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Responsible committee: GEL/210/11 EMC - Standards Committee

Interested committees:

Title: Draft BS EN 55014-1:2017 Amendment 1 - Fragment 4 - Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus

Part 1: Emission

Please notify the secretary if you are aware of any keywords that might assist in classifying or identifying the standard or if the content of this standard

- i) has any issues related to 3rd party IPR, patent or copyright
- ii) affects other national standard(s)
- iii) requires additional national guidance or information

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Introduction

This draft standard is based on national and international discussions. Your comments on this draft are invited and will assist in the preparation of the consequent standard.

For international standards, comments will be reviewed by the relevant UK national committee before sending the consensus UK vote and comments to the international committee, which will then decide appropriate action. If the international standard is approved, it is usual for the text to be published as a British Standard.

For national standards, comments will be reviewed by the relevant UK national committee and the resulting standards published as a British Standard.

UK Vote

Please indicate whether you consider the UK should submit a negative (with supporting technical reasons) or positive vote on this draft. Please indicate if you are aware of any reason why this draft standard should not be published as a British Standard.

Submission of Comments

- **Annotated drafts are not acceptable and will be rejected.**
- All comments should be submitted online at <https://standardsdevelopment.bsigroup.com/>. You will need to register in order to comment.

Template for comments and secretariat observations

Date: xx/xx/20xx	Document: ISO/DIS xxxx
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1	2	(3)	4	5	(6)	7
MB	Clause No./ Subclause No./Annex (e.g. 3.1)	Paragraph/Figure/ Table/Note	Type of comment	Commend (justification for change) by the MB	Proposed change by the MB	Secretariat observations on each comment submitted
	3.1	Definition 1	ed	Definition is ambiguous and needs clarifying.	Amend to read '...so that the mains connector to which no connection...'	
	6.4	Paragraph 2	te	The use of the UV photometer as an alternative cannot be supported as serious problems have been encountered in its use in the UK.	Delete reference to UV photometer.	



CIS/F/768/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:

CISPR 14-1/AMD1/FRAG4 ED6

DATE OF CIRCULATION:

2019-06-28

CLOSING DATE FOR VOTING:

2019-09-20

SUPERSEDES DOCUMENTS:

CIS/F/746/CD, CIS/F/758A/CC

IEC CIS/F : INTERFERENCE RELATING TO HOUSEHOLD APPLIANCES TOOLS, LIGHTING EQUIPMENT AND SIMILAR APPARATUS

SECRETARIAT:

Netherlands

SECRETARY:

Mr Pierre A. Beeckman

OF INTEREST TO THE FOLLOWING COMMITTEES:

TC 61

PROPOSED HORIZONTAL STANDARD:

☐

Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.

FUNCTIONS CONCERNED:

☒ EMC

☐ ENVIRONMENT

☐ QUALITY ASSURANCE

☐ SAFETY

☒ SUBMITTED FOR CENELEC PARALLEL VOTING

☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

Attention IEC-CENELEC parallel voting

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission

PROPOSED STABILITY DATE: 2022

NOTE FROM TC/SC OFFICERS:

See the Introduction on the first page of the annexed CDV.

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INTRODUCTION

This fragment f4 contains all the items that were not identified as requiring a separate proposal.

The main topics under review and development are:

- Incorporation of the principles clarified by ISH 2 (test conditions of steam irons)
- Address comments that were identified as matter for future amendment at the FDIS stage of CISPR 14-1 2016 (Ed. 6.0)
- Extension of the frequency range for radiated measurements above 1 GHz
- Revision of general test conditions and some specific test conditions
- Editorial improvements to improve readability, provide more clarity and avoid duplication of requirements.
- Address accepted comments to CIS/F/746/CD as detailed in CIS/F/758A/CC
- Revise definitions for equipment and devices connected to the EUT
- Add definitions suitable to DC powered equipment (batteries is one type of DC source); the definitions and requirements for equipment connected to DC distribution networks can be introduced when limits for such networks are available
- Additional information about conducted emission test setups and measurements arrangements (figures)
- Provide more extensive test conditions for robotic equipment

NOTE 1 OF THE SECRETARY: the dated references to other standards will be consolidated at later stage when fragments will be merged.

