseband Pulse)

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 55, No. 6, pp. 882-885  
June 1967

**RUMFELT, A. Y.; ELWELL, L. B.**

Radio Frequency Power Measurements

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 55, No. 6, pp. 837-850  
June 1967

**RUSSELL, D. H.; LARSON, W.**

RF Attenuation

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 55, No. 6, pp. 942-959  
June 1967

**SCOTT, W. W., Jr.; FREDERICK, N. V.**

The Measurement of Current at Radio Frequencies

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 55, No. 6, pp. 886-891  
June 1967

**SELBY, M. C.**

Voltage Measurement at High and Microwave Frequencies in Coaxial Systems

Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, Vol. 55, No. 6, pp. 877-882  
June 1967

## NOISE

**DUNLEAVY, L.; RANDA, J.; WALKER, D. K.; BILLINGER, R. L.; RICE, J.**

Characterization and Applications of On-Wafer Diode Noise Sources

IEEE Trans. Microwave Theory Tech., Vol. 46, No. 12, pp. 2620-2628

December 1998

**RANDA, J.; ACHKAR, J.; BUCHHOLZ, F. -IM.; COLARD, T.; SCHUBERT, D.; SINCLAIR, M.; RICE, J. L.; WILLIAMS, G.**

International Comparison of Noise-Temperature Measurements at 2, 4, and 12 GHz

Proc., Conf. Prec. Electromagn. Meas., 6-10 July 1998, Washington, DC, pp. 53-61

July 1998

**RANDA, J.; WALKER, D. K.; DUNLEAVY, L.; BILLINGER, R. L.; RICE, J. L.**

Characterization of On-Wafer Diode Noise Sources

Dig., 51st ARFTG Conf., 7-12 June 1998, Baltimore, MD, pp. 53-61

June 1998

**RANDA, J.**

Uncertainties in NIST Noise-Temperature Measurements

NIST TN 1502

March 1998

**WAIT, D. F.; RANDA, J.**

Amplifier Noise Measurements at NIST

IEEE Trans. Instrum. Meas., Vol. 46, No. 2, pp. 482-485

April 1997

**RANDA, J.**

Noise Temperature Measurements on Wafer

NIST TN 1390

March 1997

**WAIT, D. F.**

Radiometer Equation for Noise Comparison Radiometers

IEEE Trans. Instrum. Meas., Vol. 44, No. 2, pp. 336-339

April 1995

**PUCIC, S. P.**

Uncertainties of the NIST Coaxial Noise Calibration System

Dig., 1994 Conf. on Prec. Electromagn. Meas., 27 June-1 July 1994, Boulder, CO, pp. 254-255

June 1994

**WAIT, D. F.**

Relative Accuracy of Isolated and Unisolated Noise Comparison Radiometers

Dig., 1994 Conf. on Prec. Electromagn. Meas., 27 June-1 July 1994, Boulder, CO, pp. 256-257

June 1994

**PUCIC, S. P.**

Derivation of the System Equation for Null-Balanced Total-Power Radiometer System NCS1

NIST JRES, Vol. 99, No. 1, pp. 55-63

January-February 1994

**PUCIC, S. P.**

A Null-Balanced Total-Power Radiometer System NCS1  
NIST JRES, Vol. 99, No. 1, pp. 45-53  
January-February 1994

**PUCIC, S. P.**

Evaluation of Uncertainties of the Null-Balanced Total-Power Radiometer System NCS1  
NIST JRES, Vol. 99, No. 1, pp. 65-75  
January-February 1994

**PUCIC, S. P.**

Diffusion of Copper into Gold Plating  
Record, IEEE Instrum. Meas. Technol. Conf., 18-20 May 1993, Irvine, CA, pp. 114-117  
May 1993

**ENGEN, G. F.; WAIT, D. F.**

A "Terminal Invariant" Description of Amplifier Noise  
Dig., 1992 Conf. on Prec. Electromagn. Meas., 9-12 June 1992, Paris, France, pp. 250-251  
June 1992

**PERERA, S.**

"Broadband Mismatch Error" in Noise Measurement Systems  
Dig., 1992 Conf. on Prec. Electromagn. Meas., 9-12 June 1992, Paris, France, pp. 256-257  
June 1992

**WAIT, D. F.**

Measuring Accuracies for Various Techniques for Measuring Amplifier Noise  
Dig., 39th Auto. RF Tech. Group Conf., 5 June 1992, Albuquerque, NM, pp. 43-52  
June 1992

**WAIT, D. F.**

A Comparison of Three Techniques for the Precision Measurement of Amplifier Noise  
Dig., 1992 Conf. on Prec. Electromagn. Meas., 9-12 June 1992, Paris, France, pp. 252-253  
June 1992

**DAYWITT, W. C.**

Exact Principal Mode Field for a Lossy Coaxial Line  
IEEE Trans. Microwave Theory Tech., Vol. MTT-39, No. 8, pp. 1313-1322  
August 1991

**WAIT, D. F.; ENGEN, G. F.**

Application of Radiometry to the Accurate Measurement of Amplifier Noise  
IEEE Trans. Instrum. Meas., Vol. IM-40, No. 2, pp. 433-437  
April 1991

**WAIT, D. F.; COUNAS, G. J.; KESSEL, W.; BUCHHOLZ, F. IM.**

PTB - NIST Bilateral Comparison of Microwave Noise Power in Coaxial Transmission Line  
IEEE Trans. Instrum. Meas., Vol. IM-40, No. 2, pp. 449-454  
April 1991

**DAYWITT, W. C.**

First Order Symmetric Modes for a Slightly Lossy Coaxial Transmission Line  
IEEE Trans. Microwave Theory Tech., Vol. MTT-38, No. 11, pp. 1644-1650  
November 1990

**WAIT, D. F.**

Comments Concerning On-Wafer Noise Parameter Measurements

Dig., 36th Auto. RF Tech. Group Conf., 29-30 November 1990, Monterey, CA, pp. 5-15  
November 1990

**DAYWITT, W. C.**

First Order Principal Mode Fields and Distributed Line Parameters for a Slightly Lossy Coaxial Transmission Line.

Dig., Conf. on Prec. Electromagn. Meas., 11-14 June 1990, Ottawa, Canada, pp. 404-405  
June 1990

**PERERA, S.**

A Simple Noise Calibration Radiometer

Dig., Conf. on Prec. Electromagn. Meas., 11-14 June 1990, Ottawa, Canada, pp. 32-33  
June 1990

**WAIT, D. F.; COUNAS, G. J.; KESSEL, W.; BUCHHOLZ, F. IM.**

PTB - NIST Bilateral Comparison of Microwave Noise Power in Coaxial Transmission Line

Dig., Conf. on Prec. Electromagn. Meas., 11-14 June 1990; Ottawa, Canada, pp. 34-35  
June 1990

**DAYWITT, W. C.; COUNAS, G. J.**

Measuring Adapter Efficiency Using a Sliding Short Circuit

IEEE Trans. Microwave Theory Tech., Vol. MTT-38, No. 3, pp. 231-237  
March 1990

**DAYWITT, W. C.**

Radiometer Equation and Analysis of systematic Errors for the NIST Automated Radiometers

NIST TN 1327  
March 1989

**WAIT, D. F.; DAYWITT, W. C.**

Intercomparison of NBS Noise Calibration Services

Dig., Conf. on Prec. Electromagn. Meas., 7-10 June 1988, Tsukuba Science City, Japan,  
pp. 209-210  
1988

**GEYER, R. G.**

Magnetostatic Measurements for Mine Detection

NISTIR 88-3098  
October 1988

**DAYWITT, W. C.**

Complex Admittance of a Lossy Coaxial Open Circuit with a Hollow Center Conductor

Intl. J. Sci. Metrol., Metrologia, Vol. 24, pp. 13-22  
1987

**DAYWITT, W. C.**

A Simple Technique for Determining Joint Losses on a Coaxial Line from Swept-Frequency Reflection Data

IEEE Trans. Instrum. Meas., Vol. IM-36, pp. 468-473  
June 1987

**DAYWITT, W. C.**

A Simple Technique for Investigating Defects in Coaxial Connectors  
IEEE Trans. Microwave Theory Tech., Vol. MTT-35, No. 4, pp. 460-464  
April 1987

**WAIT, D. F.**

The Impact of Automation on NBS Noise Temperature Measurements  
Proc., IEEE Spec. Issue Radio Meas. Methods Standards, pp. 117-120  
1986

**DAYWITT, W. C.**

A Simple Technique for Determining Joint Losses on a Coaxial Line from Swept-Frequency Reflection  
Data  
Dig., 1986 Conf. on Prec. Electromagn. Meas., 23-27 June 1986, NBS, Gaithersburg, MD, p. 40  
June 1986

**DAYWITT, W. C.**

10-60 GHz G/T Measurements Using the Sun as a Source--A Preliminary Study  
NBSIR 86-3046  
April 1986

**DAYWITT, W. C.**

Broadband Noise Source Applications  
Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March, 1985, Tampa, FL, pp. 165-166  
1985

