

## COMMISSION DECISION

of 13 May 2009

## amending Decision 2006/771/EC on harmonisation of the radio spectrum for use by short-range devices

(notified under document number C(2009) 3710)

(Text with EEA relevance)

(2009/381/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision)<sup>(1)</sup>, and in particular Article 4(3) thereof,

Whereas:

- (1) Commission Decision 2006/771/EC<sup>(2)</sup> harmonises the technical conditions for use of spectrum for a wide variety of short-range devices, including applications such as alarms, local communications equipment, door openers and medical implants. Short-range devices are typically mass-market and/or portable products which can easily be taken and used across borders; differences in spectrum access conditions therefore prevent their free movement, increase their production costs and create risks of harmful interference with other radio applications and services.
- (2) Commission Decision 2008/432/EC<sup>(3)</sup> amended the harmonised technical conditions for short-range devices contained in Decision 2006/771/EC by replacing its Annex.
- (3) However, due to rapid changes in technology and societal demands, new applications for short-range devices can emerge which require regular updates of spectrum harmonisation conditions.
- (4) On 5 July 2006, the Commission issued a permanent mandate<sup>(4)</sup> to the European Conference of Postal and Telecommunications Administrations (CEPT), pursuant to Article 4(2) of Decision No 676/2002/EC, to update the Annex to Decision 2006/771/EC in response to the technological and market developments in the area of short-range devices.

(5) In its November 2008 report<sup>(5)</sup> submitted in response to that mandate, the CEPT advised the Commission to amend a number of technical aspects in the Annex to Decision 2006/771/EC.

(6) Decision 2006/771/EC should therefore be amended accordingly.

(7) Equipment operating within the conditions set in this Decision must also comply with Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity<sup>(6)</sup> in order to use the spectrum effectively so as to avoid harmful interference, demonstrated either by meeting harmonised standards or by fulfilling alternative conformity assessment procedures.

(8) The measures provided for in this Decision are in accordance with the opinion of the Radio Spectrum Committee,

HAS ADOPTED THIS DECISION:

*Article 1*

The Annex to Decision 2006/771/EC is replaced by the Annex to this Decision.

*Article 2*

This Decision is addressed to the Member States.

Done at Brussels, 13 May 2009.

For the Commission

Viviane REDING

Member of the Commission

<sup>(1)</sup> OJ L 108, 24.4.2002, p. 1.

<sup>(2)</sup> OJ L 312, 11.11.2006, p. 66.

<sup>(3)</sup> OJ L 151, 11.6.2008, p. 49.

<sup>(4)</sup> Permanent Mandate to CEPT regarding the annual update of the technical Annex to the Commission Decision on the technical harmonisation of radio spectrum for use by Short Range Devices (5 July 2006).

<sup>(5)</sup> CEPT Report 26, RSCOM 08-88.

<sup>(6)</sup> OJ L 91, 7.4.1999, p. 10.

## ANNEX

## ANNEX

## Harmonised frequency bands and technical parameters for short-range devices

| Type of short-range device                      | Frequency band                     | Power limit/field strength limit/power density limit <sup>(1)</sup>                       | Additional parameters/spectrum access and mitigation requirements <sup>(2)</sup>   | Other usage restrictions <sup>(3)</sup> | Implementation deadline                                       |                |
|---|------------------------------------|---|--|---|---|----------------|
| Non-specific short-range devices <sup>(4)</sup> | 6 765–6 795 kHz                    | 42 dBµA/m at 10 metres  |  |   | 1 October 2008  |                |
|   | 13,553–13,567 MHz                  | 42 dBµA/m at 10 metres  |  |   | 1 October 2008  |                |
|   | 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   |                |
|   | 40,660–40,700 MHz                  | 10 mW e.r.p.  |  | Video applications are excluded         | 1 June 2007   |                |
|   | 433,050–434,040 <sup>(5)</sup> MHz | 1 mW e.r.p. and – 13dBm/10 kHz power density for bandwidth modulation larger than 250 kHz |  |   | Audio and voice signals, and video applications, are excluded | 1 October 2008 |
|   |                                    | 10 mW e.r.p.  | Duty cycle <sup>(6)</sup> : 10 %   |   | Audio and voice signals, and video applications, are excluded | 1 June 2007    |
|   | 434,040–434,790 <sup>(5)</sup> MHz | 1 mW e.r.p. and – 13dBm/10 kHz power density for bandwidth modulation larger than 250 kHz |  |   | Audio and voice signals, and video applications, are excluded | 1 October 2008 |
|   |                                    | 10 mW e.r.p.  | Duty cycle <sup>(6)</sup> : 10 %   |   | Audio and voice signals, and video applications, are excluded | 1 June 2007    |
|   |                                    |   | Duty cycle <sup>(6)</sup> : 100 % subject to channel spacing up to 25 kHz  |   | Audio and voice signals, and video applications, are excluded | 1 October 2008 |
|   | 863,000–868,000 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 <sup>(6)</sup> of 0,1 % may also be used |   | Audio and voice signals, and video applications, are excluded | 1 October 2008 |

