

Overview of EMC design

A one day in-house training course for electronics companies

Suitable for all electronic manufacturing and related companies

Description

This seminar is a one-day overview of EMC design issues. Good EMC design gives you a product that is more reliable and better fitted for its environment. The seminar will introduce participants to the legislation and standards which underpin EMC requirements, and to the design aspects which have to be addressed to meet them.

Who should attend

Electronic product designers and design managers: a basic knowledge of electronics is assumed. The course will be of particular interest to design engineers in all sectors who have to meet EMC requirements as part of their project specification. It will help them avoid the costly EMC-related design mistakes that bedevil project timescales and budgets.

Course material: course notes, including all slides used and explanatory text, will be sent before the start for copying and distribution to the delegates.

Cost for the basic course

£950.00 + VAT (no per-delegate fee)

plus travel and accommodation expenses for the course presenter

For a firm quote and booking

Contact:

Elmac Services,

Gorseacres, Puddletown Road, Wareham, Dorset

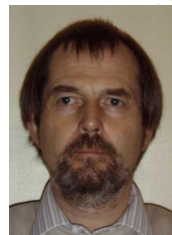
BH20 6AE UK Tel 01929 558279

e-mail courseenquiry@elmac.co.uk

web <http://www.elmac.co.uk>

Payment, admin and cancellations

The course will be invoiced on completion. The client is responsible for administering the seminar. Cancellations less than one month before the agreed start date will incur a charge.



The presenter

Tim Williams, consultant with Elmac Services, is the author of "EMC for Product Designers" (third edition), now regarded as a standard reference for design engineers needing to meet the EMC Directive, and "EMC for Systems and Installations" (with Keith Armstrong). He has written and presented many articles, conference papers and seminars internationally on circuit design and testing for EMC. He is a technical assessor for UKAS and SWEDAC, and has conducted EMC design reviews for numerous companies in every industry sector.

Programme

Morning

- 09.00-10.30 Introduction to EMC, legislation and standards: *Why EMC? – the definition of EMC – the various phenomena – the product life cycle and reliability aspects – the EMC and R&TTE Directives – other Directives and requirements – the standards regime – standards generating bodies – the three types of EMC standard*
- 10.45-12.30 Design of PCBs and shields: *Ground as a current return path – gridded and ground plane layouts – the optimum ground plane – interface layout and grounding – on-board shielding – current flow in a shield – effect of apertures and seams – conductive gaskets and coatings – partitioning shielded enclosures – using the shield as ground – cable layout and large enclosures*

Afternoon

- 13.30-15.00 Digital and analogue circuit design: *Emissions from logic circuits: clocks, transmission line ringing, decoupling – logic circuit immunity: timing and logic threshold constraints, transient susceptibility, defensive programming – analogue circuit immunity: bandwidth, dynamic range, balance, isolation*
- 15.15-16.30 Filtering and cables: *Filter configuration and layout – component imperfections – ferrites on cables and within the circuit – I/O filtering – mains filtering – screened cables: screen operation and termination – the effect of the connector*
- Exercise and case study: electronic product design review
- 16.45-17.00 Wrap up and final discussion