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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 61280-2-3

September 2009

ICS 33.180.01

English version

**Fibre optic communication subsystem test procedures -
Part 2-3: Digital systems -
Jitter and wander measurements
(IEC 61280-2-3:2009)**

Procédures d'essai des sous-systèmes
de télécommunications à fibres optiques -
Partie 2-3: Systèmes numériques -
Mesures des giges et des dérapages
(CEI 61280-2-3:2009)

Prüfverfahren für Lichtwellenleiter-
Kommunikationsunterssysteme -
Teil: 2-3: Digitale Systeme -
Messung von Jitter und Wander
(IEC 61280-2-3:2009)

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This European Standard was approved by CENELEC on 2009-08-01. 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.

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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, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 86C/885/FDIS, future edition 1 of IEC 61280-2-3, prepared by SC 86C, Fibre optic systems and active devices, of IEC TC 86, Fibre optics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61280-2-3 on 2009-08-01.

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) 2010-05-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2012-08-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61280-2-3:2009 was approved by CENELEC as a European Standard without any modification.

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60825-1	- ¹⁾	Safety of laser products - Part 1: Equipment classification and requirements	EN 60825-1	2007 ²⁾
ITU-T Recommendation G.813	- ¹⁾	Timing characteristics of SDH equipment slave clocks (SEC)	-	-

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¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

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INTERNATIONAL STANDARD

**Fibre optic communication subsystem test procedures –
Part 2-3: Digital systems – Jitter and wander measurements**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**FIBRE OPTIC COMMUNICATION SUBSYSTEM
TEST PROCEDURES –**
**Part 2-3: Digital systems –
Jitter and wander measurements**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the 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. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61280-2-3 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

The text of this standard is based on the following documents:

FDIS	Report on voting
86C/885/FDIS	86C/905/RVD

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

A list of all parts of the IEC 61280-2 series, published under the general title *Fibre optic communication subsystem test procedures – Digital systems*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

A bilingual version may be published at a later date.

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FIBRE OPTIC COMMUNICATION SUBSYSTEM TEST PROCEDURES –

Part 2-3: Digital systems – Jitter and wander measurements

1 Scope

This part of IEC 61280 specifies methods for the measurement of the jitter and wander parameters associated with the transmission and handling of digital signals.

1.1 Types of jitter measurements

This standard covers the measurement of the following types of jitter parameters:

- a) jitter tolerance
 - 1) sinusoidal method
 - 2) stressed eye method
- b) jitter transfer function
- c) output jitter
- d) systematic jitter
- e) jitter separation

1.2 Types of wander measurements

This standard covers the measurement of the following types of wander parameters:

- a) non-synchronized wander
- b) TDEV tolerance
- c) TDEV transfer
- d) synchronized wander

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60825-1, *Safety of laser products – Part 1: Equipment classification and requirements*

ITU-T Recommendation G.813, *Timing characteristics of SDH equipment slave clocks (SEC)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE See also IEC 61931.