ANACOM AUTORIDADE NACIONAL DE COMUNICAÇÕES

NATIONAL TABLE
OF
FREQUENCY ALLOCATION

2010/2011 Edition

TABLE OF CONTENTS

1. INTRODUCTION 4

2. FRAMEWORK OF NTFA 5

3. STRUCTURE OF NTFA 8

4. MAIN ACTIONS DEVELOPED IN 2010 IN THE DOMAIN OF MANAGEMENT AND PLANNING THE RADIO SPECTRUM 9

5. CHANGES TO THE PRESENT VERSION 14

6. ADDITIONAL CLARIFICATIONS 15

ANNEX 1 - TABLE OF FREQUENCY ALLOCATION 16

1.1 Table of frequency allocation 17

ANNEX 2 - PUBLICATION OF FREQUENCY BAND USAGE 158

2.1 Frequency bands and the number of channels used for operation of the networks and services of electronic communication accessible to the public until May 31st, 2011 159

ANNEX 3 - RESERVATIONS OF FREQUENCY BANDS 184

3.1 Reserved frequency bands and to be made available in 2011/2012 for operation of the networks and services of electronic accessible to the public 185

3.2 Reserved frequency bands and to be made available in 2011/2012 for operation of the networks and services of electronic accessible to the public 194

ANNEX 4 - USAGES EXEMPT FROM LICENSING 206

4.1. Exemption of network license 207

4.2. Exemption of station license 211

ANNEX 5 – EQUIPMENTS / SYSTEMS THAT USE ULTRA WIDE BAND (UWB) TECHNOLOGY 223

5.1 Generic UWB equipments 224

5.2 Specific UWB equipments 227

ANNEX 6 - USAGE OF FREQUENCIES BY THE AMATEUR AND AMATEUR SATELLITE SERVICES 232

6.1 Access to the spectrum per amateur categories 233

ANNEX 7 - APPENDICES 236

7.1 Definitions 237

7.2 Table of frequency tolerances for transmitters 251

7.3 Acronyms 259

7.4 Relevant Documents from CEPT, ITU and EU 267

7.5 Figures 280

1. INTRODUCTION

ICP-ANACOM (ANACOM) is the National Regulatory Authority for electronic communications according to the Law of Electronic Communications (LCE), Law number 5/2004, of February 10th.

One of the competences of ANACOM, within the scope of LCE, is to assure the planning, management and control of the radio spectrum, in the framework of its effective and efficient usage. For that purpose, and as a support activity developed in this scope, ANACOM maintains - periodically prepares and updates - the National Table of Frequency Allocation (NTFA)[1], an essential instrument for the spectrum management that gathers fundamental elements for the good fulfilment of the management and frequency planning activities.

In fact, according to article 15 of LCE, ANACOM, within the scope of the spectrum management, is in charge of planning the frequencies according to the following criteria:

a) Availability of the radio spectrum;
b) Assurance of effective competition in the relevant markets;
c) Effective and efficient use of the frequencies;

ANACOM is also competent to proceed with the allocation and consignment of frequencies, which obey to objective, transparent, non-discriminating and proportional criteria, and also promote the harmonisation of the use of frequencies in the European Union so as to assure its effective and efficient usage within the scope of Decision number 676/2002/EC[2] (article 15, numbers 3 and 4 of LCE).

The entities that wish to offer networks or services of electronic communications[3] accessible to the public which involve the usage of the radio

[1] Available to the public in the ANACOM site in http://www.anacom.pt/render.jsp?categoryId=291355.
[2] Decision of the European Parliament and Council, from March 7th, 2002, regarding a regulatory framework for the policy of radio spectrum in the European Community (radio spectrum decision)
[3] "*Electronic communications network:* the broadcast systems and, if applicable, the switching or routing equipments and others resources that allow sending signals by cable, radio, optical means, or other electromagnetic means, including satellite networks, fixed terrestrial (with circuit or packet switches, including the Internet) and mobile networks, electricity cable systems, if they are used to broadcast signals, networks used for the broadcast of sound and

spectrum are obliged to send previously to ANACOM a brief description of the network or service offer that they wish to start and to communicate the predicted date for the start of the activity, without prejudice of other elements demanded by the regulator. The procedures for starting the network and services of electronic communications offer are available on the ANACOM site[4].

The offer of networks or services of electronic communications, not accessible to the public, which operate in frequency bands subject to radio licensing, depends only of the corresponding licensing request, for network or station, according to Decree-Law number 151-A/2000, from July 20th, changed by Decree-Law number 264/2009, from September 28th.

The legal regime applicable to the use of amateur and amateur satellite stations is in Decree-Law number 53/2009, from March 2nd.

2. FRAMEWORK OF NTFA

In the terms of article 16 of LCE, ANACOM must publish the NTFA annually, which must contain:

a) The frequency bands and the number of channels already allocated to the companies of electronic communications accessible to the public, including the date when the allocation was reviewed;

b) The frequency bands reserved and to be made available in the following year within the scope of networks and services of electronic communications, accessible and not accessible to the public, specifying the cases in which the usage rights are required, as well as the corresponding allocation process;

c) The frequencies whose rights of usage are susceptible to broadcast in the terms of article 37 of LCE.

---

television, and the networks used for cable television, regardless of the type of information broadcast."

"*Electronic communications service:* the service generally offered against payment, which consists totally or mainly in the sending of signals through electronic communications networks, including the telecommunication services and the broadcast services of networks used for broadcasting, without prejudice to the exclusion mentioned in item b) of number 1 of article 2 of LCE."

[4]Accessible in http://www.anacom.pt/render.jsp?categoryId=115580.

The frequencies allocated to the Armed Forces and the security forces and services are excluded from this publication.

The radio spectrum is divided into frequency bands, which extend from 9 kHz to 3000 GHz, and are allocated to different radiocommunications services (e.g., fixed, mobile, broadcast, radiolocation, radionavigation, amateur, radioastronomy, etc.). Within the scope of the spectrum planning, and given its scarcity, one tries that the frequencies, as much as possible, are shared by different radiocommunications services, as long as there are no harmful interferences.

Within a certain radiocommunications service (e.g., fixed service – microwave links) specific channels may also be defined. This is a new subdivision of the bands in channels with a well defined width, which can take up the entire corresponding band or only a small part. The channels aim at ordering the usages of the radio spectrum in order to minimize prejudicial interferences between operators / users in neighbouring countries and to allow economies of scale to the sector.

In this context, Portugal adopts harmonized channels at European level, in the scope of the spectrum planning works in the Conference of European Postal and Telecommunications (CEPT), or at world level, resulting from the harmonization done within the International Telecommunication Union, Radiocommunications Sector (ITU-R).

In order to identify the radiocommunications services applicable to Portugal, according to the Radiocommunications Regulation (RR) of ITU-R, in Annex 1 of NTFA, the Table of Frequency Allocation is displayed, which also reflects the main national applications (main services and/or systems authorized in Portugal).

The RR, international treaty signed by Portugal, results from agreements signed among the Member-States of ITU within the scope of the World Radiocommunications Conferences (WRC), which take place every 3 or 4 years, and must be complied with by the countries in this organization.

Additionally to the revision of RR, the WRC establish guidelines, at technical and regulatory levels, for the usage of the radio spectrum. The last WRC was

in Geneva, from October 22nd to November 16th, 2007[5]. National works are under way to prepare the next WRC (http://www.anacom.pt/render.jsp?contentId=1041099), which will take place in 2012.

The usages of spectrum are based on the publication of the usages and reservations of frequency bands established, for each year, by the NTFA (Annexes 2 and 3, correspondingly), within the scope of the networks and services of electronic communications, accessible and not accessible to the public.

The NTFA specifies the cases in which usage rights are required, as well as if their allocation arises from the full accessibility regime or if it involves a selection procedure by competition or comparison, namely auction or tender. The respective procedures follow the specific courses, according to articles 31 and 35 of LCE.

The usage rights in NTFA are transferable according to the regime foreseen in article 37 of LCE. In the scope of the transfer of frequency usage rights, ANACOM, considering it to be important to define relevant rules and conditions associated with secondary spectrum trading, thought that such rules should reflect the legal changes arising from the transposition of the new European regulatory framework (revision of 2006), which should be concluded during 2011.

It should also be said that, according article 31 of LCE, ANACOM can adopt and publish decisions for the limitation o allocation of usage rights, which however must be duly justified and take into consideration the need to maximize the benefits for the users and facilitate the development of competition.

NTFA also includes the indication of the usages of frequencies exempt from radio licensing (Annex 4), for which ANACOM does not require any previous act.

It should be noted that, as seen in the section of NTFA regarding the reservations of frequency bands established for each year (Annex 3), the

[5] The main conclusions of the conference can be seen in http://www.anacom.pt/template2.jsp?categoryId=117299.

process of allocation of the available spectrum is, in general, of complete accessibility (e.g. Fixed Service applications). This allows, in the frequency bands in which demand does not exceed the available radio spectrum, for a faster access to the users of this resource, thus contributing to maximize the benefits for the consumers, promoting competition and the development of the market.

Considering that the approval of NTFA constitutes a measure with a significant impact on the relevant market, this is preceded by the general consultation procedure foreseen in article 8 of LCE. Then, a new version of NTFA is published, so as to allow that the version in effect keeps updated, without prejudice of, at any time, changes being made to the elements in this document, which are duly justified.

Thus, NTFA, a fundamental instrument in the spectrum management is, according opt the law, simultaneously stable, in order to assure the security of those intervening in the market, and has the capacity to adapt.

However, the balance must be assured between the stability desired for NTFA and the necessary changes so that it adequately reflects the purposes defined by Law, in particular, due to the need to promote the harmonization of the usage of frequencies (number 4 of article 15 of LCE) and the assurance of effective conditions for competition in the relevant markets and the effective and efficient usage of the frequencies (see items b) and c) of number 2 of article 15 of LCE).

3. STRUCTURE OF NTFA

NTFA is structured in seven parts:

- The first part (Annex 1), called "Table of frequency allocation", has a detailed presentation of the subdivisions of the radio spectrum, for frequencies between 9 kHz and 275 GHz, discriminating the radiocommunications services for each frequency band, according to the allocations of the RR of the ITU-R applicable to Portugal, indicating the used and planned services and systems;

- The second part (Annex 2) "Publication of the usages of frequency bands" contains the frequency bands and the number of channels used for operation of the networks and services of electronic communication accessible to the public until May 31st 2011;
- The third part (Annex 3) "Reservations of frequency bands" indicates the frequencies reserved and to be made available in 2011, for the operation of networks and services of electronic communications (i) accessible to the public and (ii) not accessible to the public;
- The fourth part of NTFA (Annex 4) "Usages exempt from licensing" has the usages of spectrum exempt from radio licensing, divided into (i) Exemption from network license and (ii) Exemption from station license;
- The fifth part of NTFA (Annex 5) "Equipments / Systems that use ultra wide band technology, UWB" has details of the generic Ultra Wide Band (UWB) equipments the specific UWB equipments;
- The sixth part of NTFA (Annex 6) "Usage of frequencies by amateur services and amateur satellite" contains the frequency bands and terms of usage (maximum allowed powers) by the different categories of amateurs, in addition to the status of amateur and amateur satellite;
- The seventh part of NTFA (Annex 7) "Appendixes" includes a set of additional elements (e.g., definitions, acronyms, relevant documents, figures).

4. MAIN ACTIONS DEVELOPED IN 2010 IN THE DOMAIN OF MANAGEMENT AND PLANNING THE RADIO SPECTRUM

Within the scope of the actions regarding the management and planning of the radio spectrum, the following activities developed in 2010 stand out:

- NTFA and Frequencies Portal

The public consultation that the National Table of Frequency Allocation (NTFA), 2009/2010 edition, was submitted to, ended on January 28th, 2010, and the analysis report (http://www.anacom.pt/render.jsp?contentId=1001855) and the reviewed NTFA were approved by deliberation on March 31st, 2010.

In order to implement a portal with information about frequencies, which will allow to easily and interactively view and search information in the scope of the frequency plan, allocations and national usages of the spectrum, in 2009 the requirements were identified and the specifications were defined for the development of a software solution called e-QNAF – National frequencies portal. This tool is currently being developed and it is foreseen that it will be available on the Anacom site soon.

The framework for e-QNAF is the adoption of Decision ECC/DEC/(01)03 (Decision EFIS), which establishes a database that includes the national tables of frequency allocation of the member states of CEPT, which is available for consultation in http://www.efis.dk/. EFIS allows viewing usages of the radio spectrum by country and allows comparing between countries, so as to verify the differences in spectrum allocation in Europe. It should be noted that EFIS is also the frequency portal selected by the Community, according to the Decision of the Commission 2007/344/EC, from May 16th, 2007.

The e-QNAF will allow the automatic export of data contained in the NTFA in order to keep EFIS updated.

- Digital Terrestrial Television

ICP-ANACOM decided, by deliberation on July 12th, 2010, to revoke the act of allocation of frequency usage rights associated with *Multiplexers* B to F and, consequently, the five titles that consubstantiate the usage rights allocated to PT Comunicações, without loss of bond. It was also determined that the revocation decision has retroactive effects since January 29th, 2010, when the corresponding decision project was approved.

In this scope, it should also be noted that, by deliberation on June 24th, 2010 the BM of ICP-ANACOM and in compliance with number 2 of the Resolution of Council of Ministers number 26/2009, published on March 17th, the final decision regarding the detailed plan for the termination of terrestrial analogical broadcast (plan for *switch-off*) associated with the introduction of terrestrial digital television (DTT) in Portugal, was approved.

The approved plan includes three stages scheduled as follows:

1st Stage - January 12th, 2012, for the transmitters and transposers that assure the coverage of the seashore of the continental territory;

2nd Stage - March 22nd, 2012, for the transmitters and transposers that assure the coverage in the Autonomous Regions of Azores and Madeira;

3rd Stage - April 26th, 2012, for the transmitters and transposers that assure the coverage in the remaining continental territory;

The present version of NTFA was updated regarding updates as a consequence of the actions summed up above.

- Digital Dividend, Sub-band 790-862 MHz

As a sequence of the public consultation started by ICP-ANACOM in 2009 and concerning the subsequent developments in the matter, namely at European level, and with the need to make decisions on this issue, Anacom submitted in September 2010 to public consultation, a decision project in order to (i) designate and make available the sub-band 790-862 MHz for electronic communication services, in accordance with Decision 2010/267/EU and proceed to the corresponding change in the National Table of Frequency Allocation, and (ii) make available the said sub-band before 2015, depending on the definition of technical and geographical conditions, that aim at the compatibility, namely with the usages in Spain and Morocco.

By deliberation of December 16th, 2010, the BM of ICP-ANACOM decided to keep the sense of the decision project, designating and making available the sub-band 790-862 MHz for electronic communication services in NTFA.

It should also be noted that ANACOM decided, by deliberation on March 9th and April 4th, 2011, to proceed with the change of some operating channels of Multiplexer A (Mux A) of the digital terrestrial television (DTT) broadcast service, consigned to PT Comunicações (PTC). Hence, the radio channels 61 (790-798 MHz), 64 (814-822 MHz) and 67 (838-846 MHz), consigned to PTC, were substituted by channel 56 (750-758 MHz) for the continental territory, by channel 54 (734-742 MHz) for the Autonomous Region of Madeira and by channels 48 (686-694 MHz), 49 (694-702 MHz) and 55 (742-750 MHz) for the Autonomous Region of Azores.

- 2.6 GHz and potential aggregation of spectrum

In 2009, ANACOM conducted a public consultation about the allocation of usage rights in the frequency bands 2500-2690 MHz (also known as the 2.6 GHz band). The replies received showed a wide interest at national level in the 2.6 GHz band (http://www.anacom.pt/render.jsp?contentId=776018), and therefore, during 2010, ICP-ANACOM analysed several factors regarding the consignment of the band, namely the conjugation with other bands (450 MHz; 790-862 MHz; e-GSM; 1800 MHz; 2,1 GHz; 3,6 GHz), the potential allocation models and obligations associated with the usage rights so as to prepare the start of the allocation process in 2011.

- *Refarming* of the GSM 900/1800 spectrum and consequent reformulation of the SMT operator titles

In the context of *refarming* of the radio spectrum in the frequency bands of 900 MHz and 1800 MHz, it was approved by deliberation in July 8th, 2010 of the Board of Management of ICP-ANACOM, to unify in a single title per operator[6], of the conditions applicable to the exercise of usage rights of frequencies allocated to Optimus, TMN and Vodafone Portugal for providing land mobile service in the listed bands. Simultaneously, the report for the previous hearing and public consultation, which the corresponding probable direction of decision, was approved.

In the scope of refarming the GSM 900/1800 spectrum, the restriction of using GSM technology in the spectrum at stake was eliminated from NTFA.

- BWA Auction

Following the approval of Regulation number 427/2009, for the Allocation of Frequency Usage Rights for the Broadband Access Via Radio (BWA), in 2010, the different stages of the procedure of selection by auction took place. The only round of bidding in the distribution stage took place during February 2010, in which two of the three participating entities were considered winners. In the consignment stage, the selection of lots in the geographical zones 1, 2, 3, 4, 5, 6, 7 and 8 was done, after which the corresponding Usage Rights were assigned to the winning bidders[7].

[6] Available in http://www.anacom.pt/render.jsp?categoryId=337367.
[7] Available in http://www.anacom.pt/render.jsp?categoryId=337551.

Following the BWA auction, the allocated spectrum as well as the entities holding the frequency usage rights are included in Annex 2 - usages.

- BFWA in 5.8 GHz

The *Broadband Fixed Wireless Access* (BFWA) was introduced in the section of Reservations in NTFA 2009/2010 in the frequency band 5725 – 5875 MHz, based on the results of studies conducted in CEPT, reflected on the CEPT Report 015 (reply from CEPT to the mandate of the European Commission on BWA). The CEPT Report 015 identifies problems with the Fixed Satellite Service, considering that the said frequency band can only be opened to BWA operations limited to the fixed and nomadic modes (BFWA).

During 2010, the analysis of opening the band for BFWA applications continued, based on new studies in CEPT and in the results of the discussions at the level of the European Commission. After the technical tests were conducted (namely taking into account the need to protect the usage of frequencies from weather radar systems), this band will be available for BFWA operations, and the allocation of Frequency Usage Rights is no required, and is only subject to prior registration of the stations.

- MCV

Following the adoption by the European Commission of Decision 2010/166/UE, from March 19th, 2010, and Recommendation 2010/167/EU, from March 19th, 2010, about the harmonization of usage conditions of the spectrum for mobile communications on board vessels (MCV services) in the European Union and about the authorization of systems for mobile communications services on board vessels (MCV service), respectively, ICP-ANACOM deliberated on 01.07.2010 to start, according to article 8 of Law number 5/2004, from February 10th, a public consultation about the introduction of mobile communication services on board vessels (MCV), so as to listen to those interested in the matter, and to proceed with the necessary changes to the National Table of Frequency Allocation and consequent update of the NTFA.

Hence, considering the replies received for the consultation, ANACOM approved, by deliberation on January 6th, 2011, the final decision about the offer of mobile communication services on board vessels (MCV).

- SST and the new regulatory framework from EU

ANACOM has announced in the recent past that it was considering the start of a public consultation regarding the secondary spectrum trading (SST), which promoted a multidisciplinary debate of the matter and allowed to determine a set of guidelines for the market. However, considering the ongoing transposition process of the new European regulatory framework (revision from 2006), the regulator thought that the debate about SST must take into account the impact of law changes, so this debate will take place in line with the timings foreseen for the revision of the regulatory framework.

This way, the present NTFA does not have any changes regarding the question of transferability of the frequency usage rights.

5. CHANGES TO THE PRESENT VERSION

NTFA was updated so as to reflect the current usages (dated May 31st, 2011) and the availability of spectrum for 2011, in the following way:

a) Update of the allocation table (**Annex 1**), so as to include new Decisions ECC and EC;

b) Update of the frequency band usages, referring to May 31st, 2011 (**Annex 2**);

c) Update of the available spectrum destined to networks and services of electronic communications, accessible and not accessible to the public, as stated in **Annex 3**;

d) Change to the annex of equipments exempt of license (**Annex 4**);

e) Update of the annex regarding UWB equipment (**Annex 5**);

f) Several updates (e.g., references to Decisions / Recommendations from EC and CEPT, detected lapses, etc.).

6. ADDITIONAL CLARIFICATIONS

Any request for additional clarification regarding the information contained in this publication must be sent to the following e-mail address: esclarecimentos.qnaf@anacom.pt.

Annex 1

TABLE OF FREQUENCY ALLOCATION

1.1 Table of frequency allocation

The structure of the "Table of Frequency Allocation" is as follows:

Column 1: FREQUENCY BANDS

Indicates the frequency bands that each line on the table refers to.

Column 2: ALLOCATIONS OF RR (article 5) APPLICABLE TO PORTUGAL

Contains for each frequency band:

- Allocations of article 5 of RR applicable to Portugal;
- Notes of article 5 of RR applicable to Portugal.

The allocations highlighted with upper-case letters correspond to primary status allocations; the allocations with secondary status are written in lower-case.

The footnotes of RR (5.xxx) indicated in front of a certain service only regard to it; when footnotes are isolated in the cell, they do not refer to any of the specified services.

Column 3: MAIN NATIONAL APPLICATIONS

Main services / systems authorized in Portugal (in ***'bold'*** if they have usages). When a technology is referred, it reflects the current usage of the band, although it is not implied that the band is limited to the specified technology.

Column 4: NOTES

Used plans;

Relevant national and international standards;

Usage limitations of the bands;

Other pertinent information.

The definitions regarding the presented services, the acronyms and relevant documents referred can be found in Annex 7.

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
Lower than 9	(Not allocated) 5.53, 5.54		
9 - 14	RADIONAVIGATION	**SRD – Inductive applications (9-90 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
14 - 19,95	FIXED MOBILE MARITIME 5.57 5.56	**SRD – Inductive applications (9-90 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band
19,95 - 20,05	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	**SRD – Inductive applications (9-90 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
20,05 - 70	FIXED MOBILE MARITIME 5.57 5.56	**SRD – Inductive applications (9-90 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band
70 - 72	RADIONAVIGATION 5.60	**SRD – Inductive applications (9-90 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
72 - 84	FIXED MOBILE MARITIME 5.57 RADIONAVIGATION 5.60 5.56	**SRD – Inductive applications (9-90 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
84 - 86	RADIONAVIGATION 5.60	**SRD – Inductive applications (9-90 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
86 - 90	FIXED MOBILE MARITIME 5.57 RADIONAVIGATION 5.56	**SRD – Inductive applications (9-90 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
90 - 110	RADIONAVIGATION 5.62 Fixed 5.64	**LORAN-C System (RV) (100 kHz)** **SRD – Inductive applications (90-119 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
110 - 112	FIXED MOBILE MARITIME RADIONAVIGATION 5.64	**SRD – Inductive applications (90-119 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
112 - 115	RADIONAVIGATION 5.60	**SRD – Inductive applications (90-119 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
115 - 117,6	RADIONAVIGATION 5.60 Fixed Mobile Maritime 5.64	**SRD – Inductive applications (90-119 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
117,6 - 126	FIXED MOBILE MARITIME RADIONAVIGATION 5.60 5.64	**SRD – Inductive applications(90-119 kHz; 119-135 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
126 - 129	RADIONAVIGATION 5.60	**SRD – Inductive applications (119-135 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
129 - 130	FIXED MOBILE MARITIME RADIONAVIGATION 5.60 5.64	**SRD – Inductive applications (119-135 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
130 - 135,7	FIXED MOBILE MARITIME 5.64	**SRD – Inductive applications(119-135 kHz; 135-140 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
135,7 - 137,8	FIXED MOBILE MARITIME Amateur 5.67A 5.64, 5.67B	**Amateur (AM)** **SRD – Inductive applications (135-140 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	According to Annex 6 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
137,8 – 148,5	FIXED MOBILE MARITIME 5.64	**SRD – Inductive applications(135-140 kHz; 140-148.5 kHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band
148,5 - 255	BROADCAST	**SRD – Inductive applications (148.5 kHz–5 MHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
255 - 283,5	BROADCAST AERONAUTICAL RADIONAVIGATION	NDB – Radio beacons (RVA) **SRD – Inductive applications (148.5 kHz–5 MHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ICAO – Annex 10 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
283,5 - 315	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radio beacons) 5.73 5.74	**NDB – Radio beacons (RVA)** **DIFFERENTIAL GPS System (RV) (285-325 kHz)** **NDB – Radio beacons (RVM)** **SRD – Inductive applications (148.5 kHz–5 MHz)** **SRD- Wireless systems for medical applications (9-315 kHz)**	ICAO – Annex 10 GE-85 (Radio beacons) ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
315 - 325	AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radio beacons) 5.73	**NDB – Radio beacons (RVA)** **DIFFERENTIAL GPS System (RV) (285-325 kHz)** **SRD – Inductive applications (148.5 kHz–5 MHz)** **SRD- Wireless systems for medical applications (315-600 kHz)**	ICAO – Annex 10 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
325 - 405	AERONAUTICAL RADIONAVIGATION	**NDB and LOCATOR - Radio beacons (RVA)**	ICAO – Annex 10
		SRD – Inductive applications: RFID (400-600 kHz)	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
		SRD – Inductive applications (148.5 kHz–5 MHz)	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
		SRD- Wireless systems for medical applications and implants in animals (315-600 kHz)	ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
405 - 415	RADIONAVIGATION 5.76		
		SRD – Inductive applications: RFID (400-600 kHz)	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
		SRD – Inductive applications (148.5 kHz–5 MHz)	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
		SRD- Wireless systems for medical applications and implants in animals (315-600 kHz)	ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
415 - 435	MOBILE MARITIME 5.79	**Mobile Maritime (MM)**	GE-85
	AERONAUTICAL RADIONAVIGATION	**NDB and LOCATOR - Radio beacons (RVA)**	ICAO – Annex 10
		SRD – Inductive applications: RFID (400-600 kHz)	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
		SRD – Inductive applications (148.5 kHz–5 MHz)	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
		SRD- Wireless systems for medical applications and implants in animals (315-600 kHz)	ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
435 - 495	MOBILE MARITIME 5.79, 5.79A	**Mobile Maritime (MM)**	GE-85
		NAVTEX – International System (MM) (490 kHz)	RR Ap. 15 RR Resolution 339 (Rev. WRC-07)
	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 2010/368/EU, from June 30th
		SRD – Inductive applications (148.5 kHz–5 MHz)	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
		SRD- Wireless systems for medical applications and implants in animals (315-600 kHz)	ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
	5.82		Restricted band
495 - 505	MOBILE 5.82A	**Mobile (MOV)**	
		SRD – Inductive applications: RFID (400-600 kHz)	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
		SRD – Inductive applications (148.5 kHz–5 MHz)	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
		SRD- Wireless systems for medical applications and implants in animals (315-600 kHz)	ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
	5.82B		

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
505 - 526,5	MOBILE MARITIME 5.79, 5.79A, 5.84 AERONAUTICAL RADIONAVIGATION	**Mobile Maritime (MM)** **NAVTEX – International System (MM) (518 kHz)** **NDB – Radio beacons (RVA) (510-526.5 kHz)** **SRD – Inductive applications: RFID (400-600 kHz)** **SRD – Inductive applications (148.5 kHz–5 MHz)** **SRD- Wireless systems for medical applications and implants in animals (315-600 kHz)**	GE-85 RR Ap. 15 RR Resolution 339 (Rev. WRC-07) ICAO – Annex 10 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
526,5 - 1606,5	BROADCAST	**Audio broadcast (RAD)** **SRD – Inductive applications: RFID (400-600 kHz)** **SRD – Inductive applications (148.5 kHz–5 MHz)** **SRD- Wireless systems for medical applications and implants in animals (315-600 kHz)**	GE-75 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
1606,5 - 1625	FIXED MOBILE MARITIME 5.90 MOBILE TERRESTRIAL 5.92	**Mobile Maritime (MM)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	GE-85 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
1625 - 1635	RADIOLOCATION		

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
1635 - 1800	FIXED MOBILE MARITIME 5.90 MOBILE TERRESTRIAL 5.92	**Mobile Maritime (MM)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	GE-85 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (1715-1800 kHz)
1800 - 1810	RADIOLOCATION	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
1810 - 1850	AMATEUR 5.100	**Amateur (AM) (1830-1,850 kHz)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	According to Annex 6 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
1850 - 2000	FIXED MOBILE except mobile aeronautical 5.92, 5.103	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
2000 - 2025	FIXED MOBILE except mobile aeronautical (R) 5.92, 5.103	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
2025 - 2045	FIXED MOBILE except mobile aeronautical (R) Meteorology ancillary 5.104 5.92, 5.103	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
2045 - 2160	FIXED MOBILE MARITIME MOBILE TERRESTRIAL 5.92	**Mobile Maritime (MM)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	GE-85 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (2140-2,160 kHz)
2160 - 2170	RADIOLOCATION	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
2170 - 2173,5	MOBILE MARITIME	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
2173,5 - 2190,5	MOBILE (help and call) 5.108, 5.109, 5.110, 5.111	**MOBILE (danger and call)** **Mobile Maritime (MM)** **Help and call - telephone (2182 kHz)** **DSC (2187.5 kHz)** **NBDP (2174.5 kHz)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	RR Ap. 15 RR Resolution 354 (Rev. WRC-07) RR Resolution 331 (Rev. WRC-07) ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
2190,5 - 2194	MOBILE MARITIME	**Mobile Maritime (MM)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
2194 - 2300	FIXED MOBILE except mobile aeronautical (R) 5.92, 5.103	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
2300 - 2498	FIXED MOBILE except mobile aeronautical (R) BROADCAST 5.113 5.103	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
2498 - 2501	STANDARD FREQUENCY AND TIME SIGNAL (2,500 kHz)	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
2501 - 2502	STANDARD FREQUENCY AND TIME SIGNAL Space investigation	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
2502 - 2625	FIXED MOBILE except mobile aeronautical (R) 5.92, 5.103	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
2625 - 2650	MOBILE MARITIME MARITIME RADIONAVIGATION 5.92	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
2650 - 2850	FIXED MOBILE except mobile aeronautical (R) 5.92, 5.103	**Fixed (FIX)** **Mobile Maritime (MOV)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
2850 - 3025	MOBILE AERONAUTICAL (R) 5.111, 5.115	**Mobile aeronautical (MAR)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	RR Ap.27 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
3025 - 3155	MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (MAOR)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	RR Ap. 26 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
3155 - 3200	FIXED MOBILE except mobile aeronautical (R) 5.116	**Fixed (FIX)** **Mobile (MOV)** **SRD – Inductive applications (3155-3400 kHz; 148.5-5 MHz)**	 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
3200 - 3230	FIXED MOBILE except mobile aeronautical (R) BROADCAST 5.113 5.116	**Fixed (FIX)** **Mobile (MOV)** **SRD – Inductive applications (3155-3400 kHz; 148.5-5 MHz)**	 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
3230 - 3400	FIXED MOBILE except mobile aeronautical BROADCAST 5.113 5.116	**Fixed (FIX)** **Mobile (MOV)** **SRD – Inductive applications (3155-3400 kHz; 148.5-5 MHz)**	 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (3375-3,400 kHz)

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
3400 - 3500	MOBILE AERONAUTICAL (R)	**Mobile aeronautical (MAR)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	RR Ap. 27 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
3500 - 3800	AMATEUR FIXED MOBILE except mobile aeronautical 5.92	**Amateur (AM)** **Fixed (FIX)** **Mobile (MOV)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	According to Annex 6 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
3800 - 3900	FIXED MOBILE AERONAUTICAL (OR) MOBILE TERRESTRIAL	**Fixed (FIX)** **Mobile aeronautical (MAOR)** **Mobile terrestrial (MT)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
3900 - 3950	MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (MAOR)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	RR Ap. 26 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
3950 - 4000	FIXED BROADCAST	**Fixed (FIX)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
4000 - 4063	FIXED MOBILE MARITIME 5,127	**Fixed (FIX)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
4063 - 4438	MOBILE MARITIME 5.79A, 5.109, 5.110, 5.130, 5.131, 5.132 5.128	**Mobile Maritime (MM)** **Help and security traffic - telephone (4125 kHz)** **NBDP (4,177.5 kHz)** **DSC (4,207.5 kHz)** **NAVTEX – International System (MM) (4209.5 kHz)** **SRD – Railway applications (4234 kHz)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	RR Ap. 15 RR Ap. 17 RR Ap. 25 RR Art. 52 RR Resolution 339 (Rev. WRC-07) ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (4152-4172 kHz; 4221-4351 kHz)
4438 - 4650	FIXED MOBILE except mobile aeronautical (R)	**Fixed (FIX)** **Mobile (MOV)** **SRD – Railway applications (4,516 kHz)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
4650 - 4700	MOBILE AERONAUTICAL (R)	**Mobile aeronautical (MAR)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	RR Ap. 27 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
4700 - 4750	MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (MAOR)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	RR Ap. 26 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
4750 - 4850	FIXED MOBILE AERONAUTICAL (OR) MOBILE TERRESTRIAL BROADCAST 5.113	**Fixed (FIX)** **Mobile aeronautical (MAOR)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
4850 - 4995	FIXED MOBILE TERRESTRIAL BROADCAST 5.113	**Fixed (FIX)** **Mobile terrestrial (MT)** **SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
4995 - 5003	STANDARD FREQUENCY AND TIME SIGNAL (5,000 kHz)	**SRD – Inductive applications (148.5 kHz–5 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
5003 - 5005	STANDARD FREQUENCY AND TIME SIGNAL Space investigation	**SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
5005 - 5060	FIXED BROADCAST 5.113	**Fixed (FIX)** **SRD – Inductive applications (5-30 MHz)**	 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
5060 - 5250	FIXED Mobile except mobile aeronautical	**Fixed (FIX)** **SRD – Inductive applications (5-30 MHz)**	 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
5250 - 5450	FIXED MOBILE except mobile aeronautical	**Fixed (FIX)** **SRD – Inductive applications (5-30 MHz)**	 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
5450 - 5480	FIXED MOBILE AERONAUTICAL (OR) MOBILE TERRESTRIAL	**Fixed (FIX)** **Mobile aeronautical (MAOR)** **SRD – Inductive applications (5-30 MHz)**	 RR Ap. 26 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
5480 - 5680	MOBILE AERONAUTICAL (R) 5.111, 5.115	**Mobile aeronautical (MAR)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 27 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
5680 - 5730	MOBILE AERONAUTICAL (OR) 5.111, 5.115	**Mobile aeronautical (MAOR)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 26 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
5730 - 5900	FIXED MOBILE TERRESTRIAL	**Fixed (FIX)** **SRD – Inductive applications (5-30 MHz)**	 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
5900 - 5950	BROADCAST 5.134 5.136	**SRD – Inductive applications (5-30 MHz)**	 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
5950 - 6200	BROADCAST	**Audio broadcast (RAD)** **SRD – Inductive applications (5-30 MHz)**	RR Art. 12 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
6200 - 6525	MOBILE MARITIME 5.109, 5.110, 5.130, 5.132 5.137	**Mobile Maritime (MM)** Help and security traffic - telephone (6,215 kHz) NBDP (6,268 kHz) DSC (6,312 kHz) NBDP - MSI (6314 kHz) **SRD – Inductive applications (5-30 MHz)**	RR Ap. 15 RR Ap. 17 RR Ap. 25 RR Art. 52 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (6233-6,261 kHz; 6332.5-6,501 kHz)

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
6525 - 6685	MOBILE AERONAUTICAL (R)	**Mobile aeronautical (MAR)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 27 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
6685 - 6765	MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (MAOR)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 26 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
6765 - 7000	FIXED MOBILE except mobile aeronautical (R) 5,138, 5,138A	**Fixed (FIX)** **Mobile terrestrial (MT)** Adaptive systems (6765-6795 MHz) **ISM – Industrial, scientific, and medical applications (6765-6795 kHz)** **SRD - Non-specific applications (6765-6795 kHz)** **SRD – Inductive applications (6765-6,795 kHz; 5-30 MHz)**	RR Resolution 729 (Rev. WRC-07) Rec. UIT-R F.1110 ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (6795-7,000 kHz)
7000 - 7100	AMATEUR AMATEUR SATELLITE	**Amateur (AM)** **Amateur satellite (AMS)** **SRD – Inductive applications (5-30 MHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
7100 - 7200	AMATEUR 5.141C	**Amateur (AM)** **SRD – Inductive applications (5-30 MHz)**	According to Annex 6 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
7200 - 7300	BROADCAST	**Audio broadcast (RAD)** **SRD – Inductive applications (5-30 MHz)**	RR Art. 12 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
7300 - 7400	BROADCAST 5.134 FIXED 5.143 5.143	Audio broadcast (RAD) **Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
7400 - 7450	BROADCAST 5,143B	Audio broadcast (RAD) **Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (7400-8800 kHz; 5-30 MHz)**	RR Art. 12 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
7450 - 8100	FIXED 5.143E MOBILE except mobile aeronautical (R) 5.143E	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (7400-8800 kHz; 5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (7757-8,100 kHz)

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
8100 - 8195	FIXED MOBILE MARITIME	**Fixed (FIX)** **Mobile Maritime (MM)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (7400-8800 kHz; 5-30 MHz)**	 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
8195 - 8815	MOBILE MARITIME 5.109, 5.110, 5.132, 5.145 5.111	**Mobile Maritime (MM)** **Help and security traffic - telephone (8,291 kHz)** **NBDP (8,376.5 kHz)** **DSC (8,414.5 kHz)** **NBDP – MSI (8416.5 kHz)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (7400-8800 kHz; 5-30 MHz)**	RR Ap. 15 RR Ap. 17 RR Ap. 25 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (8300-8340 kHz; 8438-8707 kHz)
8815 - 8965	MOBILE AERONAUTICAL (R)	**Mobile aeronautical (MAR)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 27 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
8965 - 9040	MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (MAOR)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 26 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
9040 - 9400	FIXED	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
9400 - 9500	BROADCAST 5.134 5.146	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
9500 - 9900	BROADCAST 5.147	**Audio broadcast (RAD)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	RR Art. 12 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
9900 - 9995	FIXED	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
9995 - 10003	STANDARD FREQUENCY AND TIME SIGNAL (10,000 kHz) 5.111	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
10003 - 10005	STANDARD FREQUENCY AND TIME SIGNAL Space investigation 5.111	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
10005 - 10100	MOBILE AERONAUTICAL (R) 5.111	**Mobile aeronautical (MAR)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 27 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
10100 - 10150	FIXED Amateur	**Fixed (FIX)** **Amateur (AM) (10100-10108 kHz, 10117-10120 kHz, 10133-10150 kHz)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	According to Annex 6 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
10150 - 11175	FIXED Mobile except mobile aeronautical (R)	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (10200-11000 kHz; 5-30 MHz)**	 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
11175 - 11275	MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (MAOR)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 26 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
11275 - 11400	MOBILE AERONAUTICAL (R)	**Mobile aeronautical (MAR)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 27 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
11400 - 11600	FIXED	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
11600 - 11650	BROADCAST 5.134 5.146	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
11650 - 12050	BROADCAST 5.147	**Audio broadcast (RAD)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	RR Art. 12 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
12050 - 12100	BROADCAST 5.134 5.146	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
12100 - 12230	FIXED	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
12230 - 13200	MOBILE MARITIME 5.109, 5.110, 5.132, 5.145	**Mobile Maritime (MM)** **Help and security traffic - telephone (12290 kHz)** **NBDP (12,520 kHz)** **DSC (12,577 kHz)** **NBDP – MSI (12,579 kHz)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD-Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Ap. 15 RR Ap. 17 RR Ap. 25 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (12368-12,420 kHz; 12658.5-13,077 kHz)
13200 - 13260	MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (MAOR)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD-Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Ap. 26 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
13260 - 13360	MOBILE AERONAUTICAL (R)	**Mobile aeronautical (MAR)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Ap. 27 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
13360 - 13410	FIXED RADIOASTRONOMY 5.149	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
13410 - 13570	FIXED Mobile except mobile aeronautical (R) 5.150	**Fixed (FIX)** **Mobile (MOV)** **ISM – Industrial, scientific, and medical applications (13553-13,567 kHz)** **SRD - Non-specific applications (13553-13,567 kHz)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (13553-13,567 kHz; 5-30 MHz)** **SRD-Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (13410-13,450 kHz; 13495-13,515 kHz)
13570 - 13600	BROADCAST 5.134 5.151	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD-Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
13600 - 13800	BROADCAST	**Audio broadcast (RAD)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD-Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Art. 12 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
13800 - 13870	BROADCAST 5.134 5.151	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD-Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
13870 - 14000	FIXED Mobile except mobile aeronautical (R)	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD-Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (13870-13,914 kHz)

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
14000 - 14250	AMATEUR AMATEUR SATELLITE	**Amateur (AM)** **Amateur satellite (AMS)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
14250 - 14350	AMATEUR	**Amateur (AM)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	According to Annex 6 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
14350 - 14990	FIXED Mobile except mobile aeronautical (R)	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (14604-14,670 kHz)

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
14990 - 15005	STANDARD FREQUENCY AND TIME SIGNAL (15,000 kHz) 5.111	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
15005 - 15010	STANDARD FREQUENCY AND TIME SIGNAL Space investigation	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
15010 - 15100	MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (MAOR)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Ap. 26 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
15100 - 15600	BROADCAST	**Audio broadcast (RAD)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Art. 12 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
15600 - 15800	BROADCAST 5.134 5.146	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
15800 - 16360	FIXED	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (16180-16,231 kHz)

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
16360 - 17410	MOBILE MARITIME 5.109, 5.110, 5.132, 5.145	**Mobile Maritime (MM)** **Help and security traffic - telephone (16,420 kHz)** **NBDP (16,695 kHz)** **DSC (16,804.5 kHz)** **NBDP – MSI (16,806.5 kHz)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Ap. 15 RR Ap. 17 RR Ap. 25 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (16549-16,617 kHz; 16904.5-17,242 kHz)
17410 - 17480	FIXED	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (17410-17,452 kHz)

