



**OMICRON**  
**LAB**

## Get a Grip on Your Power Supply

Advanced Characterization, Simulation  
and Troubleshooting of Electronic Power Systems



### Seminar

including practical examples and demonstrations  
with the power supply experts

Steven M. Sandler (Picotest),  
Dr. Ali Shirsavar (Biricha Digital Power) and  
Bostjan Bitenc (Linear Technologies)

**May 22, 2013 - Klaus, Austria**

*No time to attend?  
visit our sessions at the PCIM in Nuremberg!  
More info at [www.omicron-lab.com/event](http://www.omicron-lab.com/event)*

# Program

## Topics

In this compact one-day seminar you learn new state of the art methods and procedures to characterize, simulate and measure the performance of analog and digital power supplies as well as distributed power systems.

### **Characterizing and troubleshooting distributed power systems**

This session addresses some of the common distributed power system issues and how to perform high fidelity in-system measurements, using three domains to identify and troubleshoot problems utilizing non-invasive testing methods. Impedance measurement, the key to assessing and optimizing PDNs (Power Distribution Networks) is explored in-depth. We will show how to determine and interpret the stability margin of control loops, as well as filter/converter combinations using non-invasive single port and two port measurements.

### **Digital Power De-Mystified from DC/DC to Digital PFC**

This session aims to inform the participants of the real engineering benefits as well as the practical challenges of digital power thus enabling them to choose the most suitable power management solution for their application. We will present numerous real life examples and a case study on Digital PFC (Power Factor Correction). The session concludes with a live demonstration of an auto-tuning stable digital DC/DC converter.

### **SMPS Bode Analysis Using LTspice**

In this session we show how a frequency domain simulation of a SMPS can be obtained from transient simulation data. A special focus will be laid on methods to assess the correctness of the simulation results. The session closes with practical demonstrations and the comparison of simulation examples with real world measurements.

### **Live hands-on workshop**

In small groups you will get the chance to gain practical experience by performing the new measurement methods introduced in the theoretical sessions.

## Speakers



**Steven M. Sandler** is an internationally well known expert for power supply design and measurements. With experience from countless mission critical designs used in the space, defence, and energy industries Steve is one of the most experienced power supply specialists of our time.

[www.picotest.com/blog](http://www.picotest.com/blog)



**Dr. Ali Shirsavar** is an expert in the design of digital power supplies. He combines an in-depth academic background on power supply design theory with the practical hands-on skills required to get analog and digital power supply designs working.

[www.biricha.com](http://www.biricha.com)



**Bostjan Bitenc** is an expert in SMPS design and simulation with more than 20 years of experience. In his daily work as Field Application Engineer at Linear Technology he consults customers on design, implementation and debugging of SMPS and other analog circuits.

[www.linear.com](http://www.linear.com)

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More info at [www.omicron-lab.com/event](http://www.omicron-lab.com/event)

## Participants

- Power supply design engineers who want to get a comprehensive and complete view on the performance of their power supply design.
- Electronic engineers who need to assess the quality of a power supply they are using or planning to buy.

## Agenda

08:30 - 12:00

- Characterizing and troubleshooting of distributed power systems
- Digital Power De-Mystified from DC/DC to Digital PFC

12:00 - 13:00

- Lunch

13:00 - 16:30

- SMPS Bode Analysis Using LTspice
- Practical laboratory measurements such as loop gain, non-invasive, ultra low impedances and more

## Seminar partners



## Free Participation

The participation in our seminar is free of charge.

## Venue

The one-day seminar will take place in the  
OMICRON Development Center:

OMICRON electronics GmbH  
Oberes Ried 1  
6833 Klaus  
Vorarlberg  
Austria

## Accommodation

For participants who arrive before or leave after  
the day of the seminar, we recommend a stay in one of  
the following hotels:

Hotel Martinspark  
Mozartstrasse 2  
A-6850 Dornbirn  
Phone: +43 5572 3760  
Fax: +43 5572 3760 376  
E-Mail: [info@martinspark.at](mailto:info@martinspark.at)

Hotel 24 7  
Montfortstrasse 6  
A-6840 Götzis  
Phone: +43 5523 69247  
Fax: +43 5523 69247 7  
E-Mail: [office@hotel247.at](mailto:office@hotel247.at)

If you need help with the booking of the rooms or a  
taxi, no problem. Just let us know and we will be happy  
to assist you.

## Organization

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Oberes Ried 1  
6833 Klaus, Austria  
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Fax: +43 5523 507 7304  
E-Mail: [patricia.marte@omicron.at](mailto:patricia.marte@omicron.at)



## Registration

Register until:  
**April 30, 2013**

Please register online at  
[www.omicron-lab.com/event](http://www.omicron-lab.com/event)  
or send the filled form below to:

OMICRON Lab,  
Oberes Ried 1, 6833 Klaus, Austria  
Fax +43 5523 507-7304

- Yes, I will attend the free OMICRON Lab seminar in **Klaus on May 22, 2013.**
- I plan to visit your sessions at the **PCIM (Nuremberg) on May 16, 2013.** Please send me more information.
- Unfortunately, I can not attend. Please provide me the seminar documentation after the seminar.

More information can be found at:  
[www.omicron-lab.com/event](http://www.omicron-lab.com/event)

Name: .....

Function: .....

Company: .....

Address: .....

ZIP/City/Country: .....

Phone/Fax: .....

E-Mail: .....

Signature: .....

*We look forward to hearing from you!*