Switchover to switching power supply design! This is a comprehensive "hands-on" guide to the theory, and design of, PWM and resonant switching supplies. Yefu's firsthand information, coupled with his experience, will enable you to select the right switching power supplies, giving you the background necessary to select the right commercial supply. This book covers the most important resonant converters, including series resonant converters; resonant LLC converters; soft switching pulse width modulation converters; zero voltage switching; and zero current switching. Each topic is illustrated with practical circuit diagrams, as well as simulation results, which mainly focus on the commutation analysis and output characteristic. This book is a must-read for engineers whose primary specialty is not in analog or power engineering fields.

Switching Power Supply Design, 3rd Ed.

This is a rigorous, carefully explained and motivated "engineer's bible" to power supply design. Between dense, mathematical textbooks on power electronics and tiny power supply "cookbooks" there exists no practical tutorial on the hazards of contemporary power supply design. Our Preaminar book, the 800 lb gorilla in the field, is both mathematically dense and 7 yrs old. This new book, detailing cutting edge thermal management techniques, grouping key design equations in a special reference section, and containing a concise design FAQ, will serve both as an invaluable tutorial and quick reference.

Switching Power Supply Design

Switching and Linear Power Supply, Power Converter Design

Switch Mode Power Conversion

Troubleshooting Switching Power Converters

Switching Power Supply Design, 3rd Ed.

High-Speed DSP and Analog System Design is based on the author's over 25 years of experience in high-speed DSP and computer systems and courses in both digital and analog systems design at Rice University. It provides hands-on, practical advice for working engineers, including: • Tips on cost-efficient design and system simulation techniques • Methods to reduce cost, and increase performance of high-speed digital and analog designs by minimizing component and system noise and ensuring system design success. • Guidelines to be used throughout the design process to reduce noise and radiation and to avoid common pitfalls while improving quality and reliability. • A variety of design examples focusing on audio, video, analog filters, DDR memory, and power supplies. The inclusion of analog systems and related issues cannot be found in other high-speed design books. • This book is an essential resource for all engineers either interested in or working on system-level design. It was created by a recognized system design expert who not only teaches these principles daily but who brings years of hands-on design expertise as the creator of some of the personal computer industry's most distinctive audio solutions.
Switched-mode power supplies are now established as an industry standard method of providing power to many types of electronic equipment. This book provides coverage of all aspects of switched-mode power supply technology, from initial specifications through design simulation testing and attention to national and international regulations on safety. The approach is essentially practical with many worked design examples included.

Voltage Regulator Circuit Manual

Voltage Regulator Circuit Manual highlights the techniques in DC regulator design. This book contains seven chapters that cover different circuit types, from the simple incorporation of SIC chips to the complex IC manufacturing. After providing an overview of the changes in power supply design, this book goes on discussing the various circuit configurations applicable to linear IC voltage regulators and switching regulator designs. The following chapters contain schematic diagrams of a general assortment of regulators. In these chapters, the circuits are based on three-terminal, linear regulator ICs that offer simplicity of design, low cost, minimal circuit complexity, and relatively fast construction times. A chapter focuses on a wide assortment of regulators that fall into the general category of "switchers", which is a very broad class of circuit that encompasses several highly different configurations. The discussion then shifts to the switching power supply circuits that fall into the category of flyback regulators, also known as ringing choke regulators. The last chapters deal with DC regulators that perform true value voltage conversions and their distinct characteristics. These chapters also include circuits that did not exactly fit the other circuit categories, such as battery chargers and motor controllers. Technicians and electronic engineers and designers who are interested in electronic design will find this book beneficial.

Soft Commutation Isolated DC-DC Converters

This book is the most comprehensive study available of the theoretical and practical aspects of controlling and measuring Electromagnetic interference in switching power supplies, including input filter instability considerations. The new edition is thoroughly revised with six completely new chapters, while the existing EMI chapters are expanded to include many more step-by-step numerical examples and key derivations and EMI mitigation techniques. New topics cover the length and breadth of modern switching power conversion techniques, lucidly explained in simple but thorough terms, now with uniquely detailed "wall-reference charts" providing easy access to even complex topics. Step-by-step and iterative approach for calculating high-frequency losses in forward converter transformers, including Proximity losses based on Crowell's equations. A thorough, yet uniquely simple design flow-chart for building DC-DC converters and their magnetic components under typical wide-input supply conditions. Step-by-step, solved examples for stabilizing control loops of all three major topologies, using either transconductance or conventional operational amplifiers, and either current-mode or voltage-mode control.

Switching Power Supply Design, 2nd Edition

This comprehensive reference/text explains the development and principles of operation, modelling, and analysis of switch-mode power supplies (SM PS: highlighting conversion efficiency, size, and steady state/ transient regulation characteristics). Covering the practical design techniques of SM PS, this book reveals how to develop specific models of circuits and components for simulation and design purposes; explains both the computer simulation of the switching behaviours of ac-to-dc converters and the modelling of linear and non-linear circuit components; deals with the modelling and simulation of the low-frequency behaviour of converters (including current-controlled converters and converters with multiple outputs) and regulators; describes computer-aided design (CAD) techniques as applied to converters and regulators; introduces the principles and design of quasi-resonant and resonant converters; provides details on SPICE, a circuit simulation package used to calculate electrical circuit behaviour; containing over 1000 helpful drawings, equations, and tables, this is a valuable reference for circuit design, electrical, and electronics engineers, and serves as an excellent text for upper-level undergraduate and graduate students in these disciplines.