

SMPTE REGISTERED DISCLOSURE DOCUMENT

Format for Non-PCM Audio and Data in AES3 — Dolby-E[®] Data Type



Page 1 of 10 pages

The attached document is a Registered Disclosure Document prepared by the proponent identified below. It has been examined by the appropriate SMPTE Technology Committee and is believed to contain adequate information to satisfy the objectives defined in the Scope, and to be technically consistent.

This document is NOT a Standard, Recommended Practice or Engineering Guideline, and does NOT imply a finding or representation of the Society.

Errors in this document should be reported to the proponent identified below, with a copy to eng@smpte.org. All other inquiries in respect of this document, including inquiries as to intellectual property requirements that may be attached to use of the disclosed technology, should be addressed to the proponent identified below.

This document defines the Dolby-E mapping onto AES-3 according to SMPTE ST 337 and SMPTE ST 339, and to be a proper reference in SMPTE ST 338 for code point 28.

Proponent contact information:

Jeffrey Riedmiller
Dolby Laboratories
100 Potrero Avenue
San Francisco, CA 94103
USA

Email: JCR@dolby.com

Table of Contents	Page
1 Scope.....	3
2 Normative References.....	3
3 Definitions and Acronyms.....	3
3.1 Definitions.....	3
3.2 Acronyms.....	4
4 Dolby E.....	4
4.1 Overview.....	4
4.2 burst_preamble.....	5
4.3 data_type identifier.....	5
4.4 data_type_dependent.....	5
4.5 data_stream_number.....	5
4.6 Dolby E burst_payload.....	5
4.7 Dolby E Sampling Frequency.....	5
4.8 Dolby E Reference Point.....	5
4.9 Dolby E Standard Repetition Rate.....	5
4.10 Dolby E Standard Decode Latency.....	6
4.11 Dolby Reference Position.....	6
4.12 Dolby E Guard Band.....	8
4.13 Use of Pause Data Bursts between Dolby E Data Bursts.....	9
Annex A Bibliography (Informative).....	10

1 Scope

This Registered Disclosure Document (RDD) describes how Dolby® E data rate reduced (non-PCM) audio streams are packed into an AES3 data stream, following the methods described by SMPTE ST 337. The Dolby E data type is identified by a data type number listed in SMPTE ST 338 and carried in the burst information word of the data burst preamble. The RDD describes how the Dolby E data is packed into the AES3 data stream.

Note: "Dolby", and the double -D symbol are trademarks of Dolby Laboratories.

2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this recommended practice. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this recommended practice are encouraged to investigate the possibility of applying the most recent edition of the standards indicated below.

Dolby Laboratories, "Dolby E Professional Encoder Development Manual"

SMPTE ST 337:2015, Format for Non-PCM Audio and Data in an AES3 Serial Digital Audio Interface

SMPTE ST 339:2015, Format for Non-PCM Audio and Data in AES3 — Generic Data Types

3 Definitions and Acronyms

3.1 Definitions

3.1.1 Latency

Delay time of an external audio decoder to decode a Dolby E data burst, defined as the sum of two values; the receiving delay time and the decoding delay time.

3.1.2 Fractional frame rates

Dolby E supports two fractional audio frame rates. These frame rates are written in shorthand notation, as specified in Table 1.

Table 1 – Shorthand notation for fractional frame rates

Fractional Dolby E audio frame rate (fps)	Shorthand version
$24 \times 1000 / 1001$	23.976
$30 \times 1000 / 1001$	29.97

Note: Dolby E is usable with video systems running at other frame rates, such as 60/1.001 fps, by using the methods documented in SMPTE RDD 19.