

ERC RECOMMENDATION 70-03 (Tromsø 1997 and subsequent amendments)

RELATING TO THE USE OF SHORT RANGE DEVICES (SRD)

**Recommendation adopted by the Frequency Management, Regulatory Affairs and
Spectrum Engineering Working Groups**

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Please see the Document History at the end of this document for
the revision status of individual annexes and appendices.

**PLEASE NOTE
IMPLEMENTATION STATUS**

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FOREWORD

This Recommendation sets out the general position on common spectrum allocations for Short Range Devices (SRDs) for countries within the CEPT. It is also intended that it can be used as a reference document by the CEPT member countries when preparing their national regulations in order to keep in line with the provisions of the R&TTE Directive.

In using this Recommendation it should be remembered that it represents the most widely accepted position within the CEPT but it should not be assumed that all allocations are available in all countries. An indication of where allocations are not available or where deviations from the CEPT position occur is to be found in Appendix 3.

It should also be remembered that the pattern of radio use is not static. It is continuously evolving to reflect the many changes that are taking place in the radio environment; particularly in the field of technology. Spectrum allocations must reflect these changes and the position set out in this Recommendation is therefore subject to continuous review.

Moreover, many administrations have designated additional frequencies or frequency bands for SRD applications on a national basis that do not conform to the CEPT position set out in this Recommendation.

For these reasons, those wishing to develop or market SRDs based on this Recommendation are advised to contact the relevant national administration to verify that the position set out herein still applies. Any inconsistencies between the national position stated in the implementation table in Appendix 1 of this Recommendation and those national positions stated elsewhere should be brought to the attention of the ERO (Yurdal@ero.dk) in order that these differences may be resolved.

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.

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INTRODUCTION

CEPT has adopted this Recommendation to deal with Short Range Devices and the European Telecommunications Standards Institute (ETSI) has now developed harmonised standards for the majority of these devices. Other standards or technical specifications will be applicable within the framework of the R&TTE Directive for placing on the market.

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 relevant standards.

This Recommendation describes the spectrum management requirements for SRDs relating to allocated frequency bands, maximum power levels, channel spacing and duty cycle.

For CEPT countries that have implemented the R&TTE Directive, Article 12 (CE-marking) and Article 7.2 on putting into service of radio equipment apply. Article 12 states that “any other marking may be affixed to the equipment provided that the visibility and legibility of the CE-marking is not hereby reduced” and Article 7.2 states that “member states may restrict the putting into service of radio equipment only for reasons related to the effective and appropriate use of the radio spectrum, avoidance of harmful interference or matters relating to public health.”

“The CEPT has considered the use of SRD devices on board aircraft and it has concluded that, from the CEPT regulatory perspective, such use is allowed under the same conditions provided in the relevant Annex of Recommendation 70-03. For aviation safety aspects, the CEPT is not the right body to address this matter which remains the responsibility of aircraft manufacturers or aircraft owners who should consult with the relevant national or regional aviation bodies before the installation and use of such devices on board aircraft.”

For Short Range Devices individual licenses are normally not required. Where licenses are required this is stated in the relevant Annex.

The following annexes define the regulatory parameters as well as additional information about harmonised standards, frequency issues and important technical parameters. Other technical parameters are indicated in the relevant standard.

Appendix 2 covers the relevant ERC Decisions and ETSI standards.

For countries having implemented the R&TTE Directive further details can be found on the relevant EC (http://europa.eu.int/comm/enterprise/rtte/index_en.htm) and the ERO web sites (www.ero.dk).

“The European Conference of Postal and Telecommunications Administrations,

considering

- a) that SRDs in general operate in shared bands and are not permitted to cause harmful interference to other radio services;
- b) that in general SRDs cannot claim protection from other radio services;
- c) that due to the increasing interest in the use of SRDs for a growing number of applications it is necessary to harmonise frequencies and regulations for these devices;
- d) that there is a need to distinguish between different applications;
- e) that additional applications and associated annexes will be added as necessary;
- f) that for CEPT countries that have implemented the R&TTE Directive article 12 (CE marking) and article 7.2 on putting into service of radio equipment apply,
- g) that equipment marketed before the adoption of this Recommendation marked with the abbreviation CEPT LPD Y according to the abrogated CEPT Recommendation T/R 01-04 should be allowed continuation of free circulation and use
- h) that maintenance of Appendices 2 and 3 and also the related cross-references in the Annexes may be undertaken by the ERO based on information from Administrations,
- i) that information about placing SRD equipment on the market and its use can be obtained by contacting individual administrations, especially with regard to equipment operating in frequencies or frequency bands that may be designated for SRDs by administrations in addition to those covered in this Recommendation;
- j) that SRD equipment normally use either integral or dedicated antennas. In exceptional cases external antennas could be used which will be mentioned in the appropriate annex to this Recommendation;
- k) that for those countries implementing the provisions of this Recommendation, national restrictions in respect of the annexes can be found in Appendix 3;

recommends

- 1) that CEPT administrations implement the parameters in accordance with the indications mentioned in the annexes;
- 2) that technical parameter limits should not be exceeded by any function of the equipment;
- 3) that CEPT administrations should allow visitors from other countries to carry and use their equipment temporarily without any further formalities unless there are national restrictions as shown in Appendix 3.”

Note:

Please check the Office web site (www.ero.dk) for the up to date position on the implementation of this and other ECC/ERC recommendations.

Annex 1 Non-specific Short Range Devices

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended primarily for Telemetry, Telecommand, Alarms and Data in general and other similar applications. Video applications should only be used above 2.4 GHz.

Regulatory parameters related to Annex 1

	Frequency Band	Power / Magnetic Field	Duty cycle	Channel spacing	ECC/ERC Decision	Notes
a	6765 - 6795 kHz	42 dBuA/m at 10 m	No Restriction	No spacing		
b	13.553 - 13.567 MHz	42 dBuA/m at 10 m	No Restriction	No spacing		
c	26.957 - 27.283 MHz	42 dBuA/m at 10 m 10 mW e.r.p	No Restriction	No spacing	ERC DEC (01)02	
d	40.660 - 40.700 MHz	10 mW e.r.p.	No Restriction	No spacing	ERC DEC (01)03	
e	138.20 - 138.45 MHz.	10 mW e.r.p.	< 1.0 %	No spacing		
f	433.050 - 434.790 MHz	10 mW e.r.p.	< 10 %	No spacing	ECC DEC (04)02	Audio and voice signals should be avoided in the band 433.05-434.79 MHz
f1	433.050 - 434.790 MHz	1 mW e.r.p. -13 dBm/10 kHz	up to 100%	No spacing	ECC DEC (04)02	Power density limited to -13 dBm/10 kHz for wideband modulation with a bandwidth greater than 250 kHz Audio and voice signals should be avoided in the band 433.05-434.79 MHz
f2	434.040-434.790 MHz	10 mW e.r.p.	up to 100%	Up to 25 kHz	ECC DEC (04)02	Audio and voice signals should be avoided in the band 433.05-434.79 MHz
g	863 - 870 MHz (note 3, 4 and 6)	≤ 25 mW e.r.p.	≤ 0.1% or LBT (note 1 and 5)	≤ 100 kHz for 47 or more channels (note 2)		FHSS modulation
		≤ 25 mW e.r.p (note 6) Power density : - 4.5 dBm/100 kHz (note 8)	≤ 0.1% or LBT (note 1, 5 and 6)	No spacing		DSSS and other wideband modulation other than FHSS
		≤ 25 mW e.r.p.	≤ 0.1% or LBT (note 1 and 5)	≤ 100 kHz, for 1 or more channels (note 2 and 7)		Narrow /wide-band modulation
g1	868.000 - 868.600 MHz (note 4)	≤ 25 mW e.r.p.	≤ 1% or LBT. (note 1)	No spacing, for 1 or more channels (note 2)	ERC DEC (01)04	Narrow / wide-band modulation No channel spacing, however the whole stated frequency band may be used
g2	868.700 - 869.200 MHz (note 4)	≤ 25 mW e.r.p.	≤ 0.1% or LBT. (note 1)	No spacing, for 1 or more channels (note 2)	ERC DEC (01)04	Narrow / wide-band modulation No channel spacing, however the whole stated frequency band may be used
g3	869.400 - 869.650 MHz (note 4)	≤ 500 mW e.r.p	≤ 10% or LBT. (note 1)	25 kHz (for 1 or more channels)	ERC DEC (01)04	Narrow / wide-band modulation The whole stated frequency band may be used as 1 channel for high speed data transmission
g4	869.700 - 870.000 MHz	≤ 5 mW e.r.p.	up to 100%	No spacing (for 1 or more channels)	ERC DEC (01)04	Narrow / wide-band modulation No channel spacing, however the whole stated frequency band may be used Audio applications excluded Voice applications allowed with LBT together with 1 minute carrier time-out timer
h	2400.0 - 2483.5 MHz	10 mW e.i.r.p.	No Restriction	No spacing		
i	5725 - 5875 MHz	25 mW e.i.r.p.	No Restriction	No spacing		
j	24.00 - 24.25 GHz	100 mW e.i.r.p.	No Restriction	No spacing		
k	61.0 - 61.5 GHz	100 mW e.i.r.p.	No Restriction	No spacing		
l	122 - 123 GHz	100 mW e.i.r.p.	No Restriction	No spacing		
m	244 - 246 GHz	100 mW e.i.r.p	No Restriction	No spacing		

- Note 1: For single frequency devices the duty cycle limit applies, unless LBT is used.
For FHSS, DSSS or AFA devices, the duty cycle applies to the total transmission unless LBT is used.
- Note 2: The preferred channel spacing is 100 kHz allowing for a subdivision into 50 kHz or 25 kHz.
- Note 3: Subbands for alarms are excluded (see ERC/REC 70-03 Annex 7).
- Note 4: Audio and voice applications are excluded.
- Note 5: Duty cycle may be increased to 1% if the band is limited to 865 – 868 MHz.
- Note 6: 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 7: 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 8: 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.

Additional Information

Harmonised Standards

EN 300 220 subbands c) to g4)

EN 300 330 subbands a) to c)

EN 300 440 subbands h) i) and j)

Technical parameters also referred to in the harmonised standard

Listen before talk (LBT) with a preferred option of adaptive frequency agility (AFA) feature may be used instead of duty cycle.
LBT is defined in EN 300 220.

Frequency issues

The bands in Annex 1 a - b - c - d f – f1 – f2 – h – i - j - k - l and m are also designated for industrial, scientific and medical (ISM) applications as defined in ITU Radio Regulations.

The adjacent frequency band above 870 MHz has been designated for use by the high powered TETRA and other digital land mobile PMR/PAMR systems. Manufacturers should take this into account in the design of equipment and choice of power levels.

Annex 2 Tracking, Tracing and Data Acquisition

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended for a number of specific devices including –

- Detecting avalanche victims,
- Meter Reading
- Asset Tracking and Tracing

Regulatory parameters related to Annex 2

	Frequency Band	Power / Magnetic field	Duty cycle	Channel spacing	ECC/ERC Decision	Notes
a	457 kHz	7 dBuA/m at 10 m	<100%	Continuous wave (CW) – no modulation.	ECC DEC (04)01	Detection of avalanche victims
b	169.4 – 169.475 MHz	500 mW e.r.p	<10%	Max 50 kHz	ECC/DEC/(05)02	Meter Reading
c	169.4 – 169.475 MHz	500 mW e.r.p	<1%	Max 50 kHz	ECC/DEC/(05)02	Asset Tracking and Tracing

Additional Information

Harmonised Standards

EN 300 718 Subband a)
EN 300 220 Subband b) & c)

Frequency issues

No information

Technical parameters also referred to in the harmonised standard

No information

Additional Information

Harmonised Standards

EN 300 718

Frequency issues

No information

Technical parameters also referred to in the harmonised standard

No information

Annex 3 Wideband Data Transmission systems

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended for Wideband Data Transmission Systems and Wireless Access Systems including Radio Local Area Networks (WAS/RLANs) (formerly known as Radio Local Area Networks (RLANs)) within the band 2400-2483.5 MHz and for Wireless Access Systems including Radio Local Area Networks (WAS/RLANs) within the bands 5150-5250 MHz, 5250-5350 MHz, 5470-5725 MHz and 17.1-17.3 GHz.

Regulatory parameters related to Annex 3

Frequency Band	Power	Duty cycle	Channel spacing	ECC/ERC Decs	Notes
a 2400.0-2483.5 MHz	100 mW e.i.r.p.	No Restriction	No spacing	ERC/DEC/(01)07	For wide band modulations other than FHSS (e.g. DSSS, OFDM, ..), the maximum e.i.r.p. density is limited to 10 mW/1 MHz
b 5150 -5250 MHz	200 mW Max mean	No Restriction		ECC/DEC/(04)08	Restricted to indoor use. The maximum mean e.i.r.p. density shall be limited to 0.25 mW/25 kHz in any 25 kHz band.
c 5250 – 5350 MHz	200 mW Max mean	No Restriction		ECC/DEC/(04)08	Restricted to indoor use. The maximum mean e.i.r.p. density shall be limited to 10 mW/MHz in any 1 MHz band.
d 5470 – 5725 MHz	1 W Max mean	No Restriction		ECC/DEC/(04)08	Indoor as well as outdoor use allowed. The maximum mean e.i.r.p. density shall be restricted to 50 mW/MHz in any 1 MHz band.
e 17.1 - 17.3 GHz	100 mW e.i.r.p.	No Restriction	No spacing		

Additional Information

Harmonised Standards

EN 300 328 subband a)
EN 301 893 subbands b), c) and d)
subband e): t.b.d.

Frequency issues

Wireless Access Systems including Radio Local Area Networks (WAS/RLANs) within the bands 5250-5350 MHz and 5470-5725 MHz shall only be allowed to operate when the mandatory features required in the ECC Decision (04)08 are implemented.

Technical parameters also referred to in the harmonised standard

The power level for band b, c and d refers to Maximum mean e.i.r.p. The mean e.i.r.p. refers to the highest power level of the transmitter power control range during the transmission burst if transmitter power control is implemented.

Annex 4 Railway applications

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended for applications specifically intended for use on railways.

The subbands below are intended for the following applications:

- band a) Automatic vehicle identification systems for railways including Automatic Vehicle Identification for Railways (AVI)
- band b) Balise tele-powering and down-link (train to ground) systems including Eurobalise and activation of the Loop / Euroloop
- band c) Balise up-link (ground to train) systems including Eurobalise
- band d1) and d2) Loop up-link (ground to train) systems including Euroloop

Regulatory parameters related to Annex 4

Frequency Band	Power / Magnetic field	Duty cycle	Channel spacing	ECC/ERC Decs	Notes
a	2446 - 2454 MHz	500 mW e.i.r.p.		No Restriction	Transmitting only in presence of trains. 5 channels, each 1.5 MHz wide within the band 2446-2454 MHz
b	27.095 MHz	42 dB μ A/m at 10 m		No spacing	Tele-powering and Down-link signal for Balise / Eurobalise. May also be optionally used for the activation of the Loop / Euroloop.
c	4234 kHz	9 dB μ A/m at 10m		<1%	No spacing Transmitting only on receipt of a Balise / Eurobalise. Tele-powering signal from a train.
d1	4516 kHz	7 dB μ A/m at 10 m		No Restriction	No spacing Not intended for new applications, existing applications to be phased out by 2010.
d2	11.1 – 16.0 MHz	-7 dB μ A/m at 10m		No Restriction	No spacing Maximum field strength specified in a bandwidth of 10 kHz, spatially averaged over any 200m length of the loop. Transmitting only in presence of trains. Spread Spectrum Signal, Code Length: 472 Chips

Additional Information

Harmonised Standards

EN 300 761 subband a)
EN 300 330 subbands b), c), d1)

Frequency issues

No information

Technical parameters also referred to in the harmonised standard

The maximum allowed H-field for the Eurobalise Tele-powering and Down-link is defined in Figure 1 on the next page. The maximum allowed H-field for the Eurobalise Up-link is defined in Figure 2 and for the Euroloop Up-link is defined in Table 1 on the following pages.

