BS IEC 61937-3:2017+A1:2020

BSI Standards Publication

Digital audio — Interface for non-linear PCM encoded audio bitstreams applying IEC 60958

Part 3: Non-linear PCM bitstreams according to the AC-3 and enhanced AC-3 formats

Documents
Document Sharing Hub

Full document details: BS IEC 61937-3:2017+A1:2020

National foreword

This British Standard is the UK implementation of IEC 61937-3:2017+A1:2020. It supersedes BS IEC 61937-3:2017, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee EPL/100, Audio-visual equipment.

A list of organizations represented on this committee can be obtained on request to its committee manager.

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2021
Published by BSI Standards Limited 2021

ISBN 978 0 539 12617 4

ICS 33.160.30

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 June 2019.

Amendments/corrigenda issued since publication

Date	Text affected
30 June 2021	Implementation of IEC amendment 1:2020: deletion of final paragraph of 5.3.4 (see Introduction to Amendment 1 for details)

Documents
Document Sharing Hub

Full document details: BS IEC 61937-3:2017+A1:2020

IEC 61937-3

Edition 3.0 2017-07

INTERNATIONAL STANDARD

Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 –
Part 3: Non-linear PCM bitstreams according to the AC-3 and enhanced AC-3 formats

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.160.30

ISBN 978-2-8322-4557-6

Warning! Make sure that you obtained this publication from an authorized distributor.

® Registered trademark of the International Electrotechnical Commission

Documents
Document Sharing Hub

Full document details: BS IEC 61937-3:2017+A1:2020

CONTENTS

FOREWORD 3
1 Scope 6
2 Normative references 6
3 Terms, definitions and abbreviated terms 6
3.7 Abbreviated terms 7
4 Mapping of the audio bitstream on to IEC 61937-1 7
4.1 General 7
4.2 AC-3 and enhanced AC-3 burst-info 7
5 Format of AC-3 and enhanced AC-3 data-bursts 8
5.1 General 8
5.2 Pause data-burst 8
5.3 Audio data-bursts 8
5.3.1 AC-3 data 8
5.3.2 Latency of AC-3 decoding 9
5.3.3 Enhanced AC-3 data 10
5.3.4 Latency of the enhanced AC-3 decoder 12
Bibliography 14

Figure 1 – AC-3 data-burst, with reference point R 8
Figure 2 – Latency of AC-3 decoding 9
Figure 3 – Enhanced AC-3 data-burst 11
Figure 4 – Latency of enhanced AC-3 decoding 12

Table 1 – Fields of burst-info 7
Table 2 – Repetition period of the pause data-bursts 8
Table 3 – Data-type-dependent information when data-type bits 0-4 = 1 9
Table 4 – Data-type-dependent information when data-type bits 0-4 = 21 and data-type bits 5-6 = 0 11
Table 5 – Maximum enhanced AC-3 burst-payload size and bitstream data rate per sampling frequency and IEC 60958 frame rate 12

Documents
Document Sharing Hub
Full document details: BS IEC 61937-3:2017+A1:2020

INTERNATIONAL ELECTROTECHNICAL COMMISSION

DIGITAL AUDIO – INTERFACE FOR NON-LINEAR PCM ENCODED AUDIO BITSTREAMS APPLYING IEC 60958 –

Part 3: Non-linear PCM bitstreams according to the AC-3 and enhanced AC-3 formats

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 61937-3 has been prepared by subcommittee technical area 4: Digital system interfaces and protocols, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This third edition of IEC 61937-3 cancels and replaces the second edition published in 2007. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) removal of support for enhanced AC-3 bitstreams with a sampling frequency of 32 kHz;
b) updates to normative and informative references;
c) clarification of pause data-burst usage for enhanced AC-3 bitstreams.

AVA Documents
Document Sharing Hub

Full document details: BS IEC 61937-3:2017+A1:2020

The text of this International Standard is based on the following documents:

CDV	Report on voting
100/2720/CDV	100/2934/RVC

Full information on the voting for the approval of this International Standard can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 61973 series, published under the general title *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958*, can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

Documents
Document Sharing Hub
Full document details: BS IEC 61937-3:2017+A1:2020