

EMI / EMC

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 Lightning
- 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.



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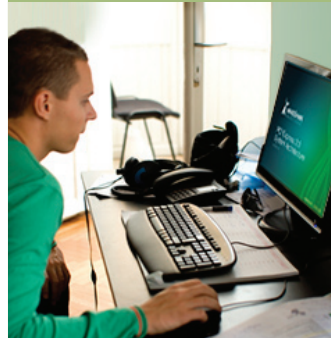


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