Spectrum mask relating to Eurobalise Tele-powering and Down-link

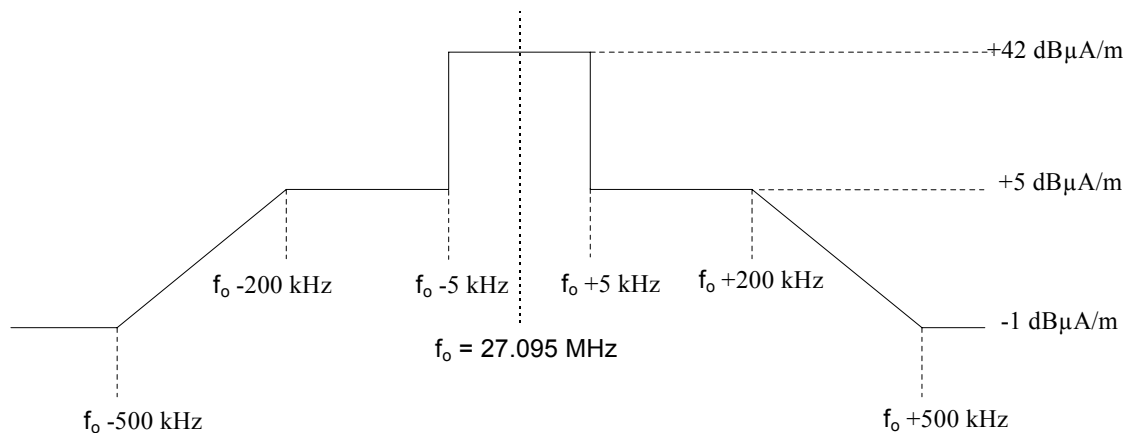


Figure 1

Magnetic field limits at 10 metre measurement distance for the Balise / Eurobalise Tele-powering and Down-link signals

Spectrum mask relating Eurobalise Up-link

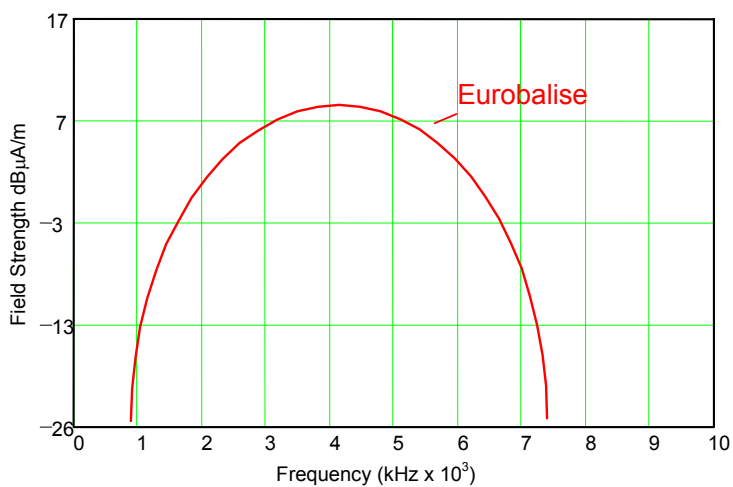


Figure 2

Magnetic field limits at 10 metre measurement distance in 10 kHz measurement bandwidth for the Balise / Eurobalise Up-link transmission

Spectrum Mask relating to Euroloop Up-link

Frequency	Relative attenuation for the magnetic field strength
≤ 1 MHz	37 dB
7.3 MHz	23 dB
11.1 MHz	0 dB
16.0 MHz	0 dB
23.0 MHz	23 dB
≥ 30 MHz	35 dB

Table 1

Figures defining the transmission mask of Loop / Euroloop Up-link signal

Annex 5 Road Transport and Traffic Telematics (RTTT)

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended for Road Transport and Traffic Telematics (RTTT).

Regulatory parameters related to Annex 5

Frequency Band	Power	Duty cycle	Channel spacing	ECC/ERC Decs	Notes
a 5795 - 5805 MHz	2 W 8 W	e.i.r.p. e.i.r.p.	No Restriction	ECC DEC (02)01	
b 5805 - 5815 MHz	2 W 8 W	e.i.r.p. e.i.r.p.	No Restriction	ECC DEC (02)01	Individual license required
c 63 - 64 GHz			No spacing	ECC DEC (02)01	Vehicle to vehicle and road to vehicle systems. Power level to be determined
d 76 - 77 GHz	55 dBm peak	No Restriction	No spacing	ECC DEC (02)01	Power level 55 dBm peak power e.i.r.p. - 50 dBm average power - 23.5 dBm average power for puls radar only. Vehicle and infrastructure radar systems

Additional Information

Harmonised Standards

EN 300 674	subbands a) and b)
EN 301 091	subband d)
ES 200 674	subbands a) and b)

Frequency issues

The frequency band a) is intended for road to vehicle systems, particularly (but not exclusively) road toll systems.

The frequency band a) and b) are recommended for 5 MHz channel spacing systems with the frequencies: 5797.5 MHz, 5802.5 MHz, 5807.5 MHz and 5812.5 MHz. For 10 MHz channel spacing systems 5800 MHz and 5810 MHz.

5805 - 5815 MHz on a national basis for multi-lane road junctions, particularly, but not exclusively road toll systems.

The use of 8 W e.i.r.p. allows for 1 Mbit/s in accordance with ETSI standard ES 200 674-1.

2W e.i.r.p. allows for 500 kbit/s downlink and 250 kbit/s uplink in accordance with EN 300 674-1 and for low data rates (31 kbit/s) in accordance with EN 300 674-2.

Technical parameters also referred to in the harmonised standard

No information

Annex 6 Equipment for Detecting Movement and Alert

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended for Equipment for Detecting Movement, Equipment for Alert and Tank Level Probing Radar (TLPR).

Regulatory parameters related to Annex 6

Frequency Band	Power	Duty cycle	Channel spacing	ECC/ERC Decs	Notes
a 2400.0 - 2483.5 MHz	25 mW e.i.r.p.	No Restriction	No spacing	ERC DEC (01)08	Note 1
b 9200 - 9500 MHz	25 mW e.i.r.p.	No Restriction	No spacing		Note 1
c 9500 - 9975 MHz	25 mW e.i.r.p.	No Restriction	No spacing		Note 1
d 10.5 - 10.6 GHz	500 mW e.i.r.p.	No Restriction	No spacing		Note 1
e 13.4 - 14.0 GHz	25 mW e.i.r.p.	No Restriction	No spacing		Note 1
f 24.05 - 24.25 GHz	100 mW e.i.r.p.	No Restriction	No spacing		Note 1
g 4.5 – 7.0 GHz	-41.3 dBm/MHz e.i.r.p.	No Restriction	No spacing		Note 2
h 8.5 – 10.6 GHz	-41.3 dBm/MHz e.i.r.p.	No Restriction	No Spacing		Notes 2 & 3
i 24.05 – 27.0 GHz	-41.3 dBm/MHz e.i.r.p.	No Restriction	No Spacing		Note 2
j 57 – 64 GHz	-41.3 dBm/MHz e.i.r.p.	No Restriction	No Spacing		Note 2
k 75 – 85 GHz	-41.3 dBm/MHz e.i.r.p.	No Restriction	No Spacing		Note 2

Additional Information

Harmonised Standards

EN 300 440 sub-bands a), b), c), d), e), f)

EN 302 372 (for TLPR) sub-bands g), h), i), j), k)

Frequency issues

Note 1:

Some countries may allow equipment with transmitter powers between 25 mW and 500 mW in which case an individual licence or a general licence may be required.

Note 2:

Bands g, h, i, j and k are to be used by TLPR equipment only.

The power limit is the radiated emission outside an enclosed tank structure.

The maximum emission inside an enclosed tank structure is limited to: +24 dBm e.i.r.p. for band g, +30 dBm e.i.r.p. for band h, and +43 dBm e.i.r.p. for bands i, j and k.

Note 3:

For the frequency range 10.6 GHz to 10.7 GHz, the radiated unwanted emissions outside the tank enclosure shall be less than – 60 dBm/MHz e.i.r.p.

Technical parameters also referred to in the harmonised standard

No information

Annex 7 Alarms

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended exclusively for alarm systems including social alarms and alarms for security and safety.

The subbands below are intended for the following applications:

- Alarms in general band a), b) ,c) and e)
- Social Alarms band d), f) and g)

Regulatory parameters related to Annex 7

Frequency Band	Power		Duty cycle	Channel spacing	ECC/ERC Decs	Notes
a 868.6 - 868.7 MHz	10 mW	e.r.p.	< 1.0 %	25 kHz	ERC DEC (01)09	The whole frequency band may also be used as 1 channel for high speed data transmissions
b 869.250 - 869.300 MHz	10 mW	e.r.p.	< 0.1 %	25 kHz	ERC DEC (01)09	
c 869.650 - 869.700 MHz	25 mW	e.r.p.	< 10 %	25 kHz	ERC DEC (01)09	
d 869.200 - 869.250 MHz	10 mW	e.r.p.	< 0.1 %	25 kHz		Social Alarms
e 869.300 – 869.400 MHz	10 mW	e.r.p.	< 1.0 %	25 kHz		
f 169.4750 – 169.4875 MHz	10 mW	e.r.p.	< 0.1 %	12.5 kHz	ECC DEC (05)02	Social Alarms (exclusive use)
g 169.5875 – 169.6000 MHz	10 mW	e.r.p.	< 0.1 %	12.5 kHz	ECC DEC (05)02	Social Alarms (exclusive use)

Additional Information

Harmonised Standards

EN 300 220

Frequency issues

No information

Technical parameters also referred to in the harmonised standard

No information

Annex 8 Model Control

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended for the application of model control equipment, which is solely for the purpose of controlling the movement of the model, in the air, on land or over or under the water surface. Although the bands are not harmonised, the parameters given in the table are common in a majority of CEPT countries. It should be noted that the bands are not exclusive for this type of application.

Regulatory parameters related to Annex 8

Frequency Band	Power	Duty cycle	Channel spacing	ECC/ERC Decs	Notes
a 26.995, 27.045, 27.095, 27.145, 27.195 MHz	100 mW e.r.p.	No Restriction	10 kHz	ERC DEC (01)10	
b 34.995 - 35.225 MHz	100 mW e.r.p.	No Restriction	10 kHz	ERC DEC (01)11	Only for flying models
c 40.665, 40.675, 40.685, 40.695 MHz	100 mW e.r.p.	No Restriction	10 kHz	ERC DEC (01)12	

Additional Information

Harmonised Standards

EN 300 220

Frequency issues

No information

Technical parameters also referred to in the harmonised standard

No information

Annex 9 Inductive applications

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended for inductive applications include for example car immobilisers, animal identification, alarm systems, cable detection, waste management, personal identification, wireless voice links, access control, proximity sensors, antitheft systems including RF anti-theft induction systems, data transfer to handheld devices, automatic article identification, wireless control systems and automatic road tolling. It should be noted that other types of anti-theft systems can be operated in accordance with other relevant annexes.

Regulatory parameters related to Annex 9

Frequency Band	Magnetic field	Duty cycle	Channel spacing	ECC/ERC Decs	Notes
aa 9 - 59.750 kHz	72 dBuA/m at 10 m	No Restriction	No spacing	ERC DEC (01)13	In case of external antennas only loop coil antennas may be employed. Field strength level descending 3 dB/oct at 30 kHz
ab 59.750 - 60.250 kHz	42 dBuA/m at 10 m	No Restriction	No spacing	ERC DEC (01)13	In case of external antennas only loop coil antennas may be employed
ac 60.250 - 70.000 kHz	69 dBuA/m at 10 m	No Restriction	No spacing	ERC DEC (01)13	In case of external antennas only loop coil antennas may be employed. Field strength level descending 3 dB/oct at 30 kHz
b 70 - 119 kHz	42 dBuA/m at 10 m	No Restriction	No spacing	ERC DEC (01)13	In case of external antennas only loop coil antennas may be employed
c 119 - 135 kHz	66 dBuA/m at 10 m	No Restriction	No spacing	ERC DEC (01)13	In case of external antennas only loop coil antennas may be employed. Field strength level descending 3 dB/oct at 30 kHz
c1 135 - 140 kHz	42 dBuA/m at 10 m	No Restriction	No spacing		In case of external antennas only loop coil antennas may be employed
c2 140 - 148.5 kHz	37.7 dBuA/m at 10 m	No Restriction	No spacing		In case of external antennas only loop coil antennas may be employed
d 6765 - 6795 kHz	42 dBuA/m at 10 m	No Restriction	No spacing		
e 7400 - 8800 kHz	9 dBuA/m at 10 m	No Restriction	No spacing	ERC DEC (01)15	
f 13.553 - 13.567 MHz	42 dBuA/m at 10 m	No Restriction	No spacing		
f1 13.553 - 13.567 MHz	60 dBuA/m at 10 m	No Restriction	No spacing		For RFID and EAS only
g 26.957 - 27.283 MHz	42 dBuA/m at 10 m	No Restriction	No spacing	ERC DEC (01)16	
h 10.200 - 11.000 MHz	9 dBuA/m at 10 m	No Restriction	No spacing		
k 3155 - 3400 kHz	13.5 dBuA/m at 10 m	No Restriction	No spacing		In case of external antennas only loop coil antennas may be employed
l1 148.5 kHz - 5 MHz	-15 dBuA/m at 10 m	No Restriction	No spacing		In case of external antennas only loop coil antennas may be employed <i>The maximum field strength is specified in a bandwidth of 10 kHz. The maximum allowed total field strength is -5 dBuA/m at 10 m for systems operating at bandwidths larger than 10 kHz whilst keeping the density limit (-15 dBuA/m in a bandwidth of 10 kHz).</i>
l2 5 - 30 MHz	-20 dBuA/m at 10 m	No Restriction	No spacing		In case of external antennas only loop coil antennas may be employed. <i>The maximum field strength is specified in a bandwidth of 10 kHz. The maximum allowed total field strength is -5 dBuA/m at 10 m for systems operating at bandwidths larger than 10 kHz whilst keeping the density limit (-20 dBuA/m in a bandwidth of 10 kHz).</i>
l3 400 - 600 kHz	-8 dBuA/m at 10 m	No Restriction	No spacing		For RFID only In case of external antennas only loop coil antennas may be employed.

The maximum field strength is specified in a bandwidth of 10 kHz.

The maximum allowed total field strength is $-5\text{dB}\mu\text{A/m}$ at 10 m for systems operating at bandwidths larger than 10 kHz measured at the center frequency whilst keeping the density limit ($-8\text{dB}\mu\text{A/m}$ in a bandwidth of 10 kHz).

