The current state of digital power

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Digital power today is a small fraction of overall power industry revenue but is commanding a large share of industry attention and discussion. Traction for digital power solutions is evident based on a slew of product announcements from a multitude of suppliers, all playing to their strengths. Traditional analog power houses are rolling out products that have a “digital wrapper” around an analog controller, while the traditional DSP and microcontroller houses are rolling out products that provide customers infinite programmable options to address all possible power management needs. Emerging pure-play digital solutions are challenging these two sets of players with offerings that promise the flexibility of digital features at cost parity with analog solutions. But, in reality, the pure-play digital solutions have not reached the price parity or the simplicity of the elegant analog solutions, yet.

From a functional perspective, digitally controlled, analog loop-based products can meet most of the demanding requirements (telemetry, fault programmability/reporting, phase shedding, etc.,) but they can’t meet all without adding a few external components. In contrast, the true digital controller with the digital loop can meet all of these requirements without any additional external components. However, because these all-digital solutions are more capable from a features perspective, they are also more complex from a user’s perspective. Commercially successful digital solutions must be able to provide the features while minimizing the complexity and the risk (read: fear) of making a change.

To make things even more interesting, the top three drivers in selecting a power (be it digital or not!) solution are efficiency, size and cost. Digital’s impact on efficiency and size is a minor positive, while it can actually have a negative impact on cost. No new technology will play a major role in the mainstream market unless the overall solution cost is compatible with the existing technology.

About the Author:
Deepak Savadatti is currently the Executive Director of Multiphase Product Line, Enterprise Power Business Unit of International Rectifier. Experienced in both established and developmental phase start-up companies, Savadatti has a varied background in applications engineering, product management, marketing and sales.

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