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
17480 - 17550	**BROADCAST 5.134** 5.146	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
17550 - 17900	BROADCAST	**Audio broadcast (RAD)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Art. 12 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
17900 - 17970	MOBILE AERONAUTICAL (R)	**Mobile aeronautical (MAR)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Ap. 27 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
17970 - 18030	MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (MAOR)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Ap. 26 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band
18030 - 18052	FIXED	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
18052 - 18068	FIXED Space investigation	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
18068 - 18168	AMATEUR AMATEUR SATELLITE	**Amateur (AM)** **Amateur satellite (AMS)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
18168 - 18780	FIXED Mobile except mobile aeronautical	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (18249-18,373 kHz)
18780 - 18900	MOBILE MARITIME	**Mobile Maritime (MM)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Ap. 17 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (18846-18,870 kHz)

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
18900 - 19020	**BROADCAST 5.134** 5.146	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
19020 - 19680	FIXED	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (19020-19,120 kHz)
19680 - 19800	MOBILE MARITIME 5,132	**Mobile Maritime (MM)** **NBDP – MSI (19,680.5 kHz)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	RR Ap. 17 RR Ap. 15 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (19705-19,755 kHz)

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
19800 - 19990	FIXED	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
19990 - 19995	STANDARD FREQUENCY AND TIME SIGNAL Space investigation 5.111	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
19995 - 20010	STANDARD FREQUENCY AND TIME SIGNAL (20,000 kHz) 5.111	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications and implants in animals (12.5-20.0 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
20010 - 21000	FIXED Mobile	**Fixed (FIX)** **Mobile (MOV)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (20442-20,680 kHz)
21000 - 21450	AMATEUR **AMATEUR SATELLITE**	**Amateur (AM)** **Amateur satellite (AMS)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
21450 - 21850	BROADCAST	**Audio broadcast (RAD)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	RR Art. 12 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
21850 - 21870	FIXED	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
21870 - 21924	FIXED 5.155B	**SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
21924 - 22000	MOBILE AERONAUTICAL (R)	**Mobile aeronautical (MAR)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 27 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
22000 - 22855	MOBILE MARITIME 5,132	**Mobile Maritime (MM)** **NBDP – MSI (22,376 kHz)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 17 RR Ap. 25 RR Ap. 15 ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (22180-22,240 kHz; 22445.5-22,696 kHz)
22855 - 23000	FIXED	**Fixed (FIX)** **SRD – Railway applications (7.3-23.0 MHz)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (22900-23,000 kHz)
23000 - 23200	FIXED Mobile except mobile aeronautical (R)	**Fixed (FIX)** **Mobile (MOV)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
23200 - 23350	FIXED 5.156A MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (MAOR)** **SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band
23350 - 24000	FIXED MOBILE except mobile aeronautical 5.157	**Fixed (FIX)** Adaptive systems **SRD – Inductive applications (5-30 MHz)**	RR Resolution 729 (Rev. WRC-07) Rec. UIT-R F.1110 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
24000 - 24890	FIXED MOBILE TERRESTRIAL	**Fixed (FIX)** Adaptive systems (24000-24125 kHz; 24325-24890 kHz) **SRD – Inductive applications (5-30 MHz)**	RR Resolution 729 (Rev. WRC-07) Rec. UIT-R F.1110 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (24125-24,325 kHz)
24890 - 24990	AMATEUR AMATEUR SATELLITE	**Amateur (AM)** **Amateur satellite (AMS)** **SRD – Inductive applications (5-30 MHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
24990 - 25005	STANDARD FREQUENCY AND TIME SIGNAL (25,000 kHz)	**SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
25005 - 25010	STANDARD FREQUENCY AND TIME SIGNAL Space investigation	**SRD – Inductive applications (5-30 MHz)**	ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
25010 - 25070	FIXED MOBILE except mobile aeronautical	 Adaptive systems **SRD – Inductive applications (5-30 MHz)**	 RR Resolution 729 (Rev. WRC-07) Rec. UIT-R F.1110 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
25070 - 25210	MOBILE MARITIME	**Mobile Maritime (MM)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 17 RR Ap. 25 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (25121-25,161.25 kHz)
25210 - 25550	FIXED MOBILE except mobile aeronautical	Fixed (FIX) Adaptive systems **SRD – Inductive applications (5-30 MHz)**	 RR Resolution 729 (Rev. WRC-07) Rec. UIT-R F.1110 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
25550 - 25670	RADIOASTRONOMY 5.149	 **SRD – Inductive applications (5-30 MHz)**	 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
25670 - 26100	BROADCAST	**Audio broadcast (RAD)** **SRD – Inductive applications (5-30 MHz)**	RR Art. 12 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
26100 - 26175	MOBILE MARITIME 5,132	**Mobile Maritime (MM)** **NBDP – MSI (26,100.5 kHz)** **SRD – Inductive applications (5-30 MHz)**	RR Ap. 17 RR Ap. 15 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (26122.5-26,145 kHz)

FREQUENCY BAND (kHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
26175 - 27500	FIXED MOBILE except mobile aeronautical 5.150	**Fixed (FIX)** **Mobile (MOV)** Adaptive systems (26175-26,870 kHz; 26957-27,500 kHz) **SCPP – Call and search for people in local scope (MOV) (27155 kHz; 27165 kHz; 27175 kHz; 27185 kHz; 27225 kHz)** **ISM – Industrial, scientific, and medical applications (26957-27,283 kHz)** **SRD - Non-specific applications (26957-27,283 kHz)** **SRD – Railway applications (27095 kHz)** **SRD-Model control (26995 kHz; 27045 kHz; 27095 kHz; 27145 kHz; 27195 kHz)** **SRD – Inductive applications (26957-27,283 kHz; 5-30 MHz)** **CB (26.960-27.410 MHz)**	RR Resolution 729 (Rev. WRC-07) Rec. UIT-R F.1110 *Local Paging* ERC/REC 70-03 Annex 1 ERC/DEC/(01)02 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 8 ERC/DEC/(01)10 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 9 ERC/DEC/(01)16 Decision 2010/368/EU, from June 30th CEPT Rec. T/R 20-09 Restricted band (26870-26,957 kHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
27,5 - 28	METEOROLOGY ANCILLARY FIXED MOBILE	Adaptive systems (27.5-27.85 MHz) **CT0 – Cordless telephones (27, 5375-27, 8375 MHz) (MOV)** **SRD – Inductive applications (5-30 MHz)**	RR Resolution 729 (Rev. WRC-07) Rec. UIT-R F.1110 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th Restricted band (27.85-28 MHz)
28 - 29,7	AMATEUR AMATEUR SATELLITE	**Amateur (AM)** **Amateur satellite (AMS)** **SRD – Inductive applications (5-30 MHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th
29,7 - 30,005	FIXED MOBILE	**SMT – Private networks (MOV)** **SRD – Remote control, remote measurement, remote alarm and data transfer systems (29.980 MHz; 29.990 MHz; 30.000 MHz)** **SRD – Inductive applications (5-30 MHz)** **SRD- Wireless systems for medical applications (30-37.5 MHz)**	Plane of 40 MHz ERC/REC 70-03 Annex 9 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
30,005-30,01	SPACE OPERATIONS (satellite identification) FIXED MOBILE SPACE INVESTIGATION	**SMT – Private networks (MOV)** **SRD- Wireless systems for medical applications (30-37.5 MHz)**	Plane of 40 MHz ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
30,01 - 37,5	FIXED MOBILE	**SMT – Private networks (MOV)** **CT0 – Cordless telephones (36.9875-37, 2875 MHz) (MOV)** **SRD – Remote control for model aeroplanes (34,995-35,225 MHz)** **SRD – Remote control, remote measurement, remote alarm and data transfer systems (30.100 MHz)** **SRD- Wireless systems for medical applications (30-37.5 MHz)**	Plane of 40 MHz ERC/REC 70-03 Annex 8 ERC/DEC/(01)11 ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th Restricted band (30.0375-33.0875 MHz; 35.8625-36.9625 MHz; 37.3125-39.7625 MHz)
37,5 - 38,25	FIXED MOBILE Radioastronomy 5.149	**SMT – Private networks (MOV)**	Plane of 40 MHz Restricted band
38,25 - 39,986	FIXED MOBILE	**SMT – Private networks (MOV)**	Plane of 40 MHz Restricted band (37.3125-39.7625 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
39,986 - 40,02	FIXED MOBILE Space investigation	**SMT – Private networks (MOV)**	Plane of 40 MHz
40,02 - 40,98	FIXED MOBILE 5.150	**SMT – Private networks (MOV)** **SCPP – Call and search for people in local scope (MOV) (40.680 MHz)** **ISM – Industrial, scientific, and medical applications (40.66-40.7 MHz)** **SRD - Non-specific applications (40.66-40.7 MHz)** **SRD – Model control (40.665 MHz, 40.675 MHz, 40.685 MHz, 40.695 MHz)**	Plane of 40 MHz *Local Paging* ERC/REC 70-03 Annex 1 ERC/DEC/(01)03 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 8 ERC/DEC/(01)12
40,98 - 41,015	FIXED MOBILE Space investigation	**SMT – Private networks (MOV)**	Restricted band
41,015 - 44	FIXED MOBILE	**SMT – Private networks (MOV)**	Restricted band
44 - 47	FIXED MOBILE Radiolocation 5.162A	**SMT – Private networks (MOV)**	Usage of band 46-68 MHz by the Radiolocation Service is restricted to wind profile radars Restricted band

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
47 - 68	BROADCAST Radiolocation 5.162A	**Analogical television broadcast (RAD)** **Amateur (AM) (50-50.5 MHz)**	Band I (47-68 MHz) (channels 2 to 4) ST-61 Broadcast to stop until April 26th, 2012, according to RCM number 26/2009, of February 26th Usage of band 46-68 MHz by the Radiolocation Service is restricted to wind profile radars According to Annex 6 Restricted band (47.25-49.5 MHz; 50.5-51 MHz; 54-68 MHz)
68 - 74,8	FIXED MOBILE except mobile aeronautical 5.149	**SMT – Private networks (MOV)** **Amateur (AM) (70.157-70.2125 MHz; 70.2375-70.2875 MHz)**	Plane of 80 MHz ECC/DEC/(06)06 According to Annex 6 Restricted band (68.8875-69.8625 MHz; 73.3-74.1 MHz)
74,8 - 75,2	AERONAUTICAL RADIONAVIGATION 5.180	**Aeronautical radio help – ILS system markers (RVA)**	ICAO – Annex 10 ECC/DEC/(06)06
75,2 - 87,5	FIXED MOBILE except mobile aeronautical	**SMT – Private networks (MOV)**	Plane of 80 MHz ECC/DEC/(06)06 Restricted band (75.2125-77.65 MHz; 79.4125-80.3875 MHz; 83.8250-84.6250 MHz; 85.7375-87.4875 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
87,5 - 108	BROADCAST	**Audio broadcast (RAD)** **SRD – Wireless audio systems**	Band II – FM GE-84 ERC/REC 70-03 Annex 13 Decision 2010/368/EU, from June 30th
108 - 117,975	AERONAUTICAL RADIONAVIGATION 5.197A	**Aeronautical radio help – VOR and ILS systems localizer (RVA)**	ICAO – Annex 10
117,975 - 137	MOBILE AERONAUTICAL (R) 5.111, 5.200	**Mobile aeronautical (MAR)** **Emergency (121.5 MHz and 123.1 MHz)**	ICAO – Annex 10
137 - 137,025	SPACE OPERATIONS (space-Earth) SATELLITE METEOROLOGY (space-Earth) MOBILE SATELLITE (space-Earth) 5.208A, 5.208B, 5.209 SPACE INVESTIGATION (space-Earth) Fixed Mobile except mobile aeronautical (R) 5.208	**Mobile satellite (MV-S) (137-138 MHz)**	ERC/DEC/(99)06

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
137,025 - 137,175	SPACE OPERATIONS (space-Earth) SATELLITE METEOROLOGY (space-Earth) SPACE INVESTIGATION (space-Earth) Fixed Mobile satellite (space-Earth) 5.208A, 5.208B, 5.209 Mobile except mobile aeronautical (R) 5.208	**Mobile satellite (MV-S) (137-138 MHz)**	ERC/DEC/(99)06
137,175 - 137,825	SPACE OPERATIONS (space-Earth) SATELLITE METEOROLOGY (space-Earth) MOBILE SATELLITE (space-Earth) 5.208A, 5.208B, 5.209 SPACE INVESTIGATION (space-Earth) Fixed Mobile except mobile aeronautical (R) 5.208	**Mobile satellite (MV-S) (137-138 MHz)**	ERC/DEC/(99)06
137,825 - 138	SPACE OPERATIONS (space-Earth) SATELLITE METEOROLOGY (space-Earth) SPACE INVESTIGATION (space-Earth) Fixed Mobile satellite (space-Earth) 5.208A, 5.208B, 5.209 Mobile except mobile aeronautical (R) 5.208	**Mobile satellite (MV-S) (137-138 MHz)**	ERC/DEC/(99)06

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
138 - 143,6	MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (OR) (MAOR)** **SRD - Non-specific applications (138.20-138.45 MHz)**	ERC/REC 70-03 Annex 1 Restricted band
143,6 - 143,65	MOBILE AERONAUTICAL (OR) SPACE INVESTIGATION (space-Earth)	**Mobile aeronautical (OR) (MAOR)**	Restricted band
143,65 - 144	MOBILE AERONAUTICAL (OR)	**Mobile aeronautical (OR) (MAOR)**	Restricted band
144 - 146	AMATEUR AMATEUR SATELLITE	**Amateur (AM) (144-145.8 MHz)** **Amateur satellite (AMS)**	According to Annex 6 According to Annex 6
146 - 148	FIXED MOBILE except mobile aeronautical (R)	**Fixed (FIX)** **Mobile (MOV)**	ECC/DEC/(06)06 Restricted band (146.0125-148.400 MHz)
148 - 149,9	FIXED MOBILE except mobile aeronautical (R) MOBILE SATELLITE (Earth-space) 5.209 SPACE OPERATIONS (Earth-space) 5.218 5.219, 5.221	**SMT – Private networks (MOV)** **Mobile satellite (MV-S) (148-150.05 MHz)**	Plane of 160 MHz ECC/DEC/(06)06 ERC/DEC/(99)06 Restricted band (146.0125-148.400 MHz; 149.0125-149.8875 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
149,9 - 150,05	MOBILE SATELLITE (Earth-space) 5.209, 5.224A RADIONAVIGATION BY SATELLITE 5.224B 5.220, 5.222, 5.223	**Mobile satellite (MV-S) (148-150.05 MHz)**	ERC/DEC/(99)06 ECC/DEC/(06)06
150,05 - 153	FIXED MOBILE except mobile aeronautical RADIOASTRONOMY 5.149	**SMT – Private networks (MOV)** **SRD – Remote control, remote measurement, remote alarm and data transfer systems (150.9375 MHz; 150.9500 MHz)**	Plane of 160 MHz ECC/DEC/(06)06 Restricted band (150.5375-150.8875; 151.2-151.9875 MHz)
153 - 154	FIXED MOBILE except mobile aeronautical (R) Meteorology ancillary	**SMT – Private networks (MOV)**	Plane of 160 MHz ECC/DEC/(06)06 Restricted band (153.6125-154.4875 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
154 - 156, 4875	FIXED MOBILE except mobile aeronautical (R) 5.226	**SMT – Private networks (MOV)** **SMM – Mobile maritime service networks (156-156.4875MHz) (MOV)** **Land-vessel communications, for differential GPS (MOV); broadcast frequencies: 156.075 MHz (vessel station) and 160.675 MHz (coastal station)** **SRD – Remote control, remote measurement, remote alarm and data transfer systems (155.5375 MHz; 155.5500 MHz)**	Plane of 160 MHz ECC/DEC/(06)06 RR Ap. 18 National plan Administrative Rule 630/2002 of June 12th RR Ap. 18 - Channel 61 Administrative Rule 630/2002 of June 12th Restricted band (153.6125-154.65 MHz; 155.1375-155.4875 MHz; 155.8-155.9875 MHz)
156,4875 - 156,5625	MOBILE MARITIME (help and call via DSC) 5.111, 5.226, 5.227	**Mobile Maritime (MM)** **DSC – help, security and call (156.525 MHz)**	RR Ap. 18 - Channel 70 Administrative Rule 630/2002 of June 12th ECC/DEC/(06)06
156,5625 - 156,7625	FIXED MOBILE except mobile aeronautical (R) 5.226	**Mobile Maritime (MM)** **SMM – Mobile maritime service networks (156.5625-156.7625 MHz) (MOV)**	RR Ap. 18 ECC/DEC/(06)06 National plan Administrative Rule 630/2002 of June 12th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
156,7625 - 156,8375	MOBILE MARITIME (help and call) 5.111, 5.226	**Mobile Maritime (MM)** **Help, security and call - telephone (156.800 MHz)**	RR Ap. 15 RR Ap. 18 - Channel 16 Administrative Rule 630/2002 of June 12th ECC/DEC/(06)06
156,8375 - 174	FIXED MOBILE except mobile aeronautical 5.226, 5.227A	**SMT – Private networks (MOV)** **SCPP – Call and search for people in local scope (MOV) (169.175 MHz)** **Receiving stations of the AIS system (MOV) (161.975 MHz; 162.025 MHz)** **SMM – Mobile maritime service networks (MOV) (156.8375-158.0125 MHz) (160.6125-162.6125 MHz)** **SRD- Detection, tracing and data acquisition systems (169.4 – 169.475 MHz)** **SRD – Alarms (169,4750 -169.4875 MHz; 169.5875-169.6000 MHz)** **SRD – Transmitter microphones and auxiliary hearing aids (169.4-169.4750 MHz; 169.4875 – 169.5875 MHz; 173.965-174.015 MHz)**	Plane of 160 MHz ECC/DEC/(06)06 *Local Paging* RR Ap. 18. Channel AIS1 (161.975 MHz) Channel AIS2 (162.025 MHz) Administrative Rule 630/2002 of June 12th RR Ap. 18 National plan Administrative Rule 630/2002 of June 12th ERC/REC 70-03 Annex 2 ERC/REC 70-03 Annex 7 Decision 2005/928/EC, from December 20th Decision 2008/673/EC, from August 13th ERC/REC 70-03 Annex 10

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
174 - 223	BROADCAST	**Analogical television broadcast (RAD)** T-DAB – Audio broadcast (RAD) (219-230 MHz) **SAP/SAB Applications** **SRD – Transmitter microphones and auxiliary hearing aids (173.965-174.015 MHz; 174 – -216 MHz)**	Band III (174-216 MHz) (channels 5 to 10) GE-06 Broadcast to stop until April 26th, 2012, according to RCM number 26/2009, of February 26th Agreement Wi95CO07 Broadcast ancillary ERC/REC 70-03 Annex 10
223 - 230	BROADCAST Fixed Mobile	T-DAB – Audio broadcast (RAD) (219-230 MHz)	Agreement Wi95CO07 Restricted band (225-230 MHz)
230 - 235	FIXED MOBILE		Restricted band
235 - 267	FIXED MOBILE 5.111, 5.254, 5.256		Restricted band
267 - 272	FIXED MOBILE Space operations (space-Earth) 5.254, 5.257		Restricted band

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
272 - 273	SPACE OPERATIONS (space-Earth) FIXED MOBILE 5.254		Restricted band
273 - 312	FIXED MOBILE 5.254		Restricted band
312 - 315	FIXED MOBILE Mobile satellite (Earth-space) 5.254, 5.255		Restricted band
315 - 322	FIXED MOBILE 5.254		Restricted band
322 - 328,6	FIXED MOBILE RADIOASTRONOMY 5.149		Restricted band
328,6 - 335,4	AERONAUTICAL RADIONAVIGATION 5.258	**Aeronautical radio help – ILS system glide path (RVA)**	ICAO – Annex 10

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
335,4 - 387	FIXED MOBILE 5.254	**SIRESP (380-385 MHz)**	Some channels in the extension band 383-385 MHz are used by SIRESP ERC/DEC/(01)19 (DMO) ECC/DEC/(06)05 Restricted band
387 - 390	FIXED MOBILE Mobile satellite (space-Earth) 5.208A, 5.208B, 5.254, 5.255		Restricted band
390 - 399,9	FIXED MOBILE 5.254	**SIRESP (390-395 MHz)**	Some channels in the extension band 393-395 MHz are used by SIRESP ERC/DEC/(01)19 (DMO) ECC/DEC/(06)05 Restricted band
399,9 - 400,05	MOBILE SATELLITE (Earth-space) 5.209, 5.224A SATELLITE RADIONAVIGATION 5.222, 5.224B, 5.260 5.220		
400,05 - 400,15	SATELLITE STANDARD FREQUENCY AND TIME SIGNAL (400.1 MHz) 5.261		

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
400,15 - 401	METEOROLOGY ANCILLARY SATELLITE METEOROLOGY (space-Earth) MOBILE SATELLITE (space-Earth) 5.208A, 5.208B, 5.209 SPACE INVESTIGATION (space-Earth) 5.263 Space operations (space-Earth) 5.264		
401 - 402	METEOROLOGY ANCILLARY SPACE OPERATIONS (space-Earth) SATELLITE EARTH EXPLORATION (Earth-space) SATELLITE METEOROLOGY (Earth-space) Fixed Mobile except mobile aeronautical	**SRD- Wireless systems for medical applications (401-402 MHz)**	ERC/REC 70-03 Annex 12 Decision 2010/368/EU, from June 30th
402 - 403	METEOROLOGY ANCILLARY SATELLITE EARTH EXPLORATION (Earth-space) SATELLITE METEOROLOGY (Earth-space) Fixed Mobile except mobile aeronautical	**SRD- Wireless systems for medical applications (402-405 MHz)**	ERC/REC 70-03 Annex 12 ERC/DEC/(01)17 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
403 - 406	METEOROLOGY ANCILLARY Fixed Mobile except mobile aeronautical	**Radiosondes (METAX)** **SRD- Wireless systems for medical applications (402-405 MHz; 405-406 MHz)**	ERC/REC 70-03 Annex 12 ERC/DEC/(01)17 Decision 2010/368/EU, from June 30th
406 - 406,1	MOBILE SATELLITE (Earth-space) 5.266, 5.267	**Beacons COSPAS – SARSAT (MV-S)**	RR Ap.15
406,1 - 410	FIXED MOBILE except mobile aeronautical RADIOASTRONOMY 5.149	**Monopaths (FIX)**	Plan of monopaths: simplex connections ECC/DEC/(06)06 Restricted band (408.7875-409.9875 MHz)
410 - 420	FIXED MOBILE except mobile aeronautical SPACE INVESTIGATION (space-space) 5.268	**Monopaths (FIX)** **TETRA (412-417.575 MHz)**	Plan of monopaths: duplex connections ECC/DEC/(06)06 Restricted band (417.5875-418.5875 MHz)
420 - 430	FIXED MOBILE except mobile aeronautical Radiolocation	**Monopaths (FIX)** **TETRA (422-427.575 MHz)**	Plan of monopaths: duplex connections ECC/DEC/(06)06 Restricted band (427.5875-428.5875 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
430 – 432	AMATEUR RADIOLOCATION	**Amateur (AM)**	According to Annex 6
432 - 438	AMATEUR Amateur satellite 5.282 RADIOLOCATION Satellite Earth exploration (active) 5.279A 5.138, 5.280	**Amateur (AM) (432-435 MHz)** **Amateur satellite (AMS) (435-438 MHz)** **ISM – Industrial, scientific, and medical applications (433.05-434.79 MHz)** **SRD - Non-specific applications (433.05-434.79 MHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th
438 - 440	AMATEUR RADIOLOCATION	**Amateur (AM)**	According to Annex 6
440 - 450	FIXED MOBILE except mobile aeronautical Radiolocation 5.286	**SMT – Private networks (MOV)** **PMR446 (446-446,1 MHz) analogical** **PMR446 (446.1-446.2 MHz) digital** **TETRA (DMO channels in band 445.2 – 445.3 MHz)** **Talk-Back (445.150; 448.300-448.475MHz)**	Plane of 440-450 MHz ECC/DEC/(06)06 ERC/DEC/(98)25 ECC/DEC/(05)12

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
450 - 455	FIXED MOBILE 5.209, 5.286, 5.286A, 5.286B, 5.286C	**SMT – Private networks (MOV)** **SMRP – Mobile service with shared resources (MOV) (some frequencies in the sub-band 450.0125-451.4625 MHz consigned)** **CDMA-PAMR (453-457.45 MHz)** TETRA	Plane of 450 MHz ECC/DEC/(06)06 MPT 1327 ECC/DEC/(04)06 Some channels in band 450-470 MHz
455 - 456	FIXED MOBILE 5.209, 5.286A, 5.286B, 5.286C	SMTP – Public Mobile Terrestrial Service (455.80625-457.45 MHz) **CDMA-PAMR (453-457.45 MHz)**	ECC/DEC/(04)06 ECC/DEC/(06)06

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
456 - 459	FIXED MOBILE 5.287	 **SMT – Private networks (MOV)** SMTP – Public Mobile Terrestrial Service (455.80625-457.45 MHz) **Communications on board vessels (457.5375 MHz; 457.550 MHz; 457.5625 MHz; 457.575 MHz) (MOV)** **CDMA-PAMR (453-457.45 MHz)** **SRD – Remote control, remote measurement, remote alarm and data transfer systems (458.1125 MHz; 458.1250 MHz; 458.1375 MHz; 458.1500 MHz)**	 Plane of 450 MHz ECC/DEC/(06)06 CEPT Rec. T/R 32-02 ECC/DEC/(04)06 Restricted band (458.2125-459.3625 MHz)
459 - 460	FIXED MOBILE 5.209, 5.286A, 5.286B, 5.286C	 **SMT – Private networks (MOV)**	 Plane of 450 MHz ECC/DEC/(06)06 Restricted band (458.2125-459.3625 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
460 - 470	FIXED		
	MOBILE	**SMT – Private networks (MOV)**	Plane of 450 MHz ECC/DEC/(06)06
		SMTP – Public Mobile Terrestrial Service (465.80625-467.45 MHz)	MPT 1327
		SMRP – Mobile service with shared resources (MOV) (some frequencies in the sub-band 460.0125 - 461.4625 MHz consigned)	*Local Paging*
		SCPP – Call and search for people in local scope (MOV) (468.1125 MHz; 468.1250 MHz; 469.275 MHz)	CEPT Rec. T/R 32-02
		ECAR – Coverage equipment in restricted area (468.1375 MHz; 468.15 MHz)	ECC/DEC/(04)06
	Satellite meteorology (space-Earth)	**Communications on board vessels (467.5375 MHz; 467.550 MHz; 467.5625 MHz; 467.575 MHz) (MOV)**	
	5.287, 5.289	**CDMA-PAMR (463-467.45 MHz)**	Restricted band (468.2125-469.2125 MHz; 469.3625-469.5875 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
470 - 790	BROADCAST Mobile terrestrial 5.296 5.149, 5.306, 5.311A	**Analogical television broadcast (RAD)** **DVB-T – Digital Television Broadcast (470-582 MHz and 582-790 MHz) (RAD)** **SAP/SAB Applications** **SRD – Transmitter microphones and auxiliary hearing aids (470-862 MHz)**	GE-06 Bands IV (470-582 MHz) and V (582-822 MHz) (channels 21 to 64) Broadcast to stop until April 26th, 2012, according to RCM number 26/2009, of February 26th Band V (some channels between 47 and 56) Broadcast ancillary ERC/REC 70-03 Annex 10
790 - 862	FIXED BROADCAST MOBILE except mobile aeronautical 5.316B, 5.317A 5.316	**Analogical television broadcast (RAD)** Terrestrial systems capable of providing electronic communications services **SAP/SAB Applications** **SRD – Transmitter microphones and auxiliary hearing aids (470-862 MHz)**	GE-06 Band V (582-822 MHz) (channels 35 to 64) Broadcast to stop until April 26th, 2012, according to RCM number 26/2009, of February 26th and according to plan approved on June 24th Decision 2010/267/EU, May 6th, 2010 Broadcast ancillary ERC/REC 70-03 Annex 10

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
862 - 890	FIXED		
	MOBILE except mobile aeronautical 5.317A	Terrestrial systems capable of providing electronic communications services	Directive 2009/114/EC ERC/DEC/(97)02: Extension band GSM (880-890/925-935 MHz) Decision 2011/251/EU, April 18th, 2011
		MCV	Decision 2010/166/EU, March 19th, 2010 regarding MCV services
		GSM-R – (876 -880 MHz)	Decision 1999/569/EC, July 28th, 1999 ECC/DEC/(02)05
	BROADCAST 5.322		
		SRD - Non-specific applications (863-870 MHz)	ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th
		SRD – Alarms (868.6-868.7 MHz; 869.25-869.4 MHz; 869.65-869.7 MHz)	ERC/REC 70-03 Annex 7 Decision 2010/368/EU, from June 30th
		SRD – Social alarms (869.2-869.25 MHz)	ERC/REC 70-03 Annex 7 Decision 2010/368/EU, from June 30th
		SRD – Transmitter microphones and auxiliary hearing aids (863-865 MHz)	ERC/REC 70-03 Annex 10
		SRD – RFID (865-868 MHz)	ERC/REC 70-03 Annex 11 Decision 2006/804/EC, from November 23th
		SRD – Wireless audio applications (863-865 MHz)	ERC/REC 70-03 Annex 13 Decision 2010/368/EU, from June 30th Restricted band (873-876 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
890 - 942	FIXED MOBILE except mobile aeronautical 5.317 A BROADCAST 5.322 Radiolocation	**Terrestrial systems capable of providing electronic communications services (880-915 MHz/ 925-960 MHz)** MCV GSM-R – (921 -925 MHz)	Directive 87/372/EEC changed by Directive 2009/114/EC ERC/DEC/(94)01 ECC/REC/(05)08 Decision 2011/251/EU, April 18th, 2011 ERC/DEC/(97)02: Extension band GSM (880-890/925-935 MHz) Decision 2010/166/EU, March 19th, 2010 regarding MCV services Decision 1999/569/EC, July 28th, 1999 ECC/DEC/(02)05 Restricted band (918-921 MHz)
942 - 960	FIXED MOBILE except mobile aeronautical 5.317A BROADCAST 5.322	**Terrestrial systems capable of providing electronic communications services (880-915 MHz/ 925-960 MHz)** MCV	Directive 87/372/EEC changed by Directive 2009/114/EC ERC/DEC/(94)01 ECC/REC/(05)08 Decision 2011/251/EU, April 18th, 2011 Decision 2010/166/EU, March 19th, 2010 regarding MCV services
960 – 1164	AERONAUTICAL RADIONAVIGATION 5.328 MOBILE AERONAUTICAL (R) 5,327A	**Navigation, security and flight systems – DME, TACAN, SSR (RVA)**	

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
1164 – 1215	AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION BY SATELLITE (space-Earth) (Earth-space) 5.328B 5,328A	**Navigation, security and flight systems – DME, TACAN, SSR (RVA)**	
1215 - 1240	SATELLITE EARTH EXPLORATION (active) RADIOLOCATION RADIONAVIGATION BY SATELLITE (space-Earth) 5.329 5.329A (Earth-space) 5.328B SPACE INVESTIGATION (active) RADIONAVIGATION 5,331 5.332	**GPS – Global Positioning System (RVA-S)**	
1240 – 1300	SATELLITE EARTH EXPLORATION (active) RADIOLOCATION SATELLITE RADIONAVIGATION (space-Earth) 5.329, 5.329A (space-space), 5.328B SPACE INVESTIGATION (active) Amateur Amateur satellite (Earth-space) 5.282 RADIONAVIGATION 5,331 5,332, 5,335A	**Wind profile radars** **Amateur (AM) (1240-1260 MHz, 1270-1300 MHz)** **Amateur satellite (AMS) (1260-1,270 MHz)**	According to Annex 6 According to Annex 6

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
1300 - 1350	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION SATELLITE RADIONAVIGATION (Earth-space) 5,149, 5,337A	**Radars (RVA)**	
1350 – 1400	FIXED MOBILE RADIOLOCATION 5.149, 5.338A, 5.339	**Microwave links (FIX)**	Band of 1,500 MHz CEPT Rec. T/R 13-01 Annex A (1350-1375 MHz) and Annex B (1375-1400 MHz)
1400 - 1427	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340, 5.341	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
1427 - 1429	SPACE OPERATIONS (Earth-space) FIXED MOBILE except mobile aeronautical 5.338A, 5.341	Microwave links (FIX)	Band of 1,500 MHz CEPT Rec. T/R 13-01 Annex B (1427-1452 MHz)
1429 - 1452	FIXED MOBILE except mobile aeronautical 5.338A, 5.341	Microwave links (FIX)	Band of 1,500 MHz CEPT Rec. T/R 13-01 Annex B (1427-1452 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
1452 - 1492	FIXED MOBILE except mobile aeronautical BROADCAST 5.345 SATELLITE BROADCAST 5.208B, 5.345 5.341	T-DAB – Audio broadcast (RAD) (1452-1,479.5 MHz) S-DAB: Audio broadcast satellite (RAD-S) (1479.5-1492 MHz)	Agreement MA02revCO07 ECC/DEC/(03)02
1492 - 1518	FIXED MOBILE except mobile aeronautical 5.341	**Microwave links (FIX)** **STL – Audio broadcast studio / transmitter connections (FIX) (1517-1525 MHz)**	Band of 1,500 MHz CEPT Rec. T/R 13-01 Annex A (1492-1517 MHz)
1518 - 1525	FIXED MOBILE except mobile aeronautical MOBILE SATELLITE (space-Earth) 5.348, 5.348A, 5.348B, 5.351 5.341	**STL – Audio broadcast studio / transmitter connections (FIX) (1517-1525 MHz)**	ECC/DEC/(04)09
1525 - 1530	SPACE OPERATIONS (space-Earth) FIXED MOBILE SATELLITE (space-Earth) 5.208B, 5.351A Satellite Earth exploration Mobile except mobile aeronautical 5.341, 5.351, 5.354	**Mobile satellite (1525-1544 MHz); GMPCS (1525-1544 MHz)**	

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
1530 - 1535	SPACE OPERATIONS (space-Earth) MOBILE SATELLITE (space-Earth) 5.208B, 5.351A, 5.353A Satellite Earth exploration Fixed Mobile except mobile aeronautical 5.341, 5.351, 5.354	**Mobile satellite (1525-1544 MHz); GMPCS (1525-1544 MHz)**	
1535 - 1544	MOBILE SATELLITE (space-Earth) 5.208B, 5.351A 5.341, 5.351, 5.353A, 5.354	**Mobile satellite (1525-1544 MHz); GMPCS (1525-1544 MHz)**	
1544 - 1545	MOBILE SATELLITE (space-Earth) 5.208B, 5.351A 5.341, 5.354, 5.356	**Help and security system satellite, including GMDSS (MV-S)**	Band restricted to help and security systems
1545 - 1559	MOBILE SATELLITE (space-Earth) 5.208B, 5.351A 5.341, 5.351, 5.354, 5.357, 5.357A	**Mobile maritime satellite (MM-S); GMPCS** **Help and security system satellite, including GMDSS (MV-S)**	Band restricted to help and security systems
1559 - 1610	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION BY SATELLITE (space-Earth) (space-space) 5.208B, 5.328B, 5.329A 5.341	**GPS – Global Positioning System (RVA-S)**	

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
1610 - 1610,6	MOBILE SATELLITE (Earth-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341, 5.364, 5.366, 5.367, 5.368, 5.371, 5.372	GMPCS (1610-1626,5 MHz)	ERC/DEC/(97)03
1610,6 - 1613,8	MOBILE SATELLITE (Earth-space) 5.351A RADIOASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149, 5.341, 5.364, 5.366, 5.367, 5.368, 5.371, 5.372	GMPCS (1610-1626,5 MHz)	ERC/DEC/(97)03 Important band for radioastronomy service in Europe
1613,8 - 1626,5	MOBILE SATELLITE (Earth-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile satellite (space-Earth) 5.208B 5.341, 5.364, 5.365, 5.366, 5.367, 5.368, 5.371	GMPCS (1610-1626,5 MHz) **IRIDUM terminals (1621.35-1626.5 MHz)**	ERC/DEC/(97)03
1626,5 - 1631,5	MOBILE SATELLITE (Earth-space) 5.351A 5.341, 5.351, 5.353A, 5.354	**Mobile maritime satellite (MM-S); GMPCS (1626,5-1645,5 MHz)**	
1631,5 - 1636,5	MOBILE SATELLITE (Earth-space) 5.351A 5.341, 5.351, 5.353A, 5.354, 5.374	**Mobile maritime satellite (MM-S); GMPCS (1626,5-1645,5 MHz)**	
1636,5 - 1645,5	MOBILE SATELLITE (Earth-space) 5.351A 5.341, 5.351, 5.353A, 5.354	**Mobile terrestrial satellite (MT-S); GMPCS (1626,5-1645,5 MHz)**	

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
1645,5 - 1646,5	MOBILE SATELLITE (Earth-space) 5.351A 5.341, 5.354, 5.375	**Help and security system satellite, including GMDSS (MV-S)**	Band restricted to help and security systems
1646,5 - 1656,5	MOBILE SATELLITE (Earth-space) 5.351A 5.341, 5.351, 5.354, 5.357A, 5.376	**Mobile satellite (MV-S); GMPCS (1646.5-1660.5 MHz)**	
1656,5 - 1660	MOBILE SATELLITE (Earth-space) 5.351A 5.341, 5.351, 5.354, 5.374	**Mobile satellite (MV-S); GMPCS (1646.5-1660.5 MHz)**	
1660 - 1660,5	MOBILE SATELLITE (Earth-space) 5.351A RADIOASTRONOMY 5.149, 5.341, 5.351, 5.354, 5.376A	**Mobile satellite (MV-S); GMPCS (1646.5-1660.5 MHz)**	Important band for radioastronomy service in Europe
1660,5 – 1668	RADIOASTRONOMY SPACE INVESTIGATION (passive) Fixed Mobile except mobile aeronautical 5.149, 5.341, 5.379A		Important band for radioastronomy service in Europe
1668 – 1668,4	MOBILE SATELLITE (Earth-space) 5.351A, 5.379B, 5.379C RADIOASTRONOMY SPACE INVESTIGATION (passive) Fixed Mobile except mobile aeronautical 5.149, 5.341, 5.379A		Important band for radioastronomy service in Europe

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
1668,4 - 1670	METEOROLOGY ANCILLARY FIXED MOBILE SATELLITE (Earth-space) 5.351A, 5.379B, 5.379C MOBILE except mobile aeronautical RADIOASTRONOMY 5.149, 5.341, 5.379D, 5.379E		Important band for radioastronomy service in Europe
1670 - 1675	METEOROLOGY ANCILLARY FIXED SATELLITE METEOROLOGY (space-Earth) MOBILE MOBILE SATELLITE (Earth-space) 5.351A, 5.379B 5.341, 5.379D, 5.379E, 5.380A		ECC/DEC/(02)07 (for harmonized usage of bands 1670-1675 MHz and 1800-1805 MHz) ECC/DEC/(04)09
1675 - 1690	METEOROLOGY ANCILLARY FIXED SATELLITE METEOROLOGY (space-Earth) MOBILE except mobile aeronautical 5.341		Restricted band

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
1690 - 1700	METEOROLOGY ANCILLARY SATELLITE METEOROLOGY (space-Earth) Fixed Mobile except mobile aeronautical 5.289, 5.341		
1700 - 1710	FIXED SATELLITE METEOROLOGY (space-Earth) MOBILE except mobile aeronautical 5.289, 5.341		

