1. Record Nr. UNINA9910458571503321

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Titolo	Complete PCB design using OrCad capture and layout [[electronic resource] /] / by Kraig Mitzner
Pubbl/distr/stampa	Amsterdam ; ; Boston, : Elsevier/Newnes, c2007
ISBN	1-281-01934-8 9786611019341 0-08-054920-9
Descrizione fisica	1 online resource (529 p.)
Disciplina	621.3815/31
Soggetti	Printed circuits - Design and construction Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references (p. 491-493) and index.
Nota di contenuto	FRONT COVER; COMPLETE PCB DESIGN USING ORCAD CAPTURE AND LAYOUT; COPYRIGHT PAGE; TABLE OF CONTENTS; INTRODUCTION; ACKNOWLEDGMENTS; CHAPTER 1: INTRODUCTION TO PCB DESIGN AND CAD; Computer-Aided Design and the OrCAD Design Suite; Printed Circuit Board Fabrication; PCB cores and layer stack-up; PCB fabrication process; Photolithography and chemical etching; Mechanical milling; Layer registration; Function of OrCAD Layout in the PCB Design Process; Design Files Created by Layout; Layout format files (.MAX); Postprocess (Gerber) files; PCB assembly layers and files CHAPTER 2: INTRODUCTION TO THE PCB DESIGN FLOW BY EXAMPLEOverview of the Design Flow; Creating a Circuit Design with Capture; Starting a new project; Placing parts; Wiring (connecting) the parts; Creating the Layout netlist in Capture; Designing the PCB with Layout; Starting Layout and importing the netlist; Making a board outline; Placing the parts; Autorouting the board; Manual routing; Cleanup; Locking traces; Performing a design rule check; Postprocessing the board design for manufacturing; CHAPTER 3: PROJECT STRUCTURES AND THE LAYOUT TOOL SET; Project Setup and Schematic Entry Details Capture projects explainedCapture part libraries explained; Understanding the Layout Environment and Tool Set; Board technology

files; The AutoECO utility; The session frame and Design window; The toolbar; Controlling the autorouter; Postprocessing and layer details; CHAPTER 4: INTRODUCTION TO INDUSTRY STANDARDS; Introduction to the Standards Organizations; Institute for Printed Circuits (IPC-Association Connecting Electronics Industries); Electronic Industries Alliance (EIA); Joint Electron Device Engineering Council (JEDEC); International Engineering Consortium (IEC); Military Standards American National Standards Institute (ANSI)Institute of Electrical and Electronics Engineers (IEEE); Classes and Types of PCBs; Performance classes; Producibility levels; Fabrication types and assembly subclasses; OrCAD Layout design complexity levels-IPC performance classes; IPC land pattern density levels; Introduction to Standard Fabrication Allowances; Registration tolerances; Breakout and annular ring control; PCB Dimensions and Tolerances; Standard panel sizes; Tooling area allowances and effective panel usage; Standard finished PCB thickness; Core thickness; Prepreg thickness
Copper thickness for PTHs and viasCopper cladding/foil thickness; Copper Trace and Etching Tolerances; Standard Hole Dimensions; Soldermask Tolerance; End Note; Suggested reading; Other items of interest; CHAPTER 5: INTRODUCTION TO DESIGN FOR MANUFACTURING; Introduction to PCB Assembly and Soldering Processes; Assembly Processes; Manual assembly processes; Automated assembly processes (pick and place); Soldering Processes; Manual soldering; Wave soldering; Reflow soldering; Component Placement and Orientation Guide; Component Spacing for Through-hole Devices; Discrete THDs
Integrated circuit through-hole devices

Sommario/riassunto

This book provides instruction on how to use the OrCAD design suite to design and manufacture printed circuit boards. The book is written for both students and practicing engineers who need a quick tutorial on how to use the software and who need in-depth knowledge of the capabilities and limitations of the software package. There are two goals the book aims to reach:The primary goal is to show the reader how to design a PCB using OrCAD Capture and OrCAD Layout. Capture is used to build the schematic diagram of the circuit, and Layout is used to design the circuit board so that