ADDENDUM 2013

National Table of Frequency Allocations

(2010/2011 Version 2)

1. Assignment of 17.8-18.6 GHz and 18.8-19.3 GHz / 27.6-28.4 GHz and 28.6-29.1 GHz frequency bands to the Fixed Satellite Service (FSS), for the operation of publicly or non-publicly available electronic communication networks and services.

a) Annex 1. *National Table of Frequency Allocations* (pages 116 and 117):

FREQUENCY BAND (GHz)	ASSIGNMENTS UNDER RADIO-COMMUNICATIONS REGULATION - ART 8 - APPLICABLE TO PORTUGAL	PRINCIPAL NATIONAL APPLICATIONS	NOTES
...			
18.1 - 18.4	FIXED FIXED SATELLITE (space-Earth) 5.484A (Earth-space) 5.520 MOBILE 5.519	**Microwave links (FIX)** Fixed satellite (FIX-S)	18 GHz band ERC/REC 12-03 (17.7-19.7 GHz) Recommendation ITU-R F.595. Annexes 3. 4 and 5 (17.7-19.7 GHz)
18.4 - 18.6	FIXED FIXED SATELLITE (space-Earth) 5.484A MOBILE	**Microwave links (FIX)** Fixed satellite (FIX-S)	18 GHz band ERC/REC 12-03 (17.7-19.7 GHz) Recommendation UIT-R F.595. Annexes 3. 4 and 5 (17.7-19.7 GHz)
...			
18.8 - 19.3	FIXED FIXED SATELLITE (space-Earth) 5.523A MOBILE	**Microwave links (FIX)** Fixed satellite (FIX-S)	18 GHz band ERC/REC 12-03 (17.7-19.7 GHz) Recommendation UIT-R F.595. Annexes 3. 4 and 5 (17.7-19.7 GHz)
...			

b) **Annex 3.** ***Reservation of frequency bands – Communications accessible to the public*** **(page 179):**

FIXED SATELLITE SERVICE (FSS)				
Frequency bands	**Rights of use required**	**Type of use** [1]	**Scope of use**	**Allocation process**
3800 – 4200 MHz Downlink	NO	(2) (3)	g	Full accessibility
5725 - 5830 MHz Uplink	NO	(2) (3)	g	Full accessibility
5830 - 5850 MHz Uplink	NO	(2) (3)	g	Full accessibility
5850 - 5925 MHz Uplink	NO	(2) (3)	g	Full accessibility
5925 - 6425 MHz Uplink	NO	(2) (3)	g	Full accessibility
10.7 – 10.95 GHz [4] Downlink	NO	(2) (3)	g	Full accessibility
10.95 – 11.2 GHz Downlink	NO	(2) (3)	g	Full accessibility
11.2 – 11.45 GHz [4] Downlink	NO	(2) (3)	g	Full accessibility
11.45 – 11.7 GHz Downlink	NO	(2) (3)	g	Full accessibility
12.5 – 12.75 GHz Downlink	NO	(2) (3)	g	Full accessibility
12.75 – 13.25 GHz [4] Uplink	NO	(2) (3)	g	Full accessibility
14 - 14.5 GHz Uplink	NO	(2) (3)	g	Full accessibility
17.3 – 18.1 GHz [5] Uplink	NO	(2) (3)	g	Full accessibility
17.3 - 17.7 GHz [6] Downlink	NO	(2) (3)	g	Full accessibility
17.8 - 18.6 GHz Downlink	NO	(2) (3)	g	Full accessibility
18.8 - 19.3 GHz Downlink	NO	(2) (3)	g	Full accessibility
19.7 - 20.2 GHz [6] Downlink	NO	(2) (3)	g	Full accessibility
27.5 - 30.0 GHz [6] Uplink	NO	(2) (3)	g	Full accessibility

[1] Channels with shared use.
[2] Band shared with other users.
[3] Dynamic frequency management according to type of application.
[4] Appendix 30B.
[5] Appendix 30A.
[6] HDFSS (17.3-17.7 GHz. 19.7-20.2 GHz. 27.5-27.82 GHz. 28.45-28.94 GHz and 29.46-30 GHz).

c) Annex 3. ***Reservation of frequency bands - Communications not accessible to the public*** ***(*****page 191):**

FIXED SATELLITE SERVICE (FSS)					
Frequency bands	**Rights of use required**	**Type of channel**	**No. of channels** (1)	**Scope of use**	**Allocation process**
3800 – 4200 MHz Downlink	NO	(2)	(3)	g	Full accessibility
5725 – 5830 MHz Uplink	NO	(2)	(3)	g	Full accessibility
5830 – 5850 MHz Uplink	NO	(2)	(3)	g	Full accessibility
5850 – 5925 MHz Uplink	NO	(2)	(3)	g	Full accessibility
5925 – 6425 MHz Uplink	NO	(2)	(3)	g	Full accessibility
7300 – 7450 MHz Downlink	NO	(2)	(3)	g	Full accessibility
7450 – 7550 MHz Downlink	NO	(2)	(3)	g	Full accessibility
8025 – 8175 MHz Uplink	NO	(2)	(3)	g	Full accessibility
8175 – 8215 MHz Uplink	NO	(2)	(3)	g	Full accessibility
8215 – 8400 MHz Uplink	NO	(2)	(3)	g	Full accessibility
10.7 – 10.95 GHz (4) Downlink	NO	(2)	(3)	g	Full accessibility
10.95 – 11.2 GHz Downlink	NO	(2)	(3)	g	Full accessibility
11.2 – 11.45 GHz (4) Downlink	NO	(2)	(3)	g	Full accessibility
11.45 – 11.7 GHz Downlink	NO	(2)	(3)	g	Full accessibility
12.5 – 12.75 GHz Downlink	NO	(2)	(3)	g	Full accessibility
12.75 – 13.25 GHz (4) Uplink	NO	(2)	(3)	g	Full accessibility
14 - 14.5 GHz Uplink	NO	(2)	(3)	g	Full accessibility
17.3 – 18.1 GHz (5) Uplink	NO	(2)	(3)	g	Full accessibility
17.3 - 17.7 GHz (6) Downlink	NO	(2)	(3)	g	Full accessibility
17.8 - 18.6 GHz Downlink	NO	(2)	(3)	g	Full accessibility
18.8 - 19.3 GHz Downlink	NO	(2)	(3)	g	Full accessibility
19.7 - 20.2 GHz (6) Downlink	NO	(2)	(3)	g	Full accessibility
27.5 - 30.0 GHz (6) Uplink	NO	(2)	(3)	g	Full accessibility

