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SEMINAR

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Architecture of a Switching Regulator with Good Light Load Efficiency for Mobile Platforms

by

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Abstract: In Power Management Integrated Circuits (PMIC), the necessity of large drive capabilities while still able to have high light load efficiencies is becoming a difficult design tradeoff for mobile platforms. An architecture that allows for variable output voltage, from 0.6 to 1.9V along with output drive capability of 0 to 4A, while maintaining efficiency in the light load can have several different topologies, but tradeoffs are inevitable. Several topologies will be presented along with the design challenges, while highlighting a high speed design for excellent load and line transient performance with good light load efficiency.

Eric Hayes received a BS in Electronic Engineer from California Polytechnic State University, San Luis Obispo, CA in 1992. From 1992-1995 he worked for RAM Electronics Corporation developing HVAC controllers and IR remote controls. He received an MS in Electrical Engineering from Colorado State University, Fort Collins, CO in 1997 doing research on opto-electronic integrated circuits for smart pixel arrays using MSM photodiodes and Vertical Cavity Surface Emitting Lasers with GaAs integrated circuit technology. He worked at LSI logic in Fort Collins from 1997 to 2005 working on Phase Locked Loops for SERDES communications in the 1-10Gbps data rates. Joining Broadcom in 2005 he has worked on switch mode power supplies for mobile platforms optimizing area and power on PMIC devices to handle the increasing demand of smart-phone technology. His current research interests include embedded power management and energy harvesting for wireless connectivity applications.

