

Electronic Digital System Fundamentals, 2nd Edition

Authors: Dale R. Patrick, USA Stephen W. Fardo, Eastern Kentucky University, USA Vigyan (Vigs) Chandra, Eastern Kentucky University, USA Brian W. Fardo, USA

Electronic Digital Systems Fundamentals, 2nd Edition is an introductory text that provides coverage of the various topics in the field of digital electronics. The key concepts presented in this book are discussed using a simplified approach that greatly enhances learning. The use of mathematics is kept to the very minimum and is discussed clearly through applications and illustrations.

Each chapter is organized in a step-by-step progression of concepts and theory. The chapters begin with an introduction, discuss important concepts with the help of numerous illustrations, as well as examples, and conclude with summaries.

The overall learning objectives of this book include:

- Describe the characteristics of a digital electronic system.
- Explain the operation of digital electronic gate circuits.
- Demonstrate how gate functionsare achieved.
- Use binary, octal, and hexadecimal counting systems.
- Use Boolean algebrato define different logic operations.
- Change a logic diagram into a Boolean expression and a Boolean expression into a logic diagram.
- Explain how discrete components are utilized in the construction of digital integrated circuits.
- Discuss how counting, decoding, multiplexing, demultiplexing, and clocksfunction with logic devices.
- Change a *truth table*into a logic expression and a logic expression into a *truth table*.
- Identify some of the common functions of digital memory.
- Explain how arithmetic operationsare achieved with digital circuitry.
- Describe the operation of *microcontrollers*.



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Dale R. Patrick Stephen W. Fardo Vigyan (Vigs) Chandra Brian W. Fardo

River Publishers Series in Electronic Materials, Circuits and Devices

ISBN: 9788770227391 e-ISBN: 9788770227346 Available From: December 2023 Price: \$ 160.00

KEYWORDS:

Analog-To-Digital Conversion (ADC), Gatesâ€"AND, OR, NAND, NOR, ASCII Code, Asynchronous Clock/Counter, Binary Number, Binary Coded Decimal (BCD) Number, Bit / Byte, Boolean Algebra, Clock, Combinational Logic, Comparator, Counter (up/down), Decoder/Encoder, DeMorgan's Theorem, Digital Logic, Digital-To-Analog Conversion (DAC), Flip Flop, Hexadecimal Number, Inverter, Karnaugh Mapping, Kirchhoff's Laws, Light Emitting Diode (LED), Memory, Multiplexer (MUX), Octal Number, Display, Segment Shift Seven Register, Counter, Timing Synchronous Diagram, Transistor-Transistor Logic (TTL), Truth Table



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