(1) Channels with shared use.
(2) Not applicable.
(3) Band shared with other users.
(4) Appendix 30B.
(5) Appendix 30A.
(6) HDFSS (17.3-17.7 GHz. 19.7-20.2 GHz. 27.5-27.82 GHz. 28.45-28.94 GHz and 29.46-30 GHz).

2. Alignment of annex 4 of the NTFA, Usage exempt from radio licensing, with Commission Decision 2006/771/EC of 9 November 2006 on harmonisation of the radio spectrum for use by short-range devices, as subsequently amended.

a) Annex 1. *Table of frequency allocations* (pages 31. 90 and 115):

FREQUENCY BAND (KHz)	ASSIGNMENTS UNDER RADIO-COMMUNICATIONS REGULATION - ART 5 - APPLICABLE TO PORTUGAL	PRINCIPAL NATIONAL APPLICATIONS	NOTES
4438 - 4650	FIXED MOBILE except aeronautical mobile (R)	**Fixed (FIX)** **Mobile (MOV)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	 ERC/REC 70-03 Annex 9 Decision 2010/368/EU of 30 June Restricted band

FREQUENCY BAND (MHz)	ASSIGNMENTS UNDER RADIO-COMMUNICATIONS REGULATION - ART 5- APPLICABLE TO PORTUGAL	PRINCIPAL NATIONAL APPLICATIONS	NOTES
2400 - 2450	FIXED MOBILE Amateur Amateur Satellite 5.282 Radiolocation 5.150	 **Amateur (AM)** **Amateur Satellite (AMS)** **ISM – Industrial, scientific and medical applications (2400-2500 MHz)** **SRD – Non-specific applications (2400-2483.5 MHz)** **SRD - WLANs (2400-2483.5 MHz)** **SRD – Radiodetermination applications (2400-2483.5 MHz)** **SRD - RFID (2446-2454 MHz)**	 In accordance with Annex 6 In accordance with Annex 6 ERC/REC 70-03 Annex 1 Decision 2010/368/EU of 30 June ERC/REC 70-03 Annex 3 ERC/DEC/(01)07 Decision 2010/368/EU of 30 June ERC/REC 70-03 Annex 6 ERC/DEC/(01)08 Decision 2010/368/EU of 30 June ERC/REC 70-03 Annex 11 Decision 2010/368/EU of 30 June

FREQUENCY BAND (GHz)	ASSIGNMENTS UNDER RADIO-COMMUNICATIONS REGULATION - ART 5 - APPLICABLE TO PORTUGAL	PRINCIPAL NATIONAL APPLICATIONS	NOTES
17.1 - 17.2	RADIOLOCATION	**SRD – Radiodetermination applications (17.1-17.3 GHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU of 30 June Restricted band

b) Annex 4. *Usage exempt from radio licensing* (page 199 et seq.):

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Non-specific short-range devices[1]	6765 - 6795 kHz	42 dBμA/m at 10 metres			Decision 2011/829/EU
	13.553 - 13.567 MHz	42 dBμA/m at 10 metres			Decision 2011/829/EU
	26.957 - 27.283 MHz	10 mW of effective radiated power (e.r.p.), which corresponds to 42 dBμA/m at 10 metres		Video applications are excluded.	Decision 2011/829/EU
	40.660 - 40.700 MHz	10 mW e.r.p.		Video applications are excluded.	Decision 2011/829/EU
	138.20 – 138.45 MHz[2]	10 mW e.r.p.	*Duty Cycle* < 1 %	Dedicated or integrated antenna.	Recommendation 70-03
	433.050 - 434.040 MHz	1 mW e.r.p.-13dBm/10 kHz power density for bandwidth modulation larger than 250 kHz.	Voice applications allowed provided advanced mitigation techniques employed.	Video and audio applications are excluded.	Decision 2011/829/EU
		10 mW e.r.p.	Duty cycle limit[3]: 10 %	Non-voice analogue audio applications are excluded. Analogue video applications are excluded.	Decision 2011/829/EU
	434.040 – 434.790 MHz	1 mW e.r.p. e – 13dBm/10 kHz power density for bandwidth modulation larger than 250 kHz.	Voice applications allowed provided advanced mitigation techniques employed.	Video and audio applications are excluded.	Decision 2011/829/EU
		10 mW e.r.p.	Duty cycle limit[3]: 10 %	Non-voice analogue audio applications are excluded. Analogue video applications are excluded.	Decision 2011/829/EU
			Duty cycle limit[3]: 100 %. subject to channel spacing up to 25 kHz. Voice applications allowed provided advanced mitigation techniques employed.	Video and audio applications are excluded.	Decision 2011/829/EU

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

[2] When either a duty cycle, Listen Before Talk (LBT) or equivalent technique applies then it shall not be user dependent/adjustable and shall be guaranteed by appropriate technical means. For LBT devices without Adaptive Frequency Agility (AFA), or equivalent techniques, the duty cycle limit applies. For any type of frequency agile device the duty cycle limit applies to the total transmission unless LBT or equivalent technique is used.

