

## **Uses Exempt from radio licensing**

### **4.2 Station license exemption**

Under the terms of paragraph a) of no. 1 and no. 2 of article 9 of Decree-Law no. 151-A/2000 of 20 July, the following are exempt from station licences:

#### **a) *SRD-Short Range Devices***

Short-range and low-power stations represent equipment used in various applications and frequency bands.

These stations should operate according to the principle of :

- a) non-interference regarding licensed radiocommunications stations or networks.

- b) of non-protection regarding any other radiocommunications stations or networks.

The tables which follow reflect the requirements of Community Decisions, including Decision 2006/771/EC of 9 November 2006, as well as the subsequent amendments, effected by Decisions 2008/432/EC of 23 May 2008 and 2009/381/EC of 3 May 2009. Whenever possible, there is national adoption of the bands and parameters harmonised at the CEPT for SRD, contained in Recommendation ERC/REC 70-03.

SRD - Station characterization					
Application	Frequency Band	Maximum power or field strength limits	Antenna type	Channel spacing	Duty Cycle
General Use <sup>10</sup>	6765 - 6795 kHz	42 dB $\mu$ A/m at 10 m	Integral or dedicated	No spacing	
	13.553 - 13.567 MHz				
	26.957 - 27.283 MHz	10 mW e.m.r.p.			
	40.660 - 40.700 MHz				
	138.20 - 138.45 MHz				
	433.050 - 434.790 MHz <sup>11</sup>				
	433.050 - 434.790 MHz <sup>12</sup>	1 mW e.m.r.p. <sup>13</sup>			
	434.040 - 434.790 MHz <sup>3</sup>	10 mW e.m.r.p.		$\leq 25$ kHz	< 10%
	863 - 870 MHz <sup>2, 14, 15</sup>	$\leq 25$ mW e.m.r.p.		$\leq 100$ kHz <sup>16</sup> for 47 or more channels	$\leq 100\%$
		$\leq 25$ mW e.m.r.p. <sup>6</sup> -4.5 dBm/100 kHz <sup>19</sup>		No spacing	$\leq 0.1\%$ or LBT <sup>17, 18</sup>
		$\leq 25$ mW e.m.r.p.		$\leq 100$ kHz <sup>7, 20</sup> for 1 or more channels	$\leq 0.1\%$ or LBT <sup>8, 9</sup>
	868.000 - 868.600 MHz <sup>2</sup>	$\leq 25$ mW e.m.r.p.		No spacing, for 1 or more channels <sup>7</sup>	$\leq 1\%$ or LBT <sup>8</sup>
	868.700 - 869.200 MHz <sup>2</sup>				$\leq 0.1\%$ or LBT <sup>8</sup>
	869.400 - 869.650 MHz <sup>2</sup>	$\leq 500$ mW e.m.r.p.		25 kHz, for one or more channels <sup>21</sup>	$\leq 10\%$ or LBT <sup>8</sup>
	869.700 - 870.000 MHz <sup>3</sup>	$\leq 5$ mW e.m.r.p.		No spacing, for 1 or more channels	$\leq 100\%$
2400 - 2483.5 MHz	10 mW e.i.r.p.	No spacing			
5725 - 5875 MHz	25 mW e.i.r.p.				

<sup>10</sup> Video applications are only allowed above the 2.4 GHz band.

<sup>11</sup> The duty cycle, LBT or technical equivalent may not be dependent on the user and the appropriate technical resources have to be guaranteed immediately

<sup>12</sup> Audio signals are excluded from this band. Voice application with mitigation techniques of the LBT type or equivalent are permitted. The transmitter must include an output power control sensor with up to 1 minute time-out.

<sup>13</sup> The power density for modulations with bandwidths above 250 kHz is limited to -13 dBm/10 kHz

<sup>14</sup> The sub-bands for alarms are excluded

<sup>15</sup> For broadband modulations other than FHSS and DSSS with bandwidths between 200 kHz and 3 MHz, the duty cycle can be increased up to 1% if the band is limited to 865-868 MHz and the power below 10 mW e.m.r.p..

<sup>16</sup> The preferential spacing is 100 kHz, allowing 50 kHz and 25 kHz subdivisions.

<sup>17</sup> For devices with FHSS, DSSS and AFA (*Adaptive Frequency Agility*) the *duty cycle* is applied to the total transmission except where LCT is used.

