

Robert W. Jackson

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University of Massachusetts at Amherst
Amherst, Massachusetts 01003

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Education:

B.S.E.E. Northeastern University, Summa Cum Laude (1975)
M.S.E.E. Northeastern University, (1980)
Ph.D. Northeastern University (1981), Advisor: Kenneth Golden
Dissertation Title: Electromagnetic Turbulence in Space Plasmas

Employment:

Professor, University of Massachusetts/Amherst, September 2001.
Associate Professor, University of Massachusetts/Amherst, January 1989.
Assistant Professor, University of Massachusetts/Amherst, September 1982.
Assistant Professor, Northeastern University, December 1981 to August 1982.
Instructor, Northeastern University, September 1976 to September 1978.
Consultant, Hewlett Packard Co., 1990 (Lightwave/ Microwave Electronics)
Air Force Summer Faculty Research Fellow, 1984 (Electromagnetic Modeling)
Research Assistant, Northeastern University, 1978 - 1981(Space Plasmas)
Graduate Co-op Student Genrad Co., 1975 - 1976 (Test Equipment design).

Research Interests:

(1) Electromagnetics for microwave and millimeterwave integrated circuits and packages, (2) Microwave and millimeter wave integrated circuit design.

Professional Activities:

Fellow of the IEEE: Elected in 2004 “for contributions to the electromagnetic modeling of microwave integrated circuits and packaging”
Associate Editor “Transactions on Microwave Theory and Techniques” 2008-2010
Technical Committee - IEEE Society on Microwave Theory and Techniques, 1999- (MTT-12, Subcommittee on Packaging, Chair 2009-, Vice Chair 2006 - 2008)
Technical Program Committee, International Microwave Symposium, 1999- 2008, 2011
Technical Program Committee, Topical Meeting on the Electrical Performance of Electronic Packaging, 1998- 2008
Co-Chair, Topical Meeting on the Electrical Performance of Electronic Packaging 2005
Co-Chair, Topical Meeting on the Electrical Performance of Electronic Packaging 2004
Steering Committee, International Microwave Symposium 2009, Short Course Chair
Technical Committee - CPMT-12 IEEE Society on Components, Packaging, and Manufacturing Technology, 1999-2008

Guest Editor, Special Issue of IEEE Transactions on Components, Packaging, and
Manufacturing Technology on Electrical Performance of Electronic Packaging, 2005
Co-Editor of Special Issue on Electrical Performance of Electronic Packaging, Transactions
on Microwave Theory and Techniques, March 2001
Co-Editor of Special Issue on Coplanar Technology, International Journal of RF and
Microwave Computer-Aided Engineering, October 2000
Editorial Board, International Journal of RF and Microwave Computer Aided Engineering
1993 - 2004
Technical Advisory Board, Global Communications Devices, Inc., 2000 - 2003
Electronic Communications Committee, IEEE Microwave Theory and Techniques Society,
1996-1997
Reviewer for: National Science Foundation, IEEE Transactions on Microwave Theory &
Techniques, IEEE Microwave and Guided Wave Letters, Electronics Letters, IEEE
Transactions on Advance Packaging

Journal Publications (student co-authors underlined)

Sanchez, M. A., R. W. Jackson, S. Frasier “Polarization Correction of Electronically Steered Phased Arrays for Meteorological Radar,” **IEEE Trans. Geoscience and Remote Sensing**, submitted 11/2010.

Sanchez, M. A. Mandeville, and R. W. Jackson, “Compact, Low Cost, Surface Mount, Active Antenna,” **IEEE Trans. Antennas and Propagation Letters**, Vol. 9, pp.1255-1259, December 2010.

Mandeville, A. and R. W. Jackson, “Surface Mount End-Fire Antenna Package,” **Electronics Letters**, Vol. 45, No. 7, pp. 340-342, 2009.

