

Multichannel digital audio tape recorder (DATR), reel-to-reel system, for professional use —

Part 1: Format A

The European Standard EN 61595-1:1997 has the status of a
British Standard

ICS 33.160.30

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National foreword

This British Standard is the English language version of EN 61595-1:1997. It is identical with IEC 61595-1:1997.

The UK participation in its preparation was entrusted by Technical Committee EPL/100, Audio, video and multimedia systems and equipment, to Subcommittee EPL/100/2, Recording, which has the responsibility to:

- aid enquirers to understand the text;
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IEC 61595 will comprise the following parts:

- *Part 1: Format A;*
- *Part 2: Format B;*
- *Part 3: 24 bit operation for 16 bit media.*

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

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Cross-references

Attention is drawn to the fact that CEN and CENELEC Standards normally include an annex which lists normative references to international publications with their corresponding European publications. The British Standards which implement international European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 26, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

This British Standard, having been prepared under the direction of the Electrotechnical Sector Board, was published under the authority of the Standards Board and comes into effect on 15 October 1997

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Amendments issued since publication

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Descriptors: Sound recording, digital recording, magnetic tapes, recording tracks, codification, mechanical properties, electrical properties, recording characteristics, interchangeability

English version

Multichannel digital audio tape recorder (DATR),
reel-to-reel system, for professional use
Part 1: Format A

(IEC 61595-1:1997)

Système d'enregistrement à bande
audionumérique multivoie (DATR),
bobine à bobine, à usage professionnel
Partie 1: Format A
(CEI 61595-1:1997)

Digitales Mehrkanal-Tonbandgerät
(DATR), Spulensystem für
Studioanwendungen
Teil 1: Format A
(IEC 61595-1:1997)

This European Standard was approved by CENELEC on 1997-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Foreword

The text of document 100B/48/FDIS, future edition 1 of IEC 61595-1, prepared by SC 100B, Recording, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61595-1 on 1997-07-01.

The following dates were fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 1998-04-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 1998-04-01

Annexes designated “normative” are part of the body of the standard.

Annexes designated “informative” are given for information only.

In this standard, Annex ZA is normative and Annex A is informative. Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61595-1:1997 was approved by CENELEC as a European Standard without any modification.

In the official version, for Annex A, Bibliography, the following notes have to be added for the standards indicated:

- | | | |
|--------------|------|---|
| IEC 60094 | NOTE | Harmonized as EN 60094 and HD 311 series (not modified). |
| IEC 60268-12 | NOTE | Harmonized, together with its amendment 1:1991, as EN 60268-12:1995 (not modified). |
| IEC 60958 | NOTE | Harmonized as EN 60958:1990 (not modified). |
| IEC 61120-1 | NOTE | Harmonized as EN 61120-1:1993 (not modified). |
| IEC 61120-2 | NOTE | Harmonized as EN 61120-2:1993 (not modified). |
| IEC 61120-3 | NOTE | Harmonized as EN 61120-3:1993 (not modified). |
| IEC 61120-5 | NOTE | Harmonized as EN 61120-5:1995 (not modified). |

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1 Scope

This part of IEC 61595 applies to 8 to 64 channel digital audio recording on 12,7 mm or 25,4 mm wide tape (hereafter called tape), with stationary heads, for professional use. It defines the mechanical and electrical characteristics necessary to ensure the interchangeability of programmes, recorded as digital audio signals on magnetic tape in professional industries.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61595. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 61595 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60461:1986, *Time and control code for video tape recorders*.

IEC 61120-4:1992, *Digital audio tape recorder reel-to-reel system, using 6,3 mm magnetic tape, for professional use — Part 4: Magnetic tape properties: definitions and methods of measurement*.

ITU-T V.41:1988, *Code-independent error-control system*.

3 Definitions

For the purpose of this part of IEC 61595, the following definitions apply.