<sup>18</sup> Duty cycle may be 1% if the band is limited to 865-868 MHz

<sup>19</sup> The power density may be increased up to 6.2 dBm/100 kHz and 0.8 dBm/100 kHz, if the band is limited to 865-868 MHz and 865-870 MHz, respectively.

<sup>20</sup> For narrow band modulations with bandwidth from 50 to 200 kHz the band is limited to 865.5-867.5 MHz

<sup>21</sup> The entire band may be used as a common channel for the high-speed transmission of data.

SRD - Station characterization (cont.)					
Application	Frequency Band	Maximum power or field strength limits	Antenna type	Channel spacing	Duty Cycle
General Use (cont.) <sup>1</sup>	24.00 - 24.25 GHz	100 mW e.i.r.p.			
	61.00 - 61.50 GHz				
	122 - 123 GHz				
	244 - 246 GHz				
Detection, tracking and data acquisition systems	457 kHz <sup>13</sup>	7 dB $\mu$ A/m at 10 m		Continuous wave(CW) – without modulation	< 100%
	169.4 – 169.475 MHz <sup>14</sup>	500 mW e.m.r.p.		Max. 50 kHz	< 10%
	169.4 – 169.475 MHz <sup>15</sup>				< 1%
Wireless access systems / Radio local area networks (WAS/RLAN)	2400 - 2483.5 MHz	100 mW e.i.r.p. <sup>16</sup>	Dedicated	No spacing	
	5150 - 5350 MHz <sup>19 20</sup>	200 mW e.i.r.p. <sup>21</sup>		No spacing	
	5470 - 5725 MHz <sup>17 18</sup>	1 W e.i.r.p. <sup>19</sup>			
	17.1 - 17.3 GHz	100 mW e.i.r.p.			
	57 – 66 GHz	25 dBm e.i.r.p. <sup>22</sup>			
40 dBm e.i.r.p. <sup>23</sup>					
Railway applications	2446 - 2454 MHz <sup>24</sup>	500 mW e.i.r.p.	Integrated	No spacing	< 1%
	27.095 MHz <sup>25</sup>	42 dB $\mu$ A/m at 10 m	Dedicated		
	4234 kHz <sup>26</sup>	9 dB $\mu$ A/m at 10 m	Integrated or Dedicated		
	4516 kHz <sup>27</sup>	7 dB $\mu$ A/m at 10 m			

<sup>13</sup> Avalanche victim detection applications

<sup>14</sup> Measurement reading applications

<sup>15</sup> Object detection and tracking applications

<sup>16</sup> For systems that use direct sequence spectrum spreading techniques, the value of the maximum power spectrum density should be limited to 10 mW/1 MHz; for systems that use frequency leap spectrum spreading techniques, the value of the maximum power spectrum density should be limited to 20 mW/100 kHz.

<sup>19</sup> In accordance with Commission Decisions 2005/513/EC of 11 June 2005 and 2007/90/EC of 12 February 2007.

<sup>20</sup> The following conditions must be respected:

- a) only “indoor” uses are permitted in the 5150-5350 MHz band
- b) control of transmitted power (TPC) in the 5250-5350 MHz and 5470-5725 MHz bands to ensure a mitigation factor of at least 3dB at maximum power permitted for the systems or, if the TPC is not in use, the maximum permitted power of average e.i.r.p. and the corresponding maximum value of the power density for average e.i.r.p. should be reduced 3 dB,
- c) Application of a mitigation technique associated with the channel selection mechanism, to allow a uniform spacing in the 5250-5350 MHz and 5470-5725 MHz bands and to provide, at a minimum, the same level of protection as the operational requirements and requirements of detection and response described in EN 301 893;
- d) In the 5150-5350 MHz band, the maximum value of power density for the average e.i.r.p must be limited to 10mW/MHz, for each 1 MHz;
- e) In the 5470-5725 MHz band, the maximum value of power density for the average e.i.r.p must be limited to 50mW/MHz, for each 1 MHz;

<sup>21</sup> Maximum value of average e.i.r.p.

<sup>22</sup> Fixed outdoor installations are not permitted. The maximum value of power density for the average e.i.r.p is limited to -2 dBm/MHz.

<sup>23</sup> Restricted to *indoor use*. Maximum value of power density for the average e.i.r.p is limited to 13 dBm/MHz

<sup>24</sup> Automatic vehicle identification systems for railways. Transmission only where trains are present.

