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General

Permitted Short Range Devices in Ireland

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02/71R	22 December 2006	Update of requirements for SRDs in Ireland
02/71	30 July 2002	Original Document

1 Introduction

The term "Short Range Device" (SRD) is intended to cover the radio transmitters which provide either uni-directional or bi-directional communication and which have low capability of causing interference to other radio equipment. SRDs include devices such as inductive applications, model control, Road Transport and Traffic Telematics (RTTT) systems, cordless telephones, Alarms, Field Disturbance and Doppler Apparatus (FDDA) systems, Wireless microphones, wireless audio systems and wideband data transmission systems.

Short Range Devices operate on a non-interference and non-protected basis in Ireland. SRDs that operate in accordance with the requirements laid down in this section may be operated without the need for an individual user licence in Ireland. These SRDs are covered by legal instruments known as exemption orders¹. This exemption shall not absolve an operator from any requirement in law to obtain additional consents, permissions, authorisations or licences as may be necessary (e.g. for the provision of services to the public).

The interface requirements for SRDs are detailed in Tables 1 - 13 as follows:

Table 1: Non-Specific Short Range Devices

Table 2: Wideband Data Transmission Systems (incl. WAS/RLANs)

Table 3: Road Transport and Traffic Telematics (RTTT)

Table 4: Equipment for Detecting Movement and Alert

Table 5: Alarms

Table 6: Model Control

Table 7: Inductive Applications

Table 8: Radio Microphones

Table 9: Radio Frequency Identification Applications (RFID)

Table 10: Wireless Applications in Healthcare

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Table 13: Miscellaneous Applications

The legislation and documentation relevant to SRDs is listed in Section 3 of this document.

¹ S.I. 160 of 2006 and S.I. 405 of 2002

2 Interface Requirements for Short Range Devices

Table 1: Interface Requirements for Non-Specific Short Range Devices²

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
6765 – 6795 kHz	42 dB μ A/m @ 10m	-	EN 300 330	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
13.553 – 13.567 MHz	42 dB μ A/m @ 10m	-	EN 300 330	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other documents: ERC/REC 70-03
26.957 – 27.283 MHz	42 dB μ A/m @ 10m or 10 mW Effective Radiated Power (ERP)	-	EN 300 220, EN 300 330	Legal references: Commission Decision 2006/771/EC, , S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)02, ERC/REC 70-03
40.660 – 40.700 MHz	10 mW ERP	-	EN 300 220	Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)03, ERC/REC 70-03

² This category is available for any type of application which fulfils the technical conditions (typical uses include telemetry, telecommand, alarms, data in general and other similar applications).

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
49.82 – 49.98 MHz*	10 mW ERP	-	EN 300 220	Legal references: S.I. 405 of 2002, S.I. 160 of 2006
173.2125 – 173.2375 MHz*	10 mW ERP	Channel Spacing \leq 25kHz	EN 300 220	Telecommand only Legal references: S.I. 405 of 2002, S.I. 160 of 2006
173.2375 – 173.275 MHz*	100 mW ERP	Channel Spacing \leq 25kHz	EN 300 220	Legal references: S.I. 405 of 2002, S.I. 160 of 2006
433.050 – 434.790 MHz	10 mW ERP	Duty Cycle ³ \leq 10 %	EN 300 220	Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC(04)02, ERC/REC 70-03
433.050 – 434.790 MHz	1 mW ERP (-13 dBm/10 kHz for wideband modulation with a bandwidth greater than 250 kHz)	Duty Cycle ³ \leq 100 %	EN 300 220	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC(04)02, ERC/REC 70-03
434.040 – 434.790 MHz	10 mW ERP	Duty Cycle ³ \leq 100 % Channel Spacing \leq 25 kHz	EN 300 220	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC(04)02, ERC/REC 70-03

* Not included in ERC/REC/70-03 – National SRD solution only

³ Duty cycle means the ratio of time during any one-hour period when equipment is actively transmitting

