

STN	Skúšobné metódy kovových komunikačných káblov. Časť 4-7: Elektromagnetická kompatibilita (EMC). Skúšobná metóda na meranie prenosovej impedancie ZT a tlmenia tienenia aS alebo tlmenia spojenia aC konektorov a súborov do 3 GHz a nad 3 GHz. Triaxiálna metóda rúrka v rúrke.	STN EN 62153-4-7
		34 7012

Metallic communication cable test methods - Part 4-7: Electromagnetic compatibility (EMC) - Test method for measuring of transfer impedance ZT and screening attenuation as or coupling attenuation ac of connectors and assemblies up to and above 3 GHz - Triaxial tube in tube method

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 08/16

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English Version

**Metallic communication cable 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 up to
and above 3 GHz - Triaxial tube in tube method
(IEC 62153-4-7:2015)**

Méthodes d'essai des câbles métalliques de communication
- Partie 4-7: Compatibilité électromagnétique (CEM) -
Méthode d'essai pour mesurer l'impédance de transfert Z_T
et l'affaiblissement d'écrantage a_s ou l'affaiblissement de
couplage a_c des connecteurs et des cordons jusqu'à 3 GHz
et au-dessus - Méthode triaxiale en tubes concentriques
(IEC 62153-4-7:2015)

Prüfverfahren für metallische Kommunikationskabel -
Teil 4-7: Geschirmtes Prüfverfahren zur Messung von
Kopplungswiderstand Z_T und von Schirm a_s - oder
Kopplungsdämpfung a_c von HF-Steckverbindern und
konfektionierten Kabeln bis zu und über 3 GHz - Rohr-im-
Rohr-Verfahren
(IEC 62153-4-7:2015)

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EN 62153-4-7:2016**European foreword**

The text of document 46/572/FDIS, future edition 2 of IEC 62153-4-7, 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 approved by CENELEC as EN 62153-4-7:2016.

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) 2016-10-13
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2019-01-13

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Annex ZA (normative)

Normative references to international publications with their corresponding European publications

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC/TS 62153-4-1	-	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	-	Metallic communication cable test methods - - Part 4-4: Electromagnetic compatibility (EMC) - Shielded screening attenuation, test method for measuring of the screening attenuation as up to and above 3 GHz		-
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		-



INTERNATIONAL STANDARD



**Metallic communication cable 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 up to and above 3 GHz – Triaxial tube in tube
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INTERNATIONAL STANDARD



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of connectors and assemblies up to and above 3 GHz – Triaxial tube in tube
method**

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

METALLIC COMMUNICATION CABLE 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 up to and above 3 GHz – Triaxial tube in tube method**

FOREWORD

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International Standard IEC 62153-4-7 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 2006. This edition constitutes a technical revision.

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

The document is revised and updated. The changes of the revised IEC 62153-4-3:2013, and IEC 62153-4-4:2015, are included.

Measurements can be achieved now with mismatch at the generator site, impedance matching devices are not necessary.

The text of this standard is based on the following documents:

FDIS	Report on voting
46/572/FDIS	46/585/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of the IEC 62153 series, under the general title: *Metallic communication cable test methods*, can be found on the IEC website.

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

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INTRODUCTION

The shielded screening attenuation test set-up according to IEC 62153-4-3 and IEC 62153-4-4 have been extended to take into account the particularities of electrically short elements like connectors and cable assemblies. Due to the concentric outer tube of the triaxial set-up, measurements are independent of irregularities on the circumference and outer electromagnetic fields.

With the use of an additional resonator tube (inner tube respectively tube in tube), a system is created where the screening effectiveness of an electrically short device is measured in realistic and controlled conditions. Also a lower cut off frequency for the transition between electrically short (transfer impedance Z_T) and electrically long (screening attenuation a_S) can be achieved.

A wide dynamic and frequency range can be applied to test even super screened connectors and assemblies with normal instrumentation from low frequencies up to the limit of defined transversal waves in the outer circuit at approximately 4 GHz.

METALLIC COMMUNICATION CABLE 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 up to and above 3 GHz – Triaxial tube in tube method

1 Scope

This triaxial method is suitable to determine the surface transfer impedance and/or screening attenuation and coupling attenuation of mated screened connectors (including the connection between cable and connector) and cable assemblies. This method could also be extended to determine the transfer impedance, coupling or screening attenuation of balanced or multipin connectors and multicore cable assemblies. For the measurement of transfer impedance and screening- or coupling attenuation, only one test set-up is needed.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC TS 62153-4-1, *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, *Metallic communication cable test methods – Part 4-4: Electromagnetic compatibility (EMC) – Shielded screening attenuation, test method for measuring of the screening attenuation as up to and above 3 GHz*

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*

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