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INTERNATIONAL STANDARD

NORME INTERNATIONALE

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

AMENDMENT 1
AMENDEMENT 1

Specification for radio disturbance and immunity measuring apparatus and methods –
Part 1-3: Radio disturbance and immunity measuring apparatus – Ancillary equipment – Disturbance power

**Spécifications des méthodes et des appareils de mesure des perturbations radioélectriques et de l'immunité aux perturbations radioélectriques –
Partie 1-3: Appareils de mesure des perturbations radioélectriques et de l'immunité aux perturbations radioélectriques – Matériels auxiliaires – Puissance perturbatrice**

CISPR 16-1-3:2004-06/AMD1:2016-03(en-fr)

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FOREWORD

This amendment has been prepared by CISPR subcommittee A: Radio-interference measurements and statistical methods, of IEC technical committee CISPR: International special committee on radio interference.

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

CDV	Report on voting
CIS/A/1111/CDV	CIS/A/1138/RVC

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 website 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- withdrawn,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.

3.2 Abbreviations

Delete, from the existing list, the abbreviation "RTF" *and associated term* "Reference transfer factor".

4.3 The absorbing clamp assembly calibration methods and their relations

Replace, in the existing second paragraph, the two occurrences of the word "three" *by the word* "two".

Replace, in the last sentence of the existing fourth paragraph, the word "three" *by the word* "two".

Delete the entire item c) (entitled "The reference device method"*) and all corresponding text, including Equations (9) and (10).*

Replace, in the paragraph immediately following the existing item c), the two occurrences of the word "three" *by the word* "two".

Delete, in the fourth paragraph following the existing item c), the last sentence "Similarly, the reference transfer factor RTF is determined by" *and corresponding Equation (12).*

Delete the entire paragraph immediately following Equation (12).

Replace, in the last paragraph of this subclause, the second sentence by the following new sentence:

The jig method gives the CF_{jig} from which the original absorbing clamp factor can be calculated using Equation (11).

Add, at the end of this subclause, the following new paragraph:

Absorbing clamps with different geometries, different arrangement and material of ferrites, different current probes as well as different housing material do require a separate determination of the JTF. A new determination is also required if a different type of jig is used, e.g. larger geometry.

4.5.3 Requirements for the ACTS

Add, after the first sentence of item e), the following new text:

It is also permissible to use clamp factors provided on a calibration certificate by a calibration laboratory. However, such clamp factors that are used as a reference for an ACTS validation shall be determined only using the original calibration method.

4.6.1 Overview

Delete, in the second paragraph, the phrases "and the reference device calibration method" *as well as* "and the reference device clamp factor".

Figure 1 − Overview of the absorbing clamp measurement method and the associated calibration and validation procedures

In the figure, delete the entire item d).

Table 1 − Overview of the characteristics of the three-clamp calibration methods and their relation

In the title, replace the phrase "three-clamp" *by the new phrase* "two clamp".

In the table, delete the entire third row (the row having the name "The reference device method"*).*

Figure 3 – Schematic overview of the clamp calibration methods

Delete Figure 3d.

Delete, from the key in this figure, the symbol "CF_{ref}"

*In the note, delete "*and 3d*", and replace the word "*three*" by the new word "*two*".*

B.2 Calibration methods of the absorbing clamp assembly

Replace, in the first sentence of the first paragraph, the words "For all three" *by the new word* "Both".

B.2.1.1 Calibration set-up and equipment

Replace, in the first sentence of the second dashed item, the phrase "larger than" *by the new word* "of".

Add, after the second sentence of the third dashed point, the following new sentence:

For practical reasons it is recommended to use a flexible lead under test.

Add, after the dashed list, the following new note:

NOTE A good match with the requirement of 4 mm diameter can be achieved by using the outer screen of a coaxial cable (for example RG-58).

B.2.1.2 Calibration procedure

Add, after the second sentence of the third paragraph, the following new third sentence:

The receiver cable shall be suspended such that it is always spaced at a minimum of 200 mm from the horizontal ground plane throughout the entire calibration process.

B.2.2.2 Calibration procedure

Add, after the last sentence of the fourth paragraph, the following new sentence:

The receiver cable shall be treated with a SAD. The SAD shall be positioned as shown in Figures B.3 and B.4.

B.2.3 The reference device calibration method

Delete this entire subclause.

