



INTERNATIONAL STANDARD



**Specification for the testing of balanced and coaxial information technology cabling –
Part 2: Cords as specified in ISO/IEC 11801-1 and related standards**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

Part 2: Cords as specified in ISO/IEC 11801-1 and related standards

FOREWORD

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This commented version (CMV) of the official standard IEC 61935-2:2022 edition 4.0 allows the user to identify the changes made to the previous IEC 61935-2:2010 edition 3.0. Furthermore, comments from IEC TC 46 experts are provided to explain the reasons of the most relevant changes.

A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text. Experts' comments are identified by a blue-background number. Mouse over a number to display a pop-up note with the comment.

This publication contains the CMV and the official standard. The full list of comments is available at the end of the CMV.

IEC 61935-2 has been prepared by IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2010. This edition constitutes a technical revision.

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

- a) inclusion of cords up to category 8.1 and category 8.2, as defined in ISO/IEC 11801-1.

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

Draft	Report on voting
46/868/FDIS	46/869/RVD

Full information on the voting for its 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 of the IEC 61935 series, under the general title *Specification for the testing of balanced and coaxial information technology cabling*, 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 Directives, 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/standardsdev/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

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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.~~

This part of IEC 61935 covers testing of balanced and coaxial cords, for use as equipment cords, patch cords, and CP cords, as specified in ISO/IEC 11801-1 and related standards.

The test methods described in this document are suitable for any balanced or coaxial cords or cable assemblies that include connector terminations at each end. **1**

Coaxial cords for connecting equipment are constructed using cable conforming to the IEC 61196-1 series and connectors conforming to the IEC 61169-1 series.

Balanced cords for connecting equipment are constructed using cable conforming to the IEC 61156-1 series and connectors conforming to the IEC 60603-7 series, IEC 61076-3-104, IEC 61076-3-110, IEC 61076-2-101, and IEC 61076-2-109.

Therefore, an object of this document is to provide test methods to ensure compatibility of cords to be used in cabling in accordance with ISO/IEC 11801-1 and to demonstrate their performance and reliability during their operational lifetime.

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

Part 2: Cords as specified in ISO/IEC 11801-1 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.~~

This part of IEC 61935 specifies test methods for balanced and coaxial cords, which are used as equipment cords, patch cords, and CP cords, within cabling systems, in accordance with ISO/IEC 11801-1. The test methods and associated requirements are provided to demonstrate performance and reliability and to ensure compatibility of these balanced and coaxial cords during their operational lifetime. This document may also be used for providing test methodology for assessing the performance of other cords. **2**

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes 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. **3**

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

IEC 60512-26-100, *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 60512-27-100, *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*

IEC 60512-28-100, *Connectors for electronic equipment – Tests and measurements – Part 28-100: Signal integrity tests up to 2 000 MHz – Tests 28a to 28g* **4**

IEC 60512-29-100, *Connectors for electronic equipment – Tests and measurements – Part 29-100: Signal integrity tests up to 500 MHz on M12 style connectors – Tests 29a to 29g*

~~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 60603-7-1, *Connectors for electronic equipment – Part 7-1: Detail specification for 8-way, shielded, free and fixed connectors*

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 transmission with frequencies up to 100 MHz*

IEC 60603-7-4, *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, *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 60603-7-7, *Connectors for electronic equipment – Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors for data transmission with frequencies up to 600 MHz*

IEC 60603-7-41, *Connectors for electronic equipment – Part 7-41: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 500 MHz*

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*

IEC 60603-7-71, *Connectors for electronic equipment – Part 7-71: Detail specification for 8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 1 000 MHz*

IEC 60603-7-81, *Connectors for electronic equipment – Part 7-81: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 2 000 MHz* **5**

IEC 60603-7-82, *Connectors for electronic equipment – Part 7-82: Detail specification for 8-way, 12 contacts, shielded, free and fixed connectors, for data transmission with frequencies up to 2 000 MHz* **5**

IEC 60966-1, *Radio frequency and coaxial cable assemblies – Part 1: Generic specification – General requirements and test methods*

IEC 61076-2-101, *Connectors for electronic equipment – Product requirements – Part 2-101: Circular connectors – Detail specification for M12 connectors with screw-locking*

