



Interface Requirements for Radio Services in Ireland

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Note:

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Document Revision History

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06/47R	22 December 2006	Final Interface requirements for Radio Services in Ireland
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1 Introduction

This document contains interface requirements for the radio services in Ireland. These requirements include the administrative and technical requirements associated with operation of the different radio services in Ireland.

Section 2 contains general information on the background to this document and radio licensing in Ireland. Section 3 contains the individual interface requirements for each of the radio services and is divided into seven subsections as follows:

- Section 3.1: Mobile Services
- Section 3.2: Fixed Services
- Section 3.3: Broadcasting Services
- Section 3.4: Satellite Services
- Section 3.5: Short-Range Devices
- Section 3.6: Aeronautical Services
- Section 3.7: Spectrum Access in the 1785 - 1805 MHz band

2 General

1. The Radio and Telecommunications Terminal Equipment Directive¹ (R&TTE Directive) was transposed into Irish law by Statutory Instrument (S.I.) 240 of 2001 entitled “European Communities (Radio Equipment and Telecommunications Terminal Equipment) Regulations, 2001”. Regulation 5(6)(a) of S.I. 240 of 2001 transposes Article 4.1 of the R&TTE Directive and requires the Commission for Communications Regulation (ComReg) to notify the European Commission of the regulated interfaces in Ireland. This document sets out the interface requirements for the different radio services in Ireland which have been stipulated for the purpose of the efficient and effective use of the radio spectrum.
2. The manner in which the radio spectrum is allocated in Ireland is laid down in the Table of Frequency Allocations for Ireland (ComReg document 04/77)².
3. This document supersedes the following draft notifications made to the European Commission in 2000: 2000/079/IRL, 2000/080/IRL, 2000/081/IRL, 2000/082/IRL and 2000/083/IRL.
4. All radio and telecommunications terminal equipment must comply with the essential requirements and other relevant provisions of the R&TTE Directive³ before being placed on the market or put into service in Ireland. In terms of the usage of radio equipment in Ireland, radio equipment must operate in accordance with the relevant interface requirements laid down in this document.
5. Under Irish legislation (The Wireless Telegraphy Acts 1926 - 1988), all apparatus for Wireless Telegraphy requires a licence unless that apparatus has been specifically exempted from licensing under Irish legislation by means of an Exemption Order. A list of Exemption Orders currently in force in Ireland is contained in Annex A.
6. Detailed information on the licensing policies and procedures for specific radio services in Ireland are available on the ComReg website <http://www.comreg.ie>, generally in the form of guidelines to applicants.
7. All radio equipment should operate so as to optimise the effective and appropriate use of the radio spectrum and so that it does not cause harmful interference to other authorised radio services.
8. Licence conditions attached to Wireless Telegraphy licences, broadcast licences and fixed service licences require that licensees adhere to the International Commission on Non-Ionising Radiation Protection (ICNIRP)⁴ Guidelines on non-ionising radiation emissions.

¹ 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 available at <http://europa.eu.int/comm/enterprise/rte/dir99-5.htm>.

² <http://www.comreg.ie/fileupload/publications/ComReg0477.pdf>

³ Where applicable, EC Decisions under the R&TTE Directive must also be complied with. These Decisions are listed at <http://europa.eu.int/comm/enterprise/rte/decision/present.htm> and also in Annex B of this document “General References”.

⁴ www.icnirp.de

9. Throughout this document, the term “reference standards” refers to the currently applicable standards to the particular radio service in question. In some cases sub-parts of these standards are harmonised standards under the R&TTE Directive. Harmonised standards, although not compulsory, give a presumption of conformity to the relevant essential requirements of the R&TTE Directive under the scope of that standard. A list of harmonised standards under the R&TTE Directive is published in the Official Journal of the European Union (OJEU) and is published electronically on the European Commission website⁵. The OJEU maintains the list of harmonised standards and defines which parts and which versions are in force. Conformity to the harmonised standards which are in force at the time of putting into service is recommended. Users are advised to refer to the latest publication of the OJEU for information on current harmonised standards.
10. Where standards are contained in the Irish Regulations, these refer to the standards in force at the time of writing of those Regulations. If a standard is superseded this should be read as referring to the relevant successor or most up to date revision of that standard.
11. Where specific requirements contained in the harmonised standards have been repeated in this interface document this has been done for the purposes of clarity to users of the radio spectrum on the applicable requirements for the use of the different frequency bands in Ireland. In the event of any discrepancies arising between the requirements laid down in the current document and subsequent versions of harmonised standards ComReg will clarify the applicable requirements and, if necessary, may amend this document.
12. Commission Decision 2000/299/EC⁶ established classifications for radio and telecommunications terminal equipment. Radio and telecommunications terminal equipment which can be placed on the market and put into service without restrictions has been designated as Class 1. A list of Class 1 radio and telecommunications terminal equipment is maintained at <http://www.ero.dk/rtte> and <http://europa.eu.int/comm/enterprise/rtte/equip.htm#list> respectively. Class 1 equipment does not need notification under the R&TTE Article 6.4 process. On the other hand, radio equipment which has restrictions placed on it in terms of either placing on the market or putting into service is designated as Class 2 equipment and should accordingly be marked with the alert symbol. Class 2 equipment requires notification to ComReg under the Article 6.4 process.
13. Please note that the New Regulatory Framework⁷ has now been implemented into Irish law⁸. The implementing Regulations for the new Framework and other generally applicable legislation and documentation in Ireland are referenced in Annex B.

⁵ <http://europa.eu.int/comm/enterprise/newapproach/standardization/harmstds/reflist/radiotte.html>

⁶ <http://europa.eu.int/comm/enterprise/rtte/decision/class-en.pdf>

⁷ http://europa.eu.int/information_society/topics/telecoms/regulatory/new_rf/index_en.htm

⁸ http://www.comreg.ie/about_us/default.asp?s=2&navid=134

14. References to CEPT⁹ and ITU¹⁰ documents shall be without prejudice to the obligations of Ireland under European Community law. CEPT documents and details of Ireland's implementation of CEPT Decisions are available on the ERO website, www.ero.dk.
15. ComReg may from time to time introduce additional requirements where necessary for the purposes of ensuring the effective and efficient use of the radio spectrum. Such additional requirements may be necessitated by, inter alia, changes to spectrum allocations and/or technological developments. ComReg reserves the right to amend interface requirements where necessary and this document is therefore subject to revision.
16. Contact details for queries relating to this document are provided in Annex E.
17. Web addresses are referenced throughout this document for convenience only. Please note that ComReg is not responsible for the content of external websites.
18. The information in this document is made available by the Commission for Communications Regulation (ComReg) on the understanding that it is for information purposes only. It is not intended to form the basis of any investment decision and should not be considered as a recommendation by the Commissioners or their advisors to participate in any tender for the allocation of radio spectrum.
19. ComReg makes no representation or warranty nor accepts any responsibility as to the accuracy or completeness of the information contained in this document and any liability in respect of any such information or any inaccuracy in, or omission from, this document is hereby expressly disclaimed.
20. Recipients of this document in any format should take their own professional financial, legal or other advice in order to make an independent assessment of the potential value of any allocation of radio spectrum by what ever means applicable.
21. ComReg may amend and update the document at regular intervals.

⁹ European Conference of Postal and Telecommunications Administrations, <http://www.cept.org/>

¹⁰ International Telecommunication Union, <http://www.itu.int/home/index.html>

3 Interface Requirements

3.1 Mobile Services

This section outlines the interface requirements for the mobile services in Ireland. The mobile services are comprised of private mobile radio (PMR), Trunked Radio, Community Repeaters, Paging, Global System for Mobile Communications (GSM), Universal Mobile Telecommunications System (UMTS), Wideband Digital Mobile Data Services (WDMDS) and Wireless Public Address Systems (WPAS).

The interface requirements for the mobile services are detailed in Tables 1 - 5 as follows:

Table 1: PMR, Trunked Radio and Community Repeaters

Table 2: Paging services

Table 3: GSM and UMTS services

Table 4: Wideband Digital Mobile Data Services

Table 5: Wireless Public Address Systems (WPAS)

The legislation and documentation relevant to the mobile services is listed at the end of this section.

Table 1: Interface requirements for Private Mobile Radio, Trunked Radio and Community Repeaters

Parameter	Description							
Mandatory Requirements								
Frequency Band (MHz)	68 - 74.8 MHz 75.2 - 87.5MHz	138 - 156MHz	163 - 174 MHz	380 - 400 MHz	410 - 430 MHz	446 - 446.1 MHz	446.1 – 446.2 MHz	450 – 470 MHz
National Usage	VHF Low band: Land Mobile PMR and Community Repeaters	VHF Mid-band: Land Mobile PMR, Paging	VHF High band: Land Mobile PMR	Mobile: Trunked Radio. TETRA (Emergency) (380-385MHz / 390-395MHz) TETRA (Civil) (385-389.9MHz / 395-399.9MHz)	Mobile: Digital and Analogue Trunked Radio	PMR 446 handportable	Digital PMR446 handportable	UHF: Land mobile: PMR and Community Repeaters 458.5-459.5MHz: on-site paging, telemetry and telecommand
Maximum Power (25W ERP	25W ERP	25W ERP	100W EIRP	25W ERP	0.5W ERP	0.5W ERP	25W ERP
Channel Spacing	12.5 kHz	12.5 kHz for PMR 25 kHz for paging	12.5 kHz for PMR	25 kHz and 12.5 kHz	25 kHz for TETRA and 12.5 kHz for PMR trunked	12.5 kHz	6.25 kHz or 12.5 kHz channel spacing	12.5 kHz, 25kHz for data services between 458.5 – 459.5 MHz
Transmit/ receive spacing (duplex direction)	Mainly semi Duplex operation with some single frequency channels. Maximum Duplex Separations: 10.225 MHz	Mainly semi Duplex operation with some single frequency channels. Maximum Duplex Separation: 8 MHz	Mainly semi Duplex operation with some single frequency channels. Maximum Duplex Separations: 4.8 MHz	Full or semi-duplex (10 MHz) with some single frequency operations (direct mode)	Full or semi-duplex (10 MHz)	-	-	Mainly semi Duplex operation with some single frequency channels. Maximum Duplex Separations: 14MHz.
Transmission capacity/duty cycle/channel access protocol	Tone control is required for all systems	Tone control is required for all systems	Tone control is required for all systems	-	-	Tone control is mandatory	-	Tone control is required for all systems
Licensing Regime	Business Radio Licence, Community Repeater Licence or Third Party Business Radio (TPBR) licence (See ComReg documents 02/02R, 02/03R, 00/07R2, 05/82R1 and 05/82aR1.) Wireless Telegraphy Act 1926 as	Business Radio Licence (See ComReg documents 02/02R and 00/07R2) Wireless Telegraphy Act 1926 as amended, Wireless Telegraphy (Business Radio Licence) Regulations,	Business Radio Licence or Third Party Business Radio (TPBR) licence (See ComReg documents 02/02R, 00/07R2, 05/82R1 and 05/82aR1) Wireless Telegraphy Act 1926 as amended, Wireless	Wireless Telegraphy Act 1926 as amended, Wireless Telegraphy Licence is required (see S.I. 435 of 2002)	Wireless Telegraphy Act 1926 as amended, Wireless Telegraphy Licence is required (see S.I. 435 of 2002)	Wireless Telegraphy Act 1926 as amended, PMR 446 hand portables are exempt from radio licensing subject to meeting the requirements of exemption order S.I. 93 of 1998.	Digital PMR 446 hand portables are exempt from radio licensing (S.I. 160 of 2006).	Business Radio Licence, Community Repeater or Third Party Business Radio (TPBR) licence (See ComReg documents 02/02R, 02/03R, 00/07R2, 05/82R1 and 05/82aR1) Wireless Telegraphy Act 1926 as

Parameter	Description							
	amended, Wireless Telegraphy (Business Radio Licence) Regulations, 1949, as amended. Also S.I. No. 435 of 2002 and S.I. No. 83 of 1988.	1949 - 1992.	Telegraphy (Business Radio Licence) Regulations, 1949 - 1992.					amended, Wireless Telegraphy (Business Radio Licence) Regulations, 1949, as amended. S.I. No. 435 of 2002 Wireless Telegraphy (Mobile Radio Systems) Regulations, 2002 S.I. No. 83 of 1988: Wireless Telegraphy (Community Repeater Licence) Regulations, 1988.
Other licensing requirements	Good site engineering practice (ETR 053) is advised	Good site engineering practice (ETR 053) is advised	Good site engineering practice (ETR 053) is advised	Good site engineering practice (ETR 053) is advised	Good site engineering practice (ETR 053) is advised	-		Good site engineering practice (ETR 053) is advised
Information								
Reference Standards and specifications	Applicable relevant ETSI standards apply: EN 300 086, EN 300 113, EN 300 219	Applicable relevant standards apply: EN 300 086, EN 300 113, EN 300 219, EN 300 296, EN 300 341 and EN 300 390.	For PMR, applicable relevant standards apply: EN 300 086, EN 300 113, EN 300 219, EN 300 296, EN 300 341 and EN 300 390.	Applicable relevant standards apply: EN 300 392, ETS 300 393 EN 300 394, ETS 300 395 and EN 300 396.	Applicable relevant standards apply: For TETRA: EN 300 392, ETS 300 393, EN 300 394, ETS 300 395 and EN 300 396. For PMR: EN 300 086, EN 300 113, EN 300 219	EN 300 296	EN 300 113 – 2 or EN 301 166 - 2	Applicable relevant standards apply. EN 300 086, EN 300 113, EN 300 219, EN 300 341 and EN 300 390.
Relevant Documents	All relevant CEPT/ERC Decisions apply.	All relevant CEPT/ERC Decisions apply.	All relevant CEPT/ERC Decisions apply.	All relevant CEPT/ERC Decisions apply. ERC/DEC(96)01 ERC/DEC (96)04 ERC/DEC (01)19	All relevant CEPT/ERC Decisions apply. ERC/DEC(96)04 and ECC/DEC(04)06 MPT 1327	S.I. No. 93 of 1998 exempts Short Range Business Radio (PMR446) in this band from requiring a licence. These devices will not be protected and	ECC/DEC(05)12	All relevant CEPT/ERC Decisions apply. TETRA Civil, ERC/DEC(96)04 (not planned at present).