B.2.4 Measurement uncertainty of the absorbing clamp calibration

Add, immediately after the second bulleted list (pertaining to the jig calibration method) the following new note:

NOTE It is assumed that the measurement instrumentation uncertainty of the required correlation process with the original calibration method is sufficiently small such that there is no appreciable contribution to the uncertainty of the jig calibration method.

Delete the entire third dashed list ("The reference device calibration method").

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

Detailed guidance on the treatment of the measurement instrumentation uncertainty for disturbance power measurements is given in CISPR 16-4-2.

Figure B.3 − Side view of the calibration jig

Replace the existing Figure B.3 by the following new figure:

Dimensions in millimetres

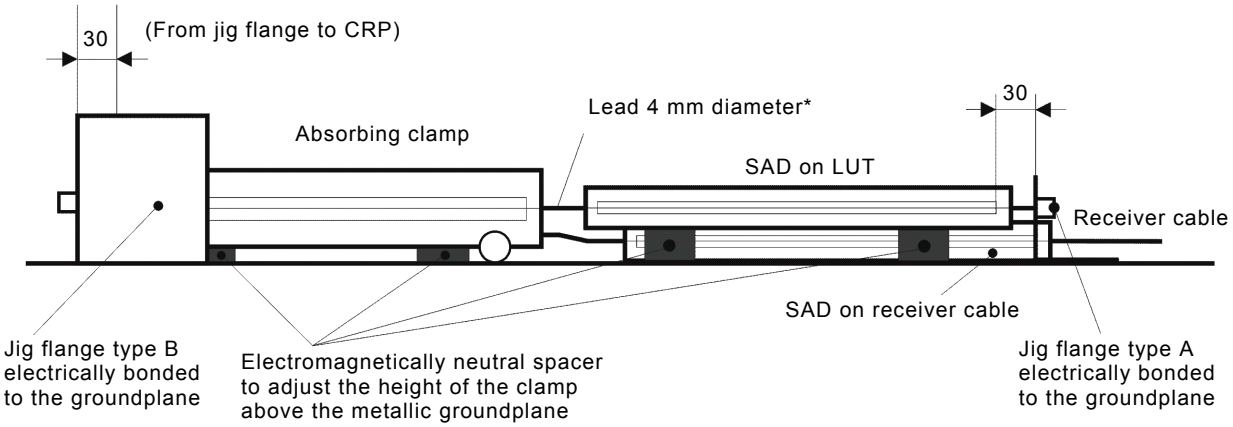


Figure B.3 – Side view of the calibration jig

Figure B.4 − Top view of the jig

Replace the existing Figure B.4 by the following new figure:

