SLOVENSKI STANDARD
SIST EN 62153-4-7:2016/A1:2018

01-september-2018

Preskusne metode za kovinske komunikacijske kable - 4-7. del: Elektromagnetna združljivost (EMC) - Preskusna metoda za meritve prehodne impedance ZT in zaslonskega slabljenja aS ali sklopnega slabljenja aC konektorjev in sestavov do in nad 3 GHz - Metoda "cev v cevi" - Dopolnilo A1 (IEC 62153-4-7:2015/A1:2018)

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 (IEC 62153-4-7:2015/A1:2018)

Prüfverfahren für metallische Kommunikationskabel - Teil 4-7: Geschirmtes Prüfverfahren zur Messung von Kopplungswiderstand ZT und von Schirm as- oder Kopplungsdämpfung ac von HF-Steckverbindern und konfektionierten Kabeln bis zu und über 3 GHz - Rohr-im-Rohr-Verfahren (IEC 62153-4-7:2015/A1:2018)

Méthodes d'essai des câbles métalliques de communication - Partie 4-7: Compatibilité électromagnétique (CEM) - Méthode d'essai pour mesurer l'impédance de transfert ZT et l'affaiblissement d'écrantage as ou l'affaiblissement de couplage aC des connecteurs et des cordons jusqu'à 3 GHz et au-dessus - Méthode triaxiale en tubes concentriques (IEC 62153-4-7:2015/A1:2018)

Ta slovenski standard je istoveten z: **EN 62153-4-7:2016/A1:2018**

ICS:

33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general
33.120.10	Koaksialni kabli. Valovodi	Coaxial cables. Waveguides

SIST EN 62153-4-7:2016/A1:2018 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 62153-4-7:2016/A1

July 2018

ICS 33.100.10; 33.120.10

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/A1:2018)

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/A1:2018)

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/A1:2018)

This amendment A1 modifies the European Standard EN 62153-4-7:2016; it was approved by CENELEC on 2018-06-13. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

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 62153-4-7:2016/A1:2018 E

European foreword

The text of document 46/679/FDIS, future IEC 62153-4-7:2015/A1, 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/A1:2018.

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)	2019-03-13
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2021-06-13

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.

Endorsement notice

The text of the International Standard IEC 62153-4-7:2015/A1:2018 was approved by CENELEC as a European Standard without any modification.

IEC 62153-4-7

Edition 2.0 2018-05

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

AMENDMENT 1
AMENDEMENT 1

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

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

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 33.100.10; 33.120.10

ISBN 978-2-8322-5599-5

FOREWORD

This amendment has been prepared by IEC technical committee 46: Cables, wires, waveguides, RF connectors, RF and microwave passive components and accessories.

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

FDIS	Report on voting
46/679/FDIS	46/682/RVD

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

The committee has decided that the contents of this amendment and the base 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

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

Add, after Annex D, the following new Annex E:

Annex E
(informative)

Direct measurement of screening effectiveness of connectors

E.1 General

IEC 62153-4-7 describes the measurement of transfer impedance and screening or coupling attenuation of connectors and cable assemblies with the tube in tube procedure. According to IEC 62153-4-7, connectors usually are measured with a short piece of connecting cable, see for example Figure 2.

In different cases it may be required to measure the screening effectiveness direct on the connector or without connecting cable, e.g. to evaluate the EMC of the interface of the mated connectors. The following describes the test set-up for direct connector measurement.

E.2 Test set-up

The test set-up and measurements are in principle the same than in Clauses 8 to 10 of this document.

Contrary to the set-ups in Clauses 8 to 10 of this document, the RF-tight tube in tube and the screening cap are direct connected to the connector under test (CUT), see Figure E.1; e.g. by a screwing joint of the connector under test to the extension tube and the screening cap. The torque of this screwing joint shall be specified by the connector manufacturer.

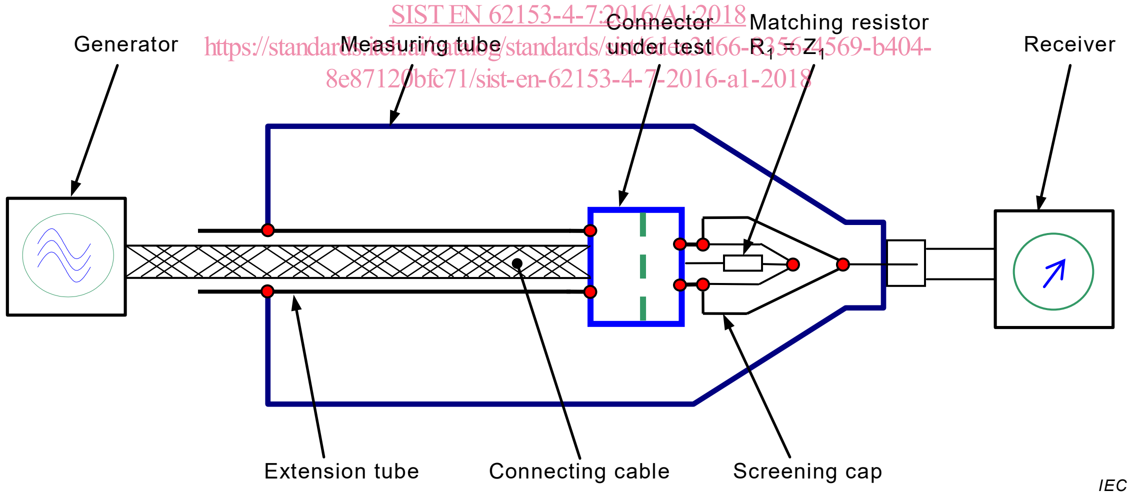


Figure E.1 – Principle of the test set-up to measure transfer impedance and screening attenuation of a connector

The same applies in principle to the set-up for measuring cable assemblies, see Figure E.2.

