

TECHNICAL REPORT



INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

**Television broadcast receivers and associated equipment – Immunity
characteristics – Methods of objective picture assessment**



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**TELEVISION BROADCAST RECEIVERS AND ASSOCIATED EQUIPMENT –
IMMUNITY CHARACTERISTICS –
METHODS OF OBJECTIVE PICTURE ASSESSMENT**

FOREWORD

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CISPR 29, which is a technical report, has been prepared by CISPR subcommittee I: Electromagnetic compatibility of information technology equipment, multimedia equipment and receivers.

This second edition cancels and replaces the first edition published in 2004. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) update of the references, and
- b) editorial improvements.

The text of this Technical Report is based on the following documents:

Draft TR	Report on voting
CIS/1/634/DTR	CIS/1/638/RVDTR

Full information on the voting for the approval of this Technical Report can be found in the report on voting indicated in the above table.

This document has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific document. At this date, the document will be

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TELEVISION BROADCAST RECEIVERS AND ASSOCIATED EQUIPMENT – IMMUNITY CHARACTERISTICS – METHODS OF OBJECTIVE PICTURE ASSESSMENT

1 Scope

This document describes the algorithms used for objective picture assessment in immunity tests of analogue and digital TV broadcast receivers and associated equipment.

The algorithms used were developed on the basis of the specifications originally included in Annex K of CISPR 20:2002/AMD2:2004, the later edition of which has been replaced by CISPR 35:2016. The method of objective picture assessment described in that annex employs the same interference mechanism and is based on the same wanted signal definition as specified in CISPR 35 for subjective picture assessment. Objective picture assessment, therefore, constitutes an alternative to the subjective method and offers the advantage of direct correlation to the subjective method.

2 Normative references

There are no normative references in this document.

3 Abbreviated terms

For the purposes of this document, the following abbreviated terms apply.

DCT discrete cosine transform

EUT equipment under test

HSL hue, saturation, luminance (colour space model)

4 Test method for objective picture assessment

Objective picture assessment is based on comparison of the picture displayed on an EUT with a reference picture or a reduced reference picture.

Both the reference picture and the test picture can be recorded from the EUT monitor by means of a video camera or at the EUT's video output if it has one.

The recorded test picture is digitised, and deviations from a stored reference picture are determined by means of the picture assessment algorithms described below. An alternative methodology computes the deviation from specific features determined on both the reference picture and the picture to assess.

5 Methodology for detection of analogue picture degradations

5.1 General

Analogue picture degradations are defined as:

- superimposed patterns, moiré patterns;
- loss of luminance and contrast;
- loss of colour;