Dimensions in millimetres

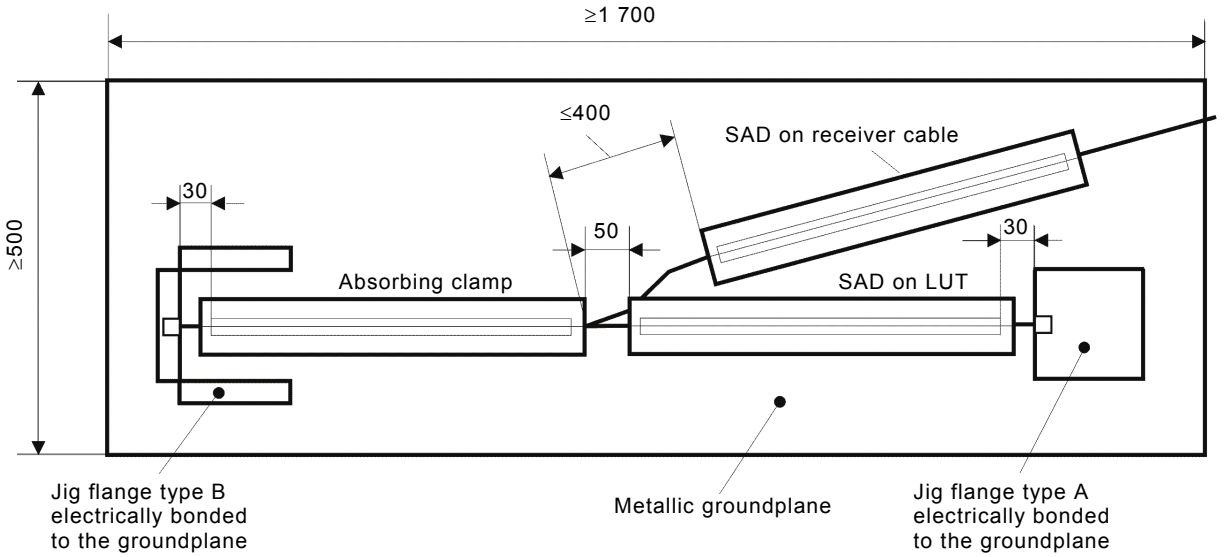
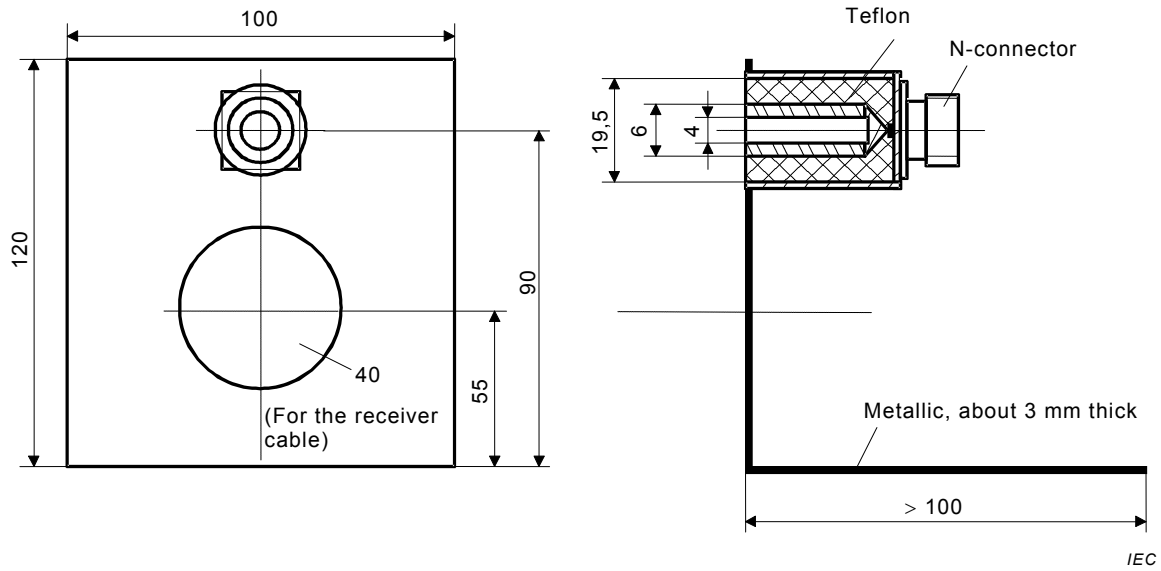


Figure B.4 – Top view of the jig

Figure B.5 − View of the jigs vertical flange

Replace the existing Figure B.5 by the following new Figure B.5, consisting of Figures B.5a and B.5b:

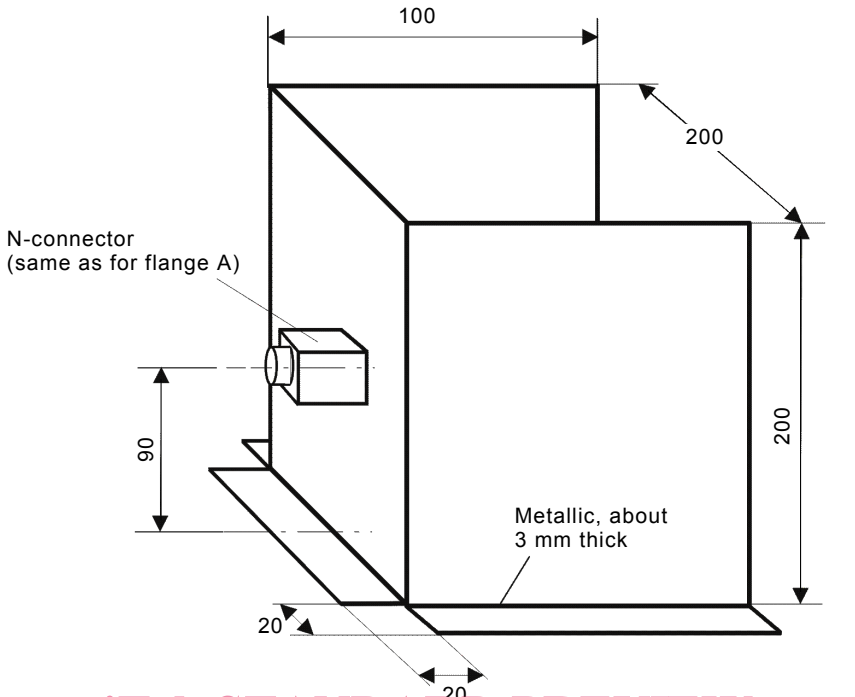
Dimensions in millimetres



The bottom sides have to be electrically bonded to the metallic ground plane.

