

analog - digital

CONVERSION NOTES

by
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Analog Devices, Inc.

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PREFACE TO THE 1977 SEMINAR EDITION

Analog-Digital Conversion Notes is the first major revision of material previously published in the highly successful *Analog-Digital Conversion Handbook*, first published by Analog Devices, Inc., in 1972 and reprinted in 1976.

This volume contains Parts I and II of that book, updated wherever specific converter products are referred to, in order to reflect the revolution in cost, size and (in some cases) performance brought about by the development of converters in integrated-circuit and hybrid form.

Two entirely new chapters have been added to further reflect changes in the structure of the technological marketplace brought about by the availability of both converters and computers as true components. Chapter II-2 is a consideration of the relationship between processes, configurations, and performance in miniature low-cost converters. Chapter I-4 considers the application of converters with parallel and serial digital interfaces, micro-computers, asynchronous serial data ports, and proprietary integrated data-conversion-subsystem architectures—a natural sequel to the wide-ranging discussion of system considerations in Chapters I-2 and I-3.

As with the earlier volume, it is our hope that this volume will help the purely digital or purely analog designer obtain appropriate practical knowledge of the complementary field and the interface between them, and that it will serve as a useful text and reference source for all designers and users of interface equipment. We will welcome the comments and suggestions of our readers for the benefit of future editions and readers.

March 1, 1977
Norwood, Mass.

D.H. Sheingold

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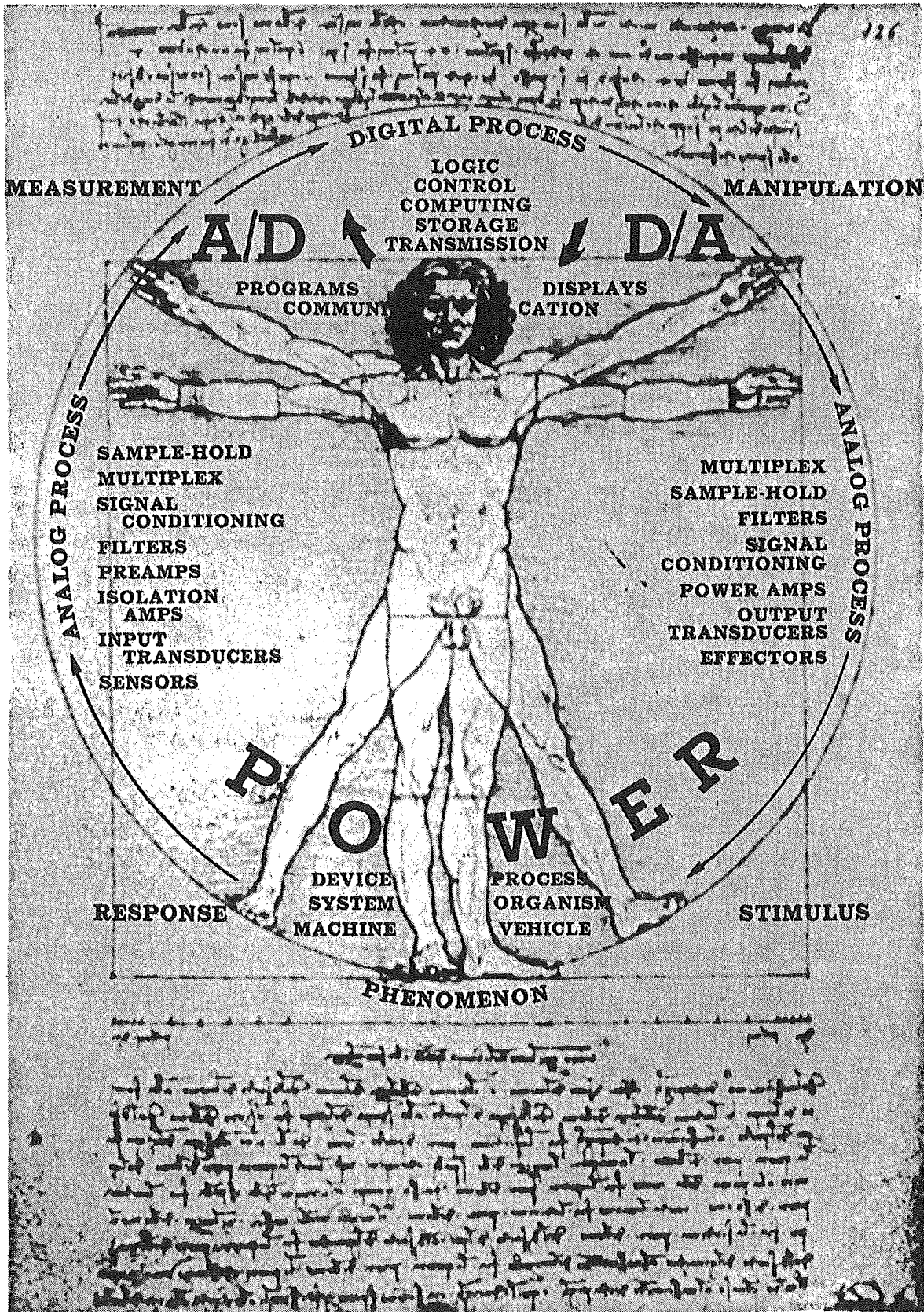
Analog Quantities; Digital Quantities; The Binary Code; Basic Conversion Relationships; Other Codes; Binary-Coded Decimal (BCD); Overranging; 2-4-2-1 BCD; Gray Code; Analog Polarity; Bipolar Codes; Code Conversion; Other Codes; Arbitrary Biasing and Scaling; DAC's as Multipliers and ADC's as Dividers; Ground Rule; Power Supplies; Digital Logic Levels; Control Logic—The Status Output; The Strobe; Analog Signals; D/A Converter Circuits; Resistance Ladders; Switching; References; Bipolar Conversion; Registers on DAC's; A/D Converter Circuits; Successive-Approximations; Integration; Counter Types; Parallel Types

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(D. H. Sheingold, with apologies to Leonardo da Vinci: Rule of Proportions, Academy of Fine Arts, Venice)

Figure 1. Functions in a data system.