

# INTERNATIONAL STANDARD

## NORME INTERNATIONALE



**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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INTERNATIONAL  
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## CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Principles of the test method .....	7
5 Equipment .....	8
5.1 General.....	8
5.2 Balun requirements.....	9
5.3 TP connecting unit requirements.....	11
5.4 Test sample .....	12
5.4.1 Tested cable length .....	12
5.4.2 Preparation of test sample.....	12
6 Test set-up .....	14
6.1 Test set-up calibration .....	14
6.2 Composite loss of the test set-up .....	14
6.2.1 General .....	14
6.2.2 Reflection loss of the absorbing clamp in the calibration set-up .....	15
6.3 Attenuation of the measuring set-up.....	16
6.4 Insertion loss of the absorbers .....	16
6.5 Test set-up arrangement.....	17
6.5.1 Test set-up verification .....	20
6.6 Pulling force on cable .....	20
7 Procedure.....	21
7.1 General.....	21
7.2 Screening attenuation of coaxial respectively quasi coaxial cables .....	22
7.2.1 Matched conditions.....	22
7.2.2 Unmatched conditions .....	23
7.3 Coupling attenuation of balanced cables .....	24
7.3.1 Coupling attenuation measurement with balun .....	24
7.3.2 Balunless coupling attenuation measurement – Set-up.....	25
7.3.3 Expression of test results .....	25
8 Test report.....	25
9 Requirement.....	26
Annex A (normative) Determination of the impedance of the inner circuit.....	27
A.1 Determination of impedance of inner circuit .....	27
A.2 Impedance matching device if $Z_1 < 50 \Omega$ .....	27
A.3 Impedance matching device if $Z_1 > 50 \Omega$ .....	28
Annex B (informative) Example of a self-made impedance matching adapter .....	29
Annex C (informative) Evaluation of test results for the coupling attenuation of balanced cables.....	31
C.1 Worst case.....	31
C.2 Examples .....	31
Annex D (informative) Reflection loss of a junction .....	34
Annex E (informative) Mixed mode parameters .....	36
E.1 Definition of mixed mode $S$ -parameters .....	36

E.2 Reference impedance of VNA .....	39
Bibliography.....	40
Figure 1 – Measurement of near end screening attenuation, principle .....	9
Figure 2 – Measurement of near end coupling attenuation with balun .....	11
Figure 3 – Balunless measuring of near end coupling attenuation with multiport VNA .....	12
Figure 4 – Termination of a screened symmetrical cable .....	13
Figure 5 – Preparation of test sample (symmetrical and multi conductor cables).....	13
Figure 6 – Calibration set-up.....	15
Figure 7 – Termination during calibration .....	15
Figure 8 – Measurement of the insertion loss of an absorber .....	17
Figure 9 – Example of screen connections for screened twisted pair cable measurement.....	18
Figure 10 – Test set-up for near end measurement of symmetrical cable .....	19
Figure 11 – Measurement of surface wave at near end of sample, principle .....	19
Figure 12 – Measurement of surface wave at far end of sample, principle.....	20
Figure 13 – Shielding arrangements for a far end measurement.....	21
Figure A.1 – Impedance matching for $Z_1 < 50 \Omega$ .....	28
Figure A.2 – Impedance matching for $Z_1 > 50 \Omega$ .....	28
Figure B.1 – Attenuation and return loss .....	29
Figure B.2 – Attenuation and return loss .....	30
Figure C.1 – Example measurement of a foil screen symmetrical cable .....	31
Figure C.2 – Example measurement of a well screened symmetrical cable .....	32
Figure C.3 – Example measurement of a well screened coaxial cable .....	32
Figure C.4 – Frequent measurement error of a symmetrical cable.....	33
Figure C.5 – Frequent measurement error of a symmetrical cable.....	33
Figure D.1 – Source with $R_i$ and $R_L$ .....	34
Figure E.1 – Common two-port network .....	36
Figure E.2 – Common four port network.....	36
Figure E.3 – Physical and logical ports of VNA .....	37
Figure E.4 – Nomenclature of mixed mode $S$ -parameters .....	37
Figure E.5 – Measurement configuration, single ended response.....	38
Figure E.6 – Measurement configuration, differential mode response.....	38
Table 1 – Balun performance characteristics (30 MHz to 1,0 GHz).....	10
Table 2 – Balun performance characteristics (30 MHz to 2,4 GHz).....	10
Table 3 – TP-connecting unit performance characteristics (30 MHz to 2,4 GHz).....	11

# INTERNATIONAL ELECTROTECHNICAL COMMISSION

## METALLIC COMMUNICATION CABLE TEST METHODS –

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

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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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://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

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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  $\pm 6$  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.