



NSAI
Standards

Irish Standard
I.S. EN 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 (IEC 60512-26-100:2008 (EQV))

I.S. EN 60512-26-100:2008

Incorporating amendments/corrigenda issued since publication:

EN 60512-26-100:2008/A1:2011

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

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

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

<i>This document replaces:</i>	<i>This document is based on:</i> EN 60512-26-100:2008	<i>Published:</i> 24 October, 2008
This document was published under the authority of the NSAI and comes into effect on: 18 September, 2009		ICS number: 31.220.10
NSAI 1 Swift Square, Northwood, Santry Dublin 9	T +353 1 807 3800 F +353 1 807 3838 E standards@nsai.ie W NSAI.ie	Sales: T +353 1 857 6730 F +353 1 857 6729 W standards.ie
Údarás um Chaighdeán Náisiúnta na hÉireann		

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60512-26-100/A1

April 2011

ICS 13.220.10

English version

**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 60512-26-100:2008/A1:2011)**

Connecteurs pour équipements
électroniques -
Essais et mesures -
Partie 26-100: Montage de mesure,
dispositifs d'essai et de référence et
mesures pour les connecteurs conformes
à la CEI 60603-7 -
Essais 26a à 26g
(CEI 60512-26-100:2008/A1:2011)

Steckverbinder für elektronische
Einrichtungen -
Mess- und Prüfverfahren -
Teil 26-100: Messaufbau, Prüf- und
Referenzanordnung und Messverfahren
für Steckverbinder nach IEC 60603-7 -
Prüfungen 26a bis 26g
(IEC 60512-26-100:2008/A1:2011)

This amendment A1 modifies the European Standard EN 60512-26-100:2008; it was approved by CENELEC on 2011-04-18. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment the status of a national standard without any alteration.

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 amendment 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, Croatia, 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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

I.S. EN 60512-26-100:2008

EN 60512-26-100:2008/A1:2011

- 2 -

Foreword

The text of document 48B/2065/CDV, future amendment 1 to IEC 60512-26-100:2008, 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 was approved by CENELEC as amendment A1 to EN 60512-26-100:2008 on 2011-04-18.

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

The following dates were fixed:

- latest date by which the amendment has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2012-01-18
- latest date by which the national standards conflicting with the amendment have to be withdrawn (dow) 2014-04-18

Endorsement notice

The text of amendment 1:2011 to the International Standard IEC 60512-26-100:2008 was approved by CENELEC as an amendment to the European Standard without any modification.

FOREWORD

This amendment has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

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

FDIS	Report on voting
48B/2065/FDIS	48B/2149/RVD

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

The committee has decided that the contents of this amendment and the base 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.

4.5.4.2 Triaxial set-up

Replace the existing third paragraph by the following:

R_1 is the inner circuit terminating load and is chosen to be within $\pm 2\%$ of Z_1 , the inner circuit impedance (see 4.5.4.3.2), utilising one or more standard value resistors.

R_2 is the outer circuit terminating load and is chosen to be within $\pm 2\%$ of the value, utilizing one or more standard value resistors, determined according to

$$R_2 = Z_2 - 50$$

where Z_2 is the outer circuit impedance (see 4.5.4.3.3).

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 60512-26-100

October 2008

ICS 31.220.10

English version

**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 60512-26-100:2008)**

Connecteurs
pour équipements électroniques -
Essais et mesures -
Partie 26-100: Montage de mesure,
dispositifs d'essai et de référence
et mesures pour les connecteurs
conformes à la CEI 60603-7 -
Essais 26a à 26g
(CEI 60512-26-100:2008)

Steckverbinder
für elektronische Einrichtungen -
Mess- und Prüfverfahren -
Teil 26-100: Messaufbau,
Prüf- und Referenzanordnung
und Messverfahren für Steckverbinder
nach IEC 60603-7 -
Prüfungen 26a bis 26g
(IEC 60512-26-100:2008)

This European Standard was approved by CENELEC on 2008-10-01. 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.