**DAYWITT, W. C.**

A Derivation for the Noise Temperature of a Horn-type Noise Standard  
Metrologia, 21 pp. 127-133  
1985

**HALFORD, D.**

Transparent Metrology of Signal to Noise Ratios of Noisy Band-limited Digital Signals  
NBS TN 1077  
June 1985

**PERERA, S.**

Noise Temperature Measurements at the National Bureau of Standards  
Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March, 1985, Tampa, FL, pp. 159-160  
March 1985

**DAYWITT, W. C.**

An Error Analysis for the Use of Presently Available Lunar Radio Flux Data in Broadbeam  
Antenna-System Measurements  
Proc., 1984 Antenna Applications Symp., 19-21 September 1984, University of Illinois,  
Urbana-Champaign, IL, pp. 1-26  
September 1984

**DAYWITT, W. C.**

A Preliminary Investigation into Using the Sun as a Source for G/T Measurements  
NBSIR 84-3015  
August 1984

**MILLER, C. K. S.; DAYWITT, W. C.**

The Reference Noise Standards NBS WR62 and WR90  
NBSIR 84-3005  
May 1984

**MILLER, C. K. S.; DAYWITT, W. C.**

The NBS Switching Radiometers  
NBSIR 84-3004  
May 1984

**DAYWITT, W. C.**

A Coaxial Noise Standard for the 1 GHz to 12.4 GHz Frequency Range  
NBS TN 1074  
March 1984

**DAYWITT, W. C.**

An Error Analysis for the Use of Presently Available Lunar Radio Flux Data in Broadbeam  
Antenna-System Measurements  
NBS TN 1073  
February 1984

**COUNAS, G. J.**

NBS 2.0 GHz to 4.0 GHz Automated Radiometer Operation and Service Manual  
NBSIR 84-1697  
January 1984

**DAYWITT, W. C.**

Design and Error Analysis for the WR10 Thermal Noise Standard  
NBS TN 1071  
December 1983

**WAIT, D. F.; DAYWITT, W. C.**

Preliminary Examination of 20 GHz G/T Measurements of Earth Terminals  
NBSIR 83-1686  
March 1983

**WAIT, D. F.**

Precision Measurement of Antenna System Noise Using Radio Stars  
IEEE Trans. Instrum. Meas., Vol. IM-32, No. 1, pp. 110-116  
March 1983

**WAIT, D. F.**

Earth Terminal Measurement System Operations Manual (Revised)  
NBSIR 83-1679 (Restricted)  
January 1983

**WAIT, D. F.**

Precision Measurement of Antenna System Noise Using Radio Stars  
Dig., 1982 Conf. on Prec. Electromagn. Meas., 28 June-1 July 1982, Boulder, CO, p. F-17  
June 1982

**COUNAS, G. J.; BREMER, T. H.**

NBS 30/60 Megahertz Noise Measurement System Operation and Service Manual  
NBSIR 81-1656  
December 1981



**WAKEFIELD, J. P.**

Addendum to Earth Terminal Measurement System Maintenance Manual  
NBSIR 81-1641  
October 1981

**ESTIN, A. J.; DAYWITT, W. C.**

Evaluation of Signal Plus Noise Detection Error in an Envelope Detector with Logarithmic Compression  
IEEE Trans. Inf. Theory, Vol. IT-17, No. 5, pp. 663-664  
September 1981

**ESTIN, A. J.; DAYWITT, W. C.**

Evaluation of Signal Plus Noise Detection Error in an Envelope Detector with Logarithmic Compression  
NBSIR 79-1614 (Restricted)  
August 1979

**ESTIN, A. J.; DAYWITT, W. C.**

Evaluation of Signal Plus Noise Detection Error in an Envelope Detector with Logarithmic Compression  
Proc., 1978 Conf. on Prec. Electromagn. Meas., 26-29 June 1978, Ottawa, Canada  
1978

**DAYWITT, W. C.**

An Error Analysis for the Measurement of Satellite EIRP using a Calibrated Radio Star  
IEEE Trans. Instrum. Meas., Vol. IM-27, No. 3, pp. 253-258  
September 1978

**DAYWITT, W. C.**

Atmospheric Propagation Equations Used in the NBS Earth Terminal Measurement System  
NBSIR 78-883  
April 1978

**WAIT, D. F.**

Earth Terminal Measurement System Operations Manual  
NBSIR 78-879  
April 1978

**DAYWITT, W. C.**

Error Equations Used in the NBS Earth-Terminal Measurement System  
NBSIR 78-869  
December 1977

**DAYWITT, W. C.**

A Precision Earth-Terminal System for Accurate C/KT, G/T, and EIRP Measurements with a Calibrated Radio Star  
Proc., 1977 Union Radio Scientifique Internationale Intl. Symp. on Meas. in Telecommunications, 3-7 October 1977, Lannion, France, pp. 1-4  
October 1977

**KANDA, M.**

An Improved Solid State Noise Source  
IEEE Trans. Microwave Theory Tech. pp. 173-182  
December 1976

**DAYWITT, W. C.**

Error Equations Used in the NBS Precision G/T Measurement System  
NBSIR 76-842  
September 1976

**KANDA, M.**

Study of Errors in Absolute Flux Density Measurements of Cassiopeia A  
IEEE Trans. Instrum. Meas., Vol. IM-25, No. 3, pp. 173-182  
September 1976

**KANDA, M.**

An Improved Solid State Noise Source  
Proc., 1976 IEEE MTT-S Microwave Symp., 14-16 June, 1976, Cherry Hill, NJ, pp. 224-226  
June 1976

**KANDA, M.; LARSON, T. R.**

Stability of Silicon Avalanche Noise Diodes at K and Ka Bands  
Proc., 1976 Conf. on Precision Electromagn. Meas., 28 June-1 July 1976, Boulder, CO  
June 1976

**KANDA, M.**

Study of Errors in Absolute Flux Density Measurements of Cassiopeia A  
NBSIR 75-822  
October 1975

**DAYWITT, W. C.; KANDA, M.**

G/T Measurement Errors with Radio Stars  
Proc., 1975 IEEE Intl. Antenna and Propagat. Symp., 2-4 June 1975, Urbana-Champaign, IL,  
Session 20, pp. 460-463  
June 1975

**KANDA, M.; LARSON, T. R.**

A Measure for the Stability of Solid State Noise Sources  
Proc., 1975 IEEE Intl. Microwave Theory and Technique Symp., 12-14 May 1975, Palo Alto,  
CA, pp. 315-317  
May 1975

**WAIT, D. F.; KANDA, M.; DAYWITT, W. C.; MILLER, C. K. S.**

A Study of the Measurement of G/T Using Cassiopeia A  
NBSIR 74-382  
October 1974

**ARTHUR, M. G.**

The Measurement of Noise Performance Factors: A Metrology Guide  
NBS MN 142  
June 1974

**DAYWITT, W. C.**

A Reference Noise Standard for Millimeter Waves  
IEEE Trans. Microwave Theory Tech., Vol. MTT-21, No. 12, pp. 845-847  
December 1973

**ENGEN, G. F.**

Mismatch Considerations in Evaluating Amplifier Noise Performance  
IEEE Trans. Instrum. Meas., Vol. IM-22, pp. 274-278  
September 1973

**HALFORD, D.**

Comparing Frequencies  
Physics Today, Vol. 26, No. 2, p. 15  
February 1973

**BOYLE, D. R.; CLAGUE, F. R.; REEVE, G. R.; WAIT, D. F.; KANDA, M.**

An Automated Precision Noise Figure Measurement System at 60 GHz  
IEEE Trans. Instrum. Meas., Vol. IM-21, No. 4, pp. 543-549  
November 1972

**HALFORD, D.**

Infrared-Microwave Frequency Synthesis Design: Some Relevant Conceptual Noise Aspects  
Proc., 1971 Frequency Standards and Metrology Seminar, 30 August-1 September 1972,  
Quebec, Canada, pp. 431-466  
August 1972

**DAYWITT, W. C.; FOOTE, W. J.; CAMPBELL, E.**

WR15 Thermal Noise Standard  
NBS TN 615  
March 1972

**ARTHUR, M. G.**

A Precision HF-Noise Power Measurement System  
Proc., Instrum. Soc. Amer. ISA-70 Conf., October 1971  
October 1971

**ENGEN, G. F.**

A New Method of Characterizing Amplifier Noise Performance  
IEEE Trans. Instrum. Meas., Vol. IM-19, pp. 344-349  
November 1970

## REMOTE SENSING

**GANS, W. L.; GEYER, R. G.; KLEMPERER, W. K.**

Quantifying Standard Performance of Electromagnetic-Based Mine Detectors  
NISTIR 3982  
October 1991

**HILL, D. A.**

Magnetic Dipole Excitation of an Insulated Conductor of Finite Length  
IEEE Trans Geosci. Remote Sensing, Vol. GE-28, No. 3, pp. 289-294  
May 1990

**HILL, D. A.; ANDERSON, L. R.**

Propagation Along a Two-Wire Line Located at the Air-Earth Interface  
IEEE Trans. Geosci. Remote Sensing, Vol. GE-28, No. 3, pp. 400-402.  
May 1990

