

Explanatory document
on Commission Decision 2010/368/EU amending Commission Decision 2006/771/EC on
harmonisation of the radio spectrum for use by short-range devices

1. INTRODUCTION

The aim of this document is to provide guidance on a number of issues related to the conditions of use set by the technical annex of the Commission Decision 2010/368/EU amending Commission Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices.

This document is for information purposes only; no legal conclusions should be drawn from this document.

2. GENERAL CONTEXT

Commission Decision 2010/368/EU amends Commission Decision 2006/771/EC by replacing the technical annex with an updated version. The conditions described in the technical annex have to be implemented in the national spectrum regulations of Member States.

Besides complying with the conditions set out in spectrum regulation, radio equipment must comply with the R&TTE Directive (Directive 1999/5/EC) which establishes a regulatory framework for the placing on the market, free movement and putting into service in the Community of radio equipment.

The technical parameters set in the technical annex of the SRD Decision set the boundaries within which all short-range devices to be used in these bands must at least operate while additional requirements defined via Harmonised Standards may apply in order to meet the essential requirements defined pursuant article 3 of the R&TTE Directive.

Under Article 5 of the R&TTE Directive, equipment meeting relevant Harmonised Standards or parts thereof whose reference numbers have been published in the Official Journal of the EU are presumed to be in compliance with the essential requirements of the R&TTE Directive.

3. RELEVANT HARMONISED STANDARDS FOR SHORT-RANGE DEVICES (SRDs)

Annex 1 links types of SRDs and their frequency bands as described in the technical annex of the updated SRD Decision to Harmonised Standards which can be used for the presumption of compliance with the essential requirements of the R&TTE Directive.

In the table in annex 1, these Harmonised Standards can be found in the column entitled 'Reference Standard'. The list of Harmonised Standards can not be assumed to be complete. It is possible that other Harmonised Standards will be developed after the publication of this document that can also be used to achieve compliance with the essential requirements. The term 'Reference Standard' refers to the state of the art Harmonised Standard applicable at the time of conformity assessment of the equipment. If a manufacturer decides not to use

Harmonised Standards and instead follows an alternative conformity assessment procedure, as foreseen in the R&TTE Directive, he is required to ensure that all relevant essential requirements are met before placing equipment on the European market. In such cases, they should offer a level of protection to other users of the spectrum equivalent to the protection provided by the relevant Harmonised Standard.

All Harmonised Standards under the R&TTE Directive are published in the Official Journal of the EU and a list of Harmonised Standards is published on the European Commission's website (<http://ec.europa.eu/enterprise/rtte/harstand.htm>). The OJ maintains the list of Harmonised Standards up to date and determines which parts and versions are in force. Manufacturers and users are advised to refer to the latest publication of the OJ for information on currently applicable Harmonised Standards.

4. APPLICATION OF ARTICLE 3.3 OF DECISION 2006/771/EC

Commission Decision 2010/368/EU amends Commission Decision 2006/771/EC by replacing the technical annex with an updated version, while leaving unchanged the articles of the original Decision.

Article 3.3 allows Member States to set 'less restrictive' conditions.

Article 3.3 of this Decision 2006/771/EC:

This Decision is without prejudice to the right of Member States to allow the use of the frequency bands under less restrictive conditions than specified in the Annex to this Decision.

The footnotes to the technical annex explain in more detail how these provisions can be applied by Member States for specific entries of the annex of the SRD Decision.

It should be emphasised that the choice by a Member States to implement such 'less restrictive' conditions in their national legislation is made at its own risk and is applicable only on its territory. Equipment operating in accordance with these 'less restrictive' conditions can not automatically be used throughout the Community without restrictions. Equipment designed to meet such 'less restrictive' conditions is likely to be classified as 'class 2' under the classification Decision (2000/299/EC) (so classified unless all MS decide to choose a common less restrictive condition).

5. EQUIPMENT AGGREGATING SUB-BANDS

The technical annex is structured along ascending frequency ranges for different applications. Certain frequency ranges (for example 433.050 – 434.040 MHz) include a series of optional sets of usage conditions; this allows users to choose the set of parameters to which they decide to comply, in combination with the fulfilment of the essential requirements of the R&TTE Directive.

The way in which the frequency bands are presented in the technical annex should not be interpreted as preventing equipment from aggregating spectrum sub-bands as necessary. Equipment can operate across different frequency bands (i.e. by combining different allocations).

