

INTERNATIONAL STANDARD

NORME INTERNATIONALE



**Connectors for electrical and electronic equipment – Tests and measurements –
Part 28-100: Signal integrity tests up to 2 000 MHz – Tests 28a to 28g**

**Connecteurs pour équipements électriques et électroniques – Essais
et mesures –**

**Partie 28-100: Essais d'intégrité des signaux jusqu'à 2 000 MHz – Essais 28a
à 28g**



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CONTENTS

FOREWORD.....	6
1 Scope.....	8
2 Normative references	8
3 Terms, definitions and abbreviated terms	10
3.1 Terms and definitions.....	10
3.2 Abbreviated terms.....	10
4 Overall test arrangement.....	11
4.1 General.....	11
4.2 Test instrumentation	11
4.2.1 General	11
4.2.2 Vector network analyser	11
4.2.3 RF switching unit.....	11
4.2.4 Reference loads and termination loads	11
4.3 Measurement precautions.....	12
4.4 Mixed mode S-parameter nomenclature.....	12
4.5 Coaxial cables and interconnections for network analysis.....	13
4.6 Characteristic for switching matrices.....	14
4.7 Test fixture types	14
4.8 Requirements for termination performance at calibration plane.....	14
4.9 Reference loads for calibration	14
4.10 Calibration	15
4.10.1 General	15
4.10.2 Calibration test interface.....	16
4.10.3 Calibration at end of coaxial test cables.....	16
4.11 Termination loads for termination of conductor pairs.....	16
4.11.1 General	16
4.11.2 Impedance matching resistor termination networks.....	17
4.12 Termination of screens.....	17
4.13 Test specimen and reference planes.....	17
4.13.1 General	17
4.13.2 Interconnections between the device under test (DUT) and the calibration plane.....	18
4.14 Overall test setup requirements	19
5 Connector measurements up to 2 000 MHz	20
5.1 General.....	20
5.1.1 Determining pass and fail	20
5.2 Insertion loss, test 28a.....	20
5.2.1 Object.....	20
5.2.2 Insertion loss	20
5.2.3 Test method	20
5.2.4 Test setup	20
5.2.5 Procedure.....	20
5.2.6 Test report.....	21
5.2.7 Accuracy	21
5.3 Return loss, test 28b.....	22
5.3.1 Object.....	22
5.3.2 Return loss	22

5.3.3	Test method	22
5.3.4	Test setup	22
5.3.5	Procedure.....	23
5.3.6	Test report.....	23
5.3.7	Accuracy	23
5.4	Near-end crosstalk (NEXT), test 28c	23
5.4.1	Object.....	23
5.4.2	NEXT.....	23
5.4.3	Test method	23
5.4.4	Test setup	24
5.4.5	Procedure.....	24
5.4.6	Test report.....	25
5.4.7	Accuracy	25
5.5	Far-end crosstalk (FEXT), test 28d	25
5.5.1	Object.....	25
5.5.2	FEXT	25
5.5.3	Test method	25
5.5.4	Test setup	25
5.5.5	Procedure.....	26
5.5.6	Test report.....	26
5.5.7	Accuracy	27
5.6	Transverse conversion loss (TCL), test 28f	27
5.6.1	Object.....	27
5.6.2	TCL	27
5.6.3	Test method	27
5.6.4	Test setup	27
5.6.5	Procedure.....	27
5.6.6	Test report.....	28
5.6.7	Accuracy	28
5.7	Transverse conversion transfer loss (TCTL), test 28g	28
5.7.1	Object.....	28
5.7.2	TCTL	28
5.7.3	Test method	28
5.7.4	Test setup	28
5.7.5	Procedure.....	28
5.7.6	Test report.....	29
5.7.7	Accuracy	29
5.8	Shield transfer impedance (Z_T), test 26e	29
5.8.1	Object.....	29
5.8.2	Transfer impedance (Z_T)	29
5.8.3	Test method	29
5.8.4	Test setup	30
5.8.5	Procedure.....	30
5.8.6	Test report.....	30
5.8.7	Accuracy	30
5.9	Coupling attenuation (a_C)	30
5.9.1	Object.....	30
5.9.2	Coupling attenuation (a_C).....	30