**HILL, D. A.**

Magnetic Dipole Excitation of a Long Conductor in a Lossy Medium  
IEEE Trans. Geosci. Remote Sensing, Vol. GE-26, No. 6, pp. 720-725  
November 1988

**HILL, D. A.**

Fields of Horizontal Currents Located Above the Earth  
IEEE Trans. Geosci. Remote Sensing, Vol. GE-26, No. 6, pp. 726-732  
November 1988

**HILL, D. A.**

Electromagnetic Wave Propagation in a Symmetrical Coal Seam  
IEEE Trans. Antennas Propagat., Vol. AP-34, No. 2, pp. 244-247  
February 1986

**HILL, D. A.**

Radio Propagation in a Coal Seam and the Inverse Problem  
Proc., 1985 Intl. Symp. on Antennas and EM Theory, 26-28 August 1985, Beijing, China,  
pp. 422-427  
August 1985

**BELSHER, D. R.; MCLAUGHLIN, R. G.; REPJAR, A. G.; BUSSEY, H. E.**

Detection of Lost Wells and Unknown Water-Filled Voids in Coal Mines through Development of an  
Experimental Microwave System  
NBSIR 84-3017  
September 1984

**HILL, D. A.**

Radio Propagation in a Coal Seam and the Inverse Problem  
NBS JRES, Vol. 89, No. 5, pp. 385-394  
September-October 1984

**CHEW, H.**

Electromagnetic Modeling of Oil Shale Retorts for Remote Sensing Purposes  
IEEE Trans. Geosci. Remote Sensing, Vol. GE-20, No. 4, pp. 510-517  
October 1982

Remote Sensing (cont.)

**ROE, K. C.; WITTMANN, R. C.**

Improved Coal Interface Detector  
NBSIR 82-1663  
May 1982

**CHEW, H.**

Modeling of Oil Shale Retorts for Electromagnetic Sensing Techniques  
NBSIR 81-1653  
November 1981

**CHANG, A. T. C.; SHIUE, J. C.; BOYNE, H. S.; ELLERBRUCH, D. A.; COUNAS, G. J.**

Preliminary Results of Passive Microwave Snow Experiment During February and March 1978  
NASA-TP-1408, Rept-7802-F22, p. 114  
1979

**BELSHER, D. R.**

Feasibility Study on the Use of a Microwave System for the Nondestructive Evaluation of Historic Adobe Structures  
NBSIR 79-1610  
July 1979

**MONTGOMERY, J. P.; CHANG, D. C.**

Electromagnetic Boundary-Value Problems Based Upon a Modification of Residue Calculus and Function Theoretic Techniques  
NBS MN 164  
June 1979

**BOYNE, H. S.; ELLERBRUCH, D. A.**

Microwave Measurements of Snow Stratigraphy and Water Equivalence  
Proc., Western Snow Conf.  
April 1979

**ELLERBRUCH, D. A.; JOHNSON, R. B.; BELSHER, D. R.; YAGHJIAN, A. D.; STEPPE, M. C.; FLEMING R. W.**

High Resolution Sensing Techniques for Slope Stability Studies  
Federal Highway Administration Report, FHWA-7-3-0001  
March 1979

**ELLERBRUCH, D. A.; JESCH, R. L.; JONES, R. N.; BUSSEY, H. E.; BOYNE, H. S.**

Electromagnetic Scattering Properties of Soils and Snow  
Proc., 1978 Intl. Symp. on Remote Sensing of Environment (12th), 20-26 April 1978, Ann Arbor, MI, Vol. 2, pp. 957-974  
April 1978

**ELLERBRUCH, D. A.; BELSHER, D. R.**

Electromagnetic Technique of Measuring Coal Layer Thickness  
IEEE Trans. Geosci. Electron., Vol. GE-16, No. 2, pp. 126-133  
April 1978

**BEREUTER, W. A.; CHANG, D. C.**

Electromagnetic Remote Sensing of Inhomogeneous Media  
NBSIR 76-851  
January 1977

Remote Sensing (cont.)

**ELLERBRUCH, D. A.; BELSHER, D. R.**

FM-CW Electromagnetic Technique of Measuring Coal Layer Thickness  
NBSIR 76-840  
May 1976

**ELLERBRUCH, D. A.; ADAMS, J. W.**

Microwave Measurement of Coal Layer Thickness  
NBSIR 74-387  
September 1974

**ELLERBRUCH, D. A.**

Electromagnetic Attenuation Properties of Clay and Gravel Soils  
NBSIR 74-381  
August 1974

**STOLTENBERG, R. E.**

Detection of Human Intruders by Low Frequency Sonic Interferometric Techniques  
NBSIR 74-364  
May 1974

**CRUZ, J. E.; ROGERS, E. H.; HIESTER, A. E.**

Continuous Liquid Level Measurements with Time-Domain Reflectometry  
Adv. Cryo. Eng., Vol. 18, pp. 323-327 (Paper H-4)  
1973

**COLLIER, R. S.; ELLERBRUCH, D. A.**

RF (Radiofrequency) Total Mass Gauging in Large Storage Containers: Empty Tank Modes  
NBSIR 73-346  
October 1973

**COLLIER, R. S.; ELLERBRUCH, D. A.; CRUZ, J. E.; STOKES, R. W.; LUFT, P. E.**

Mass Quantity Gauging by RF Mode Analysis  
NBSIR 73-318  
June 1973



## TIME DOMAIN

**JOHNK, R. T.; ONDREJKA, A. R.**

The Extraction of Electrical Material Properties Using a Free-Space Time-Domain RF Absorber Reflectivity Measurement System  
Proc., IEEE EMC Symp., 18-22 August 1997, Austin, TX, pp. 537-542  
August 1997

**JARGON, J. A.; JANEZIC, M. D.**

Measuring Complex Permittivity and Permeability Using Time Domain Network Analysis  
Proc., 1996 IEEE MTT-S Intl. Microwave Symp., 17-21 June 1996, San Francisco, CA,  
pp. 1407-1410  
June 1996

**DEGROOT, D. C.; MARKS, R. B.**

Optimizing Time-Domain Network Analysis  
Dig., 46th Auto. RF Tech. Group Conf., 30 November -1 December 1995, Scottsdale, AZ,  
pp. 19-28  
December 1995

**MARKS, R. B.; DEGROOT, D. C.; JARGON, J. A.**

High-Speed Interconnection Characterization Using Time Domain Network Analysis  
Advancing Microelectronics, Vol. 22, No. 6, pp. 35-39  
November/December 1995

**MARKS, R. B.; HAYDEN, L. A.; RETTIG, J. B.**

Accuracy and Repeatability in Time Domain Network Analysis  
Proc., 44th Auto. RF Tech. Group Conf., 1-2 December 1994, Boulder, CO, pp. 39-46  
December 1994

**MARKS, R. B.; HAYDEN, L. A.; JARGON, J. A.; WILLIAMS, D. F.**

Time Domain Network Analysis Using the Multiline TRL Calibration  
Proc., 44th Auto. RF Tech. Group Conf., 1-2 December 1994, Boulder, CO, pp. 47-55  
December 1994

**HAYDEN, L. A.; MARKS, R. B.**

Accuracy in Time Domain Transmission Line Measurements  
Proc., 3rd Topical Mtg. on Electrical Performance of Electronic Packaging, November 2-4,  
1994, Monterey, CA, pp. 176-178  
November 1994

**BLEJER, D. J.; WITTMANN, R. C.; YAGHJIAN, A. D.**

On-Axis Fields from a Circular Uniform Surface Current  
Proc., Ultra-Wideband Short-Pulse Electromagnetics Intl Conf., 8-10 October 1992, Brooklyn,  
NY, pp. 285-292  
1993

**JOHNK, R. T.; ONDREJKA, A. R.; TOFANI, S.; KANDA, M.**

Time-Domain Measurements of the Electromagnetic Backscatter of Pyramidal Absorbers and Metallic Plates  
IEEE Trans. Electromagn. Compat., Vol. 35, No. 4, pp. 429-433  
November 1993