<sup>25</sup> Tele-powered and train-station systems, including Eurobalise and loop/Euroloop activation. May also be used for loop/Euroloop activation.

<sup>26</sup> Train-station systems, including Eurobalise.

<sup>27</sup> Train-station loop systems including *Euroloop*.

11.,1 – 16.0 MHz <sup>25, 28</sup>	-7 dB $\mu$ A/m at 10 m			
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SRD - Station characterization (cont.)					
Application	Frequency Band	Maximum power or field strength limits	Antenna type	Channel spacing	Duty Cycle
Road transport and traffic telematics - RTTT	5795 – 5805 MHz <sup>29</sup>	2 W e.i.r.p.	Integral or dedicated	<sup>30</sup>	No spacing
	5805 – 5815 MHz <sup>31</sup>				
	63-64 GHz <sup>32</sup>	To be defined			
	76-77 GHz <sup>33</sup>	55 dBm peak			
Radio determination applications	2400 - 2483.5 MHz	25 mW e.i.r.p.			
	9200 - 9500 MHz				
	9500 - 9975 MHz				
	10.5 – 10.6 GHz	500 mW e.i.r.p.			
	13.4 - 14.0 GHz	25 mW e.i.r.p.			
	24.05 - 24.25 GHz	100 mW e.i.r.p.			
	4.5 – 7.0 GHz <sup>34</sup>	-41.3 dBm/MHz e.i.r.p.			
	8.5 – 10.6 GHz <sup>32</sup>				
	24.05 – 27.0 GHz <sup>32</sup>				
	57 – 64 GHz <sup>32</sup>				
75 – 85 GHz <sup>32</sup>	+26 dBm e.i.r.p.				
17,1 - 17,3 GHz <sup>35</sup>					
Alarms	868.600 - 868.700 MHz <sup>36</sup>	10 mW e.m.r.p.	25 kHz	< 1.0%	
	869.200 - 869.250 MHz <sup>37</sup>				
	869.250 - 869.300 MHz				
	869.300 – 869.400 MHz	25 mW e.m.r.p.		< 0.1%	
	869.650 - 869.700 MHz				
	169.4750 – 169.4875 MHz <sup>38</sup>	10 mW e.m.r.p.	12.5 kHz	< 10%	
	169.5875 – 169.6000 MHz <sup>35</sup>				

<sup>28</sup> The maximum density value of the field is specified for a bandwidth of 10 KHz, taking the average of measurements taken over the 200m length of the loop. Transmission only in presence of trains.

<sup>29</sup> The band is for road-vehicle systems, in particular (but not exclusively) for automatic toll payment systems.

<sup>30</sup> Frequencies: 5797.5 MHz, 5802.5 MHz, 5807.5 MHz and 5812.5 MHz are used with a 5 MHz channel spacing. 5800 MHz and 5810 MHz frequencies are used with a 10 MHz channel spacing.

<sup>31</sup> Requires individual licence.

<sup>32</sup> These systems, vehicle-vehicle or road-vehicle, will only be exempt from licensing after the definition of power limits.

<sup>33</sup> Vehicle and infrastructure radar systems.

<sup>34</sup> Tank Level Probing Radar (TLPR). The radiated power limit is determined outside the closed structure of the tank.

<sup>35</sup> Special requirements for the radiation diagram of antennae and for the implementation of the DAA (Detect And Avoid) technique applied as described in the standard EN 300 440 for Ground Based Synthetic Aperture Radar (GBSAR) systems.

<sup>36</sup> The 868.6-868.7 MHz frequency band may also be used as one channel for high speed data transmissions.

<sup>37</sup> Band for Social Alarms.

<sup>38</sup> Exclusive use for Social Alarms.

