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**COMMISSION DECISION
of 9 November 2006
on harmonisation of the radio spectrum for use by short-range devices**
(notified under document number C(2006) 5304)
(Text with EEA relevance)
(2006/771/EC)
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COMMISSION DECISION

of 9 November 2006

on harmonisation of the radio spectrum for use by short-range devices

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(Text with EEA relevance)

(2006/771/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) (¹), and in particular Article 4(3) thereof,

Whereas:

- (1) Given their pervasive use in the European Community and in the world, short-range devices are playing an increasing role in the economy and in the daily life of citizens, with different types of applications such as alarms, local communications equipment, door openers or medical implants. The development of applications based on short-range devices in the European Community could also contribute to achieving specific Community policy goals, such as completion of the internal market, promotion of innovation and research, and development of the information society.
- (2) Short-range devices are typically massmarket 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. In order to reap the benefits of the internal market for this type of device, to support the competitiveness of EU manufacturing industry by increasing economies of scale and to lower costs for consumers, radio spectrum must therefore be made available in the Community on the basis of harmonised technical conditions.
- (3) As this type of device uses radio spectrum with low emission power and short-range emission capability, its potential to cause interference to other spectrum users is typically limited. Therefore such devices can share frequency bands with other services which are, or are not, subject to authorisation, without causing harmful interference, and can co-exist with other short-range devices. Their use should therefore not be subject to individual authorisation pursuant to the Authorisation Directive 2002/20/EC (²). In addition, radiocommunications services, as defined in the International Telecommunications Union Radio Regulations, have priority over short-range devices and are not required to ensure protection of particular types of short-range devices against interference. Since no protection against interference can therefore be guaranteed to users of short-range devices, it is the responsibility of manufacturers of short-range devices to protect such devices against harmful interference from radiocommunications services

(¹) OJ L 108, 24.4.2002, p. 1.

(²) OJ L 108, 24.4.2002, p. 21.

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as well as from other short-range devices operating in accordance with the applicable Community or national regulations. Pursuant to 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 (the R&TTE Directive)⁽¹⁾ manufacturers should ensure, that short-range devices effectively use the radio frequency spectrum so as to avoid harmful interference to other short-range devices.

- (4) A significant number of these devices are already classified, or are likely to be in the future, as ‘Class 1’ equipment under Commission Decision 2000/299/EC of 6 April 2000 establishing the initial classification of radio equipment and telecommunications terminal equipment and associated identifiers⁽²⁾ adopted pursuant to Article 4(1) of the R&TTE Directive. Decision 2000/299/EC recognises the equivalence of radio interfaces meeting the conditions of ‘Class 1’ so that radio equipment can be placed on the market and put into service without restriction in the whole Community.
- (5) As the availability of harmonised spectrum and associated conditions of use determine ‘Class 1’ classification, this Decision will further consolidate the continuity of such classification once achieved.
- (6) On 11 March 2004 the Commission therefore issued a mandate⁽³⁾ to the CEPT, pursuant to Article 4(2) of the Radio Spectrum Decision, to harmonise frequency use for short-range devices. In response to that mandate, in its report⁽⁴⁾ of 15 November 2004 the CEPT established the list of voluntary harmonisation measures which exist in the European Community for short-range devices and stated that a more binding commitment is required from Member States in order to ensure the legal stability of the frequency harmonisation achieved in the CEPT. Therefore, it is necessary to establish a mechanism to make such harmonisation measures legally binding in the European Community.
- (7) Member States may allow, at national level, equipment to operate under more permissive conditions than specified in this Decision. However, in this case such equipment could not operate throughout the Community without restrictions and would therefore be considered as ‘Class 2’ equipment under the classification in the R&TTE Directive.
- (8) Harmonisation under this Decision does not exclude the possibility for a Member State to apply, where justified, transitional periods or radio spectrum-sharing arrangements pursuant to Article 4(5) of the Radio Spectrum Decision. These should be kept to the minimum, as they would limit the benefits of ‘Class 1’ classification.
- (9) This general technical harmonisation Decision applies without prejudice to European Community technical harmonisation measures which apply to specific bands and types of devices, such as Commission Decision 2004/545/EC of 8 July 2004 on the harmonisation of radio spectrum in the 79 GHz range for the use of automotive short-range radar equipment in the Community⁽⁵⁾, Commission Decision 2005/50/EC of 17 January 2005 on the harmonisation of the 24 GHz range

⁽¹⁾ OJ L 91, 7.4.1999, p. 10.

⁽²⁾ OJ L 97, 19.4.2000, p. 13.

⁽³⁾ Mandate to CEPT to analyse further harmonisation of frequency bands in use for short-range devices.

⁽⁴⁾ Final report by the ECC in response to the EC mandate to the CEPT on short-range devices radio spectrum harmonisation.

⁽⁵⁾ OJ L 241, 13.7.2004, p. 66.

