Selected Readings in COMPUTING AND TELECOMMUNICATIONS

Editors
Mira Kartiwi
Teddy Surya Gunawan
Aisha Hassan Abdalla Hashim

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TABLE OF CONTENT

16. COMPARATIVE ANALYSIS OF LOW POWER VLSI CIRCUITS TECHNIQUES

Anis Nurashikin Nordin and Fatin Alea bt. Talib

ABSTRACT

The advancement of Very Large Scale Integration (VLSI) microcircuits, power consumption has emerged as one of the most important design and performance parameter in today's electronic industry. The need for low power has caused a major paradigm shift where power dissipation has become as an important consideration besides performance and die space area utilization. This paper reviews four techniques for designing low power system, which are Multi VDD, scaling CMOS technology, clock gating and power gating. In the first part, the paper explains briefly about the important of low power design and literature reviews for state of the arts design techniques. The results from computer simulations were also presented for readers' appreciation.

16.1 INTRODUCTION

In the past, the major concerns of the VLSI designer were area, performance, cost and reliability; however, thing has begun to change. Today, power has emerged as one of the most important design and performance parameters for ICs. With the increasing number of portable applications, which demand of high-speed computation, complex functionality with low power consumption, the requirements for low power circuit designs have become more and more exigent. Up to now, there is several low power techniques has been developed. In this project, we will do a comparative analysis of low power VLSI circuit technique in order to accomplish a low power circuit designs.