SRD - Station characterization (cont.)					
Application	Frequency Band	Maximum power or field strength limits	Antenna type	Channel spacing	Duty Cycle
Model control	26.995 MHz; 27.045 MHz; 27.095 MHz; 27.145 MHz; 27.195 MHz	100 mW e.m.r.p.	Dedicated	10 kHz	
	34.995 - 35.225 MHz <sup>39</sup>				
Inductive systems	40.665 MHz; 40.675 MHz; 40.685 MHz; 40.695 MHz				
	9 - 59.750 kHz	72 dB $\mu$ A/m at 10 m <sub>39</sub>	Integral, dedicated or external <sup>40</sup>	No spacing	
	59.750 - 60.250 kHz	42 dB $\mu$ A/m at 10 m			
	60.250 - 70.000 kHz	69 dB $\mu$ A/m at 10 m <sub>41</sub>			
	70 - 119 kHz	42 dB $\mu$ A/m at 10 m			
	119 - 135 kHz	66 dB $\mu$ A/m at 10 m <sub>39</sub>			
	135 - 140 kHz	42 dB $\mu$ A/m at 10 m			
	140 - 148.5 kHz	37.7 dB $\mu$ A/m at 10 m			
	6765 - 6795 kHz	42 dB $\mu$ A/m at 10 m See figure 1, Section 6.6.a)	Integral or dedicated		
	7400 - 8800 kHz	9 dB $\mu$ A/m at 10 m			
	13.553 - 13.567 MHz	42 dB $\mu$ A/m at 10 m See figure 1, Section 6.6.a)			
	13.553 - 13.567 MHz	60 dB $\mu$ A/m at 10 m See figure 1, Section 6.6.a) <sup>42</sup>			
	26.957 - 27.283 MHz	42 dB $\mu$ A/m at 10 m			
	10.200 - 11.000 MHz	9 dB $\mu$ A/m at 10 m	Integral, dedicated or external <sup>35</sup>		
	3155 - 3400 kHz	13.5 dB $\mu$ A/m at 10 m			
	148.5 kHz-5 MHz	-15 dB $\mu$ A/m at 10 m <sub>43</sub>			
	5-30 MHz	-20 dB $\mu$ A/m at 10 m <sub>44</sub>			
400 - 600 kHz	-8 dB $\mu$ A/m at 10 m <sub>45, 46</sub>				

<sup>39</sup> Frequencies exclusive for flying models.

<sup>40</sup> In the case of external antenna use, only "loop coil" type antennas are permitted

<sup>41</sup> At 30 kHz decrease of 3 dB/octave

<sup>42</sup> For RFID and EAS (Electronic Article Surveillance) exclusive use,

<sup>43</sup> The maximum field intensity is specified for a bandwidth of 10 kHz. The maximum value is -5dB $\mu$  A/m at 10m for systems which operate with bandwidths greater than 10 kHz, maintaining the field intensity limit (-15 dB $\mu$ A/m at 10 m for bandwidth of 10 kHz).

<sup>44</sup> The maximum field intensity is specified for a bandwidth of 10 kHz. The maximum value is -5 dB $\mu$ A/m at 10 m for systems which operate with bandwidths greater than 10 kHz, maintaining the field intensity limit (-20 dB $\mu$  A/m at 10 m for bandwidth of 10 kHz).

<sup>45</sup> For exclusive use of RFID.

<sup>46</sup> The maximum field intensity is specified for a bandwidth of 10 kHz. The maximum value is -5 dB $\mu$ A/m at 10 m for systems which operate with bandwidths greater than 10 kHz, maintaining the field intensity limit (-8 dB $\mu$ A/m at 10 m for bandwidth of 10 kHz). These systems are required to operate with a minimum bandwidth of 30 kHz.

**SRD - Station characterization (cont.)**

<b>Application</b>	<b>Frequency Band</b>	<b>Maximum power or field strength limits</b>	<b>Antenna type</b>	<b>Channel spacing</b>	<b>Duty Cycle</b>
Radio microphones and hearing aid equipment	173.965 – 174.015 MHz <sup>47</sup>	2 mW e.m.r.p.	Integral	50 kHz	≤ 100%
	174 – 216 MHz <sup>48</sup>	50 mW e.m.r.p.		No spacing	
	470 – 862 MHz <sup>45, 49</sup>				
	863 – 865 MHz <sup>50</sup>	10 mW e.m.r.p.		20 mW e.i.r.p. <sup>51</sup>	
	1785 – 1795 MHz				
	1795 – 1800 MHz	10 mW e.m.r.p.		Max 50 kHz	
	169.4 – 169.4750 MHz <sup>45</sup>				
	169.4875 – 169.5875 MHz <sup>45</sup>				
RFID – RF Identification Systems	2446 – 2454 MHz	500 mW	Integral or dedicated	No spacing	≤ 100%
	865.0 – 865.6 MHz	100 mW e.m.r.p.		200 kHz	LBT
	865.6 – 867.6 MHz	2 W e.m.r.p.			
	867.6 – 868.0 MHz	500 mW e.m.r.p.			
Wireless systems for medical applications	9 – 315 kHz <sup>52</sup>	30 dB $\mu$ A/m at 10 m	Integral or dedicated	No spacing	<10%
	315 – 600 kHz <sup>53</sup>	-5 dB $\mu$ A/m at 10 m			
	12.5 – 20.0 MHz <sup>54</sup>	-7 dB $\mu$ A/m at 10 m			
	30.0 – 37.5 MHz <sup>55</sup>	1 mW e.m.r.p.		25 kHz	58
	402 – 405 MHz <sup>56</sup>	25 $\mu$ W e.m.r.p.			
	401 – 402 MHz <sup>57</sup>				
	405 – 406 MHz <sup>55</sup>				