| Type of short-range device                                     | Frequency band                     | Power limit/field strength limit/power density limit <sup>(1)</sup> | Additional parameters/spectrum access and mitigation requirements <sup>(2)</sup>   | Other usage restrictions <sup>(3)</sup>                       | Implementation deadline |
|--|------------------------------------|---|--|---|-------------------------|
| Non-specific short-range devices <sup>(4)</sup><br>(continued) | 868,000–868,600 <sup>(5)</sup> 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 <sup>(6)</sup> of 1 % may also be used   | Video applications are excluded                               | 1 October 2008          |
|  |                                    | 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 <sup>(6)</sup> of 0,1 % may also be used | Audio and voice signals, and video applications, are excluded | 1 October 2008          |
|  | 868,700–869,200 <sup>(5)</sup> 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 <sup>(6)</sup> of 0,1 % may also be used | Video applications are excluded                               | 1 October 2008          |
|  |                                    | 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 <sup>(6)</sup> of 0,1 % may also be used | Audio and voice signals, and video applications, are excluded | 1 October 2008          |

| Type of short-range device                                     | Frequency band                     | Power limit/field strength limit/power density limit <sup>(1)</sup> | Additional parameters/spectrum access and mitigation requirements <sup>(2)</sup>  | Other usage restrictions <sup>(3)</sup>                       | Implementation deadline |
|--|------------------------------------|---|---|---|-------------------------|
| Non-specific short-range devices <sup>(4)</sup><br>(continued) | 869,400–869,650 <sup>(5)</sup> 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 <sup>(6)</sup> of 10 % may also be used<br><br>Channel spacing must be 25 kHz, except that the whole band may also be used as a single channel for high-speed data transmission | Video applications are excluded                               | 1 October 2008          |
|  |                                    | 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 <sup>(6)</sup> of 0,1 % may also be used  | Audio and voice signals, and video applications, are excluded | 1 October 2008          |
|  | 869,700–870,000 <sup>(5)</sup> MHz | 5 mW e.r.p.   | Voice applications allowed with advanced mitigation techniques  | Audio and video applications are excluded                     | 1 June 2007             |
|  |                                    | 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 <sup>(6)</sup> of 0,1 % may also be used  | Audio and voice signals, and video applications, are excluded | 1 October 2008          |
|  | 2 400–2 483,5 MHz                  | 10 mW equivalent isotropic radiated power (e.i.r.p.)                |   |   | 1 June 2007             |
|  | 5 725–5 875 MHz                    | 25 mW e.i.r.p.  |   |   | 1 June 2007             |
|  | 24,150–24,250 GHz                  | 100 mW e.i.r.p.   |   |   | 1 October 2008          |
|  | 61,0–61,5 GHz                      | 100 mW e.i.r.p.   |   |   | 1 October 2008          |