Khandelwal, N. and R. W. Jackson, “Active Antenna Module for Low Cost Electronically Scanned Phased Arrays,” **IEEE Trans. Microwave Theory and Techniques**, Vol. 55, No 10, , October 2008.

Jackson, R. W. “Rollet Proviso and the Stability of Linear Microwave Circuits: A Tutorial” **IEEE Trans. Microwave Theory and Techniques, (Invited)**, Vol. 54, No 3, pp 993-1000, March 2006.

Theurer, C. , L. Zhang, D. Kazmer, R. Gao, R. W. Jackson, “Passive Charge Modulation for a Wireless Pressure Sensor”, **IEEE Sensors Journal**, Vol. 6, No. 1, pp.47-54, Feb. 2006.

Carrillo, R. and R. W. Jackson, “A Highly Integrated Millimeterwave Active Antenna Array Using BCB and Silicon Substrate,” **IEEE Trans. Microwave Theory and Techniques**, Vol. 53, No. 6, pp. 1648-1653, June 2004.

Carrillo, R. and R. W. Jackson, “A Technique for Interconnecting Millimeter Wave Integrated Circuits Using BCB and Bump Bonds,” **IEEE Microwave and Wireless Components Letters**, Vol. 13, pp. 196-198, June 2003.

Jackson, R. W., “A Planar Orthomode Transducer,” **IEEE Microwave and Wireless Components Letters**, Vol. 11., pp.483-485, December 2001.

Jackson, R. W. and H. Hsu, “Multilayer Elliptic Filter,” **Electronics Letters**, Vol. 37, No. 13, pp. 838-839, June 2001.

Wang, Z. and R. W. Jackson, “An Algorithm for Calculating the Coupling Between MMICs with Block Dielectric Coverings,” **IEEE Trans. Microwave Theory and Techniques**, Vol. 49, No. 1, pp 133-141, January, 2001.

Jackson, R. W., "Simple Analytical Formulas for the Non-Local Field Generated by Circuit Elements in Multi-Layer Structures," **IEEE Trans. Microwave Theory and Techniques**, Vol. 48, No. 11, pp 1967-1971, November, 2000.

Ito, R., R. W. Jackson, T. Hongsmatip, "Modeling of Electrical Coupling Between Interconnections used in a Multilayered BGA Package," **IEEE Trans. Microwave Theory and Techniques**, pp 1819-1825, September 1999.

Jackson, R.W. and Z. Wang, "Circuit Model for Coupling Between MMICs in Multi-Chip Modules Including resonance Effects," **IEEE Trans. Microwave Theory and Techniques**, Vol. 46, pp 959-964, July 1998.

Jackson, R.W. and S. Rakshit, "Microwave Circuit Modeling of High Lead Count Plastic Packages," **IEEE Trans. Microwave Theory and Techniques**, Vol. 45, pp.1926-1933, October 1997.

Jackson, R.W. and R. Ito, "Microwave Modeling of Flipped Chip Packaging Schemes," **IEEE Trans. Microwave Theory and Techniques**, Vol. 45, pp.1919-1925, October 1997.

Jackson, R.W., "A Circuit Topology for Microwave Modeling of Plastic Surface Mount Packages," **IEEE Trans. Microwave Theory and Techniques**, Vol. 44, pp.1140-1146, July 1996.

Jackson, R.W., "Simple Electromagnetic Model for Determining Resonance Frequencies in Low Cost MMIC Packages," **IEEE Trans. Microwave Theory and Techniques** (special issue on Packaging and Interconnects), Vol. 42, pp.1816-1819, September 1994.

Jackson, R.W., "Circuit Model for Resonance Coupling in Grounded Coplanar Waveguide Circuits," **IEEE Trans. Microwave Theory and Techniques** (special issue on Coplanar MMICs), Vol. 41, pp. 1641-1645, September 1993.