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radio spectrum band for the time-limited use by automotive short-range radar equipment in the Community⁽¹⁾, Commission Decision 2005/513/EC on the harmonised use of radio spectrum in the 5 GHz frequency band for the implementation of wireless access systems including radio local area networks (WAS/RLANs)⁽²⁾ or Commission Decision 2005/928/EC of 20 December 2005 on the harmonisation of the 169,4-169,8125 MHz frequency band in the Community⁽³⁾.

- (10) The use of spectrum is subject to the requirements of Community law for public health protection in particular Directive 2004/40/EC of the European Parliament and of the Council⁽⁴⁾ and Council Recommendation 1999/519/EC⁽⁵⁾. Health protection for radio equipment is ensured by conformity of such equipment to the essential requirements pursuant to the R&TTE Directive.
- (11) Due to the rapid changes in technology and societal demands, new applications for short-range devices will emerge, which will require constant scrutiny of spectrum harmonisation conditions, taking into account the economic benefits of new applications and the requirements of industry and users. Member States will have to monitor these evolutions. Regular updates of this Decision will therefore be necessary to respond to new developments in the market and technology. The Annex will be reviewed at least once every year on the basis of the information collected by Member States and provided to the Commission. A review may also be started in cases where appropriate measures will be taken by a Member State pursuant to Article 9 of the R&TTE Directive. If a review reveals the necessity to adapt the Decision, changes will be decided following the procedures specified in the Radio Spectrum Decision for the adoption of implementing measures. The updates could include transition periods to accommodate legacy situations.
- (12) 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 purpose of this Decision is to harmonise the frequency bands and the related technical parameters for the availability and efficient use of radio spectrum for short-range devices so that such devices may benefit from ‘Class 1’ classification under Commission Decision 2000/299/EC.

Article 2

For the purpose of this Decision:

1. ‘short-range device’ means radio transmitters which provide either unidirectional or bidirectional communication and which transmit over a short distance at low power;
2. ‘non-interference and non-protected basis’ means that no harmful interference may be caused to any radio communications service and that no claim may be made for protection of these devices against harmful interference originating from radio communications services.

⁽¹⁾ OJ L 21, 25.1.2005, p. 15.

⁽²⁾ OJ L 187, 19.7.2005, p. 22.

⁽³⁾ OJ L 344, 27.12.2005, p. 47.

⁽⁴⁾ OJ L 159, 30.4.2004, p. 1, corrected by OJ L 184, 24.5.2004, p. 1.

⁽⁵⁾ OJ L 199, 30.7.1999, p. 59.

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Article 3

1. Member States shall designate and make available, on a non-exclusive, non-interference and non-protected basis, the frequency bands for the types of short-range devices, subject to the specific conditions and by the implementation deadline, as laid down in the Annex to this Decision.
2. Notwithstanding paragraph 1, Member States may request transitional periods and/or radio spectrum-sharing arrangements, pursuant to Article 4(5) of the Radio Spectrum Decision.
3. 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.

Article 4

Member States shall keep the use of the relevant bands under scrutiny and report their findings to the Commission to allow regular and timely review of the Decision.

Article 5

This Decision is addressed to the Member States.

▼M2*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 ⁽¹⁾	Additional parameters/spectrum access and mitigation requirements ⁽²⁾	Other usage restrictions ⁽³⁾	Implementation deadline
Non-specific short-range devices ⁽⁴⁾	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
	433,050–434,0-40 ⁽⁵⁾ 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
	434,040–434,7-90 ⁽⁵⁾ MHz	10 mW e.r.p.	Duty cycle ⁽⁶⁾ : 10 %	Audio and voice signals, and video applications, are excluded	1 June 2007
			Duty cycle ⁽⁶⁾ : 100 % subject to channel spacing up to 25 kHz	Audio and voice signals, and video applications, are excluded	1 October 2008
	863,000–868,0-00 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 ⁽⁶⁾ of 0,1 % may also be used	Audio and voice signals, and video applications, are excluded	1 October 2008
	868,000–868,6-00 ⁽⁵⁾ MHz	25 mW e.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques	Video applications are excluded	1 October 2008

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Type of short-range device	Frequency band	Power limit/field strength limit/power density limit ⁽¹⁾	Additional parameters/spectrum access and mitigation requirements ⁽²⁾	Other usage restrictions ⁽³⁾	Implementation deadline
			described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle ⁽⁶⁾ of 1 % may also be used		
		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 ⁽⁶⁾ of 0,1 % may also be used	Audio and voice signals, and video applications, are excluded	1 October 2008
	868,700–869,2-00 ⁽⁵⁾ 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 ⁽⁶⁾ 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 ⁽⁶⁾ of 0,1 % may also be used	Audio and voice signals, and video applications, are excluded	1 October 2008
	869,400–869,6-50 ⁽⁵⁾ MHz	500 mW e.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the	Video applications are excluded	1 October 2008

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Type of short-range device	Frequency band	Power limit/field strength limit/power density limit ⁽¹⁾	Additional parameters/spectrum access and mitigation requirements ⁽²⁾	Other usage restrictions ⁽³⁾	Implementation deadline
			techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle ⁽⁶⁾ 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		
		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 ⁽⁶⁾ of 0,1 % may also be used	Audio and voice signals, and video applications, are excluded	1 October 2008
869,700–870,0-00 ⁽⁵⁾ 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 ⁽⁶⁾ 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

