Let MindShare Bring “EMI / EMC” to Life for You
If you are a design engineer, it pays for you to know how and why EMI testing is conducted, as well as the typical causes of failure. If you are an EE, you want to know why EMI testing is done, how it is conducted, and what the typical failures are, even if a special department or an outside EMI company does the actual testing. This course gives you the EMI information you need including design considerations at both CAE and CAD level.

You Will Learn:

- Design considerations at CAE and CAD levels
- To examine and identify ways to prevent common EMI/EMC problems regarding power supplies, cables, connectors, slots, discontinuity of ground planes and antenna loops
- To provide a compliant radiation/susceptibility product
- EMI regulations in the U.S., the European Union and Asia

Course Length: 2 Days

Who Should Attend?

- Digital logic engineers and system architects
- EMC specialists
- Technicians
- PCB layout professionals
- IC designers
- Applications Engineers
- Engineering and project Managers

Course Contents:

- EMI, Source, path and receptor
- EMI regulations and Issues
- Conducting an EMI Test
- Conducted and Radiated Emissions
- Conducted RF Immunity
- ESD and Lightening
- Electrical Fast Transient
- Interference Coupling Mechanism
- RFI, EMI regarding PCBs, computers, analog designs, and systems
- Grounding designs/Filtering
- CM Radiation
- Antenna Loops
- Basics of PCB Radiation
- PCB Suppression Techniques
- Design for Immunity
- Switching Mode Power Supplies (SMPS)
- Crosstalk
- Power/Ground Planes
• Picket fences, the 20H rule and Cu fills
• Ideal stackups to be EMC
• Spread Spectrum Clocking
• Bypass and Radiation on PCBs
• Interference Coupling Modes
• Near/Far Field
• Differential/common coupling modes and resonance
• Analog circuitry
• Cables/Connectors Interfaces, Filtering and Shielding
• Capacitive and Magnetic Shielding and Shield Grounding
• Slots
• Cable Radiation
• Transfer Impedance
• Shielding Connection
• Loss of Ground Plane in Cables and Cable Configuration
• Antenna Loops with Cable Connections
• Shielding vs. Filtering
• Using Ferrites
• Filtering Mains Supply
• Using Transients Suppressors on Mains and I/O lines
• Radiation Through Shields

**Recommended Prerequisites:**
Basic knowledge of ICs, high-speed designs and PCB layouts. No advanced math is required though attendees will find it helpful to bring a scientific calculator to the course.

**Course Material:**
Included in the class will be a copy of "EMC for Product Designers" by Tim Williams, and a hardcopy of course notes.
Are your company’s technical training needs being addressed in the most effective manner?

MindShare has over 25 years experience in conducting technical training on cutting-edge technologies. We understand the challenges companies have when searching for quality, effective training which reduces the students’ time away from work and provides cost-effective alternatives. MindShare offers many flexible solutions to meet those needs. Our courses are taught by highly-skilled, enthusiastic, knowledgeable and experienced instructors. We bring life to knowledge through a wide variety of learning methods and delivery options.

training that fits your needs

MindShare recognizes and addresses your company’s technical training issues with:

- Scalable cost training
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- Training in a classroom, at your cubicle or home office
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- Reducing time away from work
- Training delivered effectively globally
- Concurrently delivered multiple-site training

MindShare training courses expand your technical skillset

- PCI Express 2.0®
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- AMD Opteron Processor Architecture
- Intel 64 and IA-32 Software Architecture
- Intel PC and Chipset Architecture
- PC Virtualization
- USB 2.0
- Wireless USB
- Serial ATA (SATA)
- Serial Attached SCSI (SAS)
- DDR2/DDR3 DRAM Technology
- PC BIOS Firmware
- High-Speed Design
- Windows Internals and Drivers
- Linux Fundamentals
- ... and many more.

All courses can be customized to meet your group’s needs. Detailed course outlines can be found at www.mindshare.com

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GENERAL DYNAMICS  •  HP  •  IBM  •  KODAK  •  LSI LOGIC  •  MOTOROLA  •  MICROSOFT  •  NASA  •  NATIONAL SEMICONDUCTOR
NETAPP  •  NOKIA  •  NVIDIA  •  PLX TECHNOLOGY  •  QLOGIC  •  SIEMENS  •  SUN Microsystems  •  SYNOPSYS  •  TI  •  UNISYS

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- **MindShare Classroom**
- **MindShare Virtual Classroom**
- **MindShare eLearning**
- **MindShare Press**

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- Intro to IO Virtualization
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- PCI Express 2.0
- USB 2.0
- AMD Opteron Processor Architecture
- Virtualization Technology ...

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