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

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Non-specific short-range devices [1] (cont.)	863.000 – 865.000 MHz	25 mW p.a.r.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. As an alternative, a limit of 0.1% may be used for the duty cycle [3].	Non-voice analogue audio applications are excluded. Analogue video applications are excluded.	Decision 2011/829/EU
	865.000 - 868.000 MHz	25 mW p.a.r	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. As an alternative, a limit of 1% may be used for the duty cycle[3].	Non-voice analogue audio applications are excluded. Analogue video applications are excluded.	Decision 2011/829/EU
	868.000 - 868.600 MHz	25 mW p.a.r.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. As an alternative, a limit of 1% may be used for the duty cycle[3].	Analogue video applications are excluded.	Decision 2011/829/EU
	868.700 – 869.200 MHz	25 mW p.a.r.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. As an alternative, a limit of 0.1% may be used for the duty cycle [3].	Analogue video applications are excluded.	Decision 2011/829/EU

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Non-specific short-range devices[1] (cont.)	869.400–869.650 MHz	500 mW p.a.r.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. As an alternative, a limit of 10% may be used for the duty cycle [3]. Channel spacing 25 kHz, but whole band may be used as a single channel for the transmission of high-speed data.	Analogue video applications are excluded.	Decision 2011/829/EU
		25 mW p.a.r.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. As an alternative, a limit of 0.1% may be used for the duty cycle [3].	Non-voice analogue audio applications are excluded. Analogue video applications are excluded.	Decision 2011/829/EU
	869.700–870.000 MHz	5 mW p.a.r.	Voice application authorised provided advanced mitigation techniques employed.	Video and audio applications are excluded.	Decision 2011/829/EU
		25 mW p.a.r.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. As an alternative, a limit of 1% may be used for the duty cycle[3].	Non-voice analogue audio applications are excluded. Analogue video applications are excluded.	Decision 2011/829/EU
	2400 - 2483.5 MHz	10 mW equivalent isotropic radiated power (e.i.r.p.)			Decision 2011/829/EU
	5725 - 5875 MHz	25 mW e.i.r.p.			Decision 2011/829/EU
	24.00 - 24.25 GHz	100 mW e.i.r.p.			Recommendation 70-03 (24.15 – 24.25 GHz band harmonised by Decision 2011/829/EU)
	61.00 - 61.50 GHz	100 mW e.i.r.p.			Decision 2011/829/EU
	122 - 123 GHz	100 mW e.i.r.p.			Decision 2011/829/EU
	244 - 246 GHz	100 mW e.i.r.p.			Decision 2011/829/EU

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Tracking, Tracing and Data Acquisition Systems	456.9 – 457.1 kHz[4]	7 dBμA/m at 10 metres	Continuous wave (CW) – without modulation *Duty Cycle* < 100 %	Dedicated or integrated antenna.	Recommendation 70-03
	169.4 – 169.475 MHz[5]	500 mW p.a.r.	Channel spacing: Max. 50 kHz *Duty Cycle* < 10 %	Dedicated or integrated antenna.	Recommendation 70-03
	169.4 – 169.475 MHz[6]	500 mW p.a.r.	Channel spacing: Max. 50 kHz *Duty Cycle* < 1 %	Dedicated or integrated antenna.	Recommendation 70-03
Wideband data transmission systems	2400 - 2483.5 MHz	100 mW e.i.r.p. and 100 mW/100 kHz e.i.r.p. density applies when frequency hopping modulation is used, 10 mW/MHz e.i.r.p. density applies when other types of modulation are used	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used.		Decision 2011/829/EU
	57 – 66 GHz	40 dBm e.i.r.p. and 13 dBm/MHz e.i.r.p. density	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used.	Fixed outdoor installations are excluded	Decision 2011/829/EU
Wireless access systems / radio local area networks (WAS/RLAN)	5150 - 5350 MHz[7]	200 mW e.i.r.p. [8]		Dedicated or integrated antenna.	Decision 2007/90/EC
	5470 - 5725 MHz[7]	1 W e.i.r.p.[8]		Dedicated or integrated antenna.	Decision 2007/90/EC

[4] Detection of avalanche victims. central frequency 457 kHz.
[5] Applications for reading measurements.
[6] Applications object detection and tracing.
[7] The following conditions apply:
a) in the band 5150-5350 MHz only indoor use are allowed;
b) For systems operating in the 5250-5350 MHz and 5470-5725 MHz bands, use of transmitted power control (TPC) is required, providing, on average, a mitigation factor of 3 dB for the maximum power value allowed. If TPC is not used, the maximum average e.i.r.p. power allowed and the corresponding maximum value of power density for average e.i.r.p. must be reduced by 3 dB;
c) systems operating in the 5250-5350 MHz and 5470-5725 MHz bands are required to use mitigation techniques that provide the same level of protection as served by the operational requirements, for detection and response described in EN 301 893;
d) in the 5150-5350 MHz band, the maximum power density value for average e.i.r.p. must be limited to 10mW/MHz, for each 1 MHz;
e) in the 5470-5725 MHz band, the maximum power density value for average e.i.r.p. must be limited to 50mW/MHz, for each 1 MHz.
[8] Maximum value of average e.i.r.p.