| Type of short-range device            | Frequency band               | Power limit/field strength limit/power density limit <sup>(1)</sup>   | Additional parameters/spectrum access and mitigation requirements <sup>(2)</sup>  | Other usage restrictions <sup>(3)</sup>  | Implementation deadline |
|---------------------------------------|------------------------------|---|---|--|-------------------------|
| Wideband data transmission systems    | 2 400–2 483,5 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         |
|                                       | 57,0–66,0 <sup>(5)</sup> GHz | 40 dBm e.i.r.p. and 13 dBm/MHz e.i.r.p. density   |   | Outdoor applications are excluded        | 1 November 2009         |
|                                       |                              | 25 dBm e.i.r.p. and – 2 dBm/MHz e.i.r.p. density  |   | Fixed outdoor installations are excluded | 1 November 2009         |
| Alarm systems                         | 868,600–868,700 MHz          | 10 mW e.r.p.  | Channel spacing: 25 kHz<br>The whole frequency band may also be used as a single channel for high-speed data transmission<br>Duty cycle <sup>(6)</sup> : 1,0 %  |  | 1 October 2008          |
|                                       | 869,250–869,300 MHz          | 10 mW e.r.p.  | Channel spacing: 25 kHz<br>Duty cycle <sup>(6)</sup> : 0,1 %  |  | 1 June 2007             |
|                                       | 869,300–869,400 MHz          | 10 mW e.r.p.  | Channel spacing: 25 kHz<br>Duty cycle <sup>(6)</sup> : 1,0 %  |  | 1 October 2008          |
|                                       | 869,650–869,700 MHz          | 25 mW e.r.p.  | Channel spacing: 25 kHz<br>Duty cycle <sup>(6)</sup> : 10 %   |  | 1 June 2007             |
| Social alarms <sup>(7)</sup>          | 869,200–869,250 MHz          | 10 mW e.r.p.  | Channel spacing: 25 kHz<br>Duty cycle <sup>(6)</sup> : 0,1 %  |  | 1 June 2007             |
| Inductive applications <sup>(8)</sup> | 20,050–59,750 kHz            | 72 dB $\mu$ A/m at 10 metres  |   |  | 1 June 2007             |
|                                       | 59,750–60,250 kHz            | 42 dB $\mu$ A/m at 10 metres  |   |  | 1 June 2007             |
|                                       | 60,250–70,000 kHz            | 69 dB $\mu$ A/m at 10 metres  |   |  | 1 June 2007             |
|                                       | 70–119 kHz                   | 42 dB $\mu$ A/m at 10 metres  |   |  | 1 June 2007             |
|                                       | 119–127 kHz                  | 66 dB $\mu$ A/m at 10 metres  |   |  | 1 June 2007             |

| Type of short-range device                           | Frequency band   | Power limit/field strength limit/power density limit <sup>(1)</sup>  | Additional parameters/spectrum access and mitigation requirements <sup>(2)</sup> | Other usage restrictions <sup>(3)</sup>  | Implementation deadline |
|--|--|--|--|--|-------------------------|
| Inductive applications <sup>(8)</sup><br>(continued) | 127–140 kHz  | 42 dBµA/m at 10 metres   |  |  | 1 October 2008          |
|  | 140–148,5 kHz  | 37,7 dBµA/m at 10 metres   |  |  | 1 October 2008          |
|  | 148,5–5 000 kHz<br>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<br>Furthermore the total field strength is – 5 dBµA/m at 10 m for systems operating at bandwidths larger than 10 kHz |  |  | 1 October 2008          |
|  | 400–600 kHz  | – 8 dBµA/m at 10 metres  |  | This set of usage conditions applies to RFID <sup>(9)</sup> only                         | 1 October 2008          |
|  | 3 155–3 400 kHz  | 13,5 dBµA/m at 10 metres   |  |  | 1 October 2008          |
|  | 5 000–30 000 kHz<br>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<br>Furthermore the total field strength is – 5 dBµA/m at 10 m for systems operating at bandwidths larger than 10 kHz |  |  | 1 October 2008          |
|  | 6 765–6 795 kHz  | 42 dBµA/m at 10 metres   |  |  | 1 June 2007             |
|  | 7 400–8 800 kHz  | 9 dBµA/m at 10 metres  |  |  | 1 October 2008          |
|  | 10 200–11 000 kHz  | 9 dBµA/m at 10 metres  |  |  | 1 October 2008          |
|  | 13 553–13 567 kHz  | 42 dBµA/m at 10 metres   |  |  | 1 June 2007             |
|  |  | 60 dBµA/m at 10 metres   |  | This set of usage conditions applies to RFID <sup>(9)</sup> and EAS <sup>(10)</sup> only | 1 October 2008          |
| 26 957–27 283 kHz                                    | 42 dBµA/m at 10 metres   |  |  | 1 October 2008   |                         |

