



 [Get Print Book](#)

# Troubleshooting Switching Power Converters: A Hands-on Guide

*By Sanjaya Maniktala*



[Download](#)



[Read Online](#)

**Troubleshooting Switching Power Converters: A Hands-on Guide** By Sanjaya Maniktala

Power Supply design is all about detail. And a large part of that detail lies in the practical domain, largely because of the typically small number of microseconds of switching periods involved, and the even smaller tens of nanoseconds of switch transition times --- all these, in effect accentuating various "second-order" effects, that eventually end up playing prime havoc with "normal" expectations of how the circuit should behave. So not unsurprisingly, even after reading several books, most readers still find themselves no closer to the ultimate goal of designing an actual power supply.

Sooner or later, all engineers start realizing the hard fact that designing a switching power supply isn't the trivial task it once seemed to be. But even after years of successfully mastering the underlying theory, the ultimate goal of creating a cost-effective, reliable and commercially viable power supply may still remain a distant dream, since success ultimately hinges on experience. That is, in fact, what clearly differentiates a senior and seasoned power supply engineer from the others --- the ability to navigate and surmount a veritable minefield of tricky issues that can only be learned the hard way, by actual hands-on experience on the job.

This book presents practical knowledge the author acquired rather painfully, while working "in the trenches" for several years in major engineering companies scattered across several continents. This is intended to be the mythical senior engineer's "bag of tricks," finally made available in the form of an easy-to-read book on your shelf. This book will make life for the ambitious power supply engineer much simpler --- besides reducing significantly, the rigorous requirement of having to be a senior engineer's protégé for years on end, just to gain a small measure of real success in this field.

- \* A practical presentation that answers the important question: why is my switching converter behaving so differently than what I was expecting on the basis of my paper design? And how do I bridge that huge gap?
- \* For the first time, a systematic and thorough discussion of troubleshooting switching power supplies.
- \* Coverage of AC/DC and DC/DC power supplies.
- \* Bench Evaluation of semiconductor ICs used in power conversion --- describing standard and unusual techniques mastered by the author, while testing similar chips at National Semiconductor.
- \* Detailed coverage of vital topics that haven't been covered by available sources

--- grounding systems, the subtleties of component datasheets, and using instruments and probes effectively.

\* Systematic investigation (type of failure mechanism, topology, etc.) and solutions for 5 years of reported power supply issues on a prominent, public web forum. This approach will ensure that engineers will not repeat the same mistakes.

\* A unique, readable style: personal and direct; no mystification--- just the plain truth, easily and logically explained, with plenty of pictures, graphs and plots.

 [Download Troubleshooting Switching Power Converters: A Hand ...pdf](#)

 [Read Online Troubleshooting Switching Power Converters: A Ha ...pdf](#)

# Troubleshooting Switching Power Converters: A Hands-on Guide

*By Sanjaya Maniktala*

## **Troubleshooting Switching Power Converters: A Hands-on Guide** By Sanjaya Maniktala

Power Supply design is all about detail. And a large part of that detail lies in the practical domain, largely because of the typically small number of microseconds of switching periods involved, and the even smaller tens of nanoseconds of switch transition times --- all these, in effect accentuating various "second-order" effects, that eventually end up playing prime havoc with "normal" expectations of how the circuit should behave. So not unsurprisingly, even after reading several books, most readers still find themselves no closer to the ultimate goal of designing an actual power supply.

Sooner or later, all engineers start realizing the hard fact that designing a switching power supply isn't the trivial task it once seemed to be. But even after years of successfully mastering the underlying theory, the ultimate goal of creating a cost-effective, reliable and commercially viable power supply may still remain a distant dream, since success ultimately hinges on experience. That is, in fact, what clearly differentiates a senior and seasoned power supply engineer from the others --- the ability to navigate and surmount a veritable minefield of tricky issues that can only be learned the hard way, by actual hands-on experience on the job.

This book presents practical knowledge the author acquired rather painfully, while working "in the trenches" for several years in major engineering companies scattered across several continents. This is intended to be the mythical senior engineer's "bag of tricks," finally made available in the form of an easy-to-read book on your shelf. This book will make life for the ambitious power supply engineer much simpler --- besides reducing significantly, the rigorous requirement of having to be a senior engineer's protégé for years on end, just to gain a small measure of real success in this field.