<sup>47</sup> Hearing aids

<sup>48</sup> Earphone monitoring equipment is permitted, provided that the technical parameters applicable to radio microphones is adhered to.

<sup>49</sup> Radio microphones are only permitted in the 470-782 MHz, 790-838 MHz and 846-854 MHz sub-bands.

<sup>50</sup> Radio microphones.

<sup>51</sup> The maximum power limit for transmitting body-worn microphones is 50 mW e.m.r.p.

<sup>52</sup> For ultra-low power active medical implants which use inductive loop techniques for telemetry.

<sup>53</sup> Animal implant applications.

<sup>54</sup> For ultra-low power, active animal implants of indoor use.

<sup>55</sup> For ultra-low power membrane medical implants for measuring blood pressure.

<sup>56</sup> For ultra-low power, active medical implants covered by the harmonised EN 301 839 standard. Transmitters may combine adjacent 25KHz channels to increase bandwidth up to 300 kHz.

<sup>57</sup> For ultra-low power, active medical implants and accessories covered by the harmonised EN 302 537 standard and not covered by the 402-405 MHz frequency band. Transmitters may combine adjacent 25KHz channels to increase bandwidth up to 100 kHz. Due to the 1 MHz limit of available spectrum a maximum limit of 100 KHz is proposed for bandwidth. In order to ensure the concurrent use of the band by users.

<sup>58</sup> Unrestricted for equipment using LBT. Systems which do not use Agility frequency techniques based on RF ambient, field detection are limited to a permitted maximum of 250 nW p.a.r. with a duty cycle of ≤0.1 %.

SRD - Station characterization (cont.)					
Application	Frequency Band	Maximum power or field strength limits	Antenna type	Channel spacing	Duty Cycle
Wireless audio applications	87.5 - 108 MHz <sup>59</sup>	50 nW e.m.r.p.	Integral	200 kHz	≤ 100%
	863 - 865 MHz	10 mW e.m.r.p.		No spacing <sup>60</sup>	
	864.8 - 865 MHz <sup>61</sup>			50 kHz	
	1795 - 1800 MHz	20 mW e.i.r.p.		No spacing	
Telecommand, telemetry, alarm and data transmission systems	29.980 MHz	100 mW e.m.r.p.	Integral or dedicated	10 kHz	
	29.990 MHz				
	30.000 MHz				
	30.100 MHz				
	150.9375 MHz	500 mW e.m.r.p.		12.5 kHz	
	150.9500 MHz				
	155.5375 MHz				
	155.5500 MHz				
	458.1125 MHz				
	458.1250 MHz				
	458.1375 MHz				
	458.1500 MHz				
SRR - Automotive short range radar systems	21.65-26.65 GHz <sup>62</sup>	<sup>63</sup>	Integral	No spacing	<sup>64</sup>
	24.05-24.25 GHz	20 dBm e.i.r.p. peak	Integral	No spacing	
	77-81 GHz <sup>65</sup>	55 dBm e.i.r.p. peak <sup>66</sup>	Integral	No spacing	

<sup>59</sup> The SRR user interface must allow, as a minimum, the selection of a frequency between 88.1 MHz and 107.9 MHz and, at a maximum, between 87.6 MHz and 107.9 MHz.

<sup>60</sup> In analogue systems the width of the band used may not exceed 300 kHz.

<sup>61</sup> Narrow band analogue voice equipment, such as baby alarms, door control systems etc. is limited to the 864.8-865 MHz band

<sup>62</sup> According to Commission Decision 2005/50/EC of 17 January 2005.