- ALLEN, O. E.; HILL, D. A.; ONDREJKA, A. R.**  
Time-Domain Antenna Characterizations  
IEEE Trans. Electromagn. Compat., Vol. 35, No. 3, pp. 339-346  
August 1993
- KANDA, M.; ONDREJKA, A. R.**  
An Ultra-Broadband and Nondispersive Sensor for the Measurement of Time-Domain Signals  
Proc., Symp. on Electromagnetic Security for Information Protection, 21-22 November 1991,  
Rome, Italy, pp. 65-78  
November 1991
- TOFANI, S.; ONDREJKA, A. R.; KANDA, M.**  
A Time-Domain Method for Characterizing the Reflection Coefficient of Absorbing Materials from 30 to  
1000 MHz  
IEEE Trans. Electromagn. Compat., Vol. 33, No. 3, pp. 234-240  
August 1991
- GANS, W. L.; GEYER, R. G.; KLEMPERER, W. K.**  
Suggested Methods and Standards for Testing and Verification of Electromagnetic Buried Object  
Detectors  
NISTIR 88-3915  
March 1990
- ADAMS, J. W.; ONDREJKA, A. R.; CAVCEY, K. H.; CRUZ, J. E.; MEDLEY, H. W.;  
GROSVENOR, J. H.**  
Recent Improvements in Time-Domain EMC Measurement System  
NISTIR 89-3927  
November 1989
- GEYER, R. G.**  
Magnetostatic Measurements for Mine Detection  
NISTIR 88-3098  
October 1988
- ADAMS, J. W.; ONDREJKA, A. R.; MEDLEY, H. W.**  
Time-Domain System for Identification of the Natural Resonant Frequencies of Aircraft Relevant to  
Electromagnetic Compatibility Testing  
NBSIR 87-3077  
November 1987
- LAWTON, R. A.; RIAD, S. M.; ANDREWS, J. R.**  
Pulse and Time Domain Measurements  
Proc., IEEE, Spec. Iss. Radio Measurement Methods and Stand., Vol. 74, No. 1, pp. 77-81  
January 1986
- LAWTON, R. A.; ONDREJKA, A. R.**  
Standards for the Measurement of Impulsive Fields Radiated by a TEM Horn Antenna  
Proc., 1977 Union Radio Scientifique Intl. E Comm., 3-7 October 1977, Lannion, France,  
pp. 1-4  
1977
- ANDREWS, J. R.**  
Impulse Generator Spectrum Amplitude Measurement Techniques  
IEEE Trans. Instrum. Meas., Vol. IM-25, No. 4, pp. 380-384  
December 1976

Time Domain (cont.)

**ANDREWS, J. R.; GANS, W. L.**

Time Domain Automatic Network Analyzer

L'Onde Electrique, Vol. 55 No. 10, pp. 569-574

December 1975

**ANDREWS, J. R.; BALDWIN, E. E.**

Baseband Impulse Generator Useful to 5 GHz

Proc., 1975 IEEE Intl. Symp. on Electromagn. Compat., 7-9 October 1975, San Antonio, TX,

pp. 1-4

October 1975

**GANS, W. L.; ANDREWS, J. R.**

Time Domain Automatic Network Analyzer for Measurement of RF and Microwave Components

NBS TN 672

September 1975

**NAHMAN, N. S.; JICKLING, R. M.**

Frequency Domain Measurement of Baseband Instrumentation

NBSIR 73-330

July 1973

**NAHMAN, N. S.; JICKLING, R. M.; HOLT, D. R.**

Reference-Waveform Generation Using Debye Dielectric Dispersion

NBSIR 73-304

December 1972

## WAVEFORM METROLOGY

**CHESNUT, S. M.; PAULTER, N. G., Jr.**

Automatic Waveform Analysis and Measurement System User Manual  
NISTIR 3978  
December 1991

**TOFANI, S.; ONDREJKA, A. R.; KANDA, M.**

A Time-Domain Method for Characterizing the Reflection Coefficient of Absorbing Materials from 30 to 1000 MHz  
IEEE Trans. Electromagn. Compat., Vol. 33, No. 3, pp. 234-240  
August 1991

**ONDREJKA, A. R.; KANDA, M.**

A Time-Domain Method for Measuring the Reflection Coefficient of Microwave Absorbers at Frequencies Below 1 GHz  
Dig., 1991 Antennas and Propagation Society Symp., 24-28 June 1991, London, Ontario, Canada, Vol. 3, pp. 1656-1663  
June 1991

**PAULTER, N. G., Jr.; MAJUMDAR, A.**

A New Triple Correlation Technique for Measuring Ultrashort Laser Pulses  
Rev. Sci. Instrum., Vol. 62, No. 3, pp. 567-578  
March 1991

**PAULTER, N. G., Jr.; MAJUMDAR, A.**

A New Proposed Triple Correlator for the Measurement of Ultrashort Laser Pulses  
Opt. Commun., Vol. 81, No. 1,2, pp. 95-100  
February 1991

**GANS, W. L.**

Dynamic Calibration of Oscilloscopes and Waveform Recorders Using Pulse Standards  
Record, Instrumentation and Measurement Technology (IMTC) Conf., 13-15 February 1990, San Jose, CA, pp. 246-250  
February 1990

**LAWTON, R. A.; MEYER, K.**

Waveform Standards for Electro-Optics: A Pulse Duration Comparison  
IEEE Trans. Microwave Theory Tech., Vol. MTT-35, No. 4, pp. 450-453  
April 1987

**NAHMAN, N. S.**

Software Correction of Measured Pulse Data  
NATO ASI Series on Fast Electrical and Optical Meas., Vol. 1, Series E, No. 108, pp. 351-417  
1986

**GANS, W. L.**

Picosecond Pulse Waveform Error Analysis at NBS  
Proc., IEEE Spec. Issue on Radio Meas. Methods and Standards, pp. 86-90  
January 1986

**RIAD, S. M.**

The Deconvolution Problem: An Overview  
Proc., IEEE, Spec. Issue on Radio Meas. Methods and Standards, pp. 82-85  
January 1986

**LAWTON, R. A.**

An Efficient Antialiasing Filter

IEEE Trans. Instrum. Meas., Vol. IM-34, No. 4, pp. 570-573

December 1985

**GANS, W. L.**

Picosecond Pulse Measurements at NBS

Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March 1985, Tampa, FL, pp. 142-144

March 1985

**LAWTON, R. A.**

Pulse Waveform Standards for Electro-Optics

Proc., 1985 Topical Meeting on Picosecond Electronics and Opto-Electronics, 13-15 March

1985, Lake Tahoe, NV, pp. 205-206

March 1985

**LAWTON, R. A.**

Status Report Transient Waveform Recorder Standard

Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March 1985, Tampa, FL, pp. 154-155

March 1985

**LAWTON, R. A.; NAHMAN, N. S.; BIGELOW, J. M.**

A Solid State Reference Waveform Standard

IEEE Trans. Instrum. Meas., Vol. IM-33, No. 3, pp. 201-205

September 1984

**LAWTON, R. A.**

An Efficient Antialiasing Filter

Dig., 1984 Conf. on Prec. Electromagn. Meas., 20-24 August 1984, Delft, The Netherlands,

pp. 104-105

August 1984

**LAWTON, R. A.; NAHMAN, N. S.; BIGELOW, J. M.**

A Solid State Reference Waveform Standard

Dig., Instrum. and Meas. Technol. Conf., 17-18 January 1984, Long Beach, CA, pp. 74-76

January 1984

**ANDREWS, J. R.; BELL, B. A.; BALDWIN, E. E.**

Reference Flat Pulse Generator

NBS TN 1067

October 1983

**LAWTON, R. A.**

Photoconductive Switches Used for Waveform Generation at the National Bureau of Standards

Proc., 1983 Picosecond Optoelectronics Conf., SPIE - The International Society for Optical

Engineering, 24-26 August 1983, San Diego, CA, Vol. 439, pp. 88-94

August 1983

**ANDREWS, J. R.; BELL, B. A.; NAHMAN, N. S.; BALDWIN, E. E.**

Reference Waveform Flat Pulse Generator

IEEE Trans. Instrum. Meas., Vol. IM-32, No. 1, pp. 27-32

March 1983

Waveform Metrology (cont.)

**GANS, W. L.**

The Measurement and Deconvolution of Time Jitter in Equivalent-Time Waveform Samplers  
IEEE Trans. Instrum. Meas., Vol. IM-32, No. 1, pp. 126-133  
March 1983

**NAHMAN, N. S.**

Picosecond Domain Waveform Measurements; Status and Future Directions  
IEEE Trans. Instrum. Meas., Vol. IM-32, No. 1, pp. 117-124  
March 1983

**LAWTON, R. A.**

Performance Standards for Waveform Recorders  
IEEE Trans. Nucl. Sci., Vol. NS-30, No. 1, pp. 263-266  
February 1983

**ANDREWS, J. R.; NAHMAN, N. S.; BELL, B. A.**

Status of Reference Waveform Standards Development at NBS  
Proc., 1981 Waveform Recorder Seminar, 15 October 1981, Boulder, CO, NBS SP 634,  
pp. 69-88  
June 1982

**ANDREWS, J. R.; BELL, B. A.; NAHMAN, N. S.; BALDWIN, E. E.**

Reference Waveform Flat Pulse Generator  
Dig., Conf. on Prec. Electromagn. Meas. June 1982  
June 1982

**LAWTON, R. A.**

Precision Picosecond-Microsecond Electromagnetic Waveform Measurement at NBS  
NBS SP 628, pp. 392-407  
June 1982

**LAWTON, R. A.**

Measurement Needs and Techniques for Evaluation/Calibration,  
Proc., 1981 Waveform Recorder Seminar, 15 October 1981, Boulder, CO, NBS SP 634  
June 1982

**NAHMAN, N. S.**

Some Generic Waveform Recorder Problems  
Proc., 1981 Waveform Recorder Seminar, 15 October 1981, Boulder, CO, NBS SP 634, pp. 1-5  
June 1982

**KANDA, M.**

Time Domain Sensors and Radiators  
Natl. Radio Sci. Meeting, January 1982, University of Colorado, Boulder, CO  
January 1982

**GANS, W. L.; NAHMAN, N. S.**

Shielded Balanced and Coaxial Transmission Lines - Parametric Measurements and Instrumentation  
Relevant to Signal Waveform Transmission in Digital Service  
NBSIR 81-1042  
June 1981



Waveform Metrology (cont.)