Jackson, R.W., "The Use of Sidewall Images to Compute Package Effects in MoM Analysis of MMIC Circuits," **IEEE Trans. on Microwave Theory and Techniques**, Vol. 41, pp. 406-414, March 1993.

Jackson, R.W., Comment on "Criteria for the Onset of Oscillation in Microwave Circuits," **IEEE Trans. on Microwave Theory and Techniques**, Vol. 40, pg. 1850, September 1992.

Jackson, R.W., "Criteria for the Onset of Oscillation in Microwave Circuits," **IEEE Trans. on Microwave Theory and Techniques**, Vol. 40, pp. 556-568, March 1992.

Svitak, A.J., D.M. Pozar, and R.W. Jackson, "Optically-Fed Aperture-Coupled Microstrip Patch Antennas," **IEEE Trans. on Antennas and Propagation**, Vol. 40, pp. 85-90, January 1992.

Pozar, D.M., R.W. Jackson and A. Svitak, "Microstrip Antennas with Integrated Fibre Optic Feeds," **Electronics Letters**, Vol. 26, pp. 1889-1890, October 1990.

El-Sharawy, E. and R.W. Jackson, "Full-Wave Analysis of an Infinitely Long Magnetic Surface Wave Transducer," **IEEE Trans. on Microwave Theory and Tech.**, Vol. 38, pp. 730-738, June 1990.

El-Sharawy, E. and R.W. Jackson, "Analysis and Design of Microstrip-Slot Line for Phase Shifting Applications," **IEEE Trans. Microwave Theory and Techniques**, Vol. 38, pp. 276-283, March 1990.

Jackson, R. W., "Mode Conversion at Discontinuities in Finite Width Conductor Backed Coplanar Waveguide," **IEEE Trans. Microwave Theory and Techniques**, Vol. MTT-37, pp.1582-1589, October 1989.

Burke, J. J. and R. W. Jackson, "Surface-to-Surface Transition via Electromagnetic Coupling Between Microstrip and Coplanar Waveguide," **IEEE Trans. Microwave Theory and Techniques**, Vol. MTT-37, pp. 519-525, March 1989.

Jackson, R. W., "Full Wave, Finite Element Analysis of Irregular Microstrip Discontinuities," **IEEE Trans. Microwave Theory and Techniques**, Vol. MTT-37, pp. 81-89, January 1989.

El-Sharawy, E., and R. W. Jackson, "Coplanar Waveguide and Slot Line on Magnetic Substrates; Analysis and Experiment," **IEEE Trans. Microwave Theory and Techniques**, Vol. MTT-36, pp. 1071-1079, June 1988.

Jackson, R.W. and D.W. Matolak, "Surface to Surface Transition Via Electromagnetic Coupling of Coplanar Waveguides", **IEEE Trans. Microwave Theory and Techniques**, Vol. MTT-35, pp. 1027-1032, November 1987.

Pozar, D.M. and R.W. Jackson, "An Aperture Coupled Microstrip Antenna with a Proximity Feed on a Perpendicular Substrate", **IEEE Trans. on Antennas and Propagation**, Vol. AP-35, pp. 728-730, June 1987.

Jackson, R.W., "Considerations in the Use of Coplanar Waveguide for Millimeter Wave Integrated Circuits," **IEEE Trans. Microwave Theory and Techniques**, Vol. MTT-34, pp. 1450-1456, December 1986.

Jackson, R.W., "Printed Dipoles Electromagnetically Coupled to Coplanar Waveguide," **Electronics Letters**, Vol. 22, pp. 324-326, March 13, 1986.

Jackson, R.W. and D.M. Pozar, "Full-Wave Analysis of Microstrip Open-End and Gap Discontinuities," **IEEE Trans. Microwave Theory and Techniques**, Vol. MTT-33, pp. 1036-1042, October 1985.

Jackson, R.W., "Second Order Effects Related to a Model for a Parallel Shock," **Journal of Geophysical Research**, pp. 9981-9988, 1983.