(the text in blue and purple has been added or changed if compared with CIS/F/746/CD)

ELECTROMAGNETIC COMPATIBILITY – REQUIREMENTS FOR HOUSEHOLD APPLIANCES, ELECTRIC TOOLS AND SIMILAR APPARATUS –

Part 1: Emission

1 Scope

Move the following text (2nd paragraph) to 3.1:

Within this standard wherever the term “equipment” is used it includes the more specific terms “appliance”, “household or similar appliances”, “electric tool”, “toys” and “apparatus”.

Replace Note 3 with the following text:

NOTE 3 Examples are:

- external power controllers using semiconductor devices
- motor-driven electro-medical equipment
- electric/electronic toys
- **personal care and beauty care appliances**
- automatic goods-dispensing machines
- entertainment machines
- cine or slide projectors
- battery chargers and external power supplies for use with products under the scope of this standard
- **electric fence energisers**

Replace the paragraph after NOTE 3 with the following text:

Also included in the scope of this standard are separate parts of the above mentioned equipment such as motors and switching devices (e.g. power or protective relays). However, no emission requirements apply to such separate parts, unless otherwise stated in this document.

Equipment under the scope of this document making use of IPT is also in the scope.

Replace the fifth bullet of NOTE 4 by:

- equipment which is under the scope of CISPR 11 (e.g. microwave ovens) but be aware of 6.5 on multifunction equipment (e.g. for another function requiring click measurements)

In the list of exclusions from the scope add the following text as 3rd bullet point:

- **equipment used only in industrial environment**

3 Terms, definitions and abbreviated terms

Replace definition 3.2.1 with the following text:

3.2.1

equipment under test

EUT

equipment being evaluated for compliance with the requirements of this **document**

In 3.2 add the following definition (the numbering will be decided when merging with the other fragments):

3.2.x

system under test

EUT and auxiliary equipment which are tested together to evaluate compliance with the requirements of this **document**

Note to entry: the system under test can be made by one or more EUTs, and can also include auxiliary equipment (see 3.5.z).

Replace definition 3.4.1 with the following text:

3.4.1

port

physical interface of the system under test through which electromagnetic energy propagates

Replace definition 3.4.2 with the two following definitions:

3.4.x1

public mains network

electricity lines to which all categories of consumers have access and which are operated by a supply or distribution undertaking for the purpose of supplying electrical energy

3.4.x2

AC mains port

port used for connection to an AC public mains network

In 3.4 add the following definitions (numbering will be decided when merging with the other fragments):

3.4.x

auxiliary port

port used for connection to an auxiliary equipment

Note 1 to entry: Wired network ports are not included in this definition.

In 3.5 add the following definition (numbering will be decided when merging with the other fragments):

3.5.x

ancillary equipment

transducer or other equipment connected to a measuring receiver or (test) signal generator and used in the disturbance signal transfer between the EUT and the measuring or test equipment

EXAMPLE Current probes, voltage probes, antennas, coaxial cables, filters, attenuators and artificial mains networks

[SOURCE: CISPR 16-2-3:2016, 3.1.2, modified, example added]

Replace definition 3.5.3 for 'associated device' with the following two definitions (numbering will be decided when merging with the other fragments):

3.5.y

associated equipment

AE

equipment that is not part of the system under test but needed to exercise and/or monitor the EUT

[SOURCE: CISPR 16-2-3:2016, 3.1.5, modified]

3.5.z

auxiliary equipment

AuxEq

peripheral equipment that is part of the system under test

EXAMPLE An accessory providing additional functions to a piece of equipment, a wired remote control, an external battery, an external power supply, or a laptop providing a compatible USB power port,

[SOURCE: CISPR 16-2-3:2016, 3.1.6, modified, Note added]

Add the two following definitions (numbering will be decided when merging with the other fragments):

3.5.xx

representative load

load which is not provided (sold) with the equipment but it is used to exercise the EUT as specified in the relevant test conditions

Note 1 to entry: Examples are a resistive load or a battery used to load a battery charger output terminals, a resistive load connected to a secondary coil to exercise an IPTS or a real IPTC. It is common that a representative load is an apparatus commercially available or specified by the manufacturer in the instructions for use.

