



PCB Design Seminars

18th-20th of April, 2016 - Victoria Tower Kista, Sweden

High Density Interconnect (HDI) - for Advanced Users (18th)

This 1-day seminar with **Happy Holden** will examine advanced engineering and design techniques by use of HDI technology. You will be shown how to create superior PCB designs while saving money.

Synopsis

As finer pitch devices all come into common use, for higher and higher speed logic, the need for advanced printed wiring boards (PWB) is essential.

This seminar looks at advanced technologies for the interconnection of area array components. PWB wiring modeling, design rules, materials, and selection of PWB structures (blind, buried and microvias) will be examined and compared.

The seminar will also define the HDI technologies, circuit routing guidelines, and materials required to permit the use of widely accepted fine pitch and BGA components.

Finally, we will look at boulevard routing techniques using blind vias to show how layers can be reduced by as much as 3X, with the associated cost reductions. If you are familiar with complex multilayer engineering and design, then this new advanced seminar on using HDI effectively is for you!

Control of Signal Integrity and Crosstalk (19th)

This 1-day seminar with **Richard Hartley** focuses on the issues PCB designers and Engineers need to know to prevent signal integrity, crosstalk, and grounding problems in high speed digital and analog circuits.

Synopsis

The output edge rate (rise/fall time) of devices in a circuit, more than the rate at which the circuit is clocked, is the cause of signal integrity problems in today's PCBs. Circuits with 250 ps rise time devices can create SI problems whether being clocked at 2 MHz, 200 MHz, or 2.0 GHz.

The energy generated in transmission lines by rapid rise and fall time devices is the driving force behind the need to control circuit parasitic elements, transmission line impedance, the paths of currents, and ground structures.

IC rise/fall times today are extremely fast and ever increasing due to die shrink by IC manufacturers and demand from designers needing fast edge rates to avoid timing issues.

This seminar will help you avoid signal integrity issues on your PCB by showing you how and, more importantly, why signal integrity issues happen.

Control of Noise and EMI (20th)

This 1-day seminar with **Richard Hartley** focuses on the issues PCB designers and Engineers need to know to prevent noise and EMI issues in high speed digital and mixed signal designs.

Synopsis

Knowing how to design circuits and PCBs to contain energy and knowing how to mitigate and control the effects of high speed devices are the keys to successful design of low noise circuits.

When time-varying (AC) signals travel in the transmission lines of a PCB, state changing electric and magnetic fields are present. When NOT contained, these fields are the energy source of noise and EMI issues.

What we call 'noise' is 'intentional energy' which we fail to control and/or contain. Unharnessed energy will generate many forms of interference. What this statement fails to say is 'why' this happens... why are some circuits noisy, while others are not?

This seminar will look at the 'why' to ensure that your future PCBs are without noise and EMI issues. All previous participants have gotten improved PCB designs as a result of this seminar.

Understanding and Managing Printed Circuit Fabrication (20th)

This 1-day seminar with **Happy Holden** will focus on understanding and managing printed circuit fabrication from procurement and design advice to sourcing from Asia.

Synopsis

Printed circuit fabrication is an essential element in the electronics manufacturing supply chain, but many times, totally under-rated and taken for granted.

Now that Asia is responsible for fabricating 90% of the worlds printed circuits, understanding some of the fundamental elements can lead to cost reductions, improved quality and delivery, as well as taking advantage of some of the most widely used emerging technologies for high-performance electronics.

This seminar reviews all the cost drivers that PCB fabricators use to price their product. It will detail the printed circuit multilayer manufacturing process and highlight the quality issues and concerns.

The seminar will also present various methods of qualifying and benchmarking the capability of PCB vendors using IPC-9151 and IPC TM-650 procedures. Finally, we will look at how Asian printed circuit fabrication differs from European and Scandinavian.

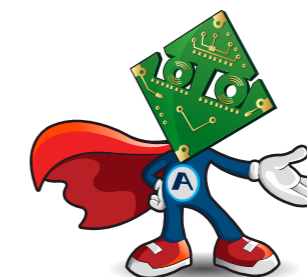
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