Office of the Director of Telecommunications Regulation

Table of Frequency Allocations, Ireland

April 2001

Office of the Director of
Telecommunications
Regulation

Contents

Foreword

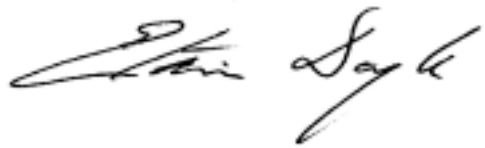
In the three years since the first publication of the Table of Frequency Allocations the telecommunication industry has moved ahead at a tremendous pace. This pace of development is mirrored in the number of changes introduced at the World Radiocommunication Conference held in 2000 (WRC-2000) and the requirement to add thirty new CEPT European Radiocommunication Committee Decisions to this edition.

This publication is part of the ODTR programme to extend and update information being made available to the public and is aimed at current users, potential users and investors in telecommunication services in Ireland. It outlines the types of radiocommunication services permitted in each frequency band together with some notes on future developments. It takes into account international, regional and bilateral agreements on radio spectrum entered into up to the end of January 2001.

The pattern of radio use is not static. It is continuously evolving to reflect the many changes that are taking place in the radio environment; particularly in the field of technology. Spectrum allocations must reflect these changes and the position set out in this publication is therefore subject to continuous review. In view of this, it is the intention that new editions of the Table will be issued regularly, taking account of the introduction of new services and the phasing out of older services.

The spectrum is a finite resource and as the pressure on it constantly grows, its management becomes more complex. The ODTR is mandated to ensure that spectrum is used in the best possible way so as to make spectrum available for new services as well as existing ones. This is accomplished through reviews of spectrum use and implementing a clear strategy for the future use of the radio spectrum to provide the essential support required for ongoing economic and social development in Ireland.

We once again will gratefully receive any comments and ideas you may have which will assist us in making future editions more useful. We have included a comment form at the back, which may be convenient.



Etain Doyle
Director of Telecommunications Regulation

Introduction

The Table lists the allocations in the radio frequency spectrum for Ireland. The structure of the Table, which is outlined below, is similar to that of the International Table of Frequency Allocations as appears in the Radio Regulations of the International Telecommunications Union (ITU) (Edition of 1998, as updated by the World Radiocommunications Conference held in 2000 (WRC-2000)). It covers the frequency range 9 kilohertz (kHz) to 1000 Gigahertz (GHz). It lists for each frequency range the types of radiocommunications services that are permitted and which ones are currently in use in Ireland. Information is also given on possible future uses or changes in use of particular frequency bands.

References are given to documentation of the International Telecommunications Union (ITU), European Union (EU), The European Conference of Postal and Telecommunications Administrations (CEPT), the European Technical Standards Institute (ETSI) and the National Standards Association of Ireland (NSAI) where appropriate. Such documentation is available to the public from these organisations.

The Table of Frequency Allocations will be updated regularly. The allocations are not static and will change in time as new radio systems are introduced and old ones phased out. Changes will also be made to reflect agreements reached on spectrum utilisation at international level, e.g. at World Radiocommunication Conferences (WRCs) of the ITU or within CEPT, or as a consequence of national decisions made to meet our specific national requirements.

Reference should also be made to ERC Report 025 on the frequency band 29.7 MHz to 105 GHz and associated European table of frequency allocations and utilisations. This report is a useful tool when considering and planning harmonisation within the context of the European frequency spectrum. A copy of this report is available on the ERO website (see Annex 5 for contact details).

Structure of the Table

Frequency Band	**ITU Allocations (Applicable to Ireland)**	**National Usage**	**Notes/Future Developments**
Column 1 Denotes the frequency band. Units used: kilohertz (kHz), Megahertz (MHz), Gigahertz (GHz)	**Column 2** Indicates the type of service allocated to the band, e.g. (FIXED, Mobile).The services are defined in the ITU International Radio Regulations. Note: Entries in UPPER CASE denote primary services. Entries in lower case denote secondary services (as defined in the Radio Regulations). The footnotes (e.g. S5.314) are the footnotes to the Table of Frequency Allocations in the Radio Regulations. Note: Only footnotes relevant to Ireland are included. The full text of footnotes appears in Annex 1.	**Column 3** Indicates the national usage of the frequency band.	**Column 4** Notes of additional information.

Introduction

Examples in using the Table

Frequency Band	ITU Allocations (Applicable to Ireland)	National Usage	Notes/Future Developments
47 - 68 (1)	BROADCASTING S5.162A S5.164	Amateurs (secondary) (50 – 52.0 MHz) Short Range Devices	ITU Stockholm 1961 Plan: Broadcasting ceased. Mobile and other uses to be considered and planned Baby Monitors and LPD - See Annex 4
68 - 74.8 (2)	FIXED MOBILE except aeronautical mobile S5.149	Land mobile (Government Services, Commercial, Public Broadcasters) Amateur (secondary), (70.125 - 70.450 MHz)	PMR (VHF Low Band) mainly commercial users and Local Authorities. CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(96)07,10,11,12,14 (Channel spacing 12.5 kHz)

Example (1):
The first row is the frequency band from 47 MHz to 68 MHz as stipulated in the first column. The second column indicates that the ITU have allocated this band exclusively to broadcasting as a primary service. The primary status is indicated by the use of uppercase letters. Two footnotes, namely S5.162A and S5.164 are applicable to Ireland. The footnotes mentioned in the table are found in Annex 1 of this document:

S5.162A Additional allocation: in Germany, ..., Ireland, Iceland, ...and Switzerland the band 46-68 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution 217 (WRC-97).

S5.164 Additional allocation: in Albania, Ireland, ... Yugoslavia the band 47-68 MHz, ... are also allocated to the land mobile service on a primary basis. However, stations of the land mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations of countries other than those mentioned in connection with the band. (WRC-97)

The third column indicates national usage. The band 47 MHz to 68 MHz was until 2000, used in Ireland for television broadcasting. Radio Amateurs may use the portion of the band (50-52 MHz) on a secondary basis. Short range devices are also permitted in the band.

The fourth column notes that for broadcasting the ITU Stockholm plan of 1961 lays out the parameters and conditions for use and the international co-ordination procedure of frequencies in this band. Furthermore that broadcasting in this frequency band has recently ceased in Ireland and that consideration is being given to mobile services and wind profiler radars as per footnotes S5.162A and S5.164. Indication is given that the permitted short range devices in this band are for baby monitors and other low power applications to which reference should be made to Annex 4 of this document which has all the relevant details on short range devices.

Example (2):
The second row is the frequency band from 68 MHz to 74.8 MHz as stipulated in the first column. The second column indicates that the ITU have allocated this band to both Fixed services and the Mobile except aeronautical mobile service on a co-primary basis. One footnote, namely S5.149 is applicable to Ireland. Annex 1 details the relevant footnote from the Radio Regulations as follows:

S5.149 *In making assignments to stations of other services to which the bands:*

13 360-13 410 kHz,
25 550-25 670 kHz,
37.5-38.25 MHz,
73-74.6 MHz in Regions 1 and 3,
150.05-153 MHz in Region 1,
322-328.6 MHz,
406.1-410 MHz,
608-614 MHz in Regions 1 and 3,
1 330-1 400 MHz,
1 610.6-1 613.8 MHz,
1 660-1 670 MHz,
1 718.8-1 722.2 MHz,
2 655-2 690 MHz,
3 260-3 267 MHz,
3 332-3 339 MHz,
3 345.8-3 352.5 MHz,
4 825-4 835 MHz,
4 950-4 990 MHz,
4 990-5 000 MHz,
6 650-6 675.2 MHz,
10.6-10.68 GHz,
14.47-14.5 GHz,
22.01-22.21 GHz,
22.21-22.5 GHz,
22.81-22.86 GHz,
23.07-23.12 GHz,
31.2-31.3 GHz,
31.5-31.8 GHz in Regions 1 & 3,
36.43-36.5 GHz,
42.5-43.5 GHz,
42.77-42.87 GHz,
43.07-43.17 GHz,
43.37-43.47 GHz,
48.94-49.04 GHz,
76-86 GHz,
92-94 GHz,
94.1-100 GHz,
102-109.5 GHz,
111.8-114.25 GHz,
128.33-128.59 GHz,
172.31-172.65 GHz,
173.52-173.85 GHz,
195.75-196.15 GHz,
209-226 GHz,
241-250 GHz,
252-275 GHz

are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. S4.5 and S4.6 and Article S29)

This footnote is intended to offer some protection to the radio astronomy service in a number of bands, allocated to other services in which important radio-astronomy frequencies lie.

The national usage indicates that the band (68-74.8 MHz) is used for land mobile services and the Radio Amateur service has a small allocation on a secondary basis. The fourth notes that for mobile use the band is known as the VHF Low Band and is used by commercial users and Local Authorities. The acronym CEPT/ERC/DEC (95) 02, refers to a decision (DEC) made by the European Radiocommunications Committee (ERC) - a committee of the European Conference of Postal and Telecommunications Administrations (CEPT) responsible for radio matters. This particular decision is entitled "ERC Decision of 1st December 1995 on the adoption of national type approval regulations for equipment to be used in the land mobile service using angle modulation based on the European Telecommunications Standard (ETS) 300 086 1995 Edition", relates to equipment standards to be followed for equipment used in this frequency band and can be found in Annex 3 of this document.

When ever reference is made to an ERC decision, it indicates that , unless other wise stated, Ireland has accepted and is implementing the Decision.

Important Notice

The information in this document is made available by the Office of the Director of Telecommunications Regulation (the "ODTR") on the understanding that it is for information purposes only. It is not intended to form the basis of any investment decision and should not be considered as a recommendation by the Director, the ODTR or their advisors to participate in any tender for the allocation of radio spectrum.

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The policy of the ODTR is to correct and update the document at regular intervals. Any reproduction of all or part of the document for any commercial purpose is forbidden.