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Applications on Railways	27.090 – 27.100 MHz[9]	42 dBμA/m at 10 metres		Integrated or dedicated antenna.	Recommendation 70-03
	984 – 7484 kHz[10]	9 dBμA/m at 10 metres	*Duty Cycle* < 1 %	Integrated antenna.	Recommendation 70-03
	7.3 – 23.0 MHz[11]	-7 dBμA/m at 10 metres		Dedicated antenna.	Recommendation 70-03
	76 – 77 GHz	55 dBm peak e.i.r.p. and 50 dBm e.i.r.p. average and 23.5 dBm e.i.r.p. average for impulse radars.		These conditions of use apply only to infrastructure systems.	Decision 2011/829/EU
Road Transport and Traffic Telematics (RTTT)	5795 – 5805 MHz[12]	2 W e.i.r.p.	The: 5797.5 MHz, 5802.5 MHz, 5807.5 MHz and 5812.5 MHz frequencies are used with a channel spacing of 5 MHz. The 5800 MHz and 5810 MHz frequencies are used with a channel spacing of 10 MHz.	Dedicated or integrated antenna.	Recommendation 70-03
	5805 – 5815 MHz[13]	2 W e.i.r.p.	The: 5797.5 MHz, 5802.5 MHz, 5807.5 MHz and 5812.5 MHz frequencies are used with a channel spacing of 5 MHz. The 5800 MHz and 5810 MHz frequencies are used with a channel spacing of 10 MHz.	Dedicated or integrated antenna.	Recommendation 70-03
	21.65 – 26.65 GHz[14, 15]	Maximum average power density 41.3 dBm/MHz e.i.r.p. Peak power density mat not exceed 0dBm/50 MHz e.i.r.p.		Dedicated or integrated antenna.	Recommendation 70-03
	77-81 GHz[14, 16]	55 dBm peak [17]		Dedicated or integrated antenna.	Recommendation 70-03
Road Transport and Traffic Telematics	24.050 - 24.075 GHz	100 mW e.i.r.p.			Decision 2011/829/EU

[9] Tele-powering and train to ground systems including Eurobalise and Loop / Euroloop activation. May also be optionally used for the activation of the Loop / Euroloop.
[10] Train to ground Balise systems, including Eurobalise. Centre frequency is 4234 kHz
[11] Train to ground loop systems including Euroloop. Centre frequency is 13.457 kHz. 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.
[12] The frequency band is intended for road to vehicle systems, particularly (but not exclusively) road toll systems
[13] Individual license required.
[14]Automotive Short Range Radars (SRR).
[15] In accordance with Commission Decision 2011/485/EU of 29 July 2011.
[16] In accordance with Commission Decision 2004/545/EC of 8 July 2004.
[17] Maximum average power density of –3 dBm/MHz p.i.r.e. Maximum average power density outside a vehicle resulting from the operation of a short range radar must not exceed –9 dBm/MHz p.i.r.e.

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Road Transport and Traffic Telematics (cont.)	24.075 - 24.150 GHz	0.1 mW e.i.r.p.			Decision 2011/829/EU
	24.075 - 24.150 GHz	100 mW e.i.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Temporary limits and range of frequency modulation apply, as specified in harmonised standards.	Conditions of use applicable to vehicle radars only.	Decision 2011/829/EU
	24.150 - 24.250 GHz	100 mW e.i.r.p.			Decision 2011/829/EU
	63 - 64 GHz	40 dBm e.i.r.p.		Conditions of use applicable to vehicle- vehicle systems, vehicle-infrastructure and infrastructure-vehicle only.	Decision 2011/829/EU
	76.0 - 77.0 GHz	55 dBm peak e.i.r.p. and 50 dBm mean e.i.r.p. and 23.5 dBm mean e.i.r.p. for pulse radars		Conditions of use applicable to terrestrial vehicle and infrastructure systems only	Decision 2011/829/EU
Intelligent Transport Systems	5875 - 5905 MHz	33 dBm Maximum total transmit power (mean e.i.r.p.) 23 dBm/MHz Maximum spectral power density (mean e.i.r.p.)	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. These require a transmitter power control (TPC) range of at least 30 dB		Decision 2008/671/EC
Radiodetermination applications [18]	2400 - 2483.5 MHz	25 mW e.i.r.p.			Decision 2011/829/EU
	9200 - 9500 MHz	25 mW e.i.r.p.		Dedicated or integrated antenna.	Recommendation 70-03
	9500 - 9975 MHz	25 mW e.i.r.p.		Dedicated or integrated antenna.	Recommendation 70-03
	10.5 – 10.6 GHz	500 mW e.i.r.p.		Dedicated or integrated antenna.	Recommendation 70-03
	13.4 - 14.0 GHz	25 mW e.i.r.p.		Dedicated or integrated antenna.	Recommendation 70-03

[18] This category covers applications used for determining the position, velocity and/or other characteristics of an object, or for obtaining information relating to these parameters.