These systems should operate with a minimum operating bandwidth of 30 kHz.

Additional Information

Harmonised Standards

EN 300 330

Frequency issues

Users should be aware that emissions from inductive applications could cause interference to nearby receivers of other radio services.

In case of loop antennas used within bands aa) and ac) integral or dedicated within an area between 0.05 m² and 0.16 m², the field strength is reduced by $10 * \log(\text{area}/0.16 \text{ m}^2)$; for an antenna area less than 0.05 m² the field strength is reduced by 10 dB

Particular attention should also be paid to the more stringent protection requirements identified by the ITU for global distress and safety communications frequencies in the same or adjacent bands.

Technical parameters also referred to in the harmonised standard

The maximum allowed H-field for bands aa), ab), ac), b) and c) is illustrated in Figure 1;

The maximum allowed H-field limits for bands c, c1) and c2) are illustrated in Figure 2;

The maximum allowed H-field limits for bands d), f) and f1) are illustrated in Figure 3 on the next pages.

The maximum allowed H-field limits for bands a, b and c are illustrated in Figure 1

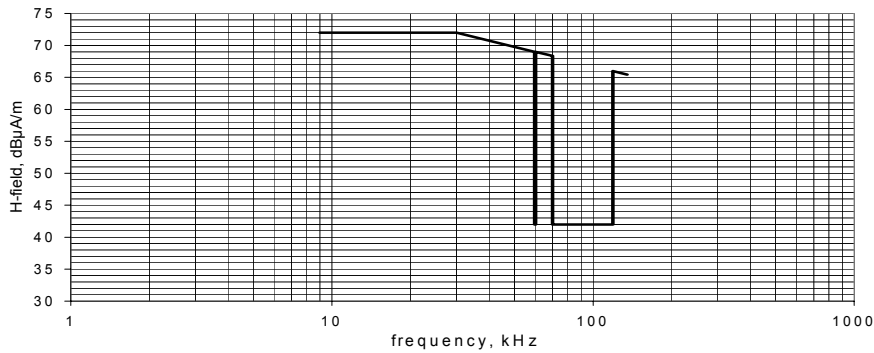


Figure 1
9-135 kHz magnetic field strength limits overview at 10-metre measurement distance

The maximum allowed H-field limits for band c1 and c2 are illustrated in Figure 2

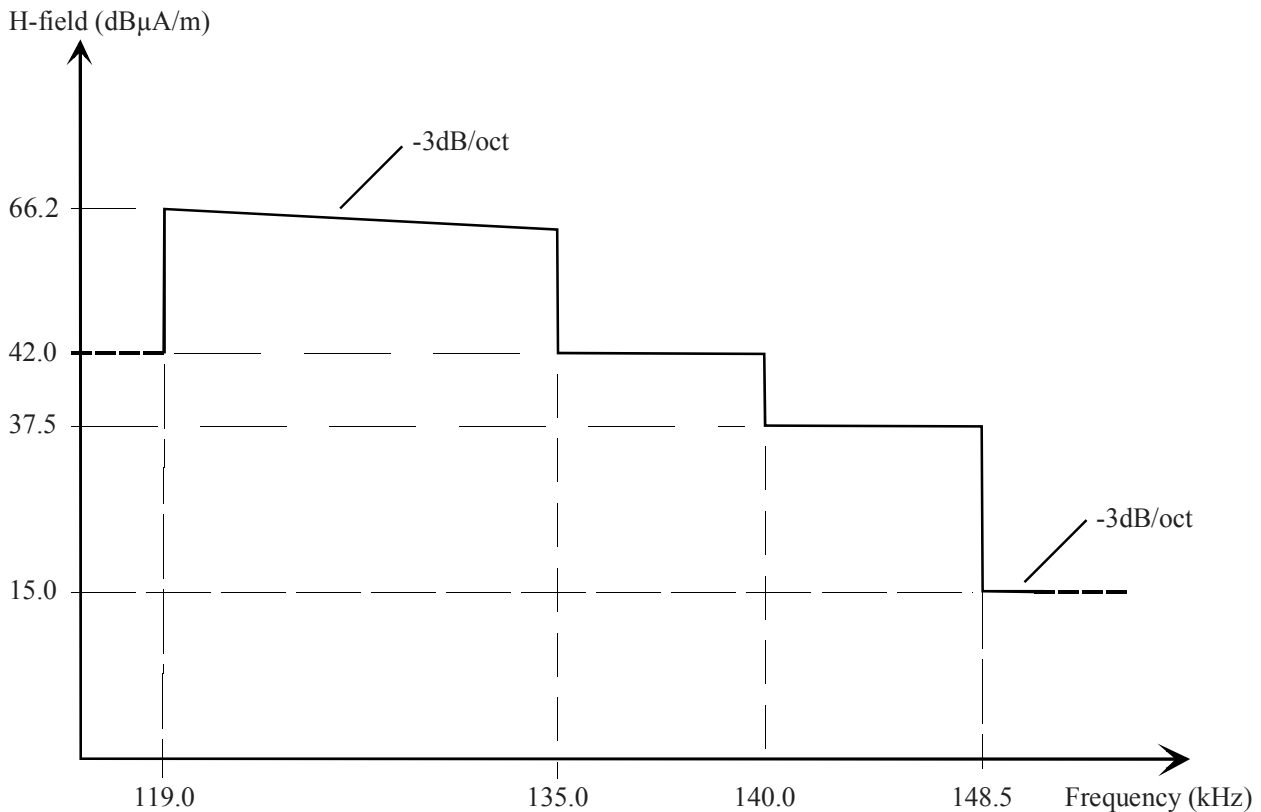


Figure 2
135 – 148.5 kHz magnetic field strength limit at 10 metres measurement distance

The maximum allowed H-field limits for band d, f and f1 are illustrated in Figure 3

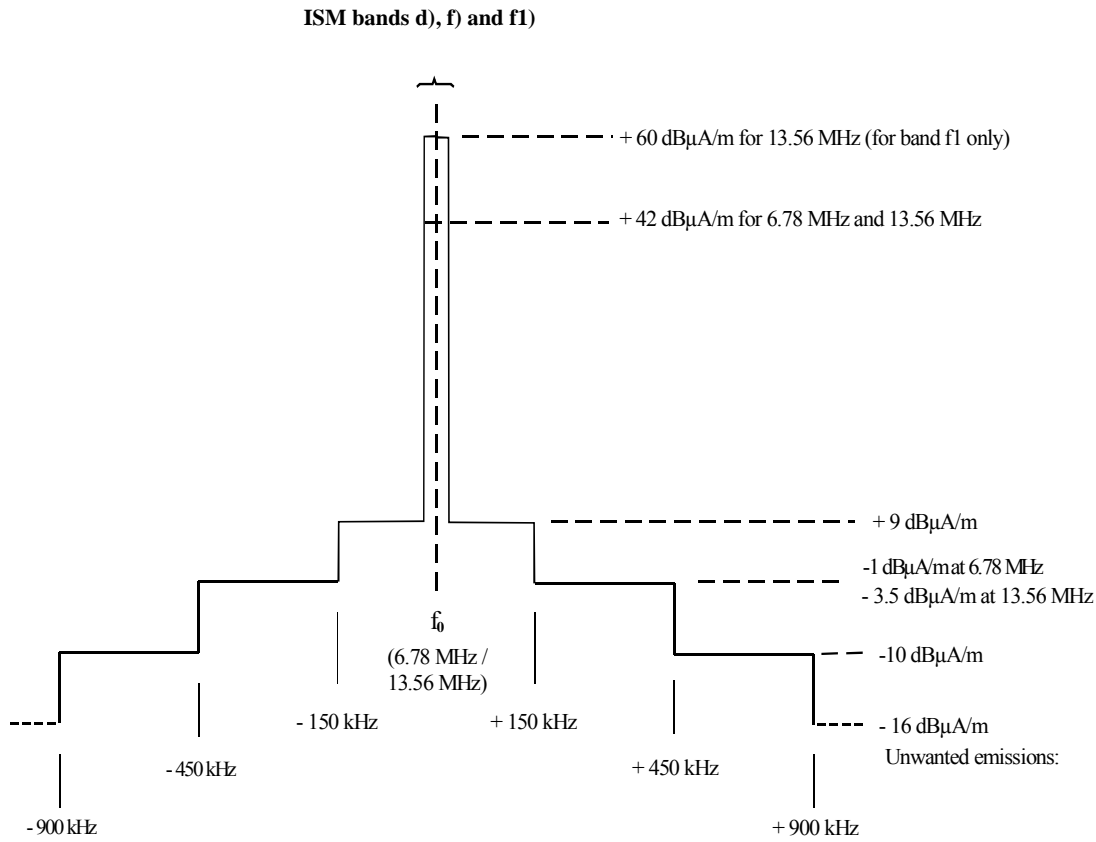


Figure 3
6.78 MHz and 13.56 MHz magnetic field strength limit at 10 metres measurement distance

Annex 10 Radio microphones and Assistive Listening Devices

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended for radio microphones (also referred to as wireless microphones or cordless microphones) and assistive listening devices including aids for the hearing impaired. Radio microphones are small, low power (50 mW or less) transmitters designed to be worn on the body, or hand held, for the transmission of close, personal sound. The receivers are more tailored to specific uses and may range from small and portable to rack mounted modules as part of a multichannel system. This annex covers professional and consumer radio microphones, both hand-held and body-worn, and aids for the handicapped.

Because of the difficulty in determining harmonized frequency bands for radio microphones, frequency band limits should be regarded as tuning ranges within which a device can be designated to operate. In most cases, Appendix 3 indicates those parts of the range that are not available in individual countries but this does not apply to the broadcasting bands at 174-216 MHz and 470-862 MHz where national geographical restrictions are likely to exist and the national administration should be contacted.

The sub bands below are intended for the following applications:

- Narrow band audio band a)
- Aids for the hearing impaired bands b), h1), h2), i)
- Radio microphones bands c) - g)

Regulatory parameters related to Annex 10

Frequency Band	Power	Duty cycle	Channel spacing	ERC Decision	Notes
a 29.7 - 47.0 MHz	10 mW e.r.p.	up to 100%	50 kHz		On a tuning range basis The frequency bands 30.3-30.5 MHz, 32.15-32.45 MHz and 41.015-47.00 MHz are harmonized military bands
b 173.965 - 174.015 MHz	2 mW e.r.p.	up to 100%	50 kHz		Aids for the hearing impaired
c 863 - 865 MHz	10 mW e.r.p.	up to 100%	No spacing		
d 174 - 216 MHz	50 mW e.r.p.	up to 100%	No spacing		On a tuning range basis Individual license required
e 470 - 862 MHz	50 mW e.r.p.	up to 100%	No spacing		On a tuning range basis Individual license required
f 1785 - 1795 MHz	20 mW e.i.r.p. 50 mW e.i.r.p.	up to 100%	No spacing		Individual license required 50 mW restricted to body worn microphones
g 1795 - 1800 MHz	20 mW e.i.r.p. 50 mW e.i.r.p.	up to 100%	No spacing		50 mW restricted to body worn equipment
h1 169.4000 - 169.4750 MHz	10 mW e.r.p.	up to 100%	Max 50 kHz	ECC/DEC/(05)02	Aids for the hearing impaired
h2 169.4875 - 169.5875 MHz	10 mW e.r.p.	up to 100%	Max 50 kHz	ECC/DEC/(05)02	Aids for the hearing impaired
i 169.4 - 174.0 MHz	10 mW e.r.p.	up to 100%	Max 50 kHz		Aids for the hearing impaired On a tuning range basis Administrations should consider channel plan for band 169.4 – 169.8125 MHz detailed in ECC/DEC/(05)02 and the risk of interference towards systems operated in the band 169.6 – 169.8125 band when developing their national frequency table

Additional Information

Harmonised Standards

- EN 300 422 sub bands a) - g), h1), h2), i)
- EN 301 840 sub band f) –g)
- EN 301 357 Sub band c)

Frequency Issues.

Band h1 is in shared spectrum, band h2 is in exclusive spectrum.

Technical parameters also referred to in the harmonised standard

No information

Annex 11 Radio frequency identification applications

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended for radio frequency identification (RFID) applications including for example automatic article identification, asset tracking, alarm systems, waste management, personal identification, access control, proximity sensors, anti-theft systems, location systems, data transfer to handheld devices and wireless control systems. It should be noted that other types of RFID systems can be operated in accordance with other relevant annexes.

Regulatory parameters related to Annex 11

Frequency Band	Power	Duty cycle	Channel spacing	ERC/ECC Decision	Notes
a 2446 - 2454 MHz	500 mW e.i.r.p. 4 W e.i.r.p.	up to 100% ≤ 15 %	No spacing		Power levels above 500 mW are restricted to use inside the boundaries of a building and the duty cycle of all transmissions shall in this case be ≤15 % in any 200 ms period (30 ms on /170 ms off)
b1 865.0 - 865.6 MHz	100 mW e.r.p.		200 kHz		
b2 865.6 - 867.6 MHz	2 W e.r.p.		200 kHz		
b3 867.6 - 868.0 MHz	500 mW e.r.p.		200 kHz		

Additional Information

Harmonised Standards

EN 300 440	Sub-band a)
EN 302 208	Sub-bands b1), b2) and b3)

Frequency issues

Subband a)

To assist enforcement authorities any emissions due to the RFID device when measured outside of the building at a distance of 10 metres shall not exceed the equivalent field strength for a 500 mW RFID device mounted outside the building when measured at the same distance. Where a building consists of a number of premises, such as shops within a shopping arcade or Mall then the measurements shall be referenced to the boundary of the user's premises within the building.

Frequency Hopping Spread Spectrum (FHSS) techniques should be used as means of mitigation when more than 500 mW e.i.r.p. is used.

Sub-bands b1), b2) and b3)

Channel centre frequencies are $864.9 \text{ MHz} + (0.2 \text{ MHz} * \text{channel number})$.

The available channel numbers for each sub-band are:

- b1: channel numbers 1 to 15
- b2: channel numbers 4 to 13
- b3: channel numbers 4 to 15.

Note: The same equipment is allowed to operate in several sub-bands.

Frequency hopping or other spread spectrum techniques shall not be used.

Technical parameters also referred to in the harmonised standard

Subband a)

In addition, antenna beamwidth limits shall be observed as described in the standard EN 300 440.

In addition, for an RFID device which can exceed 500 mW, the device should be fitted with an automatic power control to reduce the radiated power below 500 mW; this automatic power control shall guarantee the reduction of the power to a maximum of 500 mW in cases where the device is moved and used outside the boundary of the user's building or premises as described above.

Sub-bands b1), b2) and b3)

To ensure that RFID devices effectively use the radio frequency spectrum so as to avoid harmful interference to other short-range devices, they shall use LBT as described in the standard EN 302 208 or another equivalent technique. In addition, antenna beamwidth limits shall be observed as described in the standard EN 302 208.

Annex 12 Wireless applications in Healthcare

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended for wireless applications in healthcare.