Part A – The Radio Spectrum: 9 kHz to 27 500 kHz

Frequency Band (kHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
Below 9	(Not Allocated) S5.53 S5.54	Short Range Devices	Inductive Loop Systems -See Annex 4.
9 - 14	RADIONAVIGATION	Short Range Devices	Inductive Loop Systems -See Annex 4.
14 - 19.95	FIXED MARITIME MOBILE S5.57 S5.56	Short Range Devices	Inductive Loop Systems -See Annex 4.
19.95 - 20.05	STANDARD FREQUENCY AND TIME SIGNAL (20kHz)	Standard Frequency and Time Signal (Reception) Short Range Devices	Inductive Loop Systems -See Annex 4.
20.05 - 70	FIXED MARITIME MOBILE S5.57 S5.56	Short Range Devices	Inductive Loop Systems -See Annex 4.
70 - 72	RADIONAVIGATION S5.60	Radionavigation Short Range Devices	DECCA navigation system closed 31 March 2000 Inductive Loop Systems -See Annex 4.
72 - 84	FIXED MARITIME MOBILE S5.57 RADIONAVIGATION S5.60 S5.56	Short Range Devices	Inductive Loop Systems -See Annex 4.
84 - 86	RADIONAVIGATION S5.60	Radionavigation Short Range Devices	Inductive Loop Systems -See Annex 4.
86 - 90	FIXED MARITIME MOBILE S5.57 RADIONAVIGATION S5.56	Paging (Commercial Firms) Short Range Devices	Inductive Loop Systems -See Annex 4.
90 - 110	RADIONAVIGATION S5.62 Fixed S5.64	Radionavigation (LORAN – C) Short Range Devices	A LORAN C Station is being developed in Southwest Ireland Inductive Loop Systems -See Annex 4.
110 - 112	FIXED MARITIME MOBILE RADIONAVIGATION S5.64	Radionavigation Short Range Devices	Inductive Loop Systems -See Annex 4.
112 - 115	RADIONAVIGATION S5.60	Radionavigation Short Range Devices	Inductive Loop Systems -See Annex 4.

Part A – The Radio Spectrum: 9 kHz to 27 500 kHz

Frequency Band (kHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
115 - 117.6	RADIONAVIGATION S5.60 Fixed Maritime Mobile S5.64	Radionavigation Short Range Devices	 Inductive Loop Systems -See Annex 4.
117.6 - 126	FIXED MARITIME MOBILE RADIONAVIGATION S5.60 S5.64	 Short Range Devices	 Inductive Loop Systems -See Annex 4.
126 - 129	RADIONAVIGATION S5.60	Radionavigation Short Range Devices	DECCA navigation system closed 31 March 2000 Inductive Loop Systems -See Annex 4.
129 - 130	FIXED MARITIME MOBILE RADIONAVIGATION S5.60 S5.64	 Short Range Devices	 Inductive Loop Systems -See Annex 4.
130 - 148.5	MARITIME MOBILE FIXED S5.64	Weather Chart Reception (Met Eireann) Short Range Devices (130 – 135 kHz)	 Inductive Loop Systems -See Annex 4.
148.5 - 255	BROADCASTING	Broadcasting (AM Sound)	ITU Geneva 1975 Plan.
255 - 283.5	BROADCASTING AERONAUTICAL RADIONAVIGATION	Broadcasting (AM Sound)	ITU Geneva 1975 Plan.
283.5 - 315	MARITIME RADIONAVIGATION (radiobeacons) AERONAUTICAL RADIONAVIGATION S5.72 S5.73	Maritime Radionavigation: Radiobeacons (283.5 - 315 MHz) Short Range Devices (from 285 kHz)	 Inductive Loop Systems -See Annex 4.
315 - 325	AERONAUTICAL RADIONAVIGATION Maritime Radionavigation (radiobeacons) S5.73 S5.72	Short Range Devices	Inductive Loop Systems -See Annex 4.
325 - 405	AERONAUTICAL RADIONAVIGATION S5.72	Aeronautical Radionavigation: Non-Directional Beacons Short Range Devices (up to 400 kHz)	 Inductive Loop Systems -See Annex 4.
405 - 415	RADIONAVIGATION S5.76 S5.72	Aeronautical Radionavigation: Non-Directional Beacons	
415 - 435	AERONAUTICAL RADIONAVIGATION MARITIME MOBILE S5.79 S5.72	Aeronautical Radionavigation : Radiobeacons Maritime Mobile	ITU Geneva (Region 1) 1985 Plan.

Part A – The Radio Spectrum: 9 kHz to 27 500 kHz

Frequency Band (kHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
435 - 495	MARITIME MOBILE S5.79 S5.79A Aeronautical Radionavigation S5.72 S5.82	Maritime Mobile	ITU Geneva (Region 1) 1985 Plan.
495 - 505	MOBILE (distress and calling) S5.83	500 kHz is an international Distress and Calling Frequency for Radiotelegraphy	
505 - 526.5	MARITIME MOBILE S5.79 S5.57A S5.84 AERONAUTICAL RADIONAVIGATION S5.72	Maritime Mobile Aeronautical Radio Beacons (510 - 526.5 kHz)	ITU Geneva (Region 1) 1985 Plan.
526.5 - 1606.5	BROADCASTING	Broadcasting (AM Sound)	ITU Geneva 1975 Plan.
1606.5 - 1625	MARITIME MOBILE S5.90 FIXED LAND MOBILE S5.92	Maritime Mobile	ITU Geneva (Region 1) 1985 Plan.
1625 - 1635	RADIOLOCATION S5.93	Radiolocation	
1635 - 1800	MARITIME MOBILE S5.90 FIXED LAND MOBILE S5.92 S5.96	Maritime Mobile Radiolocation: Position Fixing Amateur (secondary) Short Range Devices (1650 – 1950 kHz)	Inductive Loop Systems -See Annex 4.
1800 - 1810	RADIOLOCATION	Radiolocation: Position Fixing Short Range Devices	Inductive Loop Systems -See Annex 4.
1810 - 1850	AMATEUR S5.100	Amateur Short Range Devices	Inductive Loop Systems -See Annex 4.
1850 - 2000	FIXED MOBILE except aeronautical mobile S5.92 S5.96 S5.103	Radiolocation: Position Fixing Amateur (Primary) Short Range Devices	Inductive Loop Systems -See Annex 4.
2000 - 2025	FIXED MOBILE except aeronautical mobile (R) S5.92 S5.103	Fixed Maritime Mobile Short Range Devices	Inductive Loop Systems -See Annex 4.
2025 - 2045	FIXED MOBILE except aeronautical mobile (R) Meteorological Aids S5.104 S5.92 S5.103	Short Range Devices	Inductive Loop Systems -See Annex 4.

Part A – The Radio Spectrum: 9 kHz to 27 500 kHz

Frequency Band (kHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
2045 -2160	MARITIME MOBILE FIXED LAND MOBILE S5.92	Maritime Mobile Short Range Devices	ITU Geneva (Region 1) 1985 Plan Inductive Loop Systems -See Annex 4.
2160 - 2170	RADIOLOCATION	Radiolocation Short Range Devices	 Inductive Loop Systems -See Annex 4.
2170 - 2173.5	MARITIME MOBILE	 Short Range Devices	 Inductive Loop Systems -See Annex 4.
2173.5 - 2190.5	MOBILE (distress and calling) S5.108 S5.109 S5.110 S5.111	International Distress and Calling frequencies Short Range Devices	 Inductive Loop Systems -See Annex 4.
2190.5 - 2194	MARITIME MOBILE	 Short Range Devices	 Inductive Loop Systems -See Annex 4.
2194 - 2300	FIXED MOBILE except aeronautical mobile (R) S5.92 S5.103	Fixed Maritime Mobile Short Range Devices up to 2200 kHz.	 Inductive Loop Systems -See Annex 4.
2300 - 2498	FIXED MOBILE except aeronautical mobile (R) BROADCASTING S5.113 S5.103	Maritime Mobile	
2498 - 2501	STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	Standard Frequency and Time Signal (Reception)	
2501 -2502	STANDARD FREQUENCY AND TIME SIGNAL Space Research	Standard Frequency and Time Signal (Reception)	
2502 -2625	FIXED MOBILE except aeronautical mobile (R) S5.92 S5.103	Fixed Maritime Mobile Short Range Devices	 Inductive Loop Systems -See Annex 4.
2625 - 2650	MARITIME MOBILE MARITIME RADIONAVIGATION S5.92	International Intership Communications Short Range Devices	 Inductive Loop Systems -See Annex 4.
2650 - 2850	FIXED MOBILE except aeronautical mobile (R) S5.92 S5.103	Fixed Maritime Mobile Short Range Devices	 Inductive Loop Systems -See Annex 4.
2850 - 3025	AERONAUTICAL MOBILE (R) S5.111 S5.115	Aeronautical Mobile (Government Services) Short Range Devices	Appendix 27 Aer.2 of Radio Regulations Inductive Loop Systems -See Annex 4.

Part A – The Radio Spectrum: 9 kHz to 27 500 kHz

Frequency Band (kHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
3025 - 3155	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (Government Services) Short Range Devices	Inductive Loop Systems -See Annex 4
3155 - 3200	FIXED MOBILE except aeronautical mobile (R) S5.116	Short Range Devices	Inductive Loop Systems -See Annex 4.
3200 - 3230	FIXED MOBILE except aeronautical mobile (R) BROADCASTING S5.113 S5.116	Short Range Devices	Inductive Loop Systems -See Annex 4.
3230 - 3400	FIXED MOBILE except aeronautical mobile BROADCASTING S5.113 S5.116	Fixed (Government Services, Commercial Firms) Short Range Devices	Inductive Loop Systems -See Annex 4.
3400 - 3500	AERONAUTICAL MOBILE (R)	Aeronautical Mobile Short Range Devices	Appendix 27 Aer.2 of Radio Regulations Inductive Loop Systems -See Annex 4.
3500 - 3800	AMATEUR FIXED MOBILE except aeronautical mobile S5.92	Fixed Amateur Maritime Mobile Short Range Devices up to 3560 kHz	Inductive Loop Systems -See Annex 4.
3800 - 3900	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE		
3900 - 3950	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile(Government Services)	
3950 - 4000	FIXED BROADCASTING		
4000 - 4063	FIXED MARITIME MOBILE S5.127	Maritime Mobile	Appendix 16 of Radio Regulations
4063 - 4438	MARITIME MOBILE S5.79A S5.109 S5.110 S5.129 S5.130 S5.131 S5.132	Maritime Mobile	Appendix 16 of Radio Regulations
4438 - 4650	FIXED MOBILE except aeronautical mobile (R)	Fixed (Government Services)	
4650 - 4700	AERONAUTICAL MOBILE (R)	Aeronautical Mobile (Government Services)	Appendix 27 Aer.2 of Radio Regulations
4700 - 4750	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (Government Services)	