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
1710 - 1930	FIXED MOBILE 5.384A, 5.388A 5.149, 5.341, 5.385, 5.388	**Terrestrial systems capable of providing electronic communications services (1710-1,785 MHz; 1805-1,880 MHz)** MCV **DECT – European wireless digital telecommunications system (MOV); (1880-1900 MHz)** **IMT – International mobile telecommunications (MOV); (1900-1980 MHz / 2110-2170 MHz)** **MCA** SRD – Transmitter microphones and auxiliary hearing aids (1785-1,800 MHz) **SRD – Wireless audio applications (1795-1800 MHz)**	Decision 2008/294/EC, from April 7th ERC/DEC/(95)03 ECC/REC/(05)08 Decision 2011/251/EU, April 18th, 2011 Decision 2010/166/EU, March 19th, 2010 regarding MCV services ERC/DEC/(94)03 Directive 91/287/EC CEPT Rec. T/R 22-02 Designated by WARC-1992 the bands 1885-2025 MHz and 2110-2200 MHz ECC/DEC/(06)01 (1900-1980 MHz, 2010-2025 MHz and 2110-2170 MHz) ECC/DEC/(06)07 (1710-1785 MHz and 1805-1880 MHz) ERC/REC 70-03 Annex 10 ERC/REC 70-03 Annex 13 ECC/DEC/(02)07 (for harmonized usage of bands 1670-1675 MHz and 1800-1805 MHz)
1930 – 1970	FIXED MOBILE 5.388A 5.388	**IMT-2000 – International mobile telecommunications – 2000 (MOV); (1900-1980 MHz / 2110-2170 MHz)**	Designated by WARC-1992 the bands 1885-2025 MHz and 2110-2200 MHz ECC/DEC/(06)01 (1900-1980 MHz, 2010-2025 MHz and 2110-2170 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
1970 - 1980	FIXED MOBILE 5.388A 5.388	**IMT-2000 – International mobile telecommunications – 2000 (MOV); (1900-1980 MHz / 2110-2170 MHz)**	Designated by WARC-1992 the bands 1885-2025 MHz and 2110-2200 MHz ECC/DEC/(06)01 (1900-1980 MHz, 2010-2025 MHz and 2110-2170 MHz)
1980 - 2010	FIXED MOBILE MOBILE SATELLITE (Earth-space) 5.351A 5,388, 5,389A	GMPCS (1980-2,010 MHz)	IMT-2000 – International mobile telecommunications – 2000 (MOV) Designated by WARC-1992 the bands 1885-2025 MHz and 2110-2200 MHz Decision 2007/98/EC, from February 14th ECC/DEC/(06)09 Decision 2008/626/EC, from June 30th, 2008
2010 - 2025	FIXED MOBILE 5.388A 5.388		IMT-2000 – International mobile telecommunications – 2000 (MOV) Designated by WARC-1992 the bands 1885-2025 MHz and 2110-2200 MHz ECC/DEC/(06)01 (1900-1980 MHz, 2010-2025 MHz and 2110-2170 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
2025 - 2110	SPACE OPERATIONS (Earth-space) (space-space) SATELLITE EARTH EXPLORATION (Earth-space) (space-space) FIXED MOBILE 5.391 SPACE INVESTIGATION (Earth-space) (space-space) 5.392	**TCR – Tracing, control and alignment (OE)** **Microwave links (FIX)** **SAP/SAB applications (video connections) (2025-2,110 MHz)**	 Band of 2 GHz CEPT Rec. T/R 13-01 Annex C (2025-2110 MHz) ERC/REC 25-10
2110 - 2120	FIXED MOBILE 5.388A SPACE INVESTIGATION (deep space) (Earth-space) 5.388	**IMT-2000 – International mobile telecommunications – 2000 (MOV)**	 Designated by WARC-1992 the bands 1885-2025 MHz and 2110-2,200MHz ECC/DEC/(06)01 (1900-1980 MHz, 2010-2025 MHz and 2110-2170 MHz)
2120 - 2170	FIXED MOBILE 5.388A 5.388	**IMT-2000 – International mobile telecommunications – 2000 (MOV)**	 Designated by WARC-1992 the bands 1885-2025 MHz and 2110-2200 MHz ECC/DEC/(06)01 (1900-1980 MHz, 2010-2025 MHz and 2110-2170 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
2170 - 2200	FIXED MOBILE MOBILE SATELLITE (Earth-space) 5.351A 5,388, 5,389A	 GMPCS (2170-2,200 MHz)	 IMT-2000 – International mobile telecommunications – 2000 (MOV) Designated by WARC-1992 the bands 1885-2025 MHz and 2110-2200 MHz Decision 2007/98/EC, from February 14th ECC/DEC/(06)09 Decision 2008/626/EC, from June 30th
2200 - 2290	SPACE OPERATIONS (space-Earth) (space-space) SATELLITE EARTH EXPLORATION (space-Earth) (space-space) FIXED MOBILE 5.391 SPACE INVESTIGATION (space-Earth) (space-space) 5.392	**TCR – Tracing, control and alignment (OE)** **Microwave links (FIX)** **SAP/SAB applications (video connections) (2200-2,400 MHz)**	 Band of 2 GHz CEPT Rec. T/R 13-01 Annex C (2200-2,290 MHz) ERC/REC 25-10
2290 - 2300	FIXED MOBILE except mobile aeronautical SPACE INVESTIGATION (deep space) (space-Earth)	 **SAP/SAB applications (video connections) (2200-2,400 MHz)**	 ERC/REC 25-10

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
2300 - 2400	FIXED MOBILE Amateur Radiolocation	**Amateur (AM)** **SAP/SAB applications (video connections) (2200-2,400 MHz)**	According to Annex 6 ERC/REC 25-10
2400 - 2450	FIXED MOBILE Amateur Amateur satellite 5.282 Radiolocation 5.150	**Amateur (AM)** **Amateur satellite (AMS)** **ISM – Industrial, scientific, and medical applications (2400-2,500 MHz)** **SRD - Non-specific applications (2400-2,483.5 MHz)** **SRD - WLANs (2400-2483.5 MHz)** **SRD – Railway applications (2446-2,454 MHz)** **SRD - Radiodetermination applications (2400-2,483.5 MHz)** **SRD - RFID (2446-2454 MHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 3 ERC/DEC/(01)07 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 6 ERC/DEC/(01)08 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 11 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
2450 - 2483,5	FIXED MOBILE Radiolocation 5.150	**ISM – Industrial, scientific, and medical applications (2400-2,500 MHz)** **SRD - Non-specific applications (2400-2,483.5 MHz)** **SRD - WLANs (2400-2483.5 MHz)** **SRD – Railway applications (2446-2,454 MHz)** **SRD - Radiodetermination applications (2400-2,483.5 MHz)** **SRD - RFID (2446-2454 MHz)**	ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 3 ERC/DEC/(01)07 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 4 ERC/REC 70-03 Annex 6 ERC/DEC/(01)08 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 11 Decision 2010/368/EU, from June 30th
2483,5 - 2500	FIXED MOBILE MOBILE SATELLITE (Earth-space) 5.351A Radiolocation 5.150, 5.371, 5.398, 5.399, 5.402	GMPCS (2483.5-2,500 MHz) **SAP/SAB applications (video connections)** **ISM – Industrial, scientific, and medical applications (2400-2,500 MHz)**	ERC/DEC/(97)03 IMT-2000 RR Resolution 225 (WRC-07) Component satellite: 2483.5-2500 MHz ERC/REC 25-10

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
2500 - 2520	FIXED 5.410 MOBILE except mobile aeronautical 5.384A	**MMDS (2500-2690 MHz)**	Multipoint microwave distribution system (MDR) Decision 2008/477/UE, from June 13th ECC/DEC/(02)06 ECC/DEC/(05)05 Decision 2008/477/EC regarding "Terrestrial systems capable of offering electronic communication services" prevails regarding the services for which this band is designated
2520 - 2655	FIXED 5.410 MOBILE except mobile aeronautical 5.384A SATELLITE BROADCAST 5.413, 5.416 5.339, 5.417C, 5.417D 5,418B, 5.418C	**MMDS (2500-2690 MHz)**	Multipoint microwave distribution system (MDR) Decision 2008/477/UE, from June 13th ECC/DEC/(02)06 ECC/DEC/(05)05 Decision 2008/477/EC regarding "Terrestrial systems capable of offering electronic communication services" prevails regarding the services for which this band is designated

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
2655 - 2670	FIXED 5.410 MOBILE except mobile aeronautical 5.384A SATELLITE BROADCAST 5.208B, 5.413, 5.416 Satellite Earth exploration (passive) Radioastronomy Space investigation (passive) 5.149,	**MMDS (2500-2690 MHz)**	Multipoint microwave distribution system (MDR) Decision 2008/477/UE, from June 13th ECC/DEC/(02)06 ECC/DEC/(05)05 Decision 2008/477/EC regarding "Terrestrial systems capable of offering electronic communication services" prevails regarding the services for which this band is designated
2670 - 2690	FIXED 5.410 MOBILE except mobile aeronautical 5.384A Satellite Earth exploration (passive) Radioastronomy Space investigation (passive) 5.149	**MMDS (2500-2690 MHz)**	Multipoint microwave distribution system (MDR) Decision 2008/477/UE, from June 13th ECC/DEC/(02)06 ECC/DEC/(05)05 Decision 2008/477/EC regarding "Terrestrial systems capable of offering electronic communication services" prevails regarding the services for which this band is designated

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
2690 - 2700	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
2700 - 2900	AERONAUTICAL RADIONAVIGATION 5.337 Meteorology ancillary 5.423 Radiolocation	**Navigation systems (RVA)** **Weather radars (METAX)** **Radars (RVA, RLC)**	
2900 - 3100	RADIOLOCATION 5.424A RADIONAVIGATION 5,426 5.425, 5.427	**Radars (RVA, RLC, RVM)**	
3100 - 3300	RADIOLOCATION Satellite Earth exploration (active) Space investigation (active) 5.149	**Radars (RLC)**	Restricted band
3300 - 3400	RADIOLOCATION 5.149	**Radars (RLC)**	Restricted band
3400 - 3600	FIXED FIXED SATELLITE (space-Earth) Mobile 5430A Radiolocation	**FWA** **BWA**	ERC/REC 14-03, Annex B Decision 2008/411/EC, from May 21st ECC/DEC/(07)02

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
3600 - 4200	FIXED FIXED SATELLITE (space-Earth) Mobile	**Fixed satellite (FIX-S) (3700-4200 MHz)** **VSATs (3800-4200 MHz)** **ESVs (3700-4,200 MHz)** **BWA (3600-3800 MHz)**	Decision 2008/411/EC, from May 21st ECC/DEC/(07)02 (3600-3800 MHz)
4200 - 4400	AERONAUTICAL RADIONAVIGATION 5.438 5.440	**Radars (RVA)**	
4400 - 4500	FIXED MOBILE		Restricted band
4500 - 4800	FIXED FIXED SATELLITE (space-Earth) 5.441 MOBILE	**SRD - Radiodetermination applications (4500-7,000 MHz)**	RR Ap. 30B ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band
4800 - 4990	FIXED MOBILE 5.442 Radioastronomy 5.149, 5.339	**SRD - Radiodetermination applications (4500-7,000 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
4990 - 5000	FIXED MOBILE except mobile aeronautical RADIOASTRONOMY Space investigation (passive) 5.149	**SRD - Radiodetermination applications (4500-7,000 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band
5000 – 5010	AERONAUTICAL RADIONAVIGATION SATELLITE RADIONAVIGATION (Earth-space) 5.367	**SRD - Radiodetermination applications (4500-7,000 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
5010 – 5030	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION BY SATELLITE (space-Earth) 5.443B (Earth-space) 5.328B 5.367	**SRD - Radiodetermination applications (4500-7,000 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
5030 – 5091	AERONAUTICAL RADIONAVIGATION 5.367, 5.444	**SRD - Radiodetermination applications (4500-7,000 MHz)**	Band reserved for MLS system ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
5091 – 5150	AERONAUTICAL RADIONAVIGATION MOBILE AERONAUTICAL 5.444B 5.367, 5.444, 5.444A	**SRD - Radiodetermination applications (4500-7,000 MHz)**	Band reserved for MLS system ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
5150 - 5250	AERONAUTICAL RADIONAVIGATION FIXED SATELLITE (Earth-space) 5.447A MOBILE except mobile aeronautical 5.446A, 5.446B 5.446, 5.446C, 5.447B, 5.447C	**SRD - WAS/RLAN (5150-5,350 MHz)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	ERC/REC 70-03 Annex 3 ECC/DEC/(04)08 Decisions 2005/513/EC, from July 11th, and 2007/90/EC, from February 12th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
5250 - 5255	SATELLITE EARTH EXPLORATION (active) RADIOLOCATION SPACE INVESTIGATION 5.447D MOBILE except mobile aeronautical 5.446A, 5.447F 5,448A	**SRD - WAS/RLAN (5150-5,350 MHz)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	ERC/REC 70-03 Annex 3 ECC/DEC/(04)08 Decisions 2005/513/EC, from July 11th, and 2007/90/EC, from February 12th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
5255 - 5350	SATELLITE EARTH EXPLORATION (active) RADIOLOCATION SPACE INVESTIGATION (active) MOBILE except mobile aeronautical 5.446A, 5.447F 5,448A	**SRD - WAS/RLAN (5150-5350 MHz)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	ERC/REC 70-03 Annex 3 ECC/DEC/(04)08 Decisions 2005/513/EC, from July 11th, and 2007/90/EC, from February 12th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band
5350 - 5460	SATELLITE EARTH EXPLORATION (active) 5.448B SPACE INVESTIGATION (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	**SRD - Radiodetermination applications (4500-7,000 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
5460 - 5470	RADIONAVIGATION 5,449 SATELLITE EARTH EXPLORATION (active) SPACE INVESTIGATION (active) RADIOLOCATION 5.448D 5,448B	**SRD - Radiodetermination applications (4500-7,000 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
5470 – 5570	MARITIME RADIONAVIGATION MOBILE except mobile aeronautical 5.446A, 5.450A SATELLITE EARTH EXPLORATION (active) SPACE INVESTIGATION (active) RADIOLOCATION 5.450B 5,448B	**Radars (RVM)** **SRD – WAS/RLAN (5470-5725 MHz)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	 ERC/REC 70-03 Annex 3 ECC/DEC/(04)08 Decision 2005/513/EU, from June 11th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
5570 – 5650	MARITIME RADIONAVIGATION MOBILE except mobile aeronautical 5.446A, 5.450A RADIOLOCATION 5.450B 5.452	**Radars (RVM)** **Weather radars (5600-5650 MHz)** **SRD – WAS/RLAN (5470-5725 MHz)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	 ERC/REC 70-03 Annex 3 ECC/DEC/(04)08 Decision 2005/513/EU, from June 11th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
5650-5670	RADIOLOCATION MOBILE except mobile aeronautical 5.446A, 5.450A Amateur Amateur satellite (Earth-space) 5.282 Space investigation (deep space)	**Amateur (AM) (5668-5670 MHz)** **Amateur satellite (AMS)** **SRD – WAS/RLAN (5470-5725 MHz)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 3 ECC/DEC/(04)08 Decision 2005/513/EU, from June 11th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
5670 - 5725	RADIOLOCATION MOBILE except mobile aeronautical 5.446A, 5.450A Amateur Space investigation (deep space)	**Amateur (AM)** **SRD – WAS/RLAN (5470-5725 MHz)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	According to Annex 6 ERC/REC 70-03 Annex 3 ECC/DEC/(04)08 Decision 2005/513/EU, from June 11th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
5725 - 5830	FIXED SATELLITE (Earth-space) RADIOLOCATION Amateur 5.150	Fixed satellite (FIX-S) **Amateur (AM)** **ISM – Industrial, scientific, and medical applications (5725-5,875 MHz)** **SRD - Non-specific applications (5725-5,875 MHz)** **SRD - RTTT (5795-5,815 MHz)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	According to Annex 6 ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 5 ECC/DEC/(02)01 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
5830 - 5850	FIXED SATELLITE (Earth-space) RADIOLOCATION Amateur Amateur satellite (space-Earth) 5.150	Fixed satellite (FIX-S) **Amateur satellite (AMS)** **ISM – Industrial, scientific, and medical applications (5725-5,875 MHz)** **SRD - Non-specific applications (5725-5,875 MHz)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	According to Annex 6 ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
5850 - 5925	FIXED FIXED SATELLITE (Earth-space) MOBILE 5.150	 Fixed satellite (FIX-S) ITS (5875-5905 MHz) **ISM – Industrial, scientific, and medical applications (5725-5,875 MHz)** **SRD - Non-specific applications (5725-5,875 MHz)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	 ECC/DEC/(08)01 Decision 2008/671/EC, from August 5th ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
5925 - 6700	FIXED FIXED SATELLITE (Earth-space) 5.457A MOBILE 5.149, 5.440, 5.458	**Microwave links (FIX)** **Fixed satellite (FIX-S) VSATs (5925-6,425 MHz) ESVs (5925-6,425 MHz)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	Band of 6 GHz (Low) ERC/REC 14-01 (5925-6425 MHz) Band of 6 GHz (High) ERC/REC 14-02 (6425-7125 MHz) ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
6700 - 7075	FIXED FIXED SATELLITE (Earth-space) (space-Earth) 5.441 MOBILE 5.458, 5.458A, 5.458B, 5.458C	**Microwave links (FIX)** **SRD - Radiodetermination applications (4500-7,000 MHz)**	Band of 6 GHz (High) ERC/REC 14-02 (6425-7125 MHz) ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
7075 – 7145	FIXED MOBILE 5.458	**Microwave links (FIX)**	Band of 6 GHz (High) ERC/REC 14-02 (6425-7125 MHz) Band of 7 GHz (Low) Recommendation UIT-R F.385 rec.1 (7110-7,425 MHz) ECC/REC/(02)06 Annex 1 (7125-7425 MHz)
7145 – 7235	FIXED MOBILE SPACE INVESTIGATION (Earth-space) 5.460 5.458	**Microwave links (FIX)**	Band of 7 GHz (Low) Recommendation UIT-R F.385 rec.1 (7110-7,425 MHz) ECC/REC/(02)06 Annex 1 (7125-7425 MHz)
7235 – 7250	FIXED MOBILE 5.458	**Microwave links (FIX)**	Band of 7 GHz (Low) Recommendation UIT-R F.385 rec.1 (7110-7,425 MHz) ECC/REC/(02)06 Annex 1 (7125-7425 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
7250 - 7300	FIXED FIXED SATELLITE (space-Earth) MOBILE 5.461	**Fixed satellite (FIX-S)**	Restricted band
7300 - 7450	FIXED FIXED SATELLITE (space-Earth) MOBILE except mobile aeronautical 5.461	**Microwave links (FIX)** **Fixed satellite (FIX-S)**	Band of 7 GHz (Low) Recommendation UIT-R F.385 rec.1 (7110-7,425 MHz) ECC/REC/(02)06 Annex 1 (7125-7425 MHz) Band of 7 GHz (High) Recommendation UIT-R F.385 rec.1 (7425-7,725 MHz) ECC/REC/(02)06 (7425-7725 MHz)
7450 - 7550	FIXED FIXED SATELLITE (space-Earth) SATELLITE METEOROLOGY (space-Earth) MOBILE except mobile aeronautical 5,461A	**Microwave links (FIX)** **Fixed satellite (FIX-S)**	Band of 7 GHz (High) Recommendation UIT-R F.385 rec.1 (7425-7,750 MHz) ECC/REC/(02)06 (7425-7725 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
7550 - 7750	FIXED FIXED SATELLITE (space-Earth) MOBILE except mobile aeronautical	**Microwave links (FIX)** **Fixed satellite (FIX-S)**	Band of 7 GHz (High) Recommendation UIT-R F.385 rec.1 (7425-7,750 MHz) ECC/REC/(02)06 (7425-7725 MHz) Band of 8 GHz (Low) Recommendation UIT-R F0.386 Annex 6 (7700-8,300 MHz)
7750 - 7850	FIXED SATELLITE METEOROLOGY (space-Earth) 5.461B MOBILE except mobile aeronautical	**Microwave links (FIX)**	Band of 8 GHz (Low) Recommendation UIT-R F0.386 Annex 6 (7700-8,300 MHz)
7850 - 7900	FIXED MOBILE except mobile aeronautical	**Microwave links (FIX)**	Band of 8 GHz (Low) Recommendation UIT-R F0.386 Annex 6 (7700-8,300 MHz)
7900 - 8025	FIXED FIXED SATELLITE (Earth-space) MOBILE 5.461	**Microwave links (FIX)** **Fixed satellite (FIX-S)**	Band of 8 GHz (Low) Recommendation UIT-R F0.386 Annex 6 (7700-8,300 MHz) Band of 8 GHz (High) ECC/REC/(02)06 (7900-8,500 MHz) Restricted band (7975-8,025 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
8025 - 8175	SATELLITE EARTH EXPLORATION (space-Earth) FIXED FIXED SATELLITE (Earth-space) MOBILE 5.463 5,462A	**Satellite Earth exploration (EXP-S)** **Microwave links (FIX)** **Fixed satellite (FIX-S)**	Band of 8 GHz (Low) Recommendation UIT-R F0.386 Annex 6 (7700-8,300 MHz) Band of 8 GHz (High) ECC/REC/(02)06 (7900-8,500 MHz)
8175 - 8215	SATELLITE EARTH EXPLORATION (space-Earth) FIXED FIXED SATELLITE (Earth-space) SATELLITE METEOROLOGY (Earth-space) MOBILE 5.463 5,462A	**Satellite Earth exploration (EXP-S)** **Microwave links (FIX)** **Fixed satellite (FIX-S)**	Band of 8 GHz (Low) Recommendation UIT-R F0.386 Annex 6 (7700-8,300 MHz) Band of 8 GHz (High)ECC/REC/(02)06 (7900-8,500 MHz)

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
8215 - 8400	SATELLITE EARTH EXPLORATION (space-Earth) FIXED FIXED SATELLITE (Earth-space) MOBILE 5.463 5,462A	**Satellite Earth exploration (EXP-S)** **Microwave links (FIX)** **Fixed satellite (FIX-S)**	Band of 8 GHz (Low) Recommendation UIT-R F0.386 Annex 6 (7700-8,300 MHz) Band of 8 GHz (High) ECC/REC/(02)06 (7900-8,500 MHz)
8400 - 8500	FIXED MOBILE except mobile aeronautical SPACE INVESTIGATION (space-Earth) 5.465	**Microwave links (FIX)**	Band of 8 GHz (High) ECC/REC/(02)06 (7900-8,500 MHz)
8500 - 8550	RADIOLOCATION	**SRD - Radiodetermination applications (8500-10,600 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band
8550 - 8650	SATELLITE EARTH EXPLORATION (active) RADIOLOCATION SPACE INVESTIGATION (active) 5,469A	**SRD - Radiodetermination applications (8500-10,600 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
8650 - 8750	RADIOLOCATION	**SRD - Radiodetermination applications (8500-10,600 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band
8750 - 8850	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470	**SRD - Radiodetermination applications (8500-10,600 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band
8850 - 9000	RADIOLOCATION MARITIME RADIONAVIGATION 5472	**SRD - Radiodetermination applications (8500-10,600 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band
9000 - 9200	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION 5,473A	**Radars (RVA, RLC)** **SRD - Radiodetermination applications (8500-10,600 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
9200 - 9300	RADIOLOCATION MARITIME RADIONAVIGATION 5472 5.474	**Radars (RVM, RLC) – SARTs** **SRD - Radiodetermination applications (8500-10,600 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
9300 - 9500	RADIONAVIGATION SATELLITE EARTH EXPLORATION (active) SPACE INVESTIGATION (active) RADIOLOCATION 5.427, 5.474, 5.475, 5.475A, 5.475B, 5.476A	**Radars (RVM, RVA, RLC) – SARTs** **SRD - Radiodetermination applications (8500-10,600 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
9500 - 9800	SATELLITE EARTH EXPLORATION (active) RADIOLOCATION RADIONAVIGATION SPACE INVESTIGATION (active) 5,476A	**SRD - Radiodetermination applications (8500-10,600 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
9800 - 9900	RADIOLOCATION Satellite Earth exploration (active) Space investigation (active) Fixed 5.478A, 5.478B	**SRD - Radiodetermination applications (8500-10,600 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (MHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
9900 – 10000	RADIOLOCATION Fixed 5.479	**SRD - Radiodetermination applications (8500-10,600 MHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
10 - 10,45	FIXED MOBILE RADIOLOCATION Amateur 5.479	 **Amateur (AM)** **SAP/SAB applications (video connections) (10.0-10.45 GHz)** **SRD - Radiodetermination applications (8500-10,600 MHz)**	 According to Annex 6 ERC/REC 25-10 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
10,45 - 10,5	RADIOLOCATION Amateur Amateur satellite	 **Amateur (AM)** **Amateur satellite (AMS)** **SRD - Radiodetermination applications (8500-10,600 MHz)**	 According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
10,5 - 10,55	FIXED MOBILE Radiolocation	 **SAP/SAB applications (video connections) (10.5-10.68 GHz)** **SRD - Radiodetermination applications (8500-10,600 MHz)**	 ERC/REC 25-10 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
10,55 - 10,6	FIXED MOBILE except mobile aeronautical Radiolocation	 **SAP/SAB applications (video connections) (10.5-10.68 GHz)** **SRD - Radiodetermination applications (8500-10,600 MHz)**	 ERC/REC 25-10 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
10,6 - 10,68	SATELLITE EARTH EXPLORATION (passive) FIXED MOBILE except mobile aeronautical RADIOASTRONOMY SPACE INVESTIGATION (passive) Radiolocation 5.149, 5.482, 5.482A	**SAP/SAB applications (video connections) (10.5-10.68 GHz)**	ERC/REC 25-10
10,68 - 10,7	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
10,7 - 11,7	FIXED FIXED SATELLITE (space-Earth) 5.441, 5.484A, (Earth-space) 5.484 MOBILE except mobile aeronautical	**Microwave links (FIX)** **Fixed satellite (FIX-S)** **VSATs** **SNGs (10.95-11.2 GHz and 11.45-11.7 GHz)** **LESTs (10.7-12.75 GHz)** **HESTs (10.7-12.75 GHz)** **AESs (10.7-11.7 GHz)** **EUTELTRACS – Mobile terrestrial data communication system via satellite (10.7-11.7 GHz)** **ESVs**	Band of 11 GHz ERC/REC 12-06, Annexes B and C (10.7-11.7 GHz) RR Ap. 30B: (10.7-10.95 GHz; 11.2-11.45 GHz) ECC/DEC/(06)02 ECC/DEC/(06)03 ECC/DEC/(05)11

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
11,7 - 12,5	FIXED BROADCAST SATELLITE BROADCAST 5.492 MOBILE except mobile aeronautical 5,487, 5,487A	**Broadcast satellite (RAD-S)** **LESTs (10.7-12.75 GHz)** **HESTs (10.7-12.75 GHz)**	RR Ap. 30 and Ap. 30A ECC/DEC/(06)02 ECC/DEC/(06)03
12,5 - 12,75	FIXED SATELLITE (space-Earth) 5.484A (Earth-space)	**Fixed satellite (FIX-S)** **VSATs** **SNGs** **LESTs (10.7-12.75 GHz)** **HESTs (10.7-12.75 GHz)** **AESs (12.5-12.75 GHz)** **EUTELTRACS – Mobile terrestrial data communication system via satellite (12.5-12.75 GHz)** **ESVs**	ERC/REC 13-03 ECC/DEC/(06)02 ECC/DEC/(06)03 ECC/DEC/(05)11
12,75 - 13,25	FIXED FIXED SATELLITE (Earth-space) 5.441 MOBILE Space investigation (deep space) (space-Earth)	**Microwave links (FIX)** **Fixed satellite (FIX-S)**	Band of 13 GHz ERC/REC 12-02 (12.75-13.25 GHz) RR Ap. 30B
13,25 - 13,4	SATELLITE EARTH EXPLORATION (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE INVESTIGATION (active) 5,498A		

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
13,4 - 13,75	SATELLITE EARTH EXPLORATION (active) RADIOLOCATION SPACE INVESTIGATION 5.501A Satellite standard frequency and time signal (Earth-space) 5,501B	**SRD - Radiodetermination applications (13.4-14 GHz)**	ERC/REC 70-03 Annex 6 Restricted band
13,75 - 14	FIXED SATELLITE (Earth-space) 5.484A RADIOLOCATION Satellite standard frequency and time signal (Earth-space) Space investigation Satellite Earth exploration 5.502, 5.503	**Fixed satellite (FIX-S)** **SRD - Radiodetermination applications (13.4-14 GHz)**	ERC/REC 70-03 Annex 6 Restricted band
14 - 14,25	FIXED SATELLITE (Earth-space) 5. 457A, 5.484A, 5.506, 5.506B RADIONAVIGATION 5,504 Mobile satellite (Earth-space) 5.504B, 5.506A Space investigation 5,504A	**Fixed satellite (FIX-S)** **VSATs** **SNGs** **LESTs** **HESTs** **ESVs (14-14.5 GHz)** **AESs (14-14.5 GHz)** **EUTELTRACS – Mobile terrestrial data communication system via satellite (14-14.25 GHz)**	ERC/REC 13-03 ECC/DEC/(06)02 ECC/DEC/(06)03 ECC/DEC/(05)11

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
14,25 - 14,3	FIXED SATELLITE (Earth-space) 5.457A, 5.484A, 5.506, 5.506B RADIONAVIGATION 5,504 Mobile satellite (Earth-space) 5.504B, 5.506A Space investigation 5,504A	**Fixed satellite (FIX-S)** **VSATs** **SNGs** **ESVs (14-14.5 GHz)** **AESs (14-14.5 GHz)**	ERC/REC 13-03 ECC/DEC/(05)11
14,3 - 14,4	FIXED FIXED SATELLITE (Earth-space) 5.457A, 5.484A, 5.506, 5.506B MOBILE except mobile aeronautical Mobile satellite (Earth-space) 5.504B, 5.506A Radionavigation satellite 5,504A	**Fixed satellite (FIX-S)** **VSATs** **SNGs** **ESVs (14-14.5 GHz)** **AESs (14-14.5 GHz)**	ERC/REC 13-03 ECC/DEC/(05)11
14,4 - 14,47	FIXED FIXED SATELLITE (Earth-space) 5.457A, 5.484A, 5.506, 5.506B MOBILE except mobile aeronautical Mobile satellite (Earth-space) 5.504B, 5.506A Space investigation (space-Earth) 5,504A	**Fixed satellite (FIX-S)** **VSATs** **SNGs** **ESVs (14-14.5 GHz)** **AESs (14-14.5 GHz)**	ERC/REC 13-03 ECC/DEC/(05)11

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
14,47 - 14,5	FIXED FIXED SATELLITE (Earth-space) 5.457A, 5.484A, 5.506, 5.506B MOBILE except mobile aeronautical Mobile satellite (Earth-space) 5.504B, 5.506A Radioastronomy 5,149, 5,504A	**Fixed satellite (FIX-S)** **VSATs** **SNGs** **ESVs (14-14.5 GHz)** **AESs (14-14.5 GHz)**	ERC/REC 13-03 ECC/DEC/(05)11
14,5 - 14,8	FIXED FIXED SATELLITE (Earth-space) 5.510 MOBILE Space investigation	**Microwave links (FIX)**	Band of 15 GHz ERC/REC 12-07 (14.5-14.62 GHz) Restricted band (14.62-14.8 GHz)
14,8 - 15,35	FIXED MOBILE Space investigation 5.339	**Microwave links (FIX)**	Band of 15 GHz ERC/REC 12-07 (15.23-15.35 GHz) Restricted band (14.8-15.23 GHz)
15,35 - 15,4	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
15,4 - 15,43	AERONAUTICAL RADIONAVIGATION 5.511D		
15,43 - 15,63	FIXED SATELLITE (Earth-space) 5.511A AERONAUTICAL RADIONAVIGATION 5.511C		
15,63 - 15,7	AERONAUTICAL RADIONAVIGATION 5.511D		
15,7 - 16,6	RADIOLOCATION	**Radars (RLC)**	Restricted band
16,6 - 17,1	RADIOLOCATION Space investigation (deep space) (Earth-space)	**Radars (RLC)**	Restricted band
17,1 - 17,2	RADIOLOCATION	**SRD - HYPERLANs (17.1-17.3 GHz)** **SRD - Radiodetermination applications (17.1-17.3 GHz)**	ERC/REC 70-03 Annex 3 CEPT Rec. T/R 22-06 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
17,2 - 17,3	SATELLITE EARTH EXPLORATION (active) RADIOLOCATION SPACE INVESTIGATION (active) 5,513A	**SRD - HYPERLANs (17.1-17.3 GHz)** **SRD - Radiodetermination applications (17.1-17.3 GHz)**	ERC/REC 70-03 Annex 3 CEPT Rec. T/R 22-06 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band
17,3 - 17,7	FIXED SATELLITE (Earth-space) 5.516, (space-Earth) 5.516A, 5.516B Radiolocation	**Fixed satellite (FIX-S)** HDFSS	RR Ap. 30A: (17.3-18.1 GHz) ECC/DEC/(05)08
17,7 - 18,1	FIXED FIXED SATELLITE (space-Earth) 5.484A (Earth-space) 5.516 MOBILE	**Microwave links (FIX)** **Fixed satellite (FIX-S)**	Band of 18 GHz ERC/REC 12-03 (17.7-19.7 GHz) Recommendation UIT-R F.595, Annexes 3, 4 and 5 (17.7-19.7 GHz) RR Ap. 30A: (17.3-18.1 GHz
18,1 - 18,4	FIXED FIXED SATELLITE (space-Earth) 5.484A (Earth-space) 5.520 MOBILE 5.519	**Microwave links (FIX)**	Band of 18 GHz ERC/REC 12-03 (17.7-19.7 GHz) Recommendation UIT-R F.595, Annexes 3, 4 and 5 (17.7-19.7 GHz)

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
18,4 - 18,6	FIXED FIXED SATELLITE (space-Earth) 5.484A MOBILE	**Microwave links (FIX)**	Band of 18 GHz ERC/REC 12-03 (17.7-19.7 GHz) Recommendation UIT-R F.595, Annexes 3, 4 and 5 (17.7-19.7 GHz)
18,6 - 18,8	SATELLITE EARTH EXPLORATION (passive) FIXED FIXED SATELLITE (space-Earth) 5.522B MOBILE except mobile aeronautical Space investigation (passive) 5,522A	**Microwave links (FIX)**	Band of 18 GHz 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)**	Band of 18 GHz ERC/REC 12-03 (17.7-19.7 GHz) Recommendation UIT-R F.595, Annexes 3, 4 and 5 (17.7-19.7 GHz)
19,3 - 19,7	FIXED FIXED SATELLITE (space-Earth) (Earth-space) 5.523B, 5.523C, 5.523D, 5.523E MOBILE	**Microwave links (FIX)**	Band of 18 GHz ERC/REC 12-03 (17.7-19.7 GHz) Recommendation UIT-R F.595, Annexes 3, 4 and 5 (17.7-19.7 GHz)

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
19,7 - 20,1	FIXED SATELLITE (space-Earth) 5.484A, 5.516B Mobile satellite (space-Earth)	Fixed satellite (FIX-S) HDFSS **LESTs (19.7-20.2 GHz)** **HESTS (19.7-20.2 GHz)**	ECC/DEC/(05)08 ECC/DEC/(06)02 ECC/DEC/(06)03
20,1 - 20,2	FIXED SATELLITE (space-Earth) 5.484A, 5.516B MOBILE SATELLITE (space-Earth) 5.525, 5.526, 5.527, 5.528	Fixed satellite (FIX-S) HDFSS **LESTS (19.7-20.2 GHz)** **HESTS (19.7-20.2 GHz)**	ECC/DEC/(05)08 ECC/DEC/(06)02 ECC/DEC/(06)03
20,2 - 21,2	FIXED SATELLITE (space-Earth) MOBILE SATELLITE (space-Earth) Standard frequency and time signal (space-Earth)		Restricted band
21,2 - 21,4	SATELLITE EARTH EXPLORATION (passive) FIXED MOBILE SPACE INVESTIGATION (passive)		
21,4 - 22	FIXED MOBILE SATELLITE BROADCAST 5.208B, 5.530	SRR (21.65-26.65 GHz)	Decision 2005/50/EC, from January 17th ECC/DEC/(04)10

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
22 - 22,21	FIXED MOBILE except mobile aeronautical 5.149	**Microwave links (FIX)** SRR (21.65-26.65 GHz)	Band of 23 GHz CEPT Rec. T/R 13-02 Annex A (22-23.6 GHz) Decision 2005/50/EC, from January 17th ECC/DEC/(04)10
22,21 - 22,5	SATELLITE EARTH EXPLORATION (passive) FIXED MOBILE except mobile aeronautical RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.149, 5.532	**Microwave links (FIX)** SRR (21.65-26.65 GHz)	Band of 23 GHz CEPT Rec. T/R 13-02 Annex A (22-23.6 GHz) Decision 2005/50/EC, from January 17th ECC/DEC/(04)10
22,5 - 22,55	FIXED MOBILE	**Microwave links (FIX)** SRR (21.65-26.65 GHz)	Band of 23 GHz CEPT Rec. T/R 13-02 Annex A (22-23.6 GHz) Decision 2005/50/EC, from January 17th ECC/DEC/(04)10

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
22,55 - 23,55	FIXED INTERSATELLITES 5.338A MOBILE 5.149	**Microwave links (FIX)** SRR (21.65-26.65 GHz)	Band of 23 GHz CEPT Rec. T/R 13-02 Annex A (22-23.6 GHz) Decision 2005/50/EC, from January 17th ECC/DEC/(04)10
23,55 - 23,6	FIXED MOBILE	**Microwave links (FIX)** SRR (21.65-26.65 GHz)	Band of 23 GHz CEPT Rec. T/R 13-02 Annex A (22-23.6 GHz) Decision 2005/50/EC, from January 17th ECC/DEC/(04)10
23,6 - 24	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
24 - 24,05	AMATEUR AMATEUR SATELLITE 5.150	**Amateur (AM)** **Amateur satellite (AMS)** **ISM – Industrial, scientific, and medical applications (24-24.25 GHz)** **SRD - Non-specific applications (24-24.25 GHz)** SRR (21.65-26.65 GHz)	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th ECC/DEC/(04)10 Decision 2005/50/EC, from January 17th

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
24,05 - 24,25	RADIOLOCATION Amateur Satellite Earth exploration (active) 5.150	**Radars (RLC)** **Amateur (AM)** **ISM – Industrial, scientific, and medical applications (24-24.25 GHz)** **SRD - Non-specific applications (24-24.25 GHz)** **SRD - RTTT (24,050-24.250 GHz)** **SRD - Radiodetermination applications (24.05-27 GHz)** SRR (21.65-26.65 GHz)	According to Annex 6 ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 5 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th ECC/DEC/(04)10 Decision 2005/50/EC, from January 17th
24,25 - 24,45	FIXED	SRR (21.65-26.65 GHz) **SRD - Radiodetermination applications (24.05-27 GHz)**	ECC/DEC/(04)10 Decision 2005/50/EC, from January 17th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
24,45 - 24,75	FIXED INTERSATELLITES	**FWA** SRR (21.65-26.65 GHz) **SRD - Radiodetermination applications (24.05-27 GHz)**	Band of 25 GHz CEPT Rec. T/R 13-02 Annex B (24.5-26.5 GHz) ECC/DEC/(04)10 Decision 2005/50/EC, from January 17th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
24,75 - 25,25	FIXED	**FWA** SRR (21.65-26.65 GHz) **SRD - Radiodetermination applications (24.05-27 GHz)**	Band of 25 GHz CEPT Rec. T/R 13-02 Annex B (24.5-26.5 GHz) ECC/DEC/(04)10 Decision 2005/50/EC, from January 17th ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band (25.242-25.25 GHz)
25,25 - 25,5	FIXED INTERSATELLITES 5.536 MOBILE Satellite standard frequency and time signal (Earth-space)	**FWA** SRR (21.65-26.65 GHz) **SRD - Radiodetermination applications (24.05-27 GHz)**	Band of 25 GHz CEPT Rec. T/R 13-02 Annex B (24.5-26.5 GHz) Decision 2005/50/EC, from January 17th ECC/DEC/(04)10 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band (25.25-25.492 GHz)

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
25,5 - 27	SATELLITE EARTH EXPLORATION (space-Earth) 5.536A, 5.536B FIXED INTERSATELLITES 5.536 MOBILE SPACE INVESTIGATION (space-Earth) 5.536A Satellite standard frequency and time signal (Earth-space)	**FWA** SRR (21.65-26.65 GHz) **SRD - Radiodetermination applications (24.05-27 GHz)**	Band of 25 GHz CEPT Rec. T/R 13-02 Annex B (24.5-26.5 GHz) Decision 2005/50/EC, from January 17th ECC/DEC/(04)10 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band (26.25-27 GHz)
27 - 27,5	FIXED INTERSATELLITES 5.536 MOBILE		Restricted band
27,5 - 28,5	FIXED FIXED SATELLITE (Earth-space) 5.484A, 5.516B, 5.539 MOBILE 5.538, 5.540	**FWA** Fixed satellite (FIX-S); HDFSS (27.5-27.82 GHz; 28.45-28.94 GHz)	Band of 28 GHz CEPT Rec. T/R 13-02 Annex C (27.5-29.5 GHz) ECC/DEC/(05)01

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
28,5 - 29,1	FIXED FIXED SATELLITE (Earth-space) 5.484A, 5.516B, 5.523A, 5.539 MOBILE Satellite Earth exploration (Earth-space) 5.541 5.540	**FWA** Fixed satellite (FIX-S); HDFSS (28.45-28.94 GHz)	Band of 28 GHz CEPT Rec. T/R 13-02 Annex C (27.5-29.5 GHz) ECC/DEC/(05)01
29,1 - 29,5	FIXED FIXED SATELLITE (Earth-space) 5.516B, 5.523C, 5.523E, 5.535A, 5.539, 5.541A MOBILE Satellite Earth exploration (Earth-space) 5.541 5.540	**FWA** Fixed satellite (FIX-S) HDFSS (29.46-30 GHz)	Band of 28 GHz CEPT Rec. T/R 13-02 Annex C (27.5-29.5 GHz) ECC/DEC/(05)01
29,5 - 29,9	FIXED SATELLITE (Earth-space) 5.484A, 5.516B, 5.539 Satellite Earth exploration (Earth-space) 5.541 Mobile satellite (Earth-space) 5.540	Fixed satellite (FIX-S) HDFSS (29.5-30 GHz) **LESTs (29.5-30.0 GHz);** **HESTs (29.5-30.0 GHz);**	ECC/DEC/(05)08 ECC/DEC/(06)02 ECC/DEC/(06)03

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
29,9 - 30	FIXED SATELLITE (Earth-space) 5.484A, 5.516B, 5.539 MOBILE SATELLITE (Earth-space) Satellite Earth exploration (Earth-space) 5.541, 5.543 5.525, 5.526, 5.527, 5.538, 5.540	Fixed satellite (FIX-S) HDFSS (29.5-30 GHz) **LESTs (29.5-30.0 GHz)** **HESTs (29.5-30.0 GHz)**	ECC/DEC/(05)08 ECC/DEC/(06)02 ECC/DEC/(06)03
30 - 31	FIXED SATELLITE (Earth-space) 5.338A MOBILE SATELLITE (Earth-space) Satellite standard frequency and time signal (space-Earth)		Restricted band
31 - 31,3	FIXED 5.338A MOBILE Satellite standard frequency and time signal (space-Earth) Space investigation 5.544 5.149	Microwave links (FIX)	Band of 31 GHz ECC/REC/(02)02
31,3 - 31,5	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
31,5 - 31,8	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) Fixed Mobile except mobile aeronautical 5.149		
31,8 - 32	FIXED 5.547A RADIONAVIGATION SPACE INVESTIGATION (deep space) (space-Earth) 5.547, 5.548	Microwave links (FIX)	Band of 32 GHz ERC/REC/(01)02 (31.8-33.4 GHz)
32 - 32,3	FIXED 5.547A RADIONAVIGATION SPACE INVESTIGATION (deep space) (space-Earth) 5.547, 5.548	Microwave links (FIX)	Band of 32 GHz ERC/REC/(01)02 (31.8-33.4 GHz)
32,3 - 33	FIXED 5.547A INTERSATELLITES RADIONAVIGATION 5.547, 5.548	Microwave links (FIX)	Band of 32 GHz ERC/REC/(01)02 (31.8-33.4 GHz)
33 - 33,4	FIXED 5.547A RADIONAVIGATION 5.547	Microwave links (FIX)	Band of 32 GHz ERC/REC/(01)02 (31.8-33.4 GHz)