3.5.xy

representative source

apparatus which is not provided (sold) with the equipment but it is used to power the EUT at its rated voltage in order to obtain the relevant test conditions

Note 1 to entry: Examples are an EPS or an inductive power source (IPTS).

Note 2 to entry: This is generally an apparatus commercially available or specified by the manufacturer in the instructions for use.

Add to 3.6 the following definition:

3.6.x

DC powered equipment

equipment which can perform its intended functions when supplied with direct current

Note 1 to Entry: DC powered equipment are typically powered from DC supplies as energy storage (batteries), AC/DC power converters or DC distribution networks.

Note 2 to Entry: examples of intended functions are the operation of motors and charging of internal batteries.

Delete Note 3 to Entry in definition 3.7.1 - toy.

Add in 3.8 the following definitions:

3.8.6 radio transmitter

device producing radio-frequency energy intended to be radiated by an antenna, normally for the purpose of radio communication

[SOURCE: IEC 713-08-01, 1, modified]

3.8.7 radio receiver

device with associated antenna or including an antenna, used to select the desired radio-frequency signals from incident radio-frequency radiation, to amplify them, demodulate them and if necessary convert the recovered signals into a usable form by equipment in the scope of this document

[SOURCE: IEC 713-08-01, 2, modified]

145 Add the following figures as examples for the definitions used:

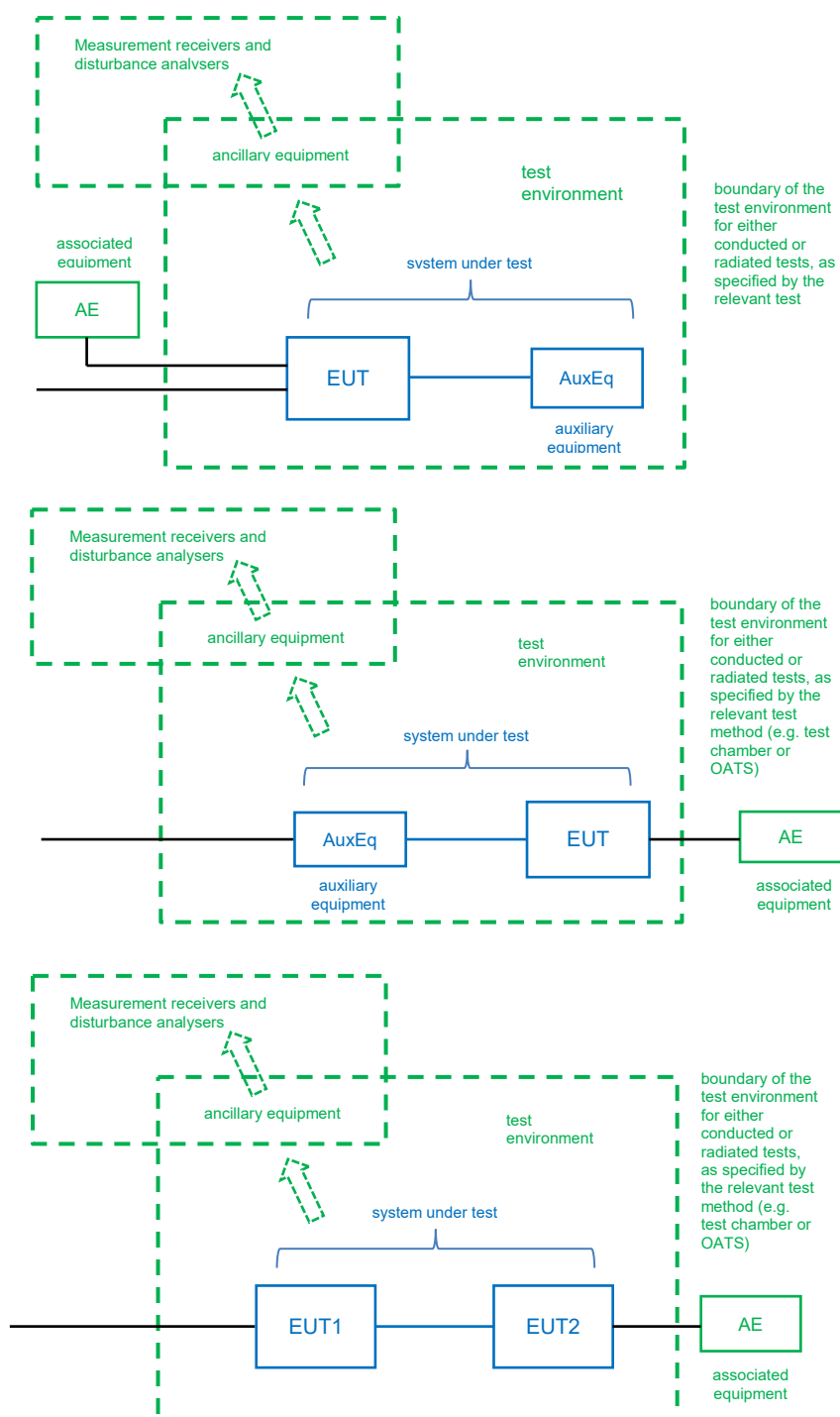


Figure x – Examples of different test configurations

148 Add to 3.9 the following abbreviations:

149 AE: Associated Equipment

150 AuxEq: Auxiliary Equipment

151 EMI: ElectroMagnetic Interference

152 EUT: Equipment Under Test

153 FSOATS: Free Space Open Area Test Site

4 Limits of disturbance

Replace 4.1 by the following text:

4.1 General

Radio disturbance limits are given in the frequency range 150 kHz to 6 000 MHz, with an extension down to 9 kHz for specific types of equipment.

If it is evident from the construction, electrical characteristics and intended use of the equipment that a certain measurement is not necessary, the equipment is deemed to comply with the relevant requirements without testing. The test report shall include the engineering justification to support these exclusions from testing.

