

SELECTED TOPICS IN ADVANCED ELECTRONICS

Edited by
Khalid A. S. Al-Khateeb



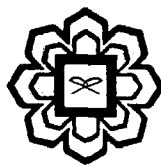
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CHAPTER 26

CIRCUIT DESIGN FOR RADIO FREQUENCY IDENTIFICATION DEVICES (RFID)

By

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Synopsis

While RFID is a relatively old technology, more recent advancements in chip manufacturing technology are making RFID practical for new applications. The advancement has been attractive for people in the consumer sector. Of specific interest is the application of RFID in tagging at item level. This technology has the potential of revolutionizing the whole supply-chain management, inventory control, and logistics [3]. The simplest and most basic structure of RFID systems consist of miniature transponders or tags attached to physical objects. RFID tags may soon become the most pervasive microchip in history. When wirelessly interrogated by RFID transceivers, or readers, tags respond with some identifying information that may be associated with arbitrary data records. There are many kinds of RFID systems used in different applications and settings. These systems have different power sources, operating frequencies, and functionalities. The properties and regulatory restrictions of a particular RFID system will determine its manufacturing costs, physical specifications, and performance. RFID applications are item-level tagging with electronic product codes, proximity cards for physical access control, and contact-less payment systems. Many more applications will become economical in the coming years [3].

1. Introduction

In recent years, The Radio Frequency Identification (RFID) tag become is one of the main applications in flexible electronics. Currently, RFID technology has moved