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
458.4875 – 458.6375 MHz*	500 mW ERP	Channel Spacing \leq 25 kHz	EN 300 220	On site telemetry/telecommand only. Please note adjacent band use for ECG monitoring in hospitals (see Table 10) Legal references: S.I. 405 of 2002, S.I. 160 of 2006
458.8375 – 458.9875 MHz*	500 mW ERP	Channel Spacing \leq 25 kHz	EN 300 220	Please note adjacent band use for ECG monitoring in hospitals (see Table 10) On site telemetry/telecommand only. Paging systems operating on 458.850 MHz to be phased out. Legal references: S.I. 405 of 2002, S.I. 160 of 2006
863 - 870 MHz	25 mW ERP	Duty Cycle ³ \leq 0.1 % (note 1, 4 and 5). Channel Spacing \leq 100 kHz for 47 or more channels (note 2)	EN 300 220	See note 3 FHSS Modulation Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
	25 mW ERP Power density : -4.5 dBm/100 kHz (note 7)	Duty Cycle ³ ≤ 0.1 % (note 1, 4 and 5)	EN 300 220	See note 3 DSSS and other wideband modulations other than FHSS Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
	25 mW ERP	Duty Cycle ³ ≤ 0.1 % (note 1, 4 and 5) Channel Spacing ≤ 100 kHz (note 2 and 6)	EN 300 220	See note 3 Narrow/wide-band Modulation Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
868.000 - 868.600 MHz	25 mW ERP	Duty Cycle ³ ≤ 1 %. (note 1)	EN 300 220	Narrow/wide-band Modulation No channel spacing. However the whole stated frequency band may be used (see note 2). Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)04, ERC/REC 70-03

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
868.700 - 869.200 MHz	25 mW ERP	Duty Cycle ³ ≤ 0.1 %. (note 1)	EN 300 220	Narrow/wide-band Modulation No channel spacing. However the whole stated frequency band may be used (see note 2). Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)04, ERC/REC 70-03
869.400 - 869.650 MHz	500 mW ERP	Duty Cycle ³ ≤ 10 %. (note 1) Channel spacing must be 25 kHz except that the whole band may also be used as one single channel for high speed data transmission.	EN 300 220	Narrow/wide-band Modulation Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)04, ERC/REC 70-03
869.700 - 870.000 MHz	5 mW ERP	Up to 100% duty cycle Voice applications allowed with advanced mitigation techniques	EN 300 220	Narrow/wide-band Modulation No channel spacing but the whole stated frequency band may be used. Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)04, ERC/REC 70-03

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
2400 - 2483.5 MHz	10 mW Equivalent Isotropic Radiated Power (EIRP)	-	EN 300 440	Commission Decision 2006/771/EC Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
5725 - 5875 MHz	25 mW EIRP	-	EN 300 440	Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
24.00 - 24.25 GHz	100 mW EIRP	-	EN 300 440	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
61.0 - 61.5 GHz	100 mW EIRP	-	TBA	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

* Not included in ERC/REC/70-03 – National SRD solution only

- Note 1: For single frequency devices the duty cycle limit applies, unless Listen Before Talk (LBT) or an equally efficient mitigation technique which gives adequate protection to other users of the radio spectrum is used.
For FHSS, DSSS or AFA devices, the duty cycle applies to the total transmission unless LBT or an equally efficient mitigation technique which gives adequate protection to other users of the radio spectrum is used.
- Note 2: The preferred channel spacing is 100 kHz allowing for a subdivision into 50 kHz or 25 kHz.
- Note 3: Sub-bands for alarms are excluded (see Table 5)
- Note 4: Duty cycle may be increased to 1% if the band is limited to 865 – 868 MHz.
- Note 5: For other wide-band modulation than FHSS and DSSS with a bandwidth of 200 kHz to 3 MHz, duty cycle can be increased to 1% if the band is limited to 865-868 MHz and power to ≤10 mW e.r.p.
- Note 6: For other narrow-band modulation with a bandwidth of 50 kHz to 200 kHz, the band is limited to 865.5 – 867.5 MHz.
- Note 7: The power density can be increased to +6.2 dBm/100 kHz and +0.8 dBm/100 kHz, if the band of operation is limited to 865 –868 MHz and 865-870 MHz respectively.