**ANDREWS, J. R.; BALDWIN, E. E.**

Amplitude Calibrator for Oscilloscopes  
NBSIR 81-1646  
April 1981

**NAHMAN, N. S.**

Error Criteria and the Use of Reference Waveforms  
Electron. Test, Vol. 4, No. 2, pp. 72-76  
February 1981

**ANDREWS, J. R.**

Pulse Reference Waveform Standards Development at NBS  
Proc., ATE Seminar/Exhib., January 1981, Pasadena, CA, p. IV.13 through IV.19  
January 1981

**ANDREWS, J. R.**

The Estimation of the Pulse Waveform in the Calibration of Impulse Generators  
Dig., Intl. Union of Radio Sci. (Union Radio Scientifique Internationale) Meeting, January 1981,  
Boulder, CO, p. 87  
January 1981

**NAHMAN, N. S.; GUILLAUME, M. E.**

Deconvolution of Duration Limited Waveforms  
Dig., Union Radio Scientifique Internationale, January 1981, Boulder, CO, p. 86  
January 1981

**NAHMAN, N. S.**

Error Criteria and the Use of Reference Waveforms  
Proc. ATE Seminar/Exhib., January 1981, Pasadena, CA, pp. IV.21 through IV.28  
January 1981

**GANS, W. L.**

Present Capabilities of the NBS Automatic Pulse Measurement System  
Dig., Conf. on Prec. Electromagn. Meas., pp. 25-26  
1976

**NAHMAN, N. S.**

Picosecond Domain Waveform Measurements (Japanese translation)  
Nikkei Electron., Nikkei-McGraw Hill  
April 1979

**YOUNG, M.; LAWTON, R. A.**

Measurement of Pulsed-Laser Power  
NBS TN 1010  
February 1979

**NAHMAN, N. S.**

Picosecond-Domain Waveform Measurements  
Proc., IEEE, Vol. 66, pp. 414-423  
April 1978

**ANDREWS, J. R.; NAHMAN, N. S.**

The Measurement of Pulse Transition Duration

Proc., Union Radio Scientifique Internationale Symp., 3-7 October, 1977, Lannion, France,  
pp. 159-164

October 1977

**LAWTON, R. A.; YOUNG, M.**

Laser-Mode Beating Used for Detector Frequency-Response Measurements

Appl. Opt., Vol. 16, pp. 2703-2705

October 1977

**ANDREWS, J. R.**

Impulse Generator Spectrum Amplitude Measurement Techniques

Dig., Conf. on Prec. Electromagn. Meas., pp. 23-24

1976

**RIAD, S. M.; NAHMAN, N. S.**

Application of the Homomorphic Deconvolution for the Separation of TDR Signals Occurring in  
Overlapping Time Windows

Dig., Conf. on Prec. Electromagn. Meas. pp. 27-29

1976

**GANS, W. L.**

Present Capabilities of the NBS Automatic Pulse Measurement System

IEEE Trans. Instrum. Meas., IM-25, pp. 384-388

December 1976

**RIAD, S. M.; NAHMAN, N. S.**

Application of the Homomorphic Deconvolution for the Separation of TDR Signals Occurring in  
Overlapping Time Windows

IEEE Trans. Instrum. Meas., IM-25, pp. 388-391

December 1976

**LAWTON, R. A.; ANDREWS, J. R.**

Electrical Strobng of Photoconductor Cuts Sampling Oscilloscope's Risetime

Laser Focus, pp. 62-65

November 1976

**ANDREWS, J. R.; LAWTON, R. A.**

Electrically Strobed Optical Waveform Sampling Oscilloscope

Rev. Sci. Instrum., Vol. 47, pp. 311-313

March 1976

**ANDREWS, J. R.**

Measurement on Pulses and Pulse Transmission Media, Circuits and Components

Intl. Union of Radio Sci. (Union Radio Scientifique Internationale) Review of Radio Sci., p. 9

1975-1977

**ANDREWS, J. R.**

Directional-Coupler Technique for Triggering a Tunnel Diode

IEEE Trans. Instrum. Meas., IM-24, pp. 275-277

September 1975

**LAWTON, R. A.; ANDREWS, J. R.**

Pulsed-Laser Application to Sampling Oscilloscope  
Electron. Lett., Vol. 11, pp. 138  
April 1975

**ANDREWS, J. R.; GANS, W. L.**

Pulsed Wavemeter Timing Reference for Sampling Oscilloscope Calibration  
IEEE Trans. Instrum. Meas., IM-24, p. 82  
March 1975

**LAWTON, R. A.; SCAVENNEC, A.**

Photoconductive Detector of Fast-Transition Optical Waveforms  
Electron. Lett., Vol. 11, pp. 74-75  
February 1975

**ANDREWS, J. R.**

Precision Picosecond-Pulse Measurements Using a High Quality Superconducting Delay Line  
IEEE Trans. Instrum. Meas., IM-23, pp. 468-472  
December 1974

**ANDREWS, J. R.; LAWTON, R. A.**

Picosecond Pulse Research at NBS  
Proc., Joint Meas. Conf., 12-14 November 1974, Gaithersburg, MD, pp. 123-140  
November 1974

**ANDREWS, J. R.**

Precision Picosecond-Pulse Measurements Using a High Quality Superconducting Delay Line  
Proc. Conf. on Prec. Electromagn. Meas., 1-5 July 1974, London, England, pp. 316-318  
July 1974

**SCAVENNEC, A.; NAHMAN, N. S.**

Active and Passive Mode Locking of Continuously Operating Rhodamine 6G Dye Lasers  
NBSIR 73-347  
February 1974

**ANDREWS, J. R.**

Inexpensive Laser Diode Pulse Generator for Optical Waveguide Studies  
Rev. Sci. Instrum., Vol. 45, pp. 22-24  
January 1974

**HONDA, T.; NAHMAN, N. S.**

Application of Ultrashort Optical Pulses to Electrical Pulse Measurements  
Proc. Symp. on New Instrum., 28-29 January 1974, IEE of Japan, Hokkaido University,  
pp. 29-38  
January 1974

**ANDREWS, J. R.**

Random Sampling Oscilloscope for the Observation of Mercury Switch Closure Transition Times  
IEEE Trans. Instrum. Meas., IM-22, pp. 375-381  
December 1973

**GANS, W. L.; NAHMAN, N. S.**

Pulse Testing of RF and Microwave Components  
NBSIR 1973  
July 1973

**ANDREWS, J. R.**

Random Sampling Oscilloscope Time Base  
NBSIR 73-309  
June 1973

**HOLT, D. R.; NAHMAN, N. S.**

Coaxial Line Pulse-Response Error Due to a Planar Skin Effect Approximation  
IEEE Trans. Instrum. Meas., IM-21, pp. 515-519  
November 1972

**HONDA, T.; NAHMAN, N. S.**

A Dye Modelocked Nd+3 Glass Laser for Generating Electrical Reference Waveforms  
NBSIR 74-360  
September 1972

**NAHMAN, N. S.; HOLT, D. R.**

Transient Analysis of Coaxial Cables Using the Skin Effect Approximation  $A + B$  (the square root of  $s$ )  
IEEE Trans. Circuit Theory, CT-19, pp. 443-451  
September 1972

**BOUILLE, R.; ANDREWS, J. R.**

Measurement of Broadening of Pulses in Glass Fibers  
Electron. Lett., Vol. 8, pp. 309-310  
June 1972

**HOLT, D. R.; NAHMAN, N. S.**

Coaxial Line Pulse-Response Error Due to a Planar Skin Effect Approximation  
Proc., 1972 Conf. on Prec. Electromagn. Meas., 26-29 June 1972, Boulder, CO, pp. 1-2  
June 1972

**LAWTON, R. A.; NAHMAN, N. S.**

Pyroelectric Detector Application to Baseband Pulse Measurements  
Electron. Lett., Vol. 8, pp. 318-330  
June 1972

**ANDREWS, J. R.**

A Frequency Calibrator for UHF Using an Avalanche Transistor  
Q S T, Vol. 56, pp. 16-18  
May 1972

**ANDREWS, J. R.; WHITTEMORE, T.; MCCAA, W. D. Jr.**

Survey of Present Waveform Sampling System Limitations  
NBS Rept. 10731  
February 1972

**ANDREWS, J. R.**

An Interfacing Unit for a 28 psec Feedthrough Sampling Oscilloscope  
Rev. Sci. Instrum., Vol. 42, pp. 1882-1885  
December 1971

**ANDREWS, J. R.**

Horizontal Time Base Sweep Generator for a Traveling Wave Oscilloscope  
IEEE Trans. Nucl. Sci., NS-18, pp. 3-18  
October 1971

Waveform Metrology (cont.)