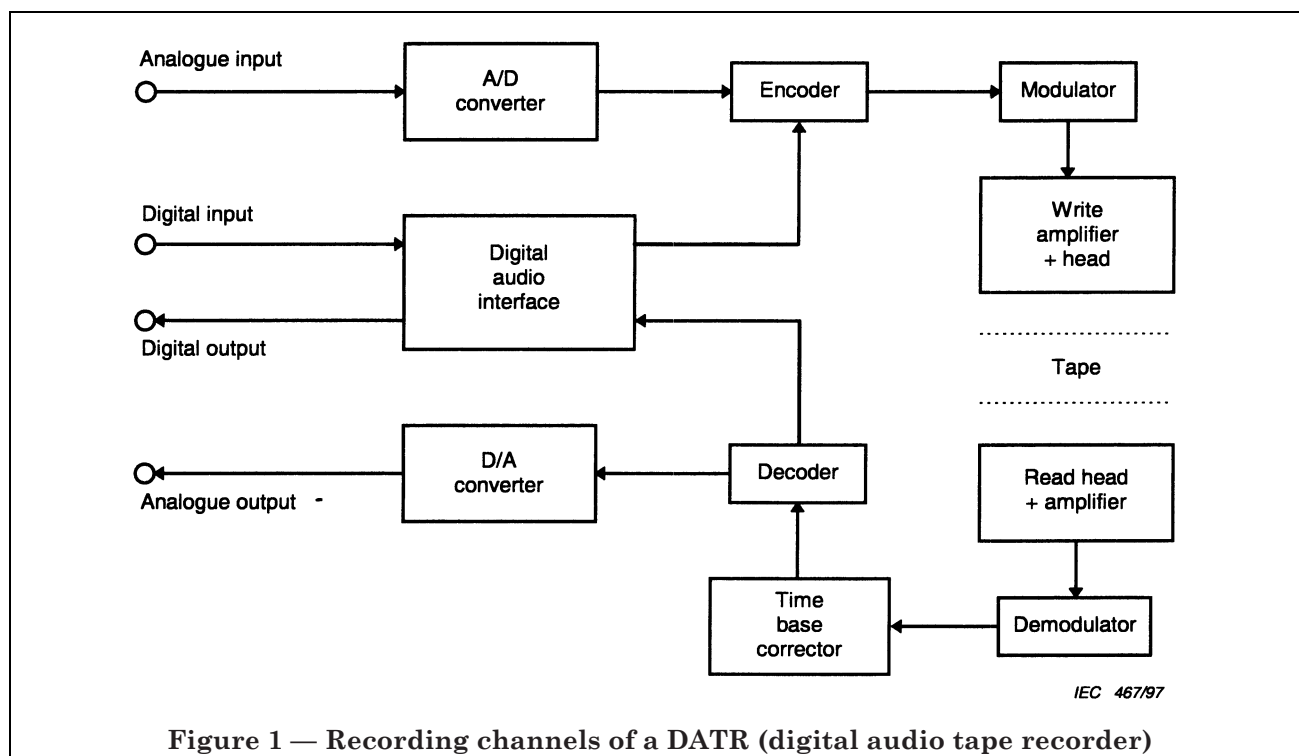
3.1

data flow of a digital audio tape recorder

Figure 1 shows, within a block diagram, the main data flow of a DATR (digital audio tape recorder)