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Radiodetermination applications[18] (cont.)	24.05 - 24.25 GHz	100 mW e.i.r.p.		Dedicated or integrated antenna.	Recommendation 70-03
	17.1 - 17.3 GHz	26 dBm e.i.r.p.	Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used.	Conditions of use applicable to terrestrial systems only.	Decision 2011/829/EU
Tank level probing radars[19]	4.5 - 7.0 GHz	24 dBm e.i.r.p.[20]			Decision 2011/829/EU
	8.5 - 10.6 GHz	30 dBm e.i.r.p.[20]			Decision 2011/829/EU
	24.05 - 27.0 GHz	43 dBm e.i.r.p.[20]			Decision 2011/829/EU
	57.0 - 64.0 GHz	43 dBm e.i.r.p.[20]			Decision 2011/829/EU
	75.0 - 85.0 GHz	43 dBm e.i.r.p.[20]			Decision 2011/829/EU
Alarm systems	868.600 - 868.700 MHz	10 mW e.r.p.	Channel spacing 25 kHz, but whole band may be used as a single channel for the transmission of high-speed data Duty cycle limit[3]: 1.0 %		Decision 2011/829/EU
	869.250 - 869.300 MHz	10 mW e.r.p.	Channel spacing: 25 kHz Duty cycle limit[3]: 0. 1 %		Decision 2011/829/EU
	869.300 – 869.400 MHz	10 mW e.r.p.	Channel spacing: 25 kHz Duty cycle limit[3]: 1.0 %		Decision 2011/829/EU
	869.650 - 869.700 MHz	25 mW p.a.r.	Channel spacing: 25 kHz Duty cycle limit[3]: 10 %		Decision 2011/829/EU
	169.4750 – 169.4875 MHz[21]	10 mW e.r.p.	Channel spacing: Max. 12.5 kHz *Duty Cycle* < 0.1 %	Dedicated or integrated antenna.	Recommendation 70-03
	169.5875 – 169.6000 MHz[21]	10 mW e.r.p.	Channel spacing: Max. 12.5 kHz *Duty Cycle* < 0.1 %	Dedicated or integrated antenna.	Recommendation 70-03

[19] Tank level probing radars (TLPR) are a specific type of radio-determination application, which are used for tank level measurements and are installed in metallic or reinforced concrete tanks, or similar structures made of material with comparable attenuation characteristics. The purpose of the tank is to contain a substance.

[20] The power limit applies inside a closed tank and corresponds to a spectral density of - 41.3 dBm/MHz p.i.r.e. outside a 500 litre test tank.

[21] Exclusive use for social alarms.

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Social alarms[22]	869.200 - 869.250 MHz	10 mW e.r.p.	Channel spacing: 25 kHz Duty cycle limit[3]: 0.1 %		Decision 2011/829/EU
Model control[23]	26 990 – 27 000 kHz	100 mW p.a.r			Decision 2011/829/EU
	27 040 – 27 050 kHz	100 mW p.a.r			Decision 2011/829/EU
	27 090 – 27 100 kHz	100 mW p.a.r			Decision 2011/829/EU
	27 140 – 27 150 kHz	100 mW p.a.r			Decision 2011/829/EU
	27 190 – 27 200 kHz	100 mW p.a.r			Decision 2011/829/EU
	34.995 - 35.225 MHz [24]	100 mW p.a.r	Channel spacing: 10 kHz	Dedicated antenna.	Recommendation 70-03
	40.665 MHz; 40.675 MHz; 40.685 MHz; 40.695 MHz	100 mW p.a.r	Channel spacing: 10 kHz	Dedicated antenna.	Recommendation 70-03
Inductive applications[25]	9 - 90 kHz	72 dBμA/m at 10 metres			Decision 2011/829/EU
	90 - 119 kHz	42 dBμA/m at 10 metres			Decision 2011/829/EU
	119 - 135 kHz	66 dBμA/m at 10 metres			Decision 2011/829/EU
	135 - 140 kHz	42 dBμA/m at 10 metres			Decision 2011/829/EU
	140 – 148.5 kHz	37.7 dBμA/m at 10 metres			Decision 2011/829/EU
	148.5 kHz – 5 000 kHz In the specific bands mentioned below, higher field strengths and additional usage restrictions apply:	– 15 dBμA/m at 10 metres in any bandwidth of 10 kHz Furthermore the total field strength is – 5 dBμA/m at 10 m for systems operating at bandwidths larger than 10 kHz.			Decision 2011/829/EU
	400 – 600 kHz	– 8 dBμA/m at 10 metres		This set of usage conditions applies to RFID only[26].	Decision 2011/829/EU
	3155 - 3400 kHz	13.5 dBμA/m at 10 metres			Decision 2011/829/EU

[22] Social alarm devices are used to assist elderly or disabled people when they are in distress.
[23] This category covers applications used to control the movement of models (principally miniature representations of vehicles) in the air, on land or over or under the water surface
[24] Exclusive frequencies for aeromodels.
[25] This category covers, for example, devices for car immobilisation, animal identification, alarm systems, cable detection, waste management, personal identification, wireless voice links, access control, proximity sensors, anti-theft systems, including RF anti-theft induction systems, data transfer to handheld devices, automatic article identification, wireless control systems and automatic road tolling.
[26] This category covers inductive applications used for radio frequency identification (RFID).

