

INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

**Specification for radio disturbance and
immunity measuring apparatus and methods –**

**Part 2:
Methods of measurement of
disturbances and immunity**

*Spécification pour les appareils et méthodes de mesure
des perturbations radioélectriques et de l'immunité –*

*Partie 2:
Méthodes de mesure des perturbations
et de l'immunité*



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CONTENTS

FOREWORD	6
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SECTION 1: GENERAL

1.1 Scope	8
1.2 Normative references	8
1.3 Definitions	8

SECTION 2: DISTURBANCE MEASUREMENTS

2.1 Types of disturbance to be measured	12
2.1.1 Types of disturbance	12
2.1.2 Detector functions.....	13
2.2 Connection of measuring equipment.....	13
2.2.1 Connection of associated equipment.....	13
2.2.2 Connections to RF reference ground.....	13
2.2.3 Connection between the EUT and the artificial mains network	13
2.3 General measurement requirements and conditions.....	14
2.3.1 Disturbance not produced by the equipment under test	14
2.3.2 Measurement of continuous disturbance	14
2.3.3 Operating conditions of the EUT	15
2.3.4 Interpretation of measuring results.....	15
2.3.5 Measurement times and scan rates for continuous disturbance	16
2.4 Measurement of disturbances conducted along leads, 9 kHz to 30 MHz	22
2.4.1 Introduction	22
2.4.2 Measuring equipment (receivers, etc.)	22
2.4.3 Associated measuring equipment.....	23
2.4.4 Equipment test configuration.....	25
2.4.5 System test configuration for conducted emissions measurements.....	41
2.4.6 <i>In situ</i> measurements	44
2.5 Measurements using the absorbing clamp, 30 MHz to 1 000 MHz	46
2.5.1 General	46
2.5.2 Measurements.....	46
2.6 Measurement of radiated disturbances	47
2.6.1 Introduction	47
2.6.2 Field-strength measurements in the frequency range 9 kHz to 1 GHz	48
2.6.3 Field-strength measurements in the frequency range 1 GHz to 18 GHz	56
2.6.4 Substitution method of measurement in the frequency range of 30 MHz to 18 GHz.....	58
2.6.5 Measurements of <i>in situ</i> equipment.....	60
2.6.6 Measurement in a loop antenna system	67

SECTION 3: IMMUNITY MEASUREMENTS

3.1 Immunity test criteria and general measurement procedures.....	69
3.1.1 General measurement method.....	69
3.1.2 Immunity degradation criteria	71
3.1.3 Product specification details	71

3.2	Method of measurement of immunity for conducted signals.....	72
3.2.1	Coupling units.....	74
3.2.2	Measurement set-up.....	74
3.2.3	Method of measurement of input immunity.....	74
3.3	Method of measurement of immunity to radiated electric field interference.....	76
3.3.1	Measurements using the TEM mode.....	76
3.3.2	Measurement using absorber-lined shielded rooms.....	79
3.3.3	Measurements using an open area test site (OATS).....	82

SECTION 4: AUTOMATED MEASUREMENTS

4.1	Automated measurements Automated measurement of emissions.....	84
4.1.1	Introduction: Precautions for automating measurements.....	84
4.1.2	Generic measurement procedure.....	84
4.1.3	Prescan measurements.....	85
4.1.4	Data reduction.....	87
4.1.5	Emission maximization and final measurement.....	87
4.1.6	Post processing and reporting.....	88

SECTION 5: FACTORS INFLUENCING MEASUREMENT ACCURACY

5.1	Factors influencing measurement accuracy.....	88
5.1.1	Accuracy of measurements.....	89
5.1.2	Avoidance of extraneous signals and effects.....	89

Annex A (informative)	Guidelines to connection of electrical equipment to the artificial mains network (see 2.2).....	90
Annex B (informative)	Use of spectrum analyzers and scanning receivers (see 2.3).....	98
Annex C (informative)	Historical background to the method of measurement of the interference power produced by electrical household and similar appliances in the VHF rang (see 3.1).....	101
Annex D (informative)	Decision tree for use of detectors for conducted measurements (see 2.4.2.1).....	103
Annex E (informative)	Measurement of disturbances in the presence of ambient emissions.....	105
Annex F (informative)	Example of the uncertainty budget.....	118

Figure 1 – Measurement of a combination of a CW signal (“NB”) and an impulsive signal (“BB”) using multiple sweeps with maximum hold.....	19
Figure 2 – Example of a timing analysis.....	20
Figure 3 – A broadband spectrum measured with a stepped receiver.....	21
Figure 4 – Intermittent narrowband disturbances measured using fast short repetitive sweeps with maximum hold function to obtain an overview of the emission spectrum.....	21
Figure 5 – Test configuration: table-top equipment for conducted disturbance measurements on power mains (see 2.4.4.1 and 2.4.4.2).....	26
Figure 6 – Optional test configuration for an EUT with only a power cord attached (see 2.4.4.1).....	28
Figure 7 – Test configuration: floor-standing equipment (see 2.4.4.1 and 2.4.5.2.2).....	29
Figure 8 – Test configuration: floor-standing and table-top equipment (see 2.4.4.1 and 2.4.5.2.2).....	30