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: rue de Stassart 35, B - 1050 Brussels

I.S. EN 60512-26-100:2008

EN 60512-26-100:2008

- 2 -

Foreword

The text of document 48B/1892/FDIS, future edition 1 of IEC 60512-26-100, 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 was approved by CENELEC as EN 60512-26-100 on 2008-10-01.

This European Standard cancels and replaces the annexes of EN 60603-7-x documents dealing with transmission characteristics for interoperability and backward compatibility.

This standard is to be read in conjunction with EN 60512-1 and EN 60512-1-100 which explains the structure of the EN 60512 series.

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) | 2009-07-01 |
| – latest date by which the national standards conflicting
with the EN have to be withdrawn | (dow) | 2011-10-01 |

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60512-26-100:2008 was approved by CENELEC as a European Standard without any modification.

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

IEC 60068-1	NOTE	Harmonized as EN 60068-1:1994 (not modified).
IEC 60512-25	NOTE	Harmonized in EN 60512-25 series (not modified).

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

NOTE 2 Where a standard cited below belongs to the EN 50000 series, the European Standard applies instead of the relevant International Standard.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
-	-	Communication cables - Specifications for test methods - Part 1-14: Electrical test methods - Coupling attenuation or screening attenuation of connecting hardware	EN 50289-1-14	- ¹⁾
IEC 60169-15	- ¹⁾	Radio-frequency connectors - Part 15: R.F. coaxial connectors with inner diameter of outer conductor 4,13 mm (0,163 in) with screw coupling - Characteristic impedance 50 ohms (Type SMA)	-	-
IEC 60512-1	- ¹⁾	Connectors for electronic equipment - Tests and measurements - Part 1: General	EN 60512-1	2001 ²⁾
IEC 60512-1-100	- ¹⁾	Connectors for electronic equipment - Tests and measurements - Part 1-100: General - Applicable publications	EN 60512-1-100	2006 ²⁾
IEC 60603-7	- ¹⁾	Connectors for electronic equipment - Part 7: Detail specification for 8-way, unshielded, free and fixed connectors	EN 60603-7	200X ³⁾
IEC 60603-7-2	- ¹⁾	Connectors for electronic equipment - Part 7-2: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 100 MHz	EN 60603-7-2	200X ³⁾
IEC 60603-7-3	- ¹⁾	Connectors for electronic equipment - Part 7-3: Detail specification for 8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 100 MHz	EN 60603-7-3	200X ³⁾
IEC 60603-7-4	2005	Connectors for electronic equipment - Part 7-4: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz	EN 60603-7-4	2005
IEC 60603-7-5	2007	Connectors for electronic equipment - Part 7-5: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz	EN 60603-7-5	200X ³⁾

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

³⁾ To be ratified.

I.S. EN 60512-26-100:2008

EN 60512-26-100:2008

- 4 -

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 61156	Series	Multicore and symmetrical pair/quad cables for digital communications	-	-
IEC 61169-16	- ¹⁾	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	2007 ²⁾
ISO/IEC 11801	2002	Information technology - Generic cabling for customer premises	EN 50173-1 ⁴⁾ and EN 50173-2 ⁵⁾	2007 2007
ITU-T Recommendation G.117	- ¹⁾	Transmission aspects of unbalance about earth	-	-
ITU-T Recommendation O.9	- ¹⁾	Measuring arrangements to assess the degree of unbalance about earth	-	-

⁴⁾ The title of EN 50173-1 is: *Information technology - Generic cabling systems – Part 1: General requirements.*

⁵⁾ The title of EN 50173-2 is: *Information technology - Generic cabling systems – Part 2: Office premises.*