Table 2: Interface Requirements for Wideband Data Transmission Systems (incl. WAS/RLANs)

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
2400 – 2483.5 MHz	100 mW EIRP	-	EN 300 328	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)07, ERC/REC 70-03
5150 – 5250 MHz	200 mW EIRP (Max mean) Power Density (Max mean EIRP): 10 mW/MHz in any 1 MHz band	Indoor use only	EN 301 893	Legal references: Commission Decision 2005/513/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC/(04)08, ERC/REC 70-03
5250 – 5350 MHz	200 mW EIRP (Max mean) Power Density (Max mean EIRP): 10 mW/MHz in any 1 MHz band	Indoor use only DFS/TPC per ECC/DEC/(04)08 and EN 301 893	EN 301 893	Legal references: Commission Decision 2005/513/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC/(04)08, ERC/REC 70-03
5470 – 5725 MHz	1 W EIRP (Max mean) Power Density (Max mean EIRP): 50 mW/MHz in any 1 MHz band	DFS/TPC per ECC/DEC/(04)08 and EN 301 893	EN 301 893	Legal references: Commission Decision 2005/513/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC/(04)08, ERC/REC 70-03

5725 – 5875 MHz ⁺	2 W EIRP (Max mean) Power Density (Max mean EIRP): 100mW/MHz	-	EN 301 489-4 EN 301 753	Registration Required ⁺ Legal references: S.I. 405 of 2002, S.I. 160 of 2006
17.1 – 17.3 GHz	100 mW EIRP	-	To be agreed	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

* Not included in ERC/REC/70-03 – National SRD solution only

⁺ See document 03/42 or www.comreg.ie/5_8GHzRegistration.asp

Table 3: Interface Requirements for Road Transport and Traffic Telematics (RTTT)

Mandatory Requirements		Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Reference Standards	Relevant Documents/Other notes
5795 – 5805 MHz	2 W EIRP	EN 300 674 ES 200 674	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC/(02)01, ERC/REC 70-03
5805 – 5815 MHz	2 W EIRP	EN 300 674 ES 200 674	Expansion spectrum only Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC/(02)01, ERC/REC 70-03
63 – 64 GHz	To be decided	To be decided	Other references: ECC/DEC/(02)01, ERC/REC 70-03
76 – 77 GHz	55 dBm EIRP (peak)	EN 301 091	Power level 55 dBm peak power e.i.r.p. - 50 dBm average power - 23.5 dBm average power for pulse radar only. Vehicle and infrastructure radar systems Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC/(02)01, ERC/REC 70-03

Table 4: Interface Requirements for Equipment for Detecting Movement and Alert

Mandatory Requirements		Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Reference Standards	Relevant Documents/Other notes
2400 – 2483.5 MHz	25 mW EIRP	EN 300 440	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)08, ERC/REC 70-03
9200 – 9500 MHz	25 mW EIRP	EN 300 440	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
9500 – 9975 MHz	25 mW EIRP	EN 300 440	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
10.5 – 10.6 GHz	25 mW EIRP	EN 300 440	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references:ERC/REC 70-03
13.4 – 14 GHz	25 mW EIRP	EN 300 440	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
24.05 – 24.25 GHz	100 mW EIRP	EN 300 440	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

Table 5: Interface Requirements for Alarms

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
169.4750 – 169.4875 MHz	10 mW ERP	Duty Cycle ³ < 0.1 % Channel Spacing: 12.5 kHz	EN 300 220	Social Alarms – exclusive use Legal references: Commission Decision 2005/928/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC/(05)02, ERC/REC 70-03
169.5875 – 169.6000 MHz	10 mW ERP	Duty Cycle ³ < 0.1 % Channel Spacing: 12.5 kHz	EN 300 220	Social Alarms – exclusive use Legal references: Commission Decision 2005/928/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC/(05)02, ERC/REC 70-03
868.6 – 868.7 MHz	10 mW ERP	Duty Cycle ³ < 1 % Channel Spacing: 25 kHz The whole frequency band may also be used as one single channel for high-speed data transmission.	EN 300 220	Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)09, ERC/REC 70-03