Jackson, R.W., "Nonlinear Electrostatic Waves: Oblique Propagation," **J. Plasma Physics**, 26, pp. 399-406, 1981.

Jackson, R.W., "Parametric Instability Due to a Low Frequency Whistler Wave," **Phys. Lett. A**, 77A, pp. 438-440, 1980.

Jackson, R.W. and K. Golden, "Formation of Precursor Whistler Mode Plasma Turbulence in Parallel Shock Waves," **J. Plasma Physics**, 22, pp. 491-497, 1979.

Conference Publications

M. Ranjbar, O. Oliaei, and R. Jackson, "A robust STF 6mW CT $\Delta\Sigma$ modulator with 76dB dynamic range and 5MHz bandwidth," in *Custom Integrated Circuits Conference (CICC), 2010 IEEE*, pp. 1-4, 2010.

Sanchez, M. and R. W. Jackson, "Low Cost Electronically Scanned Arrays Based on Surface Mount Active Antennas," **International Microwave Symposium Symposium Digest**, pp 684-688. June 2010 (Invited).

Morrison, K., C. Capar, Z. Lai, D. Goeckel, R. W. Jackson, "A Unified Framework for Low-Complexity Ultra-Wideband Signaling," **International Conference on Ultra- Wideband**, 4pp., September 2009.

Sanchez, M. and R. W. Jackson, "Architecture for Low Cost Electronically Steered Phased Arrays," **International Microwave Symposium Symposium Digest**, 4pp. June 2008.

Zhang, Q., D. L. Goeckel, J. Burkhart, B. K. Mui, N. Merrill, M. Carrier, R. W. Jackson, FSR-UWB (TR-UWB without the Delay Element): Effect of Impulse Dithering and Experimental Results," **International Conference on Ultra-Wideband**, 6pp., September 2006.

Iturbide-Sanchez, F., S. C. Reising, and R. W. Jackson, "Fabrication of a Miniaturized Spectrometer Based on MMIC Technology to Retrieve the 3-D Tropospheric Water Vapor Field," **International Microwave Symposium Digest**, 4pp., June 2006

Khandelwal, N., R. W. Jackson, "An X-band System-in-Package Active Antenna Module," **International Microwave Symposium Digest**, 4pp, June 2005

Iturbide-Sanchez, F., S. C. Reising, and R. W. Jackson, "Design and Implementation of a Miniaturized Water Vapor Profiling Radiometer," **Proceedings of the IEEE International Geoscience and Remote Sensing Symposium**, Anchorage, Alaska, 4pp, September 2004.

Reising, S. C., F. Iturbide-Sanchez, S. Padmanabhan, and R. W. Jackson, "Design and Implementation of a Miniaturized Water Vapor Profiling Radiometer," **8th Specialist Meeting on Microwave Radiometry and Remote Sensing Applications** (MicroRad '04), Rome, Italy, February 2004.

Ito, R. and R. W. Jackson," Parallel Plate Waveguide with Radiating Slot using Two Dimensional Frequency Domain Transmission Line Matrix Method," **2003 Conference on the Electrical Performance of Electronic Packaging** Proceedings Princeton, October 2003 pp 101-105.

R. Ito and R.W. Jackson, "Electromagnetic modeling of 3D printed circuit board using 2D frequency domain transmission line matrix method," **Digest IEICE** (Institute of Electronics, Information and Communication Engineers, Tokyo, Japan,) MW2003-155, vol.103, No. 288, pp.13-20, Sept. 2003.

Ito, R., R. Carrillo, and R. W. Jackson," RF Modeling of Vertical Interconnection Between Power-Ground Plane Combined with 2D TLM, **2001 Conference on the Electrical Performance of Electronic Packaging** Proceedings Boston, October 2001 pp 339-343.

Ho, Bin and R. W. Jackson, "Preserving Isolation in Grounded Coplanar Waveguide Circuits Without Via Holes," **2000 Conference on the Electrical Performance of Electronic Packaging** Proceedings Phoenix, October 2000 pp 265-268.