Part A – The Radio Spectrum: 9 kHz to 27 500 kHz

Frequency Band (kHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
4750 - 4850	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING S5.113		
4850 - 4995	FIXED LAND MOBILE BROADCASTING S5.113	Fixed	
4995 - 5003	STANDARD FREQUENCY AND TIME SIGNAL (5000 kHz)	Standard Frequency and Time Signal (Reception)	
5003 - 5005	STANDARD FREQUENCY AND TIME SIGNAL Space Research	Standard Frequency and Time Signal (Reception)	
5005 - 5060	FIXED BROADCASTING S5.113		
5060 - 5250	FIXED Mobile except aeronautical mobile	Fixed	
5250 - 5450	FIXED MOBILE except aeronautical mobile	Fixed (Government Services)	
5450 - 5480	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE		
5480 - 5680	AERONAUTICAL MOBILE (R) S5.111 S5.115	Aeronautical Mobile	Appendix 27 Aer.2 of Radio Regulations
5680 - 5730	AERONAUTICAL MOBILE (OR) S5.111 S5.115	Aeronautical Mobile (Government Services)	
5730 - 5900	FIXED LAND MOBILE	Fixed (Government Services)	
5900 - 5950	BROADCASTING S5.134 S5.136	Shortwave Broadcasting (Reception)	
5950 - 6200	BROADCASTING	Shortwave Broadcasting (Reception)	
6200 - 6525	MARITIME MOBILE S5.109 S5.110 S5.130 S5.132 S5.137	Maritime Mobile	Appendix 16 of Radio Regulations
6525 - 6685	AERONAUTICAL MOBILE (R)	Aeronautical Mobile (Government Services)	Appendix 27 Aer.2 of Radio Regulations

Part A – The Radio Spectrum: 9 kHz to 27 500 kHz

Frequency Band (kHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
6685 - 6765	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (Government Services)	
6765 - 7000	FIXED Land Mobile S5.139 S5.138	Fixed Short Range Devices 6765 – 6795 kHz	 Inductive Loop Systems -See Annex 4.
7000 - 7100	AMATEUR AMATEUR - SATELLITE	Amateur Amateur - Satellite	
7100 - 7300	BROADCASTING	Shortwave Broadcasting (Reception)	
7300 - 7350	BROADCASTING S5.134 S5.143	Shortwave Broadcasting (Reception)	
7350 - 8100	FIXED Land Mobile S5.144	Fixed Short Range Devices from 7400 kHz	 Inductive Loop Systems -See Annex 4.
8100 - 8195	FIXED MARITIME MOBILE	Maritime Mobile Short Range Devices	Appendix 16 of Radio Regulations Inductive Loop Systems -See Annex 4.
8195 - 8815	MARITIME MOBILE S5.109 S5.110 S5.132 S5.145 S5.111	Maritime Mobile Short Range Devices	Appendix 16 of Radio Regulations Inductive Loop Systems -See Annex 4.
8815 - 8965	AERONAUTICAL MOBILE (R)	Aeronautical Mobile Short Range Devices up to 8900 kHz	Appendix 27 Aer.2 of Radio Regulations Inductive Loop Systems -See Annex 4.
8965-9040	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (Government Services)	
9040 - 9400	FIXED	Fixed	
9400 - 9500	BROADCASTING S5.134 S5.146	Shortwave Broadcasting (Reception)	
9500 - 9900	BROADCASTING S5.147	Shortwave Broadcasting (Reception)	
9900 - 9995	FIXED		
9995 - 10003	STANDARD FREQUENCY AND TIME SIGNAL S5.111	Standard Frequency and Time Signal (Reception)	
10003 - 10005	STANDARD FREQUENCY AND TIME SIGNAL Space Research S5.111	Standard Frequency and Time Signal (Reception)	

Part A – The Radio Spectrum: 9 kHz to 27 500 kHz

Frequency Band (kHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
10005 - 10100	AERONAUTICAL MOBILE (R) S5.111	Aeronautical Mobile	Appendix 27 Aer.2 of Radio Regulations
10100 - 10150	FIXED Amateur	Amateur (secondary)	
10150 - 11175	FIXED Mobile except aeronautical mobile (R)	Fixed	
11175 - 11275	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (Government Service)	
11275 - 11400	AERONAUTICAL MOBILE (R)	Aeronautical Mobile (Government Service)	
11400 - 11600	FIXED	Fixed (Government Services)	
11600 - 11650	BROADCASTING S5.134 S5.146	Shortwave Broadcasting (Reception)	
11650 - 12050	BROADCASTING S5.147	Shortwave Broadcasting (Reception)	
12050 - 12100	BROADCASTING S5.134 S5.146	Shortwave Broadcasting (Reception)	
12100 - 12230	FIXED	Fixed	
12230 - 13200	MARITIME MOBILE S5.109 S5.110 S5.132 S5.145	Maritime Mobile	Appendix 16 of Radio Regulations
13200 - 13260	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (Government Services)	
13260 - 13360	AERONAUTICAL MOBILE (R)	Aeronautical Mobile	Appendix 27 Aer.2 of Radio Regulations
13360 - 13410	FIXED RADIO ASTRONOMY S5.149	Fixed	
13410 - 13570	FIXED Mobile except aeronautical mobile (R) S5.150	Short Range Devices ISM (13553-13567 kHz)	Inductive Loop Systems -See Annex 4
13570 - 13600	BROADCASTING S5.134 S5.151	Shortwave Broadcasting (Reception)	
13600 - 13800	BROADCASTING	Shortwave Broadcasting (Reception)	
13800 - 13870	BROADCASTING S5.134 S5.151		
13870 - 14000	FIXED Mobile except aeronautical mobile (R)		

Part A – The Radio Spectrum: 9 kHz to 27 500 kHz

Frequency Band (kHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
14000 - 14250	AMATEUR AMATEUR-SATELLITE	Amateur Amateur – Satellite	
14250 -14350	AMATEUR	Amateur	
14350 - 14990	FIXED Mobile except aeronautical mobile (R)	Fixed	
14990 - 15005	STANDARD FREQUENCY AND TIME SIGNAL S5.111	Standard Frequency and Time Signal (Reception)	
15005 - 15010	STANDARD FREQUENCY AND TIME SIGNAL Space Research	Standard Frequency and Time Signal (Reception)	
15010 - 15100	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (Government Services)	
15100 - 15600	BROADCASTING	Shortwave Broadcasting (Reception)	
15600 - 15800	BROADCASTING S5.134 S5.146	Shortwave Broadcasting (Reception)	
15800 - 16360	FIXED S5.153		
16360 - 17410	MARITIME MOBILE S5.109 S5.110 S5.132 S5.145	Maritime Mobile	Appendix 16 of Radio Regulations
17410 - 17480	FIXED		
17480 - 17550	BROADCASTING S5.134 S5.146	Shortwave Broadcasting (Reception)	
17550 - 17900	BROADCASTING	Shortwave Broadcasting (Reception)	
17900 - 17970	AERONAUTICAL MOBILE (R)	Aeronautical Mobile	Appendix 27 Aer.2 of Radio Regulations
17970 - 18030	AERONAUTICAL MOBILE (OR)		
18030 - 18052	FIXED		
18052 - 18068	FIXED Space Research		
18068 - 18168	AMATEUR AMATEUR - SATELLITE	Amateur Amateur - Satellite	
18168 - 18780	FIXED Mobile except aeronautical mobile		
18780 - 18900	MARITIME MOBILE	Maritime Mobile	Appendix 16 of Radio Regulations
18900 - 19020	BROADCASTING S5.134 S5.146	Shortwave Broadcasting (Reception)	

Part A – The Radio Spectrum: 9 kHz to 27 500 kHz

Frequency Band (kHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
19020 - 19680	FIXED		
19680 - 19800	MARITIME MOBILE S5.132		
19800 - 19990	FIXED		
19990 - 19995	STANDARD FREQUENCY AND TIME SIGNAL Space Research S5.111	Standard Frequency and Time Signal (Reception)	
19995 - 20010	STANDARD FREQUENCY AND TIME SIGNAL S5.111	Standard Frequency and Time Signal (Reception)	
20010 - 21000	FIXED Mobile		
21000 - 21450	AMATEUR AMATEUR-SATELLITE	Amateur Amateur - Satellite	
21450 - 21850	BROADCASTING	Shortwave Broadcasting (Reception)	
21850 - 21870	FIXED		
21870 - 21924	FIXED S5.155B		
21924 - 22000	AERONAUTICAL MOBILE (R)		
22000 - 22855	MARITIME MOBILE S5.132	Maritime Mobile	Appendix 16 of Radio Regulations
22855 - 23000	FIXED		
23000 - 23200	FIXED Mobile except aeronautical mobile (R)		
23200 - 23350	FIXED S5.156A AERONAUTICAL MOBILE (OR)		
23350 - 24000	FIXED MOBILE except aeronautical mobile S5.157		
24000 - 24890	FIXED LAND MOBILE		
24890 - 24990	AMATEUR AMATEUR-SATELLITE	Amateur Amateur - Satellite	
24990 - 25005	STANDARD FREQUENCY AND TIME SIGNAL (25000 kHz)	Standard Frequency and Time Signal (Reception)	
25005 - 25010	STANDARD FREQUENCY AND TIME SIGNAL Space Research	Standard Frequency and Time Signal (Reception)	
25010 - 25070	FIXED MOBILE except aeronautical mobile		

Part A – The Radio Spectrum: 9 kHz to 27 500 kHz

Frequency Band (kHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
25070 - 25210	MARITIME MOBILE	Maritime Mobile	Appendix 16 of Radio Regulations
25210 - 25550	FIXED MOBILE except aeronautical mobile		
25550 - 25670	RADIO ASTRONOMY S5.149		
25670 - 26100	BROADCASTING	Shortwave Broadcasting (Reception)	
26100 - 26175	MARITIME MOBILE S5.132	Maritime Mobile	Appendix 16 of Radio Regulations
26175 - 27500	FIXED MOBILE except aeronautical mobile S5.150	Paging (private, on-site) Short Range Devices Citizen Band Radio (26.96 -27.41 Mhz.) Surface Model Control	CEPT/ERC/DEC/(96)19, ETS 300 224 Low Power Devices -See Annex 4 CEPT/ERC/DEC/(96)02 CEPT/ERC/DEC/(98)11, ETS 300 135 Short Range Devices - See Annex 4

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
27.5 - 28	METEOROLOGICAL AIDS FIXED MOBILE	Paging (private, on-site)	CEPT/ERC/DEC/(96)19, ETS.300 224
28 - 29.7	AMATEUR AMATEUR-SATELLITE	Amateur Amateur - satellite.	
29.7 - 30.005	FIXED MOBILE	Telemetry	
30.005 - 30.01	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	Fixed Mobile (government services)	
30.01 - 37.5	FIXED MOBILE	Paging (Hospitals) Cordless telephones (fixed part) (31.025 - 31.325 MHz.) Telemetry Fixed (Government Services) Mobile (Government Services) Model Aircraft Control (AM/FM)	CEPT/ERC/DEC/(96)19, ETS 300 224 Note: National Specification TTE 9 SI 410 of 1997. Short Range Device – See Annex 4
37.5 - 38.25	FIXED MOBILE Radio Astronomy S5.149	Fixed Mobile (Government services)	
38.25 - 39.986	FIXED MOBILE	Cordless telephones (portable part) (39.925 - 40.225 MHz.) Fixed (Government Services) Mobile (Government Services)	Note: National Specification TTE 9 SI 410 of 1997
39.986 - 40.02	FIXED MOBILE Space Research	Cordless telephones (portable part) (39.925 - 40.225 MHz.) Fixed (Government Services) Mobile (Government Services)	Note; National Specification TTE 9 SI 410 of 1997

