Irish Standard
I.S. EN 60512-28-100:2013

Connectors for electronic equipment - Tests and measurements -- Part 28 -100: Signal integrity tests up to 1 000 MHz on IEC 60603-7 and IEC 61076-3 series connectors - Tests 28a to 28g (IEC 60512-28-100:2013 (EQV))

I.S. EN 60512-28-100:2013

Incorporating amendments/corrigenda issued since publication:

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

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SWiFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

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EUROPEAN STANDARD

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EN 60512-28-100

April 2013

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English version

Connectors for electronic equipment - Tests and measurements - Part 28-100: Signal integrity tests up to 1 000 MHz on IEC 60603-7 and IEC 61076-3 series connectors - Tests 28a to 28g

(IEC 60512-28-100:2013)

Connecteurs pour équipements électroniques - Essais et mesures - Partie 28-100: Essais d'intégrité des signaux jusqu'à 1 000 MHz sur les connecteurs des séries CEI 60603-7 et CEI 61076-3 - Essais 28a à 28g
(CEI 60512-28-100:2013)

Steckverbinder für elektronische Einrichtungen - Mess- und Prüfverfahren - Teil 28-100: Signalintegritätsprüfungen bis 1 000 MHz an Steckverbindern der Reihen IEC 60603-7 und IEC 61076-3 - Prüfungen 28a bis 28g
(IEC 60512-28-100:2013)

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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

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Ref. No. EN 60512-28-100:2013 E

Foreword

The text of document 48B/2322/FDIS, future edition 1 of IEC 60512-28-100, prepared by SC 48B "Connectors" of IEC/TC 48 "Electromechanical components and mechanical structures for electronic equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 60512-28-100:2013.

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2013-12-13
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2016-03-13

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

Endorsement notice

The text of the International Standard IEC 60512-28-100:2013 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

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

Publication	Year	Title	EN/HD	Year
IEC 60050-581	-	International Electrotechnical Vocabulary (IEV) - Part 581: Electromechanical components for electronic equipment	-	-
IEC 60512-1	-	Connectors for electronic equipment - Tests and measurements - Part 1: General	EN 60512-1	-
IEC 60512-26-100	2008	Connectors for electronic equipment - Tests and measurements - Part 26-100: Measurement setup, test and reference arrangements and measurements for connectors according to IEC 60603-7 - Tests 26a to 26g	EN 60512-26-100	2008
IEC 60603-7	Series	Connectors for electronic equipment	EN 60603-7	Series
IEC 61076-1	-	Connectors for electronic equipment - Product requirements - Part 1: Generic specification	EN 61076-1	-
IEC 61076-3-104	-	Connectors for electronic equipment - Product requirements - Part 3-104: Detail specification for 8-way, shielded free and fixed connectors for data transmissions with frequencies up to 1 000 MHz	EN 61076-3-104	-
IEC 61076-3-110	-	Connectors for electronic equipment - Product requirements - Part 3-110: Detail specification for shielded, free and fixed connectors for data transmission with frequencies up to 1 000 MHz	EN 61076-3-110	-
IEC 61156	Series	Multicore and symmetrical pair/quad cables for digital communications - Part 1-2: Electrical transmission characteristics and test methods of symmetrical pair/quad cables	-	-
IEC 61156-6	-	Multicore and symmetrical pair/quad cables for digital communications - Part 6: Symmetrical pair/quad cables with transmission characteristics up to 1 000 MHz - Work area wiring - Sectional specification	-	-

Publication	Year	Title	EN/HD	Year
IEC 61169-16	-	Radio-frequency connectors - Part 16: RF coaxial connectors with inner diameter of outer conductor 7 mm (0,276 in) with screw coupling - Characteristic impedance 50 ohms (75 ohms) (Type N)	EN 61169-16	-
IEC 62153-4-12	-	Metallic communication cable test methods - Part 4-12: Electromagnetic compatibility (EMC) - Coupling attenuation or screening attenuation of connecting hardware - Absorbing clamp method	-	-
ISO/IEC 11801	-	Information technology - Generic cabling for customer premises	-	-

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

Part 28-100: Signal integrity tests up to 1 000 MHz on IEC 60603-7 and IEC 61076-3 series connectors – Tests 28a to 28g

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.
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International Standard IEC 60512-28-100 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

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

FDIS	Report on voting
48B/2322/FDIS	48B/2332/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.

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

A list of all parts of IEC 60512 series, under the general title *Connectors for electronic equipment – Tests and measurements*, 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.

CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

Part 28-100: Signal integrity tests up to 1 000 MHz on IEC 60603-7 and IEC 61076-3 series connectors – Tests 28a to 28g

1 Scope

This part of IEC 60512 specifies the test methods for transmission performance for IEC 60603-7 and IEC 61076-3 series connectors up to 1 000 MHz. It is also suitable for testing lower frequency connectors, however the test methodology specified in the detailed specification for any given connector remains the reference conformance test for that connector.

The test methods provided here are:

– insertion loss, test 28a;
– return loss, test 28b;
– near-end crosstalk (NEXT) test 28c;
– far-end crosstalk (FEXT), test 28d;
– transverse conversion loss (TCL), test 28f;
– transverse conversion transfer loss (TCTL), test 28g.

For the transfer impedance (ZT) test, see IEC 60512-26-100, test 26e.

For the coupling attenuation, see IEC 62153-4-12.

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 60050-581, *International Electrotechnical Vocabulary (IEV) – Part 581: Electromechanical components for electronic equipment*

IEC 60512-1, *Connectors for electronic equipment – Tests and measurements – Part 1: General*

IEC 60512-26-100:2008, *Connectors for electronic equipment – Tests and measurements – Part 26-100: Measurement setup, test and reference arrangement and measurements for connectors according to IEC 60603-7 – Tests 26a to 26g*

IEC 60603-7 (all parts), *Connectors for electronic equipment*

IEC 61076-1, *Connectors for electronic equipment – Product requirements – Part 1: Generic specification*