**EKSTROM, M. P.; MCCA, W. D. Jr.; NAHMAN, N. S.**

The Measured Time and Frequency Response of a Miniature Superconducting Coaxial Line  
IEEE Trans. Nucl. Sci., NS-18, pp. 18-25  
October 1971

**ANDREWS, J. R.; NAHMAN, N. S.**

Electron-Beam Deflection in Traveling-Wave Oscilloscopes  
Record of Symp. on Electron, Ion, and Laser Beam Technol. (11th), 12-14 May 1971,  
Boulder, CO  
May 1971

**MCCA, W. D. Jr.; NAHMAN, N. S.**

Generation of Reference Waveforms by Uniform Lossy Transmission Lines  
IEEE Trans. Instrum. Meas., Vol. IM-19, pp. 382-390  
November 1970

**ANDREWS, J. R.**

Improved Bias Supply for Tunnel-Diode Picosecond Pulse Generators  
IEEE Trans. Instrum. Meas., Vol. IM-19, pp. 171-175  
August 1970

**NAHMAN, N. S.; EKSTROM, M. P.; MCCA, W. D. Jr.**

Measured Time and Frequency Response of a Miniature Superconducting Coaxial Line  
Applied Superconductivity Conf., June 1970, Boulder, CO  
June 1970

MISCELLANEOUS

**LYONS, R. M.**

Metrology for Radio-Frequency: A Bibliography of NIST Publications  
NISTIR 5075  
September 1998

**WITTMANN, R. C.; YOUNG, M.**

Are the Formulas for Mode-Field Diameter Correct?  
NIST SP 390  
September 1998

**MUTH, L. A.; DOMICH, P. D.; WELSH, B. M.; BUTERBAUGH, A. L.; KENT, B. M.**

Polarimetric Calibrations for Monostatic Standards for Radar Systems  
Proc., NCSL Conf., 19-23 July 1998, Albuquerque, NM, pp. 699-715  
July 1998

**LYONS, R. M.**

A Bibliography of the NIST Electromagnetic Fields Division Publications  
NISTIR 5063  
August 1997

**STORK, F.J.B.; BEALL, J. A.; ROSHKO, A.; DEGROOT, D. C.; RUDMAN, D. A.; ONO, R. H.**

Surface Resistance and Morphology of YBCO Films as a Function of Thickness  
IEEE Trans. Appl. Superconduct., Vol. 7, No. 2, pp. 1921-1924  
June 1997

**LYONS, R. M.**

A Bibliography of the NIST Electromagnetic Fields Division Publications  
NISTIR 5050  
August 1996

**KNOPP, K. J.; CHRISTENSEN, D. H.; HILL, J. R.; MASTERSON, K. D.**

Thin-Film Design for Enhanced Stability of Optically Pumped Vertical-Cavity Surface-Emitting Lasers (VCSELs)  
Surface and Coatings Tech., Vol. 86-87, pp. 783-787 and Proc., Intl. Conf. Metallurgical Coatings and Thin Films, 22-26 April 1996, San Diego, CA  
April 1996

**LYONS, R. M.**

A Bibliography of the NIST Electromagnetic Fields Division Publications  
NISTIR 5039  
August 1995

**REEVE, G. R.; FRIDAY, D. S.**

NIST and the Navy-Past, Present and Future  
Proc., Test and Calib. Symp., American Soc. Naval Engineers, 30 November-1 December 1994, Washington, DC, pp. 229-237  
December 1994

**WITTMANN, R. C.; ALPERT, B. K.**

An Integral Occurring in Coherence Theory  
SIAM Review, Vol 36, No. 4, p. 655  
December 1994



Miscellaneous (cont.)

- LYONS, R. M.; GIBSON, K. A.**  
A Bibliography of the NIST Electromagnetic Fields Division Publications  
NISTIR 5028  
September 1994
- WEIL, C. M.**  
Electromagnetic Properties of Materials: The NIST Metrology Program  
Proc., 5th DOD Electromagnetic Windows Symp., 19-21 October 1993, Boulder, CO,  
pp. 175-182  
October 1993
- YOUNG, M.; WITTMANN, R. C.**  
Vector Theory of Diffraction by a Single-Mode Fiber: Application to Mode-Field Diameter  
Measurements  
Opt. Lett., Vol. 18, No. 20, pp. 1715-1717  
October 1993
- LYONS, R. M.; GIBSON, K. A.**  
A Bibliography of the NIST Electromagnetic Fields Division Publications  
NISTIR 5009  
September 1993
- LYONS, R. M.; GIBSON, K. A.**  
A Bibliography of the NIST Electromagnetic Fields Division Publications  
NISTIR 3993  
August 1992
- LYONS, R. M.; GIBSON, K. A.**  
A Bibliography of the NIST Electromagnetic Fields Division Publications  
NISTIR 3973  
August 1991
- LYONS, R. M.; GIBSON, K. A.**  
A Bibliography of the NIST Electromagnetic Fields Division Publications  
NISTIR 3945  
August 1990
- REEVE, G. R.; MARKS, R. B.; BLACKBURN, D.**  
MMIC Related Metrology at the National Institute of Standards and Technology  
Record, Instrum. Meas. Tech. (IMTC) Conf.; 13-15 February 1990; San Jose, CA; pp. 196-199  
February 1990
- LYONS, R. M.; GIBSON, K. A.**  
A Bibliography of the NIST Electromagnetic Fields Division Publications  
NISTIR 89-3920  
September 1989
- FITZGERRELL, R. G.**  
Mobile Antennas  
National Institute of Justice Std.-0205.01  
May 1989

Miscellaneous (cont.)

**VANZURA, E. J.**

Creating CSUBs in Basic, Part II  
HP Design and Automation Magazine, p. 25  
November 1988

**VANZURA, E. J.**

Creating CSUBs in BASIC, Part I  
HP Design and Automation Magazine, pp. 18-21  
October 1988

**REIDY, A. R.; GIBSON, K. A.**

A Bibliography of NIST Electromagnetic Fields Division Publications  
NISTIR 88-3900  
September 1988

**VANZURA, E. J.**

Creating CSUBs Written in FORTRAN That Run in BASIC  
Proc., INTEREX Technical Computer Users Conf., 7-12 August 1988, Orlando, FL, paper 20,  
pp. 1-18  
August 1988

**JESCH, R. L.**

Fixed and Base Station FM Receivers  
National Institute of Justice Std.-0206.01  
July 1988

**JESCH, R. L.**

Fixed and Base Station FM Transmitters  
National Institute of Justice Std.-0201.01  
September 1987

**BENSEMA, W. D.**

Mobile FM Transceivers  
National Institute of Justice Std.-0210.00  
May 1986

**JESCH, R. L.**

Personal/Mobile FM Transceivers  
National Institute of Justice Std.-0224.00  
May 1986

**GIBSON, K. A.; PAGE, J. M.; MILLER, C. K. S.**

A Bibliography of the NBS Electromagnetic Fields Division Publications  
NBSIR 85-3040  
February 1986

**KU, H. H.; JUDISH, R. M.**

Fundamentals of Error Analysis  
Special Issue on Radio Measurements and Standards, Proceedings of the IEEE, Vol. 74, No. 1,  
pp. 25-27  
January 1986

**BENSEMA, W. D.**

Personal FM Transceivers  
National Institute of Justice Std.-0209.01  
September 1985

**JESCH, R. L.**

Measured Vehicular Antenna Performance  
IEEE Trans. Veh. Technol., Vol. VT-34, No. 2, pp. 97-107  
May 1985

**GIBSON, K. A.; MILLER, C. K. S.**

A Bibliography of the NBS Electromagnetic Fields Division Publications  
NBSIR 85-3022  
April 1985

**LARSEN, N. T.; VECCHIA, D. F.; SUGAR, G. R.**

VOR Calibration Services  
NBS TN 1069  
April 1985

**KUFFEL, J.; MALEWSKI, R.; VAN HEESWIJK, R.; LAWTON, R. A.**

Dynamic Performance of Digital Recorders Used for Monitoring High Voltage Impulse Tests  
Proc., 1985 Instrum. and Meas. Technol. Conf., 20-22 March 1985, Tampa, FL, pp. 211-215  
March 1985

**HILL, D. A.**

Book Review - Leaky Feeders and Subsurface Radio Communications  
IEEE Antennas Propagat., Vol. AP-31, No. 3, pp. 23-24  
June 1983

**JESCH, R. L.**

Dielectric Measurements of Oil Shale as Functions of Temperature and Frequency  
NBSIR 83-1683  
January 1983

**HILL, D. A.**

HF Ground Wave Propagation over Forested and Built-up Terrain  
NTIA Report 82-114  
December 1982

**CHEW, H.**

Electromagnetic Modeling of Oil Shale Retorts for Remote Sensing Purposes  
IEEE Trans. Geosci. Remote Sensing, Vol. GE-20, No. 4, pp. 510-517  
October 1982

**GIBSON, K. A.; MILLER, C. K. S.**

Bibliography of the Electromagnetic Fields Division Publications  
NBSIR 82-1673  
August 1982