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
40.02 - 40.98	FIXED MOBILE S5.150	Cordless telephones (portable part) (39.925 - 40.225 MHz.) Fixed (Government Services) Mobile (Government Services) Short Range Devices ISM (40.66 - 40.7 MHz)	Note; National Specification TTE 9 SI 410 of 1997. Low power devices See Annex 4
40.98 - 41.015	FIXED MOBILE Space Research	Fixed Mobile (Government services)	
41.015 - 44	FIXED MOBILE	Fixed Mobile (Government services)	
44 - 47	FIXED MOBILE S5.162A	Fixed (Government Services) Mobile (Government Services)	
47 - 68	BROADCASTING S5.162A S5.164	Amateurs (secondary) (50 – 52.0 MHz) Short Range Devices	ITU Stockholm 1961 Plan: Television Broadcasting ceased. Mobile and other uses to be considered and planned Baby Monitors and LPD - See Annex 4
68 - 74.8	FIXED MOBILE except aeronautical mobile S5.149	Land mobile (Government Services, Commercial, Public Broadcasters) Amateur (secondary),(70.125 - 70.450 MHz)	PMR (VHF Low Band) mainly commercial users and Local Authorities CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(96)07,10,11,12,14 (Channel spacing 12.5 kHz)
74.8 - 75.2	AERONAUTICAL RADIONAVIGATION S5.180	Aeronautical Radionavigation	
75.2 - 87.5	FIXED MOBILE except aeronautical mobile	Land mobile (Government services,Commercial, Local Authorities)	PMR (VHF Low Band) mainly commercial users and Local Authorities CEPT/ERC/DEC/(95)02; (96)07,10,11,12,14 (Channel spacing 12.5 kHz)
87.5 - 100	BROADCASTING	Broadcasting (FM Sound)	ITU Geneva 1984 Plan CEPT/ERC/DEC/(96)13
100 - 108	BROADCASTING	Broadcasting (FM Sound)	ITU Geneva 1984 Plan CEPT/ERC/DEC/(96)13
108 - 117.975	AERONAUTICAL RADIONAVIGATION	Aeronautical Radionavigation: Instrument Landing Systems (ILS) VHF Omni-Range (VOR)	

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
117.975 - 137	AERONAUTICAL MOBILE (R) S5.111 S5.198 S5.199 S5.200 S5.203	Aeronautical Radionavigation: air - ground - air communications (ATC)	Aeronautical Emergency Frequency - 121.5 MHz Auxiliary Frequency to 121.5 MHz - 123.1 MHz National Glider Frequency - 130.4 MHz
137 - 137.025	SPACE OPERATION (space - Earth) METEOROLOGICAL -SATELLITE (space - Earth) SPACE RESEARCH (space - Earth) MOBILE SATELLITE (space -Earth) S5.208A S5.209 Fixed Mobile except aeronautical mobile (R) S5.208	Satellite Personal Communication Service	CEPT/ERC/DEC (99)06 Leotelcom – 1 only.
137.025 - 137.175	SPACE OPERATION (space -Earth) METEOROLOGICAL –SATELLITE (space - Earth) SPACE RESEARCH (space - Earth) Mobile – Satellite (space - Earth) S5.208A S5.209 Fixed Mobile except aeronautical mobile (R) S5.208	Satellite Personal Communication Service	CEPT/ERC/DEC (99)06 Leotelcom – 1 only.
137.175 - 137.825	SPACE OPERATION (space - Earth) METEOROLOGICAL –SATELLITE (space - Earth) SPACE RESEARCH (space - Earth) MOBILE- SATELLITE (space - Earth) S5.208A S5.209 Fixed Mobile except aeronautical mobile (R) S5.208	Meteorological – Satellite (LEO Reception) Satellite Personal Communication Service	Typically 137.5MHz and 137.62 MHz CEPT/ERC/DEC (99) 06 Leotelcom – 1 only.
137.825 - 138	SPACE OPERATION (space - Earth) METEOROLOGICAL -SATELLITE (space -Earth) SPACE RESEARCH (space - Earth) Mobile – Satellite (space - Earth) S5.208A S5.209 Fixed Mobile except aeronautical Mobile (R) S5.208	Meteorological – Satellite (LEO Reception)	Typically 137.85 MHz
138 - 143.6	AERONAUTICAL MOBILE (OR) S5.211	Land Mobile	VHF mid- Band,CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(96)07,10,11,12,14 refer to equipment specifications. (Channel spacing 12.5 kHz)

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
143.6 - 143.65	AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space –Earth) S5.211	Land Mobile	VHF mid- Band,CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(96)07, 10, 11, 12, 14 (Channel spacing 12.5 kHz)
143.65 - 144	AERONAUTICAL MOBILE (OR) S5.211	Land Mobile	VHF mid- Band, CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(96)07,10,11,12,14 (Channel spacing 12.5 kHz)
144 - 146	AMATEUR AMATEUR-SATELLITES	Amateur Amateur-Satellite	
146 - 148	FIXED MOBILE except aeronautical mobile (R)	Land Mobile	VHF mid- Band, CEPT/ERC/DEC/(95)02; (96)07,10,11,12,14 (Channel spacing 12.5 kHz)
148 - 149.9	FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth –space) S5.209 S5.218 S5.219 S5.221	Land Mobile Satellite Personal Communication Service	VHF mid- Band, CEPT/ERC/DEC/(95)02, (96)07,10,11,12,14 (Channel spacing 12.5 kHz) CEPT/ERC/DEC (99) 06 Leotelcom – 1 only.
149.9 - 150.05	RADIONAVIGATION - SATELLITE S5.224B MOBILE - SATELLITE (Earth - space) S5.209 S5.224A S5.220 S5.222 S5.223	Satellite Personal Communication Service	CEPT/ERC/DEC (99) 06 Leotelcom – 1 only.
150.05 - 153	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149	Land Mobile Radio Telemetry (Educational Institutions)	VHF mid - Band, CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(96)07,10,11,12,14 (Channel spacing 12.5 kHz)
153 - 154	FIXED MOBILE except aeronautical mobile (R) Meteorological Aids	Paging	CEPT/ERC/DEC/(96)19, ETS 300 224
154 - 156.7625	FIXED MOBILE except aeronautical mobile (R) S5.226 S5.227	Maritime Mobile	Appendix 18 Radio Regulations CEPT/ERC/DEC/(96)20, ETS 300 162

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
156.7625 - 156.8375	MARITIME MOBILE (distress and calling) S5.111 S5.226	Maritime Mobile Land Mobile	Appendix 18 Radio Regulations CEPT/ERC/DEC/(96)20, ETS 300 162 PMR VHF High Band, mainly commercial users and Local Authorities CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(95)02, (96)07,10,11,12,14,19 (12.5 kHz Channels)
156.8375 - 174	FIXED MOBILE except aeronautical mobile S5.226	Pan-European Land Based Public Radio Paging Service - ERMES (169.4 -169.8 MHz.) Maritime Mobile AIS (161.975 & 162.025 MHz reserved) Fixed Land Mobile and Telemetry Short Range Devices	E.C Directive 90/543/EEC,S.I.No.28of 1995 CEPT/ERC/DEC(94)02 Appendix 18 Radio Regulations CEPT/ERC/DEC/(96)20, ETS 300 162 CEPT/ERC/DEC (99)17 from 01/01/2000 PMR VHF High Band, mainly commercial users and Local Authorities CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(95)02, (6)07,10,11,12,14,19 (Channel spacing 12.5 kHz) Short Range Devices – See Annex 4
174 - 223	BROADCASTING	Broadcasting: Television Broadcasting: T-DAB Short Range Devices	ITU Stockholm 1961 Plan (CEPT 1995 Wiesbaden Arrangement, CEPT Bonn Meeting 1996) Wireless Microphones - See Annex 4
223 - 230	BROADCASTING Fixed Mobile	Broadcasting: Television Broadcasting: T-DAB	ITU Stockholm 1961 Plan Introduction of T-DAB in Ireland (223-230 MHz) (CEPT 1995 Wiesbaden Arrangement, CEPT Bonn Meeting 1996)
230 - 235	FIXED MOBILE		

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
235 - 267	FIXED MOBILE S5.111 S5.199 S5.254 S5.256	Fixed (Government Services) Mobile (Government Services): 243 MHz Emergency SAR, SAR Training Frequencies, ATC, Air to Air Naval Intership	
267 - 272	FIXED MOBILE Space Operation (space -Earth) S5.254 S5.257		
272 - 273	SPACE OPERATION (space - Earth) FIXED MOBILE S5.254		
273 - 312	FIXED MOBILE S5.254	Mobile: Emergency Search & Rescue - SAR (Government Services) Position Fixing	
312 - 315	FIXED MOBILE Mobile - Satellite (Earth - space) S5.254 S5.255	Satellite Personal Communication System	CEPT/ERC/DEC(99)06
315 - 322	FIXED MOBILE S5.254	Low Power Security Devices	
322 - 328.6	FIXED MOBILE RADIO ASTRONOMY S5.149		
328.6 - 335.4	AERONAUTICAL RADIONAVIGATION S5.258	Aeronautical Radionavigation: Instrument Landing Systems (Glide Path)	
335.4 - 387	FIXED MOBILE S5.254	Mobile: Trunked Radio (Planned) TETRA (Emergency) (380–385 MHz/390 -395Mhz) TETRA (Civil) (385 - 390 MHz / 395 - 399.9MHz)	CEPT/ERC/DEC(96)01 CEPT/ERC/DEC(96)04, ETS 300 392, ETS 300 393
387 - 390	FIXED MOBILE Mobile - Satellite (space -Earth) S5.208A S5.254 S5.255	Mobile: Trunked Radio (Planned) TETRA (Civil) (385 - 390 MHz /395 - 399.9MHz) Satellite Personal Communication System	CEPT/ERC/DEC(96)04, ETS 300 392, ETS 300 393 CEPT/ERC/DEC(99)06