Jackson, R. W. and Z. Wang, "Radiation and Algorithms," *invited paper* for the, "**Workshop on Microwave and Mm-Wave Design Tool Applications for Virtual Prototyping**," at the IEEE Microwave Theory and Techniques Symposium, June 1999,.

Wang, Z., R. W. Jackson, "Coupling Algorithm for MMICs in Multi-Chip Assemblies with Baffles," **IEEE Microwave Theory and Techniques** Symposium Digest, June 1999,

Ito, R., T. Hongmatip, and R. W. Jackson, " Electrical Modeling of a BGA Package for Microwave Applications – A Layer by Layer Approach," **1998 Conference on the Electrical Performance of Electronic Packaging** Proceedings West Point, pp.237-241, October 1998.

Jackson, R. W., "Radiative Coupling and Equivalent Sources," *invited paper* for the workshop on, "**Computer Aided Electromagnetic Modeling, and Measurement for Electronics Packaging**," Baltimore, Maryland, June 1998.

Wang, Z., R. W. Jackson, "A CAD Algorithm for Coupling Between Dielectric Covered MMICs in Multi-Chip Assemblies," **IEEE Microwave Theory and Techniques** Symposium Digest, pp. 33-37, June 1998.

Jackson, R. W., " Modeling of Microwave Packaging Schemes and Comparison to Scale Model Measurements," **National Radio Science Meeting**, January 1998.

Ito, R. and R. W. Jackson, "Circuit Modeling of Isolation in Flip-Chip Microwave Integrated Circuits," **1997 Conference on the Electrical Performance of Electronic Packaging** Proceedings, San Jose.,pp.217-220, October 1997.

Jackson, R.W. and Z. Wang, "Circuit Based Model for Coupling Between MMICs in Multi-Chip Assemblies," **IEEE Microwave Theory and Techniques Symposium Digest**, Vol. 3, pp. 1377-1380, June 1997.

Jackson, R.W. and S. Rakshit, "Microwave Modeling of an Elevated Paddle Surface Mount Package," **1996 Conference on the Electrical Performance of Electronic Packaging Proceedings**, Napa Valley, pp.57 - 62, October 1996.

Jackson, R.W., S. Rakshit, and N. King, "Modeling and Application of Plastic Package Surface Mount Packages on Typical PCBs," **1996 Wireless Workshop Proceedings**, Sedona, pp. 81 - 84, September 1996.

Jackson, R.W., "Modeling Millimeterwave IC Behavior for Flipped Chip Mounting Schemes," *invited paper* for the **1996 WRI International Symposium on "Directions for the Next Generation of MMIC Devices and Systems**, N.Y., N.Y., September 1996.

Jackson, R.W., "MMIC Package Resonances: Characteristics, Effects, Remedies," *invited paper* for the **Workshop on Electromagnetic Modeling of Microwave Packages and Interconnects**, Atlanta, June 1993.

Jackson, R.W., "Removing Package Effects from Microstrip Moment Method Calculations," **IEEE Microwave Theory and Techniques Symposium Digest**, Vol. 3, pp. 1225-1228, June 1992.

Jackson, R.W., "Coupling Effects Due to Resonances in Large Millimeter Wave MMIC Packages," *invited paper* for the **Workshop on Loss, Crosstalk, and Package Effects in MICs and MMICs**, Boston, Massachusetts, June 1991.

Burke, J.J. and R.W. Jackson, "A Simple Circuit Model for Resonant Mode Coupling in Packaged MMICs," **IEEE Microwave Theory and Techniques Symposium Digest**, pp. 1221-1224, June 1991.

Burke, J.J. and R.W. Jackson, "Reduction of Parasitic Coupling in Packaged MMIC's," **IEEE Microwave Theory and Techniques Symposium Digest**, pp. 255-258, May 1990.