<sup>63</sup> The maximum average power density will be -41.3 dBm/MHz e.i.r.p. Peak power density value should not exceed 0dBm/50 MHz e.i.r.p.

<sup>64</sup> For peak powers over -10 dBm e.i.r.p. and duty cycle < 10%.

<sup>65</sup> According to Commission Decision 2004/545/EC of 8 July 2004.

<sup>66</sup> Maximum average power density will be -3 dBm/MHz e.i.r.p. Maximum average power density outside a vehicle resulting from the operation of a short range radar should not exceed -9 dBm/MHz e.i.r.p.



**b) Earth stations of the Fixed Satellite Service**

**HEST and LEST Terminals**

These stations should operate on a non-interference and non-protection basis regarding licensed radiocommunications stations or networks.

The use of this kind of Earth stations is only allowed at distances beyond those indicated in the table below, measured from airport boundaries.

<b>Station characterisation</b>			
<b>Earth station</b>	<b>Frequency Band</b>	<b>Maximum power limits (e.i.r.p.)</b>	<b>Distance (D) from airport boundaries</b>
High e.i.r.p. Satellite Terminal	10,70-12,75 GHz (space-to-Earth)	e.i.r.p. ≤ 34 dBW	---
Low e.i.r.p. Satellite Terminal	19,70-20,20 GHz (space-to-Earth)		
	14,00-14,25 GHz (Earth-to-space)		
	29,50-30,00 GHz (Earth-to-space)		
		34 dBW < e.i.r.p. ≤ 50 dBW	D > 500 metres
		50 dBW < e.i.r.p. ≤ 55,3 dBW	D > 1800 metres
		55,3 dBW < e.i.r.p. ≤ 57dBW	D > 2300 metres
		57 dBW < e.i.r.p. ≤ 60 dBW	D > 3500 metres

### **HDFSS Terminals**

These stations are required to operate on a non-interference and non-protection basis relative to licensed radio networks or stations.

<b>Station characterization</b>			
<b>Earth station</b>	<b>Frequency Band</b>	<b>e.i.r.p. density limits outside axis</b>	<b>minimum elevation angle</b>
High Density Fixed-Satellite Service Terminal	17,3 - 17,7 GHz space-to-Earth	---	5°
	19,7 - 20,2 GHz space-to-Earth	---	5°
	27,5 - 27,82 GHz Earth-to-space	-35 dBW/MHz	10°
	28,45 - 28,94 GHz Earth-to-space	-35 dBW/MHz	10°
	29,46 - 30,0 GHz Earth-to-space	-35 dBW/MHz	10°

## Earth stations of the Mobile Satellite Service

These stations are required to operate on a non-interference and non-protection basis relative to licensed radio networks or stations.

Station characterization	
Earth station	Frequency Band
Inmarsat-B	1525 - 1544 MHz (space-to-Earth) <sup>1</sup> 1545 - 1559 MHz (space-to-Earth) <sup>2</sup> 1626.5 - 1645.5 MHz (Earth-to-space) <sup>1</sup> 1646.5 - 1660.5 MHz (Earth-to-space) <sup>2, 3</sup>
Inmarsat-C	
Inmarsat-D	
Inmarsat-M	
Inmarsat-M4	
Inmarsat-phone (mini M)	
EMS-MSSAT	
Thuraya	
SpaceCheckers-SMS	
EUTELTRACS	10.70 - 11.70 GHz (space-to-Earth) <sup>4</sup> 12.50 - 12.75 GHz (space-to-Earth) <sup>4</sup> 14.00 - 14.25 GHz (Earth-to-space)
GMPCS <sup>5</sup>	1525 - 1544 MHz (space-to-Earth) <sup>1</sup> 1545 - 1559 MHz (space-to-Earth) <sup>2</sup> 1626.5 - 1645.5 MHz (Earth-to-space) <sup>1</sup> 1646.5 - 1660.5 MHz (Earth-to-space) <sup>2, 3</sup> 1610 - 1626.5 MHz (Earth-to-space) 1621.35 - 1626.5 MHz (space-to-Earth) 1980 - 2010 MHz (Earth-to-space) 2483.5 - 2500 MHz (space-to-Earth) 2170 - 2200 MHz (space-to-Earth)
Mobile Earth Stations (MES) ORBCOM <sup>6</sup>	137- 138 MHz (space-to-Earth) 148 - 150.05 MHz (Earth-to-space)
AES <sup>7</sup>	10.70 - 11.70 GHz (space-to-Earth) 12.50 - 12.75 GHz (space-to-Earth) 14.00 - 14.25 GHz (Earth-to-space)

<sup>1</sup> In the 1530-1544 MHz and 1626.5-1645.5 MHz frequency bands, priority is given to distress, emergency and safety communications in the scope of the GMDSS system.