Figure 2 shows the recording channels of a DATR

Figure 3 shows the reproducing channels of a DATR



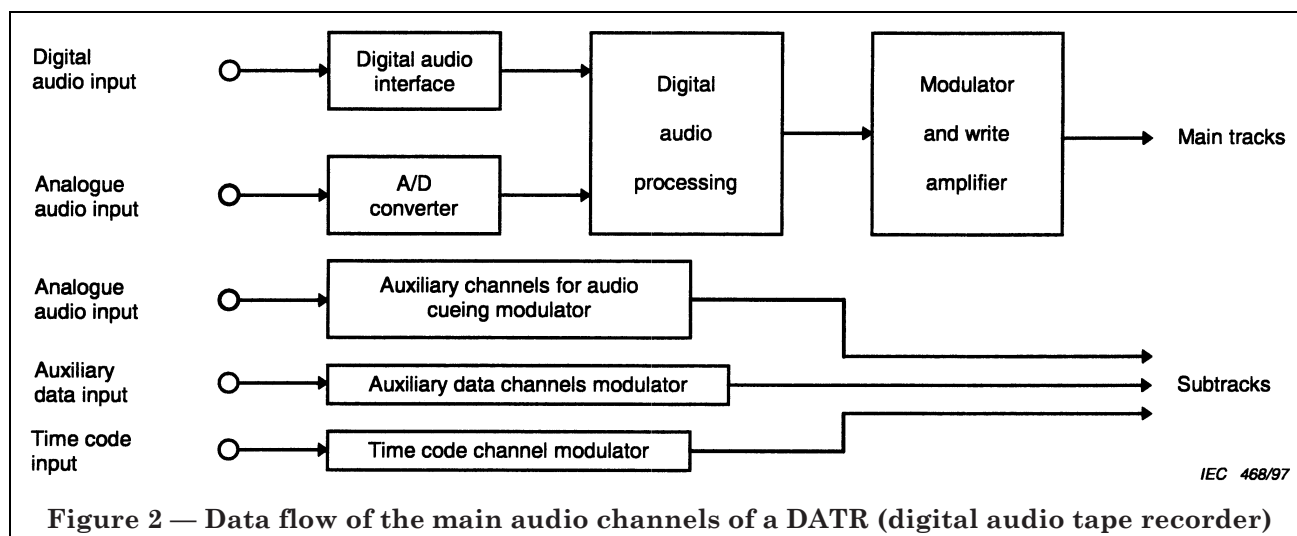


Figure 2 — Data flow of the main audio channels of a DATR (digital audio tape recorder)

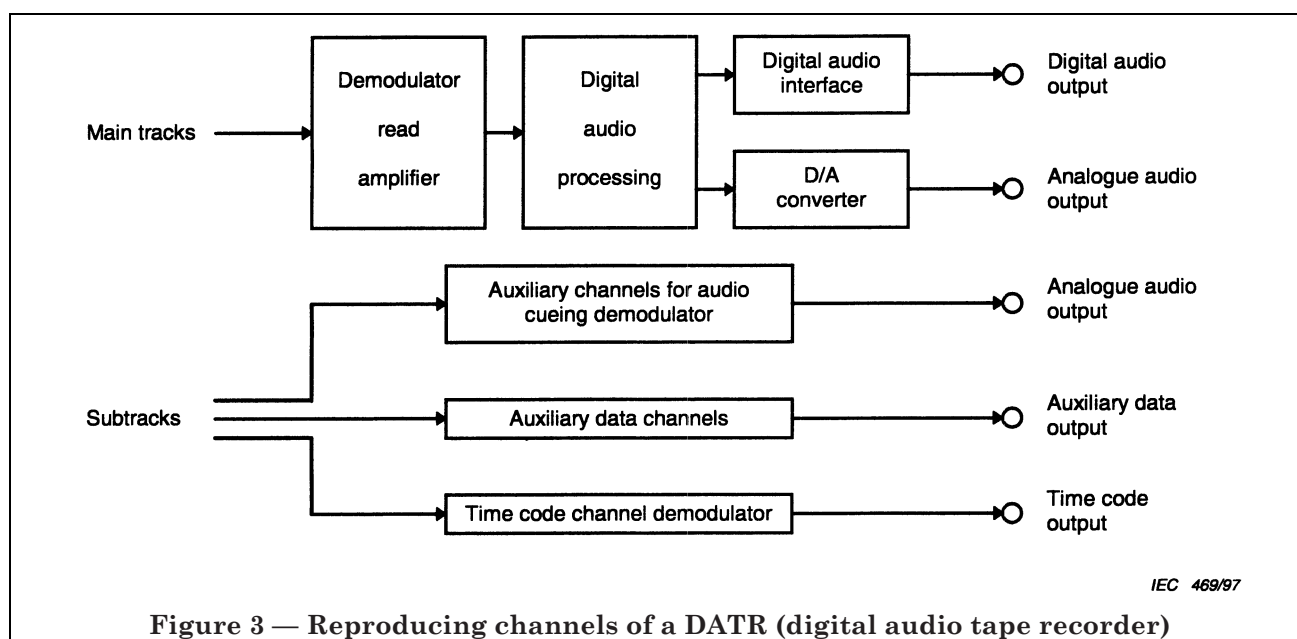


Figure 3 — Reproducing channels of a DATR (digital audio tape recorder)

4 Digital encoding

4.1 Sampling frequency

The sampling frequency shall be 48 kHz, and the accuracy of the sampling frequency at encoding shall be $\pm 50 \times 10^{-6}$.

4.2 Sampling timing

It is recommended that all channels are sampled simultaneously.

4.3 Quantization

Each audio sample shall be quantized uniformly and be expressed in 16 bits, 2s complement code. Positive numbers correspond to positive analogue voltages at the input.

5 Tape speed

The tape speed shall be nominal 76,20 cm/s (hereafter called speed I) and 38,10 cm/s (hereafter called speed II). The tolerance on tape speeds shall be within 0,2 %.