NOTE Examples are equipment that do not contain sources of RF disturbance (e.g. sources such as commutator motors and active electronic circuits, see 3.8.2) or equipment for which the emission characteristics do not require a certain test to be performed (e.g. the equipment is not deemed to be source of significant magnetic field).

No measurements need be performed at frequencies where no limits are specified.

Replace Table 1 with the following table:

Table 1 – Application of limits

	Disturbance voltage/current			Dist. voltage	Disturbance Power ^c		Radiated disturbances		
	Continuous ^{a, f}			Clicks ^b			Electric field	Magnetic field	
Sub-clause	(4.3.2)	(4.3.3)		(4.4.2)	(4.3.4)		(4.3.4, 4.3.5)	(4.3.2)	
Limits	Table 2	Table 5	Table 6	Text	Table 7	Table 8	Table 9	Table 3	Table 4
All equipment not listed below		•		•	•	•	•		
Tools			•	•	•	•	•		
Equipment using IPT	•			•	•	•	•	•	•
Electric fence energisers ^d		•		•	•	•	•		
Toys ^e		•		•	•	•	•		
^a The limits of Table 5 and Table 6 could be applicable to discontinuous disturbances (see 4.4.2.2). ^b For exemption and exceptions see 4.4.1 and 5.4.3.. ^c For mains operated equipment, if certain conditions are met, the disturbance power test may be applied in alternative to the radiated disturbance test (see 4.3.4.2 and Figure 4). ^d For electric fence energisers the disturbance voltage test is applied according to 4.3.3.5.. ^e Certain toys are deemed to comply with the requirements of this standard without testing (see A.7.1). ^f For wired network ports, see 4.3.3.7.									

Modify the title of 4.3.3 to read as follows:

4.3.3 Frequency range 150 kHz to 30 MHz (equipment not using IPT)

In 4.3.3.3 insert in the 2nd paragraph the following text as a new item f) in the list:

- f) ports which connect to leads having a shield whose both ends are appropriately connected to a ground layer, a metal plate or metal enclosure; the connections of the shield should offer low impedance to high frequency currents (e.g. a short wire or a suitable capacitor)

Delete the Note after the 2nd paragraph of 4.3.3.3.