PD CISPR/TR 31:2012

BSI Standards Publication

Database on the characteristics of radio services

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National foreword

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The UK participation in its preparation was entrusted by Technical Committee GEL/210, EMC - Policy committee, to Subcommittee GEL/210/12, EMC basic, generic and low frequency phenomena Standardization.

A list of organizations represented on this committee can be obtained on request to its secretary.

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TECHNICAL REPORT

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colour inside

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

Database on the characteristics of radio services

Base de données des caractéristiques des services radioélectriques

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.

This second edition cancels and replaces the first edition published in 2003. This edition constitutes a technical revision.

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

a) replacement of CISPR 23 as reference standard for the determination of limits by CISPR 16-4-4:2007 on "model for the calculation of limits for the protection of radio services".

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

Enquiry draft	Report on voting
CISPR/H/228/DTR	CISPR/H/234/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 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- withdrawn,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.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

DATABASE ON THE CHARACTERISTICS OF RADIO SERVICES

1 Scope

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/emc/database).

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 16-4-4.

2 Normative references

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

CISPR 16-4-4:2007, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-4: Uncertainties, statistics, and limit modelling – Statistics of complaints and a model for the calculation of limits for the protection of radio services*

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 given in Table 1.

Table 1 – Explanation of columns in the spreadsheet

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(μV/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

Characteristics	Explanation/purpose
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
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 and effective radiated power (ERP)	Transmitter output power or ERP from an integrated system in W
Antenna characteristics (maximum gain) if different from the RX antenna	Typical gain in dB in the main lope 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

An example of the table based on the above principles is given in Table 2.

Table 2 – Example based on the principles defined in Table 1

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 band-width Brec kHz	Isolation distance d m	Systema-tic 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 and ERP (effective radiated power) W	Antenna character-istics (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 million	fixed and 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 million	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/emc/database) 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. CISPR 16-4-4 shall be used 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 (see Table A.1).

Table A.1 – Reporting form

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 Eo(dBμV/m)		Typically the lowest useable field strength or specified sensitivity in dB(μV/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
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Systematic isolation Is (dB)		Typical extra isolation in dB because of, for example, typical installation practice
Existing number of units		Estimated number of units (expressed as < 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
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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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