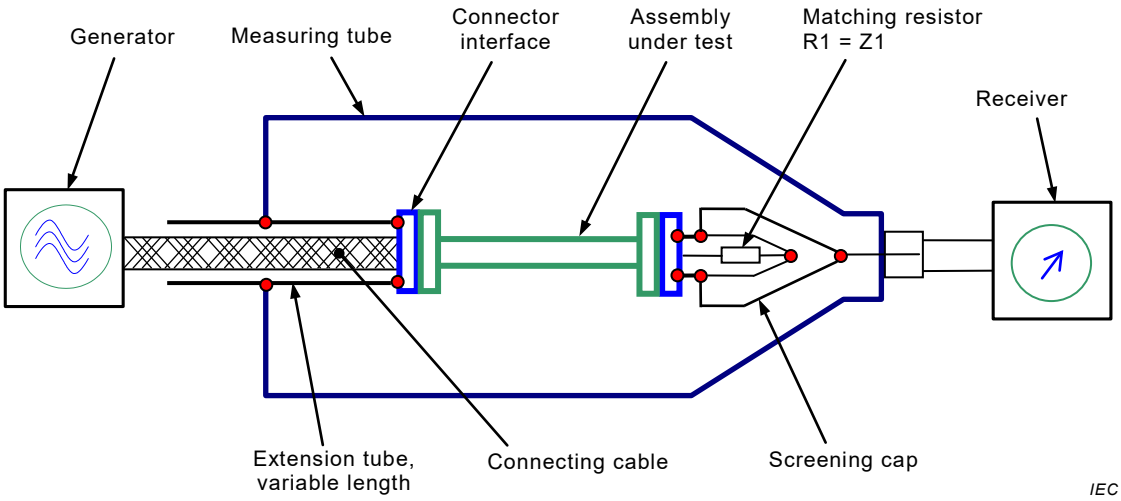
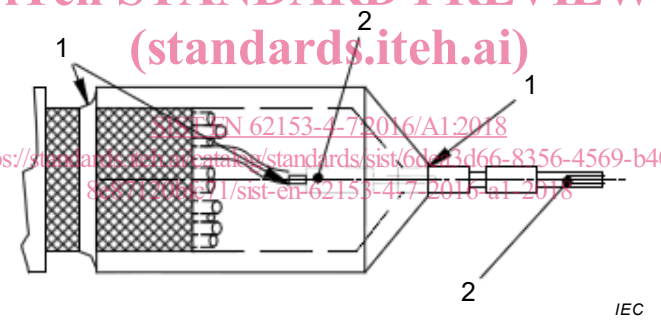


Figure E.2 – Principle of the test set-up to measure transfer impedance and screening attenuation of a cable assembly

If a multi conductor cable is tested instead of a single-conductor cable, a combination of inner conductors (cores) shall be selected such that their impedance to the screen is closest to the internal impedance of the test receiver, see Figure E.3 (e.g. determined by means of a reflectometer).



Key

1 connection

2 terminating impedance 50 Ω

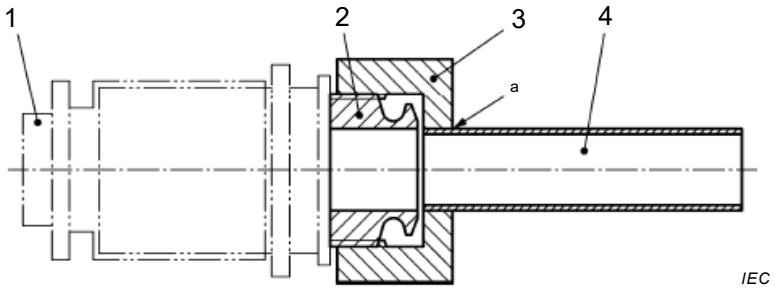
3 inner contact from RF connector connected to the shielded tube

Figure E.3 – Example of sample preparing

E.3 Construction details of test set-up

The connection of the RF-tight tube as well as the RF-tight connection of the screening cap may influence the test results considerably. Worse mounted connections may lead to leakages and to poor test results.

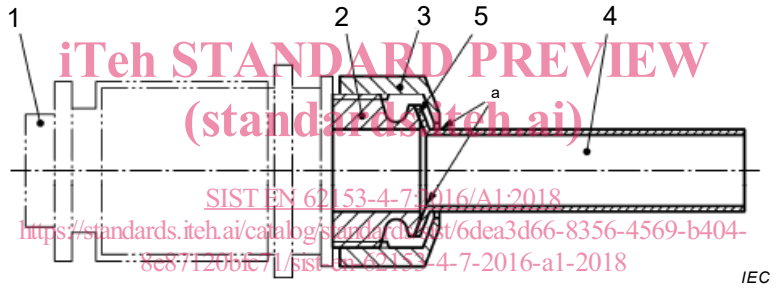
Figures E.4 and E.5 give examples of how to connect the tube in tube and the screening cap to the CUT.



Key

1 mating connector
2 coupling
3 bush (Cu-material)
4 copper tube
[a] RF-density connection (soldered for example)

Figure E.4 – Screening tube with separate nut



Key

1 mating connector
2 coupling
3 nut
4 copper tube
5 cone
[a] Matching edge-raised or chamfered

Figure E.5 – Screening fixed with associated nut