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
390 - 399.9	FIXED MOBILE S5.254	Mobile: Trunked Radio (Planned) (TETRA Emergency) (380-385 MHz/390-395MHz) (TETRA Civil) (385 - 390 MHz / 395 – 399.9Mhz) Monitoring Systems	CEPT/ERC/DEC(96)01 CEPT/ERC/DEC(96)04, ETS 300 392, ETS 300 393
399.9 - 400.05	RADIONAVIGATION –SATELLITE S5.222 S5.224B S5.260 MOBILE SATELLITE (Earth - space) S5.209 S5.224A S5.220	Radionavigation satellite Satellite Personal Communication System	CEPT/ERC/DEC(99)06
400.05 - 400.15	STANDARD FREQUENCY AND TIME SIGNAL – SATELLITE (400.1 MHz) S5.261	Standard Frequency and Time Signal (Reception)	
400.15 - 401.00	METEOROLOGICAL AIDS METEOROLOGICAL - SATELLITE (space - Earth) SPACE RESEARCH (space – Earth) MOBILE - SATELLITE (space – Earth) S5.208A S5.209 Space Operation (space - Earth) S5.263 S5.264	Meteorological Aids (Radiosondes) Satellite Personal Communication System	CEPT/ERC/DEC(99)06
401 - 402	METEOROLOGICAL AIDS SPACE OPERATION (space - Earth) EARTH EXPLORATION - SATELLITE (Earth - space) Fixed METEOROLOGICAL SATELLITE (Earth - space) Mobile except aeronautical mobile	Meteorological Aids (Radiosondes)	
402 - 403	METEOROLOGICAL AIDS EARTH EXPLORATION - SATELLITE (Earth - space) Fixed METEOROLOGICAL - SATELLITE (Earth - space) Mobile except aeronautical mobile	Meteorological Aids (Radiosondes) Short Range Devices	Medical Implants – See Annex 4
403 - 406	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile	Meteorological Aids (Radiosondes) Short Range Devices	Medical Implants – See Annex 4

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
406 - 406.1	MOBILE – SATELLITE (Earth - space) S5.266 S5.267	EPIRBs (Emergency beacons)	Cospar – Sarsat
406.1 - 410	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149		
410 - 420	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space - space) S5.268	Land Mobile: Analogue Trunked Radio: (415.775–418.9875MHz / 425.775 -428.9875MHz) TETRA (Civil)	 CEPT/ERC/DEC(96)04, ETS 300 392, ETS 300 393
420 - 430	FIXED MOBILE except aeronautical mobile Radiolocation	Fixed Land Mobile: Analogue Trunked Radio: (415.775-418.9875MHz / 425.775-428.9875MHz) TETRA (Civil)	Fixed to be phased out CEPT/ERC/DEC(96)04, ETS 300 392, ETS 300 393
430 - 440	AMATEUR RADIOLOCATION S5.138 S5.282	Amateur Radiolocation Short Range Devices ISM (433.05 - 434.79 MHz.)	 Low Power Devices See Annex 4

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
440 - 450	FIXED MOBILE except aeronautical mobile Radiolocation S5.286	Fixed (Government Services) Mobile: PMR 446 (446 - 446.1MHz): 8 channels 446.00625MHz, 446.01875MHz, 446.03125MHz, 446.04375MHz, 446.05625MHz, 446.06875MHz, 446.08125MHz, 446.09375 MHz	Fixed to be phased out. SI 93 of 1998 exempts Short Range Business Radio (PMR446) in this band from requiring a licence: These devices will not be protected and must not cause interference to licensed users, 500mW max erp. CEPT/ERC/DEC(98)25
450 - 455	FIXED MOBILE S5.209 S5.286 S5.286A S5.286B S5.286C	Fixed (used mainly for radiolinks in support of Land mobile) Land mobile (Government Services, Commercial, Local Authorities)	Fixed to be phased out. PMR UHF Band CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(96)07,10,11,12,14,19 (Channel spacing 12.5 kHz) TETRA Civil, CEPT/ERC/DEC(96)04 (not planned at present)
455 - 456	FIXED MOBILE S5.209 S5.286A S5.286B S5.286C	Fixed (used mainly for radiolinks in support of land mobile) Land mobile (Government Services, Commercial, Local Authorities)	Fixed to be phased out. PMR UHF Band CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(96)07,10,11,12,14, 19 (Channel spacing 12.5 kHz) TETRA Civil, CEPT/ERC/DEC(96)04 (not planned at present)
456 - 459	FIXED MOBILE S5.287	Fixed (used mainly for radiolinks in support of land mobile) Land mobile (Government Services, Commercial, Local Authorities) On-board ship communications	Fixed to be phased out. PMR UHF Band CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(96)07,10,11,12,14,19 (Channel spacing 12.5 kHz) T/R 32-02 TETRA Civil, CEPT/ERC/DEC(96)04 (not planned at present)

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
459 - 460	FIXED MOBILE S5.209 S5.286A S5.286B S5.286C	Fixed (used mainly for radiolinks in support of land mobile) Land mobile (Government Services, Commercial, Local Authorities) On-board ship communications	Fixed to be phased out. PMR UHF Band CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(96)07,10,11,12,14,19 (Channel spacing 12.5 kHz) T/R 32-02 TETRA Civil, CEPT/ERC/DEC(96)04 (not planned at present)
460 - 470	FIXED MOBILE Meteorological - Satellite (space - Earth) S5.287 S5.289	Land mobile (Government Services, Commercial, Local Authorities)	PMR UHF Band CEPT/ERC/DEC/(95)02, CEPT/ERC/DEC/(96)07,10,11,12,14, (Channel spacing 12.5 kHz) TETRA Civil, CEPT/ERC/DEC(96)04 (not planned at present)
470 - 790	BROADCASTING S5.149 S5.296 S5.302 S5.306 S5.311	Broadcasting (Television)	ITU Stockholm 1961 Plan Mobile (services ancillary to broadcasting only as per S5.2956) Digital Broadcasting (DTT),CEPT Chester Agreement (1997)
790 - 862	FIXED BROADCASTING	Broadcasting (Television) Broadcasting (STL and OB Links)	ITU Stockholm 1961 Plan Digital Broadcasting (DTT), CEPT Chester Agreement (1997) Links to be relocated to 1.3 GHz.
862 - 890	FIXED MOBILE except aeronautical mobile S5.317A BROADCASTING S5.322	Cordless Telephones (864.1 - 868.1 Mhz) TETRA Civil 870 - 876 MHz / 915 – 921 MHz Public Mobile Radio TACS & GSM Extension Bands 880 - 890 MHz / 925 –935 MHz Short Range Devices	CT 2 - CAI, I-ETS 300 131, SI 410 of 1997. CEPT/ERC/DEC/(96)04, ETS 300 392, ETS 300 393 CEPT/ERC/ DEC/ (97)02 (E-GSM) Numerous types permitted – See Annex 4

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
890 - 942	FIXED MOBILE except aeronautical mobile S5.317A BROADCASTING S5.322 Radiolocation	Broadcasting (Links) Public Cellular Mobile Radio: TACS (Analogue) (880 - 892 / 925 – 937 MHz) GSM (Digital) (892 - 915 / 937 – 960 MHz) TETRA (Civil) 870 - 876 MHz / 915 – 921 MHz. GSM extension Bands 880 - 890 MHz / 925 - 935 MHz	Existing links to be relocated TACS to be switched off by March 2002 E.C. Dir. 87/372/EEC, S.I. 416 of 1994 CEPT/ERC/DEC/(96)04, ETS 300 392 ETS 300 393 CEPT/ERC/DEC/(97)02 (E-GSM)
942 - 960	FIXED MOBILE except aeronautical mobile S5.317A BROADCASTING S5.322	Broadcasting (Links) Public Cellular Mobile Radio: TACS (Analogue) (890 - 900 / 935 - 945 MHz) GSM (Digital) (900 - 915 / 945 - 960 MHz)	Existing links to be relocated TACS to be switched off by March 2002 E.C. Dir. 87/372/EEC S.I. 416 of 1994
960 - 1215	AERONAUTICAL RADIONAVIGATION S5.328 S5.328A	Aeronautical Radionavigation: Distance Measuring Equipment (DME) Radar	
1215 - 1240	EARTH EXPLORATION - SATELLITE (Active) RADIOLOCATION RADIONAVIGATION - SATELLITE (space – Earth) (space-space) S5.329 S5.329A SPACE RESEARCH (Active) S5.332	Radionavigation: Radar, Navigation Systems and Active Sensors, GPS, Galileo Amateur (Secondary)	
1240 - 1260	EARTH EXPLORATION – SATELLITE (Active) RADIOLOCATION RADIONAVIGATION - SATELLITE (space-Earth) (space-space) S5.329 S5.329A SPACE RESEARCH (Active) Amateur S5.332	Radionavigation: Radar, Navigation Systems, Active Sensors, Glonass and Galileo Amateur (Secondary)	

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
1260 - 1300	EARTH EXPLORATION - SATELLITE (Active) RADIOLOCATION SPACE RESEARCH (Active) RADIONAVIGATION – SATELLITE (space-Earth) (space-space) S5.329 S5.329A Amateur S5.282 S5.335A	Radionavigation: Radar, Navigation Systems and Active Sensors, Glonass Amateur (Secondary)	
1300 - 1350	AERONAUTICAL RADIONAVIGATION S5.337 RADIOLOCATION RADIONAVIGATION – SATELLITE (Earth-space) S5.149 S5.337A	Navigation Systems	
1350 - 1400	FIXED MOBILE RADIOLOCATION S5.149 S5.339	Fixed: Point - Point Links (Infrastructure)	CEPT/ERC/ REC 13- 01 E: Annex A -1.3 GHz band Annex B - 1.4 GHz band CEPT/ERC/DEC (99)11 REF: Links Guidelines, Doc: ODTR 98/14R
1400 - 1427	EARTH EXPLORATION - SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.341	Radio Astronomy (all emissions prohibited)	
1427 - 1429	FIXED SPACE OPERATION (Earth - space) MOBILE except aeronautical mobile S5.341	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/ REC 13- 01 E: Annex B. CEPT/ERC/DEC (99)11 REF: Links Guidelines, Doc: ODTR 98/14R
1429 - 1452	FIXED MOBILE except aeronautical mobile S5.341	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/ REC 13- 01 E: Annex B. CEPT/ERC/DEC (99)11 REF: Links Guidelines, Doc: ODTR 98/14R
1452 - 1492	FIXED MOBILE except aeronautical mobile BROADCASTING-SATELLITE S5.345 S5.347 BROADCASTING S5.345 S5.347 S5.341	Fixed	Band Closed. Digital Audio Broadcasting Resolution 528 (WARC-92) (CEPT 1995 Wiesbaden Arrangement, CEPT 1996 Bonn meeting)
1492 - 1525	FIXED MOBILE except aeronautical mobile S5.341 S5.342	Fixed	Band Closed.