Parameter	Description							
						<p>must not cause interference to licensed users.</p> <p>ERC/DEC(98)25RE C. T/R 20-04</p> <p>All relevant CEPT/ERC Decisions apply.</p>		

Table 2: Interface requirements for the Paging services

Parameter	Description					
Mandatory Requirements						
Frequency Band (MHz)	26.175 – 28 MHz	30.01 - 37.5 MHz	153 - 154 MHz	169.4 – 169.8 MHz	459.000 - 459.500 MHz	469.85 – 470MHz
Maximum Transmit Power/ Maximum ERP	0.5 W	10 W	25 W for nationwide systems, 5W for local systems and 2W for on-site systems	N/A	0.5 W	25W
Maximum Channel Spacing	25kHz	25 kHz	25kHz	N/A	25 kHz	25kHz
National Usage	Paging (private, on- site)	Paging (Hospitals)	Paging and alarm systems (National, wide area, local and on-site)	ERMES being phased out	On-site paging and telemetry – ECG monitoring in adjacent bands	Wide-area paging
Licensing Regime	ComReg document 02/12R Wireless Telegraphy Licence is required under Wireless Telegraphy Act 1926 as amended.	ComReg document 02/12R Wireless Telegraphy Licence is required under Wireless Telegraphy Act 1926 as amended.	ComReg document 02/12R Wireless Telegraphy Licence is required under Wireless Telegraphy Act 1926 as amended.	To be developed. See section 3.5 Short Range Devices for information on exemptions in this band.	ComReg document 02/12R Wireless Telegraphy Licence is required under Wireless Telegraphy Act 1926 as amended.	ComReg document 02/12R Wireless Telegraphy Licence is required under Wireless Telegraphy Act 1926 as amended.
Information						
Reference standards and specifications	EN 300 224, ETS 300 682, EN 301 489-2	EN 300 224, ETS 300 682, EN 301 489-2	EN 300 224, ETS 300 682, EN 301 489-2, ETS 300 719, ETS 300 741,	ETS 300 340 EN 300 133	EN 300 224, ETS 300 682, EN 301 489-2	ETS 300 719, ETS 300 741, EN 301 489-2

Notes:

All channel spacing for private mobile radio is 12.5 kHz with the exception of some Maritime and Aeronautical services which may operate on 25 kHz channels and some digital trunked radio systems, paging, telemetry and telecommand systems in the band 458.5 - 459.5 MHz which may operate on 25 kHz channels.

Table 3: Interface Requirements for GSM & UMTS services

Parameter	Description			
Mandatory Requirements				
Frequency Band	880-915 / 925-960 MHz	1710-1785 / 1805-1880 MHz	1900-1980 MHz / 2010-2025 MHz / 2110-2170 MHz	1980-2010 MHz
Radio Service	GSM 900	GSM1800 (Also known as DCS 1800)	UMTS terrestrial (3G Mobile)	UMTS/S-PCS
Licensing Regime	Three licensed operators (national licences)	Three licensed operators (national licences)	Three licensed operators (national licences)	No licensed operators at present
Information				
Reference Standards and specifications	EN 301 489, EN 301 511 EN 300 607-1(GSM 11.10-1) EN 301 419-1 (GSM13.01) EN 300 540(GSM 03.50) EN 300 504 (GSM 02.06)	EN 300 607-1(GSM 11.10-1) EN 301 419-1 (GSM13.01) EN 300 540(GSM 03.50) EN 300 504 (GSM 02.06) EN 301 489, EN 301 511	TS 125 101 TS 125 102 TS 125 104 TS 125 105 EN 301 489, EN 301 511	TS 101 851-1 TS 101 851-2 TS 101 851-3 TS 101 851-4 EN 301 489, EN 301 511
Relevant Documents	EC Directive 87/372/EEC. ERC/DEC 94(01) ERC/DEC(97)02 (E-GSM) ERC/DEC(98)20 ECC/DEC(02)09 Regulations under Statutory Instrument S.I. No. 416 of 1994, S.I. No. 123 of 1996, S.I. No. 409 of 1997, S.I. 158 of 2003 S.I. 339 of 2003	ERC/DEC(95)03, 97(11),98(21) ERC/DEC(98)20 Regulations under Statutory Instrument (S.I.) S.I. No. 107 of 1999, S.I. 339 of 2003 S.I. No. 409 of 1997	Regulations under Statutory Instrument S.I No. 158 2002 S.I. 340 of 2003 S.I. No. 409 of 1997	ERC/DEC(97)03 (S-PCS), ERC/DEC(97)04 (S-PCS transition), Regulations under Statutory Instrument S.I. 214 of 1998 S.I No. 158 2002 S.I. 340 of 2003 S.I. No. 409 of 1997

Table 4: Interface Requirements for Wideband Digital Mobile Data Services

Parameter	Description	
Mandatory Minimum Requirements		
Frequency Band	410 – 414 MHz paired with 420 – 424 MHz	872 – 876 MHz paired with 917 – 921 MHz
Radio Service	Wideband Digital Mobile Data Services	Wideband Digital Mobile Data Services
Licensing Regime	2 national licences awarded by auction	1 national licence awarded by auction
Information		
Relevant Documents	S.I. 642 of 2005 Wireless Telegraphy (Wideband Digital Mobile Data Services) Regulations ComReg documents 05/79, 05/80, 05/31, 04/107	S.I. 642 of 2005 Wireless Telegraphy (Wideband Digital Mobile Data Services) Regulations ComReg documents 05/79, 05/80, 05/31, 04/107

Table 5: Interface requirements for Wireless Public Address Systems (WPAS)

Parameter	Description
Mandatory Requirements	
Frequency Band (MHz)	27.6 - 27.99 MHz
Radio Service	Mobile Service
Application	Wireless Public Address Systems
Bandwidth	10kHz
Transmit power limit	1W (0dBW) ERP for base station equipment using Amplitude Modulation 4W (6dBW) ERP for base station equipment using Frequency Modulation Ancillary RF equipment shall not be connected to the transmitter e.g. linear power amplifiers.
Additional requirements	Antenna Polarisation must be vertical Antenna height must not exceed 2m above the highest point of the building on which the antenna is mounted Antennas should be non-directional Antennas of low angle of radiation (gain) are favourable
Licensing regime	Wireless Public Address System (WPAS) licence is required - 5 year licence
Information	
Reference standards	EN 300 113, EN 300 135, EN 300 433
Relevant documentation	Wireless Telegraphy (Wireless Public Address System Licence) Regulations, 2006 (S.I. 304 of 2006) ComReg Documents: 06/26a and 06/26

Relevant Documentation

National Legislation

Primary Legislation - Acts

Wireless Telegraphy Act 1926, as amended.

Secondary Legislation – Statutory Instruments (S.I.)

Wireless Telegraphy (Business Radio Licence) Regulations, 1949, as amended.

S.I. 304 of 2006: Wireless Telegraphy (Wireless Public Address System Licence) Regulations, 2006.

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

S.I 642 of 2005: Wireless Telegraphy (Wideband Digital Mobile Data Services) Regulations.

S.I. 340 of 2003: Wireless Telegraphy (Third Generation and GSM Mobile Telephony Licence)(Amendment) Regulations, 2003.

S.I. 339 of 2003: Wireless Telegraphy (GSM Mobile Telephony Licence)(Amendment) Regulations, 2003.

S.I. 435 of 2002: Wireless Telegraphy (Mobile Radio Systems) Regulations, 2002.

S.I. 345 of 2002: Wireless Telegraphy (Third Generation and GSM Mobile Telephony Licence) Regulations, 2002.

S.I. 442 of 1999: Wireless Telegraphy (GSM and TACS Mobile Telephony Licence) Regulations, 1999.

S.I. 107 of 1999: Wireless Telegraphy Act, 1926 (section 3) (Exemption of DCS1800 Mobile Terminals) Order, 1999.

S.I. 468 of 1997: Wireless Telegraphy (GSM and TACS Mobile Telephony Licence) Regulations, 1997).

S.I. 409 of 1997: Wireless Telegraphy Act 1926, (section 3) (Exemption of Mobile Telephones) Order.

S.I. 123 of 1996: European Communities (Mobile and Personal Communications) Regulations, 1996.

S.I. 416 of 1994: European Communities (Co-ordinated introduction of Public Pan-European Land Based Mobile Communications – GSM) Regulations, 1994.

S.I. 83 of 1988: Wireless Telegraphy (Community Repeater Licence) Regulations, 1988.

ComReg/ODTR Documentation

06/26a Application Form - Wireless Public Address System (WPAS).

06/26 Guidelines for Applicants - Wireless Public Address System (WPAS).

05/82R1: Guidelines to applicants for Third Party Business Radio (TPBR) Licences.

05/82aR1: Application Form - Third Party Business Radio Licence.

05/79: Information Notice: The Awarding of National Licences for the Provision of Wideband Digital Mobile Data Services.

05/80: Information Memorandum: Process for the Awarding of National Licences for the Provision of Wideband Digital Mobile Data Services.

05/31: Wideband Digital Mobile Data in the 420 MHz and 900 MHz bands.

04/107: Wideband Digital Mobile Data Services in the 420MHz and 900 MHz bands.

02/12R: Application Form for a Paging Permit (Local and On-Site).

02/03R: Community Repeater Licence: Application Form and Guidance Notes.

02/02R: Temporary Business Radio Licence - Application Form.

00/07R2: Business Radio Licence Application Form.

00/07a: Business Radio Licence Guidance Notes.

ETSI Documentation

EN 300 086: Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Land Mobile Service; Radio equipment with an internal or external RF connector intended primarily for analogue speech.

EN 300 113: Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector.

EN 300 219: Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Land Mobile Service; Radio equipment transmitting signals to initiate a specific response in the receiver.

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 300 224: Electromagnetic Compatibility and Radio Spectrum Matters (ERM); On-site paging service.

EN 300 296: Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Land Mobile Service; Radio equipment using integral antennas intended primarily for analogue speech.

EN 300 135: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Angle-modulated Citizens Band radio equipment (CEPT PR 27 Radio Equipment).

EN 300 341: Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Land Mobile Service (RP 02); Radio equipment using an integral antenna transmitting signals to initiate a specific response in the receiver.

EN 300 390: Electromagnetic Compatibility and Radio Spectrum Matters (ERM); Land Mobile Service; Radio equipment intended for the transmission of data (and speech) and using an integral antenna.

EN 300 392: Terrestrial Trunked Radio (TETRA); Voice plus Data (V+D).

EN 300 395: Terrestrial Trunked Radio (TETRA); Speech codec for full-rate traffic channel.

EN 300 396: Terrestrial Trunked Radio (TETRA); Technical requirements for Direct Mode Operation (DMO).

EN 300 394: Terrestrial Trunked Radio (TETRA); Conformance testing specification.

EN 300 113-2: Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.

EN 301 166-2: Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio equipment for analogue and/or digital communication (speech and/or data) and operating on narrow band channels and having an antenna connector; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive.

ETS 300 393: Terrestrial Trunked Radio (TETRA); Packet Data Optimized (PDO).

EN 300 433: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Land Mobile Service; Double Side Band (DSB) and/or Single Side Band (SSB) amplitude modulated citizen's band radio equipment.

ETR 053: Radio Equipment and Systems (RES);Radio site engineering for radio equipment and systems in the mobile service.

CEPT Documentation

ERC/DEC(96)01: ERC Decision of 7 March 1996 on the harmonised frequency band to be designated for the introduction of the Digital Land Mobile System for the Emergency Services.

ERC/DEC(96)04: ERC Decision of 7 March 1996 on the frequency bands for the introduction of the Trans European Trunked Radio System (TETRA).

ERC/DEC(98)25: ERC Decision of 23 November 1998 on the harmonised frequency band to be designated for PMR 446.

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.

ERC/DEC(01)19: ERC Decision of 12 March 2001 on harmonised frequency bands to be designated for the Direct Mode Operation (DMO) of the Digital Land Mobile Systems for the Emergency Services

Other documentation

MPT 1327: A signalling standard for trunked private land mobile radio systems.

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

3.2 Fixed Services

This section outlines the interface requirements for the fixed services in Ireland. The fixed services are comprised of point-to-point links, point-to-multipoint links and Fixed Wireless Access (FWA) services. The interface requirements for the fixed services are detailed in Tables 6 - 9 as follows:

Table 6: Fixed services in the 450 MHz - Upper 6 GHz bands

Table 7: Fixed services in the 7 - 15 GHz bands

Table 8: Fixed services in the 18 GHz - 86 GHz bands

Table 9: Fixed Wireless Access services

The legislation and documentation relevant to the fixed services is listed at the end of this section.