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
33,4 - 34,2	RADIOLOCATION		Restricted band
34,2 - 34,7	RADIOLOCATION SPACE INVESTIGATION (deep space) (Earth-space)		Restricted band
34,7 - 35,2	RADIOLOCATION Space investigation		Restricted band
35,2 - 35,5	METEOROLOGY ANCILLARY RADIOLOCATION		Restricted band
35,5 - 36	METEOROLOGY ANCILLARY SATELLITE EARTH EXPLORATION (active) RADIOLOCATION SPACE INVESTIGATION (active) 5,549A		Restricted band
36 - 37	SATELLITE EARTH EXPLORATION (passive) FIXED MOBILE SPACE INVESTIGATION (passive) 5,149, 5,550A		Restricted band

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
37 - 37,5	FIXED MOBILE SPACE INVESTIGATION (space-Earth) 5.547	**Microwave links (FIX)**	Band of 38 GHz CEPT Rec. T/R 12-01 (37-39.5 GHz)
37,5 - 38	FIXED FIXED SATELLITE (space-Earth) MOBILE SPACE INVESTIGATION (space-Earth) Satellite Earth exploration (space-Earth) 5.547	**Microwave links (FIX)**	Band of 38 GHz CEPT Rec. T/R 12-01 (37-39.5 GHz) ERC/DEC/(00)02 Non coordinated earth stations cannot claim protection of fixed service
38 - 39,5	FIXED FIXED SATELLITE (space-Earth) MOBILE Satellite Earth exploration (space-Earth) 5.547	**Microwave links (FIX)**	Band of 38 GHz CEPT Rec. T/R 12-01 (37-39.5 GHz) ERC/DEC/(00)02 Non coordinated earth stations cannot claim protection of fixed service

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
39,5 - 40	FIXED FIXED SATELLITE (space-Earth) 5.516B MOBILE MOBILE SATELLITE (space-Earth) Satellite Earth exploration (space-Earth) 5.547		ERC/DEC/(00)02 Coordinated and non coordinated earth stations Bands identified by WRC-2003 (39.5-40 GHz) for HDFSS (space-Earth)
40 - 40,5	SATELLITE EARTH EXPLORATION (Earth-space) FIXED FIXED SATELLITE (space-Earth) 5.516B MOBILE MOBILE SATELLITE (space-Earth) SPACE INVESTIGATION (Earth-space) Satellite Earth exploration (space-Earth)		ERC/DEC/(00)02 Coordinated and non coordinated earth stations Bands identified by WRC-2003 (40-40.5 GHz) for HDFSS (space-Earth)
40,5 - 41	FIXED FIXED SATELLITE (space-Earth) BROADCAST SATELLITE BROADCAST Mobile 5.547	MWS applications, including MVDS (40.5-43.5 GHz)	ERC/DEC/(99)15 ECC/REC/(01)04 (40.5-43.5 GHz) ECC/DEC/(02)04

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
41 – 42.5	FIXED FIXED SATELLITE (space-Earth) BROADCAST SATELLITE BROADCAST Mobile 5.547, 5.551H, 5.551I	MWS applications, including MVDS (40.5-43.5 GHz)	ERC/DEC/(99)15 ECC/REC/(01)04 (40.5-43.5 GHz) ECC/DEC/(02)04
42,5 - 43,5	FIXED FIXED SATELLITE (Earth-space) 5.552 MOBILE except mobile aeronautical RADIOASTRONOMY 5.149, 5.547	MWS applications, including MVDS (40.5-43.5 GHz)	ERC/DEC/(99)15 ECC/REC/(01)04 (40.5-43.5 GHz)
43,5 - 47	MOBILE 5.553 MOBILE SATELLITE RADIONAVIGATION RADIONAVIGATION SATELLITE 5.554		Restricted band (43.5-45.5 GHz)
47 - 47,2	AMATEUR AMATEUR SATELLITE	**Amateur (AM)** **Amateur satellite (AMS)**	According to Annex 6 According to Annex 6
47,2 – 47,5	FIXED FIXED SATELLITE (Earth-space) 5.552 MOBILE 5,552A		

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
47,5 – 47,9	FIXED FIXED SATELLITE (Earth-space) 5.552 (space-Earth) 5.516B, 5.554A MOBILE		Bands identified by WRC-2003 (47.5-47.9 GHz) for HDFSS (space-Earth)
47,9 – 48,2	FIXED FIXED SATELLITE (Earth-space) 5.552 MOBILE 5,552A		
48,2 – 48,54	FIXED FIXED SATELLITE (Earth-space) 5.552 (space-Earth) 5.516B, 5.554A, 5.555B MOBILE	Microwave links (FIX)	Band of 49 GHz ERC/REC 12-10 (48.5-50.2 GHz) Bands identified by WRC-2003 (48.2-48.54 GHz) for HDFSS (space-Earth)
48,54 – 49,44	FIXED FIXED SATELLITE (Earth-space) 5.552 MOBILE 5.149, 5.340, 5.555	Microwave links (FIX)	Band of 49 GHz ERC/REC 12-10 (48.5-50.2 GHz)
49,44 – 50,2	FIXED FIXED SATELLITE (Earth-space) 5.338A, 5.552 (space-Earth) 5.516B, 5.554A, 5.555B MOBILE	Microwave links (FIX)	Band of 49 GHz ERC/REC 12-10 (48.5-50.2 GHz) Bands identified by WRC-2003 (49.44-50.2 GHz) for HDFSS (space-Earth)

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
50,2 - 50,4	SATELLITE EARTH EXPLORATION (passive) SPACE INVESTIGATION (passive) 5.340	**Radiometers – Passive sensors (EXP-S)**	
50,4 - 51,4	FIXED FIXED SATELLITE (Earth-space) 5.338A MOBILE Mobile satellite (Earth-space)		
51,4 - 52,6	FIXED 5.338A MOBILE 5.547, 5.556	Microwave links (FIX)	Band of 52 GHz ERC/REC 12-11
52,6 - 54,25	SATELLITE EARTH EXPLORATION (passive) SPACE INVESTIGATION (passive) 5.340, 5.556	**Radiometers – Passive sensors (EXP-S)** ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
54,25 - 55,78	SATELLITE EARTH EXPLORATION (passive) INTERSATELLITES 5.556A SPACE INVESTIGATION (passive)	**Radiometers – Passive sensors (EXP-S)**	
55,78 - 56,9	SATELLITE EARTH EXPLORATION (passive) FIXED 5.557A INTERSATELLITES 5.556A MOBILE 5.558 SPACE INVESTIGATION (passive) 5.547	**Radiometers – Passive sensors (EXP-S)** Microwave links (FIX)	Band of 56 GHz ERC/REC 12-12 Annex B (55.78-57 GHz)

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
56,9 - 57	SATELLITE EARTH EXPLORATION (passive) FIXED INTERSATELLITES 5.558A MOBILE 5.558 SPACE INVESTIGATION (passive) 5.547	**Radiometers – Passive sensors (EXP-S)** Microwave links (FIX)	Band of 56 GHz ERC/REC 12-12 Annex B (55.78-57 GHz)
57 - 58,2	SATELLITE EARTH EXPLORATION (passive) FIXED INTERSATELLITES 5.556A MOBILE 5.558 SPACE INVESTIGATION (passive) 5.547	**Radiometers – Passive sensors (EXP-S)** Microwave links (FIX) **SRD - Radiodetermination applications (57-64 GHz)** **SRD - WAS/RLAN (57-66 GHz)**	Band of 58 GHz ECC/REC/(09)01 (57-59 GHz) ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 3 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
58,2 - 59	SATELLITE EARTH EXPLORATION (passive) FIXED MOBILE SPACE INVESTIGATION (passive) 5.547, 5.556	**Radiometers – Passive sensors (EXP-S)** Microwave links (FIX) **SRD - Radiodetermination applications (57-64 GHz)** **SRD - WAS/RLAN (57-66 GHz)**	Band of 58 GHz ECC/REC/(09)01 (57-59 GHz) ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 3 Decision 2010/368/EU, from June 30th
59 - 59,3	SATELLITE EARTH EXPLORATION (passive) FIXED INTERSATELLITES 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE INVESTIGATION (passive)	**SRD - Radiodetermination applications (57-64 GHz)** **SRD - WAS/RLAN (57-66 GHz)**	ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 3 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
59,3 - 64	FIXED INTERSATELLITES MOBILE 5.558 RADIOLOCATION 5.559 5.138	Microwave links (FIX) **ISM – Industrial, scientific, and medical applications (61-61.5 GHz)** **SRD - Non-specific applications (61-61.5 GHz)** **SRD - RTTT (63-64 GHz)** **SRD - Radiodetermination applications (57-64 GHz)** **SRD - WAS/RLAN (57-66 GHz)**	Band of 62 GHz ECC/REC/(09)01 (61-64 GHz) ERC/REC 70-03 Annex 1 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 5 ECC/DEC/(02)01 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th ERC/REC 70-03 Annex 3 Decision 2010/368/EU, from June 30th Restricted band (59.3-61 GHz)
64 - 65	FIXED INTERSATELLITES MOBILE except mobile aeronautical 5.547, 5.556	Microwave links (FIX) **SRD - WAS/RLAN (57-66 GHz)**	Band of 65 GHz ECC/REC/(05)02 (64-66 GHz) ERC/REC 70-03 Annex 3 Decision 2010/368/EU, from June 30th

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
65 - 66	SATELLITE EARTH EXPLORATION FIXED INTERSATELLITES MOBILE except mobile aeronautical SPACE INVESTIGATION 5.547	Microwave links (FIX) **SRD - WAS/RLAN (57-66 GHz)**	Band of 65 GHz ECC/REC/(05)02 (64-66 GHz) ERC/REC 70-03 Annex 3 Decision 2010/368/EU, from June 30th
66 - 71	INTERSATELLITES MOBILE 5.553, 5.558 MOBILE SATELLITE RADIONAVIGATION RADIONAVIGATION SATELLITE 5.554		
71 - 74	FIXED FIXED SATELLITE (space-Earth) MOBILE MOBILE SATELLITE (space-Earth)		Restricted band

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
74 - 76	FIXED FIXED SATELLITE (space-Earth) MOBILE BROADCAST SATELLITE BROADCAST Space investigation (space-Earth) 5.561	Microwave links (FIX) **Amateur (AM) (75.5-76 GHz)** **Amateur satellite (AMS)** **SRD - Radiodetermination applications (75-85 GHz)**	Band of 74 GHz ECC/REC/(05)07 Annex 4 (74-76 GHz) According to Annex 6 ERC *Report* 25 (note EU35 of ECA) According to Annex 6 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
76 – 77,5	RADIOASTRONOMY RADIOLOCATION Amateur Amateur satellite Space investigation (space-Earth) 5.149	**Amateur (AM)** **Amateur satellite (AMS)** **SRD - Radiodetermination applications (75-85 GHz)** **SRD - RTTT (76-77 GHz)** **SRD - RTTT (77-81 GHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th CEPT/ERC/REC 70-03 Annex 5 ECC/DEC/(02)01 Decision 2010/368/EU, from June 30th ECC/DEC/(04)03 Decision 2004/545/EC, from July 8th Restricted band

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
77,5 - 78	AMATEUR AMATEUR SATELLITE Radioastronomy Space investigation (space-Earth) 5.149	**Amateur (AM)** **Amateur satellite (AMS)** **SRD - Radiodetermination applications (75-85 GHz)** **SRD - RTTT (77-81 GHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th ECC/DEC/(04)03 Decision 2004/545/EC, from July 8th Restricted band
78 - 79	RADIOLOCATION Amateur Amateur satellite Radioastronomy Space investigation (space-Earth) 5.149, 5.560	 **Amateur (AM)** **Amateur satellite (AMS)** **SRD - Radiodetermination applications (75-85 GHz)** **SRD - RTTT (77-81 GHz)**	 According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th ECC/DEC/(04)03 Decision 2004/545/EC, from July 8th Restricted band

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
79 - 81	RADIOASTRONOMY RADIOLOCATION Amateur Amateur satellite Space investigation (space-Earth) 5.149	 **Amateur (AM)** **Amateur satellite (AMS**) **SRD - Radiodetermination applications (75-85 GHz)** **SRD - RTTT (77-81 GHz)**	 According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th ECC/DEC/(04)03 Decision 2004/545/EC, from July 8th Restricted band
81 - 84	FIXED FIXED SATELLITE (Earth-space) MOBILE MOBILE SATELLITE (Earth-space) RADIOASTRONOMY Space investigation (space-Earth) 5,149, 5,561A	 **SRD - Radiodetermination applications (75-85 GHz)**	 ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th Restricted band

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
84 - 86	FIXED FIXED SATELLITE (Earth-space) MOBILE RADIOASTRONOMY 5.149	Microwave links (FIX) **SRD - Radiodetermination applications (75-85 GHz)**	Band of 84 GHz ECC/REC/(05)07 Annex 4 (84-86 GHz) ERC/REC 70-03 Annex 6 Decision 2010/368/EU, from June 30th
86 - 92	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
92 - 94	FIXED MOBILE RADIOASTRONOMY RADIOLOCATION 5.149		
94 - 94,1	SATELLITE EARTH EXPLORATION (active) RADIOLOCATION SPACE INVESTIGATION (active) Radioastronomy 5,562, 5,562A		

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
94,1 - 95	FIXED MOBILE RADIOASTRONOMY RADIOLOCATION 5.149		
95 - 100	FIXED MOBILE RADIOASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION SATELLITE 5.149, 5.554	**Weather radars**	
100 - 102	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340, 5.341	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
102 - 105	FIXED MOBILE RADIOASTRONOMY 5.149, 5.341		
105 – 109,5	FIXED MOBILE RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.562B 5.149, 5.341		

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
109,5 – 111,8	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340, 5.341	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
111,8 - 114,25	FIXED MOBILE RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.562B 5.149, 5.341		
114,25 - 116	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340, 5.341	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
116 - 119,98	SATELLITE EARTH EXPLORATION (passive) INTERSATELLITES 5.562C SPACE INVESTIGATION (passive) 5.341		

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
119,98 - 122,25	SATELLITE EARTH EXPLORATION (passive) INTERSATELLITES 5.562C SPACE INVESTIGATION (passive) 5.138, 5.341	**ISM – Industrial, scientific, and medical applications (122-123 GHz)** **SRD - Non-specific applications (122-123 GHz)**	ERC/REC 70-03 Annex 1
122,25 – 123	FIXED INTERSATELLITES MOBILE 5.558 Amateur 5.138	**Amateur (AM)** **ISM – Industrial, scientific, and medical applications (122-123 GHz)** **SRD - Non-specific applications (122-123 GHz)**	According to Annex 6 ERC/REC 70-03 Annex 1
123 – 130	FIXED SATELLITE (space-Earth) MOBILE SATELLITE (space-Earth) RADIONAVIGATION RADIONAVIGATION SATELLITE Radioastronomy 5.149, 5.554		

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
130 - 134	SATELLITE EARTH EXPLORATION (active) 5.562E FIXED INTERSATELLITES MOBILE 5.558 RADIOASTRONOMY 5,149, 5,562A		
134 - 136	AMATEUR AMATEUR SATELLITE Radioastronomy	**Amateur (AM)** **Amateur satellite (AMS)**	According to Annex 6 According to Annex 6
136 - 141	RADIOASTRONOMY RADIOLOCATION Amateur Amateur satellite 5.149	**Amateur (AM)** **Amateur satellite (AMS)**	According to Annex 6 According to Annex 6
141 – 148,5	FIXED MOBILE RADIOASTRONOMY RADIOLOCATION 5.149		
148,5 – 151,5	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
151,5 – 155,5	FIXED MOBILE RADIOASTRONOMY RADIOLOCATION 5.149		
155,5 – 158,5	SATELLITE EARTH EXPLORATION (passive) 5.562F FIXED MOBILE RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.562B 5.149, 5.562G		Future usage of passive sensors in this band
158,5 - 164	FIXED FIXED SATELLITE (space-Earth) MOBILE MOBILE SATELLITE (space-Earth)		
164 - 167	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
167 – 174,5	FIXED FIXED SATELLITE (space-Earth) INTERSATELLITES MOBILE 5.558 5.149		

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
174,5 - 174,8	FIXED INTERSATELLITES MOBILE 5.558		
174,8 - 182	SATELLITE EARTH EXPLORATION (passive) INTERSATELLITES 5.562H SPACE INVESTIGATION (passive)		
182 - 185	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
185 - 190	SATELLITE EARTH EXPLORATION (passive) INTERSATELLITES 5.562H SPACE INVESTIGATION (passive)		
190 – 191,8	SATELLITE EARTH EXPLORATION (passive) SPACE INVESTIGATION (passive) 5.340	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
191,8 - 200	FIXED INTERSATELLITES MOBILE 5.558 MOBILE SATELLITE RADIONAVIGATION RADIONAVIGATION SATELLITE 5.149, 5.341, 5.554		

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
200 - 209	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340, 5.341, 5.563A	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
209 - 217	FIXED FIXED SATELLITE (Earth-space) MOBILE RADIOASTRONOMY 5.149, 5.341		
217 - 226	FIXED FIXED SATELLITE (Earth-space) MOBILE RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.562B 5.149, 5.341		
226 – 231,5	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5.340	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
231,5 - 232	FIXED MOBILE Radiolocation		

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
232 - 235	FIXED FIXED SATELLITE (space-Earth) MOBILE Radiolocation		
235 - 238	SATELLITE EARTH EXPLORATION (passive) FIXED SATELLITE (space-Earth) SPACE INVESTIGATION (passive) 5.563A, 5.563B		
238 - 240	FIXED FIXED SATELLITE (space-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION SATELLITE		
240 - 241	FIXED MOBILE RADIOLOCATION		
241 - 248	RADIOASTRONOMY RADIOLOCATION Amateur Amateur satellite 5.138, 5.149	**Amateur (AM)** **Amateur satellite (AMS)** **ISM – Industrial, scientific, and medical applications (244-246 GHz)** **SRD - Non-specific applications (244-246 GHz)**	According to Annex 6 According to Annex 6 ERC/REC 70-03 Annex 1

FREQUENCY BAND (GHz)	ALLOCATIONS OF THE RADIOCOMMUNICATIONS REGULATION – ARTICLE 5 – APPLICABLE TO PORTUGAL	MAIN NATIONAL APPLICATIONS	NOTES
248 - 250	AMATEUR AMATEUR SATELLITE Radioastronomy 5.149	**Amateur (AM)** **Amateur satellite (AMS)**	According to Annex 6 According to Annex 6
250 - 252	SATELLITE EARTH EXPLORATION (passive) RADIOASTRONOMY SPACE INVESTIGATION (passive) 5,340, 5,563A	ALL BROADCASTS IN THIS BAND ARE FORBIDDEN	
252 - 265	FIXED MOBILE MOBILE SATELLITE (Earth-space) RADIOASTRONOMY RADIONAVIGATION RADIONAVIGATION SATELLITE 5.149, 5.554		
265 - 275	FIXED FIXED SATELLITE (Earth-space) MOBILE RADIOASTRONOMY 5,149, 5,563A		
275 - 1000	(Not allocated) 5.565		

Annex 2

PUBLICATION OF FREQUENCY BAND USAGE

2.1 Frequency bands and the number of channels used for operation of the networks and services of electronic communication accessible to the public until May 31st, 2011

The terms and abbreviations used have the following meaning:

Entity, i.e. companies that offer networks and services of electronic communications accessible to the public;

Usage rights: identification of the need to allocate usage rights, according to article 16, of LCE;

Date of review of allocation: final date of the concession contract or of the frequency usage rights;

Shared usage: usage of a channel/frequency by more than one entity;

Exclusive usage: usage of a channel/frequency by a single entity;

Usage basis:

n - national basis: usage of a channel/frequency at national territory level;
g - geographic limit: usage of a channel/frequency in a certain and well defined area, by radiocommunications stations, such as, fixed stations, broadcast stations and earth stations.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

FIXED SERVICE - POINT-POINT CONNECTIONS				
Entity	**Frequency bands**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
PT COMUNICAÇÕES, S.A.	2 GHz (2025 - 2,290 MHz) CEPT Rec T/R 13-01 Annex C	NO	2	g
	6 GHz (High) (6425 – 7,110 MHz) ERC/REC 14-02	NO	7	g
	7 GHz (High) (7425 - 7,750 MHz) Rec. UIT-R 385 rec.1	NO	2	g
	8 GHz (High) (8200-8,500 MHz) Rec. UIT-R 386	NO	2	g
	11 GHz (10.7 - 11.7 GHz) ERC/REC 12-06 Annex B	NO	11	g
	13 GHz (12.75 - 13.25 GHz) ERC/REC 12-02	NO	6	g
	18 GHz (17.7 - 19.7 GHz) Rec. UIT-R F.595 Annex 4	NO	10	g
	18 GHz (17.7 - 19.7 GHz) ERC/REC 12-03	NO	10	g
	23 GHz (22.3 - 23.5 GHz) Report 936-2 Annex 6	NO	8	g
	23 GHz (22 - 23.6 GHz) CEPT Rec. T/R 13-02 Annex A.1	NO	26	g
VODAFONE PORTUGAL - Comunicações Pessoais, S.A.	6 GHz (High) (6425 – 7,110 MHz) ERC/REC 14-02	NO	8	g
	7 GHz (Low) (7125 – 7,425 MHz) Rec. UIT-R 385 rec.1	NO	4	g
	7 GHz (Low) (7125 – 7,425 MHz) ECC/REC/(02)06 Annex 1	NO	15	g
	8 GHz (Low) (7700 - 8,300 MHz) Rec. UIT-R 386 Annex 6	NO	3	g
	11 GHz (10.7 - 11.7 GHz) ERC/REC 12-06 Annex B	NO	8	g
	13 GHz (12.75 - 13.25 GHz) ERC/REC 12-02	NO	8	g
	15 GHz (14.5 – 15.35 GHz) ERC/REC 12-07	NO	5	g
	18 GHz (17.7 - 19.7 GHz) Rec. UIT-R F.595 Annex 4	NO	7	g
	18 GHz (17.7 - 19.7 GHz) ERC/REC 12-03	NO	21	g
	23 GHz (22 - 23.6 GHz) CEPT Rec. T/R 13-02 Annex A.1	NO	20	g
	38 GHz (37 - 39.5 GHz) CEPT Rec. T/R 12-01	NO	22	g

(1) Shared usage channels.

FIXED SERVICE - POINT-POINT CONNECTIONS (cont.)				
Entity	**Frequency bands**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
CABOVISÃO – Televisão por Cabo, S.A.	18 GHz (17.7 - 19.7 GHz) ERC/REC 12-03	NO	2	g
ONITELECOM – Infocomunicações, S.A.	13 GHz (12.75 - 13.25 GHz) ERC/REC 12-02	NO	4	g
	18 GHz (17.7 - 19.7 GHz) ERC/REC 12-03	NO	5	g
	23 GHz (22 - 23.6 GHz) CEPT Rec. T/R 13-02 Annex A.1	NO	8	g
	38 GHz (37 - 39.5 GHz) CEPT Rec. T/R 12-01	NO	20	g
OPTIMUS - Comunicações, S.A.	7 GHz (High) (7425 - 7,725 MHz) ECC/REC/(02)06	NO	3	g
	13 GHz (12.75 - 13.25 GHz) ERC/REC 12-02	NO	13	g
	15 GHz (14.5 - 15.35 GHz) ERC/REC 12-07	NO	6	g
	18 GHz (17.7 - 19.7 GHz) ERC/REC 12-03	NO	19	g
	23 GHz (22 - 23.6 GHz) CEPT Rec. T/R 13-02 Annex A.1	NO	1	g
	38 GHz (37 - 39.5 GHz) CEPT Rec. T/R 12-01	NO	2	g
RENTELECOM - Comunicações, SA	18 GHz (17.7 - 19.7 GHz) ERC/REC 12-03	NO	1	g
MobiZAPP – Comunicações Electrónicas, S.A.	7 GHz (Low) (7125 – 7,425 MHz) ECC/REC/(02)06 Annex 1	NO	9	g
	13 GHz (12.75 - 13.25 GHz) ERC/REC 12-02	NO	8	g
	13 GHz (12.75 - 13.25 GHz) Rec. UIT-R F0.497	NO	4	g
	15 GHz (14.5 – 15.35 GHz) ERC/REC 12-07	NO	8	g
	18 GHz (17.7 - 19.7 GHz) ERC/REC 12-03	NO	6	g
	23 GHz (22-23.6 GHz) CEPT Rec. T/R 13-02 Annex A.1	NO	9	g
	38 GHz (37 - 39.5 GHz) CEPT Rec. T/R 12-01	NO	15	g
TVI – Televisão Independente, S.A.	6 GHz (Low) (5925 – 6,425 MHz) ERC/REC 14-01 Annex I	NO	1	g
	8 GHz (High) (8200 - 8,500 MHz) Rec. UIT-R 386 Annex 7	NO	3	g

(1) Shared usage channels.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

FIXED SERVICE - MULTIPOINT MICROWAVE DISTRIBUTION SYSTEM (MMDS)					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
ZON TV Cabo Madeirense, S.A.	2500 - 2,690 MHz	31-12-2011	NO	(2)	g

FIXED SERVICE - POINT-MULTIPOINT CONNECTIONS				
Entity	**Frequency bands**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
PT COMUNICAÇÕES, S.A.	Band of 1,500 MHz CEPT Rec. T/R 13-01 Annex A (1350-1,517 MHz) Plan 2 MHz	NO	8	g

Broadband Wireless Access (BWA)					
Entity	**Frequency bands**	**Date of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage scope (3)**
BRAVESENSOR, UNIPESSOAL, LDA	3400 -3,600 MHz ERC/REC 14-03 Annex B	05-08-2010	YES	2x 56 MHz	g Areas 1 and 2
BRAVESENSOR, UNIPESSOAL, LDA	3400 -3,600 MHz ERC/REC 14-03 Annex B	05-08-2010	YES	2x 28 MHz	g Areas , 3, 4, 5, 6, 7 and 8
BRAVESENSOR, UNIPESSOAL, LDA	3600 -3,800 MHz ERC/REC 12-08 Annex B	05-08-2010	YES	2x 28 MHz	g Area 1
ONITELECOM – Infocomunicações, S.A.	3600 -3,800 MHz ERC/REC 12-08 Annex B	16-09-2010	YES	2x 28 MHz	g Areas 1, 2, 3, 4, 5, 6 and 7

(1) Shared usage channels.
(2) Band shared with other users.
(3) The geographic areas are defined in Annex 1 of Regulation number 427/2009, from October 29th, corrected by Statement number 2930/2009, from November 27th.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

FIXED SERVICE - POINT-MULTIPOINT CONNECTIONS **Fixed Wireless Access (FWA)**					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage scope** (2)
PT COMUNICAÇÕES, S.A.	3400 -3,600 MHz ERC/REC 14-03 Annex B	10-12-2014	YES	2x 28 MHz	g Areas 1, 3, 5, 6, 7
OPTIMUS - Comunicações, S.A.	24.5 -26.5 GHz CEPT Rec. T/R 13-02 Annex B	1-1-2015	YES	2x 56 MHz 2x 28 MHz	g Areas 1, 2 Area 3
ONITELECOM – Infocomunicações, S.A.	24.5 -26.5 GHz CEPT Rec. T/R 13-02 Annex B	1-1-2015	YES	2x 56 MHz	g Areas 1, 2, 9
VODAFONE PORTUGAL - Comunicações Pessoais, S.A.	24.5 -26.5 GHz CEPT Rec. T/R 13-02 Annex B	1-1-2015	YES	2x 56 MHz 2 x 56 MHz	g Areas 1, 2, Areas 1,2, 3
WTS - Redes e Serviços de Telecomunicações, S.A.	27.5 -29.5 GHz CEPT Rec. T/R 13-02 Annex C	1-1-2015	YES	2x 175 MHz	g Areas 1, 2

AUDIO BROADCAST SERVICE (RAD) **MF (Medium Frequency)**					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
RÁDIO E TELEVISÃO DE PORTUGAL, SA	526.5 - 1,606.5 kHz	30-06-2014	YES	12	g
RÁDIO RENASCENÇA, LDA		01-06-2012	YES	7	g
RÁDIO COMERCIAL, SA		01-06-2012	YES	5	g
RADIALTITUDE - SOC.COMUNICAÇÃO, LDA		(3)	YES	1	g
CLUBE ASAS DO ATLANTICO		01-06-2019	YES	1	g
RÁDIO CLUBE ANGRA		(3)	YES	1	g
POSTO EMISSSOR RÁDIOD. FUNCHAL, LDA		(3)	YES	1	g

(1) Shared usage channels.
(2) The geographic areas are defined in Annex of Administrative Rule number 1062/2004, from August 25th.
(3) Awaits decision regarding the renewal of license.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

AUDIO BROADCAST SERVICE (RAD) HF (High Frequency)					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels [1]**	**Usage basis**
PROFUNK	5900 - 6,200 kHz	11-07-2014	YES	[2]	[3]
	7200 - 7,450 kHz				
	9400 - 9,900 kHz				
	11600 - 12,100 kHz				
	13570 - 13,870 kHz				
	15100 - 15,800 kHz				
	17480 - 17,900 kHz				
	18900 - 19,020 kHz				
	21450 - 21,850 kHz				
	25670 - 26,100 kHz				
RÁDIO E TELEVISÃO DE PORTUGAL, SA	5900 - 6,200 kHz	30-06-2014	YES	[2]	[3]
	7200 - 7,450 kHz				
	9400 - 9,900 kHz				
	11600 - 12,100 kHz				
	13570 - 13,870 kHz				
	15100 - 15,800 kHz				
	17480 - 17,900 kHz				
	18900 - 19,020 kHz				
	21450 - 21,850 kHz				
	25670 - 26,100 kHz				
RÁDIO RENASCENÇA, LDA	5900 - 6,200 kHz	01-06-2012	YES	[2]	[3]
	7200 - 7,450 kHz				
	9400 - 9,900 kHz				
	11600 - 12,100 kHz				
	13570 - 13,870 kHz				
	15100 - 15,800 kHz				
	17480 - 17,900 kHz				
	18900 - 19,020 kHz				
	21450 - 21,850 kHz				
	25670 - 26,100 kHz				

[1] Shared usage channels.
[2] The number of channels varies according to seasonal schedules. Bands shared with other users.
[3] Not applicable.

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) NATIONAL COVERAGE – Mainland Territory					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
RÁDIO E TELEVISÃO DE PORTUGAL, SA	87.5 - 108 MHz	30-06-2014	YES	85	g
RÁDIO RENASCENÇA, LDA		01-06-2012	YES	44	g
RÁDIO COMERCIAL SA		01-06-2012	YES	17	g

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) NATIONAL AND REGIONAL COVERAGES - Autonomous Region of Madeira					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
RÁDIO E TELEVISÃO DE PORTUGAL, SA	87.5 - 108 MHz	30-06-2014	YES	31	g
RÁDIO RENASCENÇA, LDA	87.5 - 108 MHz	01-06-2012	YES	2	g

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) NATIONAL AND REGIONAL COVERAGES - Autonomous Region of Azores					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
RÁDIO E TELEVISÃO DE PORTUGAL, SA	87.5 - 108 MHz	30-06-2014	YES	42	g
RÁDIO RENASCENÇA, LDA	87.5 - 108 MHz	01-06-2012	YES	2	g

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) REGIONAL COVERAGE (2)					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
RÁDIOPRESS-COM. E RADIODIFUSÃO, LDA	87.5 - 108 MHz	10-07-2014	YES	13	g
RÁDIO REGIONAL LISBOA, SA		10-07-2014	YES	7	g

(1) Shared usage channels.
(2) The entities holding the audio broadcast stations with local and regional coverage are authorized to operate under the license allocated by public tender.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) LOCAL COVERAGE [1] – Mainland Portugal					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels [2]**	**Usage basis**
A FLOR DO ÉTER, RADIODIFUSÃO, LDA	87.5 – 108 MHz	30-03-2019	YES	1	g
A VOZ DO SORRAIA EMIS. REG. C CORUCHE		06-03-2019	YES	1	g
ÁGUIA AZUL, CRL		09-05-2019	YES	1	g
ALCOOJOR COOP JORNAL RÁDIOF. ALCOCHETE, CRL		(3)	YES	1	g
ALFÂNDEGA FM-SOC. COMUNICAÇÃO, LDA		01-10-2011	YES	1	g
ANTENA DEZ RÁDIO SANTO ANTONIO LDA		12-06-2019	YES	1	g
ANTENA LIVRE DE GOUVEIA		12-06-2019	YES	1	g
ANTENA MINHO EMISSORA REG BRAGA, LDA		09-05-2019	YES	1	g
ANTENA MIRÓBRIGA COOP SERVICOS, CRL		22-05-2019	YES	1	g
ANTENA VAREIRA, CRL		09-05-2019	YES	1	g
AO TOM DELA (RÁDIO) LDA		22-05-2019	YES	1	g
ASS. ACADEMICA UNIVERSIDADE MINHO		09-05-2019	YES	1	g
ASS. CULT. DESPORT. RECREATIVA INÊS NEGRA		23-12-2019	YES	1	g
ASS. CULT. E RECREATIVA RÁDIO CONDESTÁVEL		22-05-2019	YES	3	g
ASS. CULTURAL RECREATIVA DE CARIA		06-03-2019	YES	1	g
ASS CULTURAL REGIONAL ZÊZERE		12-06-2019	YES	1	g
ASS. CULTURAL TORRE DE MONCORVO		30-03-2019	YES	1	g
ASS. HUM BOMB VOL VIDIGUEIRA		23-12-2019	YES	1	g
ASS. PROM SOC CULT DESP FORNOS ALGODRES		23-12-2019	YES	1	g
ASS. RÁDIO UNIVERSITARIA DO ALGARVE		22-05-2013	YES	1	g
BAOBAD-COMUNICAÇÕES E PUBLICAÇÕES, SA		09-05-2019	YES	1	g
BASMINHO – PUBLICIDADE, LDA		06-03-2019	YES	2	g
BASTOMÉDIA-PRODUÇÕES DE RÁDIO E ESP., LDA		06-03-2019	YES	2	g
BENEDITA FM-PRODUÇÕES RADIOFÓNICAS,LDA		09-05-2019	YES	1	g
CASTELO DE LANHOSO 2-COM. SOCIAL, UN., LDA		22-05-2019	YES	1	g
CENTRO FORMACAO ASS DESENVOLVIMENTO		30-03-2019	YES	1	g
CLUBE CULTURAL RÁDIO MARINHAIS		30-03-2019	YES	1	g
CÔCO-COMPANHIA DE COMUNICAÇÃO LDA		22-05-2019 06-03-2019 06-03-2019	YES	3	g
COMISSAO MELHORAMENTOS DE ESMORIZ		09-05-2019	YES	1	g
COOP. CULTURAL PALA PINTA, CRL		23-12-2009	YES	2	g
COOP. INF E CULTURA PORTO DE MÓS		30-03-2019	YES	1	g
COOP. RÁDIO BANDARRA CRB, CRL		30-03-2019	YES	1	g
COOP. RÁDIO BOA NOVA, CRL		30-03-2019	YES	1	g
COOP. RÁDIO EMISSORA ST ANTONIO DE VAGOS		12-06-2019	YES	1	g
COOP. CULTURAL VOZ DO MARAO, CRL		09-05-2019	YES	1	g
COOP. INFORM CULTURA RÁDIO VINHAIS		30-03-2019	YES	1	g

[1] The entities holding the audio broadcast stations with local and regional coverage are authorized to operate under the license allocated by public tender.

[2] Shared usage channels.