Jackson, R.W., "Frequency Domain Modeling of MMIC's Including Package Effects," *invited paper* for the **Workshop on New Developments in Numerical Modeling of Microwave and Millimeter Wave Structures**, Dallas, Texas, May 1990.

Jackson, R.W., "Mode Conversion at Discontinuities in Modified Grounded Coplanar Waveguide," **IEEE Microwave Theory and Techniques Symposium Digest**, New York, pp. 203-206, 1988.

Burke, J. J., and R.W. Jackson, "Microwave Interconnects Via Electromagnetic Coupling," presented at the **SPIE Conference Proceedings on "Interconnection of High-Speed and High-Frequency Devices and Systems**," Newport Beach, pp. 68-74, 1988.

El-Sharawy, E. and R.W. Jackson, "Full Wave Analysis of Slot Line and Coplanar Waveguide on a Magnetic Substrate," **IEEE Microwave Theory and Techniques Symposium Digest**, Las Vegas, pp. 993-996, 1987.

Jackson, R.W., "Coplanar Waveguide vs. Microstrip for Millimeter Wave Integrated Circuits," **IEEE Microwave Theory and Techniques Symposium**, Baltimore, pp. 699-702, 1986. (Received an award for best presentation in session.)

Jackson, R.W. and D.M. Pozar, "Surface Wave Losses at Discontinuities in Millimeter Wave Integrated Transmission Lines," **IEEE Microwave Theory and Techniques Symposium Digest**, St. Louis, pp. 563-565, 1985.

Book Reviews

"Notes on Microwave Circuits Volume I & II," by D. Kajfez, review appeared in IEEE AP-S Newsletter, August 1986, p. 34.

Doctoral Students

John J. Burke, "Considerations in the Simulation of Large Monolithic Microwave Integrated Circuits Enclosed in a Conducting Package," 1993

El-Badawy El-Sharawy, "Full Wave Analysis of Printed Lines on Magnetic Substrates," 1989

Zhaoyang Wang, "Investigation of Tractable Models of Coupling Between Microwave Integrated Circuits in Multi-Chip Assemblies," 2001

Rodrigo Carillo, "A Highly Integrated Millimeterwave Active Antenna Array Using BCB and Silicon Substrate," 2003

Nidhi Khandelwal, "Technology for Low Cost Electronically Steered Phased Arrays," 2008

Mauricio Sanchez, "Electronically Steered Phased Arrays For Weather Applications," 2010

Masters Students (with thesis)

Peter Rainville, "Investigation of SHF FET Amplifiers in Coplanar Waveguide," 1986.

David Matolak, "Analysis of a Coplanar Waveguide Surface-to-Surface Coupler," 1987.

John McKenna, "Investigation of a 10 GHz Oscillator/Doubler/Phase Shifter," 1987

John Cartland, "Phase Shifter/Oscillator in Coplanar Waveguide," 1987

David Kokotoff, "Computer Aided design of a Phase Shifter Matching Transformer," 1987

Jason Gerber, "Simulation of Microwave FET Circuits Using the Harmonic Balance Method," 1989

Athanasios G. Petropoulos, "Microstrip-Slot Ferrite Phase Shifter," 1992

John Lachappelle, " Investigation of Coplanar Waveguide in KU Band MMIC Design," 1994

Brian McNamara, " A Spiral Transformer for Plastic Packaged Low Noise Amplifier at 5.8 GHz," 1995

Qing-Xing Zhang, " Design and Measurement of Spiral Resonator Filters," 1996

Sambarta Rakshit , " Circuit Models of Surface Mount Plastic Packages," 1997

Ryosuke Ito, "Electrical Modeling of Manufacturable Microwave Integrated Circuit Packages," 1998

Bin Hou, " A 23 GHz Low Noise Amplifier Design for Flip-Chip Packaging," in progress

