Office of the Director of
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Radio

Permitted Short Range Devices in Ireland

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1 INTRODUCTION

The term "Short Range Device" (SRD) is intended to cover the radio transmitters which provide either uni-directional or bi-directional communication and which have low capability of causing interference to other radio equipment. SRDs use either integral, dedicated or external antennas and all modes of modulation can be permitted subject to meeting the reference standard or equivalent.

ERC Recommendation 70-03 (ERC/REC/70-03) sets out the general position on common spectrum allocations for SRDs for countries within CEPT. It is intended as a reference document for member states and represents the most widely accepted position within CEPT. Appendix 3 of the document lists the National restrictions where member states indicate where their National regulations deviate from the CEPT position. The Recommendation describes the spectrum management requirements for SRDs relating to specific frequency bands, maximum power levels, channel spacing and duty cycle.

Table 1 of this document outlines the types of device, with associated parameters, detailed in ERC/REC/70-03 which may be used in Ireland without the requirement of an individual user licence under the Wireless Telegraphy Act 1926 except for those which are restricted and accordingly listed in 'Appendix 3 – National Restrictions' of the Recommendation. Those devices restricted in Ireland by Appendix 3 of the Recommendation have not been included in Table 1. The full text of ERC/REC/70-03 is available from the ERO web-site (www.ero.dk).

In addition to the types of devices described in ERC/REC/70-03 several other devices may be used in Ireland as SRDs. Table 2 of this document describes the types of device, beyond the scope of ERC/REC/70-03, permitted for use as Short Range Devices in Ireland without the requirement of an individual user licence under the Wireless Telegraphy Act 1926.

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). All devices intended to be placed on the market in Ireland must meet the requirements of the R&TTE Directive, details of which are available from the ODTR web-site (Ref. Document No: 00/61).

Short Range Devices operate on a non-interference and non-protected basis i.e. they are not permitted to cause harmful interference to other users of the band and cannot claim protection from interference received. Due to the growing interest in the use of SRDs throughout Europe for a wide range of applications, it is necessary to harmonise frequencies and regulations for these devices and to distinguish between different applications.

2 TABLE 1 – Description of Short Range Devices permitted for use in Ireland (from ERC/REC/70-03)

Frequency Bands K=kHz M=MHz G=GHz	Application	Max Radiated Power or Field Strength Limits & Channel spacing*	Reference ETSI Standard	Additional Information
9 – 59.75 K	Inductive Applications	72 dBμA/m @ 10 m	300 330	ERC/REC/70-03 ERC/DEC/(01)13
59.75 – 60.25 K	Inductive Applications	42 dBμA/m @ 10 m	300 330	ERC/REC/70-03 ERC/DEC/(01)13
60.25 – 70 K	Inductive Applications	72 dBμA/m @ 10 m	300 330	ERC/REC/70-03 ERC/DEC/(01)13
70 – 119 K	Inductive Applications	42 dBμA/m @ 10 m	300 330	ERC/REC/70-03 ERC/DEC/(01)13
119 – 135 K	Inductive Applications	72 dBμA/m @ 10 m	300 330	ERC/REC/70-03 ERC/DEC/(01)13
6765 – 6795 K	Inductive Applications	42 dBμA/m @ 10 m	300 330	ERC/REC/70-03 ERC/DEC/(01)14
6765 – 6795 K	Non-specific SRD	42 dBμA/m @ 10 m	300 330	ERC/REC/70-03 ERC/DEC/(01)01
7400 – 8800 K	Inductive Applications	9 dBμA/m @ 10 m	300 330	ERC/REC/70-03 ERC/DEC/(01)15
13.553 – 13.567 M	Inductive Applications	42 dBμA/m @ 10 m	300 330	ERC/REC/70-03 ERC/DEC/(01)14
13.553 – 13.567 M	Non-specific SRD	42 dBμA/m @ 10 m	300 330	ERC/REC/70-03 ERC/DEC/(01)01
26.957 – 27.283 M	Inductive Applications	42 dBμA/m @ 10 m	300 330	ERC/REC/70-03 ERC/DEC/(01)16
26.957 – 27.283 M	Non-specific SRD	10 mW erp	300 220	ERC/REC/70-03 ERC/DEC/(01)02
26.99 – 27.20 M	Surface Model Control	100 mW erp : 10 kHz	300 220	ERC/REC/70-03 ERC/DEC/(01)10
34.995 – 35.225 M	Aircraft Model Control	100 mW erp : 10 kHz	300 220	ERC/REC/70-03 ERC/DEC/(01)11
40.66 – 40.7 M	Surface Model Control	100 mW erp : 10 kHz	300 220	ERC/REC/70-03 ERC/DEC/(01)12
40.66 – 40.7 M	Non-specific SRD	10 mW erp	300 220	ERC/REC/70-03 ERC/DEC/(01)03
173.965 – 174.015 M	Wireless Microphones	2 mW erp : 50 kHz	300 422	ERC/REC/70-03
402 – 405 M	Medical Implants	25 μW erp : 25 kHz	300 220	ERC/REC/70-03 ERC/DEC/(01)17
433.05 – 434.79 M	Non-specific SRD	10 mW erp	300 220	ERC/REC/70-03 Duty Cycle <10%
433.05 – 434.79 M	Non-specific SRD	1 mW erp	300 220	ERC/REC/70-03 Duty Cycle ≤ 100%
434.04 – 434.79 M	Non-specific SRD	10 mW erp : 25 kHz	300 220	ERC/REC/70-03 Duty Cycle ≤ 100%
863 – 865 M	Wireless Audio Systems	10 mW erp	301 357	ERC/REC/70-03 ERC/DEC/(01)18
863 – 865 M	Wireless Microphones	10 mW erp : 200 kHz	301 357	ERC/REC/70-03
864.8 – 865 M	Wireless Audio Systems	10 mW erp : 50 kHz	300 220	ERC/REC/70-03
868 – 868.6 M	Non-specific SRD	25 mW erp	300 220	ERC/REC/70-03 ERC/DEC/(01)04
868.6 – 868.7 M	Alarms	10 mW erp : 25 kHz	300 220	ERC/REC/70-03 ERC/DEC/(01)09