5.9.3	Test method	31
5.9.4	Test setup	31
5.9.5	Procedure.....	31
5.9.6	Test report.....	31
5.9.7	Accuracy	31
5.10	Low frequency coupling attenuation a_{CLF}	31
5.10.1	Object.....	31
5.10.2	Low frequency coupling attenuation (a_{CLF}).....	32
5.10.3	Test method	32
5.10.4	Test setup	32
5.10.5	Procedure.....	32
5.10.6	Test report.....	32
5.10.7	Accuracy	33
Annex A (informative) Derivation of mixed mode parameters using the modal decomposition technique		34
A.1	General.....	34
A.2	Example of a calculation	34
Annex B (normative) Indirect-reference test fixtures.....		37
B.1	General.....	37
B.2	Requirements	37
B.2.1	General requirements	37
B.2.2	Specific requirements	37
Annex C (normative) Direct-probe test fixtures.....		39
C.1	General.....	39
C.2	Requirements	39
C.2.1	General requirements	39
C.2.2	Specific requirements	39
Annex D (normative) Specialized test fixtures		41
D.1	General.....	41
D.2	Requirements	41
D.2.1	General requirements	41
D.2.2	Specific requirements	41
Annex E (informative) Symmetry verification of resistors used for calibration		42
E.1	General.....	42
E.2	Procedure.....	42
E.3	Example	43
Bibliography.....		45
Figure 1 - Diagram of a single-ended 4-port device		12
Figure 2 – Diagram of a balanced 2-port device.....		13
Figure 3 – Calibration of reference loads		15
Figure 4 – Resistor termination networks		16
Figure 5 – Definition of reference planes.....		17
Figure 6 – Insertion loss and TCTL measurement		21
Figure 7 – Return loss and TCL measurement		22
Figure 8 – NEXT measurement.....		24
Figure 9 – FEXT measurement		26

Figure A.1 – Voltage and current on balanced DUT	34
Figure A.2 – Voltage and current on unbalanced DUT	35
Figure E.1 – Example of 50 Ω SMA termination comparison (1 MHz – 100 MHz).....	43
Figure E.2 – Comparison of phase selected and only magnitude selected terminations.....	44
Table 1 – Mixed mode S-parameter nomenclature	13
Table 2 – Switch performance requirements	14
Table 3 – Requirements for terminations at calibration plane	14
Table 4 – Interconnection DM return loss and TCTL requirements	19
Table 5 – Overall test setup requirements.....	2
Table B.1 – [1] series 8-way connector types detail specifications and respective detail connector test procedures standards	37
Table B.2 – Reference connector crosstalk (NEXT) vector	38
Table C.1 – Direct-probe test fixture requirements	39

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Tests and measurements –
Part 28-100: Signal integrity tests up to 2 000 MHz – Tests 28a to 28g**

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IEC 60512-28-100 has been prepared by subcommittee 48B: Electrical connectors, of IEC technical committee 48: Electrical connectors and mechanical structures for electrical and electronic equipment. It is an International Standard.

This third edition cancels and replaces the second edition, published in 2019. This edition constitutes a technical revision.

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

- a) The frequency range has been modified to start at 0,1 MHz instead of 1 MHz, to include single-pair connectors.

- b) All tables and requirements have been revised down to 0,1 MHz, and partially improved to reduce the impact of the test fixture.
- c) Formulae to calculate the S-parameters from single-ended parameters have been added.
- d) A note was added for those parameters which are not applicable to single-pair connectors.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
48B/3109/FDIS	48B/3112/RVD

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

The language used for the development of this International Standard is English.

A list of all parts in the IEC 60512 series, published under the general title Connectors for electrical and electronic equipment, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directive: IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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Connectors for electrical and electronic equipment – Tests and measurements – Part 28-100: Signal integrity tests up to 2 000 MHz – Tests 28a to 28g

1 Scope

This part of IEC 60512 specifies the test methods for signal integrity and transmission performance for connectors specified in respective parts of IEC 60603-7 [1], IEC 61076-1 [2], IEC 61076-2 [3], IEC 61076-3 [4] and IEC 63171 [5] series of standards for connecting hardware applications from 0,1 MHz up to 2 000 MHz, with reference to this document.

NOTE This document is also suitable for testing signal integrity and transmission performance of connectors up to a lower value of maximum frequency; however, the test methodology specified in the detail specification for any given connector remains the reference conformance test for that connector.

The list of connector series of standards does not preclude referencing this document in other connector manufacturer's specifications or published standards.

Test procedures provided herein 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.

Other test procedures referenced herein are:

- shield transfer impedance (Z_T), see IEC 60512-26-100, test 26e.
- coupling attenuation (a_C), see IEC 62153-4-7 and IEC 62153-4-12.
- low frequency coupling attenuation (a_{CLF}) see IEC 62153-4-7 and IEC 62153-4-15.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitute requirements 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 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: Generic specification*

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*