

AIN SHAMS UNIVERSITY FACULTY OF ENGINEERING

Electronics and Communications Engineering Department

High Performance Data Converter for Video Application

A Thesis

Submitted in partial fulfillment of the requirements of the degree of

Master of Science in Electrical Engineering

Submitted by

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STATEMENT

This dissertation is submitted to Ain Shams University for

the degree of Master of Science in Electrical Engineering

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The work included in this thesis was carried out by the

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ABSTRACT

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This dissertation demonstrates the design of a standard CMOS high

performance Analog-to-Digital Converter (ADC). It begins with an

introduction to Analog to Digital Conversion. Basic definitions for

performance metrics, different types of ADC's is discussed briefly &

choosing the proper topology which is Pipelined ADC.

Next, it presents in more details the operation of Pipelined ADC,

building blocks & main sources of errors. An automated system level

design procedure is explained, and the circuit design of a prototype ADC

with commercial specs in standard CMOS technology is presented. All

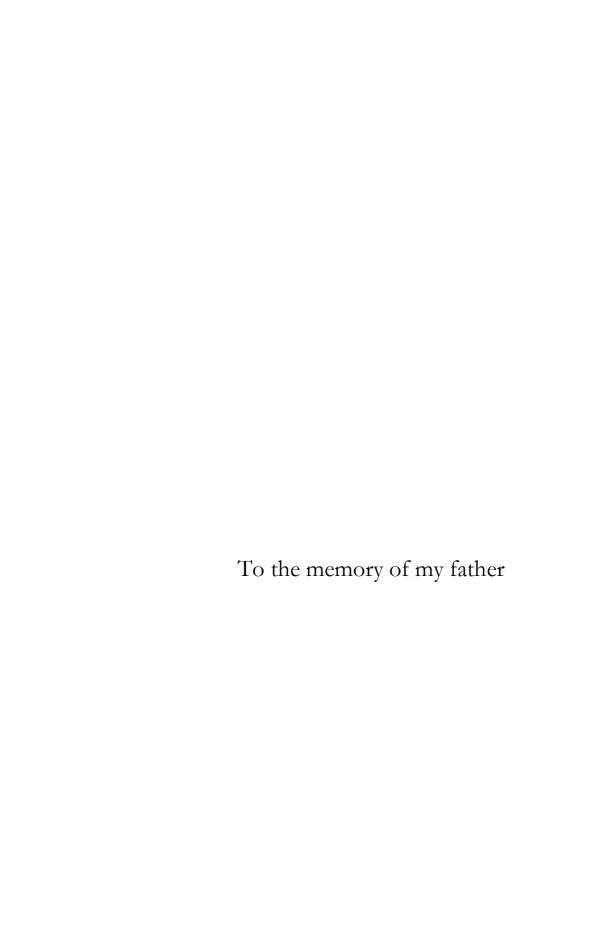
blocks of the system are analyzed, designed, and simulated, then post

layout simulated.

Finally, experimental results for a commercial ADC previously

designed using the same method is presented.

Key words: CMOS, Pipelined, FOM, Quantization, Video.



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إِنَّ فِي خَلْقِ ٱلسَّمَوَّتِ وَٱلْأَرْضِ وَٱخْتِلَفِ ٱلَّبْلِ وَٱلْبَارِ لَا يَسْتِ لِأُولِي ٱلْأَلْبَبِ ﴿ ٱلْأَبْبِ ﴿ ٱلْأَبْبِ ﴿ ٱلْأَبْبِ ﴿ اللَّهِ مَا يَكُونُ ٱللَّهُ قِيْمًا وَقُعُودًا وَعَلَىٰ جُنُوبِهِمْ وَيَتَفَكُّرُونَ فِي خَلْقِ ٱلسَّمَوَتِ وَٱلْأَرْضِ رَبَّنَا مَا خَلَقْتَ هَذَا بَطِلاً سُبْحَننَكَ فَقِنَا عَذَابَ ٱلنَّارِ ﴿ ﴾ خَلْق ٱلسَّمَوَتِ وَٱلْأَرْضِ رَبَّنَا مَا خَلَقْتَ هَذَا بَطِلاً سُبْحَننَكَ فَقِنَا عَذَابَ ٱلنَّارِ ﴿

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