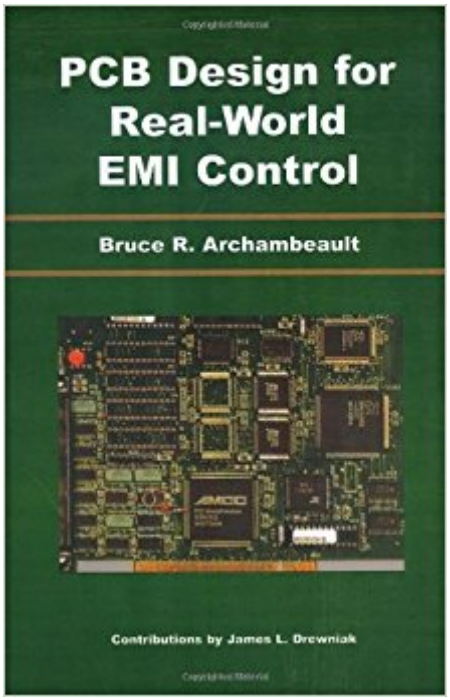
PCB Design For Real-World EMI Control (The Springer International Series In Engineering And Computer Science)



Synopsis

Proper design of printed circuit boards can make the difference between a product passing emissions requirements during the first cycle or not. Traditional EMC design practices have been simply rule-based, that is, a list of rules-of-thumb are presented to the board designers to implement. When a particular rule-of-thumb is difficult to implement, it is often ignored. After the product is built, it will often fail emission requirements and various time consuming and costly add-ons are then required. Proper EMC design does not require advanced degrees from universities, nor does it require strenuous mathematics. It does require a basic understanding of the underlying principles of the potential causes of EMC emissions. With this basic understanding, circuit board designers can make trade-off decisions during the design phase to ensure optimum EMC design. Consideration of these potential sources will allow the design to pass the emissions requirements the first time in the test laboratory. A number of other books have been published on EMC. Most are general books on EMC and do not focus on printed circuit board is intended to help EMC engineers and design design. This book engineers understand the potential sources of emissions and how to reduce, control, or eliminate these sources. This book is intended to be a 'hands-on' book, that is, designers should be able to apply the concepts in this book directly to their designs in the real-world.

Book Information

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Customer Reviews

This is easily one of the best EMI books I've ever read. It's main strength is its focus on PCB design which is after all the root cause of most EMI issues. The author does a great job of concisely and clearly explaining the topic, esp IO filtering. (Most EMI books are frankly too long; have way too much math; and cover too much material for the reader to absorb.) Especially illuminating is his explanation that current, NOT voltage, causes emissions.My only complaint with this this book is that it does not differentiate enough between magnetic and electric fields. I.e., EM fields with a high impedance (E/H) are mainly electric fields and shielding (low impedance) works due to reflection from the impedance mismatch. EM fields with a low impedance are mainly magnetic fields so there is NOT much reflection (so absorption is needed instead which requires thick shielding). Also for digital boards, burying clock lines between reference planes works because the magnetic fields from the return currents cancels out from both planes, NOT due to shielding- so I don't agree with his assertion that guard traces help with EMI.

The ground is a great place to grow carrots and potatoes.

"PCB Design for Real-World EMI Control" is a great book on techniques to reduce EMI problems in your designs. The book has a good layout with each chapter building on the last. Techniques are discussed in detail with very little math. Overall, the book is easy to follow for the beginning designer and a good reference for the experienced designer. I recommend this book to anyone involved in PCB design.

This book explained EMI control and design for EMC in a clear manor. I had only one complaint, there are a lot of graphs that appear to have been in color originally. The book is not printed in color, so it is difficult to distinguish data traces on these graphs. I would still highly recommend this book!

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