Design and Optimization of Multi-Channel Mixed-Mode ASIC: On Noise, Mismatch and Coupling

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(Titel der Masterarbeit - deutsch):

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Contents

1 Technology and Components

This chapter will give a detail view of the technology we used for the ASIC. It is very important to get familiar with the properties of components used in the design. Since functionality of current version has been verified, in this dissertation, we will focus on the optimization. Noise, mismatches between channels and noise coupling are the main issues to be discussed.

1.1 Transistor

1.2 Resistor

1.3 Capacitor

2 Design overview of current version

2.1 Front-end

2.2 Analog-to-digital converter

2.3 Digital parts

3 Optimization on mismatch

3.1 Mismatch of components

3.2 Mismatch of building blocks

3.2.1 Current mirror

3.2.2 Operational amplifier

3.3 Optimization of uniformity

4 Optimization on noise

4.1 Noise components of the transistor

4.2 Noise analysis for the ASIC

4.2.1 Input stage

4.2.2 Integration and shaper stage

4.2.3 Baseline hold

4.3 Optimization for the Noise

5 Optimization on noise coupling

5.1 Power supply rejection ratio

5.2 Substrate noise

Part I

Appendix

A Lists

A.1 List of Figures

A.2 List of Tables

B Bibliography

lorem ipsum. URL http://la.wikisource.org/wiki/Lorem_ipsum.

Erklärung:

Ich versichere, dass ich diese Arbeit selbstständig verfasst habe und keine anderen als die angegebenen Quellen und Hilfsmittel benutzt habe.

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