Frequency Bands K=kHz M=MHz G=GHz	Application	Max Radiated Power or Field Strength Limits & Channel spacing*	Reference ETSI Standard	Additional Information
868.7 – 869.2 M	Non-specific SRD	25 mW erp	300 220	ERC/REC/70-03 ERC/DEC/(01)04
869.2 – 869.25 M	Social Alarms	10 mW erp : 25 kHz	300 220	ERC/REC/70-03 ERC/DEC/(97)06
869.25 – 869.3 M	Alarms	10 mW erp : 25 kHz	300 220	ERC/REC/70-03 ERC/DEC/(01)09
869.4 – 869.65 M	Non-specific SRD	500 mW erp : 25 kHz	300 220	ERC/REC/70-03 ERC/DEC/(01)04
869.65 – 869.7 M	Alarms	25 mW erp : 25 kHz	300 220	ERC/REC/70-03 ERC/DEC/(01)09
869.7 – 870.0 M	Non-specific SRD	5 mW erp	300 220	ERC/REC/70-03 ERC/DEC/(01)04
1785.7 – 1799.4 M	Wireless Microphones	10 mW eirp : 200kHz	301 840	ERC/REC/70-03
2400 – 2483.5 M	Non-specific SRD	10 mW eirp	300 440	ERC/REC/70-03 ERC/DEC/(01)05
2400 – 2483.5 M **	Wideband Data Transmission Systems	100 mW eirp	300 328	ERC/REC/70-03 ERC/DEC/(01)07
2400 – 2483.5 M	FDDA	25 mW eirp	300 440	ERC/REC/70-03 ERC/DEC/(01)08
2446 – 2454 M	AVI for railways	500 mW eirp	300 761	ERC/REC/70-03
2446 – 2454 M	RFID	500 mW eirp 4 W eirp (indoor use)	300 440	ERC/REC/70-03
5150 – 5350 M **	HIPERLAN: indoor use only (Nomadic)	200 mW eirp	301 893	ERC/REC/70-03 ERC/DEC/(99)23
5470 – 5725 M **	HIPERLAN: indoor/outdoor use (Nomadic)	1 W eirp	301 893	ERC/REC/70-03 ERC/DEC/(99)23
5725 – 5875 M	Non-specific SRD	25 mW eirp	300 440	ERC/REC/70-03 ERC/DEC/(01)06
5795 – 5805 M	RTTT	2 W eirp	300 674 201 674	ERC/REC/70-03 ECC/DEC/(02)01
5805 – 5815 M	RTTT (Expansion Spectrum)	2 W eirp	300 674 201 674	ERC/REC/70-03 ECC/DEC/(02)01
9200 – 9500 M	FDDA	25 mW eirp	300 440	ERC/REC/70-03
9500 – 9975 M	FDDA	25 mW eirp	300 440	ERC/REC/70-03
10.5 – 10.6 G	FDDA	25 mW eirp	300 440	ERC/REC/70-03
13.4 – 14 G	FDDA	25 mW eirp	300 440	ERC/REC/70-03
17.1 – 17.3 G	HIPERLAN	100 mW eirp		ERC/REC/70-03
24.00 – 24.25 G	Non-specific SRD	100 mW eirp	300 440	ERC/REC/70-03
24.05 – 24.25 G	FDDA	100 mW eirp	300 440	ERC/REC/70-03
76 – 77 G	RTTT	55 dBm peak eirp	301 091	ERC/REC/70-03