Examples in the technical annex are:

- the 433.050 – 434.790 MHz band, where it is possible to combine the two allocations 433.050 – 434.040 MHz and the adjacent 434.040 – 434.790 MHz bands (in both cases, it is possible to emit up to 10 mW).
- the band 863.000 – 870.000 MHz where equipment (non-specific SRDs) can combine different allocations (863.000 – 868.000, 868.000 – 868.600, 868.700 – 869.200, 869.400 – 869.650 & 869.700 – 870.000 MHz) and the attached conditions of use.

ANNEX 1 - Technical annex of Commission Decision 2010/368/EU and reference standards
(valid versions of the these reference standards can be found on <http://ec.europa.eu/enterprise/rte/harstand.htm>)

Harmonised frequency bands and technical parameters for short-range devices

Type of short-range device	Frequency band ¹	Transmit power limit / field strength limit / power density limit ²	Additional parameters (channelling and/or channel access and occupation rules) ³	Other usage restrictions ⁴	Implementation deadline	Reference standard
Non-specific short-range devices ⁵	6765 - 6795 kHz	42 dBµA/m at 10 metres			1 October 2008	EN 300 330
	13,553 - 13,567 MHz	42 dBµA/m at 10 metres			1 October 2008	EN 300 330
	26,957 - 27,283 MHz	10 mW effective radiated power (e.r.p.), which corresponds to 42 dBµA/m at 10 metres		Video applications are excluded	1 June 2007	EN 300 330
	40,660 - 40,700 MHz	10 mW e.r.p.		Video applications are excluded	1 June 2007	EN 300 220

-
- ¹ Member States must allow the usage of adjacent frequency bands within this table as a single frequency band provided the specific conditions of each of these adjacent frequency bands are met.
- ² Member States must allow the usage of spectrum up to the transmit power, field strength or power density given in this table. In conformity with Article 3(3) of Decision 2006/771/EC, they may impose less restrictive conditions, i.e. allow the use of spectrum with higher transmit power, field strength or power density.
- ³ Member States may only impose these ‘additional parameters (channelling and/or channel access and occupation rules)’, and may not add other parameters or spectrum access and mitigation requirements. Less restrictive conditions within the meaning of Article 3(3) of Decision 2006/771/EC mean that Member States may completely omit the ‘additional parameters (channelling and/or channel access and occupation rules)’ in a given cell or allow higher values.
- ⁴ Member States may only impose these ‘other usage restrictions’, and may not add additional usage restrictions. As less restrictive conditions may be introduced within the meaning of Article 3(3) of Decision 2006/771/EC, Member States may omit one or all of these restrictions.
- ⁵ This category is available for any type of application which fulfils the technical conditions (typical uses are telemetry, telecommand, alarms, data in general and other similar applications).

Non-specific short-range devices (cont.)	433,050 - 434,040 ⁶ MHz	1 mW e.r.p. and -13dBm/10 kHz power density for bandwidth modulation larger than 250 kHz	Voice applications allowed with advanced mitigation techniques	Audio and video applications are excluded	1 November 2010		EN 300 220
		10 mW e.r.p.	Duty cycle limit ⁷ : 10%	Analogue audio applications other than voice are excluded. Analogue video applications are excluded	1 November 2010		EN 300 220
	434,040 - 434,790 ⁶ MHz	1 mW e.r.p. and -13dBm/10 kHz power density for bandwidth modulation larger than 250 kHz	Voice applications allowed with advanced mitigation techniques	Audio and video applications are excluded	1 November 2010		EN 300 220
		10 mW e.r.p.	Duty cycle limit ⁷ : 10%	Analogue audio applications other than voice are excluded. Analogue video applications are excluded	1 November 2010		EN 300 220
			Duty cycle limit ⁷ : 100% subject to channel spacing up to 25 kHz Voice applications allowed with advanced mitigation techniques	Audio and video applications are excluded	1 November 2010		EN 300 220

⁶ For this frequency band Member States must make all the alternative sets of usage conditions possible.

⁷ 'Duty cycle' means the ratio of time during any one-hour period when equipment is actively transmitting. Less restrictive conditions within the meaning of Article 3(3) of Decision 2006/771/EC mean that Member States may allow a higher value for 'Duty cycle'.