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Type of short-range device	Frequency band	Power limit/field strength limit/power density limit ⁽¹⁾	Additional parameters/spectrum access and mitigation requirements ⁽²⁾	Other usage restrictions ⁽³⁾	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 ⁽⁵⁾ 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	868,600–868,7-00 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 ⁽⁶⁾ : 1,0 %		1 October 2008
	869,250–869,3-00 MHz	10 mW e.r.p.	Channel spacing: 25 kHz Duty cycle ⁽⁶⁾ : 0,1 %		1 June 2007
	869,300–869,4-00 MHz	10 mW e.r.p.	Channel spacing: 25 kHz Duty cycle ⁽⁶⁾ : 1,0 %		1 October 2008
	869,650–869,7-00 MHz	25 mW e.r.p.	Channel spacing: 25 kHz Duty cycle ⁽⁶⁾ : 10 %		1 June 2007
Social alarms ⁽⁷⁾	869,200–869,2-50 MHz	10 mW e.r.p.	Channel spacing: 25 kHz Duty cycle ⁽⁶⁾ : 0,1 %		1 June 2007
Inductive applications ⁽⁸⁾	20,050–59,750 kHz	72 dB μ A/m at 10 metres			1 June 2007
	59,750–60,250 kHz	42 dB μ A/m at 10 metres			1 June 2007
	60,250–70,000 kHz	69 dB μ A/m at 10 metres			1 June 2007
	70–119 kHz	42 dB μ A/m at 10 metres			1 June 2007
	119–127 kHz	66 dB μ A/m at 10 metres			1 June 2007
	127–140 kHz	42 dB μ A/m at 10 metres			1 October 2008
	140–148,5 kHz	37,7 dB μ A/m at 10 metres			1 October 2008
	148,5–5 000 kHz	– 15 dB μ A/m at 10 metres in any			1 October 2008

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Type of short-range device	Frequency band	Power limit/field strength limit/power density limit ⁽¹⁾	Additional parameters/spectrum access and mitigation requirements ⁽²⁾	Other usage restrictions ⁽³⁾	Implementation deadline
Active medical implants ⁽¹¹⁾	In the specific bands mentioned below, higher field strengths and additional usage restrictions apply:	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			
	400–600 kHz	– 8 dBµA/m at 10 metres		This set of usage conditions applies to RFID ⁽⁹⁾ only	1 October 2008
	3 155–3 400 kHz	13,5 dBµA/m at 10 metres			1 October 2008
	5 000–30 000 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
	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 ⁽⁹⁾ and EAS ⁽¹⁰⁾ only	1 October 2008
	26 957–27 283 kHz	42 dBµA/m at 10 metres			1 October 2008
Active medical implants ⁽¹¹⁾	9–315 kHz	30 dBµA/m at 10 m	Duty cycle ⁽⁶⁾ : 10 %		1 October 2008
	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		1 November 2009

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Type of short-range device	Frequency band	Power limit/field strength limit/power density limit ⁽¹⁾	Additional parameters/spectrum access and mitigation requirements ⁽²⁾	Other usage restrictions ⁽³⁾	Implementation deadline
			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.		
Wireless audio applications ⁽¹²⁾	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 ⁽¹³⁾	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 ⁽¹⁴⁾	4,5–7,0 GHz	24 dBm e.i.r.p. ⁽¹⁵⁾			1 November 2009
	8,5–10,6 GHz	30 dBm e.i.r.p. ⁽¹⁵⁾			1 November 2009
	24,05–27,0 GHz	43 dBm e.i.r.p. ⁽¹⁵⁾			1 November 2009
	57,0–64,0 GHz	43 dBm e.i.r.p. ⁽¹⁵⁾			1 November 2009
	75,0–85,0 GHz	43 dBm e.i.r.p. ⁽¹⁵⁾			1 November 2009
Model Control ⁽¹⁶⁾	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

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Type of short-range device	Frequency band	Power limit/field strength limit/power density limit ⁽¹⁾	Additional parameters/spectrum access and mitigation requirements ⁽²⁾	Other usage restrictions ⁽³⁾	Implementation deadline
Radio Frequency Identification (RFID)	2 446–2 454 MHz	100 mW e.i.r.p.			1 November 2009

- (1) 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.
- (2) 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.
- (3) 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.
- (4) This category is available for any type of application which fulfils the technical conditions (typical uses are telemetry, tele-command, alarms, data in general and other similar applications).
- (5) For this frequency band Member States must make all the alternative sets of usage conditions possible.
- (6) ‘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’.
- (7) Social alarm devices are used to assist elderly or disabled people when they are in distress.
- (8) 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.
- (9) This category covers inductive applications used for Radio Frequency Identification (RFID).
- (10) This category covers inductive applications used for Electronic Article Surveillance (EAS).
- (11) 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).
- (12) 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.
- (13) 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.
- (14) 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.
- (15) 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.
- (16) 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.