

Mastering Analog Electronics

Unlocking the Power of Circuits and Semiconductors

Embark on a transformative journey through the intricate world of analogue electronics. This comprehensive guide is designed to empower learners at every level with the knowledge and practical expertise necessary for a successful career in analogue electronics.

Starting with the foundational disparities between analogue and digital electronics, this book provides a clear understanding of current flow, conductors, and insulators. You'll delve into the realm of semiconductors, uncovering their revolutionary impact and the art of manipulating them through doping techniques. The heart of analogue circuitry comes alive as you explore PN junctions, grasp diode behavior, and utilize TINA 12 ECAD software for hands-on simulations. Transistors and the Opamp then take center-stage, from their configurations to their roles as switches and amplifiers, with practical examples and simulations enhancing your comprehension.

Master the unique attributes of bipolar junction transistors and field effect transistors, honing your skills using TINA 12. Dive into operational amplifiers functions, and versatile configurations, and navigate mathematical operations and signal filtering. Whether you're a novice or an experienced engineer, embark on this educational journey today with and unleash your potential in analogue circuit design.

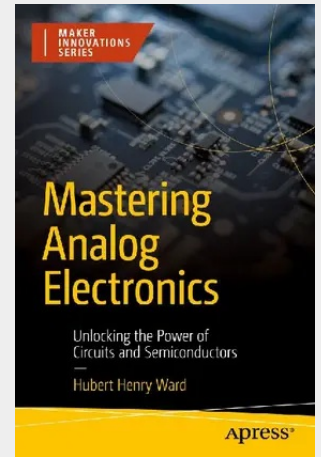
What You'll Learn

- Understand the dynamics of current flow.
- Explore semiconductor structures and their role in crafting diodes and transistors.
- Dive into the world of Uni Junction Transistors and Field Effect Transistors.
- Design a spectrum of analogue circuits, unleashing your creative potential.
- Harness the potential of oscillators such as the multivibrator, the 555 timer and the Wien Bridge oscillator.
- Gain an introduction to the basic low and high pass filters both passive and active.

Who This Book Is For

This book is tailored for students pursuing engineering qualifications, hobbyists keen on designing analogue circuits, engineers seeking a comprehensive reference on analogue electronics, teachers, and students in need of a valuable teaching resource.

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74,89 €

69,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9798868802478

Medium: Buch

ISBN: 979-8-8688-0247-8

Verlag: Apress

Erscheinungstermin: 20.08.2024

Sprache(n): Englisch

Auflage: 1. Auflage 2024

Serie: Maker Innovations Series

Produktform: Kartoniert

Gewicht: 1089 g

Seiten: 706

Format (B x H): 155 x 235 mm

