

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

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

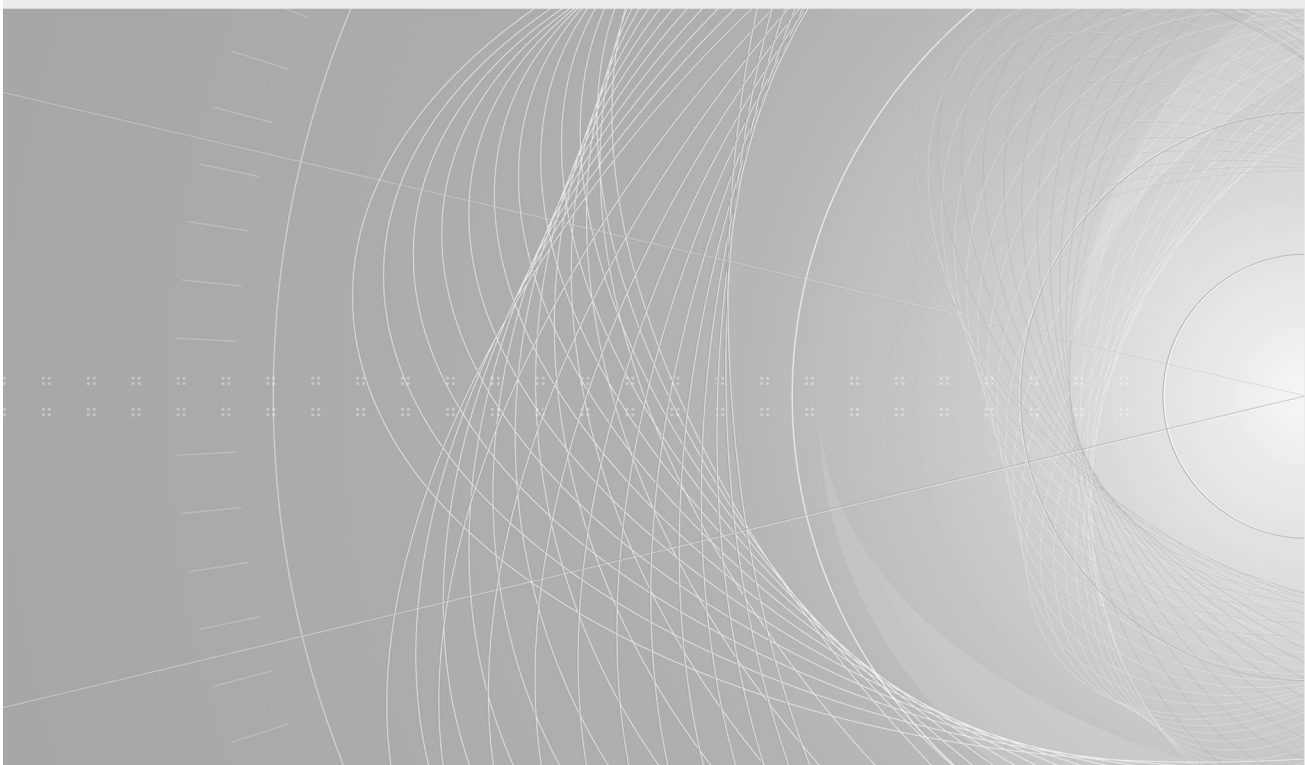
AMENDMENT 1  
AMENDEMENT 1

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

**Sound and television broadcast receivers and associated equipment – Immunity characteristics – Limits and methods of measurement**

CISPR 20:2006/AMD1:2013  
<https://standards.iteh.ai/catalog/standards/sist/faa8f928-3660-43d6-a6d0-6330c229ddb1/cispr-20-2006-amd1-2013>

**Récepteurs de radiodiffusion et de télévision et équipements associés – Caractéristiques d'immunité – Limites et méthodes de mesure**





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AMENDMENT 1 **iTeh STANDARD PREVIEW**  
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**Sound and television broadcast receivers and associated equipment – Immunity characteristics – Limits and methods of measurement**

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**Récepteurs de radiodiffusion et de télévision et équipements associés – Caractéristiques d'immunité – Limites et méthodes de mesure**

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ELECTROTECHNICAL  
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## FOREWORD

This amendment has been prepared by CISPR subcommittee I: Electromagnetic compatibility of information technology equipment, multimedia equipment and receivers.