Regulatory parameters related to Annex 12

	Frequency Band	Power/Magnetic Field	Duty cycle	Channel spacing	ECC/ERC Decision	Notes
a	402 - 405 MHz	25 μ W e.r.p.	No Restriction	25 kHz	ERC/DEC/(01)17	For Ultra Low Power Active Medical Implants covered by the applicable harmonised standard. Individual transmitters may combine adjacent channels for increased bandwidth up to 300 kHz.
a1	401 - 402 MHz	25 μ W e.r.p.	No Restriction for devices with LBT, otherwise $\leq 0,1\%$ (see note 2)	25 kHz		For Ultra Low Power Active Medical Implants and accessories covered by the applicable harmonised standard and not covered by band a. Individual transmitters may combine adjacent 25 kHz channels for increased bandwidth up to 100 kHz (see note 1).
a2	405 - 406 MHz	25 μ W e.r.p.	No Restriction for devices with LBT, otherwise $\leq 0,1\%$ (see note 2)	25 kHz		For Ultra Low Power Active Medical Implants and accessories covered by the applicable harmonised standard and not covered by band a. Individual transmitters may combine adjacent 25 kHz channels for increased bandwidth up to 100 kHz (see note 1).
b	9 - 315 kHz	30 dB μ A/m at 10 m	< 10 %	No spacing		The application is for Ultra Low Power Active Medical Implant systems using inductive loop techniques for telemetry purposes
c	315 - 600 kHz	-5 dB μ A/m at 10 m	< 10 %	No spacing		The application is for animal implantable devices.
d	30 – 37.5 MHz	1 mW e.r.p.	< 10 %	No spacing		The application is for Ultra Low Power medical membrane implants for blood pressure measurements.
e	12.5 – 20 MHz	-7 dB μ A/m at 10m	< 10 %	No spacing		The application is for ULP active animal implantable devices (ULP-AIP), limited to indoor only applications. The maximum field strength is specified in a bandwidth of 10 kHz. The transmission mask of ULP-AID is defined as follows: 3dB bandwidth 300 kHz 10dB bandwidth 800 kHz 20dB bandwidth 2 MHz.

Note 1: Due to the limited available spectrum of 1 MHz, a maximum bandwidth of 100 kHz is proposed for these bands to ensure that several users could access the band concurrently.

Note 2: Systems not providing frequency agility based on ambient RF field sensing, be limited to a maximum permitted e.r.p. of 250 nanowatts with a duty cycle of $\leq 0,1\%$.

Additional Information

Harmonised Standards

EN 301 839	Subband a)
EN 302 195	Subband b)
EN 300 330	Subband c) and e)
EN 300 220	Subband d)
Draft EN 302 537	Subband a1) and a2)

Frequency issues

Technical parameters also referred to in the harmonised standard

No information

Annex 13 Wireless Audio Applications

Scope of Annex

This annex covers frequency bands and regulatory as well as informative parameters recommended for applications for wireless audio systems including the following, cordless loudspeakers; cordless headphones; cordless headphones for portable use, for example portable CD, cassette or radio devices carried on a person; cordless headphones for use in a vehicle, for example for use with a radio or mobile telephone etc; in-ear monitoring, for use with concerts or other stage productions.

Regulatory parameters related to Annex 13

Frequency Band	Power	Duty cycle	Channel spacing	ECC/ERC Decision	Notes
a 863 - 865 MHz	10 mW e.r.p.	Up to 100%	No spacing	ERC DEC (01)18	
b 864.8 – 865.0 MHz	10 mW e.r.p.	Up to 100%	50 kHz		Narrow band analogue voice devices
c 1795 - 1800 MHz	20 mW e.i.r.p.	Up to 100%	No spacing		
d 87.5 – 108.0 MHz	50 nW e.r.p.	Up to 100%	200 kHz		

Additional Information

Harmonised Standards

EN 301 357 subband a) c) and d)
EN 300 220 subband b)

Frequency issues

Narrow band analogue voice devices, such as baby voice monitors, door entry systems etc should only use the band b) 864.8-865 MHz

Technical parameters also referred to in the harmonised standard

Systems should be designed so that when not in use there should be no transmission of an RF carrier.

Annexes to ERC REC 70-03

Annex 1 - Non-Specific SRDs

		EU member states and EFTA countries																New EU memberstates 2004																							
		AUT	BEL	DNK	E	FIN	F	D	GRC	ICE	I	IRL	LIE	LUX	HOL	NOR	POR	SUI	S	UK	CZ	CYP	EST	HNG	LTU	LVA	MLT	POL	SVN	SVK	BIH	BUL	HRV	MKD	ROU	SCG	TUR				
Annex 1A	6765-6795 kHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	x			
Annex 1B	13.553-13.567 MHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	x		
Annex 1C	26.957-27.283 MHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	x	x		
Annex 1D	40.660-40.700 MHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	x	x		
Annex 1E	138.20-138.45 MHz	Y	N	Y	N	Y	N	N	N	Y	N	N	N	Y	N	Y	N	N	N	U	Y	Y	Y	N	Y	N	Y	N	N	Y	Y	P	N	Y	N	Y	N	x	x		
Annex 1F	433.050-434.790 MHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	x	x		
Annex 1F1	433.050-434.790 MHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	L	Y	N	Y	Y	x	x	
Annex 1F2	434.040-434.790 MHz	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	L	Y	N	Y	Y	x	x		
Annex 1G	863-870 MHz	N	N	Y	N	Y	N	Y	N	Y	N	P	Y	Y	N	N	Y	Y	N	U	Y	N	U	Y	N	N	Y	P	Y	U	Y	N	Y	Y	N	N	P	x	x		
Annex 1G1	868.000-868.600 MHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	L	Y	N	Y	Y	x	x		
Annex 1G2	868.700-869.200 MHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	L	Y	N	Y	Y	x	x		
Annex 1G3	869.400-869.650 MHz	Y	Y	Y	Y	Y	Y	Y	L	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	L	Y	N	Y	Y	x	x		
Annex 1G4	869.700-870.000 MHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	L	Y	Y	Y	Y	Y	Y	Y	Y	L	Y	N	Y	Y	x	x		
Annex 1H	2400.0-2483.5 MHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	x	x		
Annex 1I	5725-5875 MHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	x	x	
Annex 1J	24.00-24.25 GHz	Y	Y	Y	Y	L	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	N	Y	N	Y	Y	x		
Annex 1K	61.0-61.5 GHz	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	Y	Y	x	
Annex 1L	122-123 GHz	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	N	Y	x	
Annex 1M	244-246 GHz	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	N	N	Y	x		

Annex 2 - Tracking, Tracing and Data Acquisition

Annex 2A	457 kHz	ECC/DEC(04)01	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	x	
Annex 2B	169.4-169.475 MHz	ECC/DEC/(05)02	N	N	N	N	N	N	N	N	N	N	U	Y	N	N	Y	U	N	Y	Y	N	U	Y	N	N	N	N	Y	Y	Y	N	N	Y	N	N	N	x	
Annex 2C	169.4-169.475 MHz		N	N	N	N	N	N	N	N	N	N	U	Y	N	N	Y	U	N	Y	Y	N	U	Y	N	N	N	N	Y	Y	Y	N	N	Y	N	N	N	x	

Annex 3 - Wideband Data Transmission Systems

Annex 3A	2400.0-2483.5 MHz	ERC/DEC(01)07	Y	Y	Y	Y	Y	L	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	L	Y	Y	N	Y	Y	x	x	
Annex 3B	5150-5250 MHz	ECC/DEC/(04)08	Y	Y	Y	Y	Y	L	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	Y	Y	N	Y	Y	x	
Annex 3C	5250-5350 MHz		Y	Y	Y	Y	Y	L	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	Y	Y	N	Y	Y	x	
Annex 3D	5470-5725 MHz		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	Y	Y	N	Y	N	x	
Annex 3E	17.1-17.3 GHz		Y	N	Y	N	Y	N	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	N	N	U	Y	Y	P	Y	Y	Y	Y	N	N	Y	N	N	Y	N	Y	N	x	

Annex 4 - Railway Applications

Annex 4A	2446-2454 MHz		Y	Y	Y	N	Y	Y	Y	Y	N	Y	Y	Y	Y	L	Y	Y	N	L	Y	N	Y	Y	N	Y	Y	U	Y	P	Y	Y	L	Y	Y	x			
Annex 4B	27.095 MHz		Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	P	L	Y	N	Y	Y	x		
Annex 4C	4234 kHz																																					x	
Annex 4D1	4516 kHz																																					x	
Annex 4D2	11.1 - 16.0 MHz																																					x	

Bright highlighted = new bands

Highlighted yellow = not implemented

Y=implemented L=limited implementation P=planned U=under study N=not implemented

*) Class 1
ECC Dec

ERC/REC 70-03

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Implementation Status

AUTBELDNK E FIN F D GRC ICE I IRL LIE LUX HOL NOR POR SUI S UK CZ CYP EST HNG LTU LVA MLT POL SVN SVK BIH BUL HRV MKD ROU S CG TUR

Annex 9 - Inductive Applications - continued

Annex 9H 10.200-11.000 MHz	N	N	Y	N	Y	Y	Y	N	Y	P	U	Y	Y	Y	N	N	Y	N	L	Y	N	Y	Y	U	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	Y	Y	N	N	Y		
Annex 9K 3155-3400 kHz	Y	Y	Y	N	Y	Y	Y	Y	Y	P	P	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	Y	Y	N	N	Y
Annex 9L1 148.5 kHz - 5 MHz	N	N	Y	N	Y	N	N	N	N	N	N	Y	Y	N	N	N	Y	N	L	Y	N	U	L	N	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y	Y	Y	N	N	P	
Annex 9L2 5 - 30 MHz	N	N	Y	N	Y	N	N	N	N	N	N	Y	Y	N	N	N	Y	N	Y	Y	N	U	P	N	N	N	P	Y	N	Y	N	Y	N	Y	Y	Y	N	N	P			
Annex 9L3 400-600 kHz	N	N	P	N	Y	N	N	N	N	N	N	Y	Y	N	N	N	Y	N	Y	Y	N	U	Y	N	N	N	P	Y	N	Y	N	Y	Y	Y	N	N	P					

Annex 10 – Radio Microphones and Assistive Listening Devices

Annex 10A 29.7-47.0 MHz	L	Y	Y	L	L	L	L	Y	Y	L	P	L	L	Y	L	N	L	L	L	L	Y	L	Y	N	L	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	L	N	Y	Y	Y			
Annex 10B 173.965-174.015 MHz	N	N	N	N	L	N	Y	U	Y	Y	Y	N	Y	Y	L	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	N	Y	N	Y	Y
Annex 10C 863-865 MHz	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Annex 10D 174-216 MHz	N	Y	L	L	L	L	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	P	N	Y	N	Y	Y			
Annex 10E 470-862 MHz	Y	Y	L	N	L	L	L	Y	Y	L	Y	Y	Y	Y	L	Y	Y	Y	Y	Y	Y	Y	Y	N	L	Y	Y	Y	Y	Y	Y	Y	Y	P	Y	Y	Y	N	Y	Y			
Annex 10F 1785-1795 MHz	N	N	Y	Y	Y	N	N	N	N	N	N	Y	Y	N	Y	Y	Y	N	L	L	N	Y	Y	N	N	N	Y	Y	N	Y	N	Y	N	Y	Y	Y	N	Y	N	Y			
Annex 10G 1795-1800 MHz	N	N	Y	Y	N	N	N	N	N	N	N	Y	Y	N	Y	Y	Y	N	L	L	N	Y	Y	N	N	N	Y	Y	N	Y	N	Y	N	N	Y	N	N	Y	N	Y			
Annex 10H1 169.4000-169.4750 MHz	N	N	N	Y	L	N	N	N	N	N	N	L	Y	N	N	Y	L	N	Y	Y	N	U	Y	N	N	N	P	Y	N	Y	N	N	Y	N	N	Y	N	N	P				
Annex 10H2 169.4875-169.5875 MHz	N	N	N	Y	Y	N	N	N	N	N	N	L	Y	N	N	N	L	N	Y	Y	N	Y	Y	N	N	N	P	Y	N	Y	N	N	Y	N	N	Y	N	N	P				
Annex 10I 169.4-174.0 MHz	N	N	Y	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	L	L	N	U	N	N	N	N	P	Y	N	Y	N	N	Y	N	N	Y	N	N	N				

ECC/DEC(05)02

Annex 11 - Radio Frequency Identification Applications

Annex 11A 2446-2454 MHz	Y	Y	Y	Y	Y	L	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	U	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Annex 11B1 865.0-865.6 MHz																																									
Annex 11B2 865.6-867.6 MHz																																									
Annex 11B3 867.6-868.0 MHz																																									

Annex 12 - Wireless Applications in Healthcare

Annex 12A 402-405 MHz	ERC/DEC(01)17	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Annex 12A1 401-402 MHz		N	N	P	N	N	N	N	N	N	N	U	Y	N	N	Y	U	N	P	N	N	U	P	N	N	N	N	P	U	Y	N	N	Y	N	N	N	N	N	N	N	
Annex 12A2 405-406 MHz		N	N	P	N	N	N	N	N	N	N	U	Y	N	N	Y	U	N	P	N	N	U	P	N	N	N	N	P	U	Y	N	N	Y	N	N	N	N	N	N	N	
Annex 12B 9-315 kHz		Y	Y	Y	L	Y	Y	Y	Y	Y	P	Y	Y	Y	Y	Y	L	Y	Y	L	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Annex 12C 315-600 kHz		N	Y	Y	Y	Y	N	Y	N	Y	N	U	Y	Y	U	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Annex 12D 30.0-37.5 MHz		N	Y	Y	N	Y	N	Y	N	N	N	U	N	Y	N	N	N	N	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Annex 12E 12.5-20.5 MHz		N	N	Y	N	Y	N	N	N	N	N	N	Y	Y	N	N	N	N	Y	N	Y	U	P	N	N	N	P	Y	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	

Annex 13 - Wireless Audio Applications

Annex 13A 863-865 MHz	ERC/DEC(01)18	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Annex 13B 864.8-865.0 MHz		Y	Y	Y	Y	Y	Y	N	Y	P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Annex 13C 1795-1800 MHz		N	Y	Y	N	N	N	Y	N	Y	N	U	Y	Y	Y	Y	Y	Y	L	Y	Y	Y	Y	U	N	Y	Y	Y	N	Y	N	N	Y	N	Y	Y	Y	Y	P		
Annex 13D 87.5-108.0 MHz		N	Y	Y	Y	Y	N	Y	N	Y	N	N	Y	Y	N	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Please note abrogated Decision

Annex 3B 5150-5350 MHz	ERC/DEC(99)23	Y	Y	Y	Y	Y	L	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Annex 3C 5470-5725 MHz		Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

*)Please note: Where class 1 is indicated, the parameters of the annex to Recommendation 70-03 may differ from the parameters of the specific sub-class (Class 1 parameters) relating to that annex.

Please refer to www.ero.dk for full details of Class 1 sub-classes.