IEC 61076-2-109, *Connectors for electronic equipment – Product requirements – Part 2-109: Circular connectors – Detail specification for connectors with M 12 × 1 screw-locking, for data transmission 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~~ 2 000 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~~ 3 000 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 TR 61156-1-2, *Multicore and symmetrical pair/quad cables for digital communications – Part 1-2: Electrical transmission characteristics and test methods of symmetrical pair/quad cables*

IEC 61156-5, *Multicore and symmetrical pair/quad cables for digital communications – Part 5: Symmetrical pair/quad cables with transmission characteristics up to 1 000 MHz – Horizontal floor wiring – Sectional 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 61156-9, *Multicore and symmetrical pair/quad cables for digital communications – Part 9: Cables for channels with transmission characteristics up to 2 GHz – Sectional specification* **6**

IEC 61156-10, *Multicore and symmetrical pair/quad cables for digital communications – Part 10: Cables for cords with transmission characteristics up to 2 GHz – Sectional specification* **6**

IEC 61169-1, *Radio-frequency connectors – Part 1: Generic specification – General requirements and measuring methods*

IEC 61169-1 (all parts), *Radio-frequency connectors – Part 1*

IEC 61169-2, *Radio-frequency connectors – Part 2: Sectional specification – Radio frequency coaxial connectors of type 9,52*

IEC 61169-24, *Radio-frequency connectors – Part 24: Sectional specification – Radio frequency coaxial connectors with screw coupling, typically for use in 75 Ω cable networks (type F)*

IEC 61196-1 (all parts), *Coaxial communication cables – Part 1*

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 11801-1 and related standards*

IEC 61935-1-1, *Specification for the testing of balanced and coaxial information technology cabling – Part 1-1: Additional requirements for the measurement of transverse conversion loss and equal level transverse conversion transfer loss*

IEC 61935-1-2, *Specification for the testing of balanced and coaxial information technology cabling – Part 1-2: Installed balanced cabling as specified in ISO/IEC 11801 – Additional requirements for measurement of resistance unbalance with field test instrumentation*

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*

IEC 62153-4-15, *Metallic communication cable test methods – Part 4-15: Electromagnetic compatibility (EMC) – Test method for measuring transfer impedance and screening attenuation – or coupling attenuation with triaxial cell*

ISO/IEC 11801-1, *Information technology – Generic cabling for customer premises – Part 1: General requirements*

ISO/IEC 14763-4, *Information technology – Implementation and operation of customer premises cabling – Part 4: Measurement of end-to-end (E2E) links*

INTERNATIONAL STANDARD

NORME INTERNATIONALE



Specification for the testing of balanced and coaxial information technology cabling –

Part 2: Cords as specified in ISO/IEC 11801-1 and related standards

Spécification relative aux essais des câblages symétriques et coaxiaux des technologies de l'information –

Partie 2: Cordons tels que spécifiés dans l'ISO/IEC 11801-1 et normes associées

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

A list of all parts of the IEC 61935 series, under the general title *Specification for the testing of balanced and coaxial information technology cabling*, 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 Directives, 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/standardsdev/publications.

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INTRODUCTION

This part of IEC 61935 covers testing of balanced and coaxial cords, for use as equipment cords, patch cords, and CP cords, as specified in ISO/IEC 11801-1 and related standards.

The test methods described in this document are suitable for any balanced or coaxial cords or cable assemblies that include connector terminations at each end.

Coaxial cords for connecting equipment are constructed using cable conforming to the IEC 61196-1 series and connectors conforming to the IEC 61169-1 series.

Balanced cords for connecting equipment are constructed using cable conforming to the IEC 61156-1 series and connectors conforming to the IEC 60603-7 series, IEC 61076-3-104, IEC 61076-3-110, IEC 61076-2-101, and IEC 61076-2-109.

Therefore, an object of this document is to provide test methods to ensure compatibility of cords to be used in cabling in accordance with ISO/IEC 11801-1 and to demonstrate their performance and reliability during their operational lifetime.