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

FDIS	Report on voting
CISPR/I/444/FDIS	CISPR/I/460/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 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- withdrawn,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.

**iTeh STANDARD PREVIEW**  
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## 2 Normative references

[CISPR 20:2006/AMD1:2013](https://standards.iteh.ai/catalog/standards/sist/faa8f928-3660-43d6-a6d0-c376-18d5-006-amd1-2013)

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*Add the following new reference to the existing list:* [c376-18d5-006-amd1-2013](https://standards.iteh.ai/catalog/standards/sist/faa8f928-3660-43d6-a6d0-c376-18d5-006-amd1-2013)

IEC 61000-4-6:2008, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

### 4.1.2 Performance criterion B

*Replace the existing text of this subclause by the following new text:*

During the application of the test disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test.

After the test, the equipment shall continue to operate as intended without operator intervention; no degradation of performance or loss of function is allowed, below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.

If the minimum performance level (or the permissible performance loss), or recovery time, is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

**Table 2 – Antenna port**

Replace the third and fourth existing rows of this table as follows:

RF voltage Common mode AM modulated carrier	See 4.3.3, Table 8 1 kHz, 80 % depth	See 5.4	FM radio antenna Digital radio antenna PC tuner cards for FM and TV Car radio FM Satellite radio TV antenna Satellite TV Ass. video tun. Antenna AM radio antenna Car radio AM	A
Screening effectiveness	See 4.3.4, Table 8a	See 5.5	FM radio antenna TV antenna Digital radio antenna	see Table 8a

**Table 3 – Limits of input immunity from unwanted signals outside the FM range** (see also 5.3.1.2 for the wanted signal)

Replace, in the second existing column, the following values as follows:

66,2 <sup>a</sup>	by	$f_n - 2f_i^a$	and	$f_n + 2f_i^b$
76,9	by	$f_n - f_i^a$	and	$f_n + f_i^b$
129,3 <sup>b</sup>	by	$f_n + 2f_i^b$	and	$f_n + f_i^b$
118,6	by	$f_n + f_i^b$		

Add, at the end of the existing table, the following new text:

**Key**

$f_n$  is the wanted signal frequency

$f_i$  is the intermediate frequency

**Table 10 – Audio input/output port (excluding loudspeaker and headphone)**

Replace the second existing row of this table as follows:

RF voltage Differential mode AM modulated signal	See 4.6 Table 13 1 kHz, 80 % depth	See 5.7	Mains powered: – FM radio antenna – Digital radio antenna – TV antenna – Ass. video tun. ant. – Ass. Video – Ass. audio, – Ass. other (e.g. audio amplifier) – Camcorders, in playback-mode – Satellite TV – Satellite radio	A
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**Table 11 – Power input port**

Replace the second and third existing rows of this table as follows:

RF voltage Common mode AM modulated signal	See 4.6 Table 12 1 kHz, 80 % depth	See 5.7	Mains powered: – FM radio antenna – Digital radio antenna – TV antenna – Ass. video tun. ant. – Ass. video – Ass. audio, – Ass. other (e.g. audio amplifier) – Camcorders, in playback-mode, – Satellite TV – Satellite radio	A
Electrical fast transients Common mode	1 kV(peak) Tr/Th: 5/50 ns 5 kHz repetition frequency	See 5.7 Direct injection Coupling/decoupling network		B

**Table 14 – Additional unwanted signal frequencies to be excluded in tests on sound and television reception functions**

Add, in the second existing row of this table, the words “Digital radio antenna” below the words “FM sound receivers”.