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
1525 - 1530	SPACE OPERATION (space -Earth) FIXED MOBILE - SATELLITE (space -Earth) S5.351A Earth Exploration - Satellite Mobile except aeronautical mobile S5.341 S5.351 S5.352A S5.354	Mobile-satellite	CEPT/ERC/DEC (98)01, 02, 03, 04 – Including Inmarsat-D and Mini-M, EMS-MSSAT and EMS PRODAT terminals
1530 - 1535	SPACE OPERATION (space – Earth) MOBILE–SATELLITE (space – Earth) S5.351A S5.353A Earth Exploration - Satellite Fixed Mobile except aeronautical mobile S5.341 S5.351 S5.354	Maritime Mobile - Satellite (space - Earth): Inmarsat System	Other Mobile – Satellite Systems
1535 - 1559	MOBILE – SATELLITE (space - Earth) S5.351A S5.341 S5.351 S5.353A S5.354 S5.356 S5.357 S5.357A	Maritime Mobile - Satellite (space - Earth): Inmarsat – M (receive) Search and Rescue (SAR) Satellite Systems including GMDSS	
1559 - 1610	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION – SATELLITE (space - Earth) (space-space) S5.329A S5.341	Aeronautical Radionavigation: GPS, Glonass and Galileo.	
1610 - 1610.60	AERONAUTICAL RADIONAVIGATION MOBILE – SATELLITE (Earth - space) S5.351A S5.341 S5.364 S5.366 S5.367 S5.368 S5.371 S5.372	Aeronautical Radionavigation: Glonass	Satellite Personal Communications Service S-PCS (planned) CEPT/ERC/DEC /(97)03, SI 214 (1998)
1610.60 - 1613.80	AERONAUTICAL RADIONAVIGATION MOBILE – SATELLITE (Earth - space) S5.351A RADIO ASTRONOMY S5.149 S5.341 S5.364 S5.366 S5.367 S5.368 S5.371 S5.372	Aeronautical Radionavigation: Glonass	Satellite Personal Communications Service S-PCS (planned) CEPT/ERC/DEC /(97)03, SI 214 (1998)
1613.80 - 1626.50	AERONAUTICAL RADIONAVIGATION MOBILE – SATELLITE (Earth – space) S5.351A Mobile - Satellite (space - Earth) S5.341 S5.364 S5.365 S5.366 S5.367 S5.368 S5.371 S5.372	Aeronautical Radionavigation: Glonass	Satellite Personal Communications Service S-PCS (planned) CEPT/ERC/DEC /(97)03, SI 214 (1198)
1626.50 - 1660.00	MOBILE – SATELLITE (Earth - space) S5.351A S5.341 S5.351 S5.353A S5.354 S5.357A S5.374 S5.375 S5.376	Maritime Mobile - Satellite (Earth-space): Inmarsat - M (transmit) Search and Rescue (SAR) Satellite Systems including GMDSS	CEPT/ERC/DEC(98)01, 02, 03, 0498

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
1660.00 - 1660.50	RADIO ASTRONOMY MOBILE - SATELLITE (Earth - space) S5.351A S5.149 S5.341 S5.351 S5.354 S5.376A	Radio Astronomy	Important band for Radio Astronomy
1660.50 - 1668.40	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile S5.149 S5.341 S5.379A	Radio Astronomy	Important band for Radio Astronomy
1668.40 - 1670	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149 S5.341	Radio Astronomy	Important band for Radio Astronomy
1670 - 1675	METEOROLOGICAL AIDS FIXED METEOROLOGICAL – SATELLITE (space - Earth) MOBILE S5.380 S5.341	TFTS (ground - air) 1670 - 1675 MHz	CEPT/ERC/DEC/(92)01 (Frequencies) CEPT/ERC/DEC (97)08 (Schiever Plan)
1675 - 1690	METEOROLOGICAL AIDS FIXED METEOROLOGICAL - SATELLITE (space - Earth) MOBILE except aeronautical mobile S5.341	Meteorological – Satellites	
1690 - 1700	METEOROLOGICAL AIDS METEOROLOGICAL - SATELLITE (space - Earth) Fixed Mobile except aeronautical mobile S5.289 S5.341	Meteorological – Satellites	Weather satellite reception (HRPT) 1690 - 1710 MHz
1700 - 1710	FIXED METEOROLOGICAL – SATELLITE (space - Earth) MOBILE except aeronautical mobile S5.289 S5.341	Meteorological – Satellites	Weather satellite reception (HRPT) 1690 - 1710 MHz

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
1710 - 1930	FIXED MOBILE S5.380 S5.384A S5.888A S5.149 S5.341 S5.385 S5.388	Digital European Cordless Telephone (DECT) (1880 - 1900 MHz.) TFTS (air - ground) 1800 -1805 MHz DCS - 1800, 1710 -1785 / 1805 - 1880 MHz Mobile - IMT-2000	DIR 91/287/EEC S.I. No. 168, 1994 SI 410 of 1997. CEPT/ERC/DEC/(92)01 (Frequencies) CEPT/ERC/DEC/(97)08 (Schiever Plan) CEPT/ERC/DEC/(95)03, (97)11 UMTS (terrestrial) Planned 1900-1980 MHz CEPT/ERC/DEC/(97)07(UMTS) CEPT/ERC/DEC (99)25
1930 - 1970	FIXED MOBILE S5.888A S5.388	Mobile - IMT-2000	UMTS (terrestrial) Planned 1900 – 1980 MHz CEPT/ERC/DEC/(97)07(UMTS) CEPT/ERC/DEC (99)25
1970 - 1980	FIXED MOBILE S5.888A S5.388	Mobile - IMT-2000	UMTS (terrestrial) Planned 1900 – 1980 MHz CEPT/ERC/DEC/(97)07 (UMTS) CEPT/ERC/DEC (99)25
1980 - 2010	FIXED MOBILE MOBILE - SATELLITE (Earth - space) S5.351A S5.388 S5.389A	Mobile – IMT-2000	UMTS/S-PCS (satellite, Earth - space) (1980 - 2010 MHz.) CEPT/ERC/DEC/(97)03 (S-PCS) CEPT/ERC/DEC/(97)07 (UMTS) CEPT/ERC/DEC/(97)04 (S-PCS Transition) SI 214 of 1998
2010 - 2025	FIXED MOBILE S5.888A S5.388	Mobile – IMT-2000	UMTS (terrestrial) planned (2010 – 2025 MHz.) CEPT/ERC/DEC/(97)07 (UMTS) CEPT/ERC/DEC (99)25

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
2025 - 2110	FIXED MOBILE S5.391 SPACE RESEARCH (Earth - space) (space - space) SPACE OPERATION (Earth -space) (space - space) EARTH EXPLORATION -SATELLITE (Earth - space) (space – space) S5.392	Fixed: Point – Point Radio Links (Infrastructure) FWA (2088.5 – 2108.5 GHz)	CEPT/ERC/REC 13 – 01 E, 2.0-2.3 GHz Annex C CEPT/ERC/DEC (99)11 Typical Capacity ≤ 34Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R National licence issued June 2000
2110 - 2120	FIXED MOBILE S5.888A SPACE RESEARCH (deep space) (Earth-space) S5.388	Mobile - IMT-2000	UMTS (terrestrial) planned (2110-2170 MHz) CEPT/ERC/DEC/(97)07 (UMTS) CEPT/ERC/DEC (99)25
2120 - 2160	FIXED MOBILE S5.888A S5.388	Mobile – IMT-2000	UMTS (terrestrial) planned (2110 -2170 MHz) CEPT/ERC/DEC/(97)07 (UMTS) CEPT/ERC/DEC/(99)25
2160 - 2170	FIXED MOBILE S5.888A S5.388	Mobile - IMT-2000	UMTS (terrestrial) planned (2110 -2170 MHz) CEPT/ERC/DEC/(97)07 (UMTS)
2170 - 2200	FIXED MOBILE MOBILE – SATELLITE (space - Earth) S5.351A S5.388 S5.389A	Mobile - IMT-2000	UMTS/S-PCS (satellite, space - Earth) (2170-2200 MHz.) CEPT/ERC/DEC/(97)03 (S-PCS) CEPT/ERC/DEC/(97)07 (UMTS) CEPT/ERC/DEC/(97)04 (S-PCS Transition) SI 214 of 1998
2200 - 2290	FIXED SPACE RESEARCH (space - Earth) (space - space) SPACE OPERATION (space - Earth) (space - space) EARTH EXPLORATION -SATELLITE (space - Earth) (space - space) MOBILE S5.391 S5.392	Fixed: Point - Point Radio Links (Infrastructure) FWA (2263.5 – 2283.5 MHz)	CEPT/ERC/REC 13 - 01 E, Annex C (new fixed service plan, 2.0 - 2.3 GHz) Typical Capacity ≤ 34 Mbit/s REF: Links Guidelines,Doc:ODTR 98/14R National licence issued June 2000

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
2290 - 2300	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space - Earth)	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 13 - 01 E, Annex C 2 GHz band (new fixed service plan, 2.0 - 2.3 GHz) Typical capacity ≤ 34 Mbit/s REF: Links Guidelines,Doc:ODTR 98/14R
2300 - 2450	FIXED MOBILE Amateur Radiolocation S5.150 S5.282	Multi - Access - Radiolinks (RURTEL) (2307 - 2326 MHz paired with 2407-2427 MHz with geographical restrictions on use) Short Range Devices (2400 – 2483.5 MHz) including RLANS (2400 - 2483.5 Mhz) Amateur (secondary) ISM (2400 - 2500 MHz)	ITU-R F. 746 Annex 2 (2.3-2.5 GHz) Low power devices and RLANS See Annex 4 and CEPT/ERC/DEC/(96)17
2450 - 2483.5	FIXED MOBILE Radiolocation S5.150	Short Range Devices (2400 -2483.5 MHz) including RLANS (2400 - 2483.5 MHz) ISM (2400 - 2500 MHz)	Low Power Devices and RLANS – See Annex 4 and CEPT/ERC/DEC/(96)17
2483.5 - 2500	FIXED MOBILE MOBILE - SATELLITE (space - Earth) S5.351A Radiolocation S5.150 S5.371 S5.398 S5.399 S5.402	ISM (2400 - 2500 MHz)	Satellite Personal Communications Service (S-PCS) CEPT/ERC/DEC/(97)03, SI 214 of 1998
2500 -2520	FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile S5.384A MOBILE - SATELLITE (space -Earth) S5.403 S5351A S5.414	Programme Retransmission Systems (2500 – 2686 MHz)	S.I. 39 (1989), S.I. 252 (1991) , SI 214 of 1998 MMDS services to cease 01/01/2005 Mobile Satellite Allocation (2520 - 2535 MHz) See S5.403

