5th Power Analysis & Design Symposium

Advanced Characterization, Simulation, and Troubleshooting of Electronic Power Systems

Symposium: April 21st,2016 / 08:30 - 17:00
Open Lab: April 20th, 2016 / 15:00 - 19:00
Eching (near Munich), Germany

With lectures, practical examples and demonstrations presented by international power supply experts from:

Analog Devices, Infineon, Linear Technology, Microchip Technology and Würth Elektronik

Supported by dataTec

Did you hear about the additional pre-event? Join our Open Lab!

Participants

• Power electronics design engineers working on analog and digital power supplies who want to ensure optimum system performance.

• Electronic engineers who need to assess the quality and stability of a power supply they are using or planning to buy.

Free Participation

The participation in our symposium is free of charge and will include lunch and refreshments during breaks.

Venue

The Symposium and the Open Lab take place at:

Bürgerhaus Eching
Roßbergerstraße 6
85386 Eching (near Munich)
Germany

Accommodation & Travel Information

All details for recommended accommodations and travel information can be found on our web page:
www.omicron-lab.com/event

If you have any questions, please feel free to contact us whenever needed!

Your Contact

OMICRON Lab
Ms. Kathi Dunst
Oberes Ried 1
6833 Klaus, Austria
Phone: +43 59495 2503
Fax: +43 59495 72503
E-Mail: katharina.dunst@omicron-lab.com

April 20th - Pre-evening Open Lab:

Join our Open Lab after your daily work is done. We will have several measurement benches ready for you, where we can measure loop stability, PSRR, output impedance and more... So come whenever you want, have a beer, bring your power supplies and do some great measurements with us.

The Lab will be open on April 20th from 15:00 - 19:00.

April 21st - Symposium Agenda:

08:30 - 09:00 Registration
09:00 - 09:15 Welcome & introduction
09:15 - 10:15 Lecture
10:15 - 11:00 Break & exhibition
11:00 - 12:40 Lecture
12:40 - 13:40 Lunch
13:40 - 14:10 Exhibition
14:10 - 15:00 Lecture
15:00 - 15:30 Break & exhibition
15:30 - 16:20 Lecture
16:20 - 17:00 Discussion & closing

Our Seminar Partners

ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

MESSBAR MEHR.
dataTec
Ihr Spezialist für
Mess- und Prüfgeräte

infineon

LINEAR TECHNOLOGY

MICROCHIP

WÜRTH ELEKTRONIK

Smart Measurement Solutions®

Topics

Digital Power Controllers Improve Reliability and Availability of DC/DC Converters

by Bernhard Strzalkowski - Analog Devices

Modern digital power controllers do not only improve the power efficiency of converters, they can also enhance their reliability and availability. New features like volt-second-balance, matched cycle-by-cycle current limiting, digital current sharing and nonlinear gain control for fast transient response can only be realized by digital controllers.
The volt-second-balance helps equalizing the current in the power transformer to avoid successive accumulation of magnetic flux, thus avoiding transformer saturation and overheating. Matched cycle-by-cycle current limiting avoids transformer imbalance during over current condition.
Digital current sharing provides accurate and EMI-robust control of converters working in parallel. Nonlinear gain enhances the system response on fast loads transients.

Filter Layout and Components for DC/DC Switching Power Converters

by Andreas Nadler - Würth Elektronik

Every product brought to the market must pass certain EMC tests. An essential design step for a proper functioning DC/DC switching converter is the selection of optimal components. In addition the PCB layout of the converter circuit and the filter circuits are critical for the EMC properties of the converter. In this lecture we will show how to calculate input and output filters for switching power converters and will present the influence of PCB layout issues, part selection and filters based on real-life EMC measurements.

Topics

Analyzing Power Converter Stability of Current Sources
by Andreas Reiter - Microchip Technology

Current sources are everywhere around us. Especially LED drivers gain significant importance and are rapidly replacing other luminaries in various markets and applications. While most literature and scientific work is dealing with stability analysis of common voltage sources, little can be found on the specific aspects on how to properly apply common stability criteria to current sources.

The load of a current source is an active part of the power conversion system that can hide issues with stability and common design margins. This lecture will walk you through an entire development process from simulation to design validation, highlighting common pitfalls and introduce techniques to unravel hidden stability issues using real-world design examples.

DC-DC Efficiency Improvement with High-Resolution Dead-Time and a Sensorless Algorithm
by Pedro Costa - Infineon

The current growth of always connected electronic devices keeps on pushing the demand for smaller power footprints and power efficiency to the limit. Synchronous DC-DC converters are a constituent part of any electronic system, and are therefore directly linked to the optimization of the footprint, and efficiency when it comes to digital power conversion. While the efficiency of a synchronous DC-DC converter, such as a buck converter, is nonetheless dependent on several variables, being one of the major contributors is the body diode conduction losses.

We will demonstrate in this presentation, how to implement an algorithm in an XM4200 ARM Cortex M4F microcontroller, that targets the minimization of body diode losses in the power switching devices.

Optimizing DC/DC Converter Dynamics via PMBus

by Bostjan Bitenc - Linear Technology Corp. (LTC)

Power management systems can be very complex these days. Many interdependent supply rails, very demanding dynamic requirements (e.g. FPGA core), space restrictions, tight cost budgets, etc. are challenging hardware engineers responsible for power supply concepts and implementations.

"Digital Control" is a key topic since many years and possible advantages have been widely discussed, but one important aspect mostly remains unsaid, it means adding a lot of complexity.

This presentation gives a quick overview on LTC´s Power System Management (PSM) concept which combines proven technology (e.g. fast analog control loops with current/voltage mode control and non-linear slope compensation) with add-on digital features. It then focuses on a new PSM buck controller, the LTC3884, that offers adjustable loop compensation via PMBus. Simulations and Bode 100 measurements will be used to visualize how this feature can be used to easily optimize dynamic performance of a DC/DC converter.

Registration

Register until:
April 8th, 2016

Please register online at
www.omicron-lab.com/event

No time to attend?
Visit us at PCIM Europe in Hall 6 booth 244