**Table 15 – Enclosure port**

Replace the second and third existing rows of this table as follows:

RF e.m. field AM modulated carrier	See 4.7.1 1 kHz, at 80 % depth	See 4.7.1 and 5.8	Mains powered: – FM radio antenna – Digital radio antenna – TV antenna – Ass. video tun. ant. – Ass. Video – Ass. Audio – Ass. other (e.g. audio amplifier) – Camcorders, in playback-mode, – Satellite TV – Satellite radio	A
RF e.m. field Keyed carrier <sup>a</sup>	900 MHz, 3 V/m, duty cycle 1/8, 217 Hz repetition frequency	IEC 61000-4-3 With measurement conditions of 5.8.4 and Table 23. Filter of B.2 replaced by the one in B.4.		

Replace, in the existing footnote to table <sup>a</sup>, the last paragraph by the following new paragraph:

In any situation where it is necessary to re-test the equipment to show compliance with this publication, the test method, configuration and parameters originally chosen shall be used in order to guarantee consistency of the results, unless it is agreed by the manufacturer to do otherwise.

<https://standards.iteh.ai/catalog/standards/sist/faa8f928-3660-43d6-a6d0-6350c229dd01/cispr-20-2006-amd1-2013>

Add, at the end of the existing table, the following new note:

NOTE In Europe (EEA) additional radiated immunity requirements are specified in EN 55020:2007/A11:2011. These facilitate coexistence of cable services and broadband mobile services in the frequency range 790 MHz to 862 MHz.

#### 4.7.1.1 FM sound broadcast receivers

Replace the existing title of this subclause by the following new title:

#### 4.7.1.1 FM sound broadcast receivers and digital radio antenna equipment

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

For equipment with a FM or digital sound broadcast reception function Table 16 applies.

#### Table 16 – Limits of immunity to ambient electromagnetic fields of FM reception functions of sound receivers

Replace the existing title of this table by the following new title:

#### Table 16 – Limits of immunity to ambient electromagnetic fields of FM and digital radio reception functions of sound receivers

Delete, in the existing note of this table, the words "(= 10,7 MHz)".

### 5.2.2 Audio power-output measurement

*Replace the last existing paragraph of this subclause by the following new paragraph:*

In any situation where it is necessary to re-test the equipment to show compliance with this publication, the test method, configuration and parameters originally chosen shall be used in order to guarantee consistency of the results, unless it is agreed by the manufacturer to do otherwise.

### 5.7.1 Measuring circuit and set-up

*Add, after the second existing paragraph of this subclause, the following new paragraph:*

If the equipment under test is classified as safety class 1 equipment (with PE connector) the mains stop filter (MSF) must be replaced by a Coupling/Decoupling Network (CDN-M3) according to IEC 61000-4-6. This CDN has to be suitable for the frequency range up to 150 MHz according to Table B.1 of IEC 61000-4-6:2008.

*Add, after the fourth paragraph of this subclause starting with "Annex D..", the following new paragraphs:*

To prevent a short circuit, especially with bridge amplifiers, the minus of loudspeaker terminals shall not be connected directly to the metallic ground plane.

Also parts 8, 12, 13, 14, 15 and 17 in Figure 8 shall not connect the loudspeaker return wire to the metallic ground plane or PE. For the return path of the injected RF current a 2,2 nF capacitor shall be mounted between the minus of the loudspeaker terminal and the ground terminal of network RC0.