Figure B.5a – Vertical flange type A (SAD side)

Dimensions in millimetres



The bottom sides have to be electrically bonded to the metallic ground plane.

Figure B.5b – Vertical flange type B (clamp EUT side)

Figure B.5 – View of the jigs vertical flanges

Figure B.6 – Test set-up for the reference device calibration method

Delete this figure.

Figure B.7 – Specification of the reference device

Delete this figure.

Figure B.8 – Measurement set-up of the decoupling factor *DF*

Replace the existing Figure B.8b (in Corrigendum 1) by the following new figure and title:

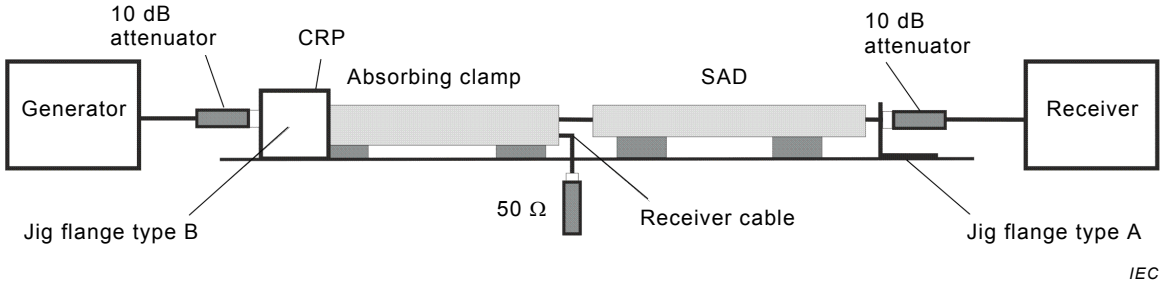


Figure B.8b – Measurement with the absorbing clamp and SAD placed in the jig

Figure B.9 – Measurement set-up of the decoupling factor *DR*

Replace the existing Figure B.9 by the following new figure:

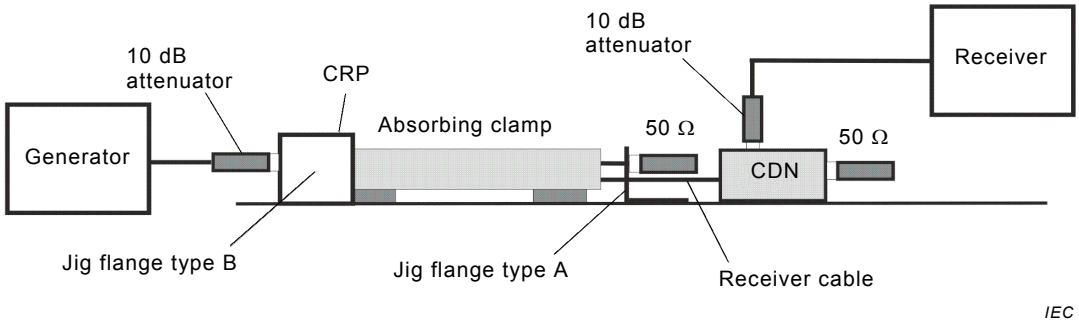


Figure B.9 – Measurement set-up of the decoupling factor *DR*

C.3 Validation measurement procedure

Add, between the second and third paragraphs of Step 2, the following new paragraph:

If a CDN is used for measuring the EUT, it should also be used for the ACTS validation (for CDN set-up see B.2.1.1 and Figure B.1).

Figure C.1 – Test set-ups for the site attenuation measurement for clamp site validation using the reference device

In the existing title, delete the phrase "using the reference device".

Add, after Annex C, the following new bibliography:

Bibliography

[1] Ryser, Heinrich, Uncertainty Contributions to the Clamp Factor CF of the Absorbing Clamp, *Proceedings of 18th International Zurich Symposium on EMC*, Munich 2007.

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