Table 6: Interface requirements for the Fixed Services in the 450 MHz – U6 GHz bands

Parameter	Description						
Mandatory Requirements							
Frequency Band (MHz)	450 – 470 MHz	1.3 GHz (1350-1375 MHz paired with 1492-1517 MHz)	1.4 GHz (1375-1400 MHz paired with 1427-1452 MHz)	2 GHz (2.025 –2.290 GHz)	4 GHz (3.800 – 4.200 GHz)	L6 GHz (5.925 -6.425 GHz)	U6 GHz (6.425 - 7.125 GHz)
Maximum Transmit Power/ Maximum ERP	Minimum required to obtain adequate receiver input signal	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level
Max Channel Spacing	25kHz	1 MHz	1 MHz	14MHz	29MHz	29.65 MHz	80 MHz
Transmit/receive spacing (duplex direction)	5.5MHz, 6.5MHz, 14 MHz	142MHz	52MHz	175MHz	213MHz	252.04 MHz	340 MHz
Transmission capacity	-	2 Mbit/s ~1MHz	2 Mbit/s ~1MHz	Up to 34 Mbit/s	Minimum capacity 140 Mbit/s	Minimum capacity 140 Mbit/s	Minimum capacity 140 Mbit/s
National Usage	Fixed/Mobile	Fixed	Fixed	Fixed	Fixed/satellite	Fixed	Fixed
Licensing Regime	Wireless Telegraphy Licence required. See ComReg document 02/11R S.I. 319 of 1992 and ComReg Document 03/83	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3 S.I. 319 of 1992 and ComReg Document 03/83	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3 S.I. 319 of 1992 and ComReg Document 03/83	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3 S.I. 319 of 1992 and ComReg Document 03/83	This band is currently under consideration	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3 S.I. 319 of 1992 and ComReg Document 03/83	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3 S.I. 319 of 1992 and ComReg Document 03/83
Equipment Class	-	Classes 1, 2, 3 (EN 300 630)	Classes 1, 2, 3 (EN 300 630)	Classes 2, 3 applicable (EN 300 633)	n/a	n/a	n/a
Minimum antenna requirements	12 element Yagi or equivalent	Class 2 EN 300 631	Class 2 EN 300 631	Class 3 EN 300 631	Class 3 EN 300 833	Class 3 EN 300 833	Class 3 EN 300 833
Minimum Path length (km)	-	-	-	25	25	25	25
Notes Band plan	-	T/R 13-01 E, Annex A	T/R 13-01 E, Annex B	T/R 13-01 E, Annex C	CEPT/ERC/REC 12/08 E, Annex B, Part 1	CEPT/ERC/REC 14-01 E, Annex 1	CEPT/ERC/REC 14-02 E, Annex 1
Information							
Reference standards	EN 300 086 EN 300 113	EN 300 630	EN 300 630	EN 300 633	EN 300 234 EN 301 127	EN 300 234 EN 301 127	EN 301 277 EN 301 669 EN 301 461

Relevant Documents	The fixed use of the band 450-470MHz is for low capacity analogue links.	Wherever possible all relevant CEPT/ERC Decisions apply	Wherever possible all relevant CEPT/ERC Decisions apply	Wherever possible all relevant CEPT/ERC Decisions apply	Wherever possible all relevant CEPT/ERC Decisions apply	Wherever possible all relevant CEPT/ERC Decisions apply	Wherever possible all relevant CEPT/ERC Decisions apply
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Table 7: Interface requirements for the Fixed Services in the 7 GHz – 15 GHz bands

Parameter	Description							
Mandatory Requirements								
Frequency Band (MHz)	L7 Outside Broadcast (7.125- 7156 GHz)	L7 GHz (7.125 – 7.425 GHz)	7 GHz (7.425 - 7.725 GHz)	L8 GHz (7.725 - 8.275 GHz)	U8 GHz (8.275 - 8.5 GHz)	11 GHz (10.7 - 11.7 GHz)	13 GHz (12.75 - 13.25 GHz)	15 GHz (14.5 - 15.35 GHz)
Maximum Transmit Power/ Maximum ERP	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level
Channel Spacing	14 MHz	14 MHz, 28 MHz	7MHz, 14MHz, 28MHz	29.65 MHz	3.5MHz,7 MHz, 14 MHz	40 MHz	3.5 MHz, 7 MHz, 14 MHz, 28 MHz	3.5 MHz, 7 MHz, 14 MHz, 28MHz
Transmit/receive spacing (duplex direction)	-	154 MHz	14MHz – 154 MHz 28MHz – 154 MHz	311.32MHz	126 MHz for 3.5 MHz and 7MHz channel spacing and 119MHz for 14MHz channel spacing	490MHz	266MHz	420MHz
Transmission capacity	-	140 Mbit/s	Minimum capacity 140 Mbit/s	Minimum capacity 140 Mbit/s	≥4 Mbit/s	Minimum capacity 140 Mbit/s	≥ 4 Mbit/s	≥ 4 Mbit/s
Licensing Regime	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Licensing regime to be decided.	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3
Equipment Class	n/a	n/a	n/a	n/a	Classes 1, 2, 3 applicable (EN 301 216)	n/a	Classes 1, 2 applicable (EN 301 128)	Classes 1, 2 applicable (EN 301 128)
Minimum antenna requirements	Class 3 EN 300 833	Class 3 EN 300 833	Class 3 EN 300 833	Class 3 EN 300 833	Class 3 EN 300 833	Class 3 EN 300 833	Class 3 EN 300 833	Class 3 EN 300 833

Minimum Path length (km)	n/a	25	25	25	25	10	9	9
Band plan	ECC/REC 02-06 Annex 1	ECC/REC 02-06 Annex 1	ECC/REC 02-06 Annex 1	ITU-R F. 386.6, Annex 1	ITU-R F. 386.6, Annex 3	CEPT/ERC/REC 12-06, Annex E	CEPT/ERC/REC 12-02	ITU-R F. 636-3
Information								
Reference standards	EN 301 216 EN 301 785	EN 301 216 EN 301 785	EN 300 234 EN 301 127 EN 301 785	EN 300 234 EN 301 127 EN 301 785	EN 301 216 EN 301 785	EN 301 277 EN 301 669 EN 301 461 EN 301 785	EN 301 128, EN 300 639, EN 301 127, EN 301 785 EN 300 786	EN 301 128 EN 301 785 EN 300 786 EN 300 639
Relevant Documents	Wherever possible all relevant CEPT/ERC Decisions apply	Wherever possible all relevant CEPT/ERC Decisions apply	Wherever possible all relevant CEPT/ERC Decisions apply	Wherever possible all relevant CEPT/ERC Decisions apply	Wherever possible all relevant CEPT/ERC Decisions apply	ITU-R F. 387-6, Annex 2. CEPT/ERC/REC 12 – 06 Annex E. Wherever possible all relevant CEPT/ERC Decisions apply	CEPT/ERC/REC 12 – 02 E. Wherever possible all relevant CEPT/ERC Decisions apply	Wherever possible all relevant CEPT/ERC Decisions apply

Table 8: Interface requirements for the Fixed Services in the 18 GHz – 86 GHz bands

Parameter	Description							
Mandatory Requirements								
Frequency Band (MHz)	18 GHz (17.7 -19.7 GHz)	23 GHz (22 -23.6 GHz)	26 GHz (Upper half of band 24.5 – 26.5 GHz)	28 GHz (Part of band 27.5 – 29.5GHz)	31 GHz band (31.0 – 31.3 GHz and 31.8 – 33.4 GHz)	38 GHz (37 – 39.5 Hz)	55 GHz (55.78 - 57 GHz)	71 -76 GHz and 81 – 86 GHz
Maximum Transmit Power/ Maximum ERP	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level	Minimum required to obtain required availability level
Channel Spacing	55 MHz, 27.5 MHz	3.5 MHz, 7 MHz, 14 MHz, 28 MHz, 56 MHz	3.5 MHz, 7 MHz, 14 MHz, 28 MHz	3.5 MHz, 7 MHz, 14 MHz, 28 MHz	To be developed	3.5 MHz, 7 MHz, 14 MHz, 28 MHz	3.5MHz, 7MHz, 14 MHz, 28 MHz	To be developed z
Transmit/receive spacing (duplex)	1010MHz	1008MHz	1008MHz	1008MHz	-	1260MHz	616MHz	To be developed

direction)								
Transmission capacity/duty cycle/channel access protocol	≥ 34 Mbit/s	≥ 4 Mbit/s	≥ 4 Mbit/s	≥ 4 Mbit/s	-	≥ 4 Mbit/s	≥ 4 Mbit/s	-
Licensing Regime	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3 and SI 296 of 2006.	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3	Wireless Telegraphy Licence required. See documents 98/14R3 and 98/15R3
Equipment class	PDH: Classes 1 & 2 applicable (EN 301 128) SDH Classes 4,5 Applicable (EN 300 430)	Class 2 applicable to PDH. Class 3 applicable to SDH.	Class B equipment applicable (PDH and SDH)	To be agreed		Class 2 applicable to PDH. Class 3 applicable to SDH.	To be agreed	To be agreed
Minimum antenna requirements	Class 3 EN 300 833	Class 3 EN 300 833	For Point to Point antennas : EN 302 217-4-2, Class 3 For Point to Multipoint antennas: EN 301 215	Class 3 EN 300 833	Class 3 EN 300 833	Class 3 EN 300 833	Class 3 EN 300 833	TS 102 524
Typical capacity	≥34Mbit/s	≥4Mbit/s	≥4Mbit/s	≥4Mbit/s	-	≥4Mbit/s	-	-
Minimum Path length (km)	6 (for 34Mbit/s capacity) 0 (for > 34Mbit/s capacity or 34Mbit/s in 14MHz channel spacing)	3 (for 2 – 34Mbit/s capacity) 0 (for > 34Mbit/s capacity or 34Mbit/s in 14MHz channel spacing)	n/a	3 (for 2 - 34Mbit/s capacity) 0 (for > 34Mbit/s capacity or 34Mbit/s in 14MHz channel spacing)	-	0	0	0
Band plan	CEPT/ERC/REC 12-03 E, Annex A	CEPT/ERC/REC 13-02 E, Annex A	CEPT/ERC/REC 13-02 E, Annex B	CEPT/ERC/REC 13-02 E, Annex C	To be developed CEPT/ERC/R EC (01)02 CEPT/ERC/R EC (02)02 CEPT/ERC/R EC (04)06	CEPT/ERC/REC 12-01 E, Annex A	CEPT/ERC/R EC 12-12 E	CEPT/ECC/R EC (05)07
Information								
Reference standards,	EN 300 430, EN 300 639,	EN 300 198 EN 301 785	For Point to Point equipment :	EN 300 431 EN 300 632	EN 300 197 TR 101 939	EN 300 197 EN 301 785	EN 300 407 EN 301 785	TS 102 524 EN 301 126

specifications and reports	EN 301 128, EN 301 785, EN 301 787, EN 302 062,	EN 302 062 TS 101 785	EN 300 431 EN 301 785 TS 101 785 TR 101 854 For Point to Multipoint equipment: EN 301 213	EN 301 785 TS 101 785	EN 301 785 EN 302 063	TS 101 785		
Relevant Documents	Wherever possible all relevant CEPT/ERC Decisions apply.	Wherever possible all relevant CEPT/ERC Decisions apply.	Wherever possible all relevant CEPT/ERC Decisions apply.	Wherever possible all relevant CEPT/ERC Decisions apply.	Wherever possible all relevant CEPT/ERC Decisions apply.	Wherever possible all relevant CEPT/ERC Decisions apply.	Wherever possible all relevant CEPT/ERC Decisions apply.	Wherever possible all relevant CEPT/ERC Decisions apply.

Table 9: Interface Requirements for Fixed Wireless Access (FWA) Services

Parameter	Description					
Mandatory Requirements						
Frequency Band	3.5 GHz	24.5-26.5 GHz	3.5GHz band	10.5 GHz band	26 GHz band	
Radio Service	Fixed Wireless Point to Multipoint Access (FWPMA)	Fixed Wireless Point to Multipoint Access (FWPMA)	Local Area Fixed Wireless Access (FWALA)	Local Area Fixed Wireless Access (FWALA)	Local Area Fixed Wireless Access (FWALA)	
Licensing Regime	National Licence	National Licences	Local Area Licences issued on a first-come first-served basis or comparative evaluation	Local Area Licences issued on a first-come first-served basis or comparative evaluation	Local Area Licences issued on a first-come first-served basis or comparative evaluation	
Information						
Reference standards	EN 301 124, EN 301 055, EN 301 213	EN 301 124, EN 301 055, EN 301 213	EN 301 021, EN 301 080, EN 301 124, EN 301 253	EN 301 021, EN 301 080, EN 301 124, EN 301 253	EN 301 213	
Antenna Standards	EN 302 085, EN 301 215	EN 302 085, EN 301 215	EN 302 085	EN 302 085	EN 301 215	
Relevant Documents	National licences issued June 2000 Regulations under Statutory Instrument (S.I.) S.I. 96/1998 S.I. 180/1998 S.I. 287/1999 Information on contest and frequency bands in document 99/07. Licence fees amended by S.I 46 of 2002.	National licences issued June 2000 Regulations under Statutory Instrument (S.I.) S.I. 96/1998 S.I. 180/1998 S.I. 287/1999 Information on contest and frequency bands in document 99/07. Licence fees amended by S.I 46 of 2002.	S.I. 79 of 2003 S.I. 530 of 2003 ComReg Document 06/17, 06/17A, 06/18 http://www.comreg.ie/FWABroadband/FWABroadband.asp	S.I. 79 of 2003 S.I. 530 of 2003 ComReg Documents 06/17, 06/17A, 06/18 http://www.comreg.ie/FWABroadband/FWABroadband.asp	S.I. 79 of 2003 S.I. 530 of 2003 ComReg Documents 06/17, 06/17A, 06/18 http://www.comreg.ie/FWABroadband/FWABroadband.asp	

Relevant Documentation

National Legislation

Primary Legislation

Wireless Telegraphy Act 1926, as amended.

Secondary Legislation

S.I. 296 of 2006: Wireless Telegraphy (National Point-to-Point and Point-to-Multipoint Block Licences) Regulations, 2006.

S.I. 530 of 2003: Wireless Telegraphy (Fixed Wireless Access Local Area Licence)(Amendment) Regulations.

S.I. 338 of 2003: Wireless Telegraphy (Fixed Wireless Point to Multipoint Access Licence)(Amendment)(no.2) Regulations, 2003.

S.I. 79 of 2003: Wireless Telegraphy (Fixed Wireless Access Local Area Licence) Regulations, 2003.

S.I. 467 of 2002: Wireless Telegraphy (Fixed Wireless Point to Multi-Point Access Licence)(Amendment) Regulations, 2002.

S.I. 287 of 1999: Wireless Telegraphy (Fixed Wireless Point to Multipoint Access Licence) Regulations, 1999.

S.I. 319 of 1992: Wireless Telegraphy (Radio Link Licence) Regulations 1992.

ComReg/ODTR Documentation

06/18: Information Notice Comparative Evaluation Stage - Revised FWALA Licensing Process.

06/17a: Revised Application Form for Fixed Wireless Access Local Area (FWALA) Licence.

06/17: Revised Guidelines to Applicants to Fixed Wireless Access Local Area (FWALA) Licences.

02/11R: Point to Point Radio Link Licence below 1GHz: Application Form and Guidance Notes.

98/15R3: Point to Point Radio Link Licences above 1 GHz - Application Form.

98/14R3: Guidelines for applicants for Point to Point Radio Link Licences in Spectrum above 1 GHz.

ETSI Documentation

EN 300 086: ElectroMagnetic Compatibility and Radio Spectrum Matters (ERM); Land Mobile Service; Radio equipment with an internal or external RF connector intended primarily for analogue speech.

EN 300 113: Electromagnetic compatibility and Radio spectrum Matters (ERM); Land mobile service; Radio equipment intended for the transmission of data (and/or speech) using constant or non-constant envelope modulation and having an antenna connector.