Hsiao-chun Hsu, "Two Compact Multilayer Components for Use in Microwave Wireless Communication Applications" 2001

Rully Moulany , " Investigation of Low Frequency Intermodulation Product Feedforward linearization for Integrated Design," 2002

Haoyang Yu, "Power Amplifier Linearization Based on the Injection Technique," 2004

Prachi Deshpande," S Band Transconductance Mixer," 2004

Guarav Verma," A 0.25uM CMOS. 5GHz Front End for Smart Antenna Applications," 2004

Huizhuang Zhuang, "Envelope-Feedback Predistortion Linearization for Power Amplifiers," 2004

Miguel Alvarado, " An LNA with Matched, Switched, Inputs for Radiometer Applications," 2007

Jessel Xavier, " A Modified Linear Amplification By Sampling Technique," 2007

Ryan Johnson, in progress

Jeffrey Shatzman, An Electronically Reconfigurable Three Band Low-Noise Amplifier in 0.5 um GaAs pHEMT Technology," 2010

Arash Mashayekhi, in progress

Research Funding

X-Band IC Technologies and Architectures for Low Cost Radars; PI, R. W. Jackson (75%?); Co-PI, R. Tessier, Raytheon; 2/07-8/10, \$400K

RFID Application for the Frequency Shifted Reference Ultra-Wideband (FSR UWB) Concept; PI-Jackson (66%?); Co-PI Goeckel Army Phase II STTR in collaboration with NEWLANS Co., 8/08-8/2010, \$231,000(UMass share)

Basic Research in Microwave Integrated Circuits; PI: R. W. Jackson; TriQuint Inc, 9/08 – unrestricted; \$85,000

CT-ER Ultra-wideband Radio for Low-Power Security; PI-Burleson, Co-PIs – Goeckel, Co-PI – Jackson (25%?), NSF, 9/08-8/2010, \$200,000

EHF Phased Arrays; PI-Schaubert, Co-PI – Jackson(30%), Kwon, Vouvakis, Boryssenko, Lockheed-Martin Co., 5/09-4/2010, \$100,000

Center for Collaborative Adaptive Sensing of the Atmosphere; P.I., D. McLaughlin; Co. I.: many others and R. W. Jackson (one of many senior personnel spread across four universities), National Science Foundation, 9/1/03-8/31/08, Direct-\$15,257,688, Indirect-\$1,742,312.
R.W.Jackson BaseBudget 9/05-9/065: roughly \$60,000

Center for Advanced Sensor and Communication Antennas; P.I., D.Schaubert; Co. I.: K. Carver, S. Desu, R. Janaswamy, D. Pozar, C. Swift, R. W. Jackson, Air Force Research Laboratory
R. W. Jackson Base Budget 9/01/05-8/31/06 roughly \$60K

Microwave Integrated Circuit Design and Modeling, Jackson P.I., R.F. Micro Devices, 9/1/04-unrestricted grant, direct-\$78,000, indirect-\$7,800

Microwave Integrated Circuit Design and Modeling, Jackson P.I., R.F. Micro Devices, 9/1/01-8/31/03, direct-\$57,600, indirect-\$6,400

Industry-University Consortium for RF/Microwave Integrated Circuit Design, Jackson P.I., (Infineon, Global Communications, Philips) 9/1/01 – 8/31/03, \$243,000-direct, \$27,000-indirect

Ultra Low Cost Antenna/RF Subsystems, Jackson PI, McLaughlin Co-PI, General Electric, 9/1/01-8/31/02 direct-\$22,500, indirect-\$2,500

"Advanced Broadband Access Technologies," Narad Networks; 9/1/00-12/31/01; Goeckel - P.I., Pozar and Jackson - Co-P.I.s; Direct - \$64,728, indirect -\$30,648;

"Gate/Drain Feed Networks for High Power Millimeterwave PHEMTs," Raytheon; 9/1/00-8/31/01; \$60,000; Jackson - P.I.