Bright highlighted = new bands

Highlighted yellow = not implemented

Y=implemented L=limited implementation P=planned U=under study N=not implemented

APPENDIX 2

List of relevant ECC/ERC Decisions, Recommendations and ETSI Standards

ECC/ERC Decisions

ECC/DEC/(05)02	On the use of the frequency band 169.4-169.8125 MHz
ECC/DEC/(04)01	Short Range Devices for detection of Avalanche Victims
ECC/DEC/(04)02	Non-specific Short Range Devices in the band 433.05-434.79 MHz
ECC/DEC(04)08	On the harmonised use of the 5 GHz frequency bands for the implementation of Wireless Access Systems including Radio Local Area Networks (WAS/RLANs)
ERC/DEC/(02)01	On the frequency bands to be designated for the coordinated introduction of Road Transport and Traffic Telematic Systems.
ERC/DEC/(95)01	On the free circulation of radio equipment in CEPT member countries.
ERC/DEC(97)06	On the harmonised frequency band to be designated for Social Alarm Systems.
ERC/DEC(01)01	Non-specific Short Range Devices in 6765-6795 kHz and 13.552-13.567 MHz
ERC/DEC(01)02	Non-specific Short Range Devices in 26.957-27.283 MHz
ERC/DEC(01)03	Non-specific Short Range Devices in 40.660-40.700 MHz
ERC/DEC(01)04	Non-specific Short Range Devices in 868.0-868.6 MHz, 868.7-869.2 MHz, 869.4-869.65 MHz, 869.7-870.0 MHz
ERC/DEC(01)05	Non-specific Short Range Devices in 2400-2483.5 MHz
ERC/DEC(01)06	Non-specific Short Range Devices in 5725-5875 MHz
ERC/DEC(01)07	Radio-LAN Short Range Devices in 2400-2483.5 MHz
ERC/DEC(01)08	Short Range Devices for Movement Detection and Alert in 2400-2483.5 MHz
ERC/DEC(01)09	Short Range Devices for Alarms in 868.6-868.7 MHz, 869.25-869.3 MHz, 869.65-869.7 MHz
ERC/DEC(01)10	Short Range Devices for Model control in 26.995, 27.045, 27.095, 27.145 and 27.195 MHz
ERC/DEC(01)11	Short Range Devices for Flying Model Control in 34.995-35.225 MHz
ERC/DEC(01)12	Short Range Devices for Model Control in 40.665, 40.675, 40.685 and 40.695 MHz
ERC/DEC(01)13	Short Range Devices for Inductive applications in 9-59.750 kHz, 59.750 – 60.250 kHz, 60.250-70 kHz, 70-119 kHz and 119-135 kHz
ERC/DEC(01)14	Short Range Devices for Inductive applications in 6765-6795 kHz, 13.553-13.567 MHz
ERC/DEC(01)15	Short Range Devices for Inductive applications in 7400-8800 kHz
ERC/DEC(01)16	Short Range Devices for Inductive applications in 26.957-27.283 MHz
ERC/DEC(01)17	Short Range Devices for Medical Implants in 402-405 MHz
ERC/DEC(01)18	Short Range Devices for Wireless Audio in 863-865 MHz

ECC/ERC Reports

ECC Report 001	Compatibility between inductive LF and HF RFID transponder and other radio communications systems in the frequency ranges 135-148.5 kHz, 4.78-8.78 MHz and 11.56-15.56 MHz
ERC Report 005	ERC Report on frequency bands for Low Power Devices
ECC Report 007	Compatibility between inductive LF RFID systems and radio communications systems in the frequency range 135 - 148.5 kHz
ECC Report 011	Strategic Plans for the future use of the frequency bands 862-870 MHz and 2400-2483.5 MHz for Short Range Devices
ECC Report 012	Ultra Low Power Active Medical Implant systems (ULP-AMI)
ECC Report 013	Adjacent band compatibility between Short Range Devices and TETRA TAPS mobile services at 870 MHz
ECC Report 037	Compatibility of planned SRD applications in 863-870 MHz
[ECC Report 055	Compatibility between existing and proposed SRDs and other radiocommunication applications in the 169.4-169.8 MHz frequency band. See supplementary excel spreadsheets in download]
ERC Report 044	ERC Report on sharing inductive systems and radiocommunication systems in the band 9-135 kHz
ERC Report 047	ERC Report on compatibility fixed services and motion sensors at 10.5 GHz
ERC Report 063	ERC Report on radio microphone applications in the frequency range 1785-1800 MHz
ERC Report 067	Study of the Frequency sharing between HIPERLANs and MSS feeder links in the 5 GHz band
ERC Report 069	ERC Report on propagation model and interference range calculation for inductive systems in 10 kHz – 30 MHz
ERC Report 072	Compatibility studies related to the possible extension band for HIPERLANs at 5 GHz
ERC Report 074	ERC Report on RFID and the radioastronomy services at 13 MHz
ERC Report 092	ERC Report on sharing inductive Short Range Devices and radio communication systems in 10.2-11 MHz
ERC Report 095	ERC Report on the use of 3155-3400 kHz for general inductive applications
ERC Report 096	ERC Report on the use of 290-300 kHz and 500-510 kHz for general inductive applications
ERC Report 098	ERC Report on compatibility of Short Range Devices at 900 MHz with adjacent services
ERC Report 109	Compatibility of Bluetooth with other existing and proposed radiocommunication systems in the 2.45 GHz frequency band

ETSI Standards including harmonised standards

ETSI standards consist of at least two parts, the last part will normally be harmonised under the R&TTE Directive.
Further information can be found at <http://europa.eu.int/comm/enterprise/rtte/harstand.htm>

Generic standards

- EN 300 220 Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1000 MHz frequency range with power levels ranging up to 500 mW; Part 3: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
- 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; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
- 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; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive

Specific standards

- 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; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive .
- EN 300 422 Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3 GHz frequency range; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
- EN 300 454 Electromagnetic compatibility and Radio spectrum Matters (ERM); Wide band audio links; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
- 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 300 718 Electromagnetic compatibility and Radio spectrum matters (ERM); Avalanche Beacons; Transmitter-receiver systems; Part 3: Harmonized EN covering essential requirements of article 3.3e of the R&TTE Directive
- 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; Part 2: Harmonized standard covering essential requirements under article 3.2 of the R&TTE Directive
- 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); Analogue cordless wideband audio devices using integral antennas operating in the CEPT recommended 863 MHz to 865 MHz frequency range; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
- EN 301 839 Electromagnetic compatibility and Radio spectrum Matters (ERM); Radio equipment in the frequency range 402 MHz to 405 MHz for Ultra Low Power Active Medical Implants and Accessories; Part 2: Harmonized EN covering essential requirements of article 3.2 of the R&TTE Directive
- EN 301 840 Electromagnetic compatibility and Radio Spectrum Matters (ERM); Digital radio microphones operating in the CEPT Harmonized band 1 785 MHz to 1 800 MHz; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive
- 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
- EN 302 208 Electromagnetic compatibility and Radio spectrum Matters (ERM); Radio Frequency Identification Equipment operating in the band 865 MHz to 868 MHz with power levels up to 2 W; Part 2: Harmonized EN under article 3.2 of the R&TTE Directive

Appendix 3 – National Restrictions

Annex	Country	Restriction	Reason/remark
<i>All Annexes</i>			
	France	France does not recognise the former marking CEPT SRD Aa Y and CEPT RLAN Y recommended by T/R 01-04 and T/R 10-01 respectively. The free circulation and use of products bearing these old markings must then be confined to existing equipments and to countries which have already adopted these markings. The marking CEPT SRD Aa Y proposed by ERC/REC 70-03 will not be recognised in France. In any case in France marking issues are in line with the R&TTE Directive.	
	Germany		Clarification of the terms contained in the table reference to the German Telecommunications Act of 22 June 2004: The use of frequencies or frequency bands for the operation of transmitting equipment requires "frequency assignment". There are two types of frequency assignments: individual frequency assignments are granted upon application and correspond to "individual license required" within the meaning of CEPT/ERC/REC 70-03; general frequency assignments are granted ex officio by administrative act, published in the Federal Network Agency's Official Gazette and correspond to "individual license not required" within the meaning of CEPT/ERC/REC 70-03.
	Lithuania		The radio frequencies may be used without an individual authorization in case the relevant radio frequency or radio frequencies band is included in the List of Radio Frequencies/Channels, which may be used without an Individual Authorisation, approved by Order No. 1V-27 of the Director of the Communications Regulatory Authority of 13 March 2003 (Official Gazette Valstybes zinios, Nr.30-1277, 2003). Radio equipment must conform to the requirements of the List.
	Moldova	Telecommunication equipment and cables are imported commercialized only on basis of conformity certificates issued by the Telecommunication Products Certification Body of Moldova and must be marked in Moldova. It is not permitted to utilise non-certificated and non-marked telecommunication equipment and cables. Subject to the above all SRD frequency bands with technical parameters indicated in ERC REC 70-03 are permitted on secondary basis.	In accordance with Law of Telecommunications of Republic of Moldova.
	Russia	In accordance with the current National Frequency Allocation Table, different communication services, including special applications operate in frequency bands designated for SRD applications. All radiocommunication systems require individual license and authorization for using certain radio frequencies, which is granted after conformity assessment procedures. All types of radio equipment requires national approval based on the national standard system (GOST) and issue of conformity certificate. Only equipment with national mark can be placed on the market in Russia.	
	Turkey		The short range and low powered devices under the scope of SRD Ordinance can be used without any need to get the certificate, use permit and frequency registers on condition that they shall meet the determined conditions and be in accordance with the standards and technical specifications accepted by The Authority

Annex	Country	Restriction	Reason/remark
Annex 1 Band A			
Non Specific Short Range Devices			
6765-6795 kHz			
	Romania	Secondary basis - individual license	
Annex 1 Band B			
Non Specific Short Range Devices			
13.553-13.567 MHz			
	Romania	Secondary basis - individual license	
Annex 1 Band C			
Non Specific Short Range Devices			
26.957-27.283 MHz			
	Romania	Secondary basis - individual license	
	United Kingdom	Only 26.995, 27.045, 27.095, 27.145, 27.195 MHz @10 kHz, e.r.p. 1mW	Restriction to protect CB. The UK is reviewing its position on this
Annex 1 Band D			
Non Specific Short Range Devices			
40.660-40.700 MHz			
	Finland	Audio and voice allowed	
	Romania	Secondary basis - individual licence	
Annex 1 Band E			
Non Specific Short Range Devices			
138.20-138.45 MHz			
	Belgium	Not implemented	
	Bulgaria	Not implemented	Planned
	Croatia	Not implemented	
	Finland	Audio and voice not allowed	
	France	Not implemented	Exclusive defence systems
	Germany	Not implemented	Defence systems
	Greece	Not implemented	Land Mobile service
	Hungary	Not implemented	Aeronautical mobile applications operate in the band
	Ireland	Not implemented	Allocated to Land Mobile
	Italy	Not implemented	Defence systems
	Latvia	Not implemented	
	Liechtenstein	Not implemented	
	Poland	Not implemented	Defence systems
	Portugal	Not implemented	Defence systems
	Romania	Not implemented	Not available
	Slovak Republic	Not implemented	Defence systems
	Slovenia	Not implemented	Not available
	Spain	Not implemented	Defence systems
	Sweden	Not implemented	
	Switzerland	Not implemented	Exclusive defence systems
	The Netherlands	Not implemented	Exclusive defence systems
	Turkey	Not implemented	Defence systems
	United Kingdom	Not implemented	Not implemented due to lack of demand. Implementation under consideration

Appendix 3 – National Restrictions

Annex	Country	Restriction	Reason/remark
Annex 1 Band F			
Non Specific Short Range Devices			
433.050-434.790 MHz			
	Finland	Audio and voice not allowed	
	France	No duty cycle limits	Conformity with ERC REC 70-03 in progress
		Voice applications allowed	
	Italy	Limited to 433.05-433.575 MHz for audio signals with 12.5 or 25 kHz channel spacing.	Defence systems
		Audio and voice signals not allowed	
	Luxembourg	No audio and no voice	

Annex 1 Band F1			
Non Specific Short Range Devices			
433.050-434.790 MHz			
	Croatia	Individual license required	
	Finland	Audio and voice not allowed	
	France	No duty cycle limits voice applications	Conformity with ERC REC 70-03 in progress allowed
	Luxembourg	No audio and no voice	
	Norway	Not implemented	
	Romania	Not implemented	

Annex 1 Band F2			
Non Specific Short Range Devices			
434.040-434.790 MHz			
	Croatia	Individual license required	
	Finland	Audio and voice signals not allowed	
	France	No duty cycle limits Voice applications	Conformity with ERC REC 70-03 in progress allowed
	Greece	Not implemented	
	Luxembourg	No audio and no voice	
	Romania	Not implemented	

Annex 1 Band G			
Non Specific Short Range Devices			
863-870 MHz			
	Austria	Not implemented	
	Belgium	Not implemented	
	Bulgaria	Not implemented	
	Cyprus	Not implemented	
	Estonia	Not implemented	Under study
	Finland	Not implemented	
	France	Not implemented	
	Greece	Not implemented	
	Ireland	Not implemented	Planned
	Italy	Not implemented	
	Latvia	Not implemented	
	Lithuania	Not implemented	
	Norway	Not implemented	
	Poland	Not implemented	Planned from 01.01.2007
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Slovak Republic	Not implemented	Under study
	Spain	Not implemented	Fixed Service
	Sweden	Not implemented	
	The Netherlands	Not implemented	
	Turkey	Planned	Implemented after SRD Ordinance is revised
	United Kingdom	Not implemented	Implementation under consideration

Annex	Country	Restriction	Reason/remark
Annex 1 Band G1			
Non Specific Short Range Devices			
868.000-868.600 MHz			
	Finland	Audio and voice not allowed	
	Romania	Not implemented	
Annex 1 Band G2			
Non Specific Short Range Devices			
868.700-869.200 MHz			
	Cyprus	Not implemented	
	Finland	Audio and voice not allowed	
	Romania	Not implemented	
Annex 1 Band G3			
Non Specific Short Range Devices			
869.400-869.650 MHz			
	Finland	Audio and voice not allowed	
	Italy	Max 25 mW e.r.p.	Defence systems
	Romania	Not implemented	
Annex 1 Band G4			
Non Specific Short Range Devices			
869.700-870.000 MHz			
	Croatia	Channel spacing 25 kHz or 50 kHz	
	Finland	Audio and voice not allowed	
	Hungary	Limited	Voice and audio applications are excluded
	Romania	Not implemented	
Annex 1 Band H			
Non Specific Short Range Devices			
2400.0-2483.5 MHz			
	France	Derogation in French overseas departments of Guyane and La Réunion: outdoor use in band 2400-2420 MHz limited to 2.5 mW e.i.r.p.	Defence systems
	Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund
	Romania	Secondary basis - individual license	
Annex 1 Band I			
Non Specific Short Range Devices			
5725-5875 MHz			
	Croatia	Not implemented	
	Romania	Secondary basis - individual license	
Annex 1 Band J			
Non Specific Short Range Devices			
24.00-24.25 GHz			
	Bulgaria	Not implemented	Planned
	Croatia	Not implemented	
	France	Power limited to 0.1 mW e.i.r.p.in frequency band 24.10 - 24.15 GHz	Military Radiolocation use. Operation by police forces of Radar Speed Meters
	Romania	Not implemented	
	United Kingdom	Only 24.150-24.250 GHz	To protect police speedmeters. Only used for movement sensing
Annex 1 Band K			
Non Specific Short Range Devices			
61.0-61.5 GHz			
	Bulgaria	Not implemented	Equipment/standards not yet developed
	Croatia	Not implemented	
	France	Not implemented	
	Romania	Not implemented	
	Slovak Republic	Not implemented	Standard not yet available
	Sweden	Not implemented	