EN 300 197: Fixed Radio Systems; Point-to-point equipment; Parameters for radio systems for the transmission of digital signals operating at 32 GHz and 38 GHz.

EN 300 198: Fixed Radio Systems; Point-to-point equipment; Parameters for radio systems for the transmission of digital signals operating at 23 GHz.

EN 300 234: Fixed Radio Systems; Point-to-point equipment; High capacity digital radio systems carrying 1 x STM-1 signals and operating in frequency bands with about 30 MHz channel spacing and alternated arrangements.

EN 300 407: Fixed Radio Systems; Point-to-point equipment; Parameters for digital radio systems for the transmission of digital signals operating at 55 GHz.

EN 300 430: Fixed Radio Systems; Point-to-point equipment; Parameters for radio systems for the transmission of STM-1 digital signals operating in the 18 GHz frequency band with channel spacing of 55 MHz and 27,5 MHz.

EN 300 431: Fixed Radio Systems; Point-to-point equipment; Parameters for radio system for the transmission of digital signals operating in the frequency range 24,50 GHz to 29,50 GHz.

EN 300 630: Fixed Radio Systems; Point-to-point equipment; Low capacity point-to-point digital radio systems operating in the 1,4 GHz frequency band.

EN 300 631: Fixed Radio Systems; Point-to-point Antennas; Antennas for point-to-point fixed radio systems in the 1 GHz to 3 GHz band.

EN 300 632: Transmission and Multiplexing (TM); Fixed radio link equipment for the transmission of analogue video signals operating in the frequency bands 24,25 GHz to 29,50 GHz and 31,0 GHz to 31,8 GHz.

EN 300 633: Fixed Radio Systems; Point-to-point equipment; Low and medium capacity point-to-point digital radio systems operating in the frequency range 2,1 GHz to 2,6 GHz.

EN 300 833: Fixed Radio Systems; Point-to-point antennas; Antennas for point-to-point fixed radio systems operating in the frequency band 3 GHz to 60 GHz.

EN 301 126: Fixed Radio Systems; Conformance testing.

EN 301 127: Fixed Radio Systems; Point-to-point equipment; High capacity digital radio systems carrying SDH signals (up to 2 x STM-1) in frequency bands with about 30 MHz channel spacing and using co-polar arrangements or Co-Channel Dual Polarized (CCDP) operation.

EN 301 128: Fixed Radio Systems; Point-to-point equipment; Plesiochronous Digital Hierarchy (PDH); Low and medium capacity digital radio systems operating in the 13 GHz, 15 GHz and 18 GHz frequency bands.

EN 301 216: Fixed Radio Systems; Point-to-point equipment; Plesiochronous Digital Hierarchy (PDH); Low and medium capacity and STM-0 digital radio system operating in the frequency bands in the range 3 GHz to 11 GHz.

EN 301 277: Fixed Radio Systems; Point-to-point equipment; High capacity digital radio systems transmitting STM-4 or 4 x STM-1 in a 40 MHz radio frequency channel using Co-Channel Dual Polarized (CCDP) operation.

EN 301 461: Fixed Radio Systems; Point-to-point equipment; High capacity fixed radio systems carrying SDH signals (2 x STM-1) in frequency bands with 40 MHz channel spacing and using Co-Channel Dual Polarized (CCDP) operation.

EN 300 639: Fixed Radio Systems; Point-to-point equipment; Sub-STM-1 digital radio systems operating in the 13 GHz, 15 GHz and 18 GHz frequency bands with about 28 MHz co-polar and 14 MHz cross-polar channel spacing.

EN 301 669: Fixed Radio Systems; Point-to-point equipment; High capacity digital radio systems carrying STM-4 in two 40 MHz channels or 2 x STM-1 in a 40 MHz channel with alternate channel arrangement.

EN 301 785: Fixed Radio Systems; Point-to-point packet data equipment; Parameters for radio systems with packet data interfaces for transmission of digital signals operating in the frequency range 7, 8, 13, 15, 18, 23, 26, 28, 32, 38, 52 to 55 GHz.

EN 301 787: Fixed Radio Systems; Point-to-Point equipment; Parameters for radio systems for the transmission of Sub-STM-0 digital signals operating in the 18 GHz frequency band.

EN 302 062: Fixed Radio Systems; Point-to-point equipment; High capacity digital radio relay systems carrying STM-4, 4 x STM-1 or 2 x STM-1 signals in bands with 55/56 MHz channel spacing.

TS 101 785: Fixed Radio Systems; Point-to-point equipment; Parameters for packet data radio systems for transmission of digital signals operating in the frequency range 23, 26, 28 or 38 GHz.

ETSI TS 102 524 Fixed Radio Systems; Point-to-Point equipment; Radio equipment and antennas for use in Point-to-Point Millimetre wave applications in the Fixed Services (mmwFS) frequency bands 71 GHz to 76 GHz and 81 GHz to 86 GHz.

CEPT Documentation

ERC/REC 12-01 E: Harmonised radio frequency channel arrangements for analogue and digital terrestrial fixed systems operating in the band 37-39.5 GHz.

ERC/REC 12-02 E: Harmonised radio frequency channel arrangements for analogue and Digital terrestrial fixed systems operating in the band 12.75 GHz to 13.25 GHz.

ERC/REC 12-03: Harmonised radio frequency channel arrangements for digital terrestrial fixed systems operating in the band 17.7 GHz to 19.7 GHz.

ERC/REC 12-06: Harmonised radio frequency channel arrangements for digital terrestrial fixed systems operating in the band 10.7 GHz to 11.7 GHz.

ERC/REC 12-12: Radio frequency channel arrangement for fixed service systems operating in the band 55.78 - 57.0 GHz.

T/R 13-01 E: Preferred channel arrangements for fixed services in the range 1 - 3 GHz.

ERC/REC 13-02 E: Preferred channel arrangements for fixed services in the range 22.0-29.5 GHz.

ERC/REC 14-01 E: Radio-frequency channel arrangements for high capacity analogue and digital radio-relay systems operating in the band 5925 MHz - 6425 MHz.

ERC/REC 14-02 E: Radio-frequency channel arrangements for medium and high capacity analogue or high capacity digital radio-relay systems operating in the band 6425 MHz - 7125 MHz.

ECC/REC 02-06: Preferred channel arrangements for digital Fixed Service Systems operating in the frequency range 7125-8500 MHz.

ECC/REC (05)07: Radio frequency channel arrangements for Fixed Service Systems operating in the bands 71-76 GHz and 81-86 GHz.

ITU Documentation

Rec. ITU-R F.385-6: Radio-frequency channel arrangements for radio-relay systems operating in the 7 GHz band.

Rec. ITU-R F.386-6: Radio-frequency channel arrangements for medium and high capacity analogue or digital radio-relay systems operating in the 8 GHz band.

Rec. ITU-R F.387-6: Radio-frequency channel arrangements for radio relay systems operating in the 11 GHz band.

Rec. ITU-R F.636-3: Radio-frequency channel arrangements for radio-relay systems operating in the 15 GHz band.

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

3.3 Broadcasting Services

This section outlines the interface requirements for the broadcasting services in Ireland. The broadcasting services include sound and television transmission as well as broadcasting-satellite services. The interface requirements for the broadcasting services are detailed in Tables 10 and 11 as follows:

Table 10: Broadcasting services in the frequency bands up to 223 MHz

Table 11: Broadcasting services in the frequency bands 223 - 2686 MHz

The legislation and documentation relevant to the broadcasting services is listed at the end of this section.

Table 10: Interface Requirements Broadcasting Services in the frequency bands up to 223 MHz

Parameter	Description				
Mandatory Requirements					
Frequency Band (MHz)	148.5 – 255 kHz 255 – 283.5 kHz	526.5 - 1606.5 kHz	5900 - 5950 kHz, 5950 - 6200 kHz, 7100 - 7300 kHz, 7300 - 7350 kHz, 9400 - 9500 kHz, 9500 - 9900 kHz, 11600 - 11650 kHz, 11650 - 12050 kHz, 12050 12100 kHz, 13570 - 13600 kHz, 13600 - 13800 kHz, 15100 - 15600 kHz, 15600 - 15800 kHz, 17480 - 17550kHz, 17550 - 17900 kHz, 18900 - 19020 kHz, 21450 - 21850 kHz, 25670 - 26100 kHz	87.5 - 100 MHz 100 - 108 MHz	174 - 223 MHz
Maximum Transmit Power/ Maximum ERP	No rule (500kW carrier power)	No rule (500kW carrier power)	-	-	No Rule
Channel Spacing	9kHz	9kHz	-	300 kHz	8MHz channel spacing for TV, DAB blocks As per Wiesbaden 95 & GE06
Occupied bandwidth	9kHz	9kHz	-	270kHz	8MHz TV, 7 MHz TV (DVB-T) 1.54 MHz DAB
Type of modulation	A3E (AM)	A3E (AM)	-	F3E (FM)	C9F/F3E/G7E = TV and X7F = DTT, G7E=DAB
National Usage	Broadcasting (AM Sound)	Broadcasting (AM Sound)	Short-wave Broadcasting (Reception only)	Broadcasting (FM Sound)	Broadcasting (Television) Broadcasting (T-DAB)
Licensing Regime	Govt. Approval to state broadcaster/ BCI regulates independent sector	Govt. Approval to state broadcaster/ BCI regulates independent sector	-	Govt. Approval to state broadcaster/ BCI regulates independent sector	Govt. Approval to state broadcaster/ BCI regulates independent sector
Information					
Reference standards, specifications and reports	Specs. To match ITU Radio Regs and requirements of GE75 Agreement	Specs. To match ITU Radio Regs and requirements of GE75 Agreement	-	Specs. To match ITU Radio Regs and requirements of GE84 Agreement. recommended Legbac MoU. EN 300 751, ETR 132	Specs. To match ITU Radio Regs and requirements of ST61 Agreement, System PAL I, Chester 97 Agreement, EN 300 744, EN 300 743, EN 301 192, TR 101 200, EN 300 468, ETR 211, EN 300 472, TR 101 190, TS 101 191, ETS 300 801, EN 301 193, EN 301 195, ETS 300 802, TR 101 194, ETR 154, ETR 289, TS

					101 197, TS 103 197, EN 301 192, TR 101 202, EN 50221, R 206 001, EN 50201 and Wiesbaden 1995 Special Arrangement as revised in Maastricht 2002. EN 300 401 (T-DAB), EN 300 797, EN 300 798, ETS 300 799, EN 301 234, EN 50248, EN 50255
Relevant Documents	ITU Geneva 1975 Plan (long wave)	ITU Geneva 1975 Plan (medium wave)		ITU Geneva 1984 Plan	ITU Stockholm 1961 Plan (CEPT 1995 Wiesbaden Arrangement, CEPT Bonn Meeting 1996, CEPT Maastricht meeting 2002)

Table 11: Interface Requirements for the Broadcasting Services in the 223 MHz - 2686 MHz bands

Parameter	Description				
Mandatory Requirements					
Frequency Band (MHz)	223 - 230 MHz	470 - 790 MHz	790 - 862 MHz	1452 - 1492 MHz	2500 – 2686 MHz
Maximum Transmit Power/ Maximum ERP	No rule	No Rule	No Rule	No Rule	32dBW
Channel Spacing	DAB blocks as per Wiesbaden 95 & GE06. DVB-T as per GE06	8 MHz channels for TV	8 MHz channels for TV	DAB blocks as per The Maastricht, 2002, Special Arrangement	22 x 8 MHz blocks
Occupied bandwidth	1.54MHz	8MHz	8MHz	1.54MHz	8MHz
Type(s) of modulation	G7E	C9F/F3E/G7E = TV X7F = DTT	C9F/F3E/G7E = TV X7F = DTT	G7E	C9F/F3E/G7E = TV X7F = DTT
National Usage	Broadcasting (Television) Broadcasting (T-DAB)	Broadcasting (Television)	Broadcasting (Television): Broadcasting (STL and OB Links)	Broadcasting (DAB)	Programme Retransmission Systems (2500 - 2686 MHz)
Licensing Regime	Govt. Approval to state broadcaster/ BCI regulates independent sector	Govt. Approval to state broadcaster/ BCI regulates independent sector	Govt. Approval to state broadcaster/ BCI regulates independent sector	Govt. Approval to state broadcaster/ BCI regulates independent sector. Content licensing process not yet in place.	Licences were awarded to operators, following a competition.
Information					
Reference standards, specifications and reports	Specs. To match ITU Radio Regs, TR 101 200, EN 300 468, ETR 211, EN 300 472, TR 101 190, TS 101 191,	Specs. To match ITU Radio Regs and requirements of ST61 Agreement, System PAL I and Chester 97 Agreement & GE06	Specs. To match ITU Radio Regs and requirements of ST61 Agreement, System PAL I and Chester 97 Agreement & GE06	Specs. To match ITU Radio Regs and the Maastricht, 2002, Special Arrangement EN 300 401 (T-DAB) EN 300 797, EN 300	TR 101 200, EN 300 468, ETR 211, ETR 162, EN 300 472, E EN 300 743, EN 300 744, TR 101 190, TS 101 191, EN 300

	ETS 300 801, EN 301 193, EN 301 195, ETS 300 802, TR 101 194, ETR 154, ETR 289, TS 101 197, EN 301 192, TR101 202, EN 50221, R 206 001, EN 50201 and Wiesbaden 1995 Special Arrangement as revised in Maastricht 2002. EN 300 401 (T-DAB), EN 300 797, EN 300 798, ETS 300 799, EN 301 234, EN 50248, EN 50255	EN 300 744, EN 300 743, EN 301 192, TS 101 192, TR101 200, EN 300 468, ETR 211, EN300 472, TR 101 190, TS 101 191, ETS 300 801, EN 301 193, EN 301 195, ETS 300 802, TR 101 194, ETR 154, ETR 289, TS 101 197, TS 103 197, EN 301 192, TR 101 202, EN 50221, R 206 001, EN 50201	EN 300 744, EN 300 743, EN 301 192, TR101 200, EN 300 468, ETR 211, EN 300 472, TR 101 190, TS 101 191, ETS 300 801, EN 301 193, EN 301 195, ETS 300 802, TR 101 194, ETR 154, ETR 289, TS 101 197, TS 103 197, EN 301 192, TR 101 202, EN 50221, R 206 001, EN 50201	798, ETS 300 799, EN 301 234, EN 50248, EN 50255	749, ETS 300 801, EN 301 193, EN 301 199, TR 101 205, EN 301 195, ETS 300 802, TR 101 194, ETR 154, ETR 289, TS 101 197, TS 103 197, EN 301 192, TR 101 202, EN 50221, R 206 001, EN 50201, TS 102 201
Relevant Documents	ITU Stockholm 1961 Plan, Introduction in Ireland (223-230MHz), (CEPT 1995 Wiesbaden Arrangement, CEPT Bonn Meeting 1996, CEPT Maastricht meeting 2002), Digital Broadcasting (T-DAB & DTT) ITU Geneva 2006 Plan.	ITU Stockholm 1961 Plan. Mobile (services ancillary to broadcasting on a case by case basis) Digital Broadcasting (DTT), CEPT Chester Agreement (1997), Digital Broadcasting (T-DAB & DTT) ITU Geneva 2006 Plan.	ITU Stockholm 1961 Plan. Digital Broadcasting (DTT), CEPT Chester Agreement (1997), Broadcasting (STL and OB Links) links to be relocated to 1.3GHz, Digital Broadcasting (T-DAB & DTT) ITU Geneva 2006 Plan.	Digital Audio Broadcasting Resolution 528 (WARC-92) (CEPT Maastricht meeting 2002)	Relevant legislation: S.I. No. 214 of 1998. S.I. 529 of 2003, S.I. 675 of 2003 ComReg documents: 04/42, 04/41, 99/44, 98/68 Channel plan for the fixed service in CEPT/ERC/REC 13 - 01 E, Annex D will not be implemented as the band is used by Programme Retransmission Systems.

