
Reader Service Number 99

Targeted primarily at novice PCB designers, The Design and Drafting of Printed Circuits explains basic engineering principles and industry terminology in a simple, straightforward manner. The subject matter is logically organized and is presented in a clear and concise style. An abundance of example illustrations further clarify and reinforce the author's verbal descriptions. "How-to" and "how-not-to" illustrations prove especially helpful, and the book contains a wealth of everyday, practical tips, reflecting the author's many years of "real-world" experience.

The text's breadth of coverage is excellent. It addresses all aspects of printed circuit design, including descriptions of related engineering and manufacturing processes. It also describes the interplay between these processes, showing how various engineering and manufacturing requirements influence or constrain design decisions in the board layout process.

Unfortunately, Design and Drafting does have some weaknesses. For instance, it is devoted almost exclusively to manual (hand-taping) methods. Although this revision includes a chapter on CAD, the material is presented rather superficially without an in-depth evaluation of its benefits. As design complexities increase with time, CAD becomes an essential element in the PCB design process. Given the rate of technological advancements, the role of CAD is certain to increase dramatically in the next several years, possibly making manual taping methods a thing of the past. In this light, the balance of Lindsay's book could be improved with a greater exposure to CAD.

In addition, the book contains, in my opinion, too many references to outmoded electronic technology of past decades. This is especially apparent in the beginning chapters. For example, transistors are compared with triode vacuum tubes. The term "condensor" is given as an alternate name for a capacitor. (This term was dropped from common use several decades ago.) In general, there seems to be an overemphasis on relays, transformers, lead-acid batteries, and the like. The focus should be on today's high-tech, state-of-the-art devices such as microprocessors, VLSI, high-density memories, etc.

Also, a greater emphasis is needed on the design rule guidelines that must be considered when dealing with various technologies. For example, emitter-coupled logic (ECL) circuitry imposes certain restrictions on component placement and conductor routing, and guidelines should be provided.

These weaknesses do not keep this text from becoming an invaluable learning tool for the novice who wishes to learn printed circuit board designing and drafting from the ground up. Without cluttering up the text with unnecessary formulas of electronic theory, Lindsey succeeds in his systematic tutorial of PC board design and layout. His presentation is concise and is organized in a logical step-by-step manner. This facilitates the learning process for the beginner, who could easily get lost in this complicated subject matter with a less well thought-out presentation.

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Reader Service Number 100

The title of the book, Computer Image Generation, and the preface are a little misleading. I expected to learn about computer image generation, or CIG, in a number of applications. The preface indicates that much of the book focuses on CIG for visual training simulators as, indeed, almost all of the book does. Thus, the book would be better titled "Computer Image Generation for Visual Training Simulators" and, as such, would do a much better job of meeting readers' expectations.

The book is divided into three parts with two to six chapters in each. As the works of several authors are collected, I will review each part separately.

Part One, "Techniques and Systems," takes the reader from simple computer graphics concepts and techniques to the generation of special effects for simulators. It includes an extensive discussion of current systems. Part One is very interesting and informative. The chapters are logically organized and cohesive. There is little duplication between the various authors, and their work is complementary. As to be expected from a collection of authors, their intended audiences vary, and the terminology at times is unnecessarily technical. Nevertheless, I found that this section describes quite well the requirements for visual training simulators and is informative on the techniques for meeting these requirements. As stated in Chapter 3, "The goal is not realism, but rather training effectiveness." Part One is very illuminating on the sophisticated methods used to meet this goal.

Part Two, "VLSIC Approaches To Computer Image Generation," gives a glimpse of what to expect in the future in CIG for training simulators because of advances in hardware. It also covers possible uses of different architectures for CIG, in particular parallel and pipeline-proving architecture. Although this section is short, it is very interesting.


In conclusion, I recommend Computer Image Generation to readers interested in CIG for visual training simulators and readers with an interest in other areas of computer graphics. The book details problems and solutions in a rather demanding application of computer graphics—the real-time generation of visuals for training.

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December 1983

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