

SELECTED TOPICS IN ADVANCED ELECTRONICS

Edited by
Khalid A. S. Al-Khateeb



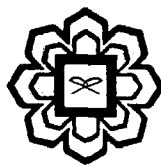
IIUM Press

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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IIUM Press
International Islamic University Malaysia
2011

Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011
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Perpustakaan Negara Malaysia

Cataloguing-in-Publication Data

Khalid A. S. Al-Khateeb: Selected Topics in Advanced Electronics

ISBN: 978-967-418-153-6

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM
(Malaysian Scholarly Publishing Council)

Printed by :
IIUM PRINTING SDN.BHD.
No. 1, Jalan Industri Batu Caves 1/3
Taman Perindustrian Batu Caves
Batu Caves Centre Point
68100 Batu Caves
Selangor Darul Ehsan
Tel: +603-6188 1542 / 44 / 45 Fax: +603-6188 1543
EMAIL: iiumprinting@yahoo.com

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ADVANCED ELECTRONICS

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CHAPTER 30

ASIC DESIGN FLOW

By

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Synopsis

As the size of the digital devices gets smaller, the ASIC design flow has to evolve accordingly and hence the increased in complexity will follow. This complexity is necessary for the designers and for the verification engineers, who seek out higher levels of abstraction to carry out their respective tasks. Some of the current trends that have been followed in the ASIC design flow will be discussed below.

1. Introduction

Application Specific Integrated Circuit (ASIC) is customized for a particular purpose or application. As the design tools has improved over the years, the maximum complexity possible in an ASIC has grown to over 100 million. Designers of digital ASICs use a hardware description language (HDL), such as Verilog or VHDL (Very high speed integrated circuit Hardwaae Desicrption Language), to describe the functionality of ASICs. ASIC's are usually classified into one of three categories: full custom, semi-custom, and structured. The Full-custom ASIC's are those that are entirely tailor-fitted to a particular application from the very start. That is, every part of the design is done from scratch. The Semi-custom ASIC's can be partly customized to serve different functions within its general area of application. They are designed to allow a certain degree of modification during the manufacturing process.