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
869.200 – 869.250 MHz	10 mW ERP	Duty Cycle ³ < 0.1 % Channel Spacing: 25 kHz	EN 300 220	Social Alarms ⁴ Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
869.250 – 869.300 MHz	10 mW ERP	Duty Cycle ³ < 0.1 % Channel Spacing: 25 kHz	EN 300 220	Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)09, ERC/REC 70-03
869.3 – 869.4 MHz	10 mW ERP	Duty Cycle ³ < 1 % Channel Spacing: 25 kHz	EN 300 220	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
869.650 – 869.700 MHz	25 mW ERP	Duty Cycle ³ < 10 % Channel Spacing: 25 kHz	EN 300 220	Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)09, ERC/REC 70-03

⁴ Social alarm devices are used to assist elderly people and people with disabilities living at home when then they are in distress.

Table 6: Interface Requirements for Model Control

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
26.99 – 27.20 MHz	100 mW ERP	Channel Spacing: 10 kHz	EN 300 220	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)10, ERC/REC 70-03
34.945 – 35.305 MHz	100 mW ERP	Channel Spacing: 10 kHz	EN 300 220	Flying Models only Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)11, ERC/REC 70-03
40.660 – 40.700 MHz	100 mW ERP	Channel Spacing: 10 kHz	EN 300 220	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)12, ERC/REC 70-03

Table 7: Interface Requirements for Inductive Applications⁵

Mandatory Requirements		Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Reference Standards	Relevant Documents/Other notes
9 – 59.75 kHz	72 dB μ A/m @ 10 m	EN 300 330	In case of external antennas only loop coil antennas may be employed. Field strength level descending 3dB/octave at 30kHz Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)13, ERC/REC 70-03
59.75 – 60.25 kHz	42 dB μ A/m @ 10 m	EN 300 330	In case of external antennas only loop coil antennas may be employed. Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)13, ERC/REC 70-03
60.25 – 70.00 kHz	69 dB μ A/m @ 10 m	EN 300 330	In case of external antennas only loop coil antennas may be employed. Field strength level descending 3dB/octave at 30kHz Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)13, ERC/REC 70-03

⁵ This category covers e.g. 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.

Mandatory Requirements		Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Reference Standards	Relevant Documents/Other notes
70 – 119 kHz	42 dB μ A/m @ 10 m	EN 300 330	In case of external antennas only loop coil antennas may be employed. Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)13, ERC/REC 70-03
119 – 135 kHz	66 dB μ A/m @ 10 m	EN 300 330	In case of external antennas only loop coil antennas may be employed. Field strength level descending 3dB/octave at 30kHz Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)13, ERC/REC 70-03
135 – 140 kHz	42 dB μ A/m @ 10 m	EN 300 330	In case of external antennas only loop coil antennas may be employed. Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
140 – 148.5 kHz	37.7 dB μ A/m @ 10 m	EN 300 330	In case of external antennas only loop coil antennas may be employed. Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

Mandatory Requirements		Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Reference Standards	Relevant Documents/Other notes
148.5 – 1600 kHz*	-5 dB μ A/m @ 10 m	EN 300 330	In case of external antennas only loop coil antennas may be employed. Legal references: S.I. 405 of 2002, S.I. 160 of 2006
285 – 400 kHz*	38 dB μ A/m @ 10 m	EN 300 330	Legal references: S.I. 405 of 2002, S.I. 160 of 2006
1650 – 1950 kHz*	8 dB μ A/m @ 10 m	EN 300 330	Legal references: S.I. 405 of 2002, S.I. 160 of 2006
1805 – 2200 kHz*	-8 dB μ A/m @ 10 m	EN 300 330	Legal references: S.I. 405 of 2002, S.I. 160 of 2006
2540 – 3560 kHz*	-8 dB μ A/m @ 10 m	EN 300 330	Legal references: S.I. 405 of 2002, S.I. 160 of 2006
3155 – 3400 kHz	13.5 dB μ A/m @ 10 m	EN 300 330	In case of external antennas only loop coil antennas may be employed. Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
6765 – 6795 kHz	42 dB μ A/m @ 10 m	EN 300 330	Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
7400 – 8800 kHz	9 dB μ A/m @ 10 m	EN 300 330	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)15, ERC/REC 70-03
10.2 – 11 MHz	9 dB μ A/m @ 10 m	EN 300 330	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