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Inductive applications [25] (cont.)	**5 000 – 30 000 kHz** In the specific bands mentioned below, higher field strengths and additional usage restrictions apply	– 20 dBμA/m at 10 metres in any bandwidth of 10 kHz Furthermore the total field strength is – 5 dBμA/m at 10 m for systems operating at bandwidths larger than 10 kHz.			Decision 2011/829/EU
	6 765 - 6 795 kHz	42 dBμA/m at 10 metres			Decision 2011/829/EU
	7 400 – 8 800 kHz	9 dBμA/m at 10 metres			Decision 2011/829/EU
	10 200 - 11 000 kHz	9 dBμA/m at 10 metres			Decision 2011/829/EU
	13 553 - 13 567 kHz	42 dBμA/m at 10 metres			Decision 2011/829/EU
		60 dBμA/m at 10 metres		This set of usage conditions applies to RFID[26] and EAS[27] only.	Decision 2011/829/EU
	26 957 – 27 283 kHz	42 dBμA/m at 10 metres			Decision 2011/829/EU
Radio microphones and aids for the hearing impaireds	173.965 – 174.015 MHz[28]	2 mW p.a.r.	Channel spacing: 50 kHz	Integrated antenna.	Recommendation 70-03
	174 – 216 MHz[29]	50 mW p.a.r.		Integrated antenna.	Recommendation 70-03
	470 – 790 MHz[29. 30] (safeguard DTT's uses)	50 mW p.a.r.		Integrated antenna.	Recommendation 70-03
	1785 – 1795 MHz	20 mW e.i.r.p.[31]		Integrated antenna.	Recommendation 70-03
	1795 – 1800 MHz	20 mW e.i.r.p.[31]		Integrated antenna.	Recommendation 70-03
	169.4 – 169.4750 MHz[28]	10 mW e.r.p.	Channel spacing: Max 50 kHz	Integrated antenna.	Recommendation 70-03
	169.4875 – 169.5875 MHz[28]	10 mW e.r.p.	Channel spacing: Max 50 kHz	Integrated antenna.	Recommendation 70-03
Radio frequency identification (RFID)	2446 – 2454 MHz	500 mW e.i.r.p.			Decision 2011/829/EU
	865.0 – 865.6 MHz	100 mW p.a.r.	Channel spacing: 200 kHz	Dedicated or integrated antenna.	Recommendation 70-03
	865.6 – 867.6 MHz	2 W p.a.r.	Channel spacing: 200 kHz	Dedicated or integrated antenna.	Recommendation 70-03
	867.6 – 868.0 MHz	500 mW p.a.r.	Channel spacing: 200 kHz	Dedicated or integrated antenna.	Recommendation 70-03
Active medical implants[32]	9 – 315 kHz	30 dBμA/m at 10 metres	Duty cycle limit[3]: 10%		Decision 2011/829/EU

[27] This category covers inductive applications used for Electronic Article Surveillance (EAS).
[28] Hearing aids.
[29] Assistive Listening Devices are allowed provided that the technical parameters indicated for Radio Microphones are observed.
[30] Use of Radio Microphones is only permitted in the following sub-bands: 470-734 MHz and 742-790 MHz in A.R. Madeira and 470-750 MHz and 758-790 MHz on Mainland Portugal. CEPT is examining possibility of their use in the 821-832 MHz sub-band.
[31] Body worn microphones subject to a maximum power limit 50 mW e.i.r.p.
[32] This category covers the radio part of active implantable medical devices, as defined in Council Directive 90/385/EEC of 20 June 1990 on the approximation of the laws of the Member States relating to active implantable medical devices (OJ L 189, 20.7.1990, p. 17).

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Active medical implants[32] (cont.)	30.0 – 37.5 MHz	1 mW e.r.p.	Duty cycle limit[3]: 10 %	This set of usage conditions applies to ultra low power medical membrane implants for blood pressure measurements only .	Decision 2011/829/EU
	402 – 405 MHz	25 μW p.a.r.	Channel spacing: 25 kHz Individual transmitters may combine adjacent channels for increased bandwidth up to 300 kHz. Other techniques to access spectrum or mitigate interference, including bandwidths greater than 300 kHz, can be used provided they result at least in an equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC to ensure compatible operation with the other users and in particular with meteorological radiosondes.		Decision 2011/829/EU
Active medical implants and associated peripherals [33]	401 – 402 MHz	25 μW p.a.r.	Channel spacing: 25 kHz Individual transmitters may combine adjacent channels for increased bandwidth up to 100 kHz. Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. Alternatively a duty cycle limit of 0,1 % may also be used [3].		Decision 2011/829/EU

[33] This category covers systems specifically designed for the purpose of providing non-voice digital communications between active medical implants, as defined in footnote 19, and/or body-worn devices and other devices external to the human body used for transferring non-time critical individual patient-related physiological information.

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Active medical implants and associated peripherals [33]	405 – 406 MHz	25 µW p.a.r.	Channel spacing: 25 kHz Individual transmitters may combine adjacent channels for increased bandwidth up to 100 kHz. Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 1999/5/EC must be used. As an alternative, a limit of 0.1% may be used for the duty cycle [3].		Decision 2011/829/EU
Animal implantable devices [34]	315-600 kHz	– 5 dBµA/m at 10 metres	Duty cycle limit[3]: 10 %		Decision 2011/829/EU
	12.5-20.0 MHz	– 7 dBµA/m at 10 metres at a bandwidth of 10 kHz	Duty cycle limit[3]: 10%	This set of usage conditions applies to indoor applications only	Decision 2011/829/EU
Low power FM transmitters [35]	87.5 - 108 MHz	50 nW p.a.r.	Maximum channel spacing of 200 kHz		Decision 2011/829/EU
Wireless audio applications [36]	863 - 865 MHz	10 mW p.a.r			Decision 2011/829/EU
	864.8 - 865 MHz [37]	10 mW p.a.r	Channel spacing: 50 kHz	Integrated antenna.	Recommendation 70-03
	1795 – 1800 MHz	20 mW e.i.r.p.		Integrated antenna.	Recommendation 70-03
Telemetry, telecommand, alarms and data transmission systems	29.980 MHz	100 mW p.a.r	Channel spacing: 10 kHz	Dedicated or integrated antenna.	
	29.990 MHz	100 mW p.a.r	Channel spacing: 10 kHz	Dedicated or integrated antenna.	
	30.000 MHz	100 mW p.a.r	Channel spacing: 10 kHz	Dedicated or integrated antenna.	
	30.100 MHz	100 mW p.a.r	Channel spacing: 10 kHz	Dedicated or integrated antenna.	
	150.9375 MHz	500 mW p.a.r	Channel spacing: 12.5 kHz	Dedicated or integrated antenna.	
	150.9500 MHz	500 mW p.a.r	Channel spacing: 12.5 kHz	Dedicated or integrated antenna.	

