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First edition
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INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

**Database on the characteristics
of radio services**

*Base de données sur les caractéristiques
des services de radiocommunications*



Reference number
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International Electrotechnical Commission
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INTERNATIONAL ELECTROTECHNICAL COMMISSION

DATABASE ON THE CHARACTERISTICS OF RADIO SERVICES

FOREWORD

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CISPR 31, which is a technical report, has been prepared by CISPR subcommittee H: Limits for the protection of radio services.

The text of this technical report is based on the following documents:

FDIS	Report on voting
CISPR/H/56/DTR	CISPR/H/66/RVC

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

The committee has decided that the contents of this publication will remain unchanged until 2006. At this date, the publication will be

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- withdrawn;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

DATABASE ON THE CHARACTERISTICS OF RADIO SERVICES

1 Scope and object

This Technical Report covers the rationale behind the actual database covering the characteristics of radio services. The database is a “living document” in the format of a spreadsheet file in the EMC Zone of the IEC web site (<http://www.iec.ch/zone/emc/>).

The objective of the database is to register those characteristics which are relevant for derivation and specification of limits for disturbance emissions from electric and/or electronic equipment, systems and installations. Committees responsible for generic and/or product emission EMC standards should use this information together with CISPR 23.

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.

CISPR 23:1987, *Determination of limits for industrial, scientific and medical equipment*

3 General

The database content is comprised of objective radio system characteristics and subjective information on typical intended usage.

4 Outline of database

The explanation of the columns in the spreadsheet is as follows:

Characteristics	Explanation /purpose
Radio system (name)	Identification of the system
Reference document (specification)	Reference to the system specification
Receiving frequency band (MHz)	Frequency band in MHz specified by the band edge frequencies
Field strength to protect or sensitivity	Typically the lowest useable field strength or specified sensitivity in dB(μ V/m)
Protection ratio R (dB)	Ratio of the minimum useable field strength for the wanted RF signal to the maximum acceptable level of an interfering signal
Receiving antenna gain Gr (dB)	Typical gain in dB in the main lobe of an antenna intended for use with a system
Receiving bandwidth Brec (kHz)	Bandwidth in kHz between “–3 dB” points
Isolation distance d (m)	Typical distance in m between a receiver and a likely source of interference
Systematic isolation Is (dB)	Typical extra isolation in dB because, for example, of typical installation practice
Existing number of units	Estimated number of units (expressed as less than 100, or 100 up to 1 million or >1 million)
Is it fixed or mobile?	Is the typical application mobile or is it fixed? If both then state both

(continued)

Duty cycle (is the equipment always on, in stand-by or used off and on?)	Percentage of time where the receiver is active
Modulation	Modulation scheme and duplex/simplex system
Is it a safety-related service?	Is the service part of a security- or safety system?
Characteristics of most harmful interference (modulation/bandwidth)	An indication of what type of interference is the most harmful, e.g. broadband, narrowband, pulsed, CW etc.
Output power & ERP (effective radiated power)	Transmitter output power or ERP from an integrated system in watts
Antenna characteristics (max. gain) if different from the RX antenna	Typical gain in dB in the main lobe of an antenna intended for use with the system
Usage area (country and/or region)	Is the typical area of use restricted to one country, region or is it worldwide

Example of the table based on the above principles:

Radio system (name)	Reference document (specification)	Receiving frequency band MHz		Field strength to protect or sensitivity Eo dBµV/m	Protection ratio R dB	Receiving antenna gain Gr dB	Receiving bandwidth Brec kHz	Isolation distance d m	Systematic isolation Is dB	Existing number of units	Is it fixed or mobile?	Receiver operating period (is the equipment always on, in stand-by or used off and on?)	Modulation	Is it a safety-related service	Characteristics of most harmful interference (modulation /bandwidth)	Output power & ERP (effective radiated power) in watts	Antenna characteristics (max. gain) if different from the RX antenna	Usage area (country and/or region)
En route radar		1 215	1 350	-7	10	35	360	5 000	18									
Radio amateur		1 240	1 300	-30	10	20	0,2	30	16	Up to 1 mill	Fixed & mobile	10 %	SSB, CW, FM	No		250		World-wide
DECT	ETSI EN 300175-2	1 880	1 900	60	10	0	1 000	3	6	> 1 mill	both	100 %	GMSK-TDMA	No	Unknown	0,25		Europe

5 Input to database

Input can be made by using the template (Annex A reporting form) and by forwarding the input to the CISPR H Secretariat.