**STOLTENBERG, R. E.; WITTMANN, R. C.**

Acoustical Interferometer Wader AIW Final Report of Advanced Development Test and Evaluation  
NBSIR 82-167 (Restricted)  
June 1982

**ROE, K. C.; WITTMANN, R. C.**

Improved Coal Interface Detector  
NBSIR 82-1663  
May 1982

**HILL, D. A.; WAIT, J. R.**

Ground Wave Propagation over a Mixed Path with an Elevation Change  
IEEE Trans. Antennas Propag., Vol. AP-30, No. 1, pp. 139-141  
January 1982

**NELSON, R. E.; JICKLING, R. M.**

Control Cable Assemblies Used with Mobile FM Receivers  
National Institute of Justice Std.-0216.00  
December 1981

**CHEW, H.**

Modeling of Oil Shale Retorts for Electromagnetic Sensing Techniques  
NBSIR 81-1653  
November 1981

**YAGHJIAN, A. D.**

Augmented Electric- and Magnetic-Field Integral Equations  
Radio Sci., Vol. 16, No. 6, pp. 987-1001  
November-December 1981

**HILL, D. A.; WAIT, J. R.**

HF Radio Wave Transmission over Sea-Ice and Remote Sensing Possibilities  
IEEE Trans. Geosci. Remote Sensing, Vol. GE-19, No. 4, pp. 204-209  
October 1981

**HILL, D. A.; WAIT, J. R.**

HF Ground Wave Propagation over Mixed Land, Sea, and Sea-Ice Paths  
IEEE Trans. Geosci. Remote Sensing, Vol. GE-19, No. 4, pp. 210-216  
October 1981

**WAKEFIELD, J. P.**

Addendum to Earth Terminal Measurement System Maintenance Manual  
NBSIR 81-1641  
October 1981

**CLARK, H. E.**

Requirements for an Effective National Nonionizing Radiation Measurement System  
NBS SP 613  
June 1981

**LEWIS, R. L.**

Spherical Scanning Data Processing: An Algorithm for Halving the Data Processing Effort When the Radiation into the Back Hemisphere is Negligible  
Dig., 1981 IEEE Antenna Propagat. Soc. Intl. Symp., June 1981  
June 1981

**YAGHJIAN, A. D.**

A Delta-Distribution Derivation of the Electric Field in the Source Region  
Dig., 1981 IEEE Antenna Propagat. Soc. Intl. Symp., June 1981  
June 1981

**HILL, D. A.; WAIT, J. R.**

HF Ground Wave Propagation over Sea Ice for a Spherical Earth Model  
IEEE Trans. Antennas Propagat., Vol. AP-19, No. 3, pp. 525-527  
May 1981

**YAGHJIAN, A. D.**

Reply to Criticism on Electric Dyadic Functions in the Source Region  
Proc., IEEE, Vol. 69, No. 2  
February 1981

**BOWMAN, R. R.**

A Temperature Probe for Radio-Frequency Heated Material  
NBSIR 81-1634  
January 1981

**ELLERBRUCH, D. A.; BOYNE, H. S.**

Active Microwave Water Equivalence Measurements  
Proc., Ft. Collins Snow Workshop  
1980

**HILL, D. A.; WAIT, J. R.**

Electromagnetic Characteristics of a Coaxial Cable with Periodic Slots  
IEEE Trans. Electromagn. Compat., Vol. EMC-22, No. 4, pp. 303-307  
November 1980

**MILLER, C. K. S.**

A Bibliography of Publications in the NBS Electromagnetic Fields Division  
NBSIR 80-1635  
November 1980

**JONES, R. N.**

Evaluation of Three-Terminal and Four-Terminal Pair Capacitors at High Frequencies  
NBS TN 1024  
September 1980

**WAIT, J. R.; HILL, D. A.**

Fields of a Horizontal Loop of Arbitrary Shape Buried in a Two-Layer Earth  
Radio Sci., Vol. 15, No. 5, pp. 903-912  
September-October 1980

**YAGHJIAN, A. D.**

Augmented Electric- and Magnetic-Field Integral Equations  
Dig., Union Radio Scientifique Internationale Symp. on EM Waves, Munich Germany  
August 1980

**DRIVER, L. D.; RIES, F. X.**

A Wideband RF Voltage Comparator  
Dig., 1980 Conf. Precision Electromagn. Meas., 23-27 June 1980, Braunschweig, FDR,  
pp. 487-488  
June 1980

**HILL, D. A.; WAIT, J. R.**

Ground Wave Attenuation Function for a Spherical Earth with Arbitrary Surface Impedance Radio Sci.  
Radio Sci., Vol. 15, No. 3, pp. 637-643  
May-June 1980

Miscellaneous (cont.)

**HILL, D. A.; WAIT, J. R.**

On the Excitation of the Zenneck Surface Wave Over the Ground at 10 MHz  
Annales des Telecommunications, Vol. 35, Nos. 5-6, pp. 1-4  
May-June 1980

**HILL, D. A.; WAIT, J. R.**

Electromagnetic Theory of the Loosely Braided Coaxial Cable: Part II - Numerical Results  
IEEE Trans. Microwave Theory Technol., Vol. MTT-28, No. 4, pp. 326-331  
April 1980

**HILL, D. A.; WAIT, J. R.**

Propagation Along a Coaxial Cable with a Helical Shield  
IEEE Trans. Microwave Theory Technol., Vol. MTT-28, No. 2, pp. 84-89  
February 1980

**WYSS, J. C.; STWALLEY, W. C.; KOCH, M. E.; VERMA, K. K.**

Laser Fluorescence Diagnostics of Lithium Vapor for Inertial Confinement Applications  
Topical Meeting on Inertial Confinement Fusion, February 1980, San Diego, CA  
February 1980

**YAGHJIAN, A. D.**

Electric Dyadic Green's Functions in the Source Region  
Proc., IEEE, Vol. 68, No. 2  
February 1980

**HAMILTON, C.; LLOYD, F.; PETERSON, R.; ANDREWS, J. R.**

A Superconducting Sampler for Josephson Logic Circuits  
Appl. Phys. Lett., Vol. 35, No. 9, pp. 718-719  
November 1979

**WHARTON, M. J.; FRUSH, C. L.; NAHMAN, N. S.**

A Video Recorder for Coherent Doppler Radar  
IEEE Trans. Geosci. Electron., Special Issue on Radio Metrology, GE-17, No. 4, pp. 171-178  
October 1979

**ARTHUR, M. G.; REEVE, G. R.**

Modulation Factor Standards  
NBS TN 1016  
September 1979

**NAHMAN, N. S.; ALLRED, C. M.; ANDREWS, J. R.; HOER, C. A.; LAWTON, R. A.**

Radar Absorber Measurement Techniques at Frequencies Above 20 GHz  
NBSIR 79-1613  
August 1979

**MONTGOMERY, J. P.; CHANG, D. C.**

Electromagnetic Boundary-Value Problems Based Upon a Modification of Residue Calculus and  
Function Theoretic Techniques  
NBS MN 164  
June 1979

**JONES, R. N.**

A Comparison of Centrifuge and Freezing Calorimeter Methods for Measuring Free Water in Snow  
NBSIR 79-1604  
April 1979



Miscellaneous (cont.)

**KING, J.; PEISER, H. S.; SANGSTER, R. C.**

Guidelines for Specification and Procurement of Measurement Instrumentation  
NBSIR 78-891  
June 1978

**SANGSTER, R. C.**

Collected Executive Summaries: Studies of the National Measurement System  
NBSIR 75-947-Rev. S.  
February 1978

**YAGHJIAN, A. D.**

A Direct Approach to the Derivation of Electric Dyadic Green's Functions  
NBS TN 1000  
January 1978

**JESCH, R. L.**

Evaluation of Low-Loss/Low-Reflection Two-Port Devices or Adapters by Automated Measurement Techniques  
NBSIR 78-870  
December 1977

**JICKLING, R. M.; SHAFER, J. F.**

FM Repeater Systems  
National Institute of Justice Std. - 0213.00  
November 1977

**YOUNG, M.; LAWTON, R. A.**

Saturation of Optical Detectors at High Modulation Frequency  
Proc., Annual Meeting Opt. Soc. of America, 12 October 1977, Toronto, Canada,  
Vol. 67, p. 1398  
October 1977

**ZAPF, T. L.; HARVEY, M. E.; LARSEN, N. T.; STOLTENBERG, R. E.**

Ultrasonic Calorimeter for Beam Power Measurements from 1 to 15 Megahertz  
Proc., 1976 Ultrasonics Symp., 29 September-1 October 1977, Annapolis, MD, IEEE Cat 76,  
CH1120-5SU, pp. 573-576  
September 1977

**NELSON, R. E.**

A Guide to Voice Scramblers for Law Enforcement Agencies  
NBS SP 480-8  
December 1976

**SANGSTER, R. C.**

Study of the National Measurement System. Final Summary Report, 1972-75  
NBSIR 75-925  
December 1976

**YAGHJIAN, A. D.**

A Direct Approach to the Derivation of Electric Dyadic Green's Functions  
Dig., AP Symp., October 1976, pp. 76-156  
October 1976

Miscellaneous (cont.)

