

Design for EMC (2 day course)

Run in collaboration with Staffordshire University, School of Engineering and Advanced Technology.

Course Summary

This Design for EMC short course is aimed at everyone involved in product design, additionally, it may be of benefit to those involved in product installation and project management. The use of mathematics is kept to a minimum with the emphasis being on the use of practical design rules.

Style and Format

The course begins with an explanation of EMC phenomenon and descriptions of the effects they can have on electronic products. The mechanisms by which circuits produce emissions are explained. All aspects of design are covered from component selection to enclosure design. In addition there are sections on test techniques, legislation and laboratory and a workshop where delegates can bring their products for discussion and testing.

What Does The Course Include?

A comprehensive set of course notes and handouts, refreshments, lunch and a completion certificate.

Agenda:

Day 1	Day 2
<ul style="list-style-type: none"> - Welcome and introduction - Nature of EMC Fields: What is EMC, EMC phenomenon, effect on products, electromagnetic waves and basic theory; - Circuit Design: Emission mechanism, choice of components, emissions from digital circuits, decoupling capacitors, analogue circuit emissions, immunity and software design. - Grounding and bond techniques: - Shielding of cables and equipment: Shielding theory, shielding materials, apertures, ventilation, displays, waveguides, seams, shield integrity hardware, cable shielding, screen typed, shielded cable connectors, ferrites, filtering and cable routing. - Electrostatic Discharge: The discharge event, effect on equipment, circuit design, PCB design, enclosure design, cable design and software design. - Signal Line EMI Suppression: - Power Lines EMI Suppression: Mains power supply filters common mode noise, differential mode noise, X & Y class capacitors, chokes, filter circuits, transients and transient suppression devices. 	<ul style="list-style-type: none"> - PCB Layout Techniques: System partitioning and component placement, power supply distribution and grounding, grounding segregation, ground planes, signal tracks and transmission lines. - Test Techniques: Radiated emission measurement, radiated immunity, conducted emissions, fast transient burst and electrostatic discharge (ESD) - EC Directive & Routes to Conformity: EU Directive 2004/108/EC, essential requirements, scope, exclusions, self certification, technical construction file, type examination, Declaration of Conformity, CE Marking and enforcement. - Video: - Laboratory: A practical demonstration of EMC test equipment with the opportunity for delegates to have their own products tested. - Workshop & Discussion: A discussion session to recap on particular points and for delegates to raise issues, both technical and legal, relating to their own products.

Booking Details:

Places will be provisionally booked by completing the online booking form. Confirmed bookings are made by faxing the signed booking form to 01527 595033. Alternatively you can post the form to the address below.

This course is delivered by Wemtech, on behalf of the CE Marking Association and has been endorsed by BSI. Further information on dates and costs are available on our website: <http://www.wemtech.co.uk/>