



SLOVENSKI STANDARD

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Konektorji za elektronsko opremo - Preskusi in meritve - 27-100. del: Preskušanje neokrnjenosti signalov do 500 MHz na konektorjih serije IEC 60603-7 - Preskusi od 27a do 27g

Connectors for electronic equipment - Tests and measurements - Part 27-100: Signal integrity tests up to 500 MHz on IEC 60603-7 series connectors - Tests 27a to 27g

Steckverbinder für elektronische Einrichtungen - Mess- und Prüfverfahren - Teil 27-100: Signalintegritätsprüfungen bis 500 MHz an Steckverbindern der Reihe IEC 60603-7 - Prüfungen 27a bis 27g

Connecteurs pour équipements électroniques - Essais et mesures - Partie 27-100: Essais d'intégrité des signaux jusqu'à 500 MHz sur les connecteurs de la série CEI 60603-7 - Essais 27a à 27g

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60512-27-100

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English version

**Connectors for electronic equipment -
Tests and measurements -
Part 27-100: Signal integrity tests up to 500 MHz on IEC 60603-7 series
connectors -
Tests 27a to 27g
(IEC 60512-27-100:2011)**

Connecteurs pour équipements
électroniques -
Essais et mesures -
Partie 27-100: Essais d'intégrité des
signaux jusqu'à 500 MHz sur les
connecteurs de la série CEI 60603-7 -
Essais 27a à 27g
(CEI 60512-27-100:2011)

Steckverbinder für elektronische
Einrichtungen -
Mess- und Prüfverfahren -
Teil 27-100: Signalintegritätsprüfungen bis
500 MHz an Steckverbindern der Reihe
IEC 60603-7 -
Prüfungen 27a bis 27g
(IEC 60512-27-100:2011)

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 48B/2262/FDIS, future edition 1 of IEC 60512-27-100, 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 60512-27-100:2012.

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) 2012-10-11
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2015-01-11

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

- | | |
|---------------|----------------------------------|
| IEC 60603-7-4 | NOTE Harmonized as EN 60603-7-4. |
| IEC 60603-7-5 | NOTE Harmonized as EN 60603-7-5. |

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60050-581	-	International Electrotechnical Vocabulary - Part 581: Electromechanical components for electronic equipment	-	-
IEC 60512-1	-	Connectors for electronic equipment - Tests and measurements - Part 1: General	EN 60512-1	-
IEC 60512-1-100	-	Connectors for electronic equipment - Tests and measurements - Part 1-100: General - Applicable publications	EN 60512-1-100	-
IEC 60512-26-100	-	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	-
IEC 60603-7	Series	Connectors for electronic equipment	EN 60603-7	Series
IEC 60603-7	2008	Connectors for electronic equipment - Part 7: Detail specification for 8-way, unshielded, free and fixed connectors	EN 60603-7	2009
IEC 61076-1	-	Connectors for electronic equipment - Product requirements - Part 1: Generic specification	EN 61076-1	-
IEC 61156	Series	Multicore and symmetrical pair/quad cables for digital communications - Part 1: Generic specification	-	-
IEC 61169-16	-	Radio-frequency connectors - Part 16: Sectional specification - RF coaxial connectors with inner diameter of outer conductor 7 mm (0,276 in) with screw coupling - Characteristics 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	-	-

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NORME INTERNATIONALE



**Connectors for electronic equipment – Tests and measurements –
Part 27-100: Signal integrity tests up to 500 MHz on 60603-7 series connectors –
Tests 27a to 27g**

**Connecteurs pour équipements électroniques – Essais et mesures –
Partie 27-100: Essais d'intégrité des signaux jusqu'à 500 MHz sur les
connecteurs de la série CEI 60603-7 – Essais 27a à 27g**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**CONNECTORS FOR ELECTRONIC EQUIPMENT –
TESTS AND MEASUREMENTS –****Part 27-100: Signal integrity tests up to 500 MHz
on 60603-7 series connectors –
Tests 27a to 27g**

FOREWORD

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International Standard IEC 60512-27-100 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
4B/2262/FDIS	48B/2275/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 electrical 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.

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CONNECTORS FOR ELECTRONIC EQUIPMENT – TESTS AND MEASUREMENTS –

Part 27-100: Signal integrity tests up to 500 MHz on 60603-7 series connectors – Tests 27a to 27g

1 Scope and object

This part of IEC 60512 specifies the test methods for transmission performance for IEC 60603-7 series connectors up to 500 MHz. It is also suitable for testing lower frequency connectors if they meet the requirements of the detail specifications and of this standard.

The test methods provided here are:

- insertion loss, test 27a;
- return loss, test 27b;
- near-end crosstalk (NEXT) test 27c;
- far-end crosstalk (FEXT), test 27d;
- transverse conversion loss (TCL), test 27f;
- transverse conversion transfer loss (TCTL), test 27g;

For the transfer impedance (Z_t) 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 60512-1-100, *Connectors for electronic equipment – Tests and measurements – Part 1-100: General - Applicable publications*

IEC 60512-26-100, *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*

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

IEC 60603-7, 2008: *Connectors for electronic equipment – Part 7: Detail specification for 8-way, unshielded, free and fixed connectors*

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

IEC 61156 (all parts), *Multicore and symmetrical pair/quad cables for digital communications*

IEC 61169-16, *Radio-frequency connectors – Part 16: Sectional specification – 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)*

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*

3 Terms, definitions, acronyms and symbols

NOTE It should be noted that this document, although having a close relationship with corresponding documents, which use different terminology to that used in those documents.

3.1 Terms and definitions

For the purposes of this document, the terms and definitions of IEC 60050(581), IEC 61076-1, IEC 60512-1, IEC 60603-7 as well as the following, apply.

3.1.1 Test Free Connector (TFC)

free connector, which is constructed such that it is a test artefact, is known as a Test Free Connector (TFC)

3.2 Acronyms

For ease of reference, acronyms used in this standard are given below.

ACRF	Attenuation to crosstalk ratio, far-end
CM	Common mode
CMR	Common mode rejection
DM	Differential mode
DMCM	Differential mode plus common mode
DUT	Device under test
EIA	Electronic Industries Alliance
ELTCTL	Equal level transverse conversion transfer loss
FEXT	Far-end crosstalk
F/UTP	Foil (surrounding) unscreened twisted-pairs
ICEA	Insulated Cable Engineers Association
IDC	Insulation displacement connection
IPC	Insulation piercing connection
NEXT	Near-end crosstalk
OSB	Output signal balance
PSAACRF	Power sum attenuation to alien crosstalk ratio, far-end
PSACRF	Power sum attenuation to crosstalk ratio, far-end
PSANEXT	Power sum alien near-end crosstalk
PSFEXT	Power sum far-end crosstalk