Figure 9 – Schematic of conducted disturbance voltage test configuration (see 2.4.4.1 and 2.4.5.2.2).....	31
Figure 10 – Equivalent circuit for measurement of common mode disturbance voltage for Class I (grounded) EUT (see 2.4.4.2.1).....	32
Figure 11 – Equivalent circuit for measurement of common mode disturbance voltage for Class II (grounded) EUT (see 2.4.4.2.2).....	34
Figure 12 – RC element for artificial hand (see 2.4.4.2.3).....	35
Figure 13 – Portable electric drill with artificial hand (see 2.4.4.2.3).....	35
Figure 14 – Portable electric saw with artificial hand (see 2.4.4.2.3).....	35
Figure 15 – Schematic diagram for simulation of telecommunication lines (T-1 network or telecom impedance simulation network) (see 2.4.4.3.2).....	38
Figure 16 – Measuring example for voltage probes (see 2.4.4.4.1).....	39
Figure 16a – Measurement arrangement for two-terminal regulating controls	39
Figure 17 – Test configuration for absorbing clamp (see 2.5.2)	47
Figure 18 – Concept of electric field strength measurements made on an open area test site with the direct and reflective rays arriving at the receiving antenna (see 2.6.2.2)	48
Figure 19 – Typical test set-up in FAR, where a, b, c and e depend on the room performance.....	52
Figure 20 – Typical test set-up for table-top equipment within the test volume of a FAR	54
Figure 21 – Typical test set-up for floor standing equipment within the test volume of a FAR.....	55
Figure 22 – Method of measurement – Substitution method (see 2.6.4.1 and 2.6.4.3).....	59
Figure 23 – Determination of the transition distance.....	66
Figure 24 – Concept of magnetic field induced current measurements made with the loop antenna system (see 2.6.6)	68
Figure 25 – Fundamental concept of immunity measurement (see 3.1.1).....	70
Figure 26 – General principle of the current-injection method (see 3.2)	73
Figure 27 – Measuring set-up for input immunity measurement of sound broadcast receivers (see 3.2.3.1).....	75
Figure 28 – Measuring set-up for input immunity measurement of television broadcast receivers (see 3.2.3.2).....	76
Figure 29 – Example of the arrangement of an open stripline TEM device in combination with absorbing panels inside a screened room with dimensions 3 m × 3,5 m (see 3.3.1.1)	77
Figure 30 – Measuring set-up for the immunity of broadcast receivers to ambient fields in the frequency range of 0,15 MHz – 150 MHz (see 3.3.1.1)	78
Figure 31 – Measuring circuit for the immunity of sound broadcast receivers to ambient fields (see 3.3.1.1.1).....	79
Figure A.1 (see A.2.1)	90
Figure A.2 (see A.2.1)	91
Figure A.3 (see A.2.2)	91
Figure A.4 (see A.2.2)	91
Figure A.5 (see A.2.3.1)	92
Figure A.6 (see A.2.3.2)	92
Figure A.7 (see A.2.3.3)	93
Figure A.8 – AMN configurations (see A.5)	97
Figure D.1 – Decision tree for optimizing speed of conducted disturbance measurements with peak, quasi-peak and average detectors.....	103
Figure E.1 – Flow diagram for the selection of bandwidths and detectors and the estimated measurement errors due to that selection	107
Figure E.2 – Relative difference in adjacent emission amplitudes during preliminary testing	108

Figure E.3 – Disturbance by an unmodulated signal (dotted line).....	109
Figure E.4 – Disturbance by an amplitude-modulated signal (dotted line)	110
Figure E.5 – Indication of an amplitude-modulated signal as a function of modulation frequency with the QP detector in CISPR bands B, C and D	110
Figure E.6 – Indication of a pulse-modulated signal (pulse width 50 μ s) as a function of pulse repetition frequency with peak, QP and average detectors	111
Figure E.7 – Disturbance by a broadband signal (dotted line)	112
Figure E.8 – Unmodulated EUT disturbance (dotted line)	112
Figure E.9 – Amplitude-modulated EUT disturbance (dotted line)	113
Figure E.10 – Increase of peak value with superposition of two unmodulated signals (U_a – level of ambient emission; U_i – level of EUT disturbance)	115
Figure E.11 – Determination of the amplitude of the disturbance signal by means of the amplitude ratio d and the factor i	115
Figure E.12 – Increase of average indication measured with a real receiver and calculated from equation (E.8)	116
Table 1 – Minimum scan times for the three CISPR bands with peak and quasi-peak detectors	16
Table 2 – Recommended antenna heights to guarantee signal interception (for prescan) in the frequency range 30 MHz to 1 000 MHz	86
Table A.1 (see A.4.2).....	95
Table A.2 (see A.4.2).....	96
Table E.1 – Combinations of EUT disturbance and ambient emissions	106
Table E.2 – Measurement error depending on the detector type and on the combination of ambient and disturbing signal spectra	117
Table F.1 – Uncertainty budget for emission measurements in a 3 m FAR.....	118

