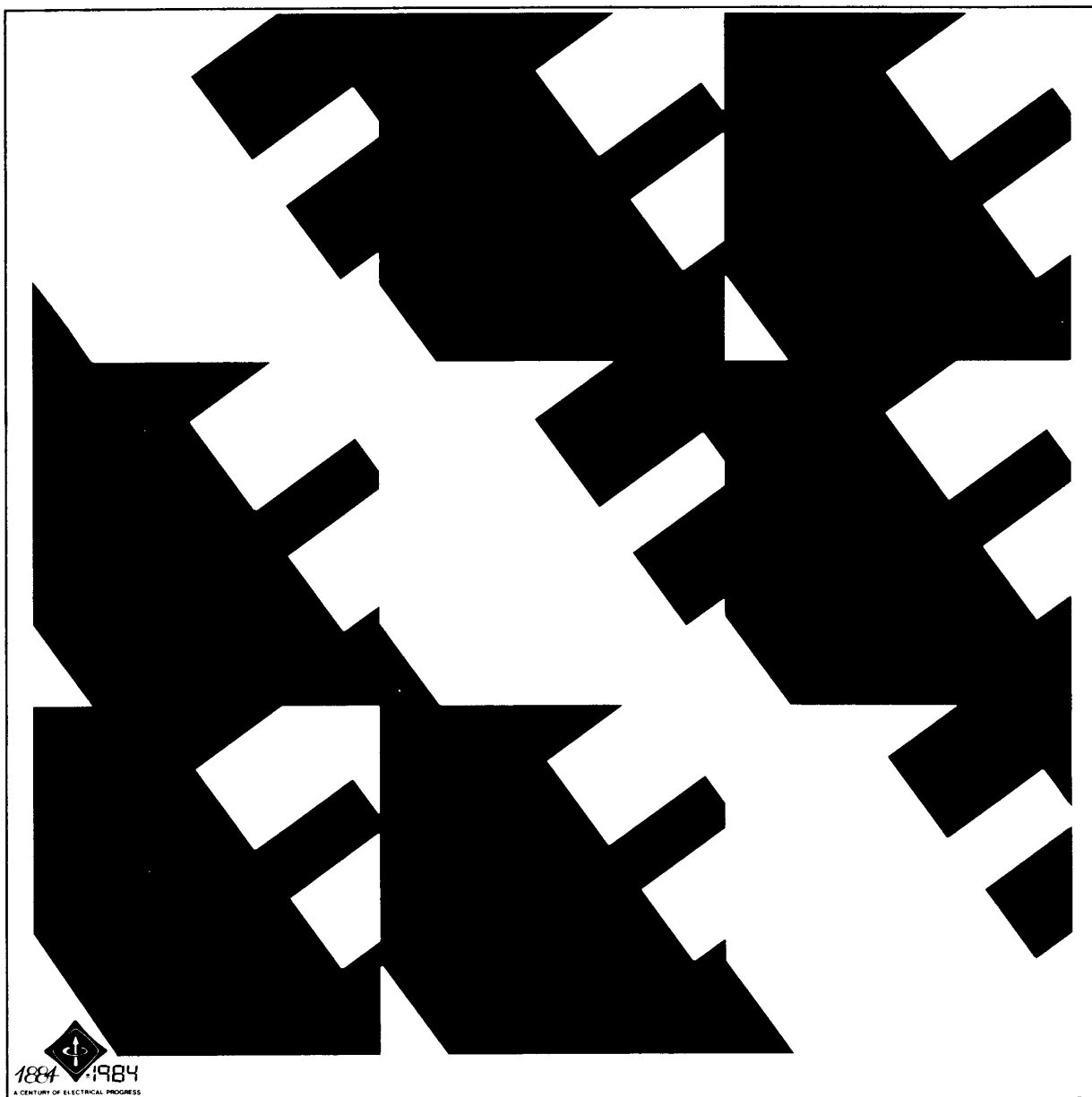


# IEEE Standard for Performance Measurements of A/D and D/A Converters for PCM Television Video Circuits

IEEE Std 746-1984



IEEE

Published by The Institute of Electrical and Electronics Engineers, Inc. 345 East 47th Street, New York, NY 10017, USA

October 15, 1984

SH09670



# **IEEE Standard for Performance Measurements of A/D and D/A Converters for PCM Television Video Circuits**

Sponsor

**Audio-Video Techniques Committee of the  
IEEE Broadcast Technology Society**

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## Foreword

(This Foreword is not a part of IEEE Std 746-1984, IEEE Standard for Performance Measurements of A/D and D/A Converters for PCM Television Video Circuits.)

The Digital Technology Subcommittee G-2.1.6 of the IEEE Broadcast Technology Society was authorized on 15 June 1978 to write a new standard for performance measurements of A/D and D/A converters for PCM television video circuits. The performances to be measured shall be relevant to the quality of the television picture. Measurements not related to the quality of the video signal are excluded from this standard. Typical television test signals and equipment are employed wherever possible. The following measurements are described in this standard: Low Frequency Linearity Errors, Frequency Response, Differential Gain and Phase, Signal-to-Noise Ratio, and Linear Waveform Distortion.

Suggestions for improvement of this standard will be welcome. They should be sent to the Secretary, IEEE Standards Board, Institute of Electrical and Electronics Engineers, 345 East 47th Street, New York, New York 10017.

At the time this standard was approved, the members of the IEEE Broadcast Technology Society Audio Video Techniques Committee G-2.1 were as follows:

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# IEEE Standard for Performance Measurements of A/D and D/A Converters for PCM Television Video Circuits

## 1. Scope and References

**1.1 Scope.** This standard describes methods for measuring the performance of uniformly coded analog-to-digital (A/D) converters and digital-to-analog (D/A) converters for pulse code modulation (PCM) television video signals. Excluded are A/D and D/A converters that employ nonlinear processes for bit reduction television circuits, as for example, sub-Nyquist encoding, differential PCM, transform coders, etc. This standard is intended primarily for CCIR System M, 525-line/60-field television circuits.

The performance to be measured should be relevant to the subjective quality of the television picture. Measurements not related to the quality of the video signal are excluded from this standard. Where possible, television type test signals are used to accommodate clamping circuits in the converters.

## 1.2 References

- [1] ANSI/EIA RS-250-B-76, Electrical Performance Standards for Television Relay Facilities.<sup>1</sup>
- [2] ANSI/IEEE Std 100-1984, IEEE Standard Dictionary of Electrical and Electronics Terms.
- [3] ANSI/IEEE Std 201-1979, IEEE Standard Definitions of Terms Relating to Television.
- [4] ANSI/IEEE Std 206-1960 (R1978), IEEE Measurement of Differential Gain and Differential Phase.
- [5] ANSI/IEEE Std 511-1979, IEEE Video Signal Transmission Measurement of Linear Waveform Distortion.
- [6] ANSI/IEEE Std 847-1982, IEEE Standard Definitions of Digital Terms Relating to Television.

<sup>1</sup> ANSI documents are available from Sales Department, The American National Standards Institute, 1430 Broadway, New York, NY 10018.

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## 2. Definition and Discussions

**2.1 General.** With few exceptions, the terms and definitions used here agree with those in ANSI/IEEE Std 100-1984 [2]<sup>2</sup> IEEE Standard Dictionary

<sup>2</sup> The numbers in brackets correspond to those of the references listed in 1.2 of this standard.