IEC 62153-4-5

Edition 2.0 2021-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Metallic communication cable test methods – Part 4-5: Electromagnetic compatibility (EMC) – Screening or coupling attenuation – Absorbing clamp method

Méthodes d'essai des câbles métalliques de communication – Partie 4-5: Compatibilité électromagnétique (CEM) – Affaiblissement d'écran ou de couplage – Méthode de la pince absorbante

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METALLIC COMMUNICATION CABLE TEST METHODS –

Part 4-5: Electromagnetic compatibility (EMC) – Screening or coupling attenuation – Absorbing clamp method

FOREWORD

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IEC 62153-4-5 has been prepared by IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories. It is an International Standard.

This second edition cancels and replaces the first edition published in 2006. This edition constitutes a technical revision.

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

a) reorganisation of clauses and annexes;
b) extension of frequency range to 2,4 GHz;
c) application of a virtual balun respectively balunless test procedure with multiport VNA.

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

FDIS	Report on voting
46/819/FDIS	46/829/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.

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.

This standard is intended to be read in conjunction with IEC TS 62153-4-1:2014, which describes the theoretical background.

A list of all parts in the IEC 62153-4-n series, under the general title: *Metallic communication cable test methods − Electromagnetic Compatibility (EMC)* can be found on the IEC website.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "http://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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METALLIC COMMUNICATION CABLE TEST METHODS –

Part 4-5: Electromagnetic compatibility (EMC) – Screening or coupling attenuation – Absorbing clamp method

1 Scope

The absorbing clamp method is suitable to determine the screening- or the coupling-attenuation of metallic communication cables in the frequency range of 30 MHz to 1 000 MHz (2 400 MHz), depending on the performance of the clamp. It is an alternative method to the triaxial method of IEC 62153-4-4 or IEC 62153-4-9. Due to the undefined outer circuit of this absorbing clamp method, the test results obtained at different places and laboratories could vary by at least ± 6 dB.

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 60050-726, *International Electrotechnical Vocabulary (IEV) – Part 726: Transmission lines and waveguides*

IEC TS 62153-4-1, *Metallic communication cable test methods – Part 4-1: Electromagnetic compatibility (EMC) – Introduction to electromagnetic screening measurements*

CISPR 16-1-3:2004, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-3: Radio disturbance and immunity measuring apparatus – Ancillary equipment – Disturbance power*

ITU-T G.117:1996, *Transmission aspects of unbalance about earth*

ITU-T O.9:1999, *Measuring arrangements to assess the degree of unbalance about earth*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-726 and IEC TS 62153-4-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
quasi-coaxial cable
cable construction with two or more inner conductors enclosed by cable screens acting as an outer conductor, connected together on both ends

Note 1 to entry: Screened balanced or multiconductor cables become a quasi-coaxial system by short circuiting the inner conductive elements.