CONTENTS

FOREWORD.....	6
INTRODUCTION.....	8
1 Scope.....	9
2 Normative reference	9
3 General requirements for measurement setup	10
3.1 Test instrumentation.....	10
3.2 Coaxial cables and test leads for network analysers.....	10
3.3 Measurement precautions	10
3.4 Balun requirements	11
3.5 Reference components for calibrations.....	12
3.5.1 Reference loads for calibration	12
3.5.2 Reference cables for calibration	12
3.6 Termination loads for termination of conductor pairs	12
3.7 Termination of screens	13
3.8 Test specimen and reference planes	13
3.9 Termination of balun with low return loss for common mode	14
3.9.1 General	14
3.9.2 Centre tap connected to ground.....	14
3.9.3 Centre tap open.....	14
4 Connector measurement up to 250 MHz.....	15
4.1 Insertion loss (IL), Test 26a.....	15
4.1.1 Object	15
4.1.2 Free connector for insertion loss.....	15
4.1.3 Test method	15
4.1.4 Test set-up	15
4.1.5 Procedure.....	15
4.1.6 Test report.....	17
4.1.7 Accuracy	17
4.2 Return loss (RL), Test 26b	17
4.2.1 Object	17
4.2.2 Free connector for return loss.....	17
4.2.3 Test method	17
4.2.4 Test set-up	17
4.2.5 Procedure.....	17
4.2.6 Test report.....	17
4.2.7 Accuracy	17
4.3 Near-end crosstalk (NEXT), Test 26c	18
4.3.1 Object	18
4.3.2 Fixed and free connector combinations to be tested	18
4.3.3 Test method	18
4.3.4 Test set-up	18
4.3.5 Procedure.....	19
4.3.6 Test report.....	20
4.3.7 Accuracy	20
4.4 Far-end crosstalk (FEXT), Test 26d.....	20
4.4.1 Object	20

4.4.2	Fixed and free connector combinations to be tested	20
4.4.3	Test method	20
4.4.4	Test set-up	20
4.4.5	Procedure.....	21
4.4.6	Test report.....	22
4.4.7	Accuracy	22
4.5	Transfer impedance (Z_T), Test 26e	22
4.5.1	Object	22
4.5.2	Test method	22
4.5.3	Definitions	22
4.5.4	Test set-up	23
4.5.5	Procedure.....	26
4.5.6	Test report.....	27
4.5.7	Accuracy	27
4.6	Transverse Conversion Loss (TCL), Test 26f.....	28
4.6.1	Object	28
4.6.2	Test method	28
4.6.3	Test set-up	28
4.6.4	Procedure.....	28
4.6.5	Test report.....	29
4.6.6	Accuracy	29
4.7	Transverse Conversion Transfer Loss (TCTL), Test 26g.....	29
4.7.1	Object	29
4.7.2	Test method	29
4.7.3	Test set-up	30
4.7.4	Procedure.....	30
4.7.5	Test report.....	30
4.7.6	Accuracy	31
5	Construction and qualification of test plugs.....	31
5.1	De-embedding near-end crosstalk (NEXT) test plug	31
5.1.1	Set-up and calibration of reference plug	31
5.1.2	Test plug construction	32
5.1.3	Test plug NEXT measurement	33
5.1.4	Test plug NEXT requirements	34
5.1.5	Test plug balance	36
5.2	Far-end crosstalk (FEXT) test plug	37
5.2.1	General	37
5.2.2	Test plug FEXT measurement – de-embedding method	38
5.2.3	Test plug FEXT measurement – direct method	38
5.2.4	FEXT test plug requirements	39
5.3	Return loss test plug	39
6	Reference plug and jack construction and measurement – the basics of the de-embedding test method	39
6.1	De-embedding near-end crosstalk (NEXT) reference plug and jack	39
6.1.1	Reference plug construction	39
6.1.2	Return loss reference plug.....	40
6.1.3	Set-up and calibration of reference plug	41
6.1.4	De-embedding reference plug NEXT measurement.....	41
6.1.5	Delay adjustment in lieu of port extension.....	41

