

James P. Noon
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TECHNICAL SKILLS:

Extensive experience in research, design and development of analog and power electronic circuits and systems as well as project management and team leadership. Experience includes inverter and converter design, active power factor correction, small signal modeling and analysis, analog and digital control, magnetics design, and computer simulation. Strong analytic skills coupled with practical experience, team leadership, and project management skills.

Have experience in a range of application areas including space/satellite systems, lighting applications, industrial controls, commercial, medical and military applications.

PROFESSIONAL EXPERIENCE:

- 2008 – present **Applications Engineering Section Leader**, Linear Technology now a part of Analog Devices Manchester, NH
Responsible for system analysis and design for power converter products. Contribute to new product definition. Lead Si evaluation and system/application circuit design and development efforts for monolithic converters. Train Field Engineers. Present at conferences. Develop reference and custom designs for strategic customers.
- 2007 – 2008 **Principal Systems Engineer**, CHiL Semiconductor, Tewksbury, MA
Responsible for new product definition for digital power controllers for multi-phase, high current converters. Lead system analysis and design efforts for power controller products. Develop control algorithms for high efficiency, fast transient response applications. Significant contributions to product development leading to several patents.
- 2003 – 2007 **Senior Principal Design Engineer**, Oztek Corp., Merrimack, NH
Lead design and development efforts in an engineering firm. Responsibilities included project management as well as hardware design of embedded control systems and power electronic circuits and systems development. Projects included development of a DSP based interleaved PFC with Phase-Shifted Full-Bridge DC-DC Converter, DC-DC and AC-DC converters and a 3-phase 480V grid-tie inverter.
- 1994-2003 **Applications Engineering Manager**, Texas Instruments Corp., formerly Unitrode Integrated Circuits, Merrimack, NH
Responsible for applications engineering within the System Power Management business unit. Managed Applications Engineering for the power product line with a group of engineers and technicians in three locations (NH, NC, TX). Technical responsibilities included new product development, circuit design and custom power system design for key customers. Technical liaison to university research programs and member of technical steering committee.
- Principal Systems Engineer (Unitrode)**, Responsible for new product development, including definition of new Integrated Circuit architectures. Designed and developed new

James P. Noon

power stage topologies and control techniques for power converters including PFC, ZVS/ZCS, DC-DC, and off-line converters.

As lead engineer in the systems group, was responsible for new product development in the DC-DC and PFC product spaces. Specific products defined include Unitrode PFC controllers, synchronous buck controllers, hot swap circuits, and general-purpose PWM controllers.

1992-1994 **Design and Development Engineer**, Lutron Electronics, Coopersburg, PA
Responsible for design and development of lighting control circuits for dimming florescent ballasts. Performed research into new methods of lighting control.

Developed a high frequency resonant inverter for dimming florescent ballast. Developed company's first power factor correction circuits and investigated and solved complex system interaction issues. Investigated lamp physics and control aspects of very low dimming behavior in fluorescent and compact fluorescent lamps.

1988-1990 **Member Technical Staff**, GE-Astro Space Division, West Windsor, NJ
Designed and developed multiple output DC-DC converters for space applications. Designed and analyzed magnetic components, filter networks, feedback control and ancillary circuits. Performed worst-case analysis, failure analysis and computer simulation of isolated dc-dc converters.

1985-1990 **Adjunct Instructor**, Mercer County Community College, West Windsor, NJ
Instructor for Circuits and Electronic Construction classes. Taught circuit theory and supervised labs.

PATENTS:

United States Patents:

- 8,461,816: "Coefficient scaling depending on number of active phases"
- 8,330,444: "Power supply circuit and dynamic switch voltage control"
- 8,242,759: "Power supply circuit and multi-phase control based on peak and average current"
- 8,024,138: "Power supply circuitry, collection and reporting of power supply parameter information"
- 7,982,446: "Power supply circuit with dynamic control of a driver circuit voltage rail"
- 6,717,826: "Method to reduce bus voltage stress in a single-stage single switch power factor correction circuit"

PUBLICATIONS:

Select Publications Authored and/or Co-Authored:

Battery Life Extension & Storage Considerations Battery Life Extension & Storage Considerations , IDTechEx Energy Harvesting & Storage USA 2014 Nov 20, 2014

Untapped Potential: Energy Harvesting Solutions, IDTechEx Wireless Sensor Networks & RTLS USA Nov 08, 2012

James P. Noon

Practical Design Considerations for Thermal and Photovoltaic Energy Harvesting Applications, Sensors Conference 2011

A DSP Based Digitally Controlled Interleaved PFC Converter, IEEE Applied Power Electronics Conference 2005, March 2005

Study and Design Considerations of a Voltage-Source Single-Stage PFC Converter, IEEE Industry Applications Conference 2000, October 2000

Single-Stage Current-Fed Isolated Boost Converter With PFC, Unitrode Power Supply Design Seminar, 1999

Practical Design Issues for PFC Circuits, IEEE Applied Power Electronics Conference 1997, February 1997

Analysis and Design of a 250kHz, 500W Power Factor Correction Circuit Employing Zero Voltage Transitions, High Frequency Power Conversion Conference, May 1995

A 250kHz 500W Power Factor Correction Circuit Employing Zero Voltage Transitions, Unitrode Power Supply Design Seminar, 1994

Design of a Multi-Module, Multi-Phase Battery Charger for the NASA EOS Space Platform Testbed, IECEC '92, August 1992

Space Platform Power System Hardware Testbed, Final Report for NASA Goddard Space Flight Center, June 1991

Design and Development of a Testbed for the Space Platform Power System, 9th Annual Virginia Power Electronics Seminar, September 1991

EDUCATION:

Virginia Polytechnic Institute and State University, Blacksburg, VA.

M.S. Electrical Engineering with concentration in Power Electronics, August 1992.

Thesis: Design of a Multi-Module Multi-Phase Battery Charger for the NASA EOS Space Platform Testbed. Thesis Advisor: Dr. F.C. Lee

Graduate Research Assistant, Virginia Power Electronics Center, Blacksburg, VA.

Contributed to the development of the power electronics' test bed for the NASA EOS satellite. 1990-1992

The College of New Jersey, Ewing, NJ.

B.S. Engineering Science with concentration in Electrical Engineering, May 1988.