* Not included in ERC/REC/70-03 – National SRD solution only

Mandatory Requirements		Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Reference Standards	Relevant Documents/Other notes
13.553 – 13.567 MHz	42 dB μ A/m @ 10 m	EN 300 330	Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
13.553 – 13.567 MHz	60 dB μ A/m @ 10 m	EN 300 330	For RFID and EAS only Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
26.957 – 27.283 MHz	42 dB μ A/m @ 10 m	EN 300 330	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)16, ERC/REC 70-03

Table 8: Interface Requirements for Radio Microphones

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant documents/Other notes
173.7 – 175.1 MHz	10 mW ERP	Channel Spacing: 50 kHz	EN 300 422	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references:ERC/REC 70-03
863 – 865 MHz	10 mW ERP	Channel Spacing: 200 kHz	EN 301 357	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

Table 9: Interface Requirements for Radio Frequency Identification Applications (RFID)

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
865 – 865.6 MHz	100 mW ERP	LBT or equally efficient mitigation technique which gives adequate protection to other users of the radio spectrum. Channel Spacing: 200 kHz	EN 302 208	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
865.6 – 867.6 MHz	2 W ERP	LBT or equally efficient mitigation technique which gives adequate protection to other users of the radio spectrum. Channel Spacing: 200 kHz	EN 302 208	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
867.6 – 868 MHz	500 mW ERP	LBT or an equally efficient mitigation technique which gives adequate protection to other users of the radio spectrum. Channel Spacing: 200 kHz	EN 302 208	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
2446 – 2454 MHz	500 mW EIRP	-	EN 300 440	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
2446 – 2454 MHz	4 W EIRP	Duty Cycle ³ ≤ 15 % Indoor Use only	EN 300 440	Duty cycle ≤ 15 % in any 200 ms period (i.e. 30 ms on/170 ms off) Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

Table 10: Interface Requirements for Wireless Applications in Healthcare

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
9 – 315 kHz	30 dB μ A/m @ 10 m	Duty Cycle ³ < 10 %	EN 300 330	The application is for ultra low power active medical implant systems using inductive loop techniques for telemetry purposes Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
315 – 600 kHz	-5 dB μ A/m @ 10 m	Duty Cycle ³ < 10 %	EN 300 330	Animal implantable devices Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
30 – 37.5 MHz	1 mW ERP	Duty Cycle ³ < 10 %	EN 300 220	The application is for Ultra Low Power medical membrane implants for blood pressure measurements Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
402 – 405 MHz	25 µW ERP	Channel Spacing: 25kHz Other channelling restriction: Individual transmitters may combine adjacent channels for increased bandwidth with advanced mitigation techniques	EN 301 839	Active Medical Implants ⁶ Legal references: Commission Decision 2006/771/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references:ERC/DEC/(01)17, ERC/REC 70-03
458.6375 – 458.8375 MHz	10 mW ERP	Channel Spacing: 25 kHz	EN 300 220	ECG monitoring only Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

⁶ 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.

Table 11: Interface Requirements for Wireless Audio Applications⁷

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
31.025 – 31.325 MHz*	10 mW ERP	-	Ref to TTE 9 (see document odtr98/62R)	Analogue cordless phones only Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
39.925 – 40.225 MHz*	10 mW ERP	-	Ref to TTE 9 (see document odtr 98/62R)	Analogue cordless phones only Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
49.82 – 49.98 MHz*	10 mW ERP	-	EN 300 220	Baby Monitors ⁸ Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
87.5 – 108 MHz	50 nW ERP	Channel Spacing: 200 kHz	EN 301 357	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

⁷ Applications for wireless audio systems include cordless loudspeakers, cordless headphones for portable use e.g. portable CD, cassette or radio devices carried on a person, cordless headphones for use in avheicle e.g. for use with a radio or mobile telephone, in-ear monitoring, for use with concerts or other stage productions.