See Annex A.

6 Usage of database

The database is placed in the EMC Zone of the IEC web site (<http://www.iec.ch/zone/emc/>) and is freely accessible. Product committees preparing EMC emission standards should consider at which frequency ranges their equipment are likely to generate emissions. The relevant frequency ranges in this database should be consulted in order to identify which radio services can be affected and which are the related levels of tolerable interference. See CISPR 23 for the principles of setting emission limits based on the information in the database.

Annex A (informative)

Reporting Form

Please use the reporting form to fill in the required information and return it either on a disc or by e-mail. Your information for the database will not be scrutinized.

The following characteristics shall be included:

Characteristics	Input column	Explanation/purpose
Radio system (name)		Identification of the system
Reference document (specification)		Reference to the system specification
Receiving frequency band (MHz)		Frequency band in MHz specified by the band edge frequencies
Field strength to protect or sensitivity E_o (dB μ V/m)		Typically the lowest useable field strength or specified sensitivity in dB(μ V/m)
Protection ratio R sensitivity (dB)		Ratio of the minimum useable field strength for the wanted RF signal to the maximum acceptable level of an interfering signal
Receiving antenna gain G_r (dB)		Typical gain in dB in the main lobe of an antenna intended for use with a system
Receiving bandwidth B_{rec} (kHz)		Bandwidth in kHz between “–3 dB” points
Isolation distance d (m)		Typical distance in m between a receiver and a likely source of interference
Systematic isolation I_s (dB)		Typical extra isolation in dB because of, for example, typical installation practice
Existing number of units		Estimated number of units (expressed as less than 100, or 100 up to 1 million or >1 million)
Is it fixed or mobile?		Is the typical application mobile or is it fixed? If both then state both
Receiver operating period (is the equipment always on, in stand-by or used off and on?)		Percentage of time where the receiver is active
Modulation		Modulation scheme and duplex/simplex system
Is it a safety-related service?		Is the service part of a security- or safety system?
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Usage area (country and/or region)		Is the typical area of use restricted to one country or region, or is it worldwide?



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Thank you for your contribution to the standards-making process.

A Prioritaire

Nicht frankieren
Ne pas affranchir



Non affrancare
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SUISSE

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Q1 Please report on **ONE STANDARD** and **ONE STANDARD ONLY**. Enter the exact number of the standard: (e.g. 60601-1-1)

.....

Q2 Please tell us in what capacity(ies) you bought the standard (tick all that apply). I am the/a:

- purchasing agent ☐
 librarian ☐
 researcher ☐
 design engineer ☐
 safety engineer ☐
 testing engineer ☐
 marketing specialist ☐
 other.....

Q3 I work for/in/as a:
(tick all that apply)

- manufacturing ☐
 consultant ☐
 government ☐
 test/certification facility ☐
 public utility ☐
 education ☐
 military ☐
 other.....

Q4 This standard will be used for:
(tick all that apply)

- general reference ☐
 product research ☐
 product design/development ☐
 specifications ☐
 tenders ☐
 quality assessment ☐
 certification ☐
 technical documentation ☐
 thesis ☐
 manufacturing ☐
 other.....

Q5 This standard meets my needs:
(tick one)

- not at all ☐
 nearly ☐
 fairly well ☐
 exactly ☐

Q6 If you ticked NOT AT ALL in Question 5 the reason is: (tick all that apply)

- standard is out of date ☐
 standard is incomplete ☐
 standard is too academic ☐
 standard is too superficial ☐
 title is misleading ☐
 I made the wrong choice ☐
 other

Q7 Please assess the standard in the following categories, using the numbers:

- (1) unacceptable,
 (2) below average,
 (3) average,
 (4) above average,
 (5) exceptional,
 (6) not applicable

- timeliness.....
 quality of writing.....
 technical contents.....
 logic of arrangement of contents
 tables, charts, graphs, figures.....
 other

Q8 I read/use the: (tick one)

- French text only ☐
 English text only ☐
 both English and French texts ☐

Q9 Please share any comment on any aspect of the IEC that you would like us to know:

.....



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