



Advanced professional development course

High-Speed PCB design analysis and challenges

presented by Mr. S L N Murthy

27 September 2018 | 9:30 AM – 1:00 PM | BIEC, Bengaluru

Synopsis:

The emergence of technologies and smaller device features has given rise to new silicon families. More devices are packed under each package and power demands are on the rise. The thrust to pack more data in each data stream has moved the data transfer from parallel to serial mode of data transfer. These have faster switching rates. Thus, every design in a system is turning out to be falling into the multi-gigahertz domain.

Designing interconnects from end to end and validating them for performance is gaining more momentum. At higher data rates, the dielectric material contributes to high signal losses and the skin effect, surface finish requires a review based on the same. In this short overview, we look at the various challenges that must be taken cognizance of during the PCB design engineering flow. The challenges in power delivery network design to ensure that operating needs of the devices are addressed.

The objective of this program is to understand the parameters that influence signal integrity and power integrity of the PCB design flow. Without dwelling into the mathematical aspects, underlining principles, solution space analysis and final assertion of design functionality is presented.

Who should attend:

This program is primarily to showcase design workflow and to address current day design challenges that are not apparent at the system level design. The coverage is aimed at PCB designers, hardware designers, system integrators who are working on DDRx based designs and high-speed serial interface designs like PCIe, HDMI, USB, etc.

What you will learn?

The primary goal of this program is to act as a curtain raiser on:

- Importance of Signal Integrity and Power Integrity in current day scenario.
- Understanding the SIX signal integrity issues.
- How to design a PCB stack to address Signal Integrity and Power Integrity.
- Characteristics of high-speed PCB materials.
- PCB Design requirements of DDR3 and DDR4 designs.
- Challenges in addressing GHz design requirements.
- End to Channel Analysis and VIA modelling.

IPC Member price – Rs. 3,000/-

Non-member price – Rs. 6,000/-

(+ applicable GST)

ABOUT THE PRESENTER



Mr. S L N Murthy

Education:

- 1966 Bachelor's degree in Electrical Engineering from Mysore University
- 1967 Bachelor's degree in Electrical Communication Engineering from Indian Institute of Science, Bangalore.
- 1969 Master's degree in Electronics from Indian Institute of Science, Bangalore.

Professional experience over 42 years in System Design, PCB, SI & PI

- 1969-71 Faculty member of ECE department at Indian Institute of Science, Bangalore, taught digital electronics, electrical engineering.
- 1971-89 Worked in Bharat Electronics in various capacities in the R&D department developing embedded systems and setting up India's first PCB CAD center that supported Defense and Space electronics.
- 1989-95 Co-founded the first electronic system design engineering company. As CTO of this company he built a team of 45 designers providing solutions to Indian defense research laboratories and ISRO.
- 1995-08 Promoter, CEO & MD of ECAD Technologies as a premier electronics engineering solutions company to address simulation driven "First time Right Design" approach in designing electronic systems. The company had 106 designers and was venture funded and acquired by a AT&S Limited, Austria in 2005.
- 2008-11 CTO of Tessolve Services, the first semiconductor test engineering services company in India.
- 2011-13 CTO of Trident Technlabs Pvt Ltd, a software solution marketing group in system engineering space.
- 2013-14 Developing solution team to address PCB design engineering and Signal/Power Integrity aspects at ASM Technologies Ltd.
- 2014- Principal Consultant at Wuerth Elektronik India Pvt. Ltd, building an engineering team in Engineering, Package Design and System design.

Professional activity:

- Senior Member IEEE, Vice-Chair IEEE EPS
- ESDA Managing committee member, IEEE EPS Chapter Vice-Chairman
- Life Member IMAPS, Life Member CSI, Member IPC Advisory Committee
- Has been on organizing and program committees of many international and national conferences, workshops. Latest being IEEE EDAPS in Dec 2018
- Presented number of papers in national & international conferences, user group meetings

Conducted over 60, four-day training programs to multinationals (GE, Juniper Networks, Trident Techlabs, Slingmedia, Wipro, etc), defense R&D (CAIR, RCI, IGCAR etc) and department of space (ISRO, VSSC, SAC) BEL, HAL on signal and power integrity and PCB level thermal analysis.

For any clarifications, please contact:

SunilDixit@ipc.org | Mob: 7338466578

PallaviShekhar@ipc.org | Mob: 7338466583

Or visit

<http://www.ipcindia.org.in/advanced-professional-development-course/>