

Eric E. Funk, Ph. D.

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SUMMARY

RF/Wireless/Microwave Photonic Engineer with 17+ years experience. RF design experience ranges from radar hardware to mm-wave wireless. Photonic design experience from radio over to laser radar. 40+ refereed or invited publications including two book chapters and guest editor of *IEEE Journal on Lightwave Technology*, Microwave Photonics Special Issue.

EDUCATION:

Ph.D. (1995) and MS (1991), Electrical Engineering, University of Maryland, College Park, MD.

B.S. Physics (1988), Rensselaer Polytechnic Institute, Troy, NY.

CURRENT POSITION (June 2003 to Present):

Eric E. Funk, Ph. D. is a co-founder of Red Mountain Radio LLC (RMR), in Ouray, CO. Recent proprietary hardware design work includes radar, radar over fiber, radar signal generation/processing, CATV set-top-box, RF Tag reader, UHF transceiver, pager transmitter.

PRIOR RELEVANT EXPERIENCE:

Dr. Funk has significant prior experience in both microwave and optics design and research. His previous work experience is listed below.

ELECTRICAL ENGINEER/MICROWAVE PHOTONICS

Naval Research Laboratory, Washington DC

(June 2000 to May 2003- including contract work through SFA Inc., Largo MD.)

Laser Radar

Developed direct sequence coded eye-safe CW laser radar for near horizon target identification. Designed/developed hybrid optical/RF heterodyne receiver. [Project Leader.]

Radio/Microwave Over Fiber

Designed and demonstrated long-haul (110 km) radio over fiber link/delay line capable of supporting 256-QAM modulated microwave radio above 10 GHz. Demonstrated LAN bridge over hybrid 26 GHz optical/wireless channel. [Project Leader.]

Multiplexed Fiber Antenna Remote

Developed multi-channel fiber-optic remote capability for phased-array antennas using a single fiber. Enables low inter-channel phase error via wavelength division multiplexing and minimization of inter-channel cross-talk.

Free space Optical Communications

Implemented vector modulation in passive optical modulating retro-reflector system. Yielded data throughput enhancement for UAV/ground terminal digital video link .

Optical Synthetic Aperture Radar

Applied synthetic aperture radar techniques to short-range coherent optical ranging.

SENIOR RF DESIGN ENGINEER

EER Systems, Chantilly, VA

(March 1999 to May 2000)

28 GHz Radio

Designed and developed subscriber units for Local Multipoint Distribution Service (LMDS), 28 GHz wireless product. Design work includes microwave and baseband circuit design, specification development, and communications channel modeling. [System Design Leader on Team]

RESEARCH ASSOCIATE/PRINCIPAL INVESTIGATOR

University of Maryland, College Park, MD., Ultra-fast Opto-electronics Lab

(March 1997 to February 1999)

Ultra-wideband radio receiver

Development of ultra-wideband radio transceiver. Theoretical analysis and propagation measurements. [Principal Investigator].

POSTDOCTORAL FELLOW, Army Research Laboratory , Adelphi, MD.
(May 1994 to March 1997) (Student contractor, previous to Ph. D.)

Ultra-wideband radio receiver

Conceived, designed, demonstrated, and patented high dynamic range ultra-wideband radio transceiver architecture based on photoconductive sampling. [Principal Investigator.] (Patent #5,596,438.)

RESEARCH ASSISTANT, Ultra-fast Optoelectronics Lab-Electrical Engineering.
(June 1989 to May 1994)

Ph. D. Dissertation: Photoconductive Ultra-wideband Pulser Array
Developed and demonstrated ultra-wideband squint-free steerable antenna array by use of photonic true-time delay control. Developed ultra-wideband pulse forming networks with photoconductive switch control.

HONORS

IEEE Journal of Lightwave Technology, guest editor of Microwave Photonics Issue, December 2003. IEEE LEOS Program Committee (2001-2003), IEEE Microwave Theory and Techniques Society, Washington DC Chapter Chair (1997), IEEE International Microwave Symposium -Steering Committee (1998).