



Another EMC resource  
from EMC Standards

EMC Training World Tour Continues!

*Helping you solve your EMC problems*

EMC seminar  
Copenhagen  
12 –13 April !



## EMC guru Keith Armstrong will hold a 2 day seminar in Copenhagen

*We are offering a 2-day seminar on EMC at PCB, Equipment, System and Installation level with the internationally recognized EMC expert and author, Keith Armstrong.*



Keith Armstrong has more than 30 years of experience in EMC, and is the author of numerous books and publications on EMC and PCB/Equipment design. He is the past chairman of the IEE's Professional Group on Electromagnetic Compatibility, a member of the IEEE's EMC and Product Safety Societies, and chaired the team that published IEEE Std 1848:2020 on Managing the Functional Safety Risks caused by EMI.

Keith will share the latest design techniques for minimizing the risks of delays to product launches, failing EMC tests or excessive manufacturing costs.

Opportunity exist to ask questions to one of the worlds most experienced experts in EMC and to network with engineering colleagues.

### A selection of the topics:

- EMC, SI, PI problems caused by ever-faster switching speeds
- EM Zoning (segregation)
- Interface analysis, filtering, suppression
- OV(GND) and power (PWR) planes
- PCB-chassis RF-bonding, shielding of PCBs
- Power supply decoupling
- Switching power conv.(AC-DC, DC-DC, DC-AC, AC-AC)
- Grounding
- Layer stacking and trace routing
- Devices with BGA packages and/or multiple DC rails
- Cable classification
- Wireless antennas (e.g. Wi-Fi, GPS, etc.)
- And a lot more.....

### **Date**

12—13/4-2023 - 08:30—16:30

### **Place of event**

Huone Conference Center  
Amager Strandvej 390, Kastrup/  
Copenhagen

### **Price**

6 995DKK / 7 500SEK or 750EUR - The price includes 2 days of training, lunches, coffee breaks and course material.

[Click here to register!](#)

Seminar organized by  
**Addmerit AB**

Click here to register!

**EMC seminar**  
**Huone Conference**  
**Center in Copenhagen**

# Program

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## **Day 1 - Essential EMC techniques on PCB level**

- *08:30 Welcome and Introductions*
- Saving time and money, and the scope and application of these design techniques
- EM Zoning (i.e. circuit segregation), interface analysis, filtering, and suppression
- Planes for 0V(GND) and other power rails (PWR)
- RF-bonding PCB Ref. Planes at EMZ boundaries
- Power supply decoupling
- Switching power converters (AC/DC, DC/DC, DC/AC, AC/AC)
- Matched transmission line techniques
- Layer stacking and trace routing
- Devices with BGA packages and/or multiple DC rails
- Some useful references, sources, and webinars

*Certificate of attendance will be issued on request!*

For questions, contact Addmerit: +46 (0)707739799  
or E-mail: [kurs@meritas.se](mailto:kurs@meritas.se)

### Adress to the seminar:

Huone Conference Center, Amager  
Strandvej 390  
Kastrup/Copenhagen

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## **Day 2 - EMC on Equipment, System and Installation level**

### **Requirements, and making things work profitably**

- EMC Directive (2014/30/EU) , UK EMC Regulations & Overview of the overall EMC control procedure
- Lightning protection (e.g. EN 62305) & National Wiring Regulations (e.g. BS7671)

### **Good EMC practices for general use**

- Planning
- Dealing with legacy equipment, systems, installation & Buying equipment; and CE + CE ≠ CE
- Power distribution systems; and power quality for EMC
- Galvanic isolation for EMC & Segregation (EM Zoning)
- Cable classification, segregation, routing & Using Bonding Ring Conductors (BRCs)
- Creating an RF Reference by RF-bonding conductors and/or metalwork
- Reducing the 'accidental RF antenna' efficiency of cables
- Terminating cable shields at EM Zone boundaries, at both ends
- Using Parallel Earth Conductors (PECs) & Reducing EMC problems caused by metal joints (e.g. due to corrosion)
- Some more things to take into account

### **EM Mitigation Techniques**

- Earthing/grounding for both Safety and EMC Zoning & Using Meshed Bonding Networks as RF References
- What to do when EM Zones must be isolated
- Filtering for EM Zoning & Shielding for EM Zoning
- Shielding large volumes, e.g. rooms, laboratories, buildings, etc.
- RF-bonding filters to shielded EMZs where cables enter/exit & RF-bonding cable shields/screens to shielded EM Zones at entry/exit
- Surge and Lightning protection

### **Maintaining good EMC over the operational lifecycle**

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