* Not included in ERC/REC/70-03 – National SRD solution only.

⁸ When operating short range devices on these frequencies in close proximity to domestic television receivers care must be taken as the domestic television receivers may suffer interference

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
446.0 – 446.1 MHz	500 mW ERP	8 channels specified in S.I. 93 of 1998. Channel Spacing: 12.5 kHz CTCSS or DCS tone control	EN 300 296	PMR446 hand portable with integral antennas for speech communications. Licence exemption covered by S.I. 93 of 1998. Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
446.1 – 446.2 MHz	500 mW ERP	6.25 kHz or 12.5 kHz channel spacing	EN 300 113 - 2 or EN 301 166 - 2	Digital PMR 446 handportable Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC(05)12, ERC/REC 70-03
863 – 865 MHz	10 mW ERP	-	EN 301 357	Commission Decision 2006/771/EC Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/DEC/(01)18, ERC/REC 70-03
864.1 – 868.1 MHz	10 mW ERP	-	ETS 300 131	CT2 Cordless Phones. ECC Decision (01)02. To be withdrawn at end of 2008. Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
864.8 – 865 MHz	10 mW ERP	Channel Spacing: 50 kHz	EN 300 220	Narrow band analogue voice devices Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
1880 – 1900 MHz ⁺	250 mW ERP (Peak)	-	EN 301 406	DECT Cordless Phones Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

⁺ Not included in ERC/REC/70-03 – Directive 91/287/EEC & S.I. No 168 of 1994

Table 12: Interface Requirements for Automotive Applications

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
21.65 – 26.65 GHz	<p>Max Mean Power Density for frequencies below 22GHz: - 61.3dBm/MHz EIRP</p> <p>Max Mean Power Density for frequencies above 22GHz: -41.3 dBm/MHz EIRP;</p> <p>Peak Power Density: 0 dBm/50 MHz EIRP</p>	Emissions within the 23.6-24 GHz band that appear 30° or greater above the horizontal plane shall be attenuated by at least 25 dB for automotive SRR placed on the market before 2010 and thereafter by at least 30 dB	EN 302 288	<p>Temporary designation for automotive Short Range Radar (SRR) for collision mitigation and traffic safety applications only.</p> <p>Legal references: Commission Decision 2005/50/EC, S.I. 405 of 2002, S.I. 160 of 2006</p> <p>Other references: ECC/DEC/(04)10, ERC/REC 70-03</p>
24.05 – 24.25 GHz	Maximum Peak Power: 20 dBm EIRP	Duty Cycle ³ ≤ 10 % (for peak emissions > -10 dBm EIRP)	EN 302 288	<p>Temporary designation for automotive SRR for collision mitigation and traffic safety applications only.</p> <p>Legal references: Commission Decision 2005/50/EC, S.I. 405 of 2002, S.I. 160 of 2006</p> <p>Other references: ECC/DEC/(04)10, ERC/REC 70-03</p>
77– 81 GHz	<p>Max Mean Power Density: -3 dBm/MHz EIRP;</p> <p>Peak Limit: 55 dBm EIRP;</p> <p>Max Mean Power Density for one SRR (measured outside the vehicle): -9 dBm/MHz EIRP</p>	To be decided	To be decided	<p>Automotive Short Range Radar (SRR) for collision mitigation and traffic safety only</p> <p>Legal references: Commission Decision 2004/545/EC, S.I. 405 of 2002, S.I. 160 of 2006</p> <p>Other references: ECC/DEC/(04)03, ERC/REC 70-03</p>

Table 13: Interface Requirements for Miscellaneous Short Range Device Applications

Mandatory Requirements				Information	
Frequency Band	Application	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
457 kHz	Devices for detecting Avalanche Victims	7 dB μ A/m @ 10 m	Continuous Wave operation	EN 300 718	Legal references: Commission Decision 2001/148/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC/(04)01, ERC/REC 70-03
4515 kHz	Railway Applications (Euroloop)	7 dB μ A/m @ 10 m	-	EN 300 330	Transmitting only on receipt of a Eurobalise signal from a train Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
27.095 MHz	Railway Application (Eurobalise)	42 dB μ A/m @ 10 m	-	EN 300 330	Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
1349 MHz	Video senders	500mW ERP	-	EN 300 440	Legal references: S.I. 405 of 2002, S.I. 160 of 2006
2446 – 2454 MHz	AVI for Railways	500 mW EIRP	-	EN 300 761	Transmitting only in the presence of trains Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03
2400 – 2483.5 MHz	Video Surveillance	25 mW EIRP	-	EN 300 440	Legal references: S.I. 405 of 2002, S.I. 160 of 2006