Appendix 3 – National Restrictions

Annex	Country	Restriction	Reason/remark
	United Kingdom	Not implemented	Not implementation due to lack of demand. Implementation under consideration
Annex 1 Band L			
Non Specific Short Range Devices			
122-123 GHz			
	Bulgaria	Not implemented	Equipment/standards not yet developed
	Croatia	Not implemented	
	France	Not implemented	
	Ireland	Not implemented	Ready to implement. No specification/equipment available
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Slovak Republic	Not implemented	Standard not yet available
	Sweden	Not implemented	Under study
	United Kingdom	Not implemented	Not implementation due to lack of demand. Implementation under consideration
Annex 1 Band M			
Non Specific Short Range Devices			
244-246 GHz			
	Bulgaria	Not implemented	Equipment/standards not yet developed
	Croatia	Not implemented	
	France	Not implemented	
	Ireland	Not implemented	Ready to implement. No specification/equipment available
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Slovak Republic	Not implemented	Standard not yet available
	Sweden	Not implemented	Under study
	United Kingdom	Not implemented	Not implementation due to lack of demand. Implementation under consideration
Annex 2 Band A			
Detection of avalanche victims			
457 kHz			
	Latvia	Not implemented	
	Serbia & Montenegro	Not implemented	
Annex 2 Band B			
Meter Reading			
169.4-169.475 MHz			
	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Croatia	Not implemented	
	Cyprus	No info	
	Denmark	Not implemented	PMR band
	Estonia	Not implemented	Under study
	Finland	No info	
	France	No info	
	Germany	No info	
	Greece	No info	
	Iceland	No info	
	Ireland	No info	
	Italy	No info	
	Latvia	No info	
	Liechtenstein	Not implemented	Under study
	Lithuania	No info	
	Malta	No info	
	Norway	No info	
	Poland	No info	
	Romania	No info	
	Serbia & Montenegro	No info	
	Spain	No info	
	Sweden	No info	
	Switzerland	Not implemented	Under study
	The Netherlands	No info	
	Turkey	No info	

Annex	Country	Restriction	Reason/remark
Annex 2 Band C			
Asset Tracking, Tracing			
169.4-169.475 MHz			
	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Croatia	Not implemented	
	Cyprus	No info	
	Denmark	Not implemented	PMR band
	Estonia	Not implemented	Under study
	Finland	No info	
	France	No info	
	Germany	No info	
	Greece	No info	
	Iceland	No info	
	Ireland	No info	
	Italy	No info	
	Latvia	No info	
	Liechtenstein	Not implemented	Under study
	Lithuania	No info	
	Malta	No info	
	Norway	No info	
	Poland	No info	
	Romania	No info	
	Serbia & Montenegro	No info	
	Spain	No info	
	Sweden	No info	
	Switzerland	Not implemented	Under study
	The Netherlands	No info	
	Turkey	No info	

Annex 3 Band A**Wideband Data Transmission systems****2400.0-2483.5 MHz**

	Bulgaria		General authorization required for outdoor use and public service
	France	Outdoor use limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz Derogation in French overseas departments of Guyane and La Réunion: outdoor use not allowed in band 2400-2420 MHz.	Military Radiolocation and Fixed Service use
	Italy		If used outside of own premises, general authorization is required
	Luxembourg	None	General authorization required for network and service supply (not for spectrum)
	Norway	Implemented	This subsection does not apply for the geographical area within a radius of 20 km from the centre of Ny-Ålesund
	Romania	On a secondary basis. Individual license required. T/R 22-06 not implemented	

Annex 3 Band B**Wideband Data Transmission systems****5150-5250 MHz**

	Bulgaria	Not implemented	Planned
	Croatia	License required	
	Italy		General authorization required if used outside own premises
	Luxembourg	None	General authorization required for network and service supply (not for spectrum)
	Romania	Not implemented	

Appendix 3 – National Restrictions

Annex	Country	Restriction	Reason/remark
Annex 3 Band C			
Wideband Data Transmission systems			
5250-5350 MHz			
	Bulgaria	Not implemented	Planned
	Croatia	License required	
	Italy		General authorization required if used outside own premises
	Luxembourg	None	General authorization required for network and service supply (not for spectrum)
	Romania	Not implemented	
Annex 3 Band D			
Wideband Data Transmission systems			
5470-5725 MHz			
	Bulgaria	Not implemented	Planned
	France		Relevant+ provisions for the implementation of DFS mechanism described in ETSI standard EN 301 893 V1.3.1 and subsequent versions
	Italy		General authorization required if used outside own premises
	Luxembourg	None	General authorization required for network and service supply (not for spectrum)
	Romania	Not implemented	
	Turkey	Not implemented	Defence systems
Annex 3 Band E			
Wideband Data Transmission systems			
17.1-17.3 GHz			
	Belgium	Not implemented	
	Bulgaria	Not implemented	Equipment/Standards not yet developed
	Croatia	Not implemented	
	Czech Republic	Not implemented	Under study, other services in the band
	France	Not implemented	
	Germany	Not implemented	Equipment/Standard not yet developed
	Hungary	Planned	No equipment and standards are available
	Italy		General authorization required if used outside own premises
	Luxembourg	Not implemented	
	Norway	Not implemented	
	Romania	Not implemented	
	Slovak Republic	Not implemented	Standard not yet available
	Slovenia	Not implemented	Not available
	Spain	Not implemented	Defence systems
	Sweden	Not implemented	
	Turkey	Not implemented	
	United Kingdom	Not implemented	
Annex 4 Band A			
Railway applications			
2446-2454 MHz			
	Bulgaria	Not implemented	Planned
	Cyprus	Not applicable	No railways
	Italy	Not implemented	
	Malta	Not implemented	Service not applicable to Malta
	Norway	Limited	Given center frequencies 2447.0, 2448.5, 2450.0, 2451.5 and 2453.0 MHz
	Romania	Secondary basis. Individual license required	
	Slovak Republic	Not implemented	Under study
	Spain	Not implemented	Not implemented due to lack of demand
	Sweden	Not implemented	License required – Defence systems
	United Kingdom	Limited	Channel plan limitation. Full implementation planned

Annex	Country	Restriction	Reason/remark
Annex 4 Band B			
Railway applications			
27.095 MHz			
	Bulgaria	Not implemented	Planned
	Croatia	Individual license required	
	Cyprus	Not applicable	No railways
	Ireland	Not implemented	
	Malta	Not implemented	Service not applicable to Malta
	Romania	Not implemented	
	Sweden	Not implemented	27.115 MHz used as provided in EU legislation
Annex 4 Band C			
Railway applications			
4234 kHz			
Annex 4 Band D1			
Railway applications			
4516 kHz			
Annex 4 Band D2			
Railway applications			
11.1-16.0 MHz			
Annex 5 Band A			
RTTT			
5795-5805 MHz			
	Bulgaria	Not implemented	Planned
	Croatia	Not implemented	
	Cyprus	Not implemented	
	France	Limited to automatic toll collection. Power limited to 2 W e.i.r.p.	Military Radiolocation and Meteorological use
	Liechtenstein	Power limited to 2 W e.i.r.p.	Annex has two levels. Lower level is implemented
	Malta	Limited implementation	Power limited to 2 W e.i.r.p.
	Norway	Not implemented	
	Romania	Not implemented	Under study
	Switzerland	Power limited to 2 W e.i.r.p.	Annex has two levels. Lower level is implemented to protect defence systems
	United Kingdom	Only 2 W permitted	Annex has two levels– the UK has only implemented the lower level to protect programme making video links
Annex 5 Band B			
RTTT			
5805-5815 MHz			
	Bulgaria	Not implemented	Planned
	Croatia	Not implemented	Individual license required
	Cyprus	Not implemented	
	France	Not implemented	
	Liechtenstein	Not implemented	Planned
	Malta	Limited implementation	Power limited to 2 W e.i.r.p.
	Norway	Not implemented	
	Romania	Not implemented	Under study
	Switzerland	Not implemented	Planned 2007
	United Kingdom	Only 2 W permitted	Annex has two levels – the UK has only implemented the lower level to protect programme making video links

Appendix 3 – National Restrictions

Annex	Country	Restriction	Reason/remark
Annex 5 Band C			
RTTT			
63-64 GHz			
	Austria	Not implemented	Equipment/standard not yet developed
	Bulgaria	Not implemented	Equipment/standard not yet developed
	Croatia	Not implemented	License required
	Cyprus	Not implemented	
	Estonia	Power limited to 2 W e.i.r.p	
	Germany	Not implemented	Equipment/standard not yet developed
	France	Not implemented	
	Liechtenstein	Not implemented	Under study. No standard available
	Norway	Not implemented	
	Poland	Not implemented	Equipment/standard not yet developed
	Romania	Not implemented	
	Slovak Republic	Not implemented	Standard not yet available
	Sweden	Not implemented	Equipment/standard not available
	Switzerland	Not implemented	Under study. No standard available
Annex 5 Band D			
RTTT			
76-77 GHz			
	Bulgaria	Not implemented	Planned
	Croatia	Not implemented	
	Cyprus	Not implemented	
	Poland	Not implemented	Planned from 01.01.2007
	Romania	Not implemented	
Annex 6 Band A			
Equipment for Detecting Movement and Alert			
2400.0-2483.5 MHz			
	France	Outdoor use limited to 10 mW e.i.r.p. within the band 2454-2483.5 MHz. Derogation in French overseas departments of Guyane and La Réunion: outdoor use in band 2400-2420 MHz limited to 2.5 mW. e.i.r.p.	Military Radiolocation and Fixed Service use. Refarming of the 2.4 GHz band has been ongoing over the last 2-3 years to allow current relaxed regulation. Use of Military radiolocation systems still requires protection on a long term basis, in particular in band 2450-2483.5 MHz.
	Romania	Not implemented	Under study
Annex 6 Band B			
Equipment for Detecting Movement and Alert			
9200-9500 MHz			
	Bulgaria	Not implemented	Planned
	Finland	Not implemented	
	France	Not implemented	
	Greece	Not implemented	
	Italy	Not implemented	Defence systems
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Spain	Not implemented	Defence systems
	Sweden	Not implemented	
	United Kingdom	Limited implementation – may be used for Radar Level Gauges on a licence per site basis only	European use of 10 GHz for movement sensing and alert is fragmented. The UK has an allocation at 10.577-10.597 GHz for these devices

Annex	Country	Restriction	Reason/remark
Annex 6 Band C			
Equipment for Detecting Movement and Alert			
9500-9975 MHz			
	Bulgaria	Not implemented	Planned
	France	Limited to 9.88-9.92 with max e.i.r.p. 50 mW	
	Germany	Not implemented	Defence systems
	Latvia	Not implemented	Under study
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Slovak Republic	Not implemented	Defence systems
	Spain	Not implemented	Defence systems
	Sweden	Not implemented	
	United Kingdom	Limited implementation - may be used for Radar Level Gauges on a license per site basis only	

Annex 6 Band D**Equipment for Detecting Movement and Alert**
10.5-10.6 GHz

	Austria	Not implemented	Fixed Service
	Bulgaria	Not implemented	Planned
	Croatia	Not implemented	
	Czech Republic	Not implemented	Other services in the band
	Estonia	Not implemented	FWA
	Finland	Not implemented	10.45-10.50 GHz available
	France	Limited to 10.57-10.61 with max e.i.r.p. 20 mW	
	Germany	Not implemented	ENG/OB video links equipment
	Hungary	Limited	e.i.r.p. 25 mW. ENG/OB systems are protected
	Ireland	25 mW e.i.r.p. power limit	
	Luxembourg	Limited to 25mW	To avoid interference with ENG/OB and Fixed Service
	Romania	Not implemented	
	Slovak Republic	Not implemented	Fixed Service
	Sweden	Limited to 10.51-10.58 GHz	
	Turkey	Not implemented	Fixed Service
	United Kingdom	Limited to 10.577-10.597 GHz. May be used for Radar Level Gauges on a license per site basis only	The UK is developing Point to Point and Point to Area services in the band below 10.575 GHz

Annex 6 Band E**Equipment for Detecting Movement and Alert**
13.4-14.0 GHz

	Bulgaria	Not implemented	Planned
	France	Not implemented	
	Romania	Not implemented	
	Spain	Not implemented	Governmental band
	Sweden	Not implemented	
	Turkey	Not implemented	

Annex 6 Band F**Equipment for Detecting Movement and Alert**
24.05-24.25 GHz

	Bulgaria	Not implemented	Military Radiolocation use. Operation by police forces of Radar Speed Meters.
	France	No restriction for fixed applications. Power limited otherwise to 0.1 mW e.i.r.p. in frequency band 24.10 - 24.15 GHz. Alternatively for FMCW modulation, the following conditions are also allowed: power limited to 20 mW (+13 dBm) mean e.i.r.p. and 50 mW (+17 dBm) peak e.i.r.p. with a minimum frequency sweep speed of 5 MHz per millisecond.	
	Romania	Not implemented	
	United Kingdom	Limited	To protect police speedmeters devices operating in 24.05-24.15 GHz must employ a 2 MHz/mS minimum sweep rate

Annex	Country	Restriction	Reason/remark
Annex 6 Band G			
Equipment for Detecting Movement and Alert			
4.5-7.0 GHz			
Annex 6 Band H			
Equipment for Detecting Movement and Alert			
8.5-10.6 GHz			
Annex 6 Band I			
Equipment for Detecting Movement and Alert			
24.05-27.0 GHz			
Annex 6 Band J			
Equipment for Detecting Movement and Alert			
57-64 GHz			
Annex 6 Band K			
Equipment for Detecting Movement and Alert			
75-85 GHz			
Annex 7 Band A			
Alarms			
868.600-868.700 MHz			
	France	Duty cycle limited to 0.1%	Implementation in France becomes limited if a duty cycle limit of 1% is confirmed for band 7(a) of Rec.70-03
	Romania	Not implemented	
	United Kingdom	Duty cycle limit 0.1%	UK will be altering its regulations to align with new 70-03 level of 1%
Annex 7 Band B			
Alarms			
869.250-869.300 MHz			
	Romania	Not implemented	
Annex 7 Band C			
Alarms			
869.650-869.700 MHz			
	Romania	Not implemented	
	Slovak Republic	Max 10 mW e.r.p.	Defence systems
Annex 7 Band D			
Alarms			
869.200-869.250 MHz			
	Cyprus	Not implemented	
Annex 7 Band E			
Alarms			
869.300-869.400 MHz			
<i>(Technical parameters have been changed)</i>			
	Austria	Not implemented	
	Bulgaria	Not implemented	
	Cyprus	Not implemented	
	Czech Republic		Intended for all non-specific SRD
	Estonia	Individual license required	Under consideration
	France	Not implemented	
	Germany	Not implemented	
	Greece	Not implemented	
	Iceland	Not Implemented	
	Ireland	Not implemented	Planned
	Italy	Not implemented	
	Latvia	Not implemented	
	Lithuania	Not implemented	

Annex	Country	Restriction	Reason/remark
	Norway	Not implemented	
	Poland	Not implemented	Planned from 01.01.2007
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Sweden	Not implemented	
	Turkey	Planned	Implemented after SRD Ordinance

