

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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

AMENDMENT 2  
AMENDEMENT 2

**Industrial, scientific and medical (ISM) radio-frequency equipment –  
Electromagnetic disturbance characteristics – Limits and methods  
of measurement**

**Appareils industriels, scientifiques et médicaux (ISM) à fréquence  
radioélectrique – Caractéristiques de perturbations électromagnétiques –  
Limites et méthodes de mesure**



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INTERNATIONAL  
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COMMISSION

COMMISSION  
ELECTROTECHNIQUE  
INTERNATIONALE

PRICE CODE  
CODE PRIX

**D**

## FOREWORD

This amendment has been prepared by CISPR subcommittee B: Interference relating to industrial, scientific and medical radio-frequency apparatus, to other (heavy) industrial equipment, to overhead power lines, to high voltage equipment and to electric traction.

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

FDIS	Report on voting
CISPR/B/394/FDIS	CISPR/B/398/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 maintenance result 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- withdrawn,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.

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### 1.2 Normative references

Add the new following reference:

CISPR 16-4-2:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-2: Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements*

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#### 5.1.2.2 Induction cooking appliances for domestic or commercial use

##### Table 2c – Mains terminal disturbance voltage for induction cooking appliances

Replace Table 2c by the following table:

**Table 2c – Mains terminal disturbance voltage for induction cooking appliances**

Frequency range MHz	Induction cooking appliance limits dB( $\mu$ V)			
	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	
	Quasi-peak	Average	Quasi-peak	Average
0,009 to 0,050	110	-	122	-
0,050 to 0,1485	90	-	102	-
	Decreasing linearly with logarithm of frequency to 80		Decreasing linearly with logarithm of frequency to 92	
0,1485 to 0,5	66	56	72	62
	Decreasing linearly with logarithm of frequency to 56	Decreasing linearly with logarithm of frequency to 46	Decreasing linearly with logarithm of frequency to 62	Decreasing linearly with logarithm of frequency to 52
0,5 to 5	56	46	56	46
5 to 30	60	50	60	50

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**6.5.4 Microwave cooking appliances**

*Replace the second sentence of the first paragraph by the following new text:*

The water container shall be a cylindrical container of borosilicate glass of an external diameter of 190 mm  $\pm$  5 mm and a height of 90 mm  $\pm$  5 mm.

Before the measurement, preliminary operation of the microwave oven under test shall be performed until the magnetron oscillating frequency is stabilized. More than 5 min preheating time is required.

*Add the following sentence as a note in order to ensure a secure measurement:*

NOTE During the measurement, the water load should be exchanged to cold water before it starts to boil.

**6.5.6 Single and multiple-zone induction cooking appliances**

*Add, after the 6th paragraph ("The smallest usable standard ... manufacturer's instructions take precedence.") the following new paragraph:*

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.

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*Insert, after subclause 6.5.7, the following new subclause 6.6:*

## **6.6 Recording of test-site measurement results**

Any results obtained from measurements of conducted and/or radiated radio-frequency disturbances shall be recorded in the test report. If the results are not recorded in a continuous way and/or in graphical form over the frequency range observed, then the minimum requirements for the recordings set out in 6.6.1 and 6.6.2 shall apply.

In addition, the test report shall include the measurement instrumentation uncertainty as specified in CISPR 16-4-2

### **6.6.1 Conducted emissions**

Of those conducted emissions above ( $L - 20$  dB), where  $L$  is the limit level in logarithmic units, the record shall include at least the disturbance levels and the frequencies of the six highest disturbances in each observed frequency band from each mains port belonging to the EUT. The record shall also include an indication of which conductor of the mains port carried the observed disturbance(s).

### **6.6.2 Radiated emissions**

Of those radiated emissions above ( $L - 20$  dB), where  $L$  is the limit level in logarithmic units, the record shall include at least the disturbance levels and the frequencies of the six highest disturbances in each observed frequency band. The record shall include the antenna polarization, antenna height and turntable rotation position if applicable for each reported disturbance. In case of test site measurements, the measurement distance actually selected and used (see 5.2.2) shall also be recorded in the test report.

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## **11 Assessment of conformity of equipment**

*Insert, after subclause 11.3, page 65, the following new subclause 11.4:*

### **11.4 Measurement uncertainty**

The results of measurements of emissions from ISM equipment shall reference the measurement instrumentation uncertainty considerations contained in CISPR 16-4-2.

Determining compliance with the limits in this standard shall be based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty. However the measurement uncertainty of the measurement instrumentation and its associated connections between the various instruments in the measurement chain shall be calculated and both the measurement results and the calculated uncertainty shall appear in the test report.

NOTE For *in situ* measurements, the contribution of uncertainty due to the site itself is excluded from the uncertainty calculation.