[3] Awaits decision regarding the renewal of license.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) LOCAL COVERAGE [1] – Mainland Portugal					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels [2]**	**Usage basis**
COOP. DE RÁDIO VOUZELA, CRL	87.5 - 108 MHz	30-03-2019	YES	1	g
COOP. DE SANTO ANDRÉ, CRL		12-06-2019	YES	1	g
COOP. NOVA PAIVENSE, CRL		06-03-2019	YES	1	g
COOP. RÁDIO VOZ DO NEIVA, CRL		[3]	YES	1	g
COOP. RADIODIFUSAO BRIGANTIA, CRL		22-05-2019	YES	2	g
CORAL RÁDIO ALTO AVE		30-03-2019	YES	1	g
CR-COMUNICAÇÃO REGIONAL, LDA		23-12-2019	YES	1	g
CRISTINA MARIA SILVA REDE, UNIPESSOAL, LDA		22-05-2019	YES	1	g
DEFESA BEIRA SOCIEDADE NOTÍCIAS, LDA		[3]	YES	1	g
DIANA FM-RADIODIFUSÃO, UN.,LDA		09-05-2019	YES	1	g
DIFUSÃO IDEIAS SOC RADIODIFUSAO, LDA		09-05-2019	YES	1	g
DRUMS – COMUNICAÇÕES SONORAS, SA		30-03-2019	YES	1	g
ECOS DA RAIA PUBLICIDADE E RÁDIO, LDA		30-03-2019	YES	1	g
EDICOES LINEAR, CRL		09-05-2019	YES	1	g
EDITAVE COMUNIC PUBLIC. PROMOÇÕES, LDA		09-05-2019	YES	2	g
EDITORIALCULT, CRL		09-05-2019	YES	2	g
EMISSORA REGIONAL DE AMARANTE		09-05-2019	YES	1	g
EMISSORA REGIONAL LEIRIA RÁDIO LIZ, CRL		09-05-2019	YES	1	g
EMISSORA REGIONAL RÁDIO BATALHA, CRL		06-03-2019	YES	1	g
EMPRESA DE DIFUSÃO DE RÁDIO, SA		09-05-2019 01-03-2011	YES	2	g
EMPRESA EDITORA CIDADE DE TOMAR, LDA		09-05-2019 01-03-2011	YES	2	g
EMPRESA JORNAL O CORREIO DE FAFE, LDA		09-05-2019	YES	1	g
EMPRESA RÁDIO CÁVADO, LDA		09-05-2019	YES	1	g
ERO- EMPRESA DE RADIODIFUSÃO DO OESTE, LDA		30-03-2019	YES	1	g
ESCOLA DE CONDUÇÃO CASTANHEIRENSE, LDA		11-03-2012	YES	1	g
FABRICA DA SÉ CATEDRAL DE FARO		22-05-2019	YES	1	g
FERCORBER-MADEIRAS E MATERIAIS DE CONSTRUÇÃO, LDA		01-09-2012	YES	1	g
FERNANDO MOURA UNIPESSOAL, LDA		11-02-2013	YES	1	g
FONÓGRAFO PRODUÇÕES SOM IMAGEM, SA		01-03-2011 01-03-2011 01-03-2011	YES	3	g

[1] The entities holding the audio broadcast stations with local and regional coverage are authorized to operate under the license allocated by public tender.
[2] Shared usage channels.
[3] Awaits decision regarding the renewal of license.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) LOCAL COVERAGE (1) – Mainland Portugal					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (2)**	**Usage basis**
FOZ DO MONDEGO-MEIOS DE RADIOD., LDA	87.5 - 108 MHz	09-05-2019	YES	1	g
FUNDAÇÃO FREI PEDRO DA GUARDA		23-12-2019	YES	1	g
GUADISOM, LDA		12-06-2019	YES	1	g
GRANADA FM-RÁDIO E JORNALISMO, UN., LDA		30-03-2019	YES	1	g
GRUPO ESTUDOS INVEST. CIENC EXPERIMENTAIS		09-05-2019	YES	1	g
GUIMAPRESS, SA		30-03-2019	YES	1	g
HORA H-AGENCIA COMUNICAÇÃO GLOBAL, LDA		30-03-2019	YES	1	g
HORIZONTES PLANOS, INF. E COMUNICAÇÃO, LDA		01-03-2011	YES	3	g
INTERIOR NORTE RÁDIO, LDA		23-12-2019	YES	1	g
INFOR-BARROSO, INFORMAÇÃO, LDA		30-03-2019	YES	1	g
INFORÁDIO COMUNICAÇÃO SOCIAL, SA		25-06-2013	YES	1	g
INTERLOCAL, COMUNICAÇÃO, SA		30-03-2019	YES	1	g
IRIS-SERVIÇO DE INF.RADIOF. INDEPEND, LDA		12-06-2019	YES	1	g
JANELA INDISCRETA SOC COMUNICAÇÃO, LDA		23-12-2019	YES	1	g
JORNAL DA TROFA, LDA		09-05-2019	YES	1	g
JORNAL ESPOSENDE SOC EDITORA, LDA		23-12-2019	YES	1	g
JOSE SOARES SILVA, LDA(R.REG SANJOANENSE)		15-11-2015	YES	1	g
LAGOANIMA-EMP. RADIOD. E COM. DE LAGOA,LDA		06-03-2019	YES	2	g
LAMEGRÁFICA-SOC. COMERC. E EDITORIAL, LDA		18-09-2013	YES	1	g
LEIRIMEDIA PRODUÇÕES E PUBLICIDADE, LDA		09-05-2019	YES	1	g
LEZÍRIA COMUNICACAO SOCIAL, SA		09-05-2019	YES	1	g
LUSOCANAL-SOC. RADIODIFUSÃO, LDA		30-03-2019	YES	1	g
MAFRA FM COOP RÁDIODIFUSÃO, CRL		06-03-2019	YES	1	g
MAIORCA FM-PROD. RADIOF.. SOC. UN, LDA		09-05-2019	YES	1	g
MAISACTUAL-COMUNICAÇÃO E MEIOS, LDA		06-03-2019	YES	1	g
MARGINÁUDIO ACT RADIOFÓNICAS, SA		30-03-2019	YES	1	g
MEDIABORBA-SOC. DE COM. SOCIAL, LDA		06-03-2019	YES	1	g
MEDIA ON-COM. SOCIAL, LDA		09-05-2019	YES	1	g
MEIA MARATONA INTERNACIONAL NAZARE ACD		12-06-2019	YES	1	g
MIRANDUM FM-SOC. COMUNICAÇÃO, LDA		01-12-2011	YES	1	g
MG-RÁDIO E COM. DA MARINHA GRANDE, LDA		22-05-2019	YES	1	g
MONSANTORÁDIO-RÁDIO CLUBE DE MONSANTO, UNIPESSOAL, LDA		12-06-2019	YES	2	g
MOVIFACE-MEIOS PUBLICITÁRIOS, LDA		09-05-2019	YES	1	g
NORTE RÁDIO E TELEVISÃO, LDA		01-03-2011 21-08-2011	YES	2	g
NOTIMAIA PUBLIC E COM. SOCIAL, LDA		09-05-2019 30-03-2019	YES	2	g
NOVA RÁDIO-A VOZ DE STO.TIRSO, LDA		09-05-2019	YES	1	g
NOVOS MARES-RADIODIFUSÃO, LDA		06-03-2019	YES	1	g
NUCLEO AMADOR DE INVEST. DE AFIFE		09-05-2019	YES	1	g
OFICINA DE VIDEO, LDA		23-12-2019	YES	2	g
ORGANIZ. COOP. INFORMATIVA MARCO, CRL		30-03-2019	YES	1	g
PAJOVIR ESPECTAC. MARKETING PUBLICI., LDA		09-05-2019 30-03-2019	YES	3	g

(1) The entities holding the audio broadcast stations with local and regional coverage are authorized to operate under the license allocated by public tender.
(2) Shared usage channels.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC

– Usages –

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) LOCAL COVERAGE [1] – Mainland Portugal					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels [2]**	**Usage basis**
PENALVA DE CASTELO FM-RADIOD. E PUBL., LDA	87.5 - 108 MHz	01-03-2011	YES	1	g
PENSE POSITIVO EDICAO DIST. AUDIOVISUAIS, LDA		22-05-2019	YES	1	g
PFM-RADIODIFUSÃO, LDA		22-05-2019	YES	1	g
PIÇARRA E COMPANHIA, LDA		09-05-2019	YES	1	g
POLIMÉDIA, LDA		23-12-2019	YES	1	g
PRC PRODUCOES RADIOFÓNICAS COIMBRA, LDA		30-03-2019	YES	1	g
PRESÉPIO DE PORTUGAL-COM. SOCIAL, UN., LDA		06-03-2019	YES	2	g
PUBLIÁREA-PUBLICAÇÕES E COMUNIC., LDA		06-03-2019	YES	1	g
PUBLICELOS, LDA		09-05-2019	YES	1	g
PUBLIDIFUSÃO LDA ESTAÇÃO ORBITAL		30-03-2019	YES	1	g
R2000-COMUNICAÇÃO SOCIAL, LDA		09-05-2019	YES	2	g
R A PRODUCOES RADIOFÓNICAS, LDA		09-05-2019	YES	1	g
R O EDIÇÕES E PUBL, LDA		30-03-2019	YES	1	g
RADIALTITUDE-SOC. COMUN. LDA		22-05-2019	YES	1	g
RÁDIO 90 FM COIMBRA RADIODIFUSAO, LDA		30-03-2019	YES	1	g
RÁDIO 100-SOC. PRODUÇÕES AUDIOVISUAIS, LDA		23-12-2019	YES	1	g
RÁDIO BONFIM-PRODUÇÕES AUDIOVISUAIS, LDA		06-03-2019	YES	1	g
97,5 FM RÁDIO PORTEL, LDA		01-03-2011	YES	1	g
RÁDIO ALTO MINHO, LDA		09-05-2019	YES	2	g
RÁDIO ALVOR, CRL		22-05-2019	YES	1	g
RÁDIO AMADOR DE CANAS DE SENHORIM, CRL		30-03-2019	YES	1	g
RÁDIO ANSIÃES, CRL		23-12-2019	YES	1	g
RÁDIO ASSOC BOMB VOLUNTARIOS DE SINES		12-06-2019	YES	1	g
RÁDIO ATLANTICO SUL R P PUBLICIDADE, LDA		[3]	YES	1	g
RÁDIO BAÍA SOC RADIODIFUSAO, LDA		09-05-2019	YES	1	g
RÁDIO BARCA, CRL		30-03-2019	YES	1	g
RÁDIO BEIRA INTERIOR, CRL		09-05-2019	YES	1	g
RÁDIO BRAGANÇANA RBA, CRL		[3]	YES	2	g
RÁDIO CAMPANÁRIO VOZ DE VILA VIÇOSA, CRL		30-03-2019	YES	1	g
RÁDIO CARDAL, LDA		09-05-2019	YES	1	g
RÁDIO CARTAXO, CRL		06-03-2019	YES	1	g
RÁDIO CASTRENSE-SOC. UNIPESSOAL, LDA		06-03-2019	YES	1	g
RÁDIO CENTRAL DO VOUGA LDA		30-03-2019	YES	1	g
RÁDIO CIDADE DE RIO MAIOR, LDA		12-06-2019	YES	1	g
RÁDIO CIDADE HOJE CCF		09-05-2019	YES	1	g
RÁDIO CIDADE PROD AUDIOVISUAIS, SA		30-03-2019	YES	1	g
RÁDIO CISTER, CRL		09-05-2019	YES	1	g
RÁDIO CLUBE AGUIARENSE		30-03-2019	YES	1	g
RÁDIO CLUBE ALVAIÁZERE, LDA		23-12-2019	YES	1	g
RÁDIO CLUBE DE ARGANIL, CRL		06-03-2019	YES	2	g
RÁDIO C. DE ARMAMAR, PROD.RADIOF, LDA		23-12-2019	YES	1	g

[1] The entities holding the audio broadcast stations with local and regional coverage are authorized to operate under the license allocated by public tender.
[2] Shared usage channels.
[3] Awaits decision regarding the renewal of license.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) LOCAL COVERAGE [1] – Mainland Portugal					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels [2]**	**Usage basis**
RÁDIO CLUBE DE ALCOUTIM, LDA	87.5 - 108 MHz	01-02-2012	YES	1	g
RÁDIO CLUBE DA COVILHÃ, CRL		06-03-2019	YES	2	g
RÁDIO CLUBE DA FEIRA, CRL		09-05-2019	YES	1	g
RÁDIO CLUBE DE GAIA SLRS, LDA		30-03-2019	YES	1	g
RÁDIO CLUBE DE GONDOMAR, LDA		09-05-2019	YES	1	g
RÁDIO CLUBE DE GRANDOLA, CRL		06-03-2019	YES	1	g
RÁDIO CLUBE DE LAFÕES, CRL		30-03-2019	YES	2	g
RÁDIO CLUBE DE LOULÉ, CRL		09-05-2019	YES	1	g
RÁDIO CLUBE DA LOURINHÃ, CRL		06-03-2019	YES	1	g
RÁDIO CLUBE DE OURÉM		30-03-2019	YES	1	g
RÁDIO CLUBE DE MATOSINHOS-RADIODIFUSAO PUBLIC ESPECTACULOS, LDA		30-03-2019	YES	1	g
RÁDIO CLUBE DA PAMPILHOSA CRL		12-06-2019	YES	1	g
RÁDIO CLUBE DE PENAFIEL, CRL		30-03-2019	YES	1	g
RÁDIO CLUBE DE REDONDO, CRL		30-03-2019	YES	1	g
RÁDIO CLUBE DE SINTRA, LDA		30-03-2019	YES	1	g
RÁDIO CLUBE LAMEGO, LDA		22-05-2019	YES	2	g
RÁDIO CLUBE POMBAL, CRL		09-05-2019	YES	1	g
RÁDIO COMERCIAL DA LINHA, LDA		30-03-2019	YES	1	g
RÁDIO COMERCIAL DE ALMEIRIM, LDA		23-12-2019	YES	2	g
RÁDIO CONCELHO DE CANTANHEDE, LDA		06-03-2019	YES	1	g
RÁDIO CORVAL, CRL		01-03-2011	YES	1	g
RÁDIO DESPERTAR VOZ DE ESTREMOZ, CRL		06-03-2019	YES	1	g
RÁDIO DO SEIXAL, LDA		09-05-2019	YES	1	g
RÁDIO DUEÇA, INFORMIRANDA, LDA		30-03-2019	YES	1	g
RÁDIO ELMO, LDA		30-03-2019	YES	1	g
RÁDIO ESCOLA TRIÂNG. PROFISSIONAL, LDA		30-11-2011	YES	2	g
RÁDIO ESCURO, CRL		30-03-2019	YES	1	g
RÁDIO EUROPA, CRL		09-05-2019	YES	1	g
RÁDIO FELGUEIRAS, CRL		06-03-2019	YES	1	g
RÁDIO FESTIVAL DO NORTE, LDA		06-03-2019	YES	1	g
RÁDIO FÓIA, CRL		30-03-2019	YES	1	g
RÁDIO FOZ DO AVE, LDA		09-05-2019	YES	1	g
RÁDIO GILÃO COOP RADIODIFUSAO, CRL		22-05-2019	YES	2	g
RÁDIO GUADALUPE, CRL		[3]	YES	1	g
RÁDIO HERTZ ASSOCIACAO CULT E RECREAT		09-05-2019	YES	1	g
RÁDIO HORIZ. TEJO-RAD. COM E MEIOS, LDA		30-03-2019	YES	1	g
RÁDIO INDEPENDENTE AVEIRO, CRL		09-05-2019	YES	1	g
RÁDIO JORNAL CAMINHENSE, LDA		12-06-2019	YES	1	g
RÁDIO JORNAL FUNDÃO, LDA		22-05-2019	YES	1	g
RÁDIO JORNAL SETÚBAL, LDA		09-05-2019	YES	1	g
RÁDIO JUVENTUDE, CRL		09-05-2019	YES	1	g

[1] The entities holding the audio broadcast stations with local and regional coverage are authorized to operate under the license allocated by public tender.
[2] Shared usage channels.
[3] Awaits decision regarding the renewal of license.

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) LOCAL COVERAGE [1] – Mainland Portugal					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels [2]**	**Usage basis**
RÁDIO LAROUCO, CRL	87.5 - 108 MHz	22-05-2019	YES	1	g
RÁDIO LIMITE DE CASTRO DAIRE, CRL		06-03-2019	YES	1	g
RÁDIO LITORAL CENTRO EMP RAD, LDA		23-12-2019	YES	1	g
RÁDIO LIVRE MACEDENSE, CRL		06-03-2019	YES	2	g
RÁDIO MAIOR, PUBLICIDADE E COM. LDA		12-06-2019	YES	2	g
RÁDIO MAIS		30-03-2019	YES	1	g
RÁDIO MANTEIGAS-RADIODIFUSÃO E PUBL., LDA		22-08-2011	YES	1	g
RÁDIO MÉRTOLA, LDA		22-06-2011	YES	1	g
RÁDIO METROPOLITANA, COMUN. SOCIAL, LDA		09-05-2019	YES	1	g
RÁDIO MIRASADO COOP CULT ANIM RÁDIOF CRL		06-03-2019	YES	1	g
RÁDIO MOLICEIRO COM SOCIAL, LDA		09-05-2019	YES	1	g
RÁDIO NACIONAL-EMISSÕES RADIOFÓNICAS, LDA		09-05-2019	YES	1	g
RÁDIO NFM, LDA		09-05-2019	YES	1	g
RÁDIO NOVA CONTRASTA, LDA		12-06-2019	YES	1	g
RÁDIO NOVA ERA SOC DE COMUNICAÇÕES LDA		30-03-2019 09-05-2019	YES	2	g
RÁDIO NOVA LOURES		30-03-2019	YES	1	g
RÁDIO NOVA SIRS SOC IND RADIODIFUSAO, LDA		06-03-2019	YES	1	g
RÁDIO OBJECTIVA, LDA		09-05-2019	YES	1	g
RÁDIO ONDA VIVA, SA		09-05-2019	YES	1	g
RÁDIO OURIQUE, LDA		01-03-2011	YES	1	g
RÁDIO PAÇOS-COMUNICAÇÃO REGIONAL, LDA		[3]	YES	1	g
RÁDIO PAL-SOC. UN, LDA		22-05-2019	YES	1	g
RÁDIO PAX		22-05-2019	YES	1	g
RÁDIO PERNES, LDA		09-05-2019	YES	2	g
RÁDIO PLANALTO, CRL		30-03-2019	YES	1	g
RÁDIO PORTALEGRE, CRL		22-05-2019	YES	2	g
RÁDIO PRAIA, CRL		[3]	YES	1	g
RÁDIO PROVINCIA, LDA		06-03-2019	YES	1	g
RÁDIO RACAL EMP RÁDIODIF INFORMACAO, LDA		30-03-2019	YES	3	g
RÁDIO REGIONAL AVEIRO		09-05-2019	YES	1	g
RÁDIO REGIONAL CENTRO, LDA		23-12-2019	YES	1	g
RÁDIO REGIONAL DE AROUCA		23-12-2019	YES	1	g
RÁDIO RENASCENÇA, LDA		06-03-2019	YES	1	g
RÁDIO RIBA TAVORA, CRL		30-03-2019	YES	2	g
RÁDIO SABUGAL-PUBLIC. E RADIODIF., LDA		21-08-2011	YES	1	g
RÁDIO SANTA MARIA, CRL		09-05-2019	YES	1	g
RÁDIO SANTIAGO COOPERATIVA COM CULTURA		22-05-2019	YES	1	g
RÁDIO SEM FRONTEIRAS, SA		30-03-2019	YES	1	g
RÁDIO SINGA, CRL		06-03-2019	YES	1	g
RÁDIO SOBERANIA, EMPRESA DE RAD. LDA		22-05-2019	YES	1	g
RÁDIO TAGIDE, CRL		09-05-2019	YES	1	g
RÁDIO TEMPOS LIVRES, CRL		30-03-2019	YES	2	g

[1] The entities holding the audio broadcast stations with local and regional coverage are authorized to operate under the license allocated by public tender.
[2] Shared usage channels.

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) LOCAL COVERAGE [1] – Mainland Portugal					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels [2]**	**Usage basis**
RÁDIOTORRES, LDA	87.5 - 108 MHz	30-03-2019	YES	1	g
RÁDIO UNIVERS. MARAO COOP RÁDIO CRL		12-06-2019	YES	1	g
RÁDIO URBANA, CRL		09-05-2019	YES	1	g
RÁDIO VALDEVEZ ASS CULT DE RADIODIFUSAO		22-05-2019	YES	2	g
RÁDIO VIDA NOVA, CRL		12-06-2019	YES	1	g
RÁDIO VIRIATO NODIGRAFICA, LDA		09-05-2019	YES	1	g
RÁDIO VIZELA COOP RADIODIFUSAO, CRL		23-12-2019	YES	1	g
RÁDIO VOZ DA PLANÍCIE CRL		22-05-2019	YES	1	g
RÁDIO VOZ DA RAIA-SOC. UN., LDA		30-03-2019	YES	1	g
RÁDIO VOZ DE ALCANENA		06-03-2019	YES	1	g
RÁDIO VOZ DE TABUAÇO, CRL		30-03-2019	YES	1	g
RÁDIO VOZ MANGUALDE		06-03-2019	YES	1	g
RÁDIO VOZ RIA EMISSORA C ESTARREJA, CRL		30-03-2019	YES	1	g
RÁDIO VOZ SETÚBAL, LDA		09-05-2019	YES	1	g
RÁDIO XXI, LDA		06-03-2019	YES	1	g
RÁDIO CLUBE DE MATOSINHOS-RADIODIFUSAO PUBLIC ESPECTACULOS, LDA		30-03-2019	YES	1	g
RÁDIOESTE COOP RÁDIODIFUSAO LOCAL, CRL		09-05-2019	YES	1	g
RAIMUNDO-COMUNICAÇÕES INDEPENDENTES, RÁDIO E JORNAIS, LDA		09-05-2019	YES	3	g
RADIBELI-PRODUÇÕES RÁDIOFÓNICAS,LDA		22-05-2019	YES	1	g
RC EMPRESA DE RADIODIFUSAO, SA		09-05-2019 30-03-2019	YES	2	g
RCB RÁDIO COVA DA BEIRA, CRL		22-05-2019	YES	2	g
RCC RÁDIO CULTURAL CERVEIRA		30-03-2019	YES	1	g
RCCI RÁDIO COM. CRIATIVIDADE IMAGEM, LDA		09-05-2019	YES	1	g
RCM-RÁDIO CLUBE DE MEDA, LDA		01-03-2011	YES	1	g
RÁDIO E TELEVISÃO DE PORTUGAL, SA (RDP ÁFRICA)		[4]	YES	3	g
RECORD FM – SOC. DE MEIOS AUDIOVISUAIS DE SINTRA, LDA		30-03-2019	YES	1	g
REDE A EMISSORA REGIONAL DO SUL, LDA		30-03-2019	YES	1	g
RJTV-RÁDIO, JORNAIS E TELEVISÃO-MEIOS COM. AUDIV., UN., LDA		30-03-2019	YES	1	g
RPCS-SOURE FM-SOC. COM., UN., LDA		30-03-2019	YES	2	g
RR RÁDIO RESTAURACAO, CRL		[3]	YES	1	g
RSF, RADIODIFUSÃO, LDA		09-05-2019 01-03-2011	YES	2	G
RTA SOC RÁDIODIF TELECOM ALBUFEIRA, LDA		12-06-2019	YES	1	g
RTM-RÁDIO E TELEVISÃO DO MINHO, LDA		09-05-2019	YES	1	g
RUC RÁDIO UNIVERSIDADE AAC		[3]	YES	1	g
RVE-SOCIEDADE RADIOFÓNICA, LDA		12-06-2019	YES	1	g
SALDIDA FM RÁDIO INFORM. CULTURACRL		30-03-2019	YES	1	g
SANTA CASA MISERIC. DE CAMPO MAIOR		21-06-2011	YES	1	g
SER-SOC.ELVENSE RADIODIFUSÃO, LDA		01-03-2011	YES	3	g

[1] The entities holding the audio broadcast stations with local and regional coverage are authorized to operate under the license allocated by public tender.
[2] Shared usage channels.
[3] Awaits decision regarding the renewal of license.
[4] Has government authorization.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) LOCAL COVERAGE [1] – Mainland Portugal					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels [2]**	**Usage basis**
SINTONIZENOS COMUNICACAO SOCIAL, LDA	87.5 - 108 MHz	09-05-2019	YES	1	g
SIRPA SOC IMPRENSA RÁDIO PARALELO, LDA		09-05-2019	YES	1	g
SIT-SOC. DE INFORM. DE TRÁS-OS-MONTES, LDA		23-12-2019	YES	2	g
SOBRAL FM-SOC. COM., UN., LDA		30-03-2019	YES	1	g
SOC FRANCO-PORTUGUESA COMUNIC. SA		06-03-2019	YES	1	g
SOCIEDADE EDITORIAL BÉTICA, LDA		30-03-2019	YES	1	g
SOCIROL SOC RÁDIODIFUSAO LIMIANA, LDA		22-05-2019	YES	1	g
SOC. PAIVIMO-EMPREND. IMOBILIARIOS, LDA		09-05-2019	YES	1	g
SOM DO PINHAL 2 MULTIMÉDIA, UN., LDA		22-05-2019	YES	1	g
SONCENTRO EMISSORA RÁDIO, LDA		23-12-2019	YES	1	g
SONS DE BOTÁREU-ACTIV. RÁDIO, UN., LDA		22-05-2019	YES	2	g
SRA-SOC. DE RADIODIFUSÃO DE ALBUFEIRA, LDA		12-06-2019	YES	1	g
SULEDITA, LDA		01-12-2011	YES	1	g
TAVIRÁDIO, CRL		22-05-2019	YES	2	g
TLA-TELEFONIA LOCAL DE ALJUSTREL, CRL		01-03-2011	YES	1	g
TSF RÁDIO JORNAL LISBOA, LDA		06-03-2019	YES	1	g
UNIRÁDIO, UCRL		30-03-2019	YES	1	g
VDRF-ELECTRÓNICA, ÁUDIO E EQUIP. TELEC., LDA		06-03-2019	YES	1	g

[1] The entities holding the audio broadcast stations with local and regional coverage are authorized to operate under the license allocated by public tender.
[2] Shared usage channels.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) LOCAL COVERAGE [1] - Autonomous Region of Azores					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels [2]**	**Usage basis**
ANTENA NOVE, CRL	87.5 – 108 MHz	06-03-2019	YES	4	g
ATLANTIRÁDIO-SOC. DE RADIODIFUSÃO, LDA		06-03-2019	YES	3	g
BRUN PACHECO E FILHOS, LDA		22-06-2011	YES	1	g
CICLONE PUBLICAÇÕES E DIFUSÕES, LDA		06-03-2019	YES	2	g
CLUBE ASAS ATLÂNTICO		01-07-2020	YES	1	g
COOPERATIVA ECOS DO NORTE, CRL		25-03-2019	YES	1	g
COOPERATIVA RADIODIFUSAO DO PICO, CRL		06-03-2019	YES	3	g
COOPERATIVA RADIODIFUSAO RÁDIO CAIS, CRL		01-03-2011	YES	2	g
COSTA E OSÓRIO, LDA		22-06-2011	YES	1	g
ECOS DAS FLORES-ACTIV. RÁDIODIF., LDA		01-02-2011	YES	1	g
ESTADO MAIOR FORÇA AÉREA		[3]	YES	1	g
PACHECO E FREITAS, LDA		22-09-2011	YES	1	g
RÁDIO CANAL ABERTO, LDA		21-08-2011	YES	2	g
RÁDIO CLUBE LAJES PICO-A VOZ DA MONTANHA, LDA		01-03-2011	YES	4	g
RÁDIO CLUBE ANGRA		06-03-2019	YES	1	g
RÁDIO ILHA, LDA		06-03-2019	YES	2	g
RÁDIO INSULAR, LDA		06-03-2019	YES	1	g
RÁDIO LUMENA VOZ DE S JORGE		06-03-2019	YES	3	g
RCA RÁDIO COMERCIAL DOS AÇORES, LDA		06-03-2019	YES	1	g
SOC. RADIODIFUSÃO GRACIOSENSE, LDA		06-03-2019	YES	1	g
TOP RÁDIO, LDA		06-03-2019	YES	2	g
UNITED STATES AIR FORCE		[3]	YES	1	g

[1] The entities holding the audio broadcast stations with local and regional coverage are authorized to operate under the license allocated by public tender.
[2] Shared usage channels.
[3] Has government authorization.

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency) LOCAL COVERAGE [1] - Autonomous Region of Madeira					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels [2]**	**Usage basis**
ADENORMA-ASSOC. DESENVOLVIMENTO COSTA NORTE DA MADEIRA – IPSS	87.5 – 108 MHz	01-03-2011	YES	1	g
ASSOC. BOMBEIROS VOLUNT. DE SÃO VICENTE E PORTO MONIZ		01-03-2011	YES	2	g
BETAMAR, LDA		21-08-2011	YES	1	g
EMPRESA JORNAL DA MADEIRA, LDA		06-03-2019	YES	1	g
NOTÍCIAS 2000-ACT. RADIOD. SONORA, LDA		06-03-2019	YES	1	g
POSTO EMISSOR DE RADIOD. DO FUNCHAL		[3]	YES	1	g
RÁDIO CLUBE MADEIRA LDA		06-03-2019	YES	1	g
RADIURBE-PRODUÇÃO E COMÉRCIO DE PUBLICIDADE RÁDIO, LDA		21-08-2011	YES	4	g
RÁDIO GIRÃO-EMPRESA DE RADIODIFUSÃO E PUBLICIDADE, LDA		01-09-2011	YES	2	g
RAMOS, MARQUES E VASCONCELOS, LDA		06-03-2019	YES	4	g
SPN – SOC. PRODUTORA DE NOTÍCIAS, LDA		06-03-2019	YES	1	g

[1] The entities holding the audio broadcast stations with local and regional coverage are authorized to operate under the license allocated by public tender.
[2] Shared usage channels.
[3] Has government authorization.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

TELEVISION BROADCAST SERVICE - ANALOGICAL (RDTV)						
Entity		**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
RÁDIO E TELEVISÃO DE PORTUGAL, SA General concession contract for public television service of 22/09/2003	RTP1	47 - 68 MHz	27-08-2019 (2)	YES	2	g
		174 - 216 MHz			6	g
		470 - 582 MHz			14	g
		582 - 822 MHz			26	g
	RTP AÇORES	174 - 216 MHz	27-08-2019 (2)	YES	6	g
		470 - 582 MHz			6	g
		582 - 822 MHz			9	g
	RTP MADEIRA	174 - 216 MHz	27-08-2019 (2)	YES	6	g
		470 - 582 MHz			2	g
		582 - 822 MHz			5	g
RÁDIO E TELEVISÃO DE PORTUGAL, SA General concession contract for public television service of 17/11/2003	RTP 2	174 - 216 MHz	27-08-2011	YES	1	g
		470 - 582 MHz			14	g
		582 - 822 MHz			28	g
SIC – SOCIEDADE INDEPENDENTE DE COMUNICAÇÃO, SA Resolution 6/92 (2nd Series) of the Council of Ministers from 22.02.1992		174 - 216 MHz	22-02-2022 (2)	YES	1	g
		470 - 582 MHz			12	g
		582 - 822 MHz			26	g
TVI TELEVISÃO INDEPENDENTE, SA Resolution 6/92 (2nd Series) of the Council of Ministers from 22.02.1992		470 - 582 MHz	22-02-2022 (2)	YES	12	g
		582 - 822 MHz			25	g

(1) Shared usage channels.

(2) The usage right of frequencies was renewed for a period of 15 years, subject to any changes arising from the determination, in legal terms, of the date for the termination (*switch-off*) of television broadcast in the analogical system. According to RCM 26/2009, published on March 17th, *switch-off* will occur until April 26th, 2012 and according to the detailed Plan approved by determination of ICP-ANACOM from June 24th, 2010.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

TERRESTRIAL DIGITAL TELEVISION BROADCAST SERVICE **Terrestrial Digital Video Broadcasting (DVB-T)**							
Entity	**MULTIPLEXER**	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels/type of usage**		**Usage basis**
					(1)	(2)	
PT COMUNICAÇÕES, S.A.	A	750-758 MHz[3] (channel 56)	09-12-2023	YES		1	Continental territory
		734 -742 MHz (channel 54)			1		A. R. Madeira
		(678 – 686 MHz) (channel 47)			1		R.A. Açores
		(686 – 694 MHz) (channel 48)			1		
		(694 – 702 MHz) (channel 49)			1		
		(742 – 750 MHz) (channel 55)			1		
		(750 – 758 MHz) (channel 56)			1		

BROADCAST SERVICE – SAP/SAB Video connections				
Entity	**Frequency bands**	**Required usage rights**	**Number of channels** [2]	**Usage basis**
RÁDIO E TELEVISÃO DE PORTUGAL, SA	2260 -2,330 MHz	NO	7 [4]	n
	10.5 -10.68 GHz	NO	2 [5]	n
SIC-SOCIEDADE INDEPENDENTE DE COMUNICAÇÃO, SA	2360 -2,390 MHz	NO	3 [4]	n
	10.5 -10.68 GHz	NO	2 [5]	n
TVI-TELEVISÃO INDEPENDENTE, SA	2330 -2,360 MHz	NO	3 [4]	n
	10.5 -10.68 GHz	NO	2 [5]	n

BROADCAST SERVICE – SAP/SAB Video connections				
Entity	**Frequency bands** [6]	**Required usage rights**	**Number of channels** [1]	**Usage basis**
MEDIA LUSO PRODUÇÕES DE TELEVISÃO, SA	174 – 197 MHz	NO	2 [7]	n
	470 – 493 MHz			
SIC-SOCIEDADE INDEPENDENTE DE COMUNICAÇÃO, SA	470 – 494 MHz	NO	2 [8]	n

[1] Shared usage channels.
[2] Exclusive usage channels.
[3] Depending on the result of the public consultation for the change of radio channels above 790 MHz, used by PT Comunicações.
[4] Channel at 10 MHz.
[5] Channel at 28 MHz.
[6] These frequency bands are allocated primarily to the broadcast service and therefore any broadcast frequency to be used must not cause interferences harmful to the reception of television broadcast.
[7] Channel at 250 kHz.
[8] Channel at 218 kHz.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

MOBILE SERVICE WITH SHARED RESOURCES (MPT 1327)					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
REPART - Sistemas de Comunicação de Recursos Partilhados, S.A.	450/470 MHz (2)	21-3-2024	YES	25 (3)	n

MOBILE SERVICE WITH SHARED RESOURCES (CDMA-PAMR)					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
RADIOMÓVEL - Telecomunicações, S.A.	453-457,45 MHz / 463 -467.45 MHz	14-10-2023	YES	2 (4)	n

MOBILE SERVICE WITH SHARED RESOURCES (TETRA)						
Entity	**Frequency bands**	**Date of review of process**	**Required usage rights**	**Number of channels/type of usage**		**Usage basis**
				(5)	**(1)**	
REPART - Sistemas de Comunicação de Recursos Partilhados, S.A.	410/430 MHz	21-03-2024	YES	15	-	g

MOBILE COMMUNICATIONS ON BOARD AIRCRAFTS (MCA)					
Entity	**Frequency bands**	**Required usage rights**	**Number of channels/type of usage**		**Usage basis**
			(5)	**(1)**	
OnAir	1710 - 1,785 MHz 1805 - 1,880 MHz	NO	374	-	n

(1) Exclusive usage channels.
(2) Plan with spacing between channels of 12,5 kHz.
(3) The number of channels stated is subject to variation according to the number of terminals for each operator.
(4) Carrier of 1.25 MHz.
(5) Shared usage channels.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

MOBILE TERRESTRIAL SERVICE					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
OPTIMUS - Comunicações, S.A.	890 - 914 MHz 935 – 959 MHz	20-11-2012	YES	39	n
	1710 - 1,785 MHz 1805 - 1,880 MHz	20-11-2012	YES	30	n
VODAFONE PORTUGAL - Comunicações Pessoais, S.A.	890 - 914 MHz 935 – 959 MHz	19-10-2021	YES	40	n
	1710 - 1,785 MHz 1805 - 1,880 MHz	19-10-2021	YES	30	n
TMN – Telecomunicações Móveis Nacionais, S.A.	890 - 914 MHz 935 - 959 MHz	16-03-2022	YES	40	n
	1710 – 1,785 MHz 1805 – 1,880 MHz	16-03-2022	YES	30	n

MOBILE TERRESTRIAL SERVICE Universal Mobile Telecommunications System (UMTS)					
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
VODAFONE PORTUGAL - Comunicações Pessoais, S.A.	1920 -1,980 MHz 2110 -2,170 MHz	11-01-2016	YES	2x 20 MHz	n
	1900 -1,920 MHz	11-01-2016	YES	1x 5 MHz	n
TMN – Telecomunicações Móveis Nacionais, S.A.	1920 -1,980 MHz 2110 -2,170 MHz	11-01-2016	YES	2x 20 MHz	n
	1900 -1,920 MHz	11-01-2016	YES	1x 5 MHz	n
OPTIMUS - Comunicações, S.A.	1920 -1,980 MHz 2110 -2,170 MHz	11-01-2016	YES	2x 20 MHz	n

(1) Exclusive usage channels.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

MARITIME MOBILE SERVICE (SMM)						
Entity	**Frequency bands**	**Date of review of allocation**	**Required usage rights**	**Number of channels/type of usage**		**Usage basis**
				(1)	**(2)**	
PT COMUNICAÇÕES. S.A.	2173.5 - 2,190.5 kHz (Help and call)	20-03-2025[3]	NO	1		[4]
	2190.5 - 2,194 kHz				1	[4]
	2501 - 2,850 kHz (Article 52 of RR				7	[4]
	3500 - 3,800 kHz (Article 52 of RR)				1	[4]
	4 MHz (Appendix 17 of RR part B, section I)				3	[4]
	6 MHz (Appendix 17 of RR part B, section I)				1	[4]
	8 MHz (Appendix 17 of RR part B, section I)				5	[4]
	12 MHz (Appendix 17 of RR part B, section I)				4	[4]
	16 MHz (Appendix 17 of RR part B, section I)				3	[4]
	18/19 MHz (Appendix 17 of RR part B, section I)				1	[4]
	22 MHz (Appendix 17 of RR part B, section I)				2	[4]
	25/26 MHz (Appendix 17 of RR part B, section I)				1	[4]
	156/174 MHz (Appendix 18 of RR)			2	7	[4]

[1] Shared usage channels.
[2] Exclusive usage channels.
[3] The Mobile Maritime Service will continue to be temporarily assured by the concessionary until the corresponding transfer to another entity according to article 3 of Decree-Law number 31/2003, February 17th.
[4] Not applicable.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC
– Usages –

FIXED SATELLITE SERVICE (SFS)				
Entity	**Frequency bands Type of connection**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
AT & T - Serviços de Telecomunicações, Sociedade Unipessoal, Lda.	14 – 14.5 GHz Uplink	NO	(2) (3)	g
PT COMUNICAÇÕES, S.A.	5925 - 6,475 MHz Uplink	NO	(2) (3)	g
	12.75 -13.25 GHz Uplink		(2) (3)	g
	14 – 14.5 GHz Uplink		(2) (3)	g
	17.3 – 17.7 GHz Uplink		(4)	g
	3600 – 4,200 MHz Downlink		(2) (3)	g
	10.95 – 11.2 GHz Downlink		(2) (3)	g
	11.45 – 11.7 GHz Downlink		(2) (3)	g
	11.7 – 12.5 GHz Downlink		(2) (3)	g
	12.5 – 12.75 GHz Downlink		(2) (3)	g
PT PRIME – Soluções Empresariais de Telecomunicações e Sistemas, S.A	5925 - 6,425 MHz Uplink	NO	(2) (3)	g
	14 – 14.5 GHz Uplink		(2) (3)	g
	3700 – 4,200 MHz Downlink		(2) (3)	g
	10.95 – 11.2 GHz Downlink		(2) (3)	g
	11.45 – 11.7 GHz Downlink		(2) (3)	g
	12.5 – 12.75 GHz Downlink		(2) (3)	g
ZON TV Cabo Portugal, S.A.	12.75 – 13.25 GHz Uplink	NO	(2) (3)	g
	13.75 – 14 GHz Uplink		(2) (3)	

Global Mobile Personal Communications by Satellite Global Mobile Personal Communications by Satellite (GMPCS)				
Entity	**Frequency bands Type of connection**	**Required usage rights**	**Type of usage (1)**	**Usage basis**
IRIDIUM ITALIA S.R.L.	1621.35 - 1,626.5 MHz Uplink/Downlink	NO	(5)	n

(1) Shared usage channels.
(2) Band shared with other users.
(3) Dynamic frequency management , according to each type of application.
(4) Exclusive for connections of the satellite broadcast service.
(5) According to the legislation in effect, these bands can be used by other users in a sharing regime.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS ACCESSIBLE TO THE PUBLIC – Usages –

SATELLITE RADIOCOMMUNICATIONS SERVICES EARTH STATIONS ON BOARD AIRCRAFTS (AES)				
Entity	**Frequency bands Type of connection**	**Required usage rights**	**Type of usage (1)**	**Usage basis**
CONNEXION BY BOEING IRELAND LIMITED	14.00 - 14.50 GHz Uplink	NO	(2)	n
	10.70 – 11.70 GHz Downlink	NO	(2)	n
	12.50 – 12.75 GHz Downlink	NO	(2)	n

SATELLITE RADIOCOMMUNICATIONS SERVICES EARTH STATIONS ON BOARD VESSELS (ESV)				
Entity	**Frequency bands Type of connection**	**Required usage rights**	**Type of usage (1)**	**Usage basis**
VIASAT, INC.	14.00 - 14.50 GHz Uplink	NO	(2)	n
	10.70 – 11.70 GHz Downlink	NO	(2)	n
	12.50 – 12.75 GHz Downlink	NO	(2)	n

Wireless access systems / Radio local access networks (WAS/RLAN)				
Entity	**Frequency bands**	**Required usage rights**	**Number of channels (1)**	**Usage basis**
HSIA Hospitality Services Portugal, S.A.	2400 -2,483.5 MHz	NO	All the band	n
	5150 - 5,350 MHz			
	5470 - 5,725 MHz			
SEMCABO – Soluções em Redes Informáticas, Lda	2400 -2,483.5 MHz	NO	All the band	n
	5150 - 5,350 MHz			
	5470 - 5,725 MHz			
PT COMUNICAÇÕES, S.A.	2400 -2,483.5 MHz	NO	All the band	n
PINKHAIR – Unipessoal, Lda.	2400 -2,483.5 MHz	NO	All the band	n
	5150 - 5,350 MHz			
	5470 - 5,725 MHz			
GOWIRELESS – Comércio de Equipamentos de Telecomunicações, Lda.	2400 -2,483.5 MHz	NO	All the band	n
	5150 - 5,350 MHz			
	5470 - 5,725 MHz			

Annex 3

RESERVATIONS OF FREQUENCY BANDS

3.1 Reserved frequency bands and to be made available in 2011/2012 for operation of the networks and services of electronic accessible to the public

The terms and abbreviations used have the following meaning:

Need for Usage right: identification of the need to allocate usage rights, according to article 16, of LCE;

Shared usage: usage of a channel/frequency by more than one entity;

Exclusive usage: usage of a channel/frequency by a single entity;

Usage basis:
n - national basis: usage of a channel/frequency at national territory level;
g - geographic limit: usage of a channel/frequency in a certain and well defined area, by radiocommunications stations, such as, fixed stations, broadcast stations and earth stations;

Allocation process: full accessibility or selection method by competition or comparison.

FIXED SERVICE - POINT-POINT CONNECTIONS				
Frequency bands	**Required usage rights**	**Type of usage** [1]	**Usage basis**	**Allocation process**
406.1 -410 MHz	NO	[2] [3]	g	full accessibility
410 -430 MHz	NO	[2] [4]	g	full accessibility
1350 – 1,375 MHz 1492 – 1,517 MHz CEPT Rec. T/R 13-01 A	NO	[2]	g	full accessibility
1375 – 1,400 MHz 1427 – 1,452 MHz CEPT Rec. T/R 13-01 B	NO	[2]	g	full accessibility
2025 – 2,110 MHz 2200 – 2,290 MHz CEPT Rec. T/R 13-01 C	NO	[2]	g	full accessibility
6 GHz (Low) (5925 – 6,425 MHz) ERC/REC 14-01	NO	[2]	g	full accessibility
6 GHz (High) (6425 – 7,110 MHz) ERC/REC14-02	NO	[2]	g	full accessibility
7 GHz (Low) (7125-7,425 MHz) ECC/REC/(02)06 Annex 1	NO	[2]	g	full accessibility
7 GHz (High) (7425-7,725 MHz) ECC/REC/(02)06	NO	[2]	g	full accessibility
8 GHz (Low) (7700 – 8,300 MHz) Rec. UIT-R F0.386 Annex 6	NO	[2]	g	full accessibility
8 GHz (High) (7900 – 8,500 MHz) ECC/REC/(02)06	NO	[2]	g	full accessibility
11 GHz (10.7 – 11.7 GHz) ERC/REC 12-06 Annexes B and C	NO	[2]	g	full accessibility
13 GHz (12.75 – 13.25 GHz) ERC/REC 12-02	NO	[2]	g	full accessibility
15 GHz (14.5 – 15.35 GHz) ERC/REC 12-07	NO	[2]	g	full accessibility
18 GHz (17.7 – 19.7 GHz) UIT-R F.595 Annexes 3, 4 and 5	NO	[2]	g	full accessibility
18 GHz (17.7 – 19.7 GHz) ERC/REC 12-03	NO	[2]	g	full accessibility
23 GHz (22 – 23.6 GHz) CEPT Rec. T/R 13-02 Annex A	NO	[2]	g	full accessibility

[1] Shared usage channels.
[2] Band shared with other users.
[3] Band with specific plan at 12.5 kHz and 25 kHz (simplex).
[4] Band with specific plan at 12.5 kHz and 25 kHz (duplex) and shared with terrestrial mobile service.

FIXED SERVICE - POINT-POINT CONNECTIONS (cont.)				
Frequency bands	**Required usage rights**	**Type of usage** [1]	**Usage basis**	**Allocation process**
31 GHz (31 - 31.3 GHz) ECC/REC/(02)02	NO	[2]	g	full accessibility
32 GHz (31.8 – 33.4 GHz) ERC/REC/(01)02	NO	[2]	g	full accessibility
38 GHz (37 – 39.5 GHz) CEPT Rec T/R 12-01	NO	[2]	g	full accessibility
49 GHz (48.5 - 50.2 GHz) ERC/REC 12-10	NO	[2]	g	full accessibility
52 GHz (51.4 - 52.6 GHz) ERC/REC 12-11	NO	[2]	g	full accessibility
56 GHz (55.78 - 57 GHz) ERC/REC 12-12 Annex B	NO	[2]	g	full accessibility
58 GHz (57 – 59 GHz) ECC/REC/(09)01	NO	[2]	g	full accessibility
62 GHz (61 - 64 GHz) ECC/REC/(09)01	NO	[2]	g	full accessibility
65 GHz (64 - 66 GHz) ECC/REC/(05)02	NO	[2]	g	full accessibility
74 GHz (74 – 76 GHz) ECC/REC/(05)07 Annex 4	NO	[2]	g	full accessibility
84 GHz (84 – 86 GHz) ECC/REC/(05)07 Annex 4	NO	[2]	g	full accessibility

[1] Shared usage channels.
[2] Band shared with other users.