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

Part 2: Cords as specified in ISO/IEC 11801-1 and related standards

1 Scope

This part of IEC 61935 specifies test methods for balanced and coaxial cords, which are used as equipment cords, patch cords, and CP cords, within cabling systems, in accordance with ISO/IEC 11801-1. The test methods and associated requirements are provided to demonstrate performance and reliability and to ensure compatibility of these balanced and coaxial cords during their operational lifetime. This document may also be used for providing test methodology for assessing the performance of other cords.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes 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 60068-2-61, *Environmental testing – Part 2-61: Test methods – Test Z/ABDM: Climatic sequence*

IEC 60512-26-100, *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 60512-27-100, *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*

IEC 60512-28-100, *Connectors for electronic equipment – Tests and measurements – Part 28-100: Signal integrity tests up to 2 000 MHz – Tests 28a to 28g*

IEC 60512-29-100, *Connectors for electronic equipment – Tests and measurements – Part 29-100: Signal integrity tests up to 500 MHz on M12 style connectors – Tests 29a to 29g*

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

IEC 60603-7-1, *Connectors for electronic equipment – Part 7-1: Detail specification for 8-way, shielded, free and fixed connectors*

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 transmission with frequencies up to 100 MHz*

IEC 60603-7-4, *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, *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 60603-7-7, *Connectors for electronic equipment – Part 7-7: Detail specification for 8-way, shielded, free and fixed connectors for data transmission with frequencies up to 600 MHz*

IEC 60603-7-41, *Connectors for electronic equipment – Part 7-41: Detail specification for 8-way, unshielded, free and fixed connectors, for data transmissions with frequencies up to 500 MHz*

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*

IEC 60603-7-71, *Connectors for electronic equipment – Part 7-71: Detail specification for 8-way, shielded, free and fixed connectors, for data transmission with frequencies up to 1 000 MHz*

IEC 60603-7-81, *Connectors for electronic equipment – Part 7-81: Detail specification for 8-way, shielded, free and fixed connectors, for data transmissions with frequencies up to 2 000 MHz*

IEC 60603-7-82, *Connectors for electronic equipment – Part 7-82: Detail specification for 8-way, 12 contacts, shielded, free and fixed connectors, for data transmission with frequencies up to 2 000 MHz*

IEC 60966-1, *Radio frequency and coaxial cable assemblies – Part 1: Generic specification – General requirements and test methods*

IEC 61076-2-101, *Connectors for electronic equipment – Product requirements – Part 2-101: Circular connectors – Detail specification for M12 connectors with screw-locking*

IEC 61076-2-109, *Connectors for electronic equipment – Product requirements – Part 2-109: Circular connectors – Detail specification for connectors with M 12 × 1 screw-locking, for data transmission 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 2 000 MHz*

IEC 61076-3-110, *Connectors for electronic equipment – Product requirements – Part 3-110: Detail specification for free and fixed connectors for data transmission with frequencies up to 3 000 MHz*

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

IEC TR 61156-1-2, *Multicore and symmetrical pair/quad cables for digital communications – Part 1-2: Electrical transmission characteristics and test methods of symmetrical pair/quad cables*

IEC 61156-5, *Multicore and symmetrical pair/quad cables for digital communications – Part 5: Symmetrical pair/quad cables with transmission characteristics up to 1 000 MHz – Horizontal floor wiring – Sectional 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 61156-9, *Multicore and symmetrical pair/quad cables for digital communications – Part 9: Cables for channels with transmission characteristics up to 2 GHz – Sectional specification*

IEC 61156-10, *Multicore and symmetrical pair/quad cables for digital communications – Part 10: Cables for cords with transmission characteristics up to 2 GHz – Sectional specification*

IEC 61169-1, *Radio-frequency connectors – Part 1: Generic specification – General requirements and measuring methods*

IEC 61169-1 (all parts), *Radio-frequency connectors – Part 1*

IEC 61169-2, *Radio-frequency connectors – Part 2: Sectional specification – Radio frequency coaxial connectors of type 9,52*

IEC 61169-24, *Radio-frequency connectors – Part 24: Sectional specification – Radio frequency coaxial connectors with screw coupling, typically for use in 75 Ω cable networks (type F)*

IEC 61196-1 (all parts), *Coaxial communication cables – Part 1*

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

IEC 61935-1-1, *Specification for the testing of balanced and coaxial information technology cabling – Part 1-1: Additional requirements for the measurement of transverse conversion loss and equal level transverse conversion transfer loss*

IEC 61935-1-2, *Specification for the testing of balanced and coaxial information technology cabling – Part 1-2: Installed balanced cabling as specified in ISO/IEC 11801 – Additional requirements for measurement of resistance unbalance with field test instrumentation*

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*

IEC 62153-4-15, *Metallic communication cable test methods – Part 4-15: Electromagnetic compatibility (EMC) – Test method for measuring transfer impedance and screening attenuation – or coupling attenuation with triaxial cell*