Annex 7 Band F**Alarms****169.4750-169.4875 MHz**

	Austria	Not implemented	
	Bulgaria	Not implemented	
	Croatia	Not implemented	
	Cyprus	Not implemented	
	Denmark	Not implemented	PMR band
	France	Not implemented	
	Germany	Not implemented	
	Greece	Not implemented	
	Ireland	Not implemented	Under study
	Italy	Not implemented	
	Latvia	Not implemented	
	Liechtenstein	Limited implementation	A paging system is active in the adjacent channel
	Lithuania	Not implemented	
	Norway	Not implemented	
	Poland	Not implemented	Planned from 01.01.2007
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Sweden	Not implemented	
	Switzerland	Geographical restriction	A paging system is active in the adjacent channel in a part of Switzerland
	The Netherlands	Not implemented	
	Turkey	Planned	Implemented after SRD Ordinance

Annex 7 Band G**Alarms****169.5875-169.6000 MHz**

	Austria	Not implemented	
	Bulgaria	Not implemented	
	Croatia	Not implemented	
	Cyprus	Not implemented	
	Denmark	Not implemented	PMR band
	France	Not implemented	
	Germany	Not implemented	
	Greece	Not implemented	
	Iceland	Not Implemented	
	Ireland	Not implemented	Under study
	Italy	Not implemented	
	Latvia	Not implemented	
	Lithuania	Not implemented	
	Norway	Not implemented	
	Poland	Not implemented	Planned from 01.01.2007
	Portugal	Not implemented	Land Mobile
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Sweden	Not implemented	
	Switzerland	Geographical restriction	Another system is active in a part of Switzerland
	The Netherlands	Not implemented	
	Turkey	Planned	Implemented after SRD Ordinance

Appendix 3 – National Restrictions

Annex	Country	Restriction	Reason/remark
Annex 8 Band A			
Model Control			
26.995, 27.045, 27.095, 27.145, 27.195 MHz			
	France	Implementation without restriction	Planned 2006
Annex 8 Band B			
Model Control			
34.995-35.225 MHz			
	France	Implementation limited to frequency band 34.995 - 35.015 MHz planned 2006	Dedicated networks for Ministry of transport.
	Germany	Limited to 35.005-35.205 MHz	Emergency services
	Liechtenstein	Until 31.12.07 shared with the previous users, interference-free operation cannot be guaranteed. From 1.1.2008 exclusively for flying models	Until 31.12.2007, 18 exclusive frequencies are available at 40.715-40.985 MHz band for flying models
	Norway	Limited	Given center frequencies (35.000 – 35.010 – 35.020 MHz etc.)
	Romania	Limited to 34.995-35.005 and 35.195-35.225 MHz. Individual license required if e.r.p. >100 mW	
	Spain	Limited	Limited to 35.030-35.200 MHz
	Switzerland	Until 31.12.07 shared with the previous users (armed forces), interference-free operation cannot be guaranteed. From 01.01.08 exclusively for flying models	Until 31.12.07 18 exclusive frequencies are available at 40.715-40.985 MHz band for flying models
Annex 9 Band AA			
Inductive applications			
9-59.750 kHz			
	Romania	Not implemented	
Annex 9 Band AB			
Inductive applications			
59.750-60.250 kHz			
	Romania	Not implemented	
	Spain	No restriction	Magnetic field 72 dBµA/m at 10 m
Annex 9 Band AC			
Inductive applications			
60.250-70.000 kHz			
	Romania	Not implemented	
	Spain	No restriction	Magnetic field 72 dBµA/m at 10 m
Annex 9 Band B			
Inductive applications			
70-119 kHz			
	Romania	Not implemented	
Annex 9 Band C			
Inductive applications			
119-135 kHz			
	Germany	Within 119-127 kHz max field strength of 66 dBµA/m at 10 metres, within 127-135 kHz max field strength is 42 dBµA/m at 10 metres. Reason for this restriction is the protection of the application "radio ripple control" in the primary Fixed Service. The length of any antenna loop element shall be <30 m	Applications within the Fixed Service
	Romania	Not implemented	

Annex	Country	Restriction	Reason/remark
Annex 9 Band C1			
Inductive applications			
135-140 kHz			
	Bulgaria	Not implemented	Planned
	Greece	Not implemented	
	Ireland	Not implemented	Planned
	Italy	Not implemented	Planned
	Latvia	Not implemented	
	Norway	Not implemented	
	Portugal	Not implemented	Defence systems
	Romania	Not implemented	
	Turkey	Planned	Implemented after SRD Ordinance is revised
Annex 9 Band C2			
Inductive applications			
140.0-148.5 kHz			
	Bulgaria	Not implemented	Planned
	Greece	Not implemented	
	Ireland	Not implemented	Planned
	Italy	Not implemented	Planned
	Latvia	Not implemented	
	Norway	Not implemented	
	Portugal	Not implemented	Defence systems
	Romania	Not implemented	
	Spain	Not implemented	Not implemented due to lack of demand
	Turkey	Planned	Implemented after SRD Ordinance is revised
Annex 9 Band D			
Inductive applications			
6765-6795 kHz			
	Croatia	Individual license required	
	The Netherlands	Implemented according to ERC/DEC(01)14	
Annex 9 Band E			
Inductive applications			
7400-8800 kHz			
	Romania	Not implemented	
	Spain	No restriction	Frequency band 7350-8800 kHz
	United Kingdom	In case of external antennas, only loop coil antennas may be employed	
Annex 9 Band F			
Inductive applications			
13.553-13.567 MHz			
	Croatia	Individual license required	
	The Netherlands	Implemented according to ERC/DEC(01)14	
Annex 9 Band F1			
Inductive applications			
13.553-13.567 MHz			
	Belgium	Not implemented	
	Bulgaria	Not implemented	Planned
	Greece	Not implemented	
	Ireland	Not implemented	Planned
	Latvia	Not implemented	
	Lithuania	Not implemented	Under study
	Norway	Not implemented	
	Romania	Not implemented	

Appendix 3 – National Restrictions

Annex	Country	Restriction	Reason/remark
Annex 9 Band G			
Inductive applications			
26.957-27.283 MHz			
	Croatia	Individual license required	
	United Kingdom	In case of external antennas, only loop coil antennas may be employed	
Annex 9 Band H			
Inductive applications			
10.200-11.000 MHz			
	Austria	Not implemented	
	Belgium	Not implemented	
	Bulgaria	Not implemented	Planned
	Cyprus	Not implemented	
	Greece	Not implemented	
	Ireland	Not implemented	Under study
	Italy	Not implemented	Planned
	Latvia	Not implemented	
	Lithuania	Not implemented	Under study
	Norway	Not implemented	
	Portugal	Not implemented	Defence systems
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Spain	Not implemented	Not implemented due to lack of demand
	Sweden	Not implemented	
	United Kingdom	In case of external antennas, only loop coil antennas may be employed	
Annex 9 Band K			
Inductive applications			
3155-3400 kHz			
	Bulgaria	Not implemented	Planned
	Ireland	Not implemented	Planned
	Italy	Not implemented	Planned
	Latvia	Not implemented	
	Norway	Not implemented	
	Portugal	Not implemented	Defence systems
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Spain	Not implemented	Not implemented due to lack of demand
Annex 9 Band LI			
Inductive applications			
148.5 kHz-5 MHz			
	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Cyprus	No info	
	Estonia	Not implemented	Under study
	France	No info	
	Germany	No info	
	Greece	No info	
	Iceland	No info	
	Italy	No info	
	Ireland	No info	
	Hungary	Limited	148.5-1600 kHz band is open. 1600-5000 kHz band is planned
	Latvia	No info	
	Lithuania	No info	
	Malta	No info	
	Norway	Not implemented	
	Portugal	Not implemented	Defence systems
	Romania	No info	
	Serbia & Montenegro	No info	
	Slovak Republic	No info	
	Spain	Not implemented	Not implemented due to lack of demand
	Sweden	No info	
	The Netherlands	No info	
	Turkey	Planned	Implemented after SRD Ordinance is revised

Annex	Country	Restriction	Reason/remark
	United Kingdom	Limited	Only 148.5-1600 kHz and 2000-5000 kHz permitted
Annex 9 Band L2			
Inductive applications			
5-30 MHz			
	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Cyprus	No info	
	Estonia	Not implemented	Under study
	France	No info	
	Germany	No info	
	Greece	No info	
	Hungary	Not implemented	Planned
	Italy	No info	
	Iceland	No info	
	Ireland	No info	
	Latvia	No info	
	Lithuania	No info	
	Malta	No info	
	Norway	Not implemented	
	Poland	Not implemented	Planned from 01.01.2008
	Portugal	Not implemented	Defence systems
	Romania	No info	
	Serbia & Montenegro	No info	
	Slovak Republic	No info	
	Spain	Not implemented	Not implemented due to lack of demand
	Sweden	No info	
	Turkey	Planned	Implemented after SRD Ordinance is revised

Annex 9 Band L3**Inductive applications****400-600 kHz**

	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Cyprus	No info	
	Denmark	Not implemented	Planned
	Estonia	Not implemented	Under study
	France	No info	
	Germany	No info	
	Greece	No info	
	Iceland	No info	
	Italy	No info	
	Ireland	No info	
	Latvia	No info	
	Lithuania	No info	
	Malta	No info	
	Norway	Not implemented	
	Poland	Not implemented	Planned from 01.01.2008
	Portugal	Not implemented	Defence systems
	Romania	No info	
	Serbia & Montenegro	No info	
	Slovak Republic	No info	
	Spain	No info	Not implemented due to lack of demand
	Sweden	No info	
	The Netherlands	No info	
	Turkey	Planned	Implemented after SRD Ordinance is revised

Appendix 3 – National Restrictions

Annex	Country	Restriction	Reason/remark
Annex 10 Band A			
Radio Microphones and Assistive Listening Devices			
29.7-47.0 MHz			
	Austria	Limited	only the frequencies 36.8, 36.85, 37.45, 37.50-37.55 MHz for narrow band and 36.7-37.1-44.55-45.0 MHz for broadband radio microphones are available
	Bulgaria	Limited	to 36.3, 36.5, 36.7, 36.9, 37.1 and 46.0-46.2 MHz
	Croatia	Not implemented	
	Czech Republic	only for sub-bands allowed	27.415-27.915 MHz 10 mW e.r.p. max 50 kHz 36.4-36.65 MHz 10 mW e.r.p. max 50 kHz 36.65-38 MHz 2 mW e.r.p. channel max 50 kHz 38-38.5 MHz 10 mW e.r.p. channel max 200 kHz
	Estonia	Limited to 37.6-38.6 MHz	Land mobile
	Finland	Limited	only 31.1, 32.1, 32.9, 33.5, 36.7, 37.1 and 42.4-43.6 MHz with max 200 kHz channels
	France	Limited	to 32.8, 36.4, 39.2 MHz 1 mW e.r.p. and 200 kHz
	Germany	Limited	to 32.4-38.2 MHz. Permitted channel spacing 10 kHz below 36 MHz and 40 kHz above 36 MHz
	Greece	Limited	to 30, 30.5, 31, 35, 36.5, 36.7, 37, 37.1, 37.5 MHz 38.25-47 MHz Governmental use
	Hungary	Limited	34.9-38.5 MHz band is allocated
	Ireland	Not implemented	Planned
	Italy	Limited to 41-43.6 MHz	Defence systems
	Latvia	Not implemented	
	Liechtenstein	Limited	to 31.4-39.6 MHz
	Luxembourg	Limited	excluding the use of the band 34.995-35.225 MHz
	Malta	Limited	to 29.7-34.9 and 37.5-40.98 MHz
	Norway	Limited	to 41.0-43.6 MHz max channel spacing 10 kHz. Max 100 mW e.r.p. AM not allowed
	Portugal	Not implemented	Defence systems
	Romania	Not implemented	
	Slovak Republic	Limited to 27.75-27.9 and 36.4-38.5 MHz	Defence systems in the rest of the band
	Spain	Limited	to 31.500, 31.750, 37.850, 38.300 and 38.550 MHz
	Sweden	Limited to 41.0-43.6 MHz	Land Mobile
	Switzerland	Limited to 31.4-39.6 MHz	Main use by defence systems
	United Kingdom	Individual licence required	26 countries have restrictions here. Many could be removed if licensing was specified in the Annex

Annex 10 Band B

Radio Microphones and Assistive Listening Devices

173.965-174.015 MHz

	Austria	Not implemented	
	Belgium	Not implemented	
	Bulgaria	Not implemented	Planned
	Croatia	Not implemented	
	Denmark	Not implemented	PMR band
	Finland	Individual license require Regional restrictions	PMR and broadcasting usage
	France	Not implemented	Governmental band
	Greece	Not implemented	Under study
	Liechtenstein	Not implemented	Occupied with mobile services
	Norway	Limited	to 173.8125, 173.8375, 173.8625, 173.8875, 173.9125, 173.9375, 173.9625, 173.9875 MHz
	Poland	Not implemented	Government band
	Romania	Not implemented	
	Spain	Not implemented	Not implemented due to lack of demand
	Sweden	Not implemented	Land Mobile
	Switzerland	Not implemented	Closely occupied with mobile services

Annex	Country	Restriction	Reason/remark
Annex 10 Band C			
Radio Microphones and Assistive Listening Devices			
863-865 MHz			
	Croatia	Not implemented	
	Romania	Limited to 845-862 MHz	
Annex 10 Band D			
Radio Microphones and Assistive Listening Devices			
174-216 MHz			
	Austria	Not implemented	
	Bulgaria	Not implemented	Planned
	Croatia	Not implemented	
	Denmark	Limited implementation	
	Finland	Regional restrictions	
	France	175.5-178.5 and 183.5-186.5 MHz with 10 mW e.r.p. and 200 kHz channel spacing	
	Ireland	Individual license required	
	Latvia	Not implemented	Under study
	Malta	Not implemented	Band allocated to broadcasting services
	Norway	Not implemented	
	Romania	Not implemented	
	Spain	Limited to 174.100, 174.300, 175.500, 176.300, 179.300, 188.100, 188.500, 189.100, 191.900 and 194.500 MHz	
	The Netherlands		License exempted
Annex 10 Band E			
Radio Microphones and Assistive Listening Devices			
470-862 MHz			
	Austria	Individual license required	
	Bulgaria	Not implemented	Planned
	Croatia	License required	
	Denmark	Limited	to 800.100-819.900 MHz
	Finland	Only 790.100-821.900 and 854-862 MHz	
		Individual licence required	
	France	Limited	to 470-830 MHz
	Germany	Subbands 608-614 MHz (TV ch 38) and 814-838 MHz (TV ch 64-66) excluded	Radio Astronomy, defence systems
	Ireland	Individual license required	
	Italy	Limited to 470-854 MHz	854-862 MHz is exclusive military band
	Latvia	Not implemented	Under study
	Malta	Limited	to 854-862 MHz
	Norway	Limited	to 800-820 MHz max 20 mW e.r.p.
	Romania	Not implemented	
	Spain	Not implemented	Only broadcasting TV in this band
	The Netherlands		License exempted
	Ukraine	Individual license required	