<sup>2</sup> In the 1545 - 1555 MHz and 1646.5-1656.5 MHz frequency bands, priority is given, in the scope of the Aeronautical Mobile-Satellite Service, to distress, emergency and safety communications, as well as to communication regarding flights safety and regularity and meteorology.

<sup>3</sup> In the 1660 - 1660.5 MHz frequency band, the operation of these Earth stations cannot cause any harmful interference to the stations of the radio astronomy service.

<sup>4</sup> In the 10.70-11.70 GHz and 12.50-12.75 GHz frequency bands, the operation of "Omnitracs-Eutelsat" Earth stations cannot cause any harmful interference to the stations of the fixed service or of the fixed satellite service.

<sup>5</sup> These stations must be marked as described in figure 2.

<sup>6</sup> These stations should not cause interference or require protection from stations of the fixed, mobile and space operation services in the 148-149.9 MHz frequency band, nor from stations of the radionavigation satellite service in the 149.9-150.05 MHz frequency band.

<sup>7</sup> AES must operate on a non-interference and non-protection basis in respect of licensed radiocommunications stations or networks.

**c) Land Mobile Service Stations**

These stations must operate on a non-interference and non-protection basis in respect of licensed radiocommunications stations or networks.

*PMR446 Analogue Stations*

Station characterization			
Frequency Band	Maximum power limits	Antenna type	Channel spacing
446.0 – 446.1 MHz <sup>67</sup>	500 mW e.m.r.p.	integral	12.5 kHz

*PMR446 Digital Stations*

Station characterization			
Frequency Band	Maximum power limits	Antenna type	Channel spacing
446.1 – 446.2 MHz <sup>68</sup>	500 mW e.m.r.p.	integral	6.25 kHz or 12.5 kHz

*Talk-Back*

Station characterization		
Frequency Band	Maximum power limits	Channel spacing
445.150 MHz	3W e.i.r.p.	25kHz
448.300 MHz		
448.325 MHz		
448.350 MHz		
448.375 MHz		
448.400 MHz		
448.425 MHz		
448.450 MHz		
448.475 MHz		

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<sup>67</sup> Channels according to Decision ERC/DEC/(98)25.

<sup>68</sup> Channels according to Decision ECC/DEC/(05)12.

#### ***d) Receiver-only radiocommunications stations***

These stations must operate on a non-interference and non-protection basis in respect of licensed radiocommunications stations or networks.

Station characterization
Receiver stations: <ul style="list-style-type: none"><li>• multiband, not associated with any particular radiocommunications services (scanners)</li><li>• satellite radiocommunications services in the frequency bands:<ul style="list-style-type: none"><li>3.4-4.2 GHz;</li><li>10.7-12.75 GHz;</li><li>17.7-20.2 GHz;</li></ul></li><li>• AIS system</li><li>• Radio astronomy service <sup>1</sup></li><li>• Satellite radio determination service <sup>2</sup></li><li>• Meteorological – satellite service<sup>5</sup></li><li>• Earth exploration satellite service<sup>5</sup></li></ul>

#### ***e) Receiver only sound and television broadcasting stations.***

#### ***f) Stations of the aeronautical mobile service and of the radio determination service installed onboard aircraft, certified by INAC<sup>3</sup>.***

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<sup>1</sup> Radio protection may be ensured for Radio astronomy stations operating in frequency bands allocated to this service with primary status, in accordance with their licensing.

<sup>2</sup> Radio protection may be ensured for earth stations operating in frequency bands allocated to this service with primary status, in accordance with their radio licensing. This procedure is not applicable to GPS and GLONASS terminals.

<sup>3</sup> Under the terms of the Order of the Chairman of the Management Board of ICP-ANACOM of 4.9.2009, ratified by determination of the Management Board of ICP-ANACOM of 9.9.2009.