Broadband Wireless Access (BWA)				
Frequency bands	**Required usage rights**	**Number of channels** [1]	**Usage basis**	**Allocation process**
3400 -3,600 MHz	YES	1 block of 2 x 28 MHz	g [2] Areas 3, 4, 5, 6, 7 and 8	To be defined
3400 -3,600 MHz	YES	2 blocks of 2 x 28 MHz	g [2] Area 9	To be defined
3600 -3,800 MHz	YES	1 block of 2 x 28 MHz	g [2] Areas 2, 3, 4, 5, 6 and 7	To be defined
3600 -3,800 MHz	YES	2 blocks of 2 x 28 MHz	g [2] Areas 8 and 9	To be defined

FIXED SERVICE - POINT-MULTIPOINT CONNECTIONS Fixed Wireless Access (FWA)				
Frequency bands	**Required usage rights**	**Number of channels** [1]	**Usage basis**	**Allocation** process
24.5 -26.5 GHz CEPT Rec. T/R 13-02 Annex B	YES	[3] 2 x 336 MHz 2 x 392 MHz 2 x 588 MHz 2 x 672 MHz 2 x 672 MHz 2 x 672 MHz 2 x 672 MHz 2 x 672 MHz 2 x 616 MHz	g [2] Area 1 Area 2 Area 3 Area 4 Area 5 Area 6 Area 7 Area 8 Area 9	Full accessibility

Broadband Fixed Wireless Access (BFWA)				
Frequency bands	**Required usage rights**	**Number of channels** [4]	**Usage basis**	**Allocation process**
5725 – 5,875 MHz	NO [5]	[5]	[5]	Full accessibility [5]

[1] Exclusive usage channels.
[2] The geographic areas are defined in Annex of Administrative Rule number 1062/2004, from August 25th.
[3] The number of channels to be made available depends in the channel adopted by the entities that request access to the band.
[4] Shared usage channels.
[5] Subject to registration of station and compliance with technical conditions of Recommendation ECC/REC/(06)04.

FIXED SERVICE - POINT-MULTIPOINT CONNECTIONS				
Frequency bands	**Required usage rights**	**Number of channels (1)**	**Usage basis**	**Allocation process**
1880 -1900 MHz ERC/DEC/(94)03	NO	10 (2)	g	Full accessibility
40.5 -43.5 GHz ERC/DEC/(99)15 ECC/REC/(01)04	YES		g	To be defined

AUDIO BROADCAST SERVICE (RAD) VHF (Very High Frequency)				
Frequency bands	**Required usage rights**	**Number of channels (1)**	**Usage basis**	**Allocation process**
87.5 – 108.0 MHz	YES	203	g	(3)

AUDIO BROADCAST SERVICE (RAD) MF (Medium Frequency)				
Frequency bands	**Required usage rights**	**Number of channels (1)**	**Usage basis**	**Allocation process**
526.5 – 1,606.5 kHz	YES	120	g	(3)

TERRESTRIAL DIGITAL AUDIO BROADCAST SERVICE Terrestrial Digital Audio Broadcasting (T-DAB)				
Frequency bands	**Required usage rights**	**Number of channels (4)**	**Usage basis**	**Allocation process**
219 - 230 MHz	YES	5	g	To be defined

TELEVISION BROADCAST SERVICE - ANALOGICAL (RDTV)				
Frequency bands	**Required usage rights**	**Number of channels (1)**	**Usage basis**	**Allocation process**
174 – 209 MHz	YES	5	g	(5)
470 – 790 MHz	YES	40	g	(5)

(1) Shared usage channels.
(2) Dynamic band management.
(3) According to Law number 54/2010, of December 24th.
(4) Exclusive usage channels.
(5) In order to supplement the coverage of the existing operators.

MOBILE SERVICE WITH SHARED RESOURCES				
Frequency bands	**Required usage rights**	**Number of channels (1)**	**Usage basis**	**Allocation process**
410 - 430 MHz	YES	60	g	To be defined

MOBILE TERRESTRIAL SERVICE				
Frequency bands	**Required usage rights**	**Number of channels (1)**	**Usage basis**	**Allocation process**
450 - 470 MHz	YES	2x1.25 MHz	g	In decision process (2)

TERRESTRIAL ELECTRONIC COMMUNICATION SERVICES				
Frequency bands	**Required usage rights**	**Number of channels (1)**	**Usage basis**	**Allocation process**
790 - 862 MHz	YES	To be defined	g	In decision process (2)

TERRESTRIAL ELECTRONIC COMMUNICATION SERVICES				
Frequency bands	**Required usage rights**	**Number of channels (1)**	**Usage basis**	**Allocation process**
880 - 890 MHz 925 - 935 MHz	YES	2x10 MHz	n	In decision process (2)

TERRESTRIAL ELECTRONIC COMMUNICATION SERVICES				
Frequency bands	**Required usage rights**	**Number of channels (1)**	**Usage basis**	**Allocation process**
1710 - 1,785 MHz 1805 - 1,880 MHz	YES	2x30 MHz	n	In decision process (2)

(1) Exclusive usage channels.
(2) See http://www.anacom.pt/render.jsp?contentId=1077074 and http://www.anacom.pt/render.jsp?contentId=1077099.

MOBILE COMMUNICATIONS ON BOARD AIRCRAFTS (MCA) [1] [2]				
Frequency bands	**Required usage rights**	**Number of channels** [3]	**Usage basis**	**Allocation process**
1710 - 1,785 MHz 1805 - 1,880 MHz	NO	374	n	Full accessibility

MOBILE COMMUNICATIONS ON BOARD VESSELS (MCV) [4] [5]				
Frequency bands	**Required usage rights**	**Number of channels** [3]	**Usage basis**	**Allocation process**
890 - 915 MHz 935 – 960 MHz	NO	124	n	Full accessibility
1710 - 1,785 MHz 1805 - 1,880 MHz	NO	374	n	Full accessibility

MOBILE TERRESTRIAL SERVICE				
Frequency bands	**Required usage rights**	**Number of channels** [3]	**Usage basis**	**Allocation process**
1900 - 1,910 MHz	YES	2x5 MHz	n	In decision process [6]

TERRESTRIAL ELECTRONIC COMMUNICATION SERVICES				
Frequency bands	**Required usage rights**	**Number of channels** [3]	**Usage basis**	**Allocation process**
2500 - 2,690 MHz	YES	To be defined	To be defined	In decision process [6]

[1] It is mandatory to comply with all the technical conditions specified in the Decision of Commission 2008/294/EC, of April 7th, 2008.
[2] Networks exempt from licensing, without prejudice to the compliance of the requirements foreseen in Determination number of the BM of ICP-ANACOM, of 13/8/2008, regarding the introduction of mobile communication services on board aircrafts (MCA).
[3] Exclusive usage channels.
[4] It is mandatory to comply with all the technical conditions specified in the Decision of Commission 2010/166/EC, of March 19th, 2010.
[5] Networks exempt from licensing, without prejudice to the act of licensing from the competent Maritime Authority (according to Determination number DE0012011 of BM of ICP-ANACOM, of 6/1/2011).
[6] See http://www.anacom.pt/render.jsp?contentId=1077074 and http://www.anacom.pt/render.jsp?contentId=1077099.

FIXED SATELLITE SERVICE (SFS)				
Frequency bands	**Required usage rights**	**Type of usage** [1]	**Usage basis**	**Allocation process**
3800 – 4,200 MHz Downlink	NO	[2] [3]	g	Full accessibility
5725 - 5,830 MHz Uplink	NO	[2] [3]	g	Full accessibility
5830 - 5,850 MHz Uplink	NO	[2] [3]	g	Full accessibility
5850 - 5,925 MHz Uplink	NO	[2] [3]	g	Full accessibility
5925 - 6,425 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
19.7 - 20.2 GHz [6] Downlink	NO	[2] [3]	g	Full accessibility
27.5 - 27.82 GHz [6] Uplink	NO	[2] [3]	g	Full accessibility
28.45 - 28.94 GHz [6] Uplink	NO	[2] [3]	g	Full accessibility
29.46 - 30.0 GHz [6] Uplink	NO	[2] [3]	g	Full accessibility

[1] Shared usage channels.
[2] Band shared with other users.
[3] Dynamic frequency management , according to each type of application.
[4] Appendix 30B.
[5] Appendix 30A.
[6] HDFSS.

SATELLITE AUDIO BROADCAST SERVICE				
Frequency bands Type of connection	**Required usage rights**	**Type of usage (1)**	**Usage basis**	**Allocation process**
11.7 – 12.5 GHz Downlink	NO	(2)	n	full accessibility

SATELLITE MOBILE SERVICE (SMS) including the Global Mobile Personal Communications by Satellite (GMPCS)				
Frequency bands Type of connection	**Required usage rights**	**Type of usage (3)**	**Usage basis**	**Allocation process**
137 – 138 MHz Downlink	NO	(4)	n	full accessibility
148 – 150.05 MHz Uplink	NO	(4)	n	full accessibility
1525 - 1,544 MHz Downlink	NO	(4)	n	full accessibility
1545 - 1,559 MHz Downlink	NO	(4)	n	full accessibility
1610 - 1,626.5 MHz Uplink	NO	(4)	n	full accessibility
1621 - 1,626.5 MHz Downlink	NO	(4)	n	full accessibility
1626.5 - 1,645.5 MHz Uplink	NO	(4)	n	full accessibility
1646.5 - 1,660.5 MHz Uplink	NO	(4)	n	full accessibility
1980 - 2,010 MHz Uplink	(5)	(4)	n	(5)
2170 - 2,200 MHz Downlink	(5)	(4)	n	(5)
2483.5 - 2,500 MHz Downlink	NO	(4)	n	full accessibility
14.0 - 14. 5 GHz Uplink	NO	(4)	n	full accessibility

(1) Exclusive usage channels.
(2) Exclusive band for this service.
(3) Shared usage channels.
(4) Band shared with other users.
(5) According to the Decision of European Commission 2009/449/EC, of May 13th, regarding the selection of pan-European systems operators that allow the offer of satellite mobile communications services (MSS), which defines the eligible candidates.

3.2 Reserved frequency bands and to be made available in 2011/2012 for operation of the networks and services of electronic accessible to the public

The terms and abbreviations used have the following meaning:

Need for Usage right: identification of the need to allocate usage rights, according to article 16, of LCE;

Operation mode*: (simplex, duplex or semi-duplex, when applicable)*
. simplex: operation mode in which transfer is possible by alternating the two directions of the telecommunication channel, by using one or two frequencies;
. duplex: operation mode in which transfer is possible simultaneously in both directions of the telecommunication channel, by using two frequencies;
. semi-duplex: simplex operation mode in one end of the telecommunication channel and duplex operation in the other, by using two frequencies;

Type of channel: *spacing between adjoining channels, when applicable*;

Shared usage: usage of a channel/frequency by more than one entity;

Exclusive usage: usage of a channel/frequency by a single entity;

Usage basis:
n - national basis: usage of a channel/frequency at national territory level;
g - geographic limit: usage of a channel/frequency in a certain and well defined area, by radiocommunications stations, such as, fixed stations, broadcast stations and earth stations;

Allocation process: full accessibility or selection method by competition or comparison.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS NOT ACCESSIBLE TO THE PUBLIC

– Reservations –

FIXED SERVICE - HIGH FREQUENCY CONNECTIONS (SFHF)				
Frequency bands	**Required usage rights**	**Type of usage** [1]	**Usage basis**	**Allocation process**
3200 – 3,375 kHz	NO	[2]	g	full accessibility
6765 – 6,795 kHz	NO	[2]	g	full accessibility
7350 – 7,757 kHz	NO	[2]	g	full accessibility
13450 – 13,495 kHz	NO	[2]	g	full accessibility
13515 – 13,570 kHz	NO	[2]	g	full accessibility
13914 – 14,000 kHz	NO	[2]	g	full accessibility
14350 – 14,604 kHz	NO	[2]	g	full accessibility
14670 – 14,990 kHz	NO	[2]	g	full accessibility
15800 – 16,180 kHz	NO	[2]	g	full accessibility
16231 -16,360 kHz	NO	[2]	g	full accessibility
17452 – 17,480 kHz	NO	[2]	g	full accessibility
18030 – 18,052 kHz	NO	[2]	g	full accessibility
18168 – 18,249 kHz	NO	[2]	g	full accessibility
18373 – 18,780 kHz	NO	[2]	g	full accessibility
19120 – 19,680 kHz	NO	[2]	g	full accessibility
19800 – 19,990 kHz	NO	[2]	g	full accessibility
20010 – 20,442 kHz	NO	[2]	g	full accessibility
20680 – 21,000 kHz	NO	[2]	g	full accessibility
21850 – 21,870 kHz	NO	[2]	g	full accessibility
22855 – 22,900 kHz	NO	[2]	g	full accessibility
23000 – 23,200 kHz	NO	[2]	g	full accessibility
23350 – 24,125 kHz	NO	[2]	g	full accessibility
24325 – 24,890 kHz	NO	[2]	g	full accessibility
25010 – 25,070 kHz	NO	[2]	g	full accessibility
25210 – 25,550 kHz	NO	[2]	g	full accessibility
26175 – 26,870 kHz	NO	[2]	g	full accessibility
26957 – 27,500 kHz	NO	[2]	g	full accessibility
27500 – 27,850 kHz	NO	[2]	g	full accessibility
29700 – 30,005 kHz	NO	[2]	g	full accessibility

[1] Shared usage channels.
[2] Band shared with other users.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS NOT ACCESSIBLE TO THE PUBLIC
– Reservations –

FIXED SERVICE - POINT-POINT CONNECTIONS				
Frequency bands	**Required usage rights**	**Type of usage** [1]	**Usage basis**	**Allocation process**
406.1 -410 MHz	NO	[2] [3]	g	full accessibility
410 -430 MHz	NO	[3] [4]	g	full accessibility
1350 – 1,375 MHz 1492 – 1,517 MHz CEPT Rec. T/R 13-01 A	NO	[3]	g	full accessibility
1375 – 1,400 MHz 1427 – 1,452 MHz CEPT Rec. T/R 13-01 B	NO	[3]	g	full accessibility
2025 – 2,110 MHz 2200 – 2,290 MHz CEPT Rec. T/R 13-01 C	NO	[3]	g	full accessibility
6 GHz (Low) (5925 – 6,425 MHz) ERC/REC 14-01	NO	[3]	g	full accessibility
6 GHz (High) (6425 – 7,110 MHz) ERC/REC 14-02	NO	[3]	g	full accessibility
7 GHz (Low) (7125-7,425 MHz) ECC/REC/(02)06 Annex 1	NO	[3]	g	full accessibility
7 GHz (High) (7425-7,725 MHz) ECC/REC/(02)06	NO	[3]	g	full accessibility
8 GHz (Low) (7700 – 8,300 MHz) Rec. UIT-R F0.386 Annex 6	NO	[3]	g	full accessibility
8 GHz (High) (7900 – 8,500 MHz) ECC/REC/(02)06	NO	[3]	g	full accessibility
11 GHz (10.7 – 11.7 GHz) ERC/REC 12-06 Annexes B and C	NO	[3]	g	full accessibility
13 GHz (12.75 – 13.25 GHz) ERC/REC 12-02	NO	[3]	g	full accessibility
15 GHz (14.5 – 15.35 GHz) ERC/REC 12-07	NO	[3]	g	full accessibility
18 GHz (17.7 – 19.7 GHz) UIT-R F.595 Annexes 3, 4 and 5	NO	[3]	g	full accessibility
18 GHz (17.7 – 19.7 GHz) ERC/REC 12-03	NO	[3]	g	full accessibility
23 GHz (22 – 23.6 GHz) CEPT Rec. T/R 13-02 Annex A	NO	[3]	g	full accessibility

[1] Shared usage channels.
[2] Band with specific plan at 12.5 kHz and 25 kHz (simplex).
[3] Band shared with other users.
[4] Band with specific plan at 12.5 kHz and 25 kHz (duplex) and shared with terrestrial mobile service.

FIXED SERVICE - POINT-POINT CONNECTIONS (cont.)				
Frequency bands	**Required usage rights**	**Type of usage** (1)	**Usage basis**	**Allocation process**
31 GHz (31 - 31.3 GHz) ECC/REC/(02)02	NO	(2)	g	full accessibility
32 GHz (31.8 – 33.4 GHz) ERC/REC/(01)02	NO	(2)	g	full accessibility
38 GHz (37 – 39.5 GHz) CEPT Rec T/R 12-01	NO	(2)	g	full accessibility
49 GHz (48.5 - 50.2 GHz) ERC/REC 12-10	NO	(2)	g	full accessibility
52 GHz (51.4 - 52.6 GHz) ERC/REC 12-11	NO	(2)	g	full accessibility
56 GHz (55.78 - 57 GHz) ERC/REC 12-12 Annex B	NO	(2)	g	full accessibility
58 GHz (57 – 59 GHz) ECC/REC/(09)01	NO	(2)	g	full accessibility
62 GHz (61 - 64 GHz) ECC/REC/(09)01	NO	(2)	g	full accessibility
65 GHz (64 - 66 GHz) ECC/REC/(05)02	NO	(2)	g	full accessibility
74 GHz (74 – 76 GHz) ECC/REC/(05)07 Annex 4	NO	(2)	g	full accessibility
84 GHz (84 – 86 GHz) ECC/REC/(05)07 Annex 4	NO	(2)	g	full accessibility

FIXED SERVICE - STUDIO-TRANSMITTER CONNECTIONS Studio Transmitter Link (STL)					
Frequency bands	**Required usage rights**	**Type of channel**	**Number of channels** (1)	**Usage basis**	**Allocation process**
1517 – 1,525 MHz	NO	100 kHz	80	g	full accessibility (3)
	NO	300 kHz	26	g	full accessibility (3)

(1) Shared usage channels.
(2) Band shared with other users.
(3) Limited to license holders for audio broadcast.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS NOT ACCESSIBLE TO THE PUBLIC
– Reservations –

BROADCAST SERVICE – SAP/SAB Video connections [1]					
Frequency bands	**Required usage rights**	**Type of channel**	**Number of channels [2]**	**Usage basis**	**Allocation process**
2025 -2,110 MHz	NO	[3]	[4]	g	full accessibility
2200 -2,260 MHz	NO	[3]	[4]	g	full accessibility
2390 -2,400 MHz	NO	[3]	[4]	g	full accessibility
2483.5 -2,500 MHz	NO	[3]	[4]	g	full accessibility
10 -10.45 GHz	NO	[3]	[4]	g	full accessibility

[1] SAP/SAB video connections, in particular wireless cameras, portable and mobile SAP/SAB video connections and point-point SAP/SAB video connections, used for live broadcast of news stories or events.
[2] Shared usage channels.
[3] Depending on the received requests.
[4] Depending on the type of channel.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS NOT ACCESSIBLE TO THE PUBLIC
– Reservations –

Integrated System of the Emergency and Security Networks					
Frequency bands	**Required usage rights**	**Type of channel**	**Number of channels** (1)	**Usage basis**	**Allocation process**
383-385 MHz / 393 -395 MHz	NO	25 kHz	80 (4)	n	Resolution of the Council of Ministers number 56/2003, of April 8th

TERRESTRIAL MOBILE SERVICE (SMM)					
Frequency bands	**Required usage rights**	**Type of channel Operation mode**	**Type of usage** (2)	**Usage basis**	**Allocation process**
29.7 - 41 MHz	NO	20 kHz simplex	(3)	g	full accessibility
		20 kHz semi-duplex	(3)	g	full accessibility
68 - 87.5 MHz	NO	12.5 kHz simplex	(3)	g	full accessibility
		12.5 kHz semi-duplex	(3)	g	full accessibility
148 - 174 MHz	NO	12.5 kHz simplex	(3)	g	full accessibility
		12.5 kHz semi-duplex	(3)	g	full accessibility
440 - 450 MHz	NO	12.5 kHz simplex	(3)	g	full accessibility
		12.5 kHz semi-duplex	(3)	g	full accessibility
450 - 470 MHz	NO	12.5 kHz simplex	(3)	g	full accessibility
		12.5 kHz semi-duplex	(3)	g	full accessibility

(1) Exclusive usage channels.
(2) Shared usage channels.
(3) Band shared with other users.
(4) 4 channels of 25 kHz are used in the extension band 383-385 MHz/ 393-395 MHz.

TERRESTRIAL MOBILE SERVICE – Systems using digital technology					
Frequency bands	**Required usage rights**	**Type of channel**	**Number of channels (2)**	**Usage basis**	**Allocation process**
410 - 430 MHz	NO	25 kHz	60	g	full accessibility

MARITIME MOBILE SERVICE (SMM)					
Frequency bands	**Required usage rights**	**Type of channel Operation mode**	**Number of channels (1)**	**Usage basis**	**Allocation process**
156 – 174 MHz (Appendix 18 of RR)	NO	25 kHz Simplex	26	g	full accessibility
	NO	25 kHz Duplex	33	g	full accessibility

AERONAUTICAL MOBILE SERVCE (SMA)					
Frequency bands	**Required usage rights**	**Type of channel**	**Type of usage (1)**	**Usage basis**	**Allocation process**
3400 - 3,500 kHz	NO	3 kHz	(2)	g	full accessibility
5480 - 5,680 kHz	NO	3 kHz	(2)	g	full accessibility
8815 - 8,965 kHz	NO	3 kHz	(2)	g	full accessibility
11275 - 11,400 kHz	NO	3 kHz	(2)	g	full accessibility
13260 - 13,360 kHz	NO	3 kHz	(2)	g	full accessibility
17900 - 17,970 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

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

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS NOT ACCESSIBLE TO THE PUBLIC
– Reservations –

AERONAUTICAL RADIONAVIGATION SERVICE (RVA)					
Frequency bands	**Required usage rights**	**Type of channel Operation mode**	**Number of channels (1)**	**Usage basis**	**Allocation process**
255 - 283.5 kHz	NO	(2)	(3)	g	full accessibility
283.5 - 315 kHz	NO	(2)	(3)	g	full accessibility
315 - 325 kHz	NO	(2)	(3)	g	full accessibility
325 - 405 kHz	NO	(2)	(3)	g	full accessibility
415 - 435 kHz	NO	1 kHz	(3)	g	full accessibility
74.8 - 75.2 MHz	NO	(2)	1	g	full accessibility
108 - 117.975 MHz	NO	(2)	(3)	g	full accessibility
328.6 - 335.4 MHz	NO	(2)	(3)	g	full accessibility
960 – 1,350 MHz	NO	(2)	(3)	g	full accessibility
2700 – 2,900 MHz	NO	(2)	(3)	g	full accessibility
2900 – 3,100 MHz	NO	(2)	(3)	g	full accessibility
4200 – 4,400 MHz	NO	(2)	(3)	g	full accessibility
5000 – 5,150 MHz	NO	(2)	(3)	g	full accessibility
5150 – 5,250 MHz	NO	(2)	(3)	g	full accessibility
9000 – 9,200 MHz	NO	(2)	(3)	g	full accessibility
9300 – 9,500 MHz	NO	(2)	(3)	g	full accessibility
15.4 – 15.7 GHz	NO	(2)	(3)	g	full accessibility

(1) Shared usage channels.
(2) Not applicable.
(3) Band shared with other users.

MARITIME RADIONAVIGATION SERVICE (RVM)					
Frequency bands	**Required usage rights**	**Type of channel Operation mode**	**Number of channels (1)**	**Usage basis**	**Allocation process**
283.5 - 315 kHz	NO	0.5 kHz	(2)	g	full accessibility
2900 – 3,100 MHz	NO	(3)	(2)	g	full accessibility
5470 - 5,600 MHz	NO	(3)	(2)	g	full accessibility
5600 - 5,650 MHz	NO	(3)	(2)	g	full accessibility
9200 – 9,300 MHz	NO	(3)	(2)	g	full accessibility
9300 - 9,500 MHz	NO	(3)	(2)	g	full accessibility

RADIOLOCATION SERVICE (RLC)					
Frequency bands	**Required usage rights**	**Type of channel Operation mode**	**Number of channels (1)**	**Usage basis**	**Allocation process**
1240 - 1,300 MHz	NO	(3)	(2)	g	full accessibility
2700 - 2,900 MHz	NO	(3)	(2)	g	full accessibility
2900 - 3,100 MHz	NO	(3)	(2)	g	full accessibility
5600 - 5,650 MHz	NO	(3)	(2)	g	full accessibility
5725 - 5,830 MHz	NO	(3)	(2)	g	full accessibility
5830 - 5,850 MHz	NO	(3)	(2)	g	full accessibility
9000 - 9,200 MHz	NO	(3)	(2)	g	full accessibility
9200 - 9,300 MHz	NO	(3)	(2)	g	full accessibility
9300 - 9,500 MHz	NO	(3)	(2)	g	full accessibility
59 - 64 GHz	NO	(3)	(2)	g	full accessibility
95 - 100 GHz	NO	(3)	(2)	g	full accessibility

(1) Shared usage channels.
(2) Band shared with other users.
(3) Not applicable.

METEOROLOGY ANCILLARY SERVICE					
Frequency bands	**Required usage rights**	**Type of channel Operation mode**	**Number of channels** (1)	**Usage basis**	**Allocation process**
403 - 406 MHz	NO	(2)	(3)	g	full accessibility

PERSONAL RADIO SERVICE – CITIZEN BAND (CB)					
Frequency bands	**Required usage rights**	**Type of channel Operation mode**	**Number of channels (1)**	**Usage basis**	**Allocation process**
26965 – 27,405 kHz	NO	10 kHz simplex	40	n	full accessibility

AMATEUR SERVICE (AM) AND AMATEUR SATELLITE SERVICE (AMS)					
Frequency bands	**Required usage rights**	**Type of channel Operation mode**	**Type of usage (1)**	**Usage basis**	**Allocation process**
(4)	NO	(4)	(4)	g/n	(4)

(1) Shared usage channels.
(2) Not applicable.
(3) Band shared with other users.
(4) Frequency bands, accessibility rules and usage conditions according to Decree-Law number 53/2009, March 2nd and Annex 6.

FIXED SATELLITE SERVICE (SFS)					
Frequency bands	**Required usage rights**	**Type of channel**	**Number of channels** (1)	**Usage basis**	**Allocation process**
3800 – 4,200 MHz Downlink	NO	(2)	(3)	g	full accessibility
5725 – 5,830 MHz Uplink	NO	(2)	(3)	g	full accessibility
5830 – 5,850 MHz Uplink	NO	(2)	(3)	g	full accessibility
5850 – 5,925 MHz Uplink	NO	(2)	(3)	g	full accessibility
5925 – 6,425 MHz Uplink	NO	(2)	(3)	g	full accessibility
7300 – 7,450 MHz Downlink	NO	(2)	(3)	g	full accessibility
7450 – 7,550 MHz Downlink	NO	(2)	(3)	g	full accessibility
8025 – 8,175 MHz Uplink	NO	(2)	(3)	g	full accessibility
8175 – 8,215 MHz Uplink	NO	(2)	(3)	g	full accessibility
8215 – 8,400 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
19.7 - 20.2 GHz (6) Downlink	NO	(2)	(3)	g	full accessibility
27.5 - 27.82 GHz (6) Uplink	NO	(2)	(3)	g	full accessibility
28.45 - 28.94 GHz (6) Uplink	NO	(2)	(3)	g	full accessibility
29.46 - 30.0 GHz (6) Uplink	NO	(2)	(3)	g	full accessibility

(1) Shared usage channels.
(2) Not applicable.
(3) Band shared with other users.
(4) Appendix 30B.
(5) Appendix 30A.
(6) HDFSS.

NETWORKS AND SERVICES OF ELECTRONIC COMMUNICATIONS NOT ACCESSIBLE TO THE PUBLIC
– Reservations –

SPACE OPERATIONS SERVICE (OE)					
Frequency bands	**Required usage rights**	**Type of channel**	**Number of channels**	**Usage basis**	**Allocation process**
2025 -2,110 MHz Uplink	NO	(1)	(2)	g	full accessibility
2200 -2,290 MHz Downlink	NO	(1)	(2)	g	full accessibility

SATELLITE EARTH EXPLORATION SERVICE (EXP-S)					
Frequency bands	**Required usage rights**	**Type of channel**	**Number of channels**	**Usage basis**	**Allocation process**
8025 -8,400 MHz Downlink	NO	(1)	(2)	g	full accessibility

(1) Not applicable.
(2) Band shared with other users.

Annex 4

USAGES EXEMPT FROM LICENSING

Spectrum usages exempt from radio licensing

4.1. Exemption of network license

According to item a) of number 1 and number 2 of article 9 of Decree-Law number 151-A/2000, July 20th, as amended by Decree-Law number 264/2009, September 28th, the following are exempt from network license:

a) Fixed Service Networks in high frequency (short wave);

b) Fixed Service Satellite Networks, except for VSAT earth station networks;

c) Satellite Meteorology Service Networks;

d) Space Operations Service Networks;

e) Satellite Earth Exploration Service Networks;

f) Aeronautical Mobile Service Networks;

g) Maritime Mobile Service Networks;

h) Port Operations Service Networks;

i) Broadcast Service Networks composed of Analogical Television Broadcast stations;

j) Broadcast Service Networks composed of Analogical Audio Broadcast stations;

k) Broadcast Service Networks composed of digital audio Broadcast stations (DRM - Digital Radio Mondiale);

l) Terrestrial Radiodetermination Service Networks;

m) Satellite Radiodetermination Service Networks;

n) Radioastronomy Service Networks;

o) Private Networks of SMT for Calling and Searching People (SCPP), whose characteristics and/or stations that integrate them present the following characteristics:

Characterization of stations			
Frequency bands	**Maximum power limits**	**Type of antenna**	**Spacing between channels**
40.680 MHz	5 W a.r.p.	External - est. base Integrated - portable	20 kHz
169.175 MHz	5 W a.r.p.	External - est. base Integrated - portable	25 kHz
468.1125 MHz	2 W a.r.p.	External - est. base Integrated - portable	12.5 kHz
468.1250 MHz	2 W a.r.p.	External - est. base Integrated - portable	
469.275 MHz	5 W a.r.p.	External - est. base Integrated - portable	25 kHz

p) The networks composed of mobile/portable radiocommunications stations and which normally are identified by cordless telephones (CTs) and that display the following characteristics:

Characterization of stations				
System Technology	**Frequency bands**	**Maximum power limits**	**Type of antenna**	**Spacing between channels**
CT0 (analogical)	27.5375 - 27.8375 MHz	power at transmitter output 10 mW	integrated or dedicated	25 kHz
	36.9875 - 37.2875 MHz			
DECT (digital)	1880 -1900 MHz	250 mW	integrated or dedicated	1.728 MHz

q) Networks composed of stations installed on board aircraft and associated mobile stations:

Mobile communications on board aircraft (MCA) [(a)] [(b)]			
Frequency bands	**Maximum power limits [(c)]**	**Minimum operation height above ground [m] [(c)]**	**Spacing between channels**
1710 - 1785 MHz 1805 - 1880 MHz	-13 dBm/200 kHz	3000	200 kHz

[(a)] It is mandatory to comply with all the technical conditions specified in the Decision of Commission 2008/294/EC, of April 7th, 2008.
[(b)] Networks exempt from licensing, without prejudice to the compliance of the requirements foreseen in Determination number of the BM of ICP-ANACOM, of 13/8/2008, regarding the introduction of mobile communication services on board aircraft (MCA).
[(c)] The maximum power limit of the base station / NCU varies with the height of operation above ground, according to Decision of the Commission 2008/294/EC, April 7th, 2008.

r) Networks composed of stations installed on board vessels and associated mobile stations:

Mobile Communications on Board Vessels (MCV) [a] [b]		
Frequency bands	**Maximum power limits of the terminal**	**Spacing between channels**
890 - 914 MHz 935 – 959 MHz	5 dBm	200 kHz
1710 - 1785 MHz 1805 - 1880 MHz	0 dBm	200 kHz

s) Networks composed of:

Analogical PMR446 Stations that display the following characteristics

Characterization of stations			
Frequency band	**Maximum power limits**	**Type of antenna**	**Spacing between channels**
446.0 – 446.1 MHz [c]	500 mW a.r.p.	integrated	12.5 kHz

Digital PMR446 Stations that display the following characteristics

Characterization of stations			
Frequency band	**Maximum power limits**	**Type of antenna**	**Spacing between channels**
446.1 – 446.2 MHz [d]	500 mW a.r.p.	integrated	6.25 kHz or 12.5 kHz

[a] It is mandatory to comply with all the technical conditions specified in the Decision of Commission 2010/166/EU, of March 19th, 2010.
[b] Networks exempt from licensing, without prejudice to the act of licensing from the competent Maritime Authority (according to Determination number DE0012011 of BM of ICP-ANACOM, of 6/1/2011).
[c] Channel according to Decision ERC/DEC/(98)25.
[d] Channel according to Decision ERC/DEC/(05)12.

Talk-Back (return channels/order circuits) that display the following characteristics

Characterization of stations		
Frequency band	**Maximum limits of radiated power**	**Spacing between channels**
445.150 MHz	3W e.i.r.p.	25 kHz
448.300 MHz		
448.325 MHz		
448.350 MHz		
448.375 MHz		
448.400 MHz		
448.425 MHz		
448.450 MHz		
448.475 MHz		

Spectrum usages exempt from radio licensing

4.2. Exemption of station license

According to item b) of number 1 and number 2 of article 9 of Decree-Law number 151-A/2000, July 20th, as amended by Decree-Law number 264/2009, September 28th, the following are exempt from station license:

a) Stations with little power and short range ("SRD-Short Range Devices")

The short range stations are composed of equipments used in many applications and frequency bands.

These stations must operate under the principle:

a) Of non interference, regarding licensed radiocommunications stations or networks;
b) Of non protection, regarding any other radiocommunications stations or networks.

The following tables include the requirements of the community Decisions, namely Decision 2006/771/EC, November 9th, 2006, as well as later changes, in Decisions 2008/432/EC, May 23rd, 2008, 2009/381/EC, May 3rd, 2009 and 2010/368/EU, June 30th, 2010. Whenever possible, the bands and parameters harmonized in CEPT for SRD are also adopted, included in Recommendation ERC/REC 70-03.

SRD - Characterization of stations					
Application	**Frequency bands**	**Power or field strength**	**Type of antenna**	**Spacing between channels**	***"Duty Cycle"***
General usage [1]	6765 - 6,795 kHz	42 dB μA/m at 10 m	Integrated or dedicated	Occupation of the entire band	
	13.553 - 13.567 MHz				
	26.957 - 27.283 MHz				
	40.660 - 40.700 MHz	10 mW a.r.p.			
	138.20 – 138.45 MHz [2]				< 1%
	433.050 - 434.790 MHz [3]				< 10%
	433.050 - 434.790 MHz [4]	1 mW a.r.p.[5]			≤ 100%
	434.040 – 434.790 MHz[4]	10 mW a.r.p.		≤ 25 kHz	
	863 - 870 MHz[3, 6, 7]	≤ 25 mW a.r.p.		≤ 100 kHz [8] for 47 channel or more	≤ 0,1%
		≤ 25 mW a.r.p. -4.5 dBm/100 kHz [9]		Occupation of the entire band	≤ 0,1%
		≤ 25 mW a.r.p.		≤ 100 kHz [8,] for 1 channel or more	≤ 0,1%
	868.000 - 868.600 MHz [10]	≤ 25 mW a.r.p.		Occupation of the entire band, for 1 or more channels [8]	≤ 1% [7]
	868.700 - 869.200 MHz [10]				≤ 0,1% [7]
	869.400 - 869.650 MHz	≤ 500 mW a.r.p.		25 kHz, for one channel or more[11]	≤ 10% [12]
	869.700 – 870.000 MHz	≤ 5 mW a.r.p.[13]		Occupation of the entire band, for 1 or more channels	≤ 100%
		≤ 25 mW a.r.p.[14]			≤ 1%[15]

[1] Video applications must be used preferably above 2.4 GHz.
[2] *Duty cycle*, LBT or equivalent technique cannot depend on the user and must be assured by adequate technical means. For LBT devices without Adaptive Frequency Agility (AFA), or equivalent techniques, the duty cycle limit *applies*. For any type of device with AFA the duty cycle *limit applies* during transfer unless LBT or equivalent technique is used.
[3] Audio and video applications are allowed as long as they use digital modulations with maximum bandwidth of 300 kHz. Voice applications are allowed with bandwidth of ≤25 kHz.
[4] Audio and video applications are excluded. Voice applications are allowed with bandwidth of ≤25 kHz and spectrum mitigation techniques. The transmitter must include an output power control sensor with a time-out up to 1 minute.
[5] The power density for modulations with bandwidth above 250 kHz is limited to -13 dBm/10 kHz.
[6] Sub-bands for alarms are excluded.
[7] Spectrum access and interference mitigation techniques must be used that offer, at least, an equivalent performance to the techniques described in harmonized standards adopted under Directive 1999/5/EC. As an alternative, a limit for the operation cycle of 0.1% can also be used. The duty cycle can be increased up to 1% if the band is limited to 865-868.6 MHz.
[8] The preferential spacing is 100 kHz and subdivisions of 50 kHz and 25 kHz are allowed.
[9] The power density can 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 correspondingly.
[10] Audio and video applications are excluded.
[11] The entire band can be used to transfer data at high speed.
[12] Spectrum access and interference mitigation techniques must be used that offer, at least, an equivalent performance to the techniques described in harmonized standards adopted under Directive 1999/5/EC. As an alternative, a limit for the operation cycle of 10% can also be used.
[13] Audio and video applications are excluded. Voice applications are allowed as long as they use spectrum mitigation techniques.
[14] Analogical audio and video applications are excluded.

SRD - Characterization of stations (cont.)					
Application	**Frequency bands**	**Power or field strength**	**Type of antenna**	**Spacing between channels**	***"Duty Cycle"***
General usage (cont.) [1]	2400 - 2,483.5 MHz	10 mW e.i.r.p.	Integrated or dedicated	Occupation of the entire band	
	5725 - 5,875 MHz	25 mW e.i.r.p.			
	24.00 - 24.25 GHz	100 mW e.i.r.p.			
	61.00 - 61.50 GHz				
	122 - 123 GHz				
	244 - 246 GHz				
Detection, tracing and data acquisition systems	456.9 – 457.1 kHz [16]	7 dB μA/m at 10 m		Continuous wave (CW) – without modulation	< 100%
	169.4 – 169.475 MHz [17]	500 mW a.r.p.		Max. 50 kHz	< 10%
	169.4 – 169.475 MHz [18]				< 1%
Wireless access systems / Radio local access networks (WAS/RLAN)	2400 - 2,483.5 MHz	100 mW e.i.r.p.[19]		Occupation of the entire band	
	5150 - 5350 MHz [20,21]	200 mW e.i.r.p.[22]	Dedicated	Occupation of the entire band	
	5470 - 5725 MHz [20, 21]	1 W e.i.r.p. [22]			
	17.1 - 17.3 GHz	100 mW e.i.r.p.			
	57 – 66 GHz	40 dBm e.i.r.p. [23]			
Applications on Railways	2446 - 2,454 MHz [25]	500 mW e.i.r.p.	Integrated		
	27.090 – 27,100 MHz [26]	42 dB μA/m at 10 m	Integrated or dedicated		
	984 – 7,484 kHz [27]	9 dB μA/m at 10 m	Integrated	Occupation of the entire band	< 1%
	516 - 8,516 kHz [28]	7 dB μA/m at 10 m			
	7.3 – 23.0 MHz [29]	-7 dB μA/m at 10 m	Dedicated		

[15] Spectrum access and interference mitigation techniques must be used that offer, at least, an equivalent performance to the techniques described in harmonized standards adopted under Directive 1999/5/EC. As an alternative, a limit for the operation cycle of 1.0% can also be used.
[16] Applications for the Detection of Victims of Avalanches, central frequency 457 kHz.
[17] Applications for reading measurements.
[18] Applications object detection and tracing.
[19] For systems with broadband modulations different from FHSS - frequency hopping spread spectrum technique - the maximum value of spectrum power density must be limited to 10 mW/MHz.
[20] According to the Decision of the Commission 2005/513/EC, July 11th, 2005, and 2007/90/EC, February 12th, 2007.
[21] The following conditions must be complied:
in the band 5150-5350 MHz only indoor usages are allowed;
the systems operating in the bands 5250-5350 MHz and 5470-5725 MHz must use transmitted power control (TPC), which provides, on average, a mitigation factor of 3 dB for the maximum power value allowed. If TPC is not used, the maximum power allowed of average e.i.r.p. and the corresponding maximum value of power density for average e.i.r.p. must be reduced by 3 dB;
systems operating in the bands 5250-5350 MHz and 5470-5725 MHz must use mitigation techniques that provide the same level of protection as the operational requirements, for detection and response described in EN 301 893;
in the band 5150-5350 MHz the maximum power density value for average e.i.r.p. must be limited to 10mW/MHz, for each 1 MHz;
in the band 5470-5725 MHz the maximum power density value for average e.i.r.p. must be limited to 50mW/MHz, for each 1 MHz;
[22] Maximum value of average e.i.r.p.
[23] Restricted to indoor usage. Maximum power density value of average e.i.r.p. is limited to 13 dBm/MHz.
[25] Automatic identification systems for railway vehicles. Transmission only in the presence of trains.
[26] Remote feed and train-station systems, including Eurobeacon and the activation of *loop/Euroloop.* As an option, it can also be used for the activation of *loop/Euroloop*. Central frequency 27,095 MHz.
[27] Station-train beacon systems, including Eurobeacon. Central frequency 4,234 kHz.
[28] Station-train *loop* systems, including *Euroloop*. Central frequency 4516 kHz.
[29] Station-train *loop* systems, including *Euroloop*. Central frequency 13.457 kHz. The maximum value of field density is specified for a bandwidth of 10 kHz, taking the average of the measurement done over 200m of the *loop*. Transmission only in the presence of trains.

