IEC 61280-2-2

Edition 4.0 2012-10

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Fibre optic communication subsystem test procedures – Part 2-2: Digital systems – Optical eye pattern, waveform and extinction ratio measurement

Procédures d'éssai des sous-systèmes de télécommunication fibroniques – Partie 2-2: Systèmes numériques – Mesure du diagramme de l'œil optique, de la forme d'onde et du taux d'extinction

IEC 61280-2-2:2012-10 (en-fr)

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FIBRE OPTIC COMMUNICATION SUBSYSTEM TEST PROCEDURES –

Part 2-2: Digital systems – Optical eye pattern, waveform and extinction ratio measurement

FOREWORD

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International Standard IEC 61280-2-2 has been prepared by subcommittee 86C: Fibre optic systems and active devices, of IEC technical committee 86: Fibre optics.

This fourth edition cancels and replaces the third edition published in 2008 and constitutes a technical revision.

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

a) additional definitions;

b) clarification of test procedures.

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

CDV	Report on voting
86C/1043/CDV	86C/1074/RVC

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

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

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

The committee has decided that the contents of this publication will remain unchanged until the stability 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- withdrawn,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.

The contents of the corrigendum of February 2015 have been included in this copy.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

FIBRE OPTIC COMMUNICATION SUBSYSTEM TEST PROCEDURES –

Part 2-2: Digital systems – Optical eye pattern, waveform and extinction ratio measurement

1 Scope

The purpose of this part of IEC 61280 is to describe a test procedure to verify compliance with a predetermined waveform mask and to measure the eye pattern and waveform parameters such as rise time, fall time, modulation amplitude and extinction ratio.

2 Normative references

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

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

3 Terms and definitions

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

3.1
amplitude histogram
graphical means to display the power or voltage population distribution of a waveform

3.2
contrast ratio
ratio of the nominal peak amplitude to the nominal minimum amplitude of two adjacent logical '1's when using return-to-zero transmission

3.3
duty cycle distortion
DCD
measure of the balance of the time width of a logical 1 bit to the width of a logical 0 bit, indicated by the time between the eye diagram nominal rising edge at the average or 50 % level and the eye diagram nominal falling edge at the average or 50 % level

3.4
extinction ratio
ratio of the nominal 1 level to the nominal 0 level of the eye diagram

3.5
eye diagram
type of waveform display that exhibits the overall performance of a digital signal by superimposing all the acquired samples on a common time axis one unit interval in width