SVENSK STANDARD SS-EN IEC 62153-4-15

Fastställd	Utgåva	Sida	Ansvarig kommitté
2021-12-15	1	1 (1+47)	SEK TK 46

Metalliska kommunikationskablar – Provning – Del 4-15: Elektromagnetisk kompatibilitet (EMC) – Överföringsimpedans och skärmnings- eller kopplingsdämpning – Metod med triaxial cell

Metallic cables and other passive components test methods – Part 4-15: Electromagnetic compatibility (EMC) – Test method for measuring transfer impedance and screening attenuation – or coupling attenuation with triaxial cell

Som svensk standard gäller europastandarden EN IEC 62153-4-15:2021. Den svenska standarden innehåller den officiella engelska språkversionen av EN IEC 62153-4-15:2021.

Nationellt förord

Europastandarden EN IEC 62153-4-15:2021

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC

– **IEC 62153-4-15, Second edition, 2021 - Metallic cables and other passive components test methods - Part 4-15: Electromagnetic compatibility (EMC) - Test method for measuring transfer impedance and screening attenuation - or coupling attenuation with triaxial cell**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 33.100.10; 33.120.10

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62153-4-15

September 2021

ICS 33.100.10; 33.120.10

English Version

Metallic cables and other passive components test methods - Part 4-15: Electromagnetic compatibility (EMC) - Test method for measuring transfer impedance and screening attenuation - or coupling attenuation with triaxial cell (IEC 62153-4-15:2021)

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 (IEC 62153-4-15:2021)

Prüfverfahren für metallische Kommunikationskabel - Teil 4-15: Elektromagnetische Verträglichkeit (EMV) - Prüfverfahren zur Messung des Kopplungswiderstandes und der Schirmdämpfung oder der Kopplungsdämpfung mit der Triaxialen Zelle (IEC 62153-4-15:2021)

This European Standard was approved by CENELEC on 2021-09-07. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC 62153-4-15:2021 E

European foreword

The text of document 46/814/FDIS, future edition 2 of IEC 62153-4-15, prepared by IEC/TC 46 “Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62153-4-15:2021.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2022-06-07
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2024-09-07

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users’ national committee. A complete listing of these bodies can be found on the CENELEC website.

Endorsement notice

The text of the International Standard IEC 62153-4-15:2021 was approved by CENELEC as a European Standard without any modification.

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 61196-1	-	Coaxial communication cables - Part 1:- Generic specification - General, definitions and requirements		-
IEC TS 62153-4-1	2014	Metallic communication cable test methods-- Part 4-1: Electromagnetic compatibility (EMC) - Introduction to electromagnetic screening measurements		-
IEC 62153-4-3	-	Metallic communication cable test methods-- Part 4-3: Electromagnetic compatibility (EMC) - Surface transfer impedance - Triaxial method		-
IEC 62153-4-4	2015	Metallic communication cable test methods-- Part 4-4: Electromagnetic compatibility (EMC) - Shielded screening attenuation, test method for measuring of the screening attenuation a_S up to and above 3 GHz		-
IEC 62153-4-7	-	Metallic cables and other passive components - Test methods - Part 4-7: Electromagnetic compatibility (EMC) -Test method for measuring of transfer impedance Z_T and screening attenuation a_S or coupling attenuation a_C of connectors and assemblies - Triaxial tube in tube method	EN IEC 62153-4-7	-
IEC 62153-4-8	-	Metallic cables and other passive-components - Test methods - Part 4-8: Electromagnetic compatibility (EMC) - Capacitive coupling admittance		-
IEC 62153-4-9	2018	Metallic communication cable test methods - Part 4-9: Coupling attenuation of screened balanced cables, triaxial method		-

IEC 62153-4-10	-	Metallic communication cable test methods- - Part 4-10: Electromagnetic compatibility (EMC) - Transfer impedance and screening attenuation of feed-throughs and electromagnetic gaskets - Double coaxial test method	-
IEC 62153-4-16	-	Metallic cables and other passive-components test methods - Part 4-16: Electromagnetic compatibility (EMC) - Extension of the frequency range to higher frequencies for transfer impedance and to lower frequencies for screening attenuation measurements using the triaxial set-up	-