Non-specific short-range devices (cont.)	863,000 - 865,000 MHz	25 mW e.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle limit ⁷ of 0,1% may also be used	Analogue audio applications other than voice are excluded. Analogue video applications are excluded	1 November 2010		EN 300 220
	865,000 - 868,000 MHz	25 mW e.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle limit ⁷ of 1% may also be used	Analogue audio applications other than voice are excluded. Analogue video applications are excluded	1 November 2010		EN 300 220
	868,000 - 868,600 MHz	25 mW e.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle limit ⁷ of 1% may also be used	Analogue video applications are excluded	1 November 2010		EN 300 220
	868,700 - 869,200 MHz	25 mW e.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle limit ⁷ of 0,1% may also be used	Analogue video applications are excluded	1 November 2010		EN 300 220

Disclaimer: This is a non-binding informative working document, which does not necessarily reflect the official position of the Commission and from which no legal conclusion should be drawn. The Commission accepts no responsibility or liability whatsoever with regard to any information referred to herein

Non-specific short-range devices (cont.)	869,400 - 869,650 ⁶ MHz	500 mW e.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle limit ⁷ of 10 % may also be used. Channel spacing must be 25 kHz, except that the whole band may also be used as a single channel for high-speed data transmission	Analogue video applications are excluded	1 November 2010		EN 300 220
		25 mW e.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle limit ⁷ of 0,1% may also be used	Analogue audio applications other than voice are excluded. Analogue video applications are excluded	1 November 2010		EN 300 220
	869,700 - 870,000 ⁶ MHz	5 mW e.r.p.	Voice applications allowed with advanced mitigation techniques	Audio and video applications are excluded	1 June 2007		EN 300 220
		25 mW e.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle limit ⁷ of 1% may also be used	Analogue audio applications other than voice are excluded. Analogue video applications are excluded	1 November 2010		EN 300 220

Disclaimer: This is a non-binding informative working document, which does not necessarily reflect the official position of the Commission and from which no legal conclusion should be drawn. The Commission accepts no responsibility or liability whatsoever with regard to any information referred to herein

Non-specific short-range devices (cont.)	2400 - 2483,5 MHz	10 mW equivalent isotropic radiated power (e.i.r.p.)			1 June 2007		EN 300 440
	5725 - 5875 MHz	25 mW e.i.r.p.			1 June 2007		EN 300 440
	24,150 - 24,250 GHz	100 mW e.i.r.p.			1 October 2008		EN 300 440
	61,0 - 61,5 GHz	100 mW e.i.r.p.			1 October 2008		Draft EN 305 550
Wideband data transmission systems	2400 - 2483,5 MHz	100 mW e.i.r.p. and 100 mW/100 kHz e.i.r.p. density applies when frequency hopping modulation is used, 10 mW/MHz e.i.r.p. density applies when other types of modulation are used	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used.		1 November 2009		EN 300 328
	57,0 – 66,0 GHz	40 dBm e.i.r.p. and 13 dBm/MHz e.i.r.p. density	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used.	Fixed outdoor installations are excluded	1 November 2010		EN 302 567

Alarm systems	868,600 - 868,700 MHz	10 mW e.r.p.	Channel spacing: 25 kHz The whole frequency band may also be used as a single channel for high-speed data transmission Duty cycle limit ⁷ : 1.0%		1 October 2008		EN 300 220
	869,250 - 869,300 MHz	10 mW e.r.p.	Channel spacing: 25 kHz Duty cycle limit ⁷ : 0.1%		1 June 2007		EN 300 220
	869,300 – 869,400 MHz	10 mW e.r.p.	Channel spacing: 25 kHz Duty cycle limit ⁷ : 1.0%		1 October 2008		EN 300 220
	869,650 - 869,700 MHz	25 mW e.r.p.	Channel spacing: 25 kHz Duty cycle limit ⁷ : 10%		1 June 2007		EN 300 220
Social alarms ⁸	869,200 – 869,250 MHz	10 mW e.r.p.	Channel spacing: 25 kHz Duty cycle limit ⁷ : 0.1%		1 June 2007		EN 300 220

⁸ Social alarm devices are used to assist elderly or disabled people when they are in distress.