### 6.1 Significance of a CISPR limit

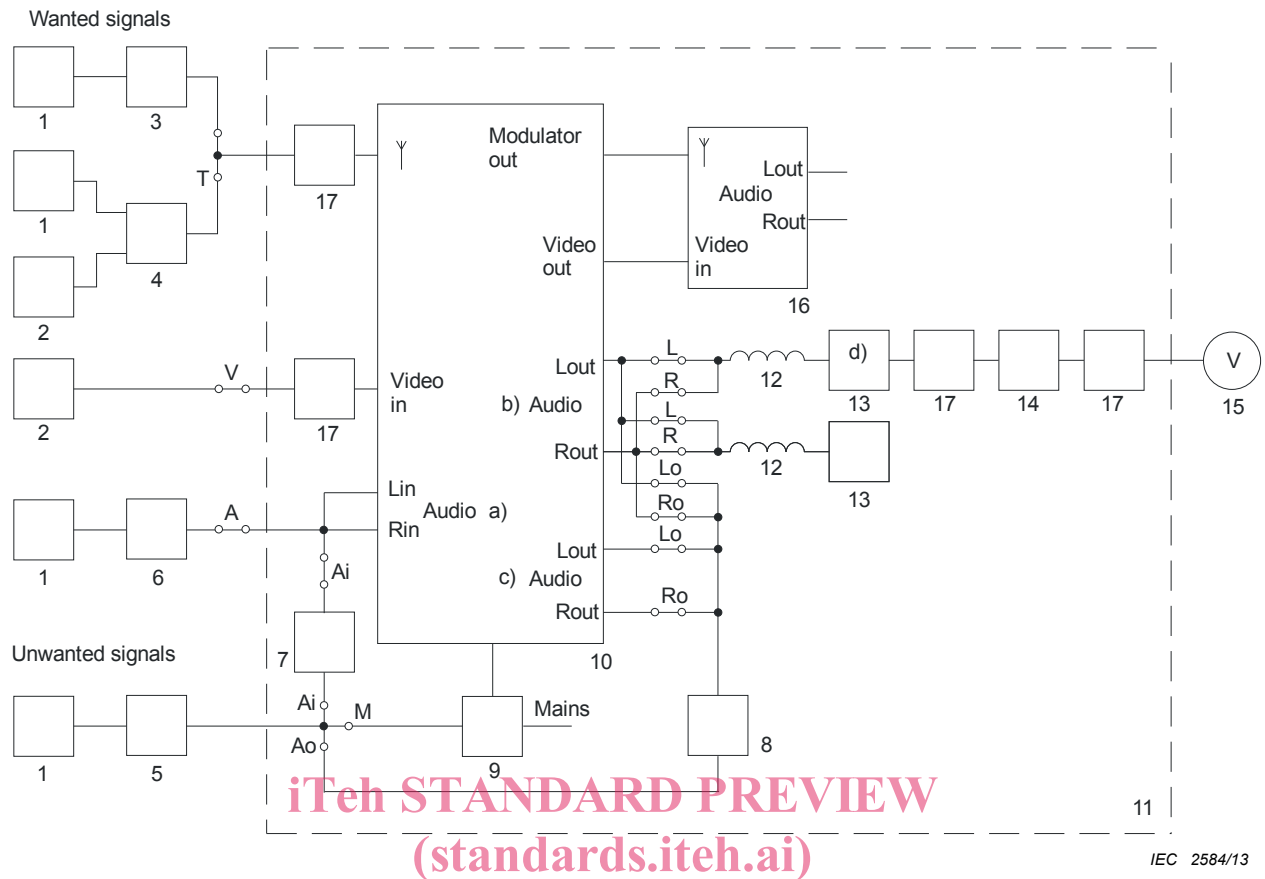
*Replace the last existing paragraph of this subclause by the following new paragraph:*

Non-compliance with this standard can be shown only after tests have been carried out in accordance with 6.1a).

### Figure 8 – Measurement of immunity from induced voltages at mains input, headphones, speakers, audio output, audio input

*Replace the existing figure by the following new figure:*





**Figure 10 – Measurement of the immunity of broadcast receivers from radiated fields in the frequency range 0,15 MHz to 150 MHz in an open stripline**

Add, after the existing footnote a), the following new text:

The signal inputs and outputs of the EUT shall be supplied or terminated with the appropriate impedance as specified by the manufacturer.

### Annex F – Calibration of the open stripline

Replace, in the existing annex, the symbol " $\Delta N_{Br}$ " by " $\Delta_{N_{Br}}$ " (2 occurrences).

### Bibliography

Add the following new reference to the existing list:

EN 55020:2007/A11:2011, *Sound and television broadcast receivers and associated equipment – Immunity characteristics – Limits and methods of measurement*