Relevant Documentation

National Legislation

Primary Legislation

Broadcasting Act, 2001,
Broadcasting Act 1990.
Radio and Television Act, 1988.
Broadcasting Authority Act, 1960, as amended.
Wireless Telegraphy Act, 1926 as amended.

Secondary Legislation

S.I. 529 of 2003: Wireless Telegraphy (Multipoint Microwave Distribution System) Regulations 2003

S.I. 675 of 2003: Wireless telegraphy (UHF Television Programme Retransmission) Regulations 2003

S.I. 99 of 2003: Broadcasting (Major Events Television Coverage) Act 1999 (Designation of Major Events) Order 2003.

S.I. 299 of 2002: Broadcasting (Transfer of Departmental Administration and Ministerial Functions) Order 2002.

S.I. 362 of 2001: Broadcasting Act, 2001 (Commencement) Order, 2001.

Broadcasting Authority Act, (Section 31) Orders 1977-1993.

S.I. 506 of 2003: Wireless Telegraphy (Carrigaline UHF Television Programme Retransmission)(Amendment) Regulations 2003.

S.I. 507 of 2003: Wireless Telegraphy (UHF Television Programme Retransmission)(Amendment) Regulations 2003.

S.I. 269 of 1988: Radio and Television Act, 1988 (Establishment Day) Order, 1988.

S.I. 211 of 1972: Wireless Telegraphy Act, 1926 (section 3) (Exemption of Sound Broadcasting Receivers) Order, 1972.

ComReg/ODTR Documentation

05/13b: RTÉ Licence Technical schedule.

05/13a: RTÉ Licence Text.

05/13: Renewal of RTÉ Licence.

04/42: Technical Conditions for the Operation of Digital Programme Services Distribution Systems.

04/41: Technical Conditions for the Operation of Analogue Programme Services Distribution Systems in Frequency Band 2500-2686 MHz.

04/28: Technical Conditions for the operation of Digital Television Delivery Systems between 11.7GHz and 12.5GHz.

04/27: Digital Television Delivery Systems at 12GHz, Guidance Notes for Applicants.

04/26: Application Form for Digital Television Delivery Systems at 12GHz.

01/90: Digital Audio Broadcasting Technical Conditions - Annex to Information Notice.

01/89: Digital Audio Broadcasting Technical Conditions - Information Notice.

00/23R: Television Deflector Licensing May 2000 – Application Form.

00/24R: Television Deflector Licensing Guidance Notes for Applicants – May 2000.

00/39: Licence Details of Television Deflector Licensees.

00/37R: Pro-Forma Television Deflector Licence.

00/25: List of Frequency Channels Used by Licensed Television Deflectors.

99/81: Amended MMDS TV Licences.

99/66R: List of Reserved Frequency Channels - National UHF Television Plan and Draft Digital Terrestrial Television Plan.

99/65: Television Deflector Licensing - Guidance Notes for Applicants.

99/64: Deflector Licensing - Application Form.

99/44: MMDS TV Licences.

99/30: Selection of Appropriate Guard Interval for Irish Digital Terrestrial Television.

98/68: Technical Conditions for the Operation of Conditional Access Systems.

98/66R: Technical Conditions for the Operation of Digital Cable Television Systems.

98/12: Conditions for the operation of Cable Television Systems.

LEGBAC MoU: Limited Exploratory Group on Broadcasting to Aeronautical

Compatibility-MoU.

ETSI documentation

ETR 132: Radio broadcasting systems; Code of practice for site engineering Very High Frequency (VHF), frequency modulated, sound broadcasting transmitters.

ETR 154: Digital Video Broadcasting (DVB); DVB implementation guidelines for the use of MPEG-2 Systems, Video and Audio in satellite and cable broadcasting applications.

ETR 162: Digital Video Broadcasting (DVB); Allocation of Service Information (SI) codes for DVB systems.

ETR 211: Digital Video Broadcasting (DVB); Guidelines on implementation and usage of Service Information (SI).

ETR 289: Digital Video Broadcasting (DVB); Support for use of scrambling and Conditional Access (CA) within digital broadcasting systems.

ETR 290: Digital Video Broadcasting (DVB); Measurement guidelines for DVB systems.

TS 101 191: Digital Video Broadcasting (DVB); Mega-frame for Single Frequency Network (SFN) synchronization.

TS 101 197: Digital Video Broadcasting (DVB); DVB SimulCrypt; Head-end architecture and synchronization.

TS 102 201: Digital Video Broadcasting (DVB); Interfaces for DVB Integrated Receiver Decoder (DVB-IRD).

TS 103 197: DVB Headend implementation of DVB SimulCrypt.

TR 100 815: Guidelines for the handling of ATM signals in DVB systems.

TR 101 190: Implementation guidelines for DVB terrestrial services; Transmission aspects.

TR 101 194: Guidelines for implementation and usage of the specification of network independent protocols for DVB interactive services.

TR 101 196: Interaction channel for Cable TV distribution systems (CATV); Guidelines for the use of ETS 300 800.

TR 101 198: Implementation of BPSK modulation in DVB satellite transmission systems.

TR 101 200: Guidelines for the use of DVB specifications and standards.

TR 101 201: Interaction channel for SMATV distribution systems; Guidelines for versions based on satellite and coaxial sections.

TR 101 202: Implementation Guidelines for Data Broadcasting.

TR 101 205: Guidelines for implementation and usage of DVB interaction channel for LMDS distribution systems.

TR 101 221: User guideline for Digital Satellite News Gathering (DSNG) and other contribution applications by satellite.

TR 101 291: Usage of the DVB test and measurement signalling channel (PID 0x001d) embedded in an MPEG-2 Transport Stream (TS).

TR 102 154: Implementation guidelines for the use of Video and Audio Coding in Contribution and Primary Distribution Applications based on the MPEG-2 Transport Stream.

EN 300 421: Framing structure, channel coding and modulation for 11/12 GHz satellite services.

EN 300 429: Framing structure, channel coding and modulation for cable systems.

EN 300 468: Digital Video Broadcasting (DVB); Specification for Service information (SI) in DVB systems.

EN 300 472: Digital Video Broadcasting (DVB); Specification for conveying ITU-R System B Teletext in DVB bitstreams.

EN 300 473: DVB Satellite Master Antenna Television (SMATV) distribution.

EN 300 744: Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for digital terrestrial television.

EN 300 748: Multipoint Video Distribution Systems (MVDS) at 10 GHz and above.

EN 300 749: Digital Video Broadcasting (DVB); Microwave Multipoint Distribution Systems (MMDS) below 10 GHz.

EN 300 797: Digital Audio Broadcasting (DAB); Distribution interfaces; Service Transport Interface (STI).

EN 300 798: Digital Audio Broadcasting (DAB); Distribution interfaces; Digital baseband In-phase and Quadrature (DIQ) interface.

EN 301 192: Digital Video Broadcasting (DVB); DVB specification for data broadcasting.

EN 301 193: Digital Video Broadcasting (DVB); Interaction channel through the Digital Enhanced Cordless Telecommunications (DECT).

EN 301 195: Digital Video Broadcasting (DVB); Interaction channel through the Global System for Mobile communications (GSM).

EN 301 199: Digital Video Broadcasting (DVB); Interaction channel for Local Multi-point Distribution Systems (LMDS).

EN 301 210: Framing structure, channel coding and modulation for Digital Satellite News Gathering (DSNG) and other contribution applications by satellite.

EN 301 222: Co-ordination channels associated with Digital Satellite News Gathering (DSNG).

EN 301 234: Digital Audio Broadcasting (DAB); Multimedia Object Transfer (MOT) protocol.

EN 300 401: Digital Audio Broadcasting (DAB); DAB to mobile, portable and fixed receivers.

EN 300 743: Digital Video Broadcasting (DVB); subtitling systems.

EN 300 751: Radio broadcasting systems; Data Radio Channel (DARC); System for wireless infotainment forwarding and teledistribution.

ETS 300 799: Digital Audio Broadcasting (DAB); Distribution interfaces; Ensemble Transport Interface (ETI).

ETS 300 801: Digital Video Broadcasting (DVB); Interaction channel through Public Switched Telecommunications Network (PSTN)/ Integrated Services Digital Networks (ISDN).

ETS 300 802: Digital Video Broadcasting (DVB); Network-independent protocols for DVB interactive services.

ETS 300 813: DVB interfaces to Plesiochronous Digital Hierarchy (PDH) networks.

ETS 300 814: DVB interfaces to Synchronous Digital Hierarchy (SDH) networks.

CEPT Documentation

T/R 13-01: Preferred channel arrangements for fixed services in the range 1-3 GHz.

“The Chester 1997 Multilateral Coordination Agreement relating to Technical Criteria, Coordination Principles and Procedures for the introduction of Terrestrial Digital Video Broadcasting (DVB-T) Chester, 25 July 1997.”

“Final Acts of the CEPT T-DAB Planning Meeting Wiesbaden, 1995”

“Final Acts of the CEPT T-DAB Planning Meeting (2) Bonn, 1996.”

“Final Acts of the CEPT T-DAB Planning Meeting (3) Maastricht, 2002.”

“Final Acts of the CEPT T-DAB Planning Meeting (4) Maastricht, 2002.”

CENELEC Documentation

EN 50201: Interfaces for DVB-IRDs.

EN 50248: DAB Receiver Characteristics.

EN 50255: Digital Audio Broadcasting system - Specification of the Receiver Data Interface (RDI).

EN 50221: Common Interface Specification for Conditional Access and other Digital Video Broadcasting Decoder Applications.

EN 50083: Cabled distribution systems for television, sound and interactive multimedia signals.

R 206 001: Guidelines for implementation & use of the Common Interface for DVB Decoder Applications.

ITU Documentation

“Regional agreement for the European broadcasting area concerning the use of frequencies by the Broadcasting Service in the VHF and UHF bands Stockholm 1961.”

“Final Acts of the Regional Administrative LF/MF Broadcasting Conference (Regions 1 and 3) Geneva, 1975.”

“Final Acts of the Regional Administrative Conference for the planning of VHF Sound Broadcasting, Geneva, 1984.”

“Final Acts of the Regional Radiocommunication Conference for planning of the digital terrestrial broadcasting service in parts of Regions 1 and 3, in the frequency bands 174-230 MHz and 470-862 MHz (GE06)”

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

3.4 Satellite Services

This section outlines the interface requirements for the satellite services in Ireland. The satellite services include meteorological satellites, radionavigation satellites, mobile satellites and fixed satellites. The interface requirements for the satellite services are detailed in Tables 12 - 15 as follows:

Table 12: Satellite services in the bands 137.175 - 1300 MHz

Table 13: Satellite services in the bands 1525 - 2200 MHz

Table 14: Satellite services in the bands 2483.5 - 7750 MHz

Table 15: Satellite services in the bands from 7900MHz

The legislation and documentation relevant to the satellite services is listed at the end of this section.

