

Preface to the Third Edition

In this edition, the time-interleaved conversion is extended to a full chapter. The other chapters have been updated with the latest developments, and that has led to a considerable increase in pages for the Nyquist and sigma-delta conversion chapters. With these extensions, the third edition of the analog-to-digital conversion book became too voluminous. So the supporting components, technology, and systems chapters have been removed.

Stiphout, The Netherlands
July 2016

Marcel Pelgrom

Preface to the Second Edition

In the second edition, a number of errors have been corrected and a few topics have been updated. The most important change is the addition of many examples and exercises to assist students in understanding the material.

Stiphout, The Netherlands
Summer 2012

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Preface to the First Edition

A book is like a window that allows you to look into the world. The window is shaped by the author, and that makes every book present a unique view of the world. This is certainly true for this book. My views were shaped by the topics and the projects throughout my career. Even more so, this book reflects my own style of working and thinking.

In the chapters discussing the fundamental processes of conversion, sampling, and quantization, you will recognize my preoccupation with mathematics. I really enjoy finding an equation that properly describes the underlying mechanism. Nevertheless, mathematics is not a goal on its own: equations help to understand the way how variables are connected to the result. Real insight comes from understanding the physics and electronics. Electronics circuits are sometimes so ingenious that they almost feel like art. Yet, in the chapters on circuit design, I have tried to keep the descriptions pragmatic. The circuit diagrams are shown in their simplest form, but not simpler.... I do have private opinions on what works and what should not be applied. Most poor solutions have simply been left out; sometimes you might read a warning in the text on a certain aspect of an otherwise interesting circuit.

This book is based on lectures for graduate students who are novice in analog-to-digital design. In the classes, my aim is to bring the students to a level where they can read and interpret the advanced literature (such as *IEEE Journal of Solid-State Circuits*) and judge the reported results on their merits. Still that leaves a knowledge gap with the designer of analog-to-digital converters. For those experienced designers, this book may serve as a reference of principles and background.

Inevitably, this book has not only strong points but also weak points. There are still so many wonderful ideas that are not addressed here but certainly would deserve some space, but simply did not fit in this volume. Still I hope this book will let you experience the same thrill that all analog-to-digital designers feel, when they talk about their passion, because that is the goal of this book: to encourage you to proceed on the route toward even better analog-to-digital converters.

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