ISO/IEC 11801-1, *Information technology – Generic cabling for customer premises – Part 1: General requirements*

ISO/IEC 14763-4, *Information technology – Implementation and operation of customer premises cabling – Part 4: Measurement of end-to-end (E2E) links*

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COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

SPÉCIFICATION RELATIVE AUX ESSAIS DES CÂBLAGES SYMÉTRIQUES ET COAXIAUX DES TECHNOLOGIES DE L'INFORMATION –

Partie 2: Cordons tels que spécifiés dans l'ISO/IEC 11801-1 et normes associées

AVANT-PROPOS

- 1) La Commission Électrotechnique Internationale (IEC) est une organisation mondiale de normalisation composée de l'ensemble des comités électrotechniques nationaux (Comités nationaux de l'IEC). L'IEC a pour objet de favoriser la coopération internationale pour toutes les questions de normalisation dans les domaines de l'électricité et de l'électronique. À cet effet, l'IEC – entre autres activités – publie des Normes internationales, des Spécifications techniques, des Rapports techniques, des Spécifications accessibles au public (PAS) et des Guides (ci-après dénommés "Publication(s) de l'IEC"). Leur élaboration est confiée à des comités d'études, aux travaux desquels tout Comité national intéressé par le sujet traité peut participer. Les organisations internationales, gouvernementales et non gouvernementales, en liaison avec l'IEC, participent également aux travaux. L'IEC collabore étroitement avec l'Organisation Internationale de Normalisation (ISO), selon des conditions fixées par accord entre les deux organisations.
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L'IEC 61935-2 a été établie par le comité d'études 46 de l'IEC: Câbles, fils, guides d'ondes, connecteurs, composants passifs pour micro-onde et accessoires. Il s'agit d'une Norme internationale.

Cette quatrième édition annule et remplace la troisième édition parue en 2010. Cette édition constitue une révision technique.

Cette édition inclut les modifications techniques majeures suivantes par rapport à l'édition précédente:

- a) inclusion des cordons des catégories 8.1 et 8.2 tels qu'ils sont définis dans l'ISO/IEC 11801-1.

Le texte de cette Norme internationale est issu des documents suivants:

Projet	Rapport de vote
46/868/FDIS	46/869/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à son approbation.

La langue employée pour l'élaboration de cette Norme internationale est l'anglais.

Une liste de toutes les parties de la série IEC 61935, publiées sous le titre général *Spécification relative aux essais des câblages symétriques et coaxiaux des technologies de l'information*, peut être consultée sur le site web de l'IEC.

Le présent document a été rédigé selon les Directives ISO/IEC, Partie 2, il a été développé selon les Directives ISO/IEC, Partie 1 et les Directives ISO/IEC, Supplément IEC, disponibles sous www.iec.ch/members_experts/refdocs. Les principaux types de documents développés par l'IEC sont décrits plus en détail sous www.iec.ch/standardsdev/publications.

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INTRODUCTION

La présente partie de l'IEC 61935 couvre les essais des cordons à paires symétriques et coaxiaux destinés à être utilisés comme cordons d'équipements, cordons de brassage et cordons CP, tels que spécifiés dans l'ISO/IEC 11801-1 et normes associées.

Les méthodes d'essai décrites dans le présent document sont adaptées aux cordons à paires symétriques ou aux cordons coaxiaux, ou aux câbles équipés de même nature, dont chaque extrémité comporte des terminaisons de connecteur.

Les cordons coaxiaux pour connexion d'équipements sont construits au moyen d'un câble conforme à la série IEC 61196-1 et de connecteurs conformes à la série IEC 61169-1.

Les cordons à paires symétriques pour connexion d'équipements sont construits au moyen d'un câble conforme à la série IEC 61156-1 et de connecteurs conformes à la série IEC 60603-7, ainsi qu'aux normes IEC 61076-3-104, IEC 61076-3-110, IEC 61076-2-101 et IEC 61076-2-109.

Par conséquent, un objet du présent document consiste à fournir les méthodes d'essai qui permettent de garantir la compatibilité des cordons à utiliser dans les câblages conformément à l'ISO/IEC 11801-1, et de démontrer les performances et la fiabilité de ces cordons au cours de leur durée de vie opérationnelle.