Notes

When selecting parameters for new SRDs, which may have inherent safety of human life implications, manufacturers and users should pay particular attention to the potential for interference from other systems operating in the same or adjacent bands. Manufacturers should advise users on the risks of potential interference and its consequences.

3 Relevant Documentation

National Legislation

Primary Legislation

Wireless Telegraphy Act 1926, as amended.

Secondary Legislation

S.I. 160 of 2006: Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Short Range Devices) (Amendment) Order, 2006.

S.I. 405 of 2002: Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Short Range Devices) Order, 2002.

S.I. 436 of 1998: Wireless Telegraphy Act, 1926 (Section 3)(Exemption of Citizens' Band (CB) Radios) Order, 1998.

S.I. 410 of 1997: Wireless Telegraphy (Cordless Telephones) Exemption Order, 1997.

S.I. 168 of 1994: European Communities (Digital European Cordless Telecommunications - DECT) Regulations, 1994.

S.I. 93 of 1998: Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Short Range Business Radios) Order, 1998.

ComReg/ODTR Documentation

03/42: Registration of 5.8 GHz Wireless Access Base Stations.

98/62R: TTE 9: Type Approval requirements for analogue cordless telephones for connection to switched public telecommunications networks in Ireland.

ETSI Documentation

EN 300 220: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Short Range Devices (SRD);Radio equipment to be used in the 25 MHz to 1 000 MHz frequency range with power levels ranging up to 500 mW.

EN 300 328: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Wideband Transmission systems;Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques.

EN 300 330: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM);Short Range Devices (SRD);Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz.

EN 300 422: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range.

EN 300 440: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Short range devices;Radio equipment to be used in the 1 GHz to 40 GHz frequency range.

EN 300 674: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Road Transport and Traffic Telematics (RTTT); Technical characteristics and test methods for Dedicated Short Range Communication (DSRC) transmission equipment (500 kbit/s / 250 kbit/s) operating in the 5,8 GHz Industrial, Scientific and Medical (ISM) band.

EN 300 761: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Short Range Devices (SRD); Automatic Vehicle Identification (AVI) for railways operating in the 2,45 GHz frequency range.

EN 301 091: Electromagnetic compatibility and Radio spectrum Matters (ERM); Road Transport and Traffic Telematics (RTTT); Technical characteristics and test methods for radar equipment operating in the 76 GHz to 77 GHz band.

EN 301 357: Electromagnetic compatibility and Radio spectrum Matters (ERM); Technical characteristics and test methods for analogue cordless wideband audio devices using integral antennas operating in the CEPT recommended 863 MHz to 865 MHz frequency range.

ES 200 674: Electromagnetic compatibility and Radio spectrum Matters (ERM); Road Transport and Traffic Telematics (RTTT); Part 1: Technical characteristics and test methods for High Data Rate (HDR) data transmission equipment operating in the 5,8 GHz Industrial, Scientific and Medical (ISM) band.

EN 301 357: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Cordless audio devices in the range 25 MHz to 2 000 MHz; Consumer radio microphones and in-ear monitoring systems operating in the CEPT harmonized band 863 MHz to 865 MHz.

EN 301 893: Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive.

ETS 300 131: Radio Equipment and Systems (RES); Common air interface specification to be used for the interworking between cordless telephone apparatus in the frequency band 864,1 MHz to 868,1 MHz, including public access services.

CEPT Documentation

ECC/DEC(05)12 ECC Decision of 28 October 2005 on harmonised frequencies, technical characteristics, exemption from individual licensing and free carriage and use of digital PMR 446 applications operating in the frequency band 446.1- 446.2 MHz.