Table 12: Interface requirements for the Satellite Services in the 137.175 - 1300 MHz bands

Parameter	Description					
Mandatory Requirements						
Frequency Band (MHz)	137.175 - 137.85 MHz	149.9 - 150.05 MHz	399.9 - 400.05 MHz	400.15 - 401.00 MHz	401 - 406 MHz	1215 - 1300 MHz
National Usage	Meteorological-Satellite (space – Earth), Satellite Personal Communication Service	Satellite Personal Communication Service	Radionavigation satellite, Satellite Personal Communication Service (SPCS)	Meteorological Aids, (Radiosondes), Satellite Personal Communication Service	Meteorological Aids, (Radiosondes)	Radionavigation : Radar, Navigation Systems and Active Sensors, GPS, Galileo and Glonass
Licensing Regime	n/a Licence exemption S.I. 197 of 2005	Licence Exemption S.I. No.173 of 2000	n/a Licence exemption S.I. 173 of 2000	n/a Licence exemption S.I. 173 of 2000	n/a Licence exemption S.I. 173 of 2000	Wireless Telegraphy licence is required unless covered by licence exemptions S.I. 273 of 2000, S.I. 505 of 2003 and S.I. 197 of 2005
Information						
Notes	-	Qualify for licence exemption if in compliance with the following standards: ETS 300 721 and operate as part of the ITU named LEOTELCOM-1 satellite system.	-	-	-	-

Table 13: Interface requirements for the Satellite Services in the 1525– 2200 MHz bands

Parameter	Description					
Mandatory Requirements						
Frequency Band (MHz)	1525 - 1559MHz	1559- 1626.5 MHz	1626.5 - 1660 MHz	1675 - 1710 MHz	1980 - 2010 MHz	2170 - 2200 MHz
National Usage	Maritime Mobile – Satellite (space – Earth) Inmarsat M (receive) Search and Rescue (SAR) Satellite systems including GMDSS Licence Exemptions for following systems Inmarsat D, Inmarsat C, Inmarsat M, EMS-PRODAT, EMS-MSSAT, Inmarsat Mini M	GPS & Glonass	Maritime Mobile – Satellite (Earth – space): Inmarsat – M (transmit) Search and Rescue (SAR) Satellite Systems including GMDSS Licence Exemptions for following systems Inmarsat D, Inmarsat C, Inmarsat M, EMS-PRODAT, EMS-MSSAT, Inmarsat Mini M	Meteorological-Satellites	Mobile –IMT 2000	Mobile - IMT 2000

Licensing Regime	Wireless Telegraphy licence is required unless covered by licence exemption. Licence exemptions: S.I. No. 398 of 2001 S.I. No. 007 of 2004	Wireless Telegraphy licence is required unless covered by licence exemption. Licence exemptions: S.I. 214 of 1998	Wireless Telegraphy licence is required unless covered by licence exemption. Licence exemptions: S.I. No. 398 of 2001	Wireless Telegraphy licence is required unless covered by licence exemption. Licence exemptions S.I. 505 of 2003	See Section 3.1 on Mobile Services Licence exemption S.I. 505 of 2003	See Section 3.1 on Mobile Services Licence exemption S.I. 505 of 2003
Information						
Notes/ Reference standards, specifications and reports	Qualify for licence exemption if in compliance with following standards ETS 300 254 or TBR 0263, ETS 300 423 or TBR 0443 as applicable	Qualify for licence exemption if in compliance with following standards TBR 413	Qualify for licence exemption if in compliance with following standards: ETS 300 254 or TBR 0263, ETS 300 423 or TBR 0443 as applicable	-	-	-
Relevant Documents	CEPT ERC/DEC/(98)01, 02, 03, 04, CEPT ERC/DEC/(98)12, CEPT ERC/DEC/(98)13, CEPT ERC/DEC/(98)14, CEPT ERC/DEC/(98)18, CEPT ERC/DEC/(98)19, CEPT ERC/DEC/(98)29	Satellite Personal Communications Service S-PCS (planned) CEPT/ ERC/DEC /(97)03	CEPT ERC/DEC/(98)01, 02, 03, 04, CEPT ERC/DEC/(98)12, CEPT ERC/DEC/(98)13, CEPT ERC/DEC/(98)14, CEPT ERC/DEC/(98)18, CEPT ERC/DEC/(98)19, CEPT ERC/DEC/(98)29	Weather satellite reception (HRPT) 1690 – 1710 MHz Future plan: Metsat reception (HRPT) 1698-1710 MHz	UMTS/S-PCS (satellite, Earth-space) (1980-2010 MHz) CEPT ERC/DEC/(97)03 (S-PCS) CEPT ERC/DEC/(97)07 CEPT ERC/DEC/(97)04 (Transition) S.I. 214 of 1998	UMTS/S-PCS (satellite, space-Earth) (2170-2200 MHz.) CEPT ERC/DEC/(97)03 (S-PCS) CEPT ERC/DEC/(97)07 CEPT ERC/DEC/(97)04 (Transition) S.I. 214 of 1998

Table 14: Interface requirements for the Satellite Services in the 2483.5 - 7750 MHz bands

Parameter	Description							
Mandatory Requirements								
Frequency Band (MHz)	2483.50 - 2500 MHz	2500.00 - 2520.00 MHz	2670 - 2690 MHz	3400 - 4200 MHz	4500 - 4800 MHz	5150 - 6700 MHz	6700 - 7075 MHz	7250 - 7750 MHz
National Usage	Satellite Personal Communication System (e.g. IRIDIUM)	See Section 3.3	See Section 3.3	Fixed - Satellite (space - Earth) Licence Exempt VSAT receivers	Fixed - Satellite (space - Earth)	Fixed - Satellite (Earth - space)	Fixed -Satellite (Earth - space) (space - Earth)	Fixed - Satellite (space - Earth) Meteorological - Satellite (space - Earth)
Licensing Regime	Qualify for licence exemption if in compliance with following standard: TBR 413 Wireless Telegraphy	See Section 3.3	See Section 3.3	Qualify for licence exemption if in compliance with following standards TBR 433: ETS 300 332 ETS 300 333 ETS 300 160 ETS 300 456	Wireless Telegraphy licence is required unless covered by licence exemption. Satellite Regulations: S.I. No. 261 of 2000, Teleport Facility	Wireless Telegraphy licence is required unless covered by licence exemption. Licence exemptions: S.I. No. 273 of 2000 - VSAT receiver exemption	Wireless Telegraphy licence is required unless covered by licence exemption. Licence exemptions: S.I. No. 261 of 2000, Teleport Facility Regulations: S.I. No. 18 of 2001	Wireless Telegraphy licence is required unless covered by licence exemption. Licence exemptions: S.I. No. 261 of 2000, Teleport Facility Regulations: S.I. No. 18 of 2001

Parameter	Description							
	licence is required unless covered by licence exemption. Licence exemptions: S.I. No. 214 of 1998, S.I. 505 of 2003			Satellite Regulations: S.I. No. 261 of 2000, Teleport Facility Regulations: S.I. No. 18 of 2001 Licence Exemption S.I. No. 273 of 2000	Regulations: S.I. No. 18 of 2001	Satellite Regulations: S.I. No. 261 of 2000, Teleport Facility Regulations: S.I. No. 18 of 2001		
Information								
Notes/ Relevant Documents	Satellite Personal Communications Service (S-PCS) CEPT ERC/DEC (97)03 S.I. 214 of 1998	See Section 3.3	See Section 3.3	Mobile Satellite allocation (2670 - 2690 MHz) S.I. No. 273 of 2000 - VSAT receiver exemption See ComReg Document 00/64R "Guidelines for Satellite Services above 3GHz" for list of standards	National Allotment for Fixed-Satellite Down Link (4500-4800MHz) Appendix 30B, Radio Regulations See ComReg Document 00/64R "Guidelines for Satellite Services above 3GHz" for list of standards	See ComReg Document 00/64R "Guidelines for Satellite Services above 3GHz" for list of standards	National Allotment for Fixed-Satellite Up Link (6725-7025MHz) Appendix S30B, Radio Regulations See ComReg Document 00/64R "Guidelines for Satellite Services above 3GHz" for list of standards	See ComReg Document 00/64R "Guidelines for Satellite Services above 3GHz" for list of standards

Table 15: Interface requirements for the Satellite Services from 7900 MHz

Parameter	Description	
Mandatory Requirements		
Frequency Band (MHz)	7900 - 8400 MHz	>8 GHz
National Usage	Fixed -Satellite (Earth - space) Meteorological - Satellite (Earth - space) Earth exploration - Satellite (space - Earth) Mobile	See Table of Frequency Allocations 04/77
Licensing Regime	Wireless Telegraphy licence is required unless covered by licence exemption. Licence exemptions: S.I. No. 261 of 2000, Teleport Facility Regulations: S.I. No. 18 of 2001	Wireless Telegraphy licence is required unless covered by licence exemption.
Information		
Reference Documents	See ComReg Document 00/64R "Guidelines for Satellite Services above 3GHz" for list of standards	See ComReg Document 00/64R "Guidelines for Satellite Services above 3GHz" for list of standards

Relevant Documentation

National Legislation

Primary Legislation

Wireless Telegraphy Act 1926, as amended.

Secondary Legislation

S.I. 197 of 2005: Wireless Telegraphy Act 1926 (section 3)(Exemption of Receive Only Apparatus For Wireless Telegraphy) Order 2005.

S.I. 128 of 2005: Wireless Telegraphy Act 1926 (Section 3)(Exemption of certain classes of Land Mobile Earth Stations) Order, 2005.

S.I. 007 of 2004: Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Low Power Aircraft Earth Stations) Order, 2004.

S.I. 505 of 2003: Wireless Telegraphy Act, 1926 (section 3) (Exemption of Certain Classes of Fixed Satellite Earth Stations) Order, 2003.

S.I. 398 of 2001: Wireless Telegraphy Act, 1926 (section 3) (Exemption of certain classes of Land Mobile Earth Stations) Order, 2001 (revoked S.I. 100 of 1999, S.I. 101 of 1999, S.I. 102 of 1999, S.I. 103 of 1999, S.I. 104 of 1999, S.I. 105 of 1999, S.I. 106 of 1999, S.I. 109 of 1999, S.I. 110 of 1999).

S.I. 18 of 2001: Wireless Telegraphy (Teleport Facilities) Regulations, 2001.

S.I. 273 of 2000: Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Certain Fixed Satellite Receiving Earth Stations) Order, 2000.

S.I. 261 of 2000: Wireless Telegraphy (Fixed Satellite Earth Stations) Regulations, 2000.

S.I. 173 of 2000: Wireless Telegraphy Act, 1926 (section 3) (Exemption of Mobile Earth Stations for Satellite Personal Communication Systems operating in bands below 1 GHz (S-PCS<1GHz)) Order, 2000.

S.I. 214 of 1998: Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Satellite Earth Stations for Satellite Personal Communications Services (S-PCS)) Order, 1998.

S.I. 179 of 1998: European Communities (Satellite Earth Station Equipment) Regulations, 1998.

S.I. 372 of 1997: European Communities (Satellite Telecommunications Services) Regulations, 1997.

ComReg/ODTR Documentation

01/32R: Guidelines for applications for a teleport facility licence in the fixed satellite service in spectrum above 3GHz.

01/33R: Application form for teleport facility licence in the fixed satellite service in spectrum above 3GHz.

00/68: Licence Exempt Satellite Earth Stations.

00/67R2: Application form for fixed satellite earth station licences in the fixed satellite service in spectrum above 3GHz: Transportable Earth Stations.

00/66R: Application form for fixed satellite earth station licences in the fixed satellite service in spectrum above 3GHz: VSATs.

00/65R: Application form for fixed satellite earth station licences in the fixed satellite service in spectrum above 3GHz: Non-Transportable Earth Stations.

00/64R: Guidelines for applicants for satellite earth station licences in the fixed satellite service in spectrum above 3GHz.

ETSI Documentation

ETS 300 157: Satellite Earth Stations and Systems (SES); Receive-only Very Small Aperture Terminals (VSATs) operating in the 11/12 GHz frequency bands.

ETS 300 159: Satellite Earth Stations and Systems (SES); Transmit-only or transmit-and receive Very Small Aperture Terminals (VSATs) used for communications operating in the Fixed Satellite Service (FSS) 11/12/14 GHz frequency bands.

ETS 300 160: Satellite Earth Stations and Systems (SES); Control and monitoring functions at a Very Small Aperture Terminal (VSAT).

ETS 300 254: Satellite Earth Stations and Systems (SES); Land Mobile Earth Stations (LMES) operating in the 1,5/1,6 GHz bands providing Low Bit Rate Data Communications (LBRDC).

ETS 300 255: Satellite Earth Stations and Systems (SES); Land Mobile Earth Stations (LMESs) operating in the 11/12/14 GHz bands providing Low Bit Rate Data Communications (LBRDC).

ETS 300 327: Satellite Earth Stations and Systems (SES); Satellite News Gathering (SNG) Transportable Earth Stations (TES) (13-14/11-12 GHz).

ETS 300 332: Satellite Earth Stations and Systems (SES); Transmit-only or transmit-and receive Very Small Aperture Terminals (VSATs) used for communications operating in the Fixed Satellite Service (FSS) 6 GHz and 4 GHz frequency bands.

ETS 300 333: Satellite Earth Stations and Systems (SES); Receive-only Very Small Aperture Terminals (VSATs) operating in the 4 GHz frequency band.

ETS 300 372: Radio Equipment and Systems (RES); Technical characteristics and methods of measurement for maritime float-free satellite Emergency Position Indicating Radio Beacon (EPIRB) operating in the 1,6 GHz band through geostationary satellites.

ETS 300 423: Satellite Earth Stations and Systems (SES); Land Mobile Earth Stations (LMES) operating in the 1,5/1,6 GHz bands providing voice and/or data communications.

ETS 300 456: Satellite Earth Stations and Systems (SES); Test methods for Very Small Aperture Terminals (VSATs) operating in the 11/12/14 GHz frequency bands.

ETS 300 460: Satellite Earth Stations and Systems (SES); Maritime Mobile Earth Stations (MMES) operating in the 1,5/1,6 GHz bands providing Low Bit Rate Data Communications (LBRDC) for the Global Maritime Distress and Safety System (GMDSS); Technical characteristics and methods of measurement.

EN 300 721: Satellite Earth Stations and Systems (SES); Mobile Earth Stations (MES) providing Low Bit Rate Data Communications (LBRDC) using LEO satellites operating below 1 GHz.

EN 300 829: Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) for Maritime Mobile Earth Stations (MMES) operating in the 1,5/1,6 GHz bands providing Low Bit Rate Data Communications (LBRDC) for the Global Maritime Distress and Safety System (GMDSS).

TBR 026: Satellite Earth Stations and Systems (SES); Low data rate Land Mobile satellite Earth Stations (LMES) operating in the 1,5/1,6 GHz frequency bands.

TBR 027: Satellite Earth Stations and Systems (SES); Low data rate Land Mobile satellite Earth Stations (LMES) operating in the 11/12/14 GHz frequency bands.

TBR 028: Satellite Earth Stations and Systems (SES); Very Small Aperture Terminal (VSAT); Transmit-only, transmit/receive or receive-only satellite earth stations operating in the 11/12/14 GHz frequency bands.

TBR 030: Satellite Earth Stations and Systems (SES); Satellite News Gathering (SNG) Transportable Earth Stations (TES) operating in the 11-12/13-14 GHz frequency bands.

TBR 041: Satellite Personal Communications Networks (S-PCN); Mobile Earth Stations (MES), including handheld earth stations, for S-PCN in the 1,6/2,4 GHz bands under the

Mobile Satellite Service (MSS); Terminal essential requirements.

TBR 043: Satellite Earth Stations and Systems (SES); Very Small Aperture Terminal (VSAT) transmit-only, transmit-and-receive, receive-only satellite earth stations operating in the 4 GHz and 6 GHz frequency bands.

TBR 044: Satellite Earth Stations and Systems (SES); Land Mobile Earth Stations (LMES) operating in the 1,5 GHz and 1,6 GHz bands providing voice and/or data communications.

