Practical

POWER ELECTRONICS & SWITCH MODE POWER SUPPLY DESIGN FOR INDUSTRY

YOU WILL LEARN HOW TO:

• Demonstrate a sound understanding of how switch mode power supplies (SMPS) operate
• Correctly select components for a switch mode power supply design
• Select the right switch mode topology for a given application
• Understand PWM and what controller to select for a given application
• Design an input stage for a switch mode power supply and correctly evaluate EMI/RFI
• Apply power transistors correctly to SMPS design
• Correctly apply high frequency transformers and select the appropriate design (including an example push - pull design application)
• Design an output section of a SMPS
• Evaluate the performance and stability of a SMPS design
• Perform a complete analysis of the noise generated by the design (EMI/RFI)
• Make an accurate assessment of the heat-sink requirements to ensure reliable operation
• Design a SMPS that complies with safety standards

WHO SHOULD ATTEND:

• Application Engineers
• Sales Engineers
• Product Designers
• Product Managers
• Component Suppliers
• Technicians
• Instrument for Control Engineers
• Service Technicians
• Electrical and Electronic Maintenance Technicians and Supervisors
Power electronic circuits have revolutionised almost every device that we use today from PCs to TV’s, microwave ovens and heavy industrial drives. Switch mode power supplies (SMPS) have thus become an important part of equipment design in all types of industrial equipment and an understanding of the different types and designs has become essential for reliable operation of complex equipment.

This workshop gives you a fundamental understanding of the basic components that form a SMPS design. You will understand how the selection of components affects the different performance parameters and operation of the SMPS. Typical practical applications of the SMPS in industry will be discussed.

The concluding section of the workshop gives you the fundamental tools in troubleshooting SMPS designs confidently and effectively.

Even though the focus of the workshop is on the direct application of this technology, you will also gain a thorough understanding of the problems that can be introduced by SMPS such as harmonics, electrostatic discharge and EMC/EMI problems.

PRE-REQUISITES
A fundamental knowledge of basic electrical concepts would be useful.