6.2	De-embedding near-end crosstalk (NEXT) reference jack.....	41
6.2.1	Reference jack construction.....	41
6.2.2	De-embedding reference jack NEXT measurement.....	43
6.2.3	Differential mode jack vector	43
6.3	Determining reference jack FEXT vector	43
6.3.1	FEXT reference plug details	43
6.3.2	FEXT reference jack assembly	46
6.3.3	De-embedding reference jack FEXT assembly measurement.....	47
Annex A	(informative) Example test fixtures in support	48
Bibliography	54
Figure 1	– Optional 180° hybrid used instead of a balun	11
Figure 2	– Example of calibration of reference loads.....	12
Figure 3	– Resistor load.....	13
Figure 4	– Definition of reference planes.....	14
Figure 5	– Balanced attenuator for balun centre tap grounded	14
Figure 6	– Balanced attenuator for balun centre tap open	15
Figure 7	– Calibration	16
Figure 8	– Measuring set-up	16
Figure 9	– NEXT measurement for differential and common mode terminations	19
Figure 10	– FEXT measurement for differential and common mode terminations.....	21
Figure 11	– Preparation of test specimen.....	23
Figure 12	– Triaxial test set-up	24
Figure 13	– Impedance matching for $R_1 < 50 \Omega$	25
Figure 14	– Impedance matching for $R_1 > 50 \Omega$	26
Figure 15	– TCL measurement.....	28
Figure 16	– TCTL measurement.....	30
Figure 17	– Back-to-back through calibration (for more information see Annex A).....	31
Figure 18	– Mated test plug/direct fixture test configuration	38
Figure 19	– De-embedding reference plug	40
Figure 20	– De-embedding reference jack.....	42
Figure 21	– De-embedding reference FEXT plug without sockets.....	43
Figure 22	– De-embedding reference FEXT plug with sockets.....	44
Figure 23	– Reference FEXT plug mated to PWB.....	44
Figure 24	– Reference FEXT plug-test lead position	45
Figure 25	– Reference FEXT plug assembly	45
Figure 26	– Test leads connected to de-embedded reference jack/PWB assembly.....	47
Figure 27	– Reference FEXT plug mated to reference jack/PWB assembly	47
Figure A.1	– TH13KIT test head interface with baluns attached	48
Figure A.2	– Alternative to item 3.1 in Table A.2	50
Figure A.3	– Pyramid test setup for shielded connectors	50
Figure A.4	– Exploded assembly of the coaxial termination reference test head.....	52
Figure A.5	– Detailed view of the coaxial termination reference test-head interface	52

I.S. EN 60512-26-100:2008

60512-26-100 © IEC:2008

– 5 –

Table 1 – Test balun performance characteristics	11
Table 2 – Uncertainty band of return loss measurement at frequencies below 100 MHz.....	18
Table 3 – Uncertainty band of return loss measurement at frequencies above 100 MHz.....	18
Table 4 – De-embedded NEXT real and imaginary reference jack vectors.....	33
Table 5 – Differential mode reference jack vectors.....	34
Table 6 – Test plug NEXT loss limits for connectors specified up to 100 MHz according to IEC 60603-7-2 or IEC 60603-7-3.....	35
Table 7 – Test plug NEXT loss limits for connectors specified up to 250 MHz according to IEC 60603-7-4 or IEC 60603-7-5.....	36
Table 8 – Test-plug differential and differential with common-mode consistency	37
Table 9 – Test plug FEXT requirements – De-embedding method	39
Table 10 – Return loss requirements for return loss reference plug.....	41
Table A.1 – Coaxial termination reference head component list	48
Table A.2 – Coaxial termination reference head, additional parts	49
Table A.3 – Coaxial termination reference head component list	51

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

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.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 60512-26-100 has been prepared by subcommittee 48B: Connectors, of IEC technical committee 48: Electromechanical components and mechanical structures for electronic equipment.

This standard cancels and replaces the Annexes of IEC 60603-7-x documents dealing with transmission characteristics for interoperability and backward compatibility.

This standard is to be read in conjunction with IEC 60512-1 and IEC 60512-1-100 which explains the structure of the IEC 60512 series.

