

H. CLARK BELL Ph.D., P.E.
Consulting Engineer

WEBSITE BIOGRAPHY

Clark Bell has over 35 years of design and design management experience in radio-frequency (rf) and microwave component and subsystem manufacturing for commercial and military space, airborne and ground equipment, emphasizing new business development and technical marketing (often resulting in state of the art solutions to extremely difficult problems). He has used lumped-element, transmission line, waveguide, semiconductor, dielectric, ferrimagnetic, superconductor, electromechanical and antenna technologies in his designs, for applications in communications and telemetry, radar and countermeasures, satellite navigation, electronic article surveillance, system integration, and simulation and instrumentation. His specialties include filters and passive components, wire antennas, rf distribution and propagation, high power handling for heat dissipation and breakdown prevention, and patents.

Dr. Bell has also been engaged as an expert in legal matters concerning communications and electronics, electrical devices, and the manufacture of engineered products. His experience includes personal injury and property damage, patent, trade secret misappropriation, breach of contract and warranty, and criminal cases.

Dr. Bell is a licensed Professional Engineer in California, a registered Patent Agent, a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), a Senior Member of the National Academy of Forensic Engineers (NAFE) and a Full Member of the Association of Federal Communications Consulting Engineers (AFCCE). Dr. Bell has published or presented 28 technical papers, including four patents, and has presented 15 talks on RF safety, ethics, forensic engineering, patent infringement, and consulting. He received the B.S. in Physics, and the M.S. and Ph.D. in Engineering (graduate fields of study: Electromagnetics, Electronic Systems, and Solid State Electronics), from the University of California, Los Angeles.

RECENT PROJECTS

Pet tracking and location system

Enhanced RFID appliances

Phase center of circularly polarized antenna

Multipactor, ionization breakdown in space power amplifier and isolator

High power combiner, IF bandpass filters for LINC amplifier in PCS base station transmitter

Contiguous triplexer for harmonic tuning of linear amplifiers

Multipactor breakdown in space diplexers

TECHNICAL PAPERS
(Since 1990)

“Zolotarev Bandpass Filters,” [expanded] *IEEE Transactions on Microwave Theory and Techniques*, vol. 49, pp.2357-2362, December 2001; [presented] *2001 IEEE MTT-S International Microwave Symposium Digest*, May 2001.

“Single-Passband, Single-Stopband Narrowband Filters,” [expanded] *IEEE Transactions on Microwave Theory and Techniques*, vol. 48, pp. 2472-2475, December 2000; [presented] *2000 IEEE MTT-S International Microwave Symposium Digest*, June 2000.

“L-Resonator Bandstop Filters,” [expanded] *IEEE Transactions on Microwave Theory and Techniques*, vol. 44, pp. 2669-2672, December 1996; [presented] *1996 IEEE MTT-S International Microwave Symposium Digest*, pp. 469-472, June 1996.

“Narrow Bandstop Filters,” [expanded] *IEEE Transactions on Microwave Theory and Techniques*, vol. 39, pp. 2188-2191, December 1991; [presented] *1991 IEEE MTT-S International Microwave Symposium Digest*, pp. 539-542, June 1991.

TECHNICAL REPORTS (Since 1990)

- "Power Handling in Spacecraft Solid State Power Amplifier Assembly," 6 April 2001
- "FM Bandpass Filter," 11 February 2001.
- "Power Handling in Spacecraft Diplexers," 19 June 2000.
- "Triplexer Feasibility Study," 19 May 2000.
- "Mine Shaft Radio Telemetry at Higher Frequencies," 6 April 1999.
- "Monopole Antenna Simulator," 24 February 1999.
- "Mine Shaft Radio Telemetry," 24 July 1998.
- "Waveguide Equalizer Simulation," 23 May 1997.
- "Phase Distortion/Degradation, Ku/Kt Wideband Filters," 2 December 1994.

TECHNICAL LECTURES (Recent)

- "The Art of Synthesis," (MTT-S Speakers Bureau talk), presented to:
RF and Microwave Seminar, Cal Tech, Pasadena, April 2002;
Graduate seminar, SUNY, Buffalo, March 2001;
IEEE Buffalo Section and AP/MTT Chapter, March 2001;
IEEE San Diego AP/ED/MTT Chapter, November 2000;
IEEE North Jersey Section and C&S/ED/MTT/AP Chapter, March 2000.
- "Microwave Filters," two lectures in graduate course "Microwave Engineering," CSUN: November 2000;
November 1998
- "Coupled Resonator Prototype Synthesis," two-hour presentation at Workshop on Microwave Filter Synthesis and Equivalent Circuit Extractions, 2000 IEEE MTT-S International Microwave Symposium, June 2000.
- "Narrowband Prototype Synthesis," three-hour lecture in graduate course "RF and Microwave Filters and Networks," NJIT, March 2000.
- "Issues in Mine Shaft Telemetry," Internal seminar, NIOSH, Spokane WA., July 1999.
- "Filters and Diplexers for Cellular, PCS and Communications Systems," Del Mar Electronics Show, Del Mar CA, May 1999.

PATENTS

- H. C. Bell, "Nested Turnstile Antenna," U.S. Patent No. 6,342,867, Jan. 29, 2002.
- H. C. Bell and H. J. Muller, "Superconducting Radio Frequency Bandstop Filter," U.S. Patent No. 5,932,522, Aug 3, 1999.
- M. Beik, H. C. Bell and A. Abdelmonem, "Electromagnetic Filter Having a Transmission Line Disposed in a Cover of the Filter Housing," U.S. Patent No. 5,843,871, Dec. 1, 1998.
- H. C. Bell and H. A. Rosen, "Contiguous Channel Multiplexer," U.S. Patent No. 4,029,902, June 14, 1977.