

Digital audio tape recorder reel to reel system, using 6.3 mm magnetic tape, for professional use —

Part 2: Format A

The European Standard EN 61120-2:1993 has the status of a British Standard

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This British Standard, having been prepared under the direction of the Electronic Equipment Standards Policy Committee, was published under the authority of the Standards Board and comes into effect on 15 January 1994

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National foreword

This British Standard has been prepared under the direction of the Electronic Equipment Standards Policy Committee and is the English language version of EN 61120-2:1993 *Digital audio tape recorder reel to reel system, using 6,3 mm magnetic tape, for professional use, Part 2: Format A*, published by the European Committee for Electrotechnical Standardization (CENELEC). It is identical with IEC 1120-2:1991, published by the International Electrotechnical Commission (IEC).

BS EN 61120 consists of the following Parts.

- *Part 1: General requirements;*
- *Part 2: Format A;*
- *Part 3: Format B;*
- *Part 4: Magnetic tape properties: definitions and methods of measurement;*
- *Part 5: Reels for 6.3 mm digital audio tape¹⁾.*

Additional information. IEC 1120-4 stated in **1.5.1** and **1.5.3** as being “(under consideration)” was published in 1992, and was implemented as BS EN 61120-4:1993.

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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 18, 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.

¹⁾ In preparation.

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Descriptors: Audio recording, digital recording, magnetic tape, data converter, code, format, recording characteristics, recording track

English version

Digital audio tape recorder reel to reel system, using 6,3 mm magnetic tape, for professional use Part 2: Format A

(IEC 1120-2:1991)

Système d'enregistrement à bande
audionumérique, bobine à bobine, utilisant
une bande magnétique de 6,3 mm, à usage
professionnel
Partie 2: Format A
(CEI 1120-2:1991)

Digitales Tonbandgerät
Spulensystem mit Magnetband 6,3 mm für
Studioanwendungen
Teil 2: Format A
(IEC 1120-2:1991)

This European Standard was approved by CENELEC on 1993-09-22. 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 CENELEC questionnaire procedure, performed for finding out whether or not the International Standard IEC 1120-2:1991 could be accepted without textual changes, has shown that no common modifications were necessary for the acceptance as a European Standard.

The reference document was submitted to the CENELEC members for formal vote and was approved by CENELEC as EN 61120-2 on 22 September 1993.

The following dates were fixed:

- latest date of publication of an identical national standard (dop) 1994-09-01
- latest date of withdrawal of conflicting national standards (dow) 1994-09-01

For products which have complied with the relevant national standard before 1994-09-01, as shown by the manufacturer or by a certification body, this previous standard may continue to apply for production until 1999-09-01.

Annexes designated “normative” are part of the body of the standard. In this standard, Annex ZA is normative.

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Electrical requirements for recording and reproducing equipment.

1 Main track recording

1.1 Recording modulation method

In this subclause a method is first defined to convert binary data sequence of each of the 8 main digital tracks for recording on the magnetic tape. The second item described in 1.2.3, is the definition of the synchronization pattern in recording code. The converted code is given by NRZI.

The 2/4 M system is defined by dividing a binary data sequence into two-bit data segments and converting these into four-cell codes using the data of the four bits preceding and the four bits succeeding the two-bit data segment. The system uses the collected data to convert the two-bit data segments into four-cell codes ensuring that no less than two and no more than seven code cells "0" exist between any code cells "1" in a sequence of converted code. The conversion rule is given by the following table.

2/4 M conversion table

Original data bits	Converted code cells	Contents
11	Y000	Unconditional
01	0010	
10	0100	"E ₂ E ₁ " ≠ "10" and "L ₁ L ₂ " = "00"
10	0001	"E ₂ E ₁ " = "10" and "L ₁ L ₂ " = "00"
10	0000	"E ₂ E ₁ " = "10", "L ₁ L ₂ " = "10" and "L ₃ L ₄ " = "00"
10	0100	"E ₂ E ₁ " ≠ "10", "L ₁ L ₂ " = "10" and "L ₃ L ₄ " = "00"
10	Y001	Except the foregoing
00	0000	"E ₄ E ₃ " ≠ "10", "E ₂ E ₁ " = "10" and "L ₁ L ₂ " ≠ 01"
00	0001	"E ₄ E ₃ " ≠ "10", "E ₂ E ₁ " = "10" and "L ₁ L ₂ " = "01"
00	0000	"E ₄ E ₃ " = "10" and "E ₂ E ₁ " = "10"
00	0100	Except the foregoing
where:		
E _n = data bits preceded by n-bit, to 2-bit data to be converted in original data sequence		
L _n = data bits succeeded by n-bit, to 2-bit data to be converted in original data sequence		
Y = complement logic of logical sum of two cells immediately before code bit Y in the converted code sequence		

The converted code is given by NRZI.

1.2 Signal block structure

1.2.1 The word format

The word slots to be recorded on the main tracks have 20 bits at speed I and 16 bits at speed II.

PCM samples are specified as uniformly quantified and are represented in the form of sign bit (MSB) leading.

1.2.2 The block structure

The following figure shows the data configuration and the contents of frames and blocks.