[34] This category covers transmitting devices which are placed inside the body of an animal for the purpose of performing diagnostic functions and/or delivery of therapeutic treatment.
[35] This category includes applications which connect personal audio devices, including mobile phones, and the automotive or home entertainment system.
[36] Applications for wireless audio systems, including: wireless microphones, cordless loudspeakers; cordless headphones; cordless headphones for portable use, e.g. portable CD, cassette or radio devices carried on a person; cordless headphones for use in a vehicle, for example for use with a radio or mobile telephone, etc.; in-ear monitoring and wireless microphones for use at concerts or other stage productions.
[37] Narrow band analogical voice equipments, such as baby monitors, door control systems, etc., are limited to the band 864.8-865 MHz.

SRD - Characterisation of stations					
Type of short-range device	**Frequency band**	**Power limit/field strength limit/power density limit**	**Additional parameters (rules governing definition of channels and/or channel access and occupation)**	**Other usage restrictions**	**NOTES**
Telemetry, telecommand, alarms and data transmission systems (cont.)	155.5375 MHz	500 mW p.a.r	Channel spacing: 12.5 kHz	Dedicated or integrated antenna.	
	155.5500 MHz	500 mW p.a.r	Channel spacing: 12.5 kHz	Dedicated or integrated antenna.	
	458.1125 MHz	500 mW p.a.r	Channel spacing: 12.5 kHz	Dedicated or integrated antenna.	
	458.1250 MHz	500 mW p.a.r	Channel spacing: 12.5 kHz	Dedicated or integrated antenna.	
	458.1375 MHz	500 mW p.a.r	Channel spacing: 12.5 kHz	Dedicated or integrated antenna.	
	458.1500 MHz	500 mW p.a.r	Channel spacing: 12.5 kHz	Dedicated or integrated antenna.	

3. Assignment of 472-479 kHz frequency band to amateur service and amendment of conditions governing access to 50-52 MHz and 1270-1300 MHz bands, also for the amateur service.

a) **Annex 1. *National Table of Frequency Allocations* (page 23):**

FREQUENCY BAND (kHz)	ASSIGNMENTS UNDER RADIO-COMMUNICATIONS REGULATION – ART 5 – APPLICABLE TO PORTUGAL	PRINCIPAL NATIONAL APPLICATIONS	NOTES
472 - 479	MARITIME MOBILE 5.79	**Maritime Mobile (MM)**	GE-85
		NAVTEX – International System (MM) (490 kHz)	RR Ap. 15 RR Resolution 339 (Rev. WRC-07)
	Amateur 5.80A		
	Aeronautical radionavigation	**SRD- Detection, tracing and data acquisition systems (457 kHz)**	ERC/REC 70-03 Annex 2
		SRD – Inductive applications: RFID (400-600 kHz)	ERC/REC 70-03 Annex 9 Decision 2011/829/EU of 8 December
		SRD – Inductive applications (148.5 kHz–5 MHz)	ERC/REC 70-03 Annex 9 Decision 2011/829/EU of 8 December
		SRD- Wireless systems for medical applications and implants in animals (315-600 kHz)	ERC/REC 70-03 Annex 12 Decision 2011/829/EU of 8 December
	5.82		Restricted band

b) Annex 6. ***Use of frequencies for amateur and amateur satellite services*** **(pages 219 and 220):**

Frequency bands [h]		Accessibility by the amateur categories and maximum allowed powers [W] [a] [b]				Status of services [e]	
		1 and A [c]	B	2 [d]	C	Amateur	Amateur satellite
135.7 - 137.8	kHz	1 [e.i.r.p.]	1 [e.i.r.p.]			S	
472 - 479	kHz	1 [e.i.r.p.]	1 [e.i.r.p.]			S	
1.810 - 1.830 [f]	kHz	200				S	
1.830 - 1.850	kHz	1500	750			P	
3.500 - 3.700	kHz	1500	750			P	
3.700 - 3.800	kHz	1500	750	200		P	
7.000 - 7.100	kHz	1500	750			P	P
7.100 - 7.200	kHz	1500	750	200		P	
10.100 - 10.150	kHz	750	200			S	
14.000 - 14.125	kHz	1500	750			P	P
14.125 - 14.250	kHz	1500	750	200		P	P
14.250 - 14.350	kHz	1500	750	200		P	
18.068 - 18.168	kHz	1500	750			P	P
21.000 - 21.151	kHz	1500	750			P	P
21.151 - 21.450	kHz	1500	750	200		P	P
24.890 - 24.990	kHz	1500	750			P	P
28 - 29.7	MHz	1500	750	200	100	P	P
50 - 50.5	MHz	300 [i]	150 [i]	150 [i]		S	
50.5 - 51	MHz	25[p.a.r.]	25[p.a.r.]			S	
51 - 52	MHz	300	150	150	50	S	
70.1570 - 70.2125	MHz	100[p.a.r.]				S	
70.2375 - 70.2875	MHz	100[p.a.r.]				S	
144 - 145.806	MHz	300 [i]	150 [i]	150	50	P	P
145.806 - 146	MHz	300	150	150			P
430 - 435	MHz	300 [i]	150 [i]	150	50	P	
435 - 438	MHz	300	150				S
438 - 440	MHz	300	150	150	50	P	
1.240 - 1.260	MHz	50[e.i.r.p.]	50[e.i.r.p.]			S	
1.260 - 1.270	MHz	50[e.i.r.p.]	50[e.i.r.p.]				S
1.270 - 1.300	MHz	300[e.i.r.p.] [i]	300[e.i.r.p.] [i]	100[p.i.r.e]		S	
2.300 - 2.400	MHz	[g]	[g]			S	
2.400 - 2.450	MHz	[g]	[g]			S	S