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
2520 - 2655	FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile S5.384A BROADCASTING –SATELLITE S5.413 S5.416 S5.339 S5.403 S5.418B S5.418C	Programme Retransmission Systems (2500 - 2686 MHz)	S.I. 39 (1989), S.I. 252 (1991) , SI 214 of 1998 Mobile Satellite Allocation (2520 - 2535 MHz) See S5.403 Channel plan for the fixed service in CEPT/ERC/REC 13 - 01 E, Annex D will not be implemented as the band is used by Programme Retransmission Systems.
2655 - 2670	FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile S5.384A BROADCASTING - SATELLITE S5.413 S5.416 Earth Exploration - Satellite (passive) Radio Astronomy Space Research (passive) S5.149 S5.420	Programme Retransmission Systems (2500 - 2686 MHz)	S.I. 39 (1989), S.I. 252 (1991), S.I. 73 (1999) Channel plan for the fixed service in CEPT/ERC/REC 13 - 01 E, Annex D will not be implemented as the band is used by Programme Retransmission Systems.
2670 - 2690	FIXED S5.409 S5.410 S5.411 MOBILE except aeronautical mobile S5.384A MOBILE – SATELLITE (Earth - space) S5.351A Earth Exploration – Satellite (passive) Radio Astronomy Space Research (passive) S5.149 S5.419 S5.420	Programme Retransmission Systems (2500 - 2686 MHz) Radio Astronomy (all emissions prohibited in the band 2690 - 2700 MHz)	S.I. 39 (1989), S.I. 252 (1991), S.I. 73 (1999) MMDS services to cease 01/01/2005 Mobile Satellite allocation (2670 - 2690 MHz) See Footnote S5.419
2690 - 2700	EARTH EXPLORATION –SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	Passive Services	
2700 - 2900	AERONAUTICAL RADIONAVIGATION S5.337 Radiolocation S5.423	Radar and Navigation Systems, Meteorological radar	
2900 - 3100	RADIONAVIGATION S5.426 Radiolocation S5.425 S5.427	Radar (S-band) Maritime Racons	

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
3100 - 3300	RADIOLOCATION Earth exploration-Satellite (active) Space research (active) S5.149	Radars, Active Sensors, Racons	
3300 - 3400	RADIOLOCATION S5.149		
3400 - 3600	FIXED FIXED - SATELLITE (space - Earth) Mobile Radiolocation S5.431	Fixed (Public Broadcaster) Radiolocation (Government Services) FWA (3410 – 3435 MHz paired with 3510 – 3535 MHz and 3475 – 3500 MHz paired with 3575 – 3600 MHz)	National licence issued June 2000
3600 - 4200	FIXED FIXED - SATELLITE (space - Earth) Mobile	Fixed: Point – Point Radio Links (Infrastructure)	CEPT/ERC/REC 12 – 08 Annex E 4 GHz band (3.6-4.2 GHz) Typical capacity = 140mbit/s REF: Links Guidelines,Doc: ODTR 98/14R
4200 - 4400	AERONAUTICAL RADIONAVIGATION S5.438 S5.440	Altimeters	
4400 - 4500	FIXED MOBILE		
4500 - 4800	FIXED FIXED - SATELLITE (space - Earth) S5.441 MOBILE		National Allotment for Fixed - Satellite (space-Earth) (4500 - 4800MHz) Appendix 30B, Radio Regulations
4800 - 4990	FIXED MOBILE S5.442 Radio Astronomy S5.149 S5.339		
4990 - 5000	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space Research (passive) S5.149		
5000 - 5150	AERONAUTICAL RADIONAVIGATION S5.367 S5.443A S5.443B S5.444 S5.444A	Microwave Landing Systems (MLS)	S5.444 gives priority to MLS in this band over other users

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
5150 - 5250	AERONAUTICAL RADIONAVIGATION FIXED – SATELLITE (Earth – space) S5.447A S5.446 S5.447B S5.447C	Short Range Devices HIPERLANS (5150 - 5250 MHz) indoor use only	HIPERLANS See Annex 4 and CEPT/ERC/DEC/(99)23, EN 300 652
5250 - 5255	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH S5.447D S5.448A	Short Range Devices HIPERLANS – indoor use only	HIPERLANS See Annex 4 and CEPT/ERC/DEC/(99)23, EN 300 652
5255 - 5350	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.448A	Short Range Devices HIPERLANS – indoor and outdoor use.	HIPERLANS See Annex 4 and CEPT/ERC/DEC/(99)23, EN 300 652
5350 - 5460	EARTH EXPLORATION SATELLITE (active) S5.448B AERONAUTICAL RADIONAVIGATION S5.449 Radiolocation		
5460 - 5470	RADIONAVIGATION S5.449 Radiolocation		
5470 - 5650	MARITIME RADIONAVIGATION Radiolocation S5.451 S5.452	Meteorological Service Radar Radiolocation: Position Fixing Equipment Amateur (Secondary) FSTV	HIPERLANs: CEPT/ERC/DEC/(99)23, EN 300 652, ETS 300 836
5650 - 5725	RADIOLOCATION Amateur Space Research (deep space) 5.282 S5.451	Amateur (5650 – 5850MHz) (secondary)	HIPERLANs: CEPT/ERC/DEC/(99)23, EN 300 652, ETS 300 836
5725 - 5830	FIXED – SATELLITE (Earth – space) RADIOLOCATION Amateur S5.150 S5.451	Road Transport & Traffic Telematics (RTTT) (5795 - 5805 MHz) Short Range Devices Amateur (5650 - 5850MHz) (secondary) ISM (5725 - 5875 MHz)	ERC/DEC (92)02 (5805-5815 MHz possible extension band) Low power devices See Annex 4

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
5830 - 5850	FIXED – SATELLITE (Earth – space) RADIOLOCATION Amateur Amateur – Satellite (space - Earth) S5.150 S5.451	Short Range Devices Amateur (5650 –5850MHz) (secondary) ISM (5725 – 5875 MHz)	Low power devices See Annex 4
5850 - 5925	FIXED FIXED – SATELLITE (Earth -space) MOBILE S5.150	Short Range Devices ISM (5725-5875 MHz)	Low power devices See Annex 4
5925 - 6700	FIXED FIXED – SATELLITE (Earth - space) MOBILE S5.149 S5.440 S5.458	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 14-01 E L6GHz Band (5.925 - 6.425GHz) CEPT/ERC/REC 14-02 E U6GHz Band (6.425 - 7.125 GHz) Typical capacity 140mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
6700 - 7075	FIXED FIXED – SATELLITE (Earth – space) (space - Earth) S5.441 MOBILE S5.458 S5.458A S5.458B S5.458C	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 14-02 E U6GHz Band (6.425 - 7.125 GHz) Typical capacity links: minimum 140mbit/s REF: Links Guidelines, Doc: ODTR 98/14R National Allotment for Fixed-Satellite Uplink (6725 - 7025 MHz) Appendix 30B, Radio Regulations
7075 - 7250	FIXED MOBILE S5.458 S5.460	Fixed: Point - Point Radio Links (Infrastructure) Outside Broadcast Links (Public Broadcasters)	CEPT/ERC/REC 14-02 E U6GHz Band (6.425 - 7.125 GHz) Typical capacity 140mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
7250 -7300	FIXED FIXED - SATELLITE (space – Earth) MOBILE S5.461	Fixed	

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
7300 - 7450	FIXED FIXED – SATELLITE (space – Earth) MOBILE except aeronautical mobile S5.461	Fixed	
7450 - 7550	FIXED FIXED – SATELLITE (space - Earth) METEOROLOGICAL - SATELLITE (space - Earth) MOBILE except aeronautical mobile S5.461A	Fixed: Point - Point Radio Links (Infrastructure)	ITU-R F. 358-6 Annex 1 7 GHz band (7425 - 7725 MHz) Typical capacity 140mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
7550 - 7750	FIXED FIXED - SATELLITE (space - Earth) MOBILE except aeronautical mobile	Fixed: Point - Point Radio Links (Infrastructure)	ITU-R F. 358-6 Annex 1 7 GHz band (7425 - 7725 MHz) ITU-R F.386-6 Annex 1 L8 GHz band (7725 - 8275 MHz) Typical capacity 140Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
7750 - 7850	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) S5.461B MOBILE except aeronautical mobile	Fixed: Point - Point Radio Links (Infrastructure)	ITU-R F.386-6 Annex 1 L8 GHz band (7725 – 8275 MHz) Typical capacity 140Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
7850 - 7900	FIXED MOBILE except aeronautical mobile	Fixed: Point - Point Radio Links (Infrastructure)	ITU-R F.386-6 Annex 1 L8 GHz band (7725 - 8275 MHz) Typical capacity 140Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
7900 - 8025	FIXED FIXED – SATELLITE (Earth - space) MOBILE S5.461	Fixed: Point - Point Radio Links (Infrastructure)	ITU-R F.386-6 Annex 1 L8 GHz band (7725 - 8275 MHz) Typical capacity 140Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
8025 - 8175	EARTH EXPLORATION SATELLITE (space - Earth) FIXED FIXED – SATELLITE (Earth - space) MOBILE S5.463 S5.462A	Fixed: Point - Point Radio Links (Infrastructure)	ITU-R F.386-6 Annex 1 L8 GHz band (7725 - 8275 MHz) Typical capacity 140Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
8175 - 8215	EARTH EXPLORATION SATELLITE (space - Earth) FIXED FIXED – SATELLITE (Earth – space) METEOROLOGICAL - SATELLITE (Earth - space) MOBILE S5.463 S5.462A	Fixed: Point - Point Radio Links (Infrastructure)	ITU-R F.386-6 Annex 1 L8 GHz band (7725 - 8275 MHz) Typical capacity 140Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
8215 - 8400	EARTH EXPLORATION SATELLITE (space - Earth) FIXED FIXED – SATELLITE (Earth -space) MOBILE S5.463 S5.462A	Fixed: Point - Point Radio Links (Infrastructure)	ITU-R F.386-6 Annex 1 L8 GHz band (7725 - 8275 MHz) Typical capacity 140Mbit/s ITU-R F.386-6 Annex 3 U8 GHz band (8275 – 8500 MHz) Typical capacity ≤34 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
8400 - 8500	FIXED MOBILE except aeronautical Mobile SPACE RESEARCH (space –Earth) S5.465 S5.467	Fixed: Point - Point Radio Links (Infrastructure)	ITU-R F.386-6 Annex 3 U8 GHz band (8275 – 8500 MHz) Typical capacity ≤34 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
8500 - 8550	RADIOLOCATION		
8550 - 8650	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.469A		
8650 - 8750	RADIOLOCATION		
8750 - 8850	RADIOLOCATION AERONAUTICAL RADIONAVIGATION S5.470	Airborne Doppler Radar	
8850 - 9000	RADIOLOCATION MARITIME RADIONAVIGATION S5.472		
9000 - 9200	AERONAUTICAL RADIONAVIGATION S5.337 Radiolocation	Radar (Government services)	
9200 - 9300	RADIOLOCATION MARITIME RADIONAVIGATION S5.472 S5.474	Short Range Devices	Motion Sensors – See Annex 4