IEC 62153-4-15

Edition 2.0 2021-08

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Metallic cables and other passive components test methods – Part 4-15: Electromagnetic compatibility (EMC) – Test method for measuring transfer impedance and screening attenuation – or coupling attenuation with triaxial cell

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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 33.100.10; 33.120.10

ISBN 978-2-8322-1003-2

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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METALLIC CABLES AND OTHER PASSIVE COMPONENTS TEST METHODS –

Part 4-15: Electromagnetic compatibility (EMC) – Test method for measuring transfer impedance and screening attenuation – or coupling attenuation with triaxial cell

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 62153-4-15 has been prepared by IEC technical committee 46: Cables, wires, waveguides, R.F. connectors, R.F. and microwave passive components and accessories.

This second edition cancels and replaces the first edition published in 2015. This edition constitutes a technical revision.

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

a) measurement of coupling attenuation of balanced connectors, assemblies and components with balun and balunless added;
b) application of a test adapter was added;
c) application of a moveable shorting plane;

d) application of the triaxial "absorber" cell;

e) correction of test results in the case that the receiver input impedance R is higher than the characteristic impedance of the outer circuit Z_2.

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

FDIS	Report on voting
46/814/FDIS	46/822/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.

A list of all the parts in the IEC 62153-4 series, published 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 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 CABLES AND OTHER PASSIVE COMPONENTS TEST METHODS –

Part 4-15: Electromagnetic compatibility (EMC) – Test method for measuring transfer impedance and screening attenuation – or coupling attenuation with triaxial cell

1 Scope

This part of IEC 62153 specifies the procedures for measuring with triaxial cell the transfer impedance, screening attenuation or the coupling attenuation of connectors, cable assemblies and components, for example accessories for analogue and digital transmission systems, and equipment for communication networks and cabling.

Measurements can be achieved by applying the device under test directly to the triaxial cell or with the tube-in-tube method in accordance with IEC 62153-4-7.

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 61196-1, *Coaxial communication cables – Part 1: Generic specification – General, definitions and requirements*

IEC TS 62153-4-1:2014, *Metallic communication cable test methods – Part 4-1: Electromagnetic Compatibility (EMC) − Introduction to electromagnetic screening measurements*

IEC 62153-4-3, *Metallic communication cable test methods – Part 4-3: Electromagnetic compatibility (EMC) − Surface transfer impedance − Triaxial method*

IEC 62153-4-4:2015, *Metallic communication cable test methods – Part 4-4: Electromagnetic compatibility (EMC) – Test method for measuring of the screening attenuation a_S up to and above 3 GHz, triaxial method*

IEC 62153-4-7, *Metallic communication cable test methods – Part 4-7: Electromagnetic compatibility (EMC) – Test method for measuring the transfer impedance Z_T and the screening attenuation a_s or coupling attenuation a_c of connectors and assemblies up to and above 3 GHz – Triaxial Tube in tube method*

IEC 62153-4-8, *Metallic cables and other passive components – Test methods – Part 4-8: Electromagnetic compatibility (EMC) – Capacitive coupling admittance*

IEC 62153-4-9:2018, *Metallic communication cable test methods – Part 4-9: Electromagnetic compatibility (EMC) – Coupling attenuation of screened balanced cables, triaxial method*

IEC 62153-4-10, *Metallic communication cable test methods – Part 4-10: Electromagnetic compatibility (EMC) – Transfer impedance and screening attenuation of feed-throughs and electromagnetic gaskets – Double coaxial test method*

IEC 62153-4-16, *Metallic communication cable test methods – Part 4-16: Electromagnetic compatibility (EMC) – Extension of the frequency range to higher frequencies for transfer impedance and to lower frequencies for screening attenuation measurements using the triaxial set-up*