Frequency bands [h]		Accessibility by the amateur categories and maximum allowed powers [W] [a] [b]				Status of services [e]	
		1 and A [c]	B	2 [d]	C	Amateur	Amateur satellite
5.650 - 5.668	MHz	[g]	[g]				S
5.668 - 5.670	MHz	[g]	[g]			S	S
5.670 - 5.830	MHz	[g]	[g]			S	
5.830 - 5.850	MHz	[g]	[g]				S
10 - 10.37	GHz	300[e.i.r.p.] [i]	300[e.i.r.p.] [i]			S	
10.37 - 10.45	GHz	[g]	[g]			S	
10.45 - 10.5	GHz	300[e.i.r.p.]	300[e.i.r.p.]			S	S
24 - 24.05	GHz	50	10	10		P	P
24.05 - 24.25	GHz	50	10			S	
47 - 47.2	GHz	50	10	10		P	P
75.5 - 76	GHz	50				S	S
76 - 77.5	GHz	50				S	S
77.5 - 78	GHz	50	10	10		P	P
78 - 81	GHz	50				S	S
122.25 - 123	GHz	50				S	
134 - 136	GHz	50	10	10		P	P
136 - 141	GHz	50				S	S
241 - 248	GHz	50				S	S
248 - 250	GHz	50	10	10		P	P

a) - peak power when no indication otherwise

b) - the used power must be the minimum necessary to perform communication

c) - applicable to holders of CEPT license issued under Recommendation CEPT Rec. T/R 61-01, in the conditions included in it, and to the holders of the Certificate of Radioamateur Stations Operator (COER) of class A issued by the Administration of the Federal Republic of Brazil in temporary stays

d) - applicable to holders of license "CEPT novice" issued under Recommendation CEPT ECC/REC/(05)06, in the conditions included in it, and to the holders of the Certificate of Radioamateur Stations Operator (COER) of class B issued by the Administration of the Federal Republic of Brazil in temporary stays

e) - P (primary) or S (secondary)

f) - in the POR geographic area, usage is limited to a non interference base with the other services outside Portuguese territory

g) - authorizations granted vase by case only for scientific studies, experiments or other activities of interest for amateur radio and for time limited periods

h) - the emission modes and used bandwidths must follow the recommendation of IARU in everything that does not infringe on applicable law, in particular, the frequency plans for certain bands defined and published by ICPANACOM

i) - for usages in which the antennas are aimed at space (for example, for lunar reflection) there is no maximum power limit. However, the maximum power determined must not be exceeded, according to the horizon, for the corresponding frequency band

4. Assignment of 5091-5150 MHz frequency band to the Aeronautical Mobile Service, making provision for band applications.

a) Annex 1. *National Table of Frequency Allocations* (page 95):

FREQUENCY BAND (kHz)	ASSIGNMENTS UNDER RADIO-COMMUNICATIONS REGULATION – ART 5 – APPLICABLE TO PORTUGAL	PRINCIPAL NATIONAL APPLICATIONS	NOTES
5091 – 5150	AERONAUTICAL RADIONAVIGATION MOBILE AERONAUTICAL 5.444B 5.367. 5.444. 5.444A	Ground communications **SRD – Radiodetermination applications (4500 -7000 MHz)**	Band reserved for MLS system ERC/REC 70-03 Annex 6 Decision 2011/829/EU of 8 December

b) Annex 3. Reservations of frequency bands – Communications not accessible to the public (page 187):

AERONAUTICAL MOBILE SERVICE (AMS)					
Frequency bands	**Rights of use required**	**Type of channel**	**No. of channels** (1)	**Scope of use**	**Allocation process**
3400 - 3500 kHz	NO	3 kHz	(2)	g	Full accessibility
5480 - 5680 kHz	NO	3 kHz	(2)	g	Full accessibility
8815 - 8965 kHz	NO	3 kHz	(2)	g	Full accessibility
11275 - 11400 kHz	NO	3 kHz	(2)	g	Full accessibility
13260 - 13360 kHz	NO	3 kHz	(2)	g	Full accessibility
17900 - 17970 kHz	NO	3 kHz	(2)	g	Full accessibility
117.975 - 137 MHz	NO	25 kHz	(2)	g	Full accessibility
117.975 - 137 MHz	NO	8.33 kHz	(2)	g	Full accessibility
143.9 - 144 MHz (3)	NO	12.5 kHz simplex	(2)	n	Full accessibility
5091 – 5150 MHz	NO	-	(2)	g	Full accessibility

(1) Channels with shared use.
(2) Band shared with other users.
(3) Free flight for sport and leisure and ultra light without engine and paraglider.