I.S. EN 60512-26-100:2008

60512-26-100 © IEC:2008

– 7 –

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

FDIS	Report on voting
48B/1892/FDIS	48B/1925/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 the 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 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.

INTRODUCTION

Detail specifications for 8-way, free and fixed connectors such as IEC 60603-7-4:2005 and IEC 60603-7-5:2007 define measurement setup, test and reference arrangements and measurements for interoperability and backward compatibility tests for connectors according IEC 60603-7 up to 250 MHz for insertion loss (IL), near end crosstalk (NEXT), far end crosstalk (FEXT), return loss (RL) and balance (transverse conversion loss, TCL, and transverse conversion transfer loss, TCTL) as well as the de-embedding method to qualify the fixed (outlet) connector.

This standard keeps the technical content of the test methods specified in the annexes C to J as specified in IEC 60603-7-4:2005 and annexes C to K as specified in IEC 60603-7-5:2007, but it structures and harmonizes the measurements for better readability. This standard is intended to be referenced by the future second editions of IEC 60603-7-x and the future first editions of IEC 60603-7-xy (under preparation). This standard is intended to be referenced by IEC 60603-7-x Edition 2.0 and IEC 60603-7-xy Edition 1.0 standards (under preparation) and may be referenced for all IEC standards with 60603-7 interface.

IEC 60516-26-100: Connectors for electronic equipment – Tests and measurements – Part 26-100, consists of the following clauses:

- Clause 3: General requirements for measurement setup
- Clause 4: Connector measurement up to 250 MHz

NOTE 1 Clauses 3 and 4 define the measurement procedures to qualify the outlet

- Clause 5: Construction and qualification of test plugs

NOTE 2 The wiring of the plug has an effect on the mated connector performance. Extensive measurements show that NEXT and FEXT are affected in a particular way so that the properties of the test plug must be controlled. To ensure adequate performance for the outlet over the expected range of different plug wiring, it shall be tested with a set of up to 12 test plugs with different NEXT performances. The outlet complies with the NEXT requirements of the standard only if all the combinations comply with their requirements for near end crosstalk. FEXT is handled in a similar way, but only one test plug is required. Clause 5 describes the construction and qualification of test plugs. Test plugs are used in the laboratory as long as possible to avoid the costly procedure to find new test plugs.

- Clause 6: Reference jack construction and measurement – the basics of the de-embedding test method

NOTE 3 Clause 6 describes the preparation and measurements of the reference plugs and jacks as a basis of the de-embedding test method.

The test methods provided here are:

- insertion loss, test 26a;
- return loss, test 26b;
- near-end crosstalk (NEXT), test 26c;
- far-end crosstalk (FEXT), test 26d;
- transfer impedance (Z_T), test 26e;
- transverse conversion loss (TCL), test 26f;
- transverse conversion transfer loss (TCTL), test 26g.

For the coupling attenuation, see EN 50289-1-14.

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

1 Scope

This part of IEC 60512 specifies the test and measurements and the related measurement setup and reference arrangements for interoperability and backward compatibility tests for the development and qualification of 8-way, free and fixed connectors for data transmission.

2 Normative reference

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 60169-15, *Radio-frequency connectors – Part 15: R.F. coaxial connectors with inner diameter of outer conductor 4.13 mm (0.163 in) with screw coupling – Characteristic impedance 50 ohms (Type SMA)*

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 60603-7, *Connectors for frequencies below 3 MHz for use with printed boards – Part 7: Detail specification for connectors, 8-way, including fixed and free connectors with common mating features, with assessed quality*

IEC 60603-7-2, *Connectors for electronic equipment – Part 7-2: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 100 MHz*

IEC 60603-7-3, *Connectors for electronic equipment – Part 7-3: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 100 MHz*

IEC 60603-7-4:2005, *Connectors for electronic equipment – Part: 7-4: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz*

IEC 60603-7-5:2007, *Connectors for electronic equipment – Part: 7-5: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 250 MHz*

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

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)*

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- Looking for additional Standards? Visit Intertek Inform Infostore
 - Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation
-