Inductive applications ⁹	9,000 - 59,750 kHz	72 dBµA/m at 10 metres			1 November 2010		EN 300 330
	59,750 - 60,250 kHz	42 dBµA/m at 10 metres			1 June 2007		EN 300 330
	60,250 - 70,000 kHz	69 dBµA/m at 10 metres			1 June 2007		EN 300 330
	70 - 119 kHz	42 dBµA/m at 10 metres			1 June 2007		EN 300 330
	119 - 127 kHz	66 dBµA/m at 10 metres			1 June 2007		EN 300 330
	127 - 140 kHz	42 dBµA/m at 10 metres			1 October 2008		EN 300 330
	140 - 148,5 kHz	37,7 dBµA/m at 10 metres			1 October 2008		EN 300 330
	148,5 - 5000 kHz In the specific bands mentioned below, higher field strengths and additional usage restrictions apply:	-15 dBµA/m at 10 metres in any bandwidth of 10 kHz Furthermore the total field strength is -5 dBµA/m at 10 m for systems operating at bandwidths larger than 10 kHz			1 October 2008		EN 300 330

⁹ This category covers, for example, devices for car immobilisation, animal identification, alarm systems, cable detection, waste management, personal identification, wireless voice links, access control, proximity sensors, anti-theft systems, including RF anti-theft induction systems, data transfer to handheld devices, automatic article identification, wireless control systems and automatic road tolling.

Disclaimer: This is a non-binding informative working document, which does not necessarily reflect the official position of the Commission and from which no legal conclusion should be drawn. The Commission accepts no responsibility or liability whatsoever with regard to any information referred to herein

Inductive applications (cont.)	400 - 600 kHz	-8 dBμA/m at 10 metres		This set of usage conditions applies to RFID ¹⁰ only	1 October 2008		EN 300 330
	3155 - 3400 kHz	13,5 dBμA/m at 10 metres			1 October 2008		EN 300 330
	5000 - 30000 kHz In the specific bands mentioned below, higher field strengths and additional usage restrictions apply:	-20 dBμA/m at 10 metres in any bandwidth of 10 kHz Furthermore the total field strength is -5 dBμA/m at 10 m for systems operating at bandwidths larger than 10 kHz			1 October 2008		EN 300 330
	6765 - 6795 kHz	42 dBμA/m at 10 metres			1 June 2007		EN 300 330
	7400 - 8800 kHz	9 dBμA/m at 10 metres			1 October 2008		EN 300 330
	10200 - 11000 kHz	9 dBμA/m at 10 metres			1 October 2008		EN 300 330

¹⁰

This category covers inductive applications used for Radio Frequency Identification (RFID).

Inductive applications (cont.)	13553 - 13567 kHz	42 dBµA/m at 10 metres			1 June 2007		EN 300 330
		60 dBµA/m at 10 metres		This set of usage conditions applies to RFID ¹⁰ and EAS ¹¹ only	1 October 2008		EN 300 330
	26957 - 27283 kHz	42 dBµA/m at 10 metres			1 October 2008		EN 300 330
Active medical implants ¹²	9 - 315 kHz	30 dBµA/m at 10m	Duty cycle limit ⁷ : 10%		1 October 2008		EN 302 195
	30,0 - 37,5 MHz	1 mW e.r.p.	Duty cycle limit ⁷ : 10%	This set of usage conditions applies to ultra low power medical membrane implants for blood pressure measurements only	1 November 2010		EN 302 510
	402 - 405 MHz	25 µW e.r.p.	Channel spacing: 25 kHz Individual transmitters may combine adjacent channels for increased bandwidth up to 300 kHz. Other techniques to access spectrum or mitigate interference, including bandwidths greater than 300 kHz, can be used provided they result at least in an equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC to ensure compatible operation with the other users and in particular with meteorological radiosondes.		1 November 2009		EN 301 839

¹¹ This category covers inductive applications used for Electronic Article Surveillance (EAS).

¹² This category covers the radio part of active implantable medical devices, as defined in Council Directive 90/385/EEC of 20 June 1990 on the approximation of the laws of the Member States relating to active implantable medical devices and their peripherals (OJ L 189, 20.7.1990, p. 17).