- \* A practical presentation that answers the important question: why is my switching converter behaving so differently than what I was expecting on the basis of my paper design? And how do I bridge that huge gap?
- \* For the first time, a systematic and thorough discussion of troubleshooting switching power supplies.
- \* Coverage of AC/DC and DC/DC power supplies.
- \* Bench Evaluation of semiconductor ICs used in power conversion --- describing standard and unusual techniques mastered by the author, while testing similar chips at National Semiconductor.
- \* Detailed coverage of vital topics that haven't been covered by available sources --- grounding systems, the subtleties of component datasheets, and using instruments and probes effectively.
- \* Systematic investigation (type of failure mechanism, topology, etc.) and solutions for 5 years of reported power supply issues on a prominent, public web forum. This approach will ensure that engineers will not repeat the same mistakes.
- \* A unique, readable style: personal and direct; no mystification--- just the plain truth, easily and logically explained, with plenty of pictures, graphs and plots.

## Troubleshooting Switching Power Converters: A Hands-on Guide By Sanjaya Maniktala Bibliography

- Sales Rank: #1159006 in Books
- Published on: 2007-09-14
- Original language: English
- Number of items: 1
- Dimensions: 9.46" h x .98" w x 7.76" l, 1.81 pounds
- Binding: Hardcover
- 320 pages

 [Download Troubleshooting Switching Power Converters: A Hand ...pdf](#)

 [Read Online Troubleshooting Switching Power Converters: A Ha ...pdf](#)

## **Download and Read Free Online Troubleshooting Switching Power Converters: A Hands-on Guide By Sanjaya Maniktala**

---

### **Editorial Review**

#### **Review**

The senior engineer's "bag of tricks," on power supplies made available in the form of an easy-to-read book!

### **Users Review**

#### **From reader reviews:**

##### **Lillian Owensby:**

As people who live in the modest era should be upgrade about what going on or facts even knowledge to make these people keep up with the era which can be always change and move ahead. Some of you maybe will probably update themselves by reading books. It is a good choice to suit your needs but the problems coming to you is you don't know what type you should start with. This Troubleshooting Switching Power Converters: A Hands-on Guide is our recommendation to help you keep up with the world. Why, because this book serves what you want and wish in this era.

##### **Johnny Powers:**

Your reading 6th sense will not betray anyone, why because this Troubleshooting Switching Power Converters: A Hands-on Guide publication written by well-known writer who knows well how to make book which might be understand by anyone who else read the book. Written inside good manner for you, still dripping wet every ideas and creating skill only for eliminate your personal hunger then you still skepticism Troubleshooting Switching Power Converters: A Hands-on Guide as good book not simply by the cover but also by the content. This is one guide that can break don't determine book by its cover, so do you still needing yet another sixth sense to pick this specific!? Oh come on your looking at sixth sense already alerted you so why you have to listening to another sixth sense.

##### **Steve Pratt:**

Don't be worry should you be afraid that this book can filled the space in your house, you will get it in e-book way, more simple and reachable. This Troubleshooting Switching Power Converters: A Hands-on Guide can give you a lot of friends because by you checking out this one book you have issue that they don't and make anyone more like an interesting person. This kind of book can be one of a step for you to get success. This publication offer you information that probably your friend doesn't learn, by knowing more than other make you to be great people. So , why hesitate? Let's have Troubleshooting Switching Power Converters: A Hands-on Guide.

**Jessie Davis:**

What is your hobby? Have you heard in which question when you got college students? We believe that that question was given by teacher to the students. Many kinds of hobby, Everybody has different hobby. Therefore you know that little person such as reading or as reading become their hobby. You should know that reading is very important and book as to be the factor. Book is important thing to increase you knowledge, except your teacher or lecturer. You find good news or update with regards to something by book. Many kinds of books that can you decide to try be your object. One of them is niagra Troubleshooting Switching Power Converters: A Hands-on Guide.

**Download and Read Online Troubleshooting Switching Power  
Converters: A Hands-on Guide By Sanjaya Maniktala  
#P5XWLHA92CS**

# **Read Troubleshooting Switching Power Converters: A Hands-on Guide By Sanjaya Maniktala for online ebook**

Troubleshooting Switching Power Converters: A Hands-on Guide By Sanjaya Maniktala Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Troubleshooting Switching Power Converters: A Hands-on Guide By Sanjaya Maniktala books to read online.

## **Online Troubleshooting Switching Power Converters: A Hands-on Guide By Sanjaya Maniktala ebook PDF download**

**Troubleshooting Switching Power Converters: A Hands-on Guide By Sanjaya Maniktala Doc**

**Troubleshooting Switching Power Converters: A Hands-on Guide By Sanjaya Maniktala Mobipocket**

**Troubleshooting Switching Power Converters: A Hands-on Guide By Sanjaya Maniktala EPub**