ECC/DEC/(04)08: ECC Decision of 9 July 2004 on the harmonised use of the 5 GHz frequency bands for the implementation of Wireless Access Systems including Radio Local Area Networks (WAS/RLANs)

ECC/DEC/(04)02: ECC Decision of 19 March 2004 on harmonised frequencies, technical characteristics and exemption from individual licensing of Non-Specific Short Range Devices operating in the frequency band 433.050-434.790 MHz excluding audio and voice applications

ECC/DEC/(02)01: ECC Decision of 15 March 2002 on the frequency bands to be designated

for the coordinated introduction of Road Transport and Traffic Telematic Systems.

ERC/DEC/(01)17: ERC Decision of 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Short Range Devices used for Ultra Low Power Active Medical Implants operating in the frequency band 402 - 405 MHz.

ERC/DEC/(01)16: ERC Decision on 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Short Range Devices used for inductive applications operating in the frequency band 26.957 - 27.283 MHz.

ERC/DEC/(01)15: ERC Decision of 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Short Range Devices used for inductive applications operating in the frequency band 7400 - 8800 kHz.

ERC/DEC(01)13 ERC Decision of 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Short Range Devices used for inductive applications operating in the frequency bands 9 - 59.750 kHz, 59.750 - 60.250 kHz, 60.250 - 70 kHz, 70 - 119 kHz, 119 - 135 kHz.

ERC/DEC/(01)12: ERC Decision of 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Short Range Devices used for Model control operating in the frequencies 40.665, 40.675, 40.685 and 40.695 MHz.

ERC/DEC/(01)11: ERC Decision of 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Short Range Devices used for Flying Model control operating in the frequency band 34.995 - 35.225 MHz.

ERC/DEC/(01)10: ERC Decision of 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Short Range Devices used for Model control operating in the frequencies 26.995, 27.045, 27.095, 27.145 and 27.195 MHz.

ERC/DEC/(01)09: ERC Decision of 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Short Range Devices used for Alarms operating in the frequency bands 868.60 - 868.7 MHz, 869.25 - 869.3 MHz, 869.65 - 869.7 MHz.

ERC/DEC/(01)08: ERC Decision of 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Short Range Devices used for Movement Detection and Alert operating in the frequency band 2400 - 2483.5 MHz.

ERC/DEC/(01)07: ERC Decision of 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Short Range Devices used for Radio Local Area Networks (RLANs) operating in the frequency band 2400 - 2483.5 MHz.

ERC/DEC/(01)04: ERC Decision of 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Non-specific Short Range Devices operating in the frequency bands 868.0 - 868.6 MHz, 868.7 - 869.2 MHz, 869.4 - 869.65 MHz, 869.7 - 870.0 MHz.

ERC/DEC/(01)03: ERC Decision of 12 March 2001 on harmonised frequencies, technical

characteristics and exemption from individual licensing of Non-specific Short Range Devices operating in the frequency band 40.660 - 40.700 MHz.

ERC/DEC/(01)02: ERC Decision of 12 March 2001 on harmonised frequencies, technical characteristics and exemption from individual licensing of Non-specific Short Range Devices operating in the frequency band 26.957 - 27.283 MHz.

ERC/REC 70-03: Relating to the use of Short Range Devices (SRD).

European Legislation

Commission Decision 2006/804/EC on harmonisation of the radio spectrum for radio frequency identification (RFID) devices operating in the ultra high frequency (UHF) band

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

Commission Decision 2005/928/EC on the harmonisation of the 169,4-169,8125 MHz frequency band in the Community (frequency band originally designated for the ERMES paging system).

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).

Commission Decision 2005/50/EC on the harmonisation of the 24 GHz range radio spectrum band for the time-limited use by automotive short-range radar equipment in the Community.

Commission Decision 2004/545/EC on the harmonisation of radio spectrum in the 79 GHz range for the use of automotive short-range radar equipment in the Community.

Commission Decision 2001/148/EC on the application of Article 3(3)(e) of Directive 1999/5/EC to avalanche beacons.

Please note that all documentation is subject to updates and revision.

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