Specification for the testing of balanced and coaxial information technology cabling - Part 2: Cords as specified in ISO/IEC 11801 and related standards

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 61935-2:2010 sisaldab Euroopa standardi EN 61935-2:2010 ingliskeelset teksti.	This Estonian standard EVS-EN 61935-2:2010 consists of the English text of the European standard EN 61935-2:2010.
Standard on kinnitatud Eesti Standardikeskuse 31.10.2010 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 31.10.2010 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 03.09.2010.	Date of Availability of the European standard text 03.09.2010.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 33.040.20, 33.120.20

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61935-2

September 2010

ICS 33.040.20; 33.120.20

Supersedes EN 61935-2:2005

English version

Specification for the testing of balanced and coaxial information technology cabling - Part 2: Cords as specified in ISO/IEC 11801 and related standards

(IEC 61935-2:2010)

Spécification relative aux essais des câblages symétriques et coaxiaux des technologies de l'information - Partie 2: Cordons tels que spécifiés dans l'ISO/CEI 11801 et normes associées
(CEI 61935-2:2010)

Spezifikation für die Prüfung der symmetrischen und koaxialen informationstechnischen Verkabelung – Teil 2: Schnüre nach ISO/IEC 11801 und entsprechenden Normen
(IEC 61935-2:2010)

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Ref. No. EN 61935-2:2010 E

Foreword

The text of document 46/351/FDIS, future edition 3 of IEC 61935-2, prepared by IEC TC 46, Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61935-2 on 2010-09-01.

This European Standard supersedes EN 61935-2:2005.

This EN 61935-2:2010 differs from EN 61935-2:2005 in that it covers category 6_A to category 7_A cords as defined in ISO/IEC 11801.

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 EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2011-06-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2013-09-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61935-2:2010 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 60068-2-68	NOTE	Harmonized as EN 60068-2-68.
IEC 60512-27-100[1)]	NOTE	Harmonized as EN 60512-27-100[1)].

[1)] At draft stage.

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 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 60068-2-61	-	Environmental testing - Part 2: Test methods - Test Z/ABDM: Climatic sequence	EN 60068-2-61	-
IEC 60603-7	Series	Connectors for electronic equipment - Part 7: Detail specifications	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 60603-7-51	-	Connectors for electronic equipment - Part 7-51: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 500 MHz	EN 60603-7-51	-
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: Rectangular connectors - 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	-	-
IEC 61156-1	-	Multicore and symmetrical pair/quad cables for digital communications - Part 1: Generic specification	-	-
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	-	-
IEC 61935-1 (mod)	2009	Specification for the testing of balanced and coaxial information technology cabling - Part 1: Installed balanced cabling as specified in ISO/IEC 11801 and related standards	EN 61935-1	2009

Publication	Year	Title	EN/HD	Year
IEC 62153-4-11	-	Metallic communication cable test methods - Part 4-11: Electromagnetic compatibility (EMC) - Coupling attenuation or screening attenuation of patch cords, coaxial cable assemblies, pre-connectorized cables - Absorbing clamp method	-	-
ISO/IEC 11801	-	Information technology - Generic cabling for customer premises	-	-

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INTRODUCTION

Balanced cords are constructed for connecting equipment using free connectors according to IEC 60603-7 series, IEC 61076-3-104 and IEC 61076-3-110. It is known that connecting hardware performance is subject to influence by the properties of the free connector termination and therefore balanced cords should be tested to determine the quality of the assembly. Moreover, the performance of balanced cords may differ due to the performances of the involved separate components depending upon the efficiency of the manufacturing procedure. Manufacturing procedures also impact upon the reliability of these balanced cords. Therefore, the primary object of this standard is to provide test methods to ensure compatibility of balanced cords to be used in cabling according to ISO/IEC 11801. Another object is to provide test methods and associated requirements to demonstrate the performance and reliability of these balanced cords during their operational lifetime.

The test methods described in this standard may also be used for any balanced cords that include twisted pairs terminated at each end.

SPECIFICATION FOR THE TESTING OF BALANCED AND COAXIAL INFORMATION TECHNOLOGY CABLING –

Part 2: Cords as specified in ISO/IEC 11801 and related standards

1 Scope

This International Standard provides methods to ensure compatibility of balanced cords to be used in cabling according to ISO/IEC 11801 and provides test methods and associated requirements to demonstrate the performance and reliability of these balanced cords during their operational lifetime. This International Standard may also be used for providing test methods for assessing the behaviour of other balanced cords.

2 Normative references

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 60068-2-61, *Environmental testing – Part 2: Test methods – Test Z/AMB: Climatic sequence*

IEC 60603-7 (all parts), *Connectors for electronic equipment – Part 7: Detail specifications*

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

IEC 60603-7-51, *Connectors for electronic equipment – Part 7-51: Detail specification for 8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 500 MHz*

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 1000 MHz*

IEC 61076-3-110, *Connectors for electronic equipment – Product requirements – Part 3-110: Rectangular connectors – Detail specification for shielded, free and fixed connectors for data transmission with frequencies up to 1000 MHz*

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

IEC 61156-1, *Multicore and symmetrical pair/quad cables for digital communications – Part 1: Generic specification*

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*

IEC 61935-1:2009, *Specification for the testing of balanced and coaxial information technology cabling – Part 1: Installed balanced cabling as specified in ISO/IEC 11801 and related standards*

IEC 612153-4-11, *Metallic communication cable test methods – Part 4-11: Electromagnetic compatibility (EMC) – Coupling attenuation or screening attenuation of patch cords, coaxial cable assemblies, pre-connectorized cables – Absorbing clamp method*

ISO/IEC 11801, *Information technology – Generic cabling for customer premises*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 61935-1 and the following apply.

3.1
cord
a cable assembly as defined in IEC 61935-1 whatever its targeted use

NOTE In this document, the usage of balanced cord covers, amongst others, work area cord, patch cord and equipment cord. The terminology "modular plug cord" is an alternative expression.

4 General requirements and test configuration

4.1 Cable and connector design

When compliance with ISO/IEC 11801 is required, the design of the cables and connectors should conform to the applicable parts of IEC 61156 and IEC 60603-7, IEC 61076-3-110 and IEC 61076-3-104 respectively.

4.2 Balanced cord, cable and connector tests

For balanced cords complying with ISO/IEC 11801, cables and connectors used in cable assemblies should be assessed separately in accordance with IEC 61156-1 and IEC 60603-7, IEC 61076-3-104 or IEC 61076-3-110 respectively. These component tests do not need to be repeated on the balanced cord, but the terminated contact height should be assessed (e.g. dimension K2 of Table 1 of IEC 60603-7).

For other cords, the cables and connectors shall be assessed separately according to their respective standard unless there are no component standards. In this case, all tests will be performed on the cords, including interface tests. The acceptance tests described in this document shall be performed on a balanced cord on a lot-by-lot basis.

The periodic tests described in this document are type tests that have to be performed according to the quality system of the manufacturer.

4.3 Test configuration and equipment

The reference measurement procedures that are described in this standard require the use of a network analyser, coaxial interface cables, r.f. transformers (baluns), twisted pair test leads and impedance matching terminations. Refer to IEC 61935-1 for requirements of test equipment, including baluns (see 4.2.6 of IEC 61935-1). The nominal impedance for the test set-up and the terminations is 100 Ω. The same tests may be used for 120 Ω and 150 Ω cords, but the measurement methods have not been evaluated for these nominal impedance values.