SPÉCIFICATION RELATIVE AUX ESSAIS DES CÂBLAGES SYMÉTRIQUES ET COAXIAUX DES TECHNOLOGIES DE L'INFORMATION –

Partie 2: Cordons tels que spécifiés dans l'ISO/IEC 11801-1 et normes associées

1 Domaine d'application

La présente partie de l'IEC 61935, spécifie les méthodes d'essai applicables aux cordons à paires symétriques et aux cordons coaxiaux utilisés comme cordons d'équipements, cordons de brassage et cordons CP dans des systèmes de câblage, conformément à l'ISO/IEC 11801-1. Les méthodes d'essai et leurs exigences associées permettent de démontrer les performances et la fiabilité et de garantir la compatibilité de ces cordons à paires symétriques et cordons coaxiaux au cours de leur durée de vie opérationnelle. Le présent document peut également être utilisé en vue de fournir une méthodologie d'essai pour l'évaluation des performances d'autres cordons.

2 Références normatives

Les documents suivants sont cités dans le texte de sorte qu'ils constituent, pour tout ou partie de leur contenu, des exigences du présent document. Pour les références datées, seule l'édition citée s'applique. Pour les références non datées, la dernière édition du document de référence s'applique (y compris les éventuels amendements).

IEC 60068-2-61, *Essais d'environnement – Partie 2-61: Méthodes d'essai – Essai Z/ABDM: Séquence climatique*

IEC 60512-26-100, *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*

IEC 60512-27-100, *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*

IEC 60512-28-100, *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*

IEC 60512-29-100, *Connecteurs pour équipements électroniques – Essais et mesures – Partie 29-100: Essais d'intégrité des signaux jusqu'à 500 MHz sur les connecteurs de type M12 – Essais 29a à 29g*

IEC 60603-7, *Connecteurs pour équipements électroniques – Partie 7: Spécification particulière pour les fiches et les embases non écrantées à 8 voies*

IEC 60603-7-1, *Connecteurs pour équipements électroniques – Partie 7-1: Spécification particulière pour les fiches et les embases écrantées à 8 voies*

IEC 60603-7-2, *Connecteurs pour équipements électroniques – Partie 7-2: Spécification particulière pour les fiches et les embases non blindées à 8 voies pour la transmission de données à des fréquences jusqu'à 100 MHz*

IEC 60603-7-3, *Connecteurs pour équipements électroniques – Partie 7-3: Spécification particulière pour les fiches et les embases blindées à 8 voies pour la transmission de données à des fréquences jusqu'à 100 MHz*

IEC 60603-7-4, *Connecteurs pour équipements électroniques – Partie 7-4: Spécification particulière pour les fiches et les embases non blindées à 8 voies pour la transmission de données à des fréquences jusqu'à 250 MHz*

IEC 60603-7-5, *Connecteurs pour équipements électroniques – Partie 7-5: Spécification particulière pour les fiches et les embases blindées à 8 voies pour la transmission de données à des fréquences jusqu'à 250 MHz*

IEC 60603-7-7, *Connecteurs pour équipements électroniques – Partie 7-7: Spécification particulière pour les fiches et les embases blindées à 8 voies pour la transmission de données à des fréquences jusqu'à 600 MHz*

IEC 60603-7-41, *Connecteurs pour équipements électroniques – Partie 7-41: Spécification particulière pour les fiches et les embases non blindées à 8 voies pour la transmission de données à des fréquences jusqu'à 500 MHz*

IEC 60603-7-51, *Connecteurs pour équipements électroniques – Partie 7-51: Spécification particulière pour les fiches et les embases blindées à 8 voies pour la transmission de données à des fréquences jusqu'à 500 MHz*

IEC 60603-7-71, *Connecteurs pour équipements électroniques – Partie 7-71: Spécification particulière pour les fiches et les embases blindées à 8 voies pour la transmission de données à des fréquences jusqu'à 1 000 MHz*

IEC 60603-7-81, *Connecteurs pour équipements électroniques – Partie 7-81: Spécification particulière pour les fiches et les embases blindées à 8 voies pour la transmission de données à des fréquences jusqu'à 2 000 MHz*

IEC 60603-7-82, *Connecteurs pour équipements électroniques – Partie 7-82: Spécification particulière pour les fiches et les embases écrantées à 8 voies et 12 contacts pour la transmission de données à des fréquences jusqu'à 2 000 MHz*

IEC 60966-1 *Cordons coaxiaux et cordons pour fréquences radioélectriques - Partie 1: Spécification générique – Exigences générales et méthodes d'essai*