| Type of short-range device                       | Frequency band    | Power limit/field strength limit/power density limit <sup>(1)</sup> | Additional parameters/spectrum access and mitigation requirements <sup>(2)</sup>  | Other usage restrictions <sup>(3)</sup>                           | Implementation deadline |
|--|-------------------|---|---|---|-------------------------|
| Active medical implants <sup>(11)</sup>          | 9–315 kHz         | 30 dBµA/m at 10 m   | Duty cycle <sup>(6)</sup> : 10 %  |   | 1 October 2008          |
|  | 402–405 MHz       | 25 µW e.r.p.  | Channel spacing: 25 kHz<br>Individual transmitters may combine adjacent channels for increased bandwidth up to 300 kHz.<br>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         |
| Wireless audio applications <sup>(12)</sup>      | 87,5–108,0 MHz    | 50 nW e.r.p.  | Channel spacing up to 200 kHz   |   | 1 October 2008          |
|  | 863–865 MHz       | 10 mW e.r.p.  |   |   | 1 June 2007             |
| Radio determination applications <sup>(13)</sup> | 2 400–2 483,5 MHz | 25 mW e.i.r.p.  |   |   | 1 November 2009         |
|  | 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         |
| Tank Level Probing Radar <sup>(14)</sup>         | 4,5–7,0 GHz       | 24 dBm e.i.r.p. <sup>(15)</sup>                                     |   |   | 1 November 2009         |
|  | 8,5–10,6 GHz      | 30 dBm e.i.r.p. <sup>(15)</sup>                                     |   |   | 1 November 2009         |
|  | 24,05–27,0 GHz    | 43 dBm e.i.r.p. <sup>(15)</sup>                                     |   |   | 1 November 2009         |
|  | 57,0–64,0 GHz     | 43 dBm e.i.r.p. <sup>(15)</sup>                                     |   |   | 1 November 2009         |
|  | 75,0–85,0 GHz     | 43 dBm e.i.r.p. <sup>(15)</sup>                                     |   |   | 1 November 2009         |

| Type of short-range device            | Frequency band    | Power limit/field strength limit/power density limit <sup>(1)</sup> | Additional parameters/spectrum access and mitigation requirements <sup>(2)</sup> | Other usage restrictions <sup>(3)</sup> | Implementation deadline |
|---------------------------------------|-------------------|---|--|---|-------------------------|
| Model Control <sup>(16)</sup>         | 26 990–27 000 kHz | 100 mW e.r.p.   |  |   | 1 November 2009         |
|                                       | 27 040–27 050 kHz | 100 mW e.r.p.   |  |   | 1 November 2009         |
|                                       | 27 090–27 100 kHz | 100 mW e.r.p.   |  |   | 1 November 2009         |
|                                       | 27 140–27 150 kHz | 100 mW e.r.p.   |  |   | 1 November 2009         |
|                                       | 27 190–27 200 kHz | 100 mW e.r.p.   |  |   | 1 November 2009         |
| Radio Frequency Identification (RFID) | 2 446–2 454 MHz   | 100 mW e.i.r.p.   |  |   | 1 November 2009         |

<sup>(1)</sup> Member States must allow the usage of spectrum up to the 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 power, field strength or power density.

<sup>(2)</sup> Member States may only impose these “additional parameters/spectrum access and mitigation requirements”, 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 parameters/spectrum access and mitigation requirements in a given cell or allow higher values.

<sup>(3)</sup> 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.

<sup>(4)</sup> 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).

<sup>(5)</sup> For this frequency band Member States must make all the alternative sets of usage conditions possible.

<sup>(6)</sup> “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”.

<sup>(7)</sup> Social alarm devices are used to assist elderly or disabled people when they are in distress.

<sup>(8)</sup> 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.

<sup>(9)</sup> This category covers inductive applications used for Radio Frequency Identification (RFID).

<sup>(10)</sup> This category covers inductive applications used for Electronic Article Surveillance (EAS).

<sup>(11)</sup> 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 (OJ L 189, 20.7.1990, p. 17).

<sup>(12)</sup> Applications for wireless audio systems, including: 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, for use at concerts or other stage productions.

<sup>(13)</sup> 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.

<sup>(14)</sup> 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.

<sup>(15)</sup> 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.

<sup>(16)</sup> 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.