Active medical implants and associated peripherals ¹³	401 - 402 MHz	25 µW e.r.p.	Channel spacing: 25 kHz Individual transmitters may combine adjacent channels for increased bandwidth up to 100 kHz. Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle limit ⁷ of 0,1% may also be used		1 November 2010		EN 302 537
	405 - 406 MHz	25 µW e.r.p.	Channel spacing: 25 kHz Individual transmitters may combine adjacent channels for increased bandwidth up to 100 kHz. Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle limit ⁷ of 0,1% may also be used		1 November 2010		EN 302 537
Animal implantable devices ¹⁴	315 - 600 kHz	-5 dBµA/m at 10m	Duty cycle limit ⁷ : 10%		1 November 2010		EN 302 536
	12,5 - 20,0 MHz	-7 dBµA/m at 10m in a bandwidth of 10 kHz	Duty cycle limit ⁷ : 10%	This set of usage conditions applies to indoor applications only.	1 November 2010		EN 300 330
Low power FM transmitters ¹⁵	87,5 - 108,0 MHz	50 nW e.r.p.	Channel spacing up to 200 kHz		1 November 2010		EN 301 357

¹³ This category covers systems specifically designed for the purpose of providing non-voice digital communications between active medical implants, as defined in footnote 12, and/or body worn devices and other devices external to the human body used for transferring non-time critical individual patient related physiological information.

¹⁴ This category covers transmitting devices which are placed inside the body of an animal for the purpose of performing diagnostic functions and/or delivery of therapeutic treatment

¹⁵ This category includes applications which connect personal audio devices, including mobile phones, and the automotive or home entertainment system.

Wireless audio applications ¹⁶	863 - 865 MHz	10 mW e.i.r.p.			1 November 2010		EN 301 357
Radio determination applications ¹⁷	2400 - 2483,5 MHz	25 mW e.i.r.p.			1 November 2009		EN 300 440
	17,1 – 17,3 GHz	26 dBm e.i.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used.	This set of usage conditions applies to ground based systems only	1 November 2009		EN 300 440
Tank Level Probing Radar ¹⁸	4,5 - 7,0 GHz	24 dBm e.i.r.p. ¹⁹			1 November 2009		EN 302 372
	8,5 - 10,6 GHz	30 dBm e.i.r.p. ²⁶			1 November 2009		EN 302 372
	24,05 - 27,0 GHz	43 dBm e.i.r.p. ²⁶			1 November 2009		EN 302 372
	57,0 - 64,0 GHz	43 dBm e.i.r.p. ²⁶			1 November 2009		EN 302 372
	75,0 – 85,0 GHz	43 dBm e.i.r.p. ²⁶			1 November 2009		EN 302 372

¹⁶ Applications for wireless audio systems, including: wireless microphones; cordless loudspeakers; cordless headphones; cordless headphones for portable use, e.g. portable CD, cassette or radio devices carried on a person; cordless headphones for use in a vehicle, for example for use with a radio or mobile telephone, etc.; in-ear monitoring and wireless microphones for use at concerts or other stage productions.

¹⁷ This category covers applications used for determining the position, velocity and/or other characteristics of an object, or for obtaining information relating to these parameters.

¹⁸ Tank Level Probing Radars (TLPR) are a specific type of radiodetermination application, which are used for tank level measurements and are installed in metallic or reinforced concrete tanks, or similar structures made of material with comparable attenuation characteristics. The purpose of the tank is to contain a substance.

¹⁹ The power limit applies inside a closed tank and corresponds with a spectral density of -41,3 dBm/MHz e.i.r.p. outside a 500 litre test tank.

Disclaimer: This is a non-binding informative working document, which does not necessarily reflect the official position of the Commission and from which no legal conclusion should be drawn. The Commission accepts no responsibility or liability whatsoever with regard to any information referred to herein

Model Control ²⁰	26990 - 27000 kHz	100 mW e.r.p.			1 November 2009		EN 300 220
	27040 - 27050 kHz	100 mW e.r.p.			1 November 2009		EN 300 220
	27090 - 27100 kHz	100 mW e.r.p.			1 November 2009		EN 300 220
	27140 - 27150 kHz	100 mW e.r.p.			1 November 2009		EN 300 220
	27190 - 27200 kHz	100 mW e.r.p.			1 November 2009		EN 300 220
Radio Frequency Identification (RFID)	2446 - 2454 MHz	100 mW e.i.r.p.			1 November 2009		EN 300 440
Road Transport and Traffic Telematics	76,0 - 77,0 GHz	55 dBm peak e.i.r.p. and 50 dBm mean e.i.r.p. and 23,5 dBm mean e.i.r.p. for pulse radars		This set of usage conditions applies to terrestrial vehicle and infrastructure systems only.	1 November 2010		EN 301 091

²⁰ This category covers applications used to control the movement of models (principally miniature representations of vehicles) in the air, on land or over or under the water surface.