IEC 61076-2-101, *Connecteurs pour équipements électroniques – Exigences de produit – Partie 2-101: Connecteurs circulaires – Spécification particulière pour les connecteurs M12 à vis*

IEC 61076-2-109, *Connecteurs pour équipements électroniques – Exigences de produit – Partie 2-109: Connecteurs circulaires – Spécification particulière relative aux connecteurs avec verrouillage à vis M 12 × 1, pour les transmissions de données à des fréquences jusqu'à 500 MHz*

IEC 61076-3-104, *Connecteurs pour équipements électriques et électroniques – Exigences de produit – Partie 3-104: Spécification particulière pour les fiches et les embases écrantées à 8 voies pour la transmission de données à des fréquences jusqu'à 2 000 MHz*

IEC 61076-3-110, *Connecteurs pour équipements électroniques – Exigences de produit – Partie 3-110: Spécification particulière pour les fiches et les embases pour la transmission de données à des fréquences jusqu'à 3 000 MHz*

IEC 61156-1, *Câbles multiconducteurs à paires symétriques et quartes pour transmissions numériques – Partie 1: Spécification générique*

IEC TR 61156-1-2, *Multicore and symmetrical pair/quad cables for digital communications - Part 1-2: Electrical transmission characteristics and test methods of symmetrical pair/quad cables* (disponible en anglais seulement)

IEC 61156-5, *Multicore and symmetrical pair/quad cables for digital communications – Part 5: Symmetrical pair/quad cables with transmission characteristics up to 1 000 MHz – Horizontal floor wiring – Sectional specification* (disponible en anglais seulement)

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* (disponible en anglais seulement)

IEC 61156-9, *Multicore and symmetrical pair/quad cables for digital communications – Part 9: Cables for channels with transmission characteristics up to 2 GHz – Sectional specification* (disponible en anglais seulement)

IEC 61156-10, *Multicore and symmetrical pair/quad cables for digital communications – Part 10: Cables for cords with transmission characteristics up to 2 GHz – Sectional specification* (disponible en anglais seulement)

IEC 61169-1, *Connecteurs pour fréquences radioélectriques – Partie 1: Spécification générique – Exigences générales et méthodes de mesure*

IEC 61169-1 (toutes les parties), *Connecteurs pour fréquences radioélectriques – Partie 1*

IEC 61169-2, *Connecteurs pour fréquences radioélectriques – Partie 2: Spécification intermédiaire – Connecteurs coaxiaux pour fréquences radioélectriques de type 9,52*

IEC 61169-24, *Connecteurs pour fréquences radioélectriques – Partie 24: Spécification intermédiaire – Connecteurs coaxiaux pour fréquences radioélectriques avec couplage à vis, typiquement utilisés dans des réseaux de distribution par câbles de 75 Ω (type F)*

IEC 61196-1 (toutes les parties), *Câbles coaxiaux de communication – Partie 1:*

IEC 61935-1, *Spécification relative aux essais des câblages symétriques et coaxiaux des technologies de l'information – Partie 1: Câblages symétriques installés selon les spécifications de l'ISO/IEC 11801-1 et normes associées*

IEC 61935-1-1, *Spécification relative aux essais des câblages symétriques et coaxiaux des technologies de l'information – Partie 1-1: Exigences supplémentaires pour le mesurage de l'affaiblissement de conversion transversale et de l'affaiblissement de transfert de conversion transversale de niveau égal*

IEC 61935-1-2, *Spécification relative aux essais des câblages symétriques et coaxiaux des technologies de l'information – Partie 1-2: Câblages symétriques installés tels que spécifiés dans l'ISO/IEC 11801 – Exigences supplémentaires pour le mesurage de l'asymétrie*

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* (disponible en anglais seulement)

IEC 62153-4-15, *Méthodes d'essais des câbles métalliques et autres composants passifs - Partie 4-15: Compatibilité électromagnétique (CEM) – Méthode d'essai pour le mesurage de*

l'impédance de transfert et de l'affaiblissement d'écran – ou de l'affaiblissement de couplage avec cellule triaxiale

ISO/IEC 11801-1, *Information technology – Generic cabling for customer premises -- Part 1: General requirements* (disponible en anglais seulement)

ISO/IEC 14763-4, *Information technology – Implementation and operation of customer premises cabling – Part 4: Measurement of end-to-end (E2E) links* (disponible en anglais seulement)