SRD - Characterization of stations (cont.)					
Application	**Frequency bands**	**Power or field strength**	**Type of antenna**	**Spacing between channels**	**"*Duty Cycle*"**
Telematic systems of road transportation - RTTT	5795 – 5,805 MHz [30]	2 W e.i.r.p.	Integrated or dedicated	[31]	
	5805 – 5,815 MHz [32]				
	63 -64 GHz [33]	To be defined		Occupation of the entire band	
	76 -77 GHz [34]	55 dBm peak [35]			
	21.65 – 26.65 GHz [36, 37]	[38]			
	77-81 GHz [36, 39]	55 dBm peak [40]			
	24.050 – 24.075 GHz[41]	100 mW e.i.r.p.[42]	Integrated		
	24.075 – 24.150 GHz[41]	0.1 mW e.i.r.p.			4µs/40kHz f/ each 3ms [43]
		100 mW e.i.r.p.			1ms/40kHz f/ each 40ms [44]
	24.150 – 24.250 GHz[41]	100 mW e.i.r.p.			
Radiodetermination Applications	2400 - 2,483.5 MHz	25 mW e.i.r.p.	Integrated or dedicated		
	9200 - 9,500 MHz				
	9500 - 9,975 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[45]	-41.3 dBm/MHz e.i.r.p.			
	8.5 – 10.6 GHz[45]				
	24.05 – 27.0 GHz[45]				
	57 – 64 GHz[45]				
	75 – 85 GHz[45]				
	17.1 - 17.3 GHz [46]	+26 dBm e.i.r.p.			DAA

SRD - Characterization of stations (cont.)					
Application	**Frequency**	**Power or field**	**Type of**	**Spacing between**	**"*Duty***

[30] The band is for road-vehicle systems, in particular (but not exclusively) for automatic toll payment systems.
[31] The frequencies: 5797.5 MHz, 5802.5 MHz, 5807.5 MHz and 5812.5 MHz are used with a channel spacing of 5 MHz. The frequencies 5800 MHz and 5810 MHz are used with a channel spacing of 10 MHz.
[32] Requires individual license.
[33] These systems, vehicle-vehicle or road-vehicle are only exempt from licensing after the definition of the power limits.
[34] Vehicle radar systems and infrastructures.
[35] 55 dBm e.i.r.p. of peak and 50 dBm e.i.r.p. average and 23,5 dBm e.i.r.p. average for impulse radars.
[36] SRR –Short range radar systems for cars.
[37] According to the Decision from the Commission 2005/50/EC, January 17th, 2005.
[38] The maximum value of the average power density is –41.3 dBm/MHz e.i.r.p. The value of the peak power density must not exceed 0dBm/50 MHz e.i.r.p.
[39] According to the Decision from the Commission 2004/545/EC, July 8th, 2004.
[40] The maximum value of the average power density is –3 dBm/MHz e.i.r.p. The maximum value of the average power density outside a vehicle resulting from the operation of a short range radar must not exceed –9 dBm/MHz e.i.r.p. .
[41] Radars for vehicles.
[42] For peak powers above –10 dBm e.i.r.p. the operation cycle < 10%.
[43] The requirements of mitigation and access to the spectrum apply to devices assembled on the bumper. If assembled without a bumper, the requirement must be 3µs/40kHz of maximum transfer time in each 3ms.
[44] The requirements of mitigation and access to the spectrum apply to devices assembled on a bumper or assembled without bumper.
[45] Tank Level Probing Radar (TLPR). The limit value of radiated power is determined outside the tank's closed structure.
[46] Spectrum access and interference mitigation techniques must be used that offer, at least, an equivalent performance to the techniques described in harmonized standards adopted under Directive 1999/5/EC. Special requirements for the antenna radiation diagram and in the DAA (Detect And Avoid) technical implementation applied as described in standard EN 300 440 for Ground Based Synthetic Aperture Radar (GBSAR) systems.

	bands	strength	antenna	channels	*Cycle*"
Alarms	868.600 - 868.700 MHz [47]	10 mW a.r.p.	Integrated or dedicated	25 kHz	< 1,0%
	869.200 - 869.250 MHz [48]				< 0,1%
	869.250 - 869.300 MHz				
	869.300 – 869.400 MHz				< 1,0%
	869.650 - 869.700 MHz	25 mW a.r.p.			< 10%
	169.4750 – 169.4875 MHz [49]	10 mW a.r.p.		12.5 kHz	< 0,1%
	169.5875 – 169.6000 MHz[49]				
Model control	26.995 MHz; 27.045 MHz; 27.095 MHz; 27.145 MHz; 27.195 MHz	100 mW a.r.p.	Dedicated	10 kHz	
	34.995 - 35.225 MHz [50]				
	40.665 MHz; 40.675 MHz; 40.685 MHz; 40.695 MHz				
Inductive applications	9 - 90 kHz	72 dB μA/m at 10 m [51]	Integrated, dedicated or external [52]	Occupation of the entire band	
	90 - 119 kHz	42 dB μA/m at 10 m			
	119 - 135 kHz	66 dB μA/m at 10 m[53]			
	135 - 140 kHz	42 dB μA/m at 10 m			
	140 – 148.5 kHz	37.7 dB μA/m at 10 m			
	6765 - 6795 kHz	42 dB μA/m at 10 m See figure 1, Annex 7, 7.6.a)	Integrated or dedicated		
	7400 – 8,800 kHz	9 dB μA/m at 10 m			
	13.553 - 13.567 MHz	42 dB μA/m at 10 m See figure 1, Annex 7, 7.6.a)			
	13.553 - 13.567 MHz	60 dB μA/m at 10 m See figure 1, Annex 7, 7..6.a) [54]			
	26.957 - 27.283 MHz	42 dB μA/m at 10 m			
	10.200 – 11.000 MHz	9 dB μA/m at 10 m			
	3155 – 3,400 kHz	13.5 dB μA/m at 10 m	Integrated, dedicated or external [52]		
	148.5 kHz–5 MHz	-15 dB μA/m at 10 m[55]			

[47] The frequency band 868.6-868.7 MHz can also be used entirely as a channel for high speed data transfer.
[48] Exclusive band for Social alarms.
[49] Exclusive usage for Social Alarms.
[50] Exclusive frequencies for aeromodels.
[51] Decrease of 3 dB/oct at 30 kHz.
[52] In case external antennas are used, only antennas of the loop coil type are allowed.
[53] Decrease of 3 dB/oct at 119 kHz.
[54] For exclusive usage of RFID and EAS (Electronic Article Surveillance).
[55] The maximum field intensity value is specified for a bandwidth of 10 kHz. The maximum value allowed -5 dBμA/m at 10 m for systems that operate in bandwidths above 10 kHz keeping the field intensity limit (-15 dBμA/m at 10 m for bandwidth of 10 kHz).

SRD - Characterization of stations (cont.)					
Application	**Frequency bands**	**Power or field strength**	**Type of antenna**	**Spacing between channels**	***"Duty Cycle"***
Inductive applications (cont.)	5 -30 MHz	-20 dB μA/m at 10 m[56]	Integrated, dedicated or external [52]	Occupation of the entire band	
	400 – 600 kHz[57]	-8 dB μA/m at 10 m[58]			
Transmitter microphones and hearing aid equipments	173.965 – 174.015 MHz [59]	2 mW a.r.p.	Integrated	50 kHz	≤ 100%
	174 – 216 MHz[60]	50 mW a.r.p.		Occupation of the entire band	
	470 – 862 MHz [60,61]				
	863 – 865 MHz[62]	10 mW a.r.p.			
	1785 – 1,795 MHz	20 mW e.i.r.p. [63]			
	1795 – 1,800 MHz				
	169.4 – 169.4750 MHz[59]	10 mW a.r.p.		Max 50 kHz	
	169.4875 – 169.5875 MHz[59]				
RFID – RF Identification Systems	2446 – 2454 MHz	≤500 mW e.i.r.p.	Integrated or dedicated	Occupation of the entire band	≤ 100%
	865.0 – 865.6 MHz	100 mW a.r.p.		200 kHz	
	865.6 – 867.6 MHz	2 W a.r.p.			
	867.6 – 868.0 MHz	500 mW a.r.p.			
Wireless systems for medical applications	9 – 315 kHz [64]	30 dB μA/m at 10 m	Integrated or dedicated	Occupation of the entire band	<10%
	315 – 600 kHz [65]	-5 dB μA/m at 10 m			
	12.5 – 20.0 MHz [66]	-7 dB μA/m at 10 m[67]			
	30.0 – 37.5 MHz [68]	1 mW a.r.p.			
	402 – 405 MHz [69]	25 μW a.r.p.		25 kHz	
	401 – 402 MHz [70]				[71]
	405 – 406 MHz [70]				

[56] The maximum field intensity value is specified for a bandwidth of 10 kHz. The maximum value allowed -5 dBμA/m at 10 m for systems that operate in bandwidths above 10 kHz keeping the field intensity limit (-20 dBμA/m at 10 m for bandwidth of 10 kHz).
[57] For exclusive usage of RFID.
[58] The maximum field intensity value is specified for a bandwidth of 10 kHz. The maximum value allowed is -5 dBμA/m at 10 m for systems that operate in bandwidths above 10 kHz keeping the field intensity limit (-8 dBμA/m at 10 m for bandwidth of 10 kHz). These systems must operate with a minimum bandwidth of 30 kHz.
[59] Hearing aids.
[60] Ear monitoring devices are allowed, as long as they comply with the technical parameters for transmitter microphones.
[61] The usage of transmitter microphones is only allowed in the sub-bands 470-750 MHz and 758-862 MHz.
[62] Transmitter microphones.
[63] The maximum power value for "body worn" transmitter microphones is 50 mW e.i.r.p.
[64] For active ultra-low power medical implants that use the inductive *loop* technique for telemetry.
[65] Applications for implants in animals.
[66] For active ultra-low power implants in animals limited to *indoor usage*.
[67] The maximum field intensity value is specified for a bandwidth of 10 kHz.
The transfer mask is defined as follows: 3dB for bandwidth 300 kHz; 10dB for bandwidth 800 kHz; 20dB for bandwidth 2 MHz.
[68] For membrane ultra-low power implants for the measurement of blood pressure.
[69] For active ultra-low power medical implants covered by the harmonized standard EN 301 839. Transmitters can combine adjoining channels in order to increase the bandwidth up to 300 kHz.
[70] For active ultra-low power medical implants and accessories covered by the harmonized standard EN 302 537 and not covered by the frequency band 402–405 MHz. Transmitters can combine adjoining 25 kHz channels in order to increase the bandwidth up to 100 kHz. Due to the limit of 1 MHz of available spectrum, a maximum limit of 100 kHz is proposed for bandwidth. In order to assure the concurrent usage of the band by the users.
[71] Without restriction for equipment that implements LBT. Systems that do not implement *Agility frequency* techniques based on environment RF field detection, must be limited to the maximum allowed of 250 nW a.r.p. with a *duty cycle* of ≤0,1 %.

SRD - Characterization of stations (cont.)					
Application	**Frequency bands**	**Power or field strength**	**Type of antenna**	**Spacing between channels**	***"Duty Cycle"***
Wireless audio applications	87.5 - 108 MHz [71]	50 mW a.r.p.	Integrated	200 kHz	≤ 100%
	863 - 865 MHz	10 mW a.r.p.		Occupation of the entire band [72]	
	864.8 - 865 MHz [73]			50 kHz	
	1795 – 1,800 MHz	20 mW e.i.r.p.		Occupation of the entire band	
Remote control, remote measurement, remote alarm and data transfer systems	29.980 MHz	100 mW a.r.p.	Integrated or dedicated	10 kHz	
	29.990 MHz				
	30.000 MHz				
	30.100 MHz				
	150.9375 MHz	500 mW a.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				

[71] The SRD user interface must allow at least the selection of a frequency between 88.1 MHz and 107.9 MHz and at most between 87.6 MHz and 107.9 MHz.
[72] In analogical systems the bandwidth used cannot exceed 300 kHz.
[73] Narrow band analogical voice equipments, such as baby monitors, door control systems, etc., are limited to the band 864.8-865 MHz.

b) Earth stations of Satellite Services

HEST and LEST terminals

These stations must operate on a non interference and non protection basis regarding the licensed radiocommunications stations or networks. Using this type of earth stations is only allowed at higher distances than those stated in the table below, starting from the limit area of airports.

Characterization of stations			
Earth station	**Frequency band**	**Maximum power limits (e.i.r.p.)**	**Distance (D) to limit area of airports**
High e.i.r.p. Satellite Terminal Low e.i.r.p. Satellite Terminal	10.70 -12.75 GHz (space-Earth) 19.70 -20.20 GHz (space-Earth) 14.00 -14.50 GHz (Earth-space) 29.50 -30.00 GHz (Earth-space)	e.i.r.p. ≤ 34 dBW	---
		34 dBW < e.i.r.p. ≤ 50 dBW	D > 500 meters
		50 dBw < e.i.r.p. ≤ 55.3 dBW	D > 1800 meters
		55.3 dBW < e.i.r.p. ≤ 57 dBW	D > 2300 meters
		57 dBW < e.i.r.p. ≤ 60 dBW	D > 3500 meters

HDFSS terminals

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

Characterization of stations			
Earth station	**Frequency band**	**Density limits of e.i.r.p. off axis**	**Minimum elevation angle**
High Density Fixed-Satellite Service Terminal	17.3 - 17.7 GHz Space-Earth	---	5º
	19.7 - 20.2 GHz space-Earth	---	5º
	27.5 - 27.82 GHz Earth-space	-35 dBW/MHz	10º
	28.45 - 28.94 GHz Earth-space	-35 dBW/MHz	10º
	29.46 - 30.0 GHz Earth-space	-35 dBW/MHz	10º

Earth stations of the Mobile Satellite Service

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

Characterization of stations	
Earth station	**Frequency band**
Inmarsat-B Inmarsat-C Inmarsat-D Inmarsat-M Inmarsat-M4 Inmarsat-phone (mini M) EMS-MSSAT Thuraya SpaceCheckers-SMS	1525 - 1,544 MHz (space-Earth) [1] 1545 - 1,559 MHz (space-Earth) [2] 1626.5 - 1645.5 MHz (Earth-space) [1] 1646.5 - 1660.5 MHz (Earth-space) [2,3]
EUTELTRACS	10.70 - 11.70 GHz (space-Earth) [4] 12.50 - 12.75 GHz (space-Earth) [4] 14.00 - 14.25 GHz (Earth-space)
GMPCS [5]	1525 - 1544 MHz (space-Earth) [1] 1545 - 1,559 MHz (space-Earth) [2] 1626.5 - 1645.5 MHz (Earth-space) [1] 1646.5 - 1660.5 MHz (Earth-space) [2, 3] 1610 - 1626.5 MHz (Earth-space) 1621.35 - 1,626.5 MHz (space-Earth) 1980 - 2,010 MHz (Earth-space) 2483.5 - 2,500 MHz (space-Earth) 2170 - 2,200 MHz (space-Earth)
Mobile Earth Stations (MES) ORBCOM [6]	137 - 138 MHz (space-Earth) 148 - 150.05 MHz (Earth-space)
AES [7]	10.70 - 11.70 GHz (space-Earth) 12.50 - 12.75 GHz (space-Earth) 14.00 - 14.25 GHz (Earth-space)

1 In the frequency bands 1530-1544 MHz and 1626.5-1645.5 MHz help, emergency and security communications in the GMDSS system have priority.

2 In bands 1545 - 1555 MHz and 1646.5-1656.5 MHz, for the Aeronautical Satellite Mobile Service, help and emergency communications, as well as communications regarding the security and regularity of flights and meteorology, have priority.

3 In the band 1660 - 1660,5 MHz the operation of these earth stations cannot cause harmful interferences to radioastronomy service stations.

4 In the bands 10.70-11.70 GHz and 12.50-12.75 GHz, the operation of the earth stations "Omnitracs-Eutelsat" cannot cause interferences to stations of the Fixed and Fixed Satellite Services.

5 These stations must bear the marking described in figure 2.

6 These stations must not cause interferences or require protection of stations of the fixed, mobile and space operation stations in the frequency band 148-149.9 MHz and satellite radionavigation stations in the frequency band 149.9-150.05 MHz.

[7] AES must operate on a non interference and non protection basis regarding licensed radiocommunications stations or networks.

Earth stations on board Vessels – (ESV)

ESV earth stations installed on board vessels must operate on a non interference and non protection basis regarding licensed radiocommunications stations or networks.

Characterization of stations [1]	
Earth station	**Frequency band**
ESV	3700 – 4200 (space-Earth) [2,3] 5925 - 6425 MHz (Earth-space) [2,3] 10.7 - 11.7 GHz (space-Earth) [4] 12.5 - 12.75 GHz (space-Earth) [4] 14.00 - 14.5 GHz (space-Earth) [4]

[1] In the terms of Determination of the Board of Management of ICP-ANACOM in 29.6.2011 about the Exemption of radio license of ESV earth stations and radiodetermination stations installed on vessels. Distances above 300 km, from the normal base line, along the Portuguese coast.
[2] Operation according to the technical and operational conditions determined in Resolution 902 (WRC-03), licensed by IPTM according to the law in effect.
[3] Distances above 300 km, from the normal base line, along the Portuguese coast.
[4] Operation according to the technical and operational conditions determined in Resolution 902 (WRC-03) and Decision ECC/DEC/(05)10, licensed by IPTM according to the law in effect.

c) Radiocommunications stations exclusively for reception

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

Characterization of stations
Receiving stations • multiband, not associated in particular with any radiocommunications service ("scanners") • of the satellite radiocommunications services in the frequency bands: 3.4-4.2 GHz 10.7-12.75 GHz 17.7-20.2 GHz • of the AIS system • of the radiogoniometry system • of the Radioastronomy Service [12] • of the satellite Radiodetermination service [13] • of the satellite Meteorology service • of the satellite Earth Exploration service

d) Television and audio broadcast stations exclusively for reception.

e) Aeronautical mobile service and radiodetermination service stations on board aircraft, certified by INAC[14].

f) Radiodetermination service stations on vessels, licensed by IPTM[15].

[12] Radio protection can be assured to Radioastronomy stations operating in frequency bands allocated to this service with Primary status, according to radio licensing.
[13] Radio protection can be assured to earth stations operating in frequency bands allocated to this service with Primary status, according to radio licensing. This procedure does not apply to GPS and GLONASS terminals.
[14] According to the Order of the President of the Board of Management of ICP-ANACOM of 4.9.2009, ratified by the determination of the Board of Management of ANACOM of 9.9.2009.
[15] According to the Determination of the Board of Management of ICP-ANACOM de 29.6.2011 regarding the Exemption of radio licensing of ESV earth stations and radiodetermination stations on board vessels.

Annex 5

EQUIPMENTS / SYSTEMS THAT USE ULTRA WIDE BAND (UWB) TECHNOLOGY

Equipments / systems that use ultra wide band (UWB) technology must operate on a "non interference and non protection regime", in which no harmful interferences can be caused to any radiocommunications service and in which the protection of those devices against harmful interferences caused by radiocommunications services cannot be claimed.

5.1 Generic UWB equipments

UWB technology allows developing several systems for different applications, namely communications and location systems, medical systems among others. This technology allows transferring large quantities of information in short distances with low emissions powers. UWB equipments are characterized by their need of large bandwidths, which makes their emissions spread across the spectrum, overlapping several radiocommunications services.

These equipments must respect the conditions established in Decision of the Commission 2009/343/EC, April 21st, 2009, which changes Decision 2007/131/EC, February 21st, 2007, regarding the usage of harmonized conditions in the radio spectrum for equipments that use ultra wide band technology in the Community (equivalent ECC Decisions adopted by the Portuguese Administration: ECC/DEC/(06)04 and ECC/DEC/(06)12), and must be used indoors, or if used outdoors, must not be attached to a fixed installation, a fixed infrastructure or a fixed external antenna.

Generic UWB equipments are exempt from radio licensing.

5.1.1 Maximum densities of e.i.r.p. in the absence of adequate mitigation techniques

Frequency band (GHz)	Maximum value of average density of e.i.r.p. (dBm/MHz)	Maximum value of peak density of e.i.r.p. (dBm/50 MHz)
Below 1.6	– 90,0	– 50,0
1.6 to 2.7	– 85,0	– 45,0
2.7 to 3.4	– 70,0	– 36,0
3.4 to 3.8	– 80,0	– 40,0
3.8 to 4.8	– 70,0	– 30,0
4.8 to 6.0	– 70,0	– 30,0
6.0 to 8.5	– 41,3	0,0
8.5 to 10.6	– 65,0	– 25,0
Above 10.6	– 85,0	– 45,0

Table 5.1.1: Maximum densities of e.i.r.p. for generic UWB in the absence of adequate mitigation techniques

5.1.2 Adequate mitigation techniques

5.1.2.1 Low Duty Cycle (LDC) mitigation technique

The maximum values of – 41.3 dBm/MHz are allowed for the average density of e.i.r.p. and 0 dBm for peak of e.i.r.p (measured at 50 MHz), in band 3.1 - 4.8 GHz, as long as a restriction is applied to the low duty cycle, so that the sum of the duration times of all transmitted signals is less than 5 % of the time in each second and lower than 0.5 % of the time in each hour and as long transmitted signal does not have a duration above 5 ms (according to Decision ECC/DEC/(06)12).

5.1.2.2 Detect And Avoid (DAA) mitigation technique

The maximum values of – 41.3 dBm/MHz are allowed for the average density of e.i.r.p. and 0 dBm for peak of e.i.r.p. (measured at 50 MHz), in the bands 3.1 - 4.8 GHz and 8.5 – 9.0 GHz, as long

as a detect and avoid (DAA) mitigation technique described in the pertinent harmonized standards according to Directive 1999/5/CE (according to Decision ECC/DEC/(06)12).

5.1.3 Operation of equipments that use ultra wide band technology in automotive and railway vehicles

Using ultra wide band equipments is authorized inside automotive and railway vehicles and as long as that usage respects the following parameters.

5.1.3.1 Maximum densities of e.i.r.p. for usage of ultra wide band technology in automotive and railway vehicles

The equipments that use ultra wide band technology installed inside automotive and railway vehicles can use the radio spectrum, as long as they respect the limits for e.i.r.p. established in section 5.1.1, and if they are applied, in band 6.0 – 8.5 GHz, the following parameters:

Frequency band (GHz)	**Maximum value of average density of e.i.r.p. (dBm/MHz)**	**Maximum value of peak density of e.i.r.p. (dBm/50 MHz)**
6.0 to 8.5	– 41,3 Subject to implementation of power control of the transmitter's power (TPC) with a range of, at least, 12 dB.	0
	– 53.3 (if TPC is not implemented)	-13,3

Table 5.1.3.1: Maximum densities of e.i.r.p. for usage of ultra wide band technology in automotive and railway vehicles

5.1.3.2 Adequate mitigation techniques for automotive and railway vehicles

5.1.3.2.1 Low Duty Cycle (LDC) mitigation technique

The operation of equipments that use ultra wide band technology inside automotive and railway vehicles is authorized, and in which the LDC mitigation technique is applied in band 3.1 – 4.8 GHz, as stated in section 5.1.2.1, with the application to e.i.r.p. of the limits established in the same section. The limits established in section 5.1.1 for e.i.r.p. apply to the remaining frequency bands. The LDC technique can also be used in band 6.0 – 8.5 GHz, as an alternative to the implementation of TPC, since it provides an equivalent degree of protection (according to Decision ECC/DEC/(06)12).

5.1.3.2.2 Detect And Avoid (DAA) mitigation technique

The operation of equipments that use ultra wide band technology inside automotive and railway vehicles is authorized and in which the DAA mitigation technique is applied in the bands 3.1-4.8 GHz and 8.5- -9.0 GHz with a limit for e.i.r.p. of – 41.3 dBm/MHz, as long as interference mitigation techniques are applied with a performance level equal or above to that of techniques described in the harmonized standards adopted in accordance with Directive 1999/5/EC. These demand that the transmitter's power control (TPC) has a range of, at least, 12 dB. In the remaining cases, a limit of – 53.3 dBm/MHz is applicable for e.i.r.p. (according to Decision ECC/DEC/(06)12).

5.2 Specific UWB equipments

a) GPR/WPR viewing systems

UWB GPR/WPR viewing systems allow developing several types of applications, among others, to locate underground gas leaks, locate survivors in avalanches, locate "objects" underground and inside "walls", locate deficiencies in structures such as roads, and are operated by qualified professionals.

The purpose of these systems is not radio communications. The planned usage for this type of systems excludes radiation to open space, which must be absolutely avoided. UWB GPR systems must radiate directly in a downward direction to the subsoil, while UWB WPR systems must radiate directly towards a "wall".

UWB GPR/WPR systems will be subject to a licensing regime that is being developed by ICP-ANACOM.

For the purpose of Decision ECC/DEC/(06)08 "Undesired emissions" was defined as the emissions that are radiated in all directions above the "ground/wall" coming from UWB GPR/WPR equipments, including direct emissions from the equipment itself, as well as emissions reflected or that cross the "structure" being investigated.

The maximum values of the average power densities and the peak powers, of any "undesired emission" emanating from UWB GPR/WPR systems cannot exceed the limits defined in Tables 5.2.1 and 5.2.2, respectively. It must be referred that the average power density must be determined according to the formulas (1) and (2) in Annex 1 of Decision ECC/DEC/(06)08 and the peak power value must be measured according to standard ETSI EN 302 066-1.

Maximum value of average power density of any "undesired emission" from UWB GPR/WPR viewing systems	
Frequency band (MHz)	**Maximum value of average density of e.i.r.p. (dBm/MHz)**
Below 230	- 65,0
230 to 1000	- 60,0
1000 to 1600	-65,0 [1]
1600 to 3400	- 51,3
3400 to 5000	- 41,3
5000 to 6000	- 51,3
Above 6000	- 65,0

Table 5.2.1: Maximum value of average power density of any "undesired emission" from UWB GPR/WPR viewing systems

Maximum value of measured radiated power density of any "undesired emission" from UWB GPR/WPR viewing systems	
Frequency band (MHz)	**Maximum value of peak power**
30 to 230	- 44.5 dBm/120kHz (a.r.p.)
> 230 to 1000	- 37.5 dBm/120kHz (a.r.p.)
> 1000 to 18000	- 30 dBm/MHz (e.i.r.p.)

Table 5.2.2: Maximum value of measured radiated power density of any "undesired emission" from UWB GPR/WPR viewing systems

These equipments must be according to the conditions established in Decision ECC/DEC/(06)08, regarding the conditions of usage for radio spectrum by UWB GPR/WPR viewing systems.

b) BMA Equipment

UWB BMA equipments allow developing several types of applications, among others, to locate "objects", such as electrical cables and wires inside "walls" and to determine the thickness of structures such as walls in buildings. The purpose of these equipments is not radio communications.

These equipments must respect the conditions established in Decision of the Commission 2009/343/EC, April 21st, 2009, which changes

[1] Additionally to the maximum value of average density of e.i.r.p. in the table above, in the bands RNSS, 1164 – 1215 MHz and 1559 – 1610 MHz, a maximum value of average density of e.i.r.p. of –75 dBm/kHz is applied if there are spectral lines in these bands.

Decision 2007/131/EC, February 21st, 2007, regarding the usage of harmonized conditions in the radio spectrum for equipments that use ultra wide band technology in the Community (equivalent ECC Decision adopted by the Portuguese Administration: ECC/DEC/(07)01, March 30th, 2007, which defines "Undesired emissions" as the emissions that are radiated in all directions coming from BMA equipments, including direct emissions from the equipment itself, as well as emissions reflected or that cross the "structure" being investigated.

UWB BMA equipments are exempt from radio licensing.

The maximum values of the average power densities and the peak powers, of any "undesired emission" emanating from UWB GPR/WPR systems cannot exceed the limits defined in **Table 5.2.3**. Additionally, the spectral density of TRP must be 5 dB below the maximum value of average spectral density of e.i.r.p. defined in **Table 5.2.3**.

Maximum values of average power densities and peak powers, of any "undesired emission" emanating from BMA systems		
Frequency band (GHz)	**Maximum value of average density of e.i.r.p. (dBm/MHz)**	**Maximum value of peak e.i.r.p. (measured at 50 MHz) (dBm)**
Below 1.73 Nota 1	- 85	- 45
1.73 to 2.2	- 65	- 25
2.2 to 2.5	- 50	- 10
2.5 to 2.69 Nota 1	- 65	- 25
2.69 to 2.7 Nota 2	- 55	- 15
2.7 to 3.4 Note 1	- 82	- 42
3.4 to 4.8	- 50	- 10
4.8 to 5.0 Note 2	- 55	- 15
5.0 to 8.0	- 50	- 10
8.0 to 8.5	- 70	- 30
Above 8.5	- 85	- 45

Table 5.2.3: Maximum values of average power densities and peak powers, of any "undesired emission" emanating from BMA systems

These equipments must be according to the conditions established in Decision ECC/DEC/(07)01, regarding the conditions of usage for radio spectrum by UWB BMA viewing systems.

Note 1: Devices that use the LBT mechanism, as described in standard EN 302 435, and that comply with the technical requirements defined in Annex 2 of Decision ECC/DEC/(07)01, can operate in the frequency band 1.215 – 1.73 GHz with the maximum limit of average e.i.r.p. of – 70 dBm/MHz and a maximum limit of peak e.i.r.p. of – 30 dBm/50MHz, and in the frequency bands 2.5 – 2.69 GHz and 2.7 – 3.4 GHz with a maximum limit of average e.i.r.p. of – 50 dBm/MHz and a maximum limit of peak e.i.r.p. of – 10 dBm/50MHz.
Note 2: In order to protect the radioastronomy service in the bands 2.69 – 2.7 GHz and 4.8 – 5 GHz, the spectral density of TRP must be below – 65 dBm/MHz.

Annex 6

USAGE OF FREQUENCIES BY THE AMATEUR AND AMATEUR SATELLITE SERVICES

6.1 Access to the spectrum per amateur categories

According to number 1 of article 15 of Decree-Law number 53/2009, March 2nd, access to frequency bands by the different amateur categories is done according to the following conditions:

Frequency bands [i]		Accessibility by the amateur categories and maximum allowed powers [W] [a) b)]				Status of Services [e)]	
		1 and A [c)]	B	2 [(4)]	C	Amateur	Amateur satellite
135,7 - 137,8	kHz	1[e.i.r.p.]	1[e.i.r.p.]			S	
1.810 - 1.830 [g)]	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 [f)]	MHz	25[a.r.p.]	25[a.r.p.]			S	
70,1570 - 70,2125	MHz	100[a.r.p.]				S	
70,2375 - 70,2875	MHz	100[a.r.p.]				S	
144 - 145,806	MHz	300 [j)]	150 [j)]	150	50	P	P
145,806 - 146	MHz	300	150	150			P
430 - 435	MHz	300 [j)]	150 [j)]	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.] [j)]	300[e.i.r.p.] [j)]			S	

Frequency bands [i]		Accessibility by the amateur categories and maximum allowed powers [W] [a] [b]				Status of Services [e]	
		1 and A [c]	B	2 [4]	C	Amateur	Amateur satellite
2.300 - 2.400	MHz	[h]	[h]			S	
2.400 - 2.450	MHz	[h]	[h]			S	S

Frequency bands [i]		Accessibility by the amateur categories and maximum allowed powers [W] [a] [b]				Status of Services [e]	
		1 and A [c]	B	2 [4]	C	Amateur	Amateur satellite
5.650 - 5.668	MHz	[h]	[h]				S
5.668 - 5.670	MHz	[h]	[h]			S	S
5.670 - 5.830	MHz	[h]	[h]			S	
5.830 - 5.850	MHz	[h]	[h]				S
10 - 10,37	GHz	300[e.i.r.p.] [j]	300[e.i.r.p.] [j]			S	
10,37 - 10,45	GHz	[h]	[h]			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) according to the concepts presented in number 7.1 of Annex 7

f) - upper limit of band will be 52 MHz after release of band on 26-04-2012 by the broadcast service

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

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

i) - 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 ICP-ANACOM

j) - 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

Annex 7

APPENDICES

7.1 Definitions

a) Concepts

Awarding (a frequency or radio channel):

Registration of a given channel in a plan adopted by a competent conference, in order to use it for one or more administrations for a radiocommunications service on Earth or in space, in one or more countries or determined geographic areas and according to specified conditions.

Allocation (of a frequency band):

Registration in the Table of Frequency Allocation of a determined frequency band, in order to use it by one or more radiocommunications services on Earth or space, or by the radioastronomy service in specified conditions. This term applies also to the considered frequency band.

Primary allocation (of a frequency band):

The services, which are in upper case (e.g. FIXED) on the Table of Frequency Allocation, have a primary status (see definition of Secondary allocation).

Secondary allocation (of a frequency band):

The services, which are not in upper case (e.g. Fixed) on the Table of Frequency Allocation, have a secondary status. A secondary service station:

- must not cause harmful interference to primary service stations with frequencies that have already been consigned or that will be consigned later;

- cannot claim protection from harmful interference from primary service stations with frequencies that have already been consigned or that will be consigned later;

- can claim protection from harmful interference from stations with the same service (secondary) or other service(s) also with the same status, as long as the frequency has been consigned to them on a previous date.

Consignment (a frequency or radio channel):

Authorization given by an administration for the usage of a radio station of a frequency or radio channel according to specified conditions.

Radio waves or microwaves

Electromagnetic waves with a frequency lower than 3000 GHz, which propagate through space without artificial guide.

Emission:

Energy flux produced in the form of radio waves, from an emitting radio station.

Emission class:

Set of characteristics of an emission, such as the type of modulations of the main carrier, nature of the modulation signal, type of information being transmitted and, eventually, other characteristics. Each class is designated by a set of standard symbols.

Emission on a single lateral band:

Emission in amplitude modulation containing only one of two lateral bands.

Consigned frequency band:

Frequency band inside which the emission of a given station is authorized

Consigned frequency:

Centre of the frequency band consigned to a station

Characteristic frequency:

Frequency that can be easily identified and measured in a given emission. A carrier frequency, for example, can be designated as a characteristic frequency.

Reference frequency:

Frequency that is a fixed and well determined position regarding the consigned frequency. The distance of that frequency from the consigned frequency is, in greatness and signal, the same as that of the characteristic frequency regarding the centre of the frequency band occupied by the emission

Frequency tolerance:

Maximum allowed distance between the consigned frequency and the frequency in the centre of the band occupied by an emission, or between the reference frequency and the characteristic frequency of an emission. The frequency tolerance is expressed in "parts per 10^6" or in "Hertz".

Power:

Whenever the power of a radio transmitter is stated, it should be expressed in one of the following ways, according to class of emission, using the indicated symbols:

Peak power (PX or pX)

Average power (PY or pY)

Carrier power (PZ or pZ)

For the different classes of emission, the relations between the peak power, the average power and the carrier power, in normal operating

conditions and in the absence of modulation, are stated in ITU-R Recommendations, which can be used as guide.

In formulas, the p symbol indicates the power in Watt and the symbol P the power in decibels regarding a reference level.

Peak power (of a radio transmitter):

Average of the power supplied at the feed line of the antenna by a transmitter in normal operation, during a radiofrequency cycle corresponding to the maximum amplitude of the modulation envelope.

Average power (of a radio transmitter):

Average of the power supplied at the feed line of the antenna by a transmitter in normal operation, during a relatively long period of time regarding the period of the component with the lowest modulation frequency.

Power carrier (of a radio transmitter):

Average of the power supplied at the feed line of the antenna by a transmitter in normal operation, during a radiofrequency cycle, in the absence of modulation.

b) Radiocommunications Services

Amateur Service (AM):

Radiocommunications service for individual training, intercommunication and technical studies, done by amateurs, i.e., duly authorized people who are interested in the radio technique for a personal and not commercial gain.

Amateur satellite (AMS):

Radiocommunications service using space stations located on satellites of Earth for the purposes as the amateur service.

Meteorology Ancillary Services (METAX):

Radiocommunications services for observations and research used for meteorology, including hydrology.

Special Service (ESP):

Radiocommunications service not defined specifically, done exclusively to meet certain needs of general interest and not open to public correspondence.

Satellite Earth Exploration Service (EXP-S):

Radiocommunications service between earth stations and one or more space stations, which can include connections between space stations, in which:

- Information regarding the Earth's characteristics and of its natural phenomena are obtained from active or passive detectors located on satellites of the Earth;
- Analogical information is collected from airborne platforms or platforms located on Earth.
- This information can be distributed to earth stations belonging to the same system.
- Platform questioning can be included.

This service can also include connections needed for its operation.

Fixed Service (FIX):

Radiocommunications service between determined fixed points.

Fixed satellite service (FIX-S):

Radiocommunications service between Earth stations located on certain fixed points using one or more satellites; in certain cases, this service includes connections between satellites, which can also be assured by the intersatellite service; the fixed satellite service can also include connections to other space radiocommunications services.

Standard frequency and time signal service (FPH):

Radiocommunications service that assures, for scientific, technical and other purposes, the emission of specified frequencies, of time signals or of both at the same time, with high precision and aimed at general reception.

Satellite standard frequency and time signal service (FPH-S):

Radiocommunications service using space stations located on satellites of Earth for the same purposes as the standard frequency and time signal service.

This service can also include connections needed for its operation.

Intersatellite Service (INT-S):

Radiocommunications service assuring the connections between artificial satellites of Earth.

Space Investigations Service (INVES):

Radiocommunications service in which space devices and other space objects are used for scientific research or technology.

Satellite Meteorology Service (MET-S):

Earth exploration service by satellite for meteorological purposes.

Mobile Service (MOV):

Radiocommunications service between mobile and earth stations or between mobile stations (CV).

Fixed Mobile Service (MV-S):

Radiocommunications service between mobile stations and one or more space stations, or between space stations used by this service, or between mobile earth stations, through one or more space stations.

This service can also include connections needed to its operation.

Aeronautical Mobile Service (MA):

Mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which rescue device stations may also participate. The radiobeacon stations for the location of accidents can also participate in this service in established danger and emergency frequencies.

Satellite Aeronautical Mobile Service (MA-S):

Mobile satellite service in which mobile earth stations are located on board aircraft. The rescue device stations and radiobeacon stations for the location of accidents can also participate in this service.

Aeronautical Mobile Service (R)* (MAR):

Aeronautical mobile service, reserved to communications regarding security and regularity of flights, mainly in national and international courses of civil aviation.

* (R): route.

Satellite Aeronautical Mobile Service (R)* (MAR-S):

Satellite aeronautical mobile service, reserved to communications regarding security and regularity of flights, mainly in national and international courses of civil aviation.

* (R): route.

Mobile aeronautical Service (OR) (MAOR):**

Aeronautical mobile service, in order to assure communications including those regarding flight coordination, mainly outside national and international courses of civil aviation.

** (OR): off-route.

Satellite Aeronautical Mobile Service (OR)* (MAO-S):

Satellite aeronautical mobile service, in order to assure communications including those regarding flight coordination, mainly outside national and international courses of civil aviation.

** (OR): off-route.

Maritime Mobile Service (MM):

Mobile service between coast stations and stations in vessels or between associated communications stations on board vessels. The rescue device stations and radiobeacon stations for the location of accidents can also participate in this service.

Satellite Maritime Mobile Service (MM-S):

Mobile satellite service in which mobile earth stations are located on board vessels. The rescue device stations and radiobeacon stations for the location of accidents can also participate in this service.

Terrestrial Mobile Service (MT)

Mobile service between base stations and terrestrial mobile stations or between terrestrial mobile stations.

Satellite Terrestrial Mobile Service (MT-S):

Mobile satellite service in which mobile earth stations are located on land.

Vessel Movement Service (ONS):

Security service included in the maritime mobile service, which is not the port operations service, between coast stations and vessels stations, or between vessel stations, with the purpose of transmitting messages regarding exclusively the movement of vessels.

The messages with a character of public correspondence are excluded from this service.

Space Operations Service (OE):

Radiocommunications service destined exclusively to the exploration of space devices, in particular space tracking, space remote measurement and space remote command. These functions are usually assured by the service in which the space stations operates.

Port Operations Service (OP):

Maritime mobile service in a harbour or surroundings of a harbour, between coast stations and vessel stations, or between vessel stations, with the purpose of transmitting messages that deal only with the manoeuvring, movement and security of vessels and, in case of emergency, with safeguarding people.

The messages with a character of public correspondence are excluded from this service.

Radioastronomy Service (RAST):

Service that involves the usage of radioastronomy.

Radiocommunications Service:

Service that implies the transmission, emission and/or reception of radio waves with specific telecommunications purposes.

Unless otherwise stated, any radiocommunications service refers to Earth radiocommunications.

Radiodetermination Service (RDT):

Radiocommunications service for the purpose of radiodetermination.

Satellite Radiodetermination Service (RDT-S):

Radiocommunications service for the purpose of radiodetermination and involving the usage of one or more space stations.

This service can also include connections needed for its operation.

Broadcast Service (RAD):

Radiocommunications service whose emissions are to be received directly by the general public. This service can include audio emissions, television emissions and other types of emissions (CS).

Satellite Broadcast Service (RAD-S):

Radiocommunications service in which the signals transmitted or retransmitted by space stations are aimed at being received directly by the general public.

In the satellite broadcast service, the expression "received directly" applies simultaneously to the individual and community reception.

Radiolocation Service (RLC);

Radiocommunications service for the purpose of radiolocation.

Satellite Radiolocation Service (RLC-S):

Satellite radiocommunications service for the purpose of radiolocation.

This service can also include connections needed for its operation.

Radionavigation Service (RV);

Radiocommunications service for the purpose of radionavigation.

Satellite Radionavigation Service (RV-S):

Satellite radiocommunications service for the purpose of radionavigation.

This service can also include connections needed for its operation.

Aeronautical Radionavigation Service (RVA):

Radionavigation service for the needs of aircraft and the security of their operation.

Satellite Aeronautical Radionavigation Service (RVA-S):

Satellite radionavigation service in which earth stations are located on board aircraft.

Maritime Radionavigation Service (RVM):

Radionavigation service for the needs of vessels and the security of their operation.

Satellite Maritime Radionavigation Service (RVM-S):

Satellite radionavigation service in which earth stations are located on board vessels.