**SANGSTER, R. C.**

Collected Executive Summaries: Studies of the National Measurement System 1972-75  
NBSIR 75-947  
September 1976

**ZAPF, T. L.; HARVEY, M. E.; LARSEN, N. T.; STOLTENBERG, R. E.**

Ultrasonic Calorimeter for Beam Power Measurements from 1 to 15 Megahertz  
NBS TN 686  
September 1976

**SANGSTER, R. C.**

Transactions Matrix Description of the National System of Physical Measurements  
NBSIR 75-943  
August 1976

**LAWTON, R. A.; ANDREWS, J. R.**

Optically Strobed Sampling Oscilloscope  
IEEE Trans. Instrum. Meas., Vol. IM-25, pp. 56-60  
March 1976

**KANDA, M.; MAY, W. G.**

Reflection Beam Isolator for Submillimeter Wavelength  
NASA-CR-140761  
June 1975

**KERNS, D. M.**

Scattering-Matrix Description and Near-Field Measurements of Electroacoustic Transducers  
J. Acoust. Soc. Amer., Vol. 57, No. 2, pp. 497-507  
February 1975

**JESCH, R. L.; HOER, C. A.**

Characterization of a High Frequency Probe Assembly for Integrated Circuit Measurements  
NBS TN 663  
January 1975

**ROGERS, G. J.; SAWYER, D. E.; JESCH, R. L.**

Semiconductor Measurement Technology: Measurement of Transistor Scattering Parameters  
NBS SP 400-5  
January 1975

**KANDA, M.; MAY, W. G.**

Hollow-Cylinder Waveguide Isolators for use at Millimeter Wavelengths  
NASA-CR-140760  
November 1974

**JICKLING, R. M.; SHAFER, J. F.**

Repeaters for Law Enforcement Communication Systems-Law Enforcement Standard Program  
National Institute of Justice Std.-0206.00  
October 1974

**LITTLE, W. E.**

Automated Computer Controlled Measurements  
Proc., 1974 Conf. Preci. Electromagn. Meas., 1-5 July 1974, London, England  
July 1974

Miscellaneous (cont.)

**BUSSEY, H. E.; LARSEN, E. B.**

Buried Antenna Performance: Development of Small Resonant Buried Antennas  
RADCR-TR-74-169M, AD 783274  
June 1974

**JESCH, R. L.; BAILEY, R. A.; TAUSCH, H. J.**

Characterization of A H.F. Probe for Integrated Circuits Measurements  
Proc., Government Micro-Circuit Applications Conf., 25-27 June 1974, Boulder, CO,  
pp. 120-121  
June 1974

**WEITZEL, D. H.; LOWE, L. T.; ELLERBRUCH, D. A.; CRUZ, J. E.; SINDT, C. F.**

Hydrogen Slush Density Reference System  
NASA-CR-124764  
June 1974

**YAGHJIAN, A. D.**

Direct Integration of the Field Equations for Electroacoustic Transducers  
IEEE Lett., Vol. 62, No. 6, pp. 858-859  
June 1974

**STOLTENBERG, R. E.**

Detection of Human Intruders by Low Frequency Sonic Interferometric Techniques  
NBSIR 74-364  
May 1974

**MILLER, C. K. S.**

Millimeter Wave Metrology Capabilities at NBS  
Proc., 1974 Millimeter Waves Techniques Conf., 26-28 March 1974, San Diego, CA, p. 11  
March 1974

**YAGHJIAN, A. D.**

Theory of Adjoint Reciprocity for Electroacoustic Transducers  
NBSIR 73-329  
February 1974

**SCAVENNEC, A.; NAHMAN, N. S.**

A Simple Passively Mode-Locked CW Dye Laser  
IEEE J. Quantum Electron., Vol. QE-10, pp. 95-96  
January 1974

**BERRY, L. A.; FITZGERRELL, R. G.; VOGLER, L. E.**

Investigation of Effect of Antenna Site and Antenna Type on LF Non-Directional Beacon Performance  
FAA-RD-73-174  
1973

**WAIT, D. F.; BEATTY, R. W.**

The 1973 Intl. Microwave Symp.  
IEEE Trans. Microwave Theory Technol., Vol. MTT-21, No. 12, pp. 747-751  
December 1973

**ELLERBRUCH, D. A.**

Test Results for the Mooring Line Data Line  
NBSIR 73-341  
October 1973

**HALFORD, D.; SHOAF, J. H.; RISLEY, A. S.**

Spectral Density Analysis: Frequency Domain Specification and Measurement of Signal Stability  
1973 Annual Symp. on Frequency Control (27th), 12-14 June 1973, Cherry Hill, NJ, pp.  
421-431  
June 1973

**SCOTT, W. W., Jr.**

Batteries Used with Law Enforcement Communications Equipment: Chargers and Charging Techniques  
NBS Rept. 10732  
June 1973

**STOLTENBERG, R. E.**

RF Null Detector NBS/SND  
NBSIR 73-302  
June 1973

**ELLERBRUCH, D. A.**

Application of Measurements of Electromagnetic Phenomena to Oceanography  
Proc., 1972 UJNR/MEC Symp. (1st), Record of the U.S.-Japan UJNR Joint Symp. on Marine  
Electronics, (Japanese Electrical Industrial Committee, Tokyo, Japan), 9 October 1972, Tokyo,  
Japan, pp. 23-30  
October 1972

**HALFORD, D.**

Infrared-Microwave Frequency Synthesis Design: Some Relevant Conceptual Noise Aspects  
Proc., 1971 Frequency Standards and Metrology Seminar, 30 August-1 September 1971,  
Quebec, Canada, pp. 431-466  
August 1972

**SANGSTER, R. C.**

Relevancy of Measurements by a Systems Approach  
Proc., 1972 Joint Meas. Conf., 21-23 June 1972, Boulder, CO, pp. 31-37  
June 1972

**MANNEY, C. H.**

Applicability of Speech Bandwidth Compression Techniques in Mine Electromagnetic Communications  
NBS Rept. 10728  
February 1972

**ENGEN, G. F.**

An Extension to the Sliding Short Method of Connector and Adaptor Evaluation  
NBS JRES, Vol. 75C, pp. 177-183  
1971

**JESCH, R. L.; BERRY, I. S.**

Batteries Used with Law Enforcement Communications Equipment  
NBS Rept. 10722  
October 1971

**KANDA, M.**

Non-Reciprocal Devices Using Solid State Magnetoplasmas at Millimeter and Submillimeter  
Wavelengths  
NASA-CR-122923  
August 1971

Miscellaneous (cont.)

**COLLIER, R. S.; CRUZ, J. E.; ELLERBRUCH, D. A.; LOWE, L. T.; WEITZEL, D. H.**

Instrumentation for Hydrogen Slush Storage Containers

NASA-CR-119241

June 1971

**WEITZEL, D. H.; LOWE, L. T.; ELLERBRUCH, D. A.; CRUZ, J. E.; SINDT, C. F.**

Hydrogen Slush Density Reference System

NBS Rept. 9796

June 1971

**BRANDENBERGER, H.; HADORN, F.; HALFORD, D.; SHOAF, J. H.**

High Quality Quartz Crystal Oscillators: Frequency Domain and Time Domain Stability

Proc., 1971 Frequency Control Annual Symp. (25th), 26-28 April 1971, Atlantic City, NJ,

pp. 226-234

April 1971

**TAGGART, H. E.; WORKMAN, J. L.; NELSON, R. E.**

Emergency Locator Transmitters: Effective Radiated Power Levels and Techniques of Determining Effective Radiated Power

NBS Rept. 9769

February 1971

**ELLERBRUCH, D. A.**

Microwave Methods for Cryogenic Liquid and Slush Instrumentation

IEEE Trans. Instrum. Meas., Vol. IM-19, No. 4, pp. 412-416

November 1970

**SCOTT, W. W., Jr.**

New Coaxial RF-DC Ammeter

IEEE Trans. Instrum. Meas., Vol. IM-19, No. 4, pp. 318-323

November 1970

**LEWIS, R. L.**

The Wave-Hop Fields for an Inclined Dipole Over a Spherical Earth with an Anisotropic Ionosphere

OT-ITR-RR5

October 1970

**WEIDMAN, M. P.; CAMPBELL, E.**

A Method for Designing Multi-Screw Waveguide Tuners

NBS TN 393

October 1970

**FOOTE, W. J.**

A New Flange Design for O-Ring Seals

Rev. Sci. Instrum.

August 1970

**HAYES, R. E.; KANDA, M.; MASCLET, G.; MAY, W. G.**

The Application of Semiconductors to Quasi-Optical Isolators for use at Submillimeter Wavelengths

NASA-CR-86379

April 1970

Miscellaneous (cont.)

**WACKER, P. F.; CORD, M. S.; BURKHARD, D. G.; PETERSEN, J. D.; KUKOL, R. F.**  
Microwave Spectral Tables, Volume III, Polyatomic Molecules with Internal Rotation  
NBS MN 70, Vol 3.  
June 1969



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