CEPT Documentation

ERC/DEC/(97)03: On the Harmonised Use of Spectrum for Satellite Personal Communication Services (S-PCS) operating within the bands 1610 - 1626.5 MHz, 2483.5 - 2500 MHz, 1980 - 2010 MHz and 2170 - 2200 MHz.

ERC/DEC(97)04: On transitional arrangements for the Fixed Service and the Mobile-Satellite Service in the bands 1980 - 2010 MHz and 2170 - 2200 MHz in order to facilitate the harmonised introduction and development of Satellite Personal Communications Services.

ERC/DEC/(97)07: ERC Decision of 30 June 1997 on the frequency bands for the introduction of the Universal Mobile Telecommunications System (UMTS).

ERC/DEC/(98)12: ERC Decision of 23 November 1998 on Exemption from Individual Licensing of Inmarsat-D terminals for land mobile applications.

ERC/DEC/(98)13: ERC Decision of 23 November 1998 on Exemption from Individual Licensing of Inmarsat-C terminals for land mobile applications.

ERC/DEC/(98)14: ERC Decision of 23 November 1998 on Exemption from Individual Licensing of Inmarsat-M terminals for land mobile applications.

ERC/DEC/(98)18: ERC Decision of 23 November 1998 on Exemption from Individual Licensing of EMS-PRODAT terminals for land mobile applications.

ERC/DEC/(98)19: ERC Decision of 23 November 1998 on Exemption from Individual Licensing of EMS-MSSAT terminals for land mobile applications.

ERC/DEC/(98)29: ERC Decision of 23 November 1998 on Exemption from Individual Licensing of Inmarsat-phone terminals (also known as Inmarsat mini-M) for land mobile applications.

ERC/DEC/(99)06: ERC Decision of 10 March 1999 on the harmonised introduction of satellite personal communication systems operating in the bands below 1 GHz (S-PCS<1GHz).

ITU Documentation

Radio Regulations Appendix S30: Provisions for all services and associated Plans for the broadcasting-satellite service in the frequency bands 11.7-12.2 GHz (in Region 3), 11.7-12.5 GHz (in Region 1) and 12.2-12.7 GHz (in Region 2).

Radio Regulations Appendix S30A: Provisions and associated Plans for feeder-links for the broadcasting-satellite service (11.7-12.5 GHz in Region 1, 12.2-12.7 GHz in Region 2 and 11.7-12.2 GHz in Region 3) in the frequency bands 14.5-14.8 GHz¹ and 17.3-18.1 GHz in Regions 1 and 3, and 17.3-17.8 GHz in Region 2.

Radio Regulations Appendix S30B: Provisions and associated Plan for the fixed-satellite service in the frequency bands 4 500-4 800 MHz, 6 725-7 025 MHz, 10.70-10.95 GHz, 11.20-11.45 GHz and 12.75-13.25 GHz.

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

3.5 Short Range Devices

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 orders¹¹. 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 16 - 28 as follows:

Table 16: Non-Specific Short Range Devices

Table 17: Wideband Data Transmission Systems (incl. WAS/RLANs)

Table 18: Road Transport and Traffic Telematics (RTTT)

Table 19: Equipment for Detecting Movement and Alert

Table 20: Alarms

Table 21: Model Control

Table 22: Inductive Applications

Table 23: Radio Microphones

Table 24: Radio Frequency Identification Applications (RFID)

Table 25: Wireless Applications in Healthcare

Table 26: Wireless Audio Applications

Table 27: Automotive Applications

Table 28: Miscellaneous Applications

The legislation and documentation relevant to SRDs is listed at the end of this section.

¹¹ S.I. 160 of 2006 and S.I. 405 of 2002

Table 16: Interface Requirements for Non-Specific Short Range Devices¹²

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

¹² This category is available for any type pf 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 ¹³ \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 ¹³ \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

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

¹³ 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
434.040 – 434.790 MHz	10 mW ERP	Duty Cycle ¹³ ≤ 100 % Channel Spacing ≤ 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
458.4875 – 458.6375 MHz*	500 mW ERP	Channel Spacing ≤ 25 kHz	EN 300 220	On site telemetry/telecommand only. Please note adjacent band use for ECG monitoring in hospitals (see Table 25) Legal references: S.I. 405 of 2002, S.I. 160 of 2006
458.8375 – 458.9875 MHz*	500 mW ERP	Channel Spacing ≤ 25 kHz	EN 300 220	Please note adjacent band use for ECG monitoring in hospitals (see Table 25) 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

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
863 - 870 MHz	25 mW ERP	Duty Cycle ¹³ ≤ 0.1 % (note 1, 4 and 5). Channel Spacing ≤ 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
	25 mW ERP Power density : -4.5 dBm/100 kHz (note 7)	Duty Cycle ¹³ ≤ 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 ¹³ ≤ 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

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
868.000 - 868.600 MHz	25 mW ERP	Duty Cycle ¹³ ≤ 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
868.700 - 869.200 MHz	25 mW ERP	Duty Cycle ¹³ ≤ 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

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
869.400 - 869.650 MHz	500 mW ERP	Duty Cycle ¹³ ≤ 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
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

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
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 20)
- 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 17: 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 18: 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 19: 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 20: 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 ¹³ < 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 ¹³ < 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 ¹³ < 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 ¹³ < 0.1 % Channel Spacing: 25 kHz	EN 300 220	Social Alarms ¹⁴ 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 ¹³ < 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 ¹³ < 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 ¹³ < 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

¹⁴ Social alarm devices are used to assist elderly people and people with disabilities living at home when then they are in distress.

Table 21: 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 22: Interface Requirements for Inductive Applications¹⁵

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

¹⁵ 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

* 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
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
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 23: 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 24: 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 ¹³ ≤ 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
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Table 25: 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 ¹³ < 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 ¹³ < 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 ¹³ < 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 ¹⁶ 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

¹⁶ 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 26: Interface Requirements for Wireless Audio Applications¹⁷

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 ¹⁸ Legal references: S.I. 405 of 2002, S.I. 160 of 2006 Other references: ERC/REC 70-03

¹⁷ 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 a vehicle 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.

¹⁸ 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
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
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

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
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
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 27: 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>	<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</p>	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	<p>Maximum Peak Power: 20 dBm EIRP</p>	<p>Duty Cycle¹³ ≤ 10 % (for peak emissions > -10 dBm EIRP)</p>	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>

Mandatory Requirements			Information	
Frequency Band	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
77– 81 GHz	Max Mean Power Density: -3 dBm/MHz EIRP; Peak Limit: 55 dBm EIRP; Max Mean Power Density for one SRR (measured outside the vehicle): -9 dBm/MHz EIRP	To be decided	To be decided	Automotive Short Range Radar (SRR) for collision mitigation and traffic safety only Legal references: Commission Decision 2004/545/EC, S.I. 405 of 2002, S.I. 160 of 2006 Other references: ECC/DEC/(04)03, ERC/REC 70-03

Table 28: 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

Mandatory Requirements				Information	
Frequency Band	Application	Maximum Permitted Radiated Power/Field Strength	Mitigation Requirements	Reference Standards	Relevant Documents/Other notes
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.

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.

02/71R: Permitted Short Range Devices in Ireland.

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.

3.6 Aeronautical Services

This section outlines the interface requirements for the Aeronautical services in Ireland as follows:

Table 29: Interface Requirements for Aeronautical Services

The legislation and documentation relevant to these services is listed at the end of this section.

Table 29: Interface Requirements for Aeronautical Services

Parameter	Description											
Mandatory Minimum Requirements												
Frequency Band	315 – 415 kHz	2850 – 3025 kHz 3400 – 3500 kHz 4650 – 4700 kHz 5480 – 5680 kHz 6525 – 6685 kHz 8815 – 8965 kHz 8965 – 9040 kHz 10005 – 10100 kHz 11175 – 11400 kHz 13200 – 13360 kHz 17900 – 17970 kHz 21924 - 22000 kHz	74800 – 75200 kHz	108 – 112 MHz	112 – 118 MHz	118 – 137 MHz	225-400 MHz	328.6 – 335.4 MHz	960 – 1215 MHz	960 – 1215 MHz	2700 – 2900 MHz	15700 – 16600 MHz
National Usage	Non-Directional Beacons	Fixed HF stations	Navigation (Fan) Markers	Instrument Landing Systems (ILS), Localisers	VHF Omnidirectional Omnidirectional (VOR) navigation	Air-ground communications Ground-air communications	UHF Communications	ILS Glide Path (GP)	Distance Measuring Equipment (DME)	Secondary surveillance radar (SSR)	Primary Radar	Surface Movement Radar (SMR)
Licensing Regime*	Wireless Telegraphy Licence is required											
Standards	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	NATO STANAG 4205 ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ITU ICAO Annex 10
Channel spacing	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ICAO Annex 10	ITU
Maximum Transmit Power/Max ERP	As per ICAO Annex 10	As per ICAO Annex 10	As per ICAO Annex 10	As per ICAO Annex 10	As per ICAO Annex 10	As per ICAO Annex 10	50W	As per ICAO Annex 10	As per ICAO Annex 10	As per ICAO Annex 10	As per operational requirement	As per operational requirement

* Equipment used or intended to be used in connection with the provision of air traffic services is subject to approval by the IAA in accordance with the IAA (Air Traffic Service Systems) Order, S.I. 855 of 2004

Relevant Documentation

National Legislation

Primary Legislation

Wireless Telegraphy Act 1926, as amended.

Secondary Legislation

S.I. 855 of 2004: Irish Aviation Authority (Air Traffic Service Systems) Order, 2004.

Other documentation

EC Directives, Decisions and Recommendations

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.

ComReg/ODTR Documentation

02/01R: Aircraft Radio Licence - Application Form.

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

3.7 Spectrum Access in the 1785 – 1805 MHz band

This section details the interface requirements for spectrum access in the 1785 – 1805 MHz band on a service and technology neutral basis.

Table 30: Interface requirements for Spectrum Access in the 1785 - 1805 MHz band

Parameter	Description
Mandatory Requirements	
Frequency Band (MHz)	1785 – 1805 MHz
Radio Service	Terrestrial Service
Application	Any
Channelling/Modulation	Any
Transmit power limit	Dictated by the device
Duplex type/separation	TDD/FDD
Licensing regime	Spectrum block on a national basis.
Frequency planning assumptions	In-band EIRP of an individual system shall be 56 dBm/MHz.

ComReg Documentation

05/93a Annexes to 05/93: Award of available spectrum: 1785 - 1805MHz (ComReg and Ofcom)

05/93 Award of available spectrum: 1785 - 1805 MHz (ComReg and Ofcom)

Annex A - Exemption Orders

A list of Exemption Orders for certain types of apparatus for wireless telegraphy is presented below. Note that these Orders are subject to revisions and updates.

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

S.I. 292 of 2005: Wireless Telegraphy Act, 1926 (section 3) (Exemption of Receive Only Apparatus for Wireless Telegraphy) (Amendment) Order, 2005.

S.I. 197 of 2005: Wireless Telegraphy Act 1926 (section 3)(Exemption of Receive Only Apparatus For Wireless Telegraphy) Order 2005.

S.I. 128 of 2005: Wireless Telegraphy Act 1926 (Section 3) (Exemption of certain classes of Land Mobile Earth Stations) Order, 2005.

S.I. 007 of 2004: Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Low Power Aircraft Earth Stations) Order, 2004.

S.I. 158 of 2003: Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Mobile Telephones) (Amendment) Order, 2003.

S.I. 409 of 1997: Wireless Telegraphy (Mobile Telephones) Exemption Order, 1997.

S.I. 505 of 2003: Wireless Telegraphy Act, 1926 (section 3) (Exemption of Certain Classes of Fixed Satellite Earth Stations) Order, 2003.

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

S.I. 398 of 2001: Wireless Telegraphy Act, 1926 (section 3) (Exemption of certain classes of Land Mobile Earth Stations) Order, 2001 (revoked S.I. 100 of 1999, S.I. 101 of 1999, S.I. 102 of 1999, S.I. 103 of 1999, S.I. 104 of 1999, S.I. 105 of 1999, S.I. 106 of 1999, S.I. 109 of 1999, S.I. 110 of 1999).

S.I. 273 of 2000: Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Certain Fixed Satellite Receiving Earth Stations) Order, 2000.

S.I. 173 of 2000: Wireless Telegraphy Act, 1926 (section 3) (Exemption of Mobile Earth Stations for Satellite Personal Communication Systems operating in bands below 1 GHz (S-PCS<1GHz)) Order, 2000.

S.I. 108 of 1999: Wireless Telegraphy Act, 1999 (section 3) (Exemption of ERMES Paging Receivers) Order, 1999.

S.I. 107 of 1999: Wireless Telegraphy Act, 1999 (section 3) (Exemption of DCS1800

Mobile Terminals) Order, 1999.

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

S.I. 214 of 1998: Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Satellite Earth Stations for Satellite Personal Communications Services (S-PCS)) Order, 1998.

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

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

S.I. 211 of 1972: Wireless Telegraphy Act, 1926 (section 3) (Exemption of Sound Broadcasting Receivers) Order, 1972.

Annex B – General References

The following references are generally applicable across the radio services includes regulations transposing the new Regulatory Framework Directives and relevant national documentation.

National Legislation

Wireless Telegraphy Acts 1926 - 1988.

S.I. 114 of 2005: Wireless Telegraphy (Third Party Trial Licence) Regulations, 2005.

S.I. 113 of 2005: Wireless Telegraphy (Research and Development Licence) Regulations, 2005.

S.I. 305 of 2003: European Communities (Electronic Communications Networks and Services)(Access) Regulations 2003.

S.I. 306 of 2003: European Communities (Electronic Communications Networks and Services)(Authorisation) Regulations 2003.

S.I. 307 of 2003: European Communities (Electronic Communications Networks and Services)(Framework) Regulations 2003.

S.I. 308 of 2003: European Communities (Electronic Communications Networks and Services)(Universal Service And Users' Rights) Regulations 2003.

S.I. 240 of 2001: European Communities (Radio Equipment and Telecommunications Terminal Equipment) Regulations, 2001, S.I. No: 240 of 2001.

ComReg/ODTR Documentation

05/89: Review of fees applicable to rights of use for radio frequencies.

05/72: Spectrum Management Strategy Statement 2005 -2007.

05/35: Opportunities for Testing & Trialling Wireless Services and Technologies in Ireland - Application Guidance Notes.