INTERNATIONAL ELECTROTECHNICAL COMMISSION
INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

**SPECIFICATION FOR RADIO DISTURBANCE AND IMMUNITY
MEASURING APPARATUS AND METHODS –**

**Part 2: Methods of measurement of
disturbances and immunity**

FOREWORD

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International Standard CISPR 16-2 has been prepared by CISPR, subcommittee A: Radio interference measurements and statistical methods.

This second edition cancels and replaces the first edition published in 1996, Amendment 1 (1999) and Amendment 2 (2002).

The document CISPR/A/443/FDIS, circulated to the National Committees as Amendment 3, led to the publication of the new edition.

The text of this standard is based on the first edition, its Amendment 1 and Amendment 2 and on the following documents:

FDIS	Report on voting
CISPR/A/443/FDIS	CISPR/A/463/RVD

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

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

This standard should be read in conjunction with CISPR 16-1.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

SPECIFICATION FOR RADIO DISTURBANCE AND IMMUNITY MEASURING APPARATUS AND METHODS –

Part 2: Methods of measurement of disturbances and immunity

1 Section 1: General

1.1 Scope

This part of CISPR 16 specifies the methods of measurement of EMC phenomena in the frequency range 9 kHz to 18 GHz.

1.2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60083:1997, *Plugs and socket-outlets for domestic and similar general use standardized in member countries of IEC – Standards*

IEC 60364-4: *Electrical installations of buildings – Part 4: Protection for safety*

CISPR 11:1997, *Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement*

CISPR 13:2001, *Sound and television broadcast receivers and associated equipment – Radio disturbance characteristics – Limits and methods of measurement*

CISPR 14-1:2000, *Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission*

CISPR 16-1:1999, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1: Radio disturbance and immunity measuring apparatus*

CISPR 22:1997, *Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement*

ITU-R Recommendation BS.468-4: *Measurement of audio-frequency noise voltage level in sound broadcasting*

1.3 Definitions

For the purpose of this part of CISPR 16, the definitions of IEC 60050(161) apply, as well as the following:

1.3.1

associated equipment

- 1) Transducers (e.g. probes, networks and antennas) connected to a measuring receiver or test generator
- 2) Transducers (e.g. probes, networks, antennas) which are used in the signal or disturbance transfer between an EUT and measuring equipment or a (test-) signal generator

1.3.2

EUT

the equipment (devices, appliances and systems) subjected to EMC (emission and immunity) compliance tests

1.3.3**product publication**

publication specifying EMC requirements for a product or product family, taking into account specific aspects of such a product or product family

1.3.4**emission limit (from a disturbing source)**

the specified maximum emission level of a source of electromagnetic disturbance

[IEV 161-03-12]

1.3.5**immunity limit**

the specified minimum immunity level

[IEV 161-03-15]

1.3.6**ground reference**

a connection that constitutes a defined parasitic capacitance to the surrounding of an EUT and serves as reference potential

NOTE See also IEC 161-04-36.

1.3.7**(electromagnetic) emission**

the phenomenon by which electromagnetic energy emanates from a source

[IEV 161-01-08]

1.3.8**Immunity (to a disturbance)**

the ability of a device, equipment or system to perform without degradation in the presence of an electromagnetic disturbance

[IEV 161-01-20]

1.3.9**coaxial cable**

a cable containing one or more coaxial lines, typically used for a matched connection of associated equipment to the measuring equipment or (test-)signal generator providing a specified characteristic impedance and a specified maximum allowable cable transfer impedance

1.3.10**common mode (asymmetrical disturbance voltage)**

the RF voltage between the artificial midpoint of a two-conductor line and reference ground, or in case of a bundle of lines, the effective RF disturbance voltage of the whole bundle (vector sum of the unsymmetrical voltages) against the reference ground measured with a clamp (current transformer) at a defined terminating impedance

NOTE See also IEC 161-04-09.

1.3.11**common mode current**

the vector sum of the currents flowing through two or more conductors at a specified cross-section of a “mathematical” plane intersected by these conductors

1.3.12**differential mode voltage; symmetrical voltage**

the RF disturbance voltage between the wires of a two conductor line

[IEV 161-04-08, modified]