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INTERNATIONAL STANDARD

NORME INTERNATIONALE

INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE
COMITÉ INTERNATIONAL SPÉCIAL DES PERTURBATIONS RADIOÉLECTRIQUES

AMENDMENT 2
AMENDEMENT 2

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

Compatibilité électromagnétique – Exigences pour les appareils électrodomestiques, outillages électriques et appareils analogues – Partie 1: Emission

CISPR 14-1:2005/A2:2011

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FOREWORD

This amendment has been prepared by CISPR subcommittee F: Interference relating to household appliances tools, lighting equipment and similar apparatus.

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

FDIS	Report on voting
CISPR/F/537/FDIS	CISPR/F/546/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 publication will remain unchanged until the stability date indicated on the IEC web site 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- withdrawn,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.

CONTENTS

Replace the existing Annexes B and C by the following new Annexes B and C:

Add the following new Annex D:

Add the following new Tables B.1, B.2 and B.3:

1 Scope

Replace the existing first paragraph of this subclause by the following new paragraph:

1.1 This standard applies to the conduction and radiation of radio-frequency disturbances from appliances whose main functions are performed by motors, switching or regulating devices, or by r.f. generators used in induction cooking appliances.

Replace the fourth dashed item of the existing Note 1 by the following new dashed item:

– equipment for generation and use of radio frequency energy for heating (other than induction cooking) and therapeutic purposes: CISPR 11;

Add, after the existing Note 2, the following new Note 3:

NOTE 3 Until induction cooking appliances are removed from the scope of CISPR 11, either CISPR 11 or CISPR 14-1 may be chosen for compliance.

4 Limits of disturbance

Add, after the first sentence of this clause, the following new text:

The requirements for induction cooking appliances are given in Annex B.

7.3.4.15

Add, after the first paragraph of this subclause – subclause introduced by Amendment 1 – the following new paragraph:

In case of the rice cooker operating in induction heating function, measurement shall be made under the condition of maximum input power and the same conditions as specified in Annex B.

Renumber the existing Annexes B and C, their existing clauses and subclauses, to have Annexes C and D respectively.

Add, after the existing Annex A, the following new Annex B:

Annex B
(normative)

Requirements for induction cooking appliances

B.1 Limits of disturbance

B.1.1 General

Radio disturbance measurements below 9 kHz and above 1 000 MHz do not need to be carried out.

B.1.2 Limits for terminal disturbance voltages in the frequency range 9 kHz to 30 MHz

Limits for mains terminal disturbance voltages are given in Table B.1.

Table B.1 – Terminal voltage limits for induction cooking appliances in the frequency range 9 kHz to 30 MHz

Frequency range	All appliances other than those which are 100 V rated and without an earth connection		All appliances which are 100 V rated and without an earth connection	
(MHz)	dB(μV) Quasi-peak	dB(μV) Average	dB(μV) Quasi-peak	dB(μV) Average
0,009 – 0,050	110	–	122	–
0,050 – 0,150	90 Decreasing linearly with logarithm of frequency to 80	–	102 Decreasing linearly with logarithm of frequency to 92	–
0,150 – 0,5	66 Decreasing linearly with logarithm of frequency to 56	56 Decreasing linearly with logarithm of frequency to 46	72 Decreasing linearly with logarithm of frequency to 62	62 Decreasing linearly with logarithm of frequency to 52
0,5 – 5	56	46	56	46
5 – 30	60	50	60	50

B.1.3 Limits for radiated disturbances in the frequency range 9 kHz to 30 MHz

The limits for radiated disturbances are specified in the Tables B.2 and B.3.

Table B.2 – Magnetic field strength limits for induction cooking appliances intended for commercial use

Frequency range MHz	**Limits at 3 m distance** **Quasi-peak** dB(μA/m)
0,009 – 0,070	69
0,070 – 0,150	69 Decreasing linearly with logarithm of frequency to 39
0,150 – 4,0	39 Decreasing linearly with logarithm of frequency to 3
4,0 – 30	3
NOTE 1 The limits of this table apply to induction cooking appliances intended for commercial use and those for domestic use with a diagonal diameter of more than 1,6 m. NOTE 2 The measurements are performed at 3 m distance with a 0,6 m loop antenna as described in 4.2.1 of CISPR 16-1-4. NOTE 3 The antenna shall be vertically installed, with the lower edge of the loop at 1 m height above the floor.	