05/35b: Wireless Trial Licence - Application Form.

05/35a: Wireless Test Licence - Application Form.

04/77: Table of Frequency Allocations of Ireland, July 2004.

03/102R: Guidance on completion of notification form relation to a General Authorisation.

03/90: Exempted Networks and Services under the Authorisations Regulations.

03/88: Communications Act 2002 Levy Order – Compliance Guidelines.

03/84: Wireless Telegraphy Licences - Future Applicability of Licence Conditions.

03/83: Guidelines relating to General Authorisations.

03/82R2: Notification Form for a General Authorisation Revised.

03/81: Conditions of General Authorisation.

EC Directives, Decisions and Recommendations

Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of electronic communications networks and associated facilities (Access Directive).

Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive).

Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive).

Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive).

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.

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).

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

Commission Decision of 6 April 2000 establishing the initial classification of Radio Equipment and Telecommunications Terminal Equipment and associated identifiers.

Annex C – Acronyms and Abbreviations

AM	Amplitude Modulation
AVI	Automatic Vehicle Identification
BRAN	Broadband Radio Access Networks
CEPT	European Conference of Postal and Telecommunications Administrations
ComReg	Commission for Communications Regulation
CT2	European Analogue cordless telephone system (second generation)
DAB	Digital Audio Broadcasting
DCS1800	Digital Communications System, 1800 MHz band
DECT	Digital European Cordless Telecommunications
DTT	Digital Terrestrial Television
DVB	Digital Video Broadcasting
Earth – space	Earth to space direction of transmission
ECC	Electronic Communications Committee (of CEPT) – formally known as ERC
ECC/DEC	ECC Decision
ECC/REC	ECC Recommendation
E-GSM	Extended GSM
EIRP	Equivalent isotropic radiated power
EN	European Norm
EPIRB	Emergency Position-Indicating Radio Beacon
ERC	European Radiocommunications Committee
ERC/DEC/	ERC Decision
ERC/REC/	ERC Recommendation
EMC	ElectroMagnetic Compatibility
ERM	Electromagnetic compatibility and Radio spectrum Matters
ERO	European Radiocommunications Office
ERP	Effective Radiated Power
ETR	ETSI Technical Report
ETS	European Telecommunication Standard
ETSI	European Telecommunication Standards Institute
FDDA	Field Disturbance and Doppler Apparatus (Motion Detectors)
FM	Frequency Modulation
FSS	Fixed Satellite Service
FWA	Fixed Wireless Access
GHz	Gigahertz - 1,000,000,000 Hertz
GLONASS	Global Satellite Navigation System (Russian Federation)
GMDSS	Global Maritime Distress and Safety System
GPS	Global Positioning System
GSM	Global System for Mobile Communications
Hz	Hertz, unit of frequency measurement (1 kHz = 1000 Hz, 1 MHz = 1000,000 Hz, 1GHz = 1000,000,000 Hertz)
HRPT	High Resolution Picture Transmission
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IMT-2000	International Mobile Telecommunications – 3rd generation Mobile

	Systems
INMARSAT	International Maritime Satellite Organisation
ISM	Industrial, Scientific and Medical applications
ITU	International Telecommunications Union
ITU-R	Radiocommunication Sector of the ITU
ITU Geneva 1975 Plan	Plan for the assignment of frequencies to broadcasting stations in the medium frequency bands in Regions 1 and 3 and in the low frequency bands in Region 1
ITU Geneva 1984 Plan	Frequency assignment plan for FM sound broadcasting stations in Region 1 and part of Region 3 in the band 87.5-108 MHz
ITU Stockholm 1961 Plan	Plans annexed to the Regional agreement for the European Broadcasting Area concerning the use of frequencies by the broadcasting services in the VHF and UHF bands
kHz	Kilohertz - 1000 Hertz
LBRDC	Low Bit Rate Data Communications
LAN	Local Area Network
LEO	Low Earth Orbit
LMES	Land Mobile Earth Stations
Mb/s or Mbps	Megabits per second
MES	Mobile Earth Stations
MHz	Megahertz - 1,000,000 Hertz
MoU	Memorandum of Understanding
MMDS	Multichannel Multipoint Distribution Service
MSS	Mobile Satellite Service
MVDS	Microwave (or Multi-point) Video Distribution System
OB	Outside Broadcasting
ODTR	Office of the Director of Telecommunications Regulation (now ComReg)
PDH	Plesiosynchronous Digital Hierarchy
PAMR	Public Access Mobile Radio
PMR	Private Mobile Radio
PSTN	Public Switched Telecommunications Network
RACON	Radar Beacon
RES	Radio Equipment and Systems
RLAN	Radio Local Area Network
R&TTE	Radio and Telecommunications Terminal Equipment
RTTT	Road Transport & Traffic Telematics
SAR	Search and Rescue
SDH	Synchronous Digital Hierarchy
SES	Satellite Earth Stations and Systems
S.I.	Statutory Instrument
SNG	Satellite News Gathering
S-PCN	Satellite Personal Communications Networks
S-PCS	Satellite Personal Communications System
space - Earth	space to Earth direction of transmission
SMATV	Satellite Master Antenna Television
SOLAS	Safety Of Life At Sea

SRD	Short Range Device
STL	Studio to Transmitter Link
STM	Synchronous Transfer Mode
T-DAB	Terrestrial Digital Audio Broadcasting
TACS	Total Access Communications System (Analogue)
TETRA	TErrestrial Trunked RAdio (Digital)
UMTS	Universal Mobile Telecommunications Systems
ULP	Ultra Low Power
VHF	Very High Frequency
VSAT	Very Small Aperture Terminal
WARC	World Administrative Radio Conference
WPAS	Wireless Public Address System
WT	Wireless Telegraphy

Annex D - Terms and Definitions

Allocation:

Entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space radiocommunication services or the radio astronomy service under specified conditions. This term shall also be applied to the frequency band concerned.

Aeronautical Mobile Service:

A mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radiobeacon stations may also participate in this service on designated distress and emergency frequencies.

Aeronautical Fixed Service:

A radiocommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular efficient and economical operation of air transport.

Aeronautical Mobile - Satellite Service:

A mobile satellite service in which mobile earth stations are located on board aircraft; survival craft stations and emergency position indicating radiobeacon stations may also participate in this service.

Amateur Service:

A radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Amateur - Satellite Service:

A radiocommunication service using space stations on earth satellites for the same purposes as those of the amateur service reception by the general public. This service may include sound transmissions, television transmissions or other types of transmission.

AVI for Railways:

Automatic Vehicle Identification for railways and is used to track and identify railway rolling stock.

Baby Monitors:

Devices commonly used to monitor the sound or movement of infants and is used to transmit sound to a remote receiver.

Broadcasting - Satellite Service:

A radiocommunication service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public. In the broadcasting satellite service the term “direct reception” shall encompass both individual reception and community reception.

Earth Exploration - Satellite Service:

A radiocommunication service between earth stations and one or more space stations, which may include links between, space stations, in which:

- Information relating to the characteristics of the earth and its natural phenomena is obtained from active sensors or passive sensors on earth satellites;
- Similar information is collected from airborne or earth based platforms;
- Such information may be distributed to earth stations within the system concerned;
- Platform interrogation may be included

This service may also include feeder links necessary for its operation.

Emergency Position - Indicating Radiobeacon Station:

A station in the mobile service the emissions of which are intended to facilitate search and rescue operations.

Field Disturbance and Doppler Apparatus (FDDA):

Apparatus which operates by producing a radiated field and responding to any disturbance of that field caused by an intrusion or movement within the field by other devices, objects or persons. In this way it can detect or monitor the movement of objects or persons. Alarm systems sometimes use this type of equipment for intruder detection.

Fixed Service:

A radiocommunication service between specified fixed points.

Fixed - Satellite Service:

A radiocommunication service between earth stations at specified fixed points when one or more satellites are used; in some cases this service includes satellite-to-satellite links, which may also be effected in the inter-satellite service; the fixed-satellite service may also include feeder links for other space radiocommunication services.

Galileo:

A proposed European global satellite navigation system.

Inductive Loop Systems:

Systems which operate by producing a controlled magnetic field within which a predetermined recognisable signal is formed. Examples include shop anti-theft tagging systems, car immobiliser keys and door access tokens.

Industrial, Scientific and Medical (ISM):

Operation of equipment or appliances designed to generate and use locally, radio frequency energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of telecommunications.

Instrument Landing System (ILS):

A radionavigation system which provides aircraft with horizontal and vertical guidance just before and during landing and, at certain fixed points, indicates the distance to the reference point of landing.

Low Power Radio Transmitters:

Radios used for short range two-way voice communications e.g. toy walkie talkies.

Meteorological Aids Service:

A radiocommunication service used for meteorological, including hydrological, observations and exploration.

Meteorological - Satellite Service:

An earth exploration satellite service for meteorological purposes.

Model Control:

Apparatus used to control the movement of the model in the air, on land or over or under the water surface.

Land Mobile Service:

A mobile radiocommunications service between base stations and land mobile stations or between land mobile stations.

Mobile - Satellite Service:

A radiocommunication service between mobile earth stations and one or more space stations, or between space stations used by this service or between mobile earth stations by means of one or more space stations. This service may also include feeder links necessary for its operation.

Maritime Mobile Service:

A mobile service between coast stations and ship stations, or between ship stations, or between associated on board communication stations; survival craft stations and emergency position-indicating radiobeacon stations may also participate in this service.

Maritime Mobile - Satellite Service:

A mobile satellite service in which mobile earth stations are located on board ships; survival

craft stations and emergency position-indicating radiobeacon stations may also participate in this service.

Non specific Short Range Devices (SRDs):

Short range devices used for general telemetry, telecommand, alarms and data with a low duty cycle. Telemetry means the transmission of remotely measured data. Telecommand means remote control. Video applications only above 2.4 GHz.

Radar:

A radiodetermination system based on the comparison of reference signals with radio signals reflected, or retransmitted, from the position to be determined.

Radar Beacon (Racon):

A transmitter-receiver associated with a fixed navigational mark which when triggered by a radar, automatically returns a distinctive signal which can appear on the display of the triggering radar, providing range, bearing and identification information.

Radio Astronomy:

Astronomy based on the reception of radio waves of cosmic origin.

Radio Astronomy Service:

A service involving the use of radio astronomy.

Radiocommunications Service:

A service involving the transmission, emission and/or reception of radio waves for specific telecommunications purposes.

Radiodetermination:

The determination of the position, velocity and/or other characteristics of an object, or the obtaining of information relating to these parameters, by means of the propagation properties of radio waves.

Radionavigation:

Radiodetermination used for the purposes of radionavigation, including obstruction warning.

Radiolocation:

Radiodetermination used for purposes other than radionavigation.

Radiosonde:

An automatic radio transmitter in the meteorological aids service usually carried on an aircraft, free balloon, kite or parachute, and which transmits meteorological data.

Road Transport and Traffic Telematics (RTTT):

Apparatus used for traffic management. Applications include automatic road toll collection, route guidance systems, vehicle or container identification, instant traffic information, parking management, advance incident warning and on-vehicle anti-collision radar.

Safety Service:

Any radiocommunication service used permanently or temporarily for the safeguarding of human life and property.

Secondary:

Where a band is indicated as allocated to more than one service and the name of the service is printed in normal characters (e.g. Mobile) these are called secondary services Stations of a secondary service:

- Shall not cause harmful interference to stations of primary services to which the frequencies are already assigned or to which stations may be assigned at a later date
- Cannot claim protection from harmful interference from stations of a primary service to which frequencies are already assigned or may be assigned at a later date;
- Can claim protection, however, from harmful interference from stations of the same or other secondary service(s) to which frequencies may be assigned at a later date.

Space Research Service:

A radiocommunication service in which spacecraft or other objects in space are used for scientific or technological research purposes.

Video Surveillance Equipment:

Apparatus typically used for security camera purposes to replace the cable between a camera and a monitor.

Wireless Audio Systems:

Apparatus typically used to replace the wired headphones or speakers in domestic hi-fi systems.

Wireless Microphones:

Apparatus used to transmit speech or music over short distances to a remote receiver in studios, theatres etc.

Wideband Wireless Systems:

General purpose high bit rate spread spectrum radio systems.

Annex E - Contact Details

Comments and queries relating to this document should be directed to:

Mr. Conor Conran, Market Framework, Commission for Communications Regulation, Block DEF, Lower Abbey Street, Irish Life Centre, Dublin 1, Ireland.

Tel: +353 1 804 9600, Fax: +353 1 804 9665, email: conor.conran@comreg.ie.

Other sources of information relating to the Licensing of Radio systems in Ireland

General queries regarding radio or licensing matters can be directed to:

Commission for Communications Regulation, Licensing Section, Block DEF, Abbey Court, Irish Life Centre, Lower Abbey Street, Dublin 1, Ireland.

Tel: +353 1 804 9600, Fax: +353 1 804 9680, website: www.comreg.ie.

Irish Government Publications, including Statutory Instruments, can be purchased from: Government Publications Sales Office, Sun Alliance House, Molesworth Street, Dublin 2, Ireland.

Tel: +353 1 647 6879, website: <http://www.revenue.ie/links/govpubl.htm>.

CEPT Documentation, including ERC Decisions and Recommendations, and Publications of the European Radiocommunications Office (ERO) can be obtained from: ERO, Peblingehus, Nansensgade 19, DK 1366 Copenhagen.

Tel: +45 338 963 00, Fax: +45 338 963 30, website: www.ero.dk.

Publications of the European Telecommunications Standards Institute (ETSI) are available from ETSI Secretariat, 650, route des Lucioles, 06921 Sophia-Antipolis Cedex, France

Tel.: +33 (0)4 92 94 42 00, Fax: +33 (0)4 93 65 47 16, website: www.etsi.org.

Irish Equipment Standards (including transposed ETSI standards) can be purchased from the National Standards Authority of Ireland at the address below:

Sales Office, NSAI, Glasnevin, Dublin 9, Ireland.

Tel: +353 1 807 3800, Fax: +353 1 807 3838, website: www.nsai.ie.

EC Directives can be obtained from The European Commission Representation in Ireland, European House, Dawson Street, Dublin 2.

Tel: +353 1 634 1111, Fax: +353 1 634 1112, website:

http://ec.europa.eu/ireland/welcome/index_en.htm.