Annex	Country	Restriction	Reason/remark
Annex 10 Band F			
Radio Microphones and Assistive Listening Devices			
1785-1795 MHz			
	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Cyprus	No info	
	Czech Republic	Individual license required	
	France	No info	
	Germany	No info	
	Greece	No info	
	Iceland	No info	
	Italy	No info	
	Ireland	No info	
	Latvia	No info	
	Lithuania	No info	
	Malta	No info	
	Romania	No info	
	Serbia & Montenegro	No info	
	Slovak Republic	No info	
	Sweden	No info	
	The Netherlands	No info	
	United Kingdom	Limited	Band to be auctioned in Northern Ireland. Separate arrangements to be agreed for Great Britain

Annex 10 Band G

Radio Microphones and Assistive Listening Devices
1795-1800 MHz

	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Croatia	Not implemented	
	Cyprus	No info	
	Czech Republic	Individual license required	
	Finland	Not implemented	
	France	No info	
	Germany	No info	
	Greece	No info	
	Iceland	No info	
	Italy	No info	
	Ireland	No info	
	Latvia	No info	
	Lithuania	No info	
	Malta	No info	
	Romania	No info	
	Serbia & Montenegro	No info	
	Slovak Republic	No info	
	Sweden	No info	
	The Netherlands	No info	
	United Kingdom	Limited	Band to be auctioned in Northern Ireland. Separate arrangements to be agreed for Great Britain

Annex	Country	Restriction	Reason/remark
Annex 10 Band H1			
Radio Microphones and Assistive Listening Devices			
169.4000-169.4750 MHz			
	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Croatia	Not implemented	
	Cyprus	No info	
	Denmark	Not implemented	PMR band
	Estonia	169.4125-169.4625 MHz	Under study
	Finland	Limited implementation	169.4125 – 169.4625 MHz
	France	No info	
	Germany	No info	
	Greece	No info	
	Iceland	No info	
	Italy	No info	
	Ireland	No info	
	Latvia	No info	
	Liechtenstein	Shared with paging services	Interference from paging services possible
	Lithuania	No info	
	Malta	No info	
	Norway	Not implemented	
	Poland	Not implemented	Planned from 01.01.2007
	Romania	No info	
	Serbia & Montenegro	No info	
	Slovak Republic	No info	
	Sweden	No info	
	Switzerland	Shared with paging services	Interference from paging services possible
	The Netherlands	No info	
	Turkey	Planned	Implemented after SRD Ordinance is revised

Annex 10 Band H2**Radio Microphones and Assistive Listening Devices****169.4875-169.5875 MHz**

	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Croatia	Not implemented	
	Cyprus	No info	
	Denmark	Not implemented	PMR band
	France	No info	
	Germany	No info	
	Greece	No info	
	Iceland	No info	
	Italy	No info	
	Ireland	No info	
	Latvia	No info	
	Liechtenstein	Shared with paging services	Interference from paging services possible
	Lithuania	No info	
	Malta	No info	
	Norway	Not implemented	
	Poland	Not implemented	Planned from 01.01.2007
	Portugal	Not implemented	Land Mobile
	Romania	No info	
	Serbia & Montenegro	No info	
	Slovak Republic	No info	
	Sweden	No info	
	Switzerland	Shared with paging services/Geographical restriction	Interference from paging services possible
	The Netherlands	No info	
	Turkey	Planned	Implemented after SRD Ordinance is revised

Appendix 3 – National Restrictions

Annex	Country	Restriction	Reason/remark
Annex 10 Band I			
Radio Microphones and Assistive Listening Devices			
169.4-174.0 MHz			
	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Croatia	Not implemented	
	Cyprus	No info	
	Czech Republic	only two additional channels allowed above 169.5875 MHz	173.3 MHz 50 mW e.r.p. max 75 kHz 173.99 MHz 2 mW e.r.p. max 50 kHz other services in the rest of the band
	Estonia	Not implemented	Under study
	Finland	Not implemented	
	France	No info	
	Germany	No info	
	Greece	No info	
	Hungary	Not planned	Governmental use in the band
	Iceland	No info	
	Italy	No info	
	Ireland	No info	
	Latvia	No info	
	Liechtenstein	Not implemented	Occupied with mobile services
	Lithuania	No info	
	Luxembourg	Not implemented	
	Malta	No info	
	Norway	Not implemented	
	Poland	Not implemented	Planned from 01.01.2007
	Portugal	Not implemented	Land Mobile
	Romania	No info	Serbia & MontenegroNo info
	Slovak Republic	No info	
	Spain	Not implemented	Not implemented due to lack of demand
	Sweden	No info	
	Switzerland	Not implemented	Occupied with mobile services
	The Netherlands	No info	
	Turkey	Not implemented	169.8-174.0 MHz band is used by PMR
	United Kingdom	Implementation in 173.325-174.000 MHz	

Annex 11 Band A

RFID

2446-2454 MHz

	Bulgaria	Not implemented	Planned
	Croatia	Not implemented	
	France	Max e.i.r.p. 500 mW	
	Italy	Not implemented	
	Latvia	Not implemented	
	Romania	Not implemented	
	Slovak Republic	Not implemented	Under study
	Sweden	Limited to 25 mW e.i.r.p.	Defence systems

Annex	Country	Restriction	Reason/remark
Annex 11 Band B1			
RFID			
865.0-865.6 MHz			
<hr/>			
Annex 11 Band B2			
RFID			
865.6-867.6 MHz			
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Annex 11 Band B3			
RFID			
867.6-868.0 MHz			
<hr/>			
Annex 12 Band A			
Wireless applications in Healthcare			
402-405 MHz			
	Romania	Not implemented	
<hr/>			
Annex 12 Band A1			
Wireless applications in Healthcare			
401-402 MHz			
	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Croatia	Not implemented	
	Cyprus	No info	
	Czech Republic	Not implemented	Under study
	Denmark	Not implemented	Planned middle 2007
	Estonia	Not implemented	Under study
	Finland	No info	
	France	No info	
	Germany	No info	
	Greece	No info	
	Hungary	Not implemented	Planned
	Iceland	No info	
	Ireland	No info	
	Italy	No info	
	Latvia	No info	
	Liechtenstein	Not implemented	Under study
	Lithuania	No info	
	Malta	No info	
	Norway	No info	
	Poland	No info	
	Romania	No info	
	Serbia & Montenegro	No info	
	Slovak Republic	Not implemented	Under study
	Slovenia	Not implemented	Planned
	Spain	No info	
	Sweden	No info	
	Switzerland	Not implemented	Under study
	The Netherlands	No info	
	Turkey	No info	
	United Kingdom	Not implemented	Full implementation planned

Annex	Country	Restriction	Reason/remark
Annex 12 Band A2			
Wireless applications in Healthcare			
405-406 MHz			
	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Croatia	Not implemented	
	Cyprus	No info	
	Czech Republic	Not implemented	Under study
	Denmark	Not implemented	Planned middle 2007
	Estonia	Not implemented	Under study
	Finland	No info	
	France	No info	
	Germany	No info	
	Greece	No info	
	Hungary	Not implemented	Planned
	Iceland	No info	
	Ireland	No info	
	Italy	No info	
	Latvia	No info	
	Liechtenstein	Not implemented	Under study
	Lithuania	No info	
	Malta	No info	
	Norway	No info	
	Poland	No info	
	Romania	No info	
	Serbia & Montenegro	No info	
	Slovak Republic	Not implemented	Under study
	Slovenia	Not implemented	Planned
	Spain	No info	
	Sweden	No info	
	Switzerland	Not implemented	Under study
	The Netherlands	No info	
	Turkey	No info	
	United Kingdom	Not implemented	Full implementation planned

Annex 12 Band B

Wireless applications in Healthcare
9-315 kHz

	Bulgaria	Not implemented	Planned
	Italy	Not implemented	Planned
	Latvia	Not implemented	
	Portugal	Limited	Limited 9-135 kHz
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Spain	Limited	Limited 9-140 kHz
	Turkey	Planned	Implemented after SRD Ordinance is revised
	United Kingdom	Limited to 9-185 kHz	Full implementation planned

Annex 12 Band C

Wireless applications in Healthcare
315-600 kHz

	Austria	Not implemented	
	Bulgaria	Not implemented	
	Cyprus	Not implemented	
	France	Not implemented	
	Greece	Not implemented	
	Ireland	Not implemented	Under study
	Italy	Not implemented	Planned
	Latvia	Not implemented	
	Lithuania	Not implemented	Under study
	Norway	Not implemented	
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	The Netherlands	Not implemented	Under study
	Turkey	Planned	Implemented after SRD Ordinance is revised

Annex	Country	Restriction	Reason/remark
Annex 12 Band D			
Wireless applications in Healthcare			
30.0-37.5 MHz			
	Austria	Not implemented	
	Bulgaria	Not implemented	
	Czech Republic	Not implemented	Other services in the band
	Cyprus	Not implemented	
	France	Not implemented	
	Greece	Not implemented	
	Iceland	Not implemented	
	Ireland	Not implemented	Under study
	Italy	Not implemented	Planned
	Latvia	Not implemented	
	Liechtenstein	Not implemented	
	Lithuania	Not implemented	Under study
	Norway	Not implemented	
	Portugal	Not implemented	Defence systems
	Romania	Not implemented	
	Slovak Republic	Not implemented	Under study
	Spain	Not implemented	
	Sweden	Not implemented	Planned
	Switzerland	Not implemented	Defence systems
	The Netherlands	Not implemented	
	Turkey	Planned	Implemented after SRD Ordinance is revised

Annex 12 Band E
Wireless applications in Healthcare
12.5-20.0 MHz

	Austria	No info	
	Belgium	No info	
	Bulgaria	No info	
	Cyprus	No info	
	Estonia	Not implemented	Under study
	France	No info	
	Germany	No info	
	Greece	No info	
	Hungary	Planned	
	Iceland	No info	
	Italy	No info	
	Ireland	No info	
	Latvia	No info	
	Lithuania	No info	
	Malta	No info	
	Norway	Not implemented	
	Poland	Not implemented	Planned from 01.01.2008
	Portugal	Not implemented	Defence systems
	Romania	No info	
	Serbia & Montenegro	No info	
	Slovak Republic	No info	
	Spain	Not implemented	
	Sweden	No info	
	The Netherlands	No info	
	Turkey	Planned	Implemented after SRD Ordinance is revised

Annex 13 Band A
Wireless Audio
863-865 MHz

	Croatia	Individual license required	
	Romania	Not implemented	

Appendix 3 – National Restrictions

Annex	Country	Restriction	Reason/remark
Annex 13 Band B			
Wireless Audio			
864.8-865 MHz			
	Bulgaria	Not implemented	Planned
	Croatia	Not implemented	
	Greece	Not implemented	
	Italy	Not implemented	Planned
	Latvia	Not implemented	
	Romania	Not implemented	

Annex 13 Band C			
Wireless Audio			
1795-1800 MHz			
	Austria	Not implemented	
	Bulgaria	Not implemented	
	Croatia	Not implemented	
	Finland	Not implemented	
	France	Not implemented	
	Greece	Not implemented	
	Ireland	Not implemented	Under study
	Italy	Not implemented	Planned
	Latvia	Not implemented	
	Lithuania	Not implemented	Under study
	Romania	Not implemented	
	Slovak Republic	Not implemented	Fixed service
	Spain	Not implemented	
	The Netherlands	Channel spacing 600 kHz	max 50 mW e.r.p.
	Turkey	Planned	Implemented after SRD Ordinance is revised
	United Kingdom	Limited	Band to be auctioned in Northern Ireland. Separate arrangements to be agreed for Great Britain

Annex 13 Band D			
Wireless Audio			
87.5-108.0 MHz			
	Austria	Not implemented	
	Bulgaria	Not implemented	
	Cyprus	Not implemented	
	France	Not implemented	
	Greece	Not implemented	
	Hungary	Not implemented	Planned
	Ireland	Not implemented	
	Italy	Not implemented	
	Latvia	Not implemented	
	Lithuania	Not implemented	
	Malta	Not implemented	
	Norway	Not implemented	
	Poland	Not implemented	Planned from 01.01.2007
	Romania	Not implemented	
	Serbia & Montenegro	Not implemented	
	Slovak Republic	Under study	
	The Netherlands	Not implemented	
	Turkey	Planned	Implemented after SRD Ordinance is revised

List of abbreviations as used in this document

AVI	Automatic Vehicle Identification for Railways
CEPT	European Conference of Postal and Telecommunications Administrations
CB	Citizen Band (27 MHz)
CT2	Cordless Telephones
EAS	Electronic Article Surveillance
ECC	Electronic Communications Committee
EFIS	ERO Frequency Information System
ENG/OB	Electronic News Gathering / Outside Broadcasting
ERC	European Radiocommunications Committee
ERM	Electromagnetic Compatibility and Radio Spectrum Matters
ERO	European Radiocommunications Office
ETSI	European Telecommunications Standard Institute
FHSS	Frequency Hopping Spread Spectrum
ISM	Industrial, Scientific and Medical applications
LAN	Local Area Network
LBT	Listen Before Talk
(O)RLAN	Outdoor Radio Local Area Network
PMR	Professional Mobile Radio / Private Mobile Radio
R&TTE	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
RFID	Radio Frequency Identification
RTTT	Road Transport & Traffic Telematics
SRD	Short Range Devices
TETRA	Terrestrial Trunked Radio
WAS	Wireless Access Systems
WLL	Wireless Local Loop

Duty cycle categories

For the purposes of this Recommendation the duty cycle is defined as the ratio, expressed as a percentage, of the maximum transmitter “on” time on one carrier frequency, relative to a one hour period unless otherwise mentioned in the relevant Annex.

For pre-programmed devices the maximum transmitter “on” time and minimum “off” time are given in the following table.¹ These limits are advisory with a view to facilitating sharing between systems in the same frequency band

	Name	Transmitting time/Full cycle ¹	Maximum transmitter “on” time (seconds)	Minimum transmitter “off” time (seconds)	Explanation
1	Very Low	<0.1%	0.72	0.72	For example, 5 transmissions of 0.72 seconds within one hour.
2	Low	<1.0%	3.6	1.8	For example, 10 transmissions of 3.6 seconds within one hour.
3	High	<10%	36	3.6	For example, 10 transmissions of 36 seconds within one hour
4	Very High	Up to 100%	-	-	Typically continuous transmissions but also those with a duty cycle greater than 10%

Document History

	Text	Page	Edition
	Text of the ERC Recommendation changed to align with the R&TTE Directive	4	October 2005
Rearranged text of Recommendation 18 October 2005			
Annex 1	Non-specific Short Range Devices	6	October 2006
Annex 2	Tracking, Tracing and Data Acquisition	8	February 2007
Annex 3	Wideband Data Transmission systems	9	August 2005
Annex 4	Railway applications	10	May 2007
Annex 5	Road Transport & Traffic Telematics (RTTT)	12	February 2004
Annex 6	Equipment for Detecting Movement and Equipment for Alert	13	May 2007
Annex 7	Alarms	14	October 2006
Annex 8	Model Control	15	May 2003
Annex 9	Inductive applications	16	October 2006
Annex 10	Radio microphones and Assistive Listening Devices	19	October 2006
Annex 11	Radio frequency identification applications	20	May 2007
Annex 12	Wireless applications in healthcare	22	May 2007
Annex 13	Wireless Audio applications	23	November 2005
Appendix 1	Implementation Status	24	May 2007
Appendix 2	List of relevant ECC/ERC Decisions, Recommendations and ETSI Standards	27	October 2005
Appendix 3	National restrictions	30	May 2007