

ART OF EMBEDDED SYSTEM DESIGN

Bobby

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In these book, I will summerize all I know about the embedded system, and give some practical electronic designs what I have done in my career. Also, I want to improve the ability of using \LaTeX by myself. This book is in the public domain. All the copyrights are under GPL 2.0. Thanks all for your attentions! All the materials are from books, internet, etc. I will list as much references as possible, but I am not sure that I can list all. For any improper or defects, your suggurestions are warmly welcomed.

Best Regards!

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Part I

Physics

Chapter 1

Solid state physics

In this chapter, will discuss the solid state physics, mainly about the basic fundamentals.

Chapter 2

Semiconductor physics

Table 2.1:

11	1	12	4	6

Table 2.1 indicate that

The universe is immense and it seems to be homogeneous, in a large scale, everywhere we look at.

furnished his toy with a romantic legend about a much larger "Tower of Brahma", which supposedly has 64 disks of pure gold —wow.

Are our disks made of concrete? resting on three diamond needles. At the beginning of time, he said, "God" placed these golden disks on the first needle and ordained that a group of priests should transfer them to the third, according to the rules above. The priests reportedly work day and night at their task. When they finish, the Tower will crumble and the world will end.

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Part II

Circuit basics

Part III

Analog circuit

Part IV

Analog VLSI design

Chapter 3

Current source

$$\frac{d}{dx} (\text{int}_0^x f(u) \, du) = f(x)$$



Figure 3.1:

Chapter 4

Current mirror

Chapter 5

Differential amplifier pair

Chapter 6

OP AMP design

Part V

Digital circuit

Chapter 7

Finite state machine

Part VI

Analog digital converter

Part VII

Verilog HDL

Part VIII

Digital VLSI

Chapter 8

CPU design

Part IX

PCB design

Part X

PCB SI&PI

Part XI

C and C++ programming

Part XII

Data structure and algorithms

Part XIII

Computer organization

Part XIV

Computer architecture

Part XV

Operating system

Part XVI

Linux administration

Part XVII

Linux kernel

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Linux driver development

Part XIX

Linux system porting

Chapter 9

Buildroot

Part XX

Computer Network

Chapter 10

TCP/IP protocols

Chapter 11

Socket programming

Part XXI

Signal and system

Part XXII

Digital signal processing

Part XXIII

Digital image processing

Part XXIV

Audio signal processing

Part XXV

Modal analysis

Part XXVI

Project Development

Part XXVII

Appendix

Chapter 12

Basic mathematics

12.1 Formulas

$$a + b = b + a$$

appendix test