Part B – The Radio Spectrum: 27.5 MHz to 10 000 MHz

Frequency Band (MHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
9300 - 9500	RADIONAVIGATION S5.476 Radiolocation S5.427 S5.474 S5.475	Radar (X-Band) Radiolocation: Position Fixing (Private operators) Maritime Racons Short Range Devices	Motion Sensors – See Annex 4
9500 - 9800	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) S5.476A	Short Range Devices	Motion Sensors – See Annex 4
9800 - 10000	RADIOLOCATION Fixed S5.479	Short Range Devices	Motion Sensors – See Annex 4

Part C – The Radio Spectrum: 10 GHz to 1000 GHz

Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
10 - 10.45	FIXED MOBILE RADIOLOCATION Amateur S5.479	Amateur (secondary)	Designated for FWA services (10.27 – 10.30 GHz paired with 10.62 – 10.65 GHz) – Subject to review.
10.45 - 10.5	RADIOLOCATION Amateur Amateur - Satellite	Amateur (secondary)	
10.5 - 10.55	FIXED MOBILE Radiolocation	Short Range Devices Radiolocation (Radars and sensors)	Motion Sensors – See Annex 4
10.55 - 10.6	FIXED MOBILE except aeronautical mobile Radiolocation	Short Range Devices Radiolocation (Radars and sensors)	Motion Sensors – See Annex 4
10.6 - 10.68	EARTH EXPLORATION -SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation S5.149 S5.482	Radiolocation (security devices)	Designated for FWA services (10.27 – 10.30 GHz paired with 10.62 – 10.65 GHz) – Subject to review.
10.68 - 10.7	EARTH EXPLORATION -SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	Radio Astronomy (all emissions prohibited)	

Part C – The Radio Spectrum: 10 GHz to 1000 GHz

Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
10.7 - 11.7	FIXED FIXED - SATELLITE (space - Earth) S5.441 S5.484A (Earth – space) S5.484 MOBILE except aeronautical mobile	Fixed: Point – Point Radio Links (Infrastructure) Earth Stations (Satellite Down Links) (Broadcasters)	CEPT/ERC/REC 12 – 06 Annex E 11 GHz band (10.7 - 11.7GHz) Typical capacity 140mbit/s REF: Links Guidelines, Doc: ODTR 98/14R Euteltracs Omnitracs Terminals CEPT/ERC/DEC (98) 15 National Allotment for Fixed - Satellite Down Link (10.7 - 10.95GHz, 11.2-11.45GHz) Appendix 30B, Radio Regulations
11.7 - 12.5	FIXED BROADCASTING BROADCASTING - SATELLITE Mobile except aeronautical mobile S5.487 S5.487A S5.491 S5.492	ENG (Public Broadcasters)	Broadcast – Satellite plans as per Radio Regulations, Appendix 30
12.5 - 12.75	FIXED – SATELLITE (space-Earth) S5.484A (Earth - space)		
12.75 - 13.25	FIXED FIXED – SATELLITE (Earth -space) S5.441 MOBILE Space Research (deep space) (space - Earth)	Fixed: Point –to-Point radio links	CEPT/ERC/REC 12-02 E 13 GHz band (12.75-13.25 GHz) Typical capacity ≤34 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R Euteltracs Omnitracs Terminals CEPT/ERC/DEC (98) 15 National Allotment for Fixed - Satellite Uplink (12.75 - 13.25 GHz) Appendix 30B, Radio Regulations
13.25 - 13.4	EARTH EXPLORATION - SATELLITE (active) AERONAUTICAL RADIONAVIGATION S5.497 SPACE RESEARCH (active) S5.498A		

Part C – The Radio Spectrum: 10 GHz to 1000 GHz

Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
13.4 - 13.75	EARTH EXPLORATION - SATELLITE (active) RADIOLOCATION SPACE RESEARCH S5.501A Standard Frequency and Time Signal – Satellite (Earth – space) S5.501 S5.501B	Short Range Devices	Motion Sensors – See Annex 4
13.75 - 14	RADIOLOCATION FIXED – SATELLITE (Earth – Space) S5.484A Standard Frequency and Time Signal – Satellite (Earth – space) Space Research S5.501 S5.502 S5.503 S5.503A	Short Range Devices	Motion Sensors – See Annex 4
14 - 14.25	FIXED – SATELLITE (Earth -space) S5.484A S5.506 RADIONAVIGATION S5.504 Mobile – Satellite (Earth –space) except aeronautical mobile – satellite Space Research	Earth Stations (Satellite uplinks) (Public Broadcasters) VSAT SNG ENG	Euteltracs Omnitracs Terminals CEPT/ERC/DEC (98) 15
14.25 - 14.3	FIXED – SATELLITE (Earth – space) S5.484A S5.506 RADIONAVIGATION S5.504 Mobile – Satellite (Earth –space) except aeronautical Mobile – Satellite Space Research S5.508	Earth Stations (Satellite uplinks) (Public Broadcasters) VSAT SNG ENG	
14.3 - 14.4	FIXED S5.484A S5.506 FIXED – SATELLITE (Earth –space) MOBILE except aeronautical mobile Mobile – Satellite (Earth –space) except aeronautical Mobile – Satellite Radionavigation – Satellite	ENG VSAT SNG	

Part C – The Radio Spectrum: 10 GHz to 1000 GHz

Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
14.4 -14.47	FIXED FIXED - SATELLITE (Earth – space) S5.484A S5.506 MOBILE except aeronautical mobile Mobile – Satellite (Earth –space) except aeronautical mobile – satellite Space Research (space – Earth)	ENG V-SAT SNG	
14.47 -14.5	FIXED FIXED-SATELLITE (Earth –space) S5.484A S5.506 MOBILE except aeronautical mobile Mobile – Satellite (Earth –space) except aeronautical mobile – satellite Radio Astronomy S5.149	ENG V-SAT SNG	
14.5 - 14.8	FIXED FIXED - SATELLITE (Earth - space) S5.510 MOBILE Space Research	Fixed: Point – Point Radio Links (Infrastructure)	ITU-R F. 636-3 15 GHz band (14.5 - 15.35 GHz) Typical capacity ≤34 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
14.8 - 15.35	FIXED MOBILE Space Research S5.339	Fixed: Point - Point Radio Links (Infrastructure)	ITU-R F. 636-3 15 GHz band (14.5 - 15.35 GHz) Typical capacity ≤34 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
15.35 - 15.4	EARTH EXPLORATION – SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	Radio Astronomy (all emissions prohibited)	
15.4 - 15.43	AERONAUTICAL RADIONAVIGATION S5.511D		
15.43 - 15.63	FIXED – SATELLITE (Earth – space) S5.511A AERONAUTICAL RADIONAVIGATION S5.511C		Radio Regulations footnotes S5.511A and S5.511C give the provisions relating to the use of the band by satellite systems.
15.63 - 15.7	AERONAUTICAL RADIONAVIGATION S5.511D		
15.7 - 16.6	RADIOLOCATION	Radar	
16.6 - 17.1	RADIOLOCATION Space Research (deep space) (Earth - space)		

Part C – The Radio Spectrum: 10 GHz to 1000 GHz

Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
17.1 - 17.2	RADIOLOCATION	Short range Devices HIPERLANS (secondary)	HIPERLANS See Annex 4
17.2 - 17.3	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) S5.513A	Short range Devices HIPERLANS (secondary)	HIPERLANS See Annex 4
17.3 - 17.7	FIXED – SATELLITE (Earth - space) S5.516 Radiolocation		Feeder Link plans for Broadcast Satellites as per Appendix 30A, Radio Regulations
17.7 - 18.1	FIXED FIXED - SATELLITE (space - Earth) S5.484A (Earth - space) S5.516 MOBILE	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 12-03 E, Annex A 18 GHz band (17.7 - 19.7 GHz) Typical capacity ≥34 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R Feeder Link plans for Broadcast Satellites as per Appendix 30A, Radio Regulation
18.1 - 18.4	FIXED FIXED - SATELLITE (space – Earth) S5.484A (Earth - space) S5.520 MOBILE S5.519	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 12-03 E, Annex A 18 GHz band (17.7 - 19.7 GHz) Typical capacity ≥34 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
18.4 - 18.6	FIXED FIXED - SATELLITE (space – Earth) S5.484A MOBILE	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 12-03 E, Annex A 18 GHz band (17.7 - 19.7 GHz) Typical capacity ≥34 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R
18.6 - 18.8	FIXED FIXED - SATELLITE (space - Earth) S5.552B MOBILE except aeronautical mobile EARTH EXPLORATION - SATELLITE (passive) Space Research (passive) S5.522A	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 12-03 E, Annex A 18 GHz band (17.7 - 19.7 GHz) Typical capacity ≥34 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R

Part C – The Radio Spectrum: 10 GHz to 1000 GHz

Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
18.8 - 19.3	FIXED FIXED – SATELLITE (space – Earth) S5.523A MOBILE	Fixed: Point - Point Radio Links (Infrastructure) Earth Station Down Links (Educational Institutions)	CEPT/ERC/REC 12-03 E, Annex A 18 GHz band (17.7 - 19.7 GHz) Typical capacity ≥34 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R Radio Regulations Footnote S5.523A refers to the use of this band by satellite systems
19.3 - 19.7	FIXED FIXED - SATELLITE (space - Earth) (Earth – space) S5.523B S5.523C S5.523D S5.523E MOBILE	Fixed: Point - Point Radio Links (Infrastructure) Earth Station Down Links (Educational Institutions)	CEPT/ERC/REC 12-03 E, Annex A 18 GHz band (17.7 -19.7 GHz) Typical capacity ≥34 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R Radio Regulations Footnote S5.523B refers to the use of this band by satellite systems
19.7 - 20.1	FIXED - SATELLITE (space - Earth) S5.484A Mobile - Satellite (space -Earth)		
20.1 - 20.2	FIXED – SATELLITE (space - Earth) S5.484A MOBILE – SATELLITE (space – Earth) S5.525 S5.526 S5.527 S5.528		
20.2 - 21.2	FIXED – SATELLITE (space – Earth) MOBILE – SATELLITE (space – Earth) Standard Frequency and Time Signal – Satellite (space – Earth)		
21.2 - 21.4	EARTH EXPLORATION -SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	Fixed: Point - Point Radio Links (Infrastructure)	Band closed.
21.4 - 22	FIXED MOBILE BROADCASTING -SATELLITE S5.530	Fixed: Point - Point Radio Links (Infrastructure)	Band closed.

Part C – The Radio Spectrum: 10 GHz to 1000 GHz

Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
22 - 22.21	FIXED MOBILE except aeronautical mobile S5.149	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 13-02 E, Annex A 23 GHz band (22 - 23.6 GHz) Typical capacity ≥ 2 Mbit/s CEPT/ERC/DEC/(96)09, EN 300 198 REF: Links Guidelines, Doc: ODTR 98/14R