Security Service (SEG):

Any radio service operated permanently or temporarily to assure the security of human life and the safeguarding of goods (CV).

Adaptive System:

Radiocommunications system that adapts its radio characteristics according to the channel's quality.

ISM (Industrial, Scientific and Medical) Usages:

Usage of devices and installations designed to produce and use, in a reduced space, radio energy for industrial, scientific, medical, domestic or similar purposes, excluding any telecommunications usage.

c) Aspects regarding SRD - Short Range Devices

Dedicated antenna - Removable antenna, indicated by the manufacturer, always having as reference the maximum limit of established e.i.r.p.

External antenna - antenna which was not designed specifically for a certain type of station.

Integrated antenna - permanent fixed antenna, designed as an indispensable part of the equipment.

Railway applications - Specific applications for railways, including automatic vehicle identification and beacons (train control systems).

Model control - Equipment to control the movement of models in the air, on the ground, above and under water.

Movement detection and alert - Equipment for the detection of movement and alert equipment (small power radar systems for radiodetermination: determination of position, speed and/or other characteristics of an object, or the collection of information regarding these parameters).

***Duty cycle* -** Percentage of time in which an equipment is active.

Spread spectrum - transmission technology in which the signal takes up a much larger bandwidth than the necessary minimum to send information.

Frequency hopping spread spectrum - spread spectrum technology in which the information is sent in several channels in a pseudo-random way.

Direct sequence spread spectrum - spread spectrum technology in which the information is combined with a pseudo-random code.

Active medical implants with very low power - Instruments, equipments, devices, materials and other items, to be used alone or in a set, for: diagnosing, preventing, monitoring, treating or mitigating illness; diagnosing, monitoring, treating or mitigating or compensating injuries or deficiencies; researching, replacing or changing the anatomy or a physiological process; design control.

Harmful interference - any interference that compromises the operation of a radionavigation service, or any other security service, or that in any way seriously damages, obstructs, or repeatedly interrupts a radiocommunications service that operates according to the applicable community or national aw.

LBT – *Listen Before Talk* – listening to the channel before starting to transmit.

Effective radiated power (a.r.p.) in a given direction **-** the product of the power supplied to the antenna by its gain regarding a dipole of half of a wavelength in a given direction.

Equivalent isotropic radiated power (e.i.r.p.) in a given direction **-** the product of the power supplied to the antenna by its gain regarding an isotropic antenna in a given direction (isotropic or absolute gain).

Average equivalent isotropic radiated power (e.i.r.p.) - is the average of e.i.r.p. throughout a data burst, when the power control is on its highest value.

RFID - RF identification systems; automatic identification of items, locations of goods, alarm systems, remainders management, personnel identification, access control, proximity sensors, anti-theft systems,

location systems, data transfer for portable equipments, wireless control systems.

Wireless audio systems - Wireless speakers; wireless headphones; wireless headphones for portable use, e.g. CD or cassette players, or portable radios; wireless headphones for usage inside vehicles, e.g. for radios, telephones, etc.; in-ear monitoring for concerts and other types of stage productions.

Inductive applications - Vehicle immobilisers, animal identification, alarm systems, cable detection, remainders management, personnel identification, wireless voice connections, access control, proximity sensors, anti-theft systems, including anti-theft induction RF systems, data transfer for portable equipments, automatic item identification, wireless control systems and automatic tolls.

Road transportation telematic systems - Communications systems for transportation support (mobile data connections between vehicles and infrastructure).

SRD - The term *Short Range Devices* includes the radio transmitters that establish uni-directional or bi-directional communications and which have a low probability of causing interference to other radio equipments. SRDs use integrated antennas, dedicated or external, and all types of modulation can be allowed, as long as the specifications of the relevant standards are complied with. Given the diversity of the services supplied by these equipments, there cannot be an exhaustive description.

7.2 Table of frequency tolerances for transmitters

The different categories of transmitter stations must comply with the corresponding frequency tolerances specified in Appendix 2 of the ITU Radiocommunications Regulations, transcribed below.

Table of frequency tolerances for transmitters

1 Frequency tolerance is defined in Article 1 of RR and, unless stated otherwise, is expressed in parts per 10^6.

2 The power referred for the different station categories is, unless stated otherwise, the peak power of a single lateral band transmitter and the average power for all other transmitters. The expression "power of a radio transmitter" is defined Article 1 of RR.

3 For technical and operational reasons, certain station categories may need more rigorous categories than those stated on the table.

Frequency bands (excluding the lower limit, including the upper limit) and station categories	**Tolerances applicable to the transmitters**
Band: **9 kHz to 535 kHz**	
1 *Fixed stations:*	
– from 9 kHz to 50 kHz	100
– from 50 kHz to 535 kHz	50
2 *Terrestrial stations:*	
a) Coastal stations	100 [1, 2]
b) Aeronautical stations	100
3 *Mobile stations:*	
a) Stations in vessels	200 [3, 4]
b) Help transmitters on vessels	500 [5]
c) Stations in survival vessels	500
d) Aircraft stations	100
4 *Radiodetermination stations*	100
5 *Broadcast stations*	10 Hz
Band: **535 kHz to 1 606.5 kHz (1 605 kHz in Region 2)** *Broadcast stations*	10 Hz (WRC
Band: **1 606.5 kHz (1 605 kHz in Region 2) to 4 000 kHz**	
1 *Fixed stations:*	
– with power lower or equal to 200 W	100 [7, 8]
– with power higher than 200 W	50 [7, 8]
2 *Terrestrial stations:*	
– with power lower or equal to 200 W	100 [1, 2, 7, 9, 10]
– with power higher than 200 W	50 [1, 2, 7, 9, 10]

Frequency bands (excluding the lower limit, including the upper limit) and station categories	Tolerances applicable to the transmitters
Band: **1 606.5 kHz (1 605 kHz in Region 2) to 4 000 kHz***(cont.)*	
3 *Mobile stations:*	
a) Stations in vessels	40 Hz [3, 4, 12]
b) Stations in survival vessels	100
c) Radiobeacons for accident location	100
d) Stations in aircraft	100 [10]
e) Terrestrial mobile stations	50 [13]
4 *Radiodetermination stations:*	
– with power lower or equal to 200 W	20 [14]
– with power higher than 200 W	10 [14]
5 *Broadcast stations*	10 Hz [15]
Band: **4 MHz to 29.7 MHz**	
1 *Fixed stations:*	
a) Emissions on a single lateral band and independent lateral band:	50 Hz
– with power lower or equal to 500 W	20 Hz
– with power higher than 500 W	10 Hz
b) Emissions of class F1B	
c) Other classes of emission:	20
– with power lower or equal to 500 W	10
– with power higher than 500 W	
2 *Terrestrial stations:*	
a) Coastal stations	20 Hz [1, 2, 16]
b) Aeronautical stations:	
– with power lower or equal to 500 W	100 [10]
– with power higher than 500 W	50 [10]
5 Base stations	20 [7]
3 *Mobile stations:*	
a) Stations in vessels:	
1) Emissions of class A1A	10
2) Emissions of class other than A1A	50 Hz [3, 4, 19]
b) Stations in survival vessels	50
c) Stations in aircraft	100 [10]
d) Terrestrial mobile stations	40 [20]
4 *Broadcast stations*	10 Hz [15, 21]
5 *Space stations*	20
6 *Earth stations*	20

Frequency bands (excluding the lower limit, including the upper limit) and station categories	**Tolerances applicable to the transmitters**
Band: **29.7 MHz to 100 MHz**	
1 *Fixed stations:*	
– with power lower or equal to 50 W	30
– with power higher than 50 W	20
2 *Terrestrial stations*	20
3 *Mobile stations*	20 [22]
4 *Radiodetermination stations*	50
5 *Broadcast stations (other than television)*	2 000 Hz [23]
6 *Broadcast stations (television, audio and video)*	500 Hz [24, 25]
7 *Space stations*	20
8 *Earth stations*	20
Band: **100 MHz to 470 MHz**	
1 *Fixed stations:*	
– with power lower or equal to 50 W	20 [26]
– with power higher than 50 W	10
2 *Terrestrial stations:*	
a) Coastal stations	10
b) Aeronautical stations	20 [28]
5 Base stations:	
– in the band 100-235 MHz	15 [29]
– in the band 235-401 MHz	7 [29]
– in the band 401-470 MHz	5 [29]
3 *Mobile stations:*	
a) Stations in vessels and stations in survival vessels	10
– in the band 156-174 MHz	50 [31]
– outside band 156-174 MHz	
b) Stations in aircraft	30 [28]
c) Terrestrial mobile stations:	
– in the band 100-235 MHz	15 [29]
– in the band 235-401 MHz	7 [29, 32]
– in the band 401-470 MHz	5 [29, 32]
4 *Radiodetermination stations*	50 [33]
5 *Broadcast stations (other than television)*	2 000 Hz [23]
6 *Broadcast stations (television, audio and video)*	500 Hz [24, 25]
7 *Space stations*	20
8 *Earth stations*	20

Frequency bands (excluding the lower limit, including the upper limit) and station categories	**Tolerances applicable to the transmitters**
Band: **470 MHz to 2 450 MHz**	
1 *Fixed stations:*	
– with power lower or equal to 100 W	100
– with power higher than 100 W	50
2 *Terrestrial stations*	20 [36]
3 *Mobile stations*	20 [36]
4 *Radiodetermination stations*	500 [33]
5 *Broadcast stations (other than television)*	100
6 *Broadcast stations (television, audio and video)* in the band 470 MHz to 960 MHz	500 Hz [24, 25]
7 *Space stations*	20
8 *Earth stations*	20
Band: **2 450 MHz to 10 500 MHz**	
1 *Fixed stations:*	
– with power lower or equal to 100 W	200
– with power higher than 100 W	50
2 *Terrestrial stations*	100
3 *Mobile stations:*	100
4 *Radiodetermination stations*	1 250 [33]
5 *Space stations*	50
6 *Earth stations*	50
Band: **10.5 GHz to 40 GHz**	
1 *Fixed stations*	300
2 *Radiodetermination stations*	5 000 [33]
3 *Broadcast stations*	100
4 *Space stations*	100
5 *Earth stations*	100

Notes regarding the table of frequency tolerance of transmitters

[1] For transmitters in coastal stations used for telegraphy with direct printing or for data transfer, the tolerance is:
- 5 Hz for the manipulation by phase variation in narrow band;
- 15 Hz for manipulation by frequency variation for the transmitters in usage or installed before January 2nd, 1992;
- 10 Hz for manipulation by frequency variation for the transmitters installed after January 1st, 1992;

[2] For transmitters in coastal stations used for selective digital call, the tolerance is 10 Hz. (WRC

[3] For transmitters in vessel stations used for telegraphy with direct printing or for data transfer, the tolerance is:
- 5 Hz for the manipulation by phase variation in narrow band;
- 40 Hz for manipulation by frequency variation for the transmitters in usage or installed before January 2nd, 1992;
- 10 Hz for manipulation by frequency variation for the transmitters installed after January 1st, 1992;

[4] For transmitters in vessel stations used for selective digital call, the tolerance is 10 Hz. (WRC

[5] If the emergency transmitter is used as a backup transmitter in order to replace the main transmitter, in case it is needed, the tolerance for vessel stations applies.

[6] (SUP - WRC-03)

[7] For radiotelephony transmitters in single lateral band, except those in coastal stations, the tolerance is:
- 50 Hz in the bands 1 606.5 (1 605 in Region 2)-4 000 kHz and 4-29.7 MHz for peak power lower or equal to 200 W and 500 W , respectively;
- 20 Hz in the bands 1 606.5 (1 605 in Region 2)-4 000 kHz and 4-29.7 MHz for peak power higher than 200 W and 500 W, respectively;

[8] For radiotelegraphy transmitters with manipulation by frequency manipulation, the tolerance is 10 Hz.

[9] For transmitters in radiotelephony coastal stations in single lateral band, the tolerance is 20 Hz.

[10] For transmitters in single band working in the frequency bands 1 606.5 (1 605 Region 2)-4 000 kHz and 4

a) for all aeronautical stations, 10 Hz;

b) for all stations in aircraft that operate in international services, 20 Hz;

c) for all stations in aircraft that operate exclusively in national services, 50 Hz[*].

[11] Not being used.

[12] For emissions in class A1A, tolerance is 50×10^{-6}.

[13] For transmitters used for radiotelephony in single lateral band or radiotelegraphy transmitters with manipulation by frequency manipulation, the tolerance is 40 Hz.

[14] For radiobeacon transmitters in the band 1606.5 (1 605 in Region 2)-1 800 kHz, tolerance is 50×10^{-6}.

[*] NOTE – In order to reach the maximum intelligibility, it is suggested to administrations that encourage the reduction of this tolerance to 20 Hz.

[15] For emissions of class A3E with a carrier power lower or equal to 10 kW, tolerance is 20 x 10^{-6}, 15 x 10^{-6} and 10 x 10^{-6} in the bands 1 606.5 (1 605 in Region 2)-4 000 kHz, 4-5.95 MHz and 5.95-29.7 MHz respectively.

[16] For emissions in class A1A, tolerance is 10 x 10^{-6}.

[17] Not being used.

[18] Not being used.

[19] For transmitters on vessel stations in the band 26 175-27 500 kHz, installed on board small vessels with carrier power lower or equal to 5 W, operating in coastal waters or surroundings and using emissions of class F3E and G3E, the frequency tolerance is 40 x 10^{-6}. (WRC

[20] For radiotelephony transmitters in single lateral band, tolerance is 50 Hz, except for transmitters operating in the band 26 175-27 500 kHz and that do not exceed a peak power of 15 W, for which a basic tolerance of 40 x 10^{-6} applies.

[21] It is suggested that administrations avoid differences in carrier frequency of few hertz, which cause degradations similar to fadings. This can be avoided if the frequency tolerance is 0.1 Hz, a tolerance that would be adequate for emissions in single lateral band*.

[22] For portable equipment not installed in vehicles with an average power not higher than 5 W, the tolerance is 40 x 10^{-6}.

[23] For transmitters with an average power lower or equal to 50 W, operating in frequencies lower than 108 MHz, a tolerance of 3 000 Hz applies.

[24] In the case of television stations:

- with an image peak power lower of equal to 50 W, in the band 29.7-100 MHz;
- with an image peak power lower of equal to 100 W, in the band 100-960 MHz;

and that receive their emissions from other television stations, or that serve small isolated communities, it may not be possible to keep this tolerance for operational reasons. For these stations, the tolerance is 2 000 Hz.

For stations with an image peak power lower or equal to 1 W, this tolerance can be additionally lowered to:
- 5 kHz in the band 100-470 MHz;
- 10 kHz in the band 470-960 MHz.

[25] For transmitters that use the M (NTSC) system, the tolerance is 1 000 Hz. However, for low power transmitters that use this system, a Note 24 applies .

[26] For microwave link systems with multiple hopping that use direct frequency conversion, the tolerance is 30 x 10^{-6}.

[27] Not being used.

[28] For 50 kHz channel spacing, the tolerance is 50 x 10^{-6}.

[29] These tolerances apply to spacings between channel equal or higher than 20 kHz.

* NOTE – The single lateral band system adopted for the bands allocated exclusively to the broadcast service in short wave does not require a frequency tolerance under 10 Hz. The degradation mentioned above occurs when the relation of useful signal/interfering signal is clearly inferior to the required protection relation. This observation is valid for emissions in double lateral band and in single lateral band.

[30] Not being used.

[31] For transmitters used by on-board communications stations, a tolerance of 5×10^{-6} applies.

[32] For portable equipment not installed in vehicles with an average power not higher than 5 W, the tolerance is 15×10^{-6}.

[33] If specific frequencies are not allocated to radar stations, the bandwidth occupied by those stations will be kept completely inside the service band allocated to the service and the stated tolerance does not apply.

[34] Not being used.

[35] Not being used.

[36] By recommending this tolerance, the administrations must take into account the most recent Recommendations from ITU-R.

7.3 Acronyms

AES - Aircraft Earth Stations

AIS - Automatic Identification System

AM - Amateur Service

AMS - Satellite Amateur Service

BMA - Building Material Analysis

BWA - Broadband Wireless Access

CB - Citizen Band

CDMA - Code Division Multiple Access

CEPT - Conference of European Postal and Telecommunications Administrations

COSPAS - "COsmicheskaya Sistyema Poiska Avariynich Sudov", Space System for the Search of Vessels in Distress

CT0 - Cordless Phones

DAA **-** Detect And Avoid

DEC - Decision

DCS 1800 - Digital Cellular Telecommunications Systems in the 1800 MHz band

DECCA - LF Hyperbolic Radionavigation System

DECT - Digital Enhanced Cordless Telecommunications

DME - Aeronautical radionavigation system in ultra-high frequency (UHF Distance Measuring Equipment)

DMO - Direct Mode Operation

DSC - Digital Selective Call

DVB-T - Terrestrial Digital Video Broadcasting system

ECA - European Common Allocation table

ECC - Electronic Communications Committee

ENG - Electronic News Gathering

ENG/OB - Electronic News Gathering / Outside Broadcasting

ERC European Radiocommunications Committee

ERO European Radiocommunications Office

ESP - Special Service

ESV - Earth Stations on Vessels

EUTELSAT EUropean TELecommunications SATellite Organisation

EUTELTRACS - EUTELsat Transport RAnging and Communication Services

EXP-S - Earth Exploration Satellite service

FIX - Fixed Service

FIX-S - Fixed Satellite Service

FPH - Standard frequency and time signal service

FPH-S - Satellite standard frequency and time signal service

FWA - Fixed Wireless Access

GE-75 - Regional Administrative Conference of broadcasting in low and medium frequency (Region 1 and 3) - Geneva, 1975

GE-84 - Regional Administrative Conference for the planning of broadcast in very high frequency (Region 1 and part of Region 3) - Geneva, 1984

GE-85 - (Radiobeacons) Regional Administrative Conference for the planning of maritime radionavigation service (radiobeacons) in the European maritime zone - Geneva, 1985

GE-85 - Regional Administrative Conference for the planning of mobile maritime and aeronautical radionavigation services in medium frequency (Region 1) - Geneva, 1985

GMDSS - Global Maritime Distress and Safety System

GMPCS - Global Mobile Personal Communications by Satellite

GPR/WPR - Ground- and Wall- Probing Radar

GPS - Global Positioning System

GSM - Global System for Mobile Communications

GSO - Geostationary Satellite Orbit

HAPS - High Altitude Platform Stations

HDFSS - High Density Fixed-Satellite Service

HDTV - High Definition TeleVision

HIPERLAN - HIgh PErformance Radio Local Area Networks

HRPT - High Resolution Picture Transmission

ICAO - International Civil Aviation Organisation

ILS - Instrument Landing System

IMT-2000 - International Mobile Telecommunications - 2000

INMARSAT - INternational MARitime SATellite Organisation

INTELSAT - INternational TELecommunication SATellite Organisation

INT-S - Intersatellite Service

INVES - Space Investigation service

ISM - Industrial, Scientific and Medical applications

ITS - Intelligent Transport Systems

LBT - Listen Before Talk

LDC - Low Duty Cycle

LORAN-C - LOng RAnge Navigation system

LRPT - Low Resolution Picture Transmission

MA - Aeronautical Mobile Service

MA-S - Aeronautical Satellite Mobile Service

MAO-S - Satellite Aeronautical Mobile Service outside routes

MCA - Mobile Communications on Aircraft

METAX - Meteorology Ancillary Service

MLS - Microwave Landing System

MM - Maritime Mobile Service

MM-S - Maritime Satellite Mobile Service

MMDS - Multipoint Microwave Distribution System

MOV - Mobile Service

MSI - Maritime Security Information

MT - Terrestrial Mobile Service

MT-S - Terrestrial Satellite Mobile Service

MVDS - Multipoint Video Distribution System

MV-S - Mobile Satellite Service

MWS - Multimedia Wireless Systems

NAVTEX - International telegraphy system for urgent navigation and meteorology warnings to vessels (International NAVTEX System)

NBDP - Telegraphy by direct printing in narrow band

NDB - Non-Directional radio Beacon

NGSO - Non-Geostationary Satellite Orbit

OE - Special Operations

OMEGA - VLF Hyperbolic Radionavigation System

ONS - Vessel Movement Service

OP - Special Operations

PAMR - Public Access Mobile Radio

A.R.P. - Apparent Radiated Power

E.I.R.P. - Equivalent Isotropic Radiated Power

PMP - Point-to-MultiPoint

PMR - Professional Mobile Radio, Private Mobile Radio

RAD - Broadcast Service

RAD-S - Broadcast Amateur Satellite Service

RAST - Radioastronomy Service

RAV - Aeronautical Radionavigation Service

RAV-S - Aeronautical Radionavigation Satellite Service

RDT - Radiodetermination Service

RDT-S - Satellite Radiodetermination Service

RDTV - Analogical Television Broadcast Service

RFID - Radio Frequency IDentification devices

RLAN - Radio Local Area Network

RLC - Radiolocation Service

RLC-S - Radiolocation Satellite Service

RNSS - RadioNavigation Satellite Service

RTI - Road Transport Information Systems

RTTT - Road Transport Telematic systems

RV - Radionavigation Service

RVA - Aeronautical Radionavigation Service

RVA-S - Aeronautical Radionavigation Satellite Service

RVM - Maritime Radionavigation Service

RVM-S - Maritime Radionavigation Satellite Service

SAP/SAB - Services Ancillary to Programming / Services Ancillary to Broadcasting

SARSAT - Search And Rescue Satellite-Aided Tracking

SCP - Public National Radio Paging

SCPP - Private Radio Paging

S-DAB - Satellite - Digital Audio Broadcasting

SEG - Security Service

SIRESP - Integrated System of the Emergency and Security Networks in Portugal

SIT - Satellite Interactive Terminal

SMM - Maritime Mobile Networks

SMRP - National Trunking Mobile System

SMT - Private Mobile Radio

SNG - Satellite News Gathering

SRD - Short Range Device

SRR - Short Range Radar

SSR - Radionavigation system: Secondary Surveillance Radar

ST-61 - European Conference for broadcasting in Very High Frequency and Ultra-High Frequency - Stockholm, 1961

STL - Studio Transmitter Links

SUT - Satellite User Terminal

TACAN - TACtical Air Navigation System

TCR - Tracking, Control and Ranging

T-DAB - Terrestrial Digital Audio Broadcasting

TETRA - TErrestrial Trunked RAdio

TFTS - Terrestrial Flight Telephone System

TRANSIT - Radionavigation-Satellite System

TRP - Total Radiated Power

UIT - International Telecommunication Union

UIT-R - International Telecommunication Union - Radiocommunication Sector

UMTS - Universal Mobile Telecommunications System

UWB - *Ultra Wideband*

VOR - VHF Omnidireccional Radio range

VSAT - Very Small Aperture Terminal

WARC-92 - World Administrative Conference of Radiocommunications for the study of frequency allocations in certain parts of the spectrum - Torremolinos, 1992

WAS/RLAN - Wireless Access Systems/ Radio Local Area Network

WLAN - Wireless Local Area Network

WRC-95 - World Radiocommunications Conference - Geneva, 1995

WRC-97 - World Radiocommunications Conference - Geneva, 1997

WRC-2000 - World Radiocommunications Conference - Istanbul, 2000

WRC-2003 - World Radiocommunications Conference - Geneva, 2003

WBDTS - Wide Band Data Transmission System

7.4 Relevant Documents from CEPT, ITU and EU

CEPT Documents

CEPT/ECC Decisions

ECC/DEC/(08)01 - Decision on the harmonized usage of the frequency band 5875-5925 MHz for *Intelligent Transport Systems* (ITS).

ECC/DEC/(07)02 - Decision on the availability of frequencies in the band 3400 – 3800 MHz for the harmonized implementation of BWA systems.

ECC/DEC/(07)01 - Decision on BMA ultra wide band equipments that use ultra wide band (UWB) technology.

ECC/DEC/(06)12 - Decision on the harmonized conditions for equipments that use ultra wide band (UWB) technology with the LDC mitigation technique in the frequency bands 3.4-4.8 GHz.

ECC/DEC/(06)09 - Designation of bands 1980-2010 MHz and 2170-2200 MHz for usage of systems in the satellite mobile service including Complementary Ground Component (CGC).

ECC/DEC/(06)08 - Decision on the conditions of usage of the radio spectrum by GPR/WPR ultra wide band viewing systems.

ECC/DEC/(06)07 - Harmonization of GSM systems on board aircraft in the frequency bands 1710-1785 and 1805-1880 MHz.

ECC/DEC/(08)08 - Harmonization of GSM systems on board vessels in the frequency bands 880-915/925-960 MHz and 1710-1785 and 1805-1880 MHz.

ECC/DEC/(06)06 - Decision on the availability of frequency bands for the introduction of Digital Terrestrial Mobile Systems of Narrow Band PMR/PAMR in the bands 80 MHz, 160 MHz and 400 MHz.

ECC/DEC/(06)05 - Decision on the harmonized frequency bands to be designated for the Air-Ground-Air (AGA) operation of digital terrestrial mobile systems for the emergency services.

ECC/DEC/(06)04 - Decision on the harmonized conditions for equipments that use ultra wide band (UWB) technology in bands below 10.6 GHz.

ECC/DEC/(06)03 - Exemption of licensing of individual LEST terminals (low e.i.r.p. satellite terminals) operating in the frequency bands 10.70-12.75 GHz or 19.70-20.20 GHz (space-Earth) and 14.00-14.25 GHz or 29.50-30.00 GHz (space-Earth)

ECC/DEC/(06)02 - Exemption of licensing of individual HEST terminals (high e.i.r.p. satellite terminals) operating in the frequency bands 10.70-12.75 GHz or 19.70-20.20 GHz (space-Earth) and 14.00-14.25 GHz or 29.50-30.00 GHz (space-Earth).

ECC/DEC/(06)01 - Decision on the harmonized usage of spectrum for terrestrial systems IMT-2000/UMTS operating in bands 1900-1980 MHz, 2010-2025 MHz and 2110-2170 MHz.

ECC/DEC/(05)12 - Decision on the harmonization of frequencies, technical characteristics, exemption if individual license and use of digital applications PMR446, operating in the frequency band 446.1-446.2 MHz.

ECC/DEC/(05)11 - Decision on the free circulation and use of earth stations on board aircraft (AES) operating in the frequency bands 14.0-14.5 GHz (Earth-space), 10.7-11.7 GHz (space-Earth) and 12.5-12.75 GHz (space-Earth).

ECC/DEC/(05)08 - Decision on the availability of frequency bands for HDFSS applications (space-Earth and Earth-space)

ECC/DEC/(05)05 - Harmonization of spectrum usage for IMT-2000/UTMS in the frequency bands 2500-2690 MHz.

ECC/DEC/(05)01 - Decision on the usage of the band 27.5-29.5 GHz by the Fixed Service and earth stations not coordinated by the Satellite Fixed Service (Earth-space)

ECC/DEC/(04)10 - Decision on the temporary introduction of SRR in the band 24 GHz.

ECC/DEC/(04)09 - Decision on the designation of bands 1518 - 1525 MHz and 1670 - 1675 MHz for the Satellite Mobile Service.

ECC/DEC/(04)08 - Decision on harmonized frequency bands for wireless access systems including RLANs.

ECC/DEC/(04)06 - Decision on the introduction of digital terrestrial mobile broadband PMR/PAMR in the bands of 400 MHz and 800/900 MHz.

ECC/DEC/(04)03 - Decision on SRR in band 77-81 GHz.

ECC/DEC/(03)02 - Designation of band 1479.5-1492 MHz for usage of S-DAB systems.

ECC/DEC/(02)07 - Harmonized usage of band 1670-1675/1800-1805 MHz and elimination of Decision ERC (92)01 of TFTS.

ECC/DEC/(02)06 - UMTS/IMT2000 in frequency band 2500-2690 MHz.

ECC/DEC/(02)05 - Designation and provision of frequencies for railway applications in the 876-880 MHz and 921-925 MHz band.

ECC/DEC/(02)04 - Terrestrial systems (fixed/broadcast system) and earth stations not coordinated of the satellite fixed system and satellite broadcast system (space-Earth) in the frequency band 40.5-42.5 GHz.

ECC/DEC/(02)01 - Coordinated introduction of road transportation telematic systems (RTTT).

CEPT/ERC Decisions

ERC/DEC/(01)19 - DMO frequencies for emergency services.

ERC/DEC/(01)17 - SRDs for medical implants in the frequency band 402-405 MHz.

ERC/DEC/(01)16 - SRDs for inductive applications in 26.957-27.283 MHz.

ERC/DEC/(01)12 - SRDs for model control in the frequencies 40.665 MHz, 40.675 MHz, 40.685 MHz and 40.695 MHz.

ERC/DEC/(01)11 - SRDs for model aircraft in the frequency band 34.995-35.225 MHz.

ERC/DEC/(01)10 - SRDs for model control in the frequencies 29.995 MHz, 27.045 MHz, 27.095 MHz, 27.145 MHz and 27.195 MHz.

ERC/DEC/(01)08 - SRDs for movement detection and alert in the frequency band 2400-2483.5 MHz.

ERC/DEC/(01)07 - SRDs for WLANs in the frequency band 2400-2483.5 MHz.

ERC/DEC/(01)03 - Non-specific SRDs in the frequency band 40.660-40.700 MHz.

ERC/DEC/(01)02 - Non-specific SRDs in the frequency band 26.957-27.283 MHz.

ERC/DEC/(00)02 - Frequency band 37.5-40.5 GHz for the fixed service and fixed satellite service.

ERC/DEC/(99)15 - Decision on the harmonized frequency band 40.5-43.5 GHz for the introduction of multimedia wireless systems (MWS) and point-to-point connections of wireless fixed systems.

ERC/DEC/(98)25 - Decision on the harmonized frequency band to be reserved for PMR 446.

ERC/DEC/(97)03 - Decision on the harmonized usage of spectrum for satellite personal communications systems (S-PCS) in bands 1610-1626.5 MHz, 2483.5-2500 MHz, 1908-2010 MHz and 2170-2200 MHz..

ERC/DEC/(97)02 - Decision on extension frequency bands for the pan-European digital GSM communications system.

ERC/DEC/(95)03 - Decision on frequency bands to be reserved for the introduction of DCS 1800 system.

ERC/DEC/(94)03 - Decision on frequency bands to be reserved for the coordinated introduction of the European wireless digital telecommunications system (DECT).

ERC/DEC/(94)01 - Decision on frequency bands to be reserved for the coordinated introduction of the pan-European public cellular digital terrestrial mobile communications system (GSM).

CEPT/ECC Recommendations

ECC/REC/(09)01 - Plan for frequencies of fixed service systems in the band 57-64 GHz.

ECC/REC/(06)04 - Usage of frequency band 5725-5875 MHz for *Broadband Fixed Wireless Access* (BFWA).

ECC/REC/(05)08 - Plan for frequencies and frequency coordination for terrestrial mobile systems GSM 900, GSM 1800, E-GSM and GSM-R (except DMO, *direct mode operation* channels).

ECC/REC/(05)07 - Plan for frequencies of fixed service systems in the band 71-76 GHz and 81-86 GHz.

ECC/REC/(05)06 - *CEPT Novice* license for amateur.

ECC/REC/(05)02 - Plan for frequencies of fixed service systems in the band 64-66 GHz.

ECC/REC/(02)06 - Plan for frequencies of digital systems in the fixed service in the band 7125-8500 MHz.

ECC/REC/(02)02 - Plan for harmonized frequencies of fixed service systems in the band 31-31.3 GHz.

ECC/REC/(01)04- Harmonized frequency band 40.5-43.5 GHz for the accommodation of multimedia wireless systems (MWS) and point-to-point connections of wireless fixed systems.

CEPT/ERC Recommendations

ERC/REC/(01)02- Plan for frequencies of fixed service digital systems in the band 31.8-33.4 MHz.

ERC/REC 70-03 - Short Range Devices (SRD).

ERC/REC 25-10 - Frequencies for ENG/OB video connections.

ERC/REC 14-03 - Plan for harmonized frequencies and allocation of blocks to small and medium capacity systems in the band 3400-3600 MHz.

ERC/REC 14-02 - Plan for frequencies for analogical systems with medium and high capacity and for high capacity digital systems in the band 6425-7125 MHz.

ERC/REC 14-01 - Plan for frequencies for analogical and digital systems with high capacity in the band 5925-6425 MHz.

ERC/REC 13-03 - Band 14.0–14,5 GHz for VSAT and SNG.

ERC/REC 12-12 - Plan for frequencies of fixed service systems in the band 55.78-57 GHz.

ERC/REC 12-11 - Plan for frequencies of fixed service systems in the band 51.4-52.6 GHz.

ERC/REC 12-10 - Plan for harmonized frequencies of fixed service digital systems in the band 48.5-50.2 GHz.

ERC/REC 12-08 - Plan for harmonized frequencies and allocation of blocks to small, medium and high capacity systems in the band 3600-4200 MHz.

ERC/REC 12-07 - Plan for harmonized frequencies of terrestrial digital fixed service systems in the band 15.23-15.35 GHz.

ERC/REC 12-06 - Plan for harmonized frequencies of terrestrial digital fixed service systems in the band 10.7-11.7 GHz.

ERC/REC 12-03 - Plan for harmonized frequencies of terrestrial digital fixed service systems in the band 17.7-19.7 GHz.

ERC/REC 12-02 - Plan for harmonized frequencies of terrestrial analogical and digital fixed service systems in the band 12.75-13.25 GHz.

CEPT Rec. T/R 61-02 - Harmonized certificate for amateur (HAREC).

CEPT Rec. T/R 61-01 - CEPT license for amateur.

CEPT Rec. T/R 32-02 - Frequencies for usage of stations on board vessels.

CEPT Rec. T/R 22-06 - Harmonized frequency bands for HIPERLANS in bands 5 GHz and 17 GHz.

CEPT Rec. T/R 22-02 - Frequencies for DECT systems.

CEPT Rec. T/R 20-09 - PR27 equipments for voice availability in the frequency band 27 MHz.

CEPT Rec. T/R 13-02 - Plan for frequencies of fixed service systems in the frequency band 22-29.5 GHz.

CEPT Rec. T/R 13-01 - Plan for frequencies of fixed service systems in the frequency band 1-3 GHz.

CEPT Rec. T/R 12-01 - Plan for harmonized frequencies of terrestrial analogical and digital fixed service systems in the band 37-39.5 GHz.

EU Documents

Decisions

2011/251/EU - Execution Decision from the Commission, April 18th, 2011, which amends Decision 2009/766/EC regarding the harmonization of frequency bands 900 MHz and 1 800 MHz for terrestrial systems capable of providing pan-European electronic communications services in the Community.

2010/368/EU - Decision of the Commission, June 30th, 2010, which amends Decision 2006/771/EC regarding "the harmonization of the radio frequency spectrum for its usage by short range equipments".

2010/267/EU - Decision of the Commission, May 6th, 2010, on harmonised technical conditions of use in the 790-862 MHz frequency band for terrestrial systems capable of providing electronic communications services in the European Union.

2010/166/EC - Decision of the Commission, March 19th, 2010, regarding the harmonization of technical conditions for usage of frequency band 790-862 MHz by terrestrial systems capable of supplying electronic communications services in the European Union.

2009/766/EC - Execution Decision from the Commission, October 16th, 2009, regarding the harmonization of frequency bands 900 MHz and 1 800 MHz for terrestrial systems capable of providing pan-European electronic communications services in the Community.

2009/449/EC - Decision of the Commission, May 13th, regarding the selection of pan-European systems operators that allow the offer of satellite mobile communications services (MSS).

2009/381/EC - Decision of the Commission, May 13th, 2010, which amends Decision 2006/771/EC regarding "the harmonization of the radio frequency spectrum for its usage by short range equipments".

2009/343/EC - Decision of the Commission, April 21st, 2009, which amends Decision 2007/131/EC regarding the usage in harmonized conditions of the radio frequency spectrum for equipments that use ultra wide band technology in the Community.

2008/673/EC - Decision of the Commission, August 13th, 2009, which amends Decision 2005/928/EC regarding the harmonization of frequency bands 169.4-169.8125 MHz (Ex-ermes) in the Community.

2008/671/EC - Decision of the Commission, August 5th, 2008, regarding the harmonized usage of radio spectrum in the frequency bands 5875 - 5905 MHz for applications regarding security in the Intelligent Transport Systems domain (ITS).

2008/626/EC - Decision of the Commission, June 30th 2008, regarding the selection and authorization of systems that provide satellite mobile communications services (MSS).

2008/477/EC - Decision of the Commission, June 13th, 2008, regarding the harmonization of frequency bands 2500-2690 MHz for terrestrial systems capable of providing electronic communications services in the Community.

2008/432/EC -Decision of the Commission, May 23th, 2008, which amends Decision of the Commission 2006/771/EC regarding the harmonization of the radio frequency spectrum for its usage by short range equipments".

2008/411/EC - Decision of the Commission, May 21st, 2008, regarding the harmonization of frequency bands 3400-3800 MHz for terrestrial systems capable of providing electronic communications services in the Community.

2008/294/EC - Decision of the Commission, April 7th, 2008, regarding the harmonized conditions for usage of spectrum for operation of mobile communications services in aircraft (MCA services) in the Community.

2007/344/EC - Decision of the Commission, May 16th, 2007, regarding the harmonized availability of information about the usage of spectrum in the Community.

2007/131/EC - Decision of the Commission, February 21st, 2007, regarding the usage in harmonized conditions of the radio frequency spectrum for equipments that use ultra wide band technology in the Community.

2007/98/EC - Decision of the Commission, February 14th, 2007, regarding the harmonized usage of the radio spectrum in the frequency band 2 GHz for the implementation of MSS systems.

2007/90/EC - Decision of the Commission, February 12th, 2007, which amends the Decision of the Commission 2005/513/EC regarding the harmonized usage of the radio spectrum in the frequency band 5 GHz for the implementation of wireless access systems, including radio local networks (WAS/RLANs).

2006/804/EC - Decision of the Commission, November 23rd, 2006, regarding the spectrum harmonization for Radio Frequency Identification devices (RFID), which operate in the ultra-high frequency bands (UHF).

2006/771/EC - Decision of the Commission, November 9th, 2006, regarding the harmonization of the radio frequency spectrum for its usage by short range equipments.

2005/928/EC - Decision of the Commission, December 20th, 2005, regarding the harmonization of frequency bands 169.4-169.8125 MHz in the Community.

2005/513/EC - Decision of the Commission, July 11th, 2005, regarding the harmonized usage of the radio spectrum in the frequency band 5 GHz for the implementation of wireless access systems, including radio local networks (WAS/RLANs).

2005/50/EC - Decision of the Commission, January 17th, 2005, regarding the harmonization of frequency bands 24 GHz for temporary usage by short range radar equipments for cars in the Community.

2004/545/EC - Decision of the Commission, July 8th, 2005, regarding the harmonization of frequency bands 79 GHz for temporary usage by short range radar equipments for cars in the Community.

Directives

2009/114/EC - Directive from the European Parliament and Council, September 16th, 2009, which amends Directive 87/372/EEC of the Council about frequency bands to be allocated for the coordinated introduction of pan-European public cellular digital terrestrial mobile communications in the Community.

87/372/CEE - Directive from the Council regarding frequency bands to be allocated for the coordinated introduction of pan-European public cellular digital terrestrial mobile communications in the Community.

Recommendations

2010/167/EU - Recommendation of the Commission, March 19th, 2010, regarding the authorization of systems for the mobile communications systems on board vessels (MCV systems).

ITU Documents

Recommendations

Rec. UIT-R F0.385 - Plan for frequencies of fixed service systems in the band 7 GHz.

Rec. UIT-R F0.386 - Plan for frequencies for analogical and digital systems with medium and high capacity in the band 8 GHz.

Rec. UIT-R F.497 - Plan for frequencies of fixed service systems in the band 13 GHz.

Rec. UIT-R F0.595 - Plan for frequencies of fixed service systems in the band 18 GHz.

Rec. UIT-R F0.1110 - Adaptive systems for frequencies lower than 30 MHz.

7.5 Figures

a) Inductive applications

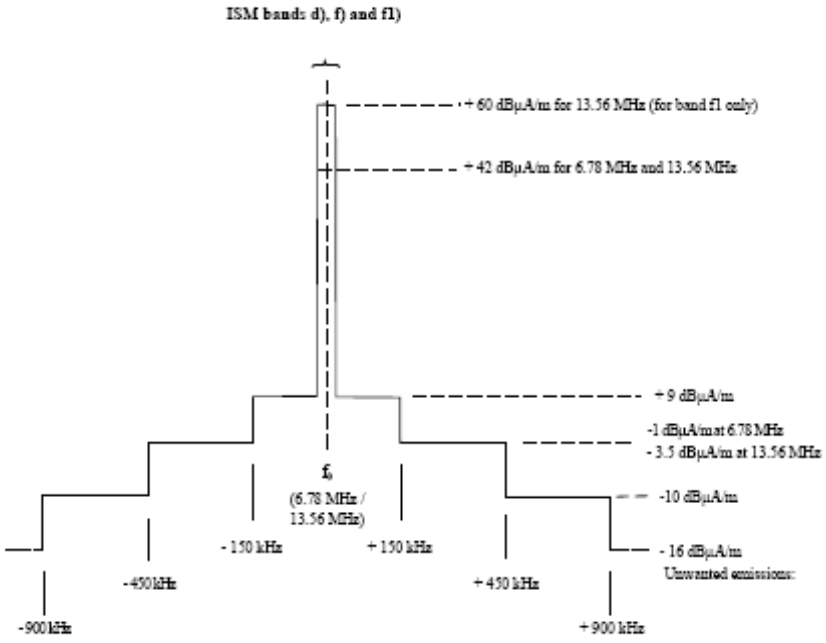

Figure 1 - Field intensity limits at 10 meters for frequency bands 6.765 - 6.795 MHz and 13.553 - 13.567 MHz

b) GMPCS mobile earth stations

Figure 2 - Marking on the GMPCS stations