Table B.3 – Limits of the magnetic field induced current in a 2 m loop antenna for induction cooking appliances for domestic use

Frequency range MHz	**Quasi-peak** dB(μA)	
	Horizontal component	**Vertical component**
0,009 – 0,070	88	106
0,070 – 0,150	88 Decreasing linearly with logarithm of frequency to 58	106 Decreasing linearly with logarithm of frequency to 76
0,150 – 30	58 Decreasing linearly with logarithm of frequency to 22	76 Decreasing linearly with logarithm of frequency to 40
NOTE 1 The limits of this table apply to induction cooking appliances for domestic use which have a diagonal dimension of less than 1,6 m. NOTE 2 The measurement is performed using the loop antenna system (LAS) as described in 7.6 of CISPR 16-2-3.		

B.1.4 Limits for emissions in the frequency range 30 MHz to 1 000 MHz

Limits for the emissions of induction cooking appliances in the frequency range 30 MHz to 1 000 MHz are given in subclause 4.1.2.

B.2 Methods of measurement

The methods of measurement of terminal disturbance voltage are given in Clause 5.

The methods of measurement of emissions in the frequency range from 30 MHz to 1 000 MHz are given in Clauses 6 and 9.

The measurement of radiated disturbances in the frequency range 9 kHz to 30 MHz shall be made in accordance with CISPR 16-2-3.

B.3 Operating conditions

The appliance shall be operated from a supply that provides the rated voltage and the rated frequency of the appliance. The operating conditions of 7.1.4 are not applicable.

The following operating conditions apply to induction hobs.

Cooking zones shall be operated separately in sequence.

Energy controller settings shall be selected to give the maximum input power.

In case of single and multiple-zone induction cooking appliances, each cooking zone shall be operated with an enamelled steel vessel filled with tap water up to 80 % of its maximum capacity.

The position of the vessel shall match the hob marking on the plate. The smallest usable standard vessel shall be placed in the centre of each cooking zone. For the dimension of the vessels, the manufacturer's instructions take precedence.

A single cooking zone with more than one induction coil shall be measured with two load conditions. The first measurement shall be performed with the smallest coil of the zone activated. The second measurement shall be performed with all coils of the zone activated. In each case, the smallest usable standard vessel shall be used (or the smallest vessel according to the manufacturer's instructions, which take precedence) which just activates the smallest coil, or all coils of the zone, respectively.

Cooking zones which are not intended for use with even vessels (e.g. wok-zones) shall be measured with the vessel provided together with the hob, or with the vessel recommended by the manufacturer.

Standard cooking vessels (dimension of the contact surface) are:

– 110 mm;
– 145 mm;
– 180 mm;
– 210 mm;
– 300 mm.

Material of the vessel: the induction cooking method has been developed for ferromagnetic utensils. For this reason, measurements shall be made with enamelled steel vessels.

The vessel bottom shall be concave and shall not deviate from flatness by more than 0,6 % of its diameter at the ambient temperature 20 °C ± 5 °C.

NOTE Some vessels on the market are manufactured from alloys with a ferromagnetic portion. However, these utensils might influence the sensing circuit for vessel displacement.

B.4 Assessment of conformity

The assessment shall be made according to Clause 8.

For equipment in small-scale production, the evaluation for compliance may be made on a single sample.

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AVANT-PROPOS

Le présent amendement a été établi par le sous-comité F du CISPR: Perturbations relatives aux appareils domestiques, aux outils, aux appareils d'éclairage et aux appareils analogues.

Le texte de cet amendement est issu des documents suivants:

FDIS	Rapport de vote
CISPR/F/537/FDIS	CISPR/F/546/RVD

Le rapport de vote indiqué dans le tableau ci-dessus donne toute information sur le vote ayant abouti à l'approbation de cet amendement.

Le comité a décidé que le contenu de cette publication ne sera pas modifié avant la date de stabilité indiquée sur le site web de la CEI sous "http://webstore.iec.ch" dans les données relatives à la publication recherchée. A cette date, la publication sera

- reconduite,
- supprimée,
- remplacée par une édition révisée, ou
- amendée.

SOMMAIRE

Remplacer les Annexes B et C existantes par les nouvelles Annexes B et C suivantes:

Annexe B (normative) Exigences relatives aux appareils de cuisson à induction

Annexe C (informative) Exemple d'utilisation de la méthode du quartile supérieur pour déterminer la conformité aux limites de perturbations

Ajouter la nouvelle Annexe D suivante:

Annexe D (informative) Guide pour la mesure des perturbations discontinues (claquements)

Ajouter les nouveaux Tableaux B.1, B.2 et B.3 suivants:

Tableau B.1 – Valeurs limites de tension perturbatrice aux bornes pour les appareils de cuisson à induction dans la plage de fréquences comprises entre 9 kHz et 30 MHz

Tableau B.2 – Limites du champ magnétique pour les appareils de cuisson à induction destinés à un usage commercial

Tableau B.3 – Limites du courant induit par le champ magnétique dans une antenne cadre de 2 m pour les appareils de cuisson à induction pour usage domestique