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Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity - Product family standard

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 55014-2:2015 sisaldab Euroopa standardi EN 55014-2:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 55014-2:2015 consists of the English text of the European standard EN 55014-2:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 03.04.2015.	Date of Availability of the European standard is 03.04.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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English Version

Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity - Product family standard (CISPR 14-2:2015)

Compatibilité électromagnétique - Exigences relatives aux appareils électrodomestiques, outillages électriques et appareils analogues - Partie 2: Immunité - Norme de famille de produits
(CISPR 14-2:2015)

Elektromagnetische Verträglichkeit - Anforderungen an Haushaltgeräte, Elektrowerkzeuge und ähnliche Elektrogeräte - Teil 2: Störfestigkeit - Produktfamiliennorm
(CISPR 14-2:2015)

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Foreword

The text of document CIS/F/652/FDIS, future CISPR 14-2, prepared by CISPR SC F “Interference relating to household appliances tools, lighting equipment and similar apparatus” of CISPR “International special committee on radio interference” was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 55014-2:2015.

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)	2015-12-25
– latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2018-03-25

This document supersedes EN 55014-2:1997.

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60335 (series)	NOTE	Harmonized as EN 60335 (series).
IEC 61558-2-7	NOTE	Harmonized as EN 61558-2-7.

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INTRODUCTION

The intention of this standard is to establish uniform requirements for the electromagnetic immunity of the equipment mentioned in the scope, to fix test specifications of immunity, to refer to basic standards for methods of testing, and to standardize operating conditions, performance criteria and interpretation of results.

Keywords: Immunity, household appliances, electric apparatus, electromagnetic compatibility.

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

Part 2: Immunity – Product family standard

1 Scope

1.1 This part of CISPR 14 deals with the electromagnetic immunity of appliances and similar apparatus for household and similar purposes that use electricity, as well as electric toys and electric tools, the rated voltage of the apparatus being not more than 250 V for single-phase apparatus to be connected to phase and neutral, and 480 V for other apparatus.

Apparatus may incorporate motors, heating elements or their combination, may contain electric or electronic circuitry, and may be powered by the mains, by transformer, by batteries, or by any other electrical power source.

Apparatus not intended for household use, but which nevertheless may require the immunity level, such as apparatus intended to be used by laymen in shops, in light industry and on farms, are within the scope of this standard, as far as they are included in CISPR 14-1. In addition, the following are also included in the scope of this standard:

– microwave ovens for domestic use and catering;
– cooking hobs and cooking ovens, heated by means of r.f. energy;
– (single- and multiple-zone) induction cooking appliances;
– appliances for personal care equipped with radiators in the range from UV to IR, inclusive (this includes visible light);
– power supplies and battery chargers provided with or intended for apparatus within the scope of this standard.

1.2 This standard does not apply to:

– equipment for lighting purposes;
– apparatus designed exclusively for heavy industrial purposes;
– apparatus intended to be part of the fixed electrical installation of buildings (such as fuses, circuit breakers, cables and switches);
– apparatus intended to be used in locations where special electromagnetic conditions prevail, such as the presence of high electromagnetic fields (for example in the vicinity of a broadcast transmitting station), or where high pulses occur on the power network (such as in a power generator station);
– radio and television receivers, audio and video equipment, and electronic music instruments other than toys;
– medical electrical appliances;
– personal computers and similar equipment other than toys;
– radio transmitters;
– apparatus designed to be used exclusively in vehicles;
– babies surveillance systems.

1.3 Immunity requirements in the frequency range 0 Hz to 400 GHz are covered.

1.4 The effects of electromagnetic phenomena relating to the safety of apparatus are excluded from this standard and are covered by other standards, for example in the IEC 60335 series.

Abnormal operation of the apparatus (such as simulated faults in the electric circuitry for testing purposes) is not taken into consideration.

NOTE 1 Attention is drawn to the fact that additional requirements can be necessary for apparatus intended to be used on board ships or aircraft.

1.5 The object of this standard is to specify the immunity requirements for apparatus defined in the scope in relation to continuous and transient, conducted and radiated electromagnetic disturbances, including electrostatic discharges.

These requirements represent essential electromagnetic compatibility immunity requirements.

NOTE 2 In special cases, situations will arise where the level of disturbances may exceed the test values specified in this standard. In these instances special mitigation measures may have to be employed.

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 60050 (all parts), *International Electrotechnical Vocabulary (IEV)* (available at www.electropedia.org)

IEC 61000-4-2:2008, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3:2006, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*
IEC 61000-4-3:2006/AMD1:2007
IEC 61000-4-3:2006/AMD2:2010

IEC 61000-4-4:2012, *Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test*

IEC 61000-4-5:2014, *Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test*

IEC 61000-4-6:2013, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-4-11:2004, *Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity tests*

IEC 61000-4-22:2010, *Electromagnetic compatibility (EMC) – Part 4-22: Testing and measurement techniques – Radiated emissions and immunity measurements in fully anechoic rooms (FARs)*

CISPR 14-1:2005, *Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission*
CISPR 14-1:2005/AMD1:2008
CISPR 14-1:2005/AMD2:2011

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions related to EMC and related phenomena found in IEC 60050-161, as well as the following terms and definitions apply.

3.1.1
electromagnetic compatibility
ability of a device, unit of equipment or system to function satisfactorily in its electro-magnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment

3.1.2
port
particular interface of the specified apparatus with the external electromagnetic environment

Note 1 to entry: See Figure 1.

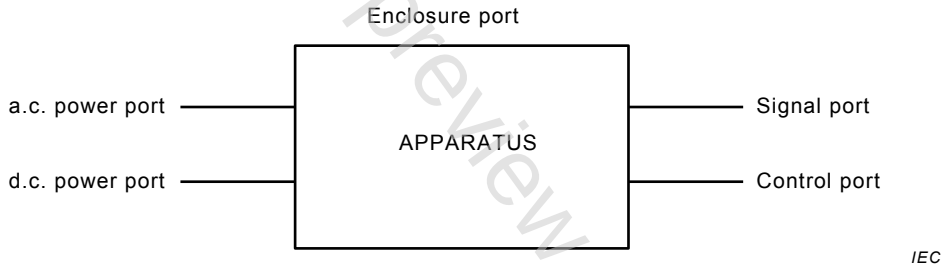

Figure 1 – Examples of ports

3.1.3
enclosure port
physical boundary of the apparatus through which electromagnetic fields may radiate or impinge

3.1.4
series production
production process in which identical apparatus are manufactured continuously or in batches (consisting of identical products)

3.1.5
safety extra-low voltage
voltage which does not exceed 50 V a.c. or 120 V ripple free d.c. between conductors, or between any conductor and earth, in a circuit which is isolated from the supply mains by such means as a safety isolating transformer

3.1.6
toy
product designed for, or clearly intended for use in play by children under 14 years old

Note 1 to entry: Toys may incorporate motors, heating elements, electronic circuits and their combination.