"Support of Research on Highly Integrated Millimeterwave Front-Ends," M/A-COM; 11/1/99-10/31/01; \$40,350; Jackson,-P.I.

"Integrated Active Arrays for Millimeterwave Wireless Communications," National Science Foundation; 9/1/99-8/31/02; \$359,354; Pozar, P.I., Jackson and Lau - Co. P.I.s

"Design of GaAs Integrated Circuits for Millimeterwave Communications Receivers - a renewal", Millitech; \$78,200; 6/99-11/00; Jackson-P.I.

“Studies Relating to Microwave Integrated Circuits for Wireless Communications, “ M/A-COM; 9/1/98 - 12/31/00; \$150,000; Jackson, P.I.,

“Design of GaAs Integrated Circuits for Millimeterwave Communications Receivers,” Millitech Inc.; 11/97 to 11/98, \$102,000; Jackson-P.I., Weinreb-Co. P.I.

"CAD Models of Radiation and Related Effects in Packaged Microwave Integrated Circuits," Raytheon/DARPA; 7/96 - 10/98; \$186,000; Jackson P.I.

"Microwave Modeling of Flip-Chip Structures for use in Manufacturable Multichip Modules," MA-COM/DARPA; 2/96 - 9/98; \$100,000; Jackson P.I.

"Graduate Fellowship," Analog Devices; 9/96-9/97; \$20,000; Jackson P.I.

"Modeling and Design of Low Cost Packages for Microwave Integrated Circuits," Raytheon; 9/95 - 12/97; \$107,000; Jackson P.I.

"Structures and Components for Low Cost Microwave Integrate Circuits," MA/COM; 1/93 - 12/94; \$100,000; Jackson, P.I.

"Printed Ferrite Phase Shifters," Raytheon; 1/1/90-12/3/90; \$31,000; Jackson, P.I.

"Millimeter Wave Radiating Elements and Arrays," Unrestricted Grant from General Electric, 12/89-??; \$50,000; Pozar, P.I.; Schaubert Co-P.I. and Jackson, Co-P.I.

"60 GHz Phased Array for Satellite Communications," General Electric; 10/89-10/91; \$300,000; Jackson, Co-P.I.; Pozar, Co-P.I.; Schaubert, P.I.

"Engineering Research Equipment: Microwave Prober," National Science Foundation; \$28,000; 1989; Jackson, Co-P.I.; Stephan, Co-P.I.; Yngvesson, P.I.

"Investigations of Broadband Phase Shifters." Raytheon Company; 5/88-5/89; \$30,000; Jackson, P.I.

"Ferrite Phase Shifter Studies," Raytheon Company; 1/86-1/88; \$121,000; Jackson, P.I.

"Millimeter Wave Circuit Structures," General Electric Company; 1/86-12/86; \$43,000; Jackson, P.I.; Pozar, Co-P.I.

"Technology Development for Monolithic Phased Arrays," Rome Air Development Center #F19628-84-K-0022; 1/84-10/86; \$174,000; Jackson, Pozar, Yngvesson, Co-P.I.'s; Schaubert, P.I.

"A Study of Inter-Injection-Locked Phased Arrays," ARO; 8/86-6/88; \$120,000; Jackson, Co-P.I.; Stephan, P.I.

"Transmission Lines for Millimeter Wave Integrated Circuits," General Electric Company; 1/85-1/86; \$60,000; Jackson, P.I.

"Computed Aided Design of Waveguide Matching Sections," Raytheon Company; 3/84-3/85; \$22,000; Jackson, P.I.

"Characterization of Microstrip Discontinuities on Thick Substrates, AFOSR, #F496-82-C-0035; 12/84-12/85; \$12,000; Jackson, P.I.

"Circuits for Monolithic Phase Shifters," General Electric Company; 1/85-1/86; \$56,000; Jackson, Co-P.I., Stephan, P.I.