* Maximum Permitted Channel Spacing

** Provision of services to the public is permitted. Public service provider is required to hold an appropriate Telecommunications Licence (ref. ODTR 98/44R)

NOTE: ***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 advice users on the risks of potential interference and its consequences***

3 TABLE 2 – Description of Short Range Devices permitted for use in Ireland (National SRDs)

Frequency Bands K=kHz M=MHz G=GHz	Application	Max Radiated Power or Field Strength Limits & Channel spacing*	Reference ETSI Standard	Additional Information
285 – 400 K	Inductive Applications	38 dBµA/m @ 10 m	300 330	
1650 – 1950 K	Inductive Applications	8 dBµA/m @ 10 m	300 330	
1800 – 2200 K	Inductive Applications	-8 dBµA/m @ 10 m	300 330	
2540 – 3560 K	Inductive Applications	-8 dBµA/m @ 10 m	300 330	
31.025 – 31.325 M	Analogue cordless phones	10 mW erp	-	Radio info in National Std TTE 9
39.925 – 40.225 M	Analogue cordless phones	10 mW erp	-	Radio info in National Std TTE 9
49.82 – 49.98[1] M	Baby Monitors	10 mW erp	300 220	
49.82 – 49.98 M	Low Power Radio Transmitters	10 mW erp	300 220	
173.2125 – 173.2375 M	Non-specific SRD - telecommand only	10 mW erp : 25 kHz	300 220	
173.2375 – 173.275 M	Non-specific SRD	100 mW erp : 25 kHz	300 220	
173.7 – 175.1 M	Wireless Microphones	10 mW erp	300 422	
864.1 – 868.1 M	CT2 cordless phones	10 mW erp	300 131	Subject to review
1880 – 1900 M	DECT cordless phones	250 mW erp (peak)		DIR 91/287/EEC, S.I 168, 1994
5150 – 5250 M **	Wideband Data Transmission Systems : Indoor use only (Nomadic)	30 mW (no TPC)	301 893	See Annex 1
5150 – 5250 M **	Wideband Data Transmission Systems : Indoor use only (Nomadic)	60 mW (with TPC)	301 893	See Annex 1
5150 – 5350 M **	Wideband Data Transmission Systems : Indoor use only (Nomadic)	60 mW (no TPC)	301 893	See Annex 1
5150 – 5350 M **	Wideband Data Transmission Systems : Indoor use only (Nomadic)	120 mW (with TPC)	301 893	See Annex 1
5725 – 5875 M **	Wideband Data Transmission (Fixed)	100mW/MHz up to a maximum of 2W eirp	TBA	Registration of base-stations required

* Maximum Permitted Channel Spacing

** Provision of services to the public is permitted. Public service provider is required to hold an appropriate Telecommunications Licence (ref. ODTR 98/44R)

NOTE: ***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 advice users on the risks of potential interference and its consequences***

[1] 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

4 GLOSSARY OF TERMS

"Inductive Applications" means systems which operate by producing a controlled magnetic field within which a predetermined recognisable signal is formed;

"Non-specific SRD" means Non-specific Short Range Device which is an apparatus for wireless telegraphy including telemetry, telecommand, alarms and data;

"Model Control" means apparatus for wireless telegraphy used to control the movement of a model in the air, on land or over/under the surface of water;

"Baby Monitors" means apparatus for wireless telegraphy which transmit sound to a remote receiver and is commonly used to monitor infants;

"Low Power Radio Transmitter" means apparatus for wireless telegraphy for short range two-way voice communications;

"Wireless Microphones" means apparatus for wireless telegraphy which transmit audio or voice over short distances to a remote receiver;

"Duty Cycle" means the ratio, expressed as a percentage, of the maximum transmitter 'on' time on one carrier frequency, relative to a one hour period;

"Medical Implant" means apparatus for wireless telegraphy for programming and occasional communications with a medical device implanted in the body;

"Wireless Audio Systems" means apparatus for wireless telegraphy which transmit audio or voice over short distances to a remote receiver;

"CT2 Cordless Phones" means apparatus for wireless telegraphy which meets the European CT2 standard;

"Alarms" means apparatus for wireless telegraphy used exclusively for alarm systems including social alarms and alarms for security and safety;

"DECT Cordless Phones" means apparatus for wireless telegraphy which meets the European DECT standard;

"Wideband Data Transmission Systems" means a wireless local, metropolitan or personal area network utilising apparatus for wireless telegraphy;

"FDDA" means Field Disturbance and Doppler Apparatus which is apparatus for wireless telegraphy which operates by creating a radiated field and responding to disturbances/changes within that field;

"AVI for Railways" means Automatic Vehicle Identification for Railways which is apparatus for wireless telegraphy used to track and identify railway vehicles;

"RFID" means Radio Frequency Identification which is apparatus for wireless telegraphy used to identify tagged articles;

"HIPERLAN" means apparatus for wireless telegraphy which meets the ETSI harmonised standard EN 301 893;

"RTTT" means Road Transport and Traffic Telematics which are apparatus for wireless telegraphy for applications relating to road traffic and transport management including automatic road toll collection, route guidance systems, traffic information and advance incident warning;

"erp" means Effective Radiated Power and **"eirp"** means Effective Isotropic Radiated Power as defined in the Radio Regulations;

"Radio Regulations" means the Radio Regulations annexed to the Constitution of the International Telecommunications Union;

"Nomadic" means a communications network/topology which permits limited mobility of one or more devices within the network;

"Fixed" means a communications network/topology in which all devices are in a fixed geographical location within the network;

"TPC" means Transmitter Power Control which is a feature of an apparatus for wireless telegraphy which ensures a reduction in radiated power of 50% when the transmitting device is in close proximity to the intended receiver.

ANNEX 1

Current regulations in Ireland regarding the operation of Wireless Local Area Networks in the 5GHz band require equipment to comply with the technical conditions detailed in ERC/DEC/(99)23 and the draft harmonised standard for HIPERLAN Type 2 (EN 301 893).

The ODTR is aware that there are some technical difficulties at present in obtaining equipment that will operate Dynamic Frequency Selection (DFS), as mandated by ERC/DEC/(99)23, and that the specification for this facility has not yet been completed. Therefore in the interim period, prior to the completion of the specification of the DFS performance characteristics, it has been decided to permit the operation of suitable equipment without the DFS feature in accordance with the technical requirements detailed below (e.g. IEEE 802.11a). This interim solution shall be withdrawn on the completion of the DFS performance characteristics and the publication of the harmonised standard in the Official Journal of the European Communities.

Technical Requirements:

1. Equipment shall meet the draft harmonised standard EN 301 893 except for the requirement of DFS.
2. Equipment may only be used INDOORS.
3. The frequency band of operation may be either 5150 – 5250MHz or 5150 – 5350MHz. The maximum permitted radiated power shall vary depending on the selection of frequency band (see Table 3 below).
4. A random channel selection mechanism shall be implemented across the entire band selected, to ensure a uniform channel loading over the entire band.
5. Transmitter Power Control (TPC), where implemented, shall provide at least 3dB mitigation.

Table 3: Maximum Permitted Radiated Powers for Interim Solution

Frequency Band (MHz)	**Maximum Permitted Radiated Power (EIRP)**	
	TPC	**No TPC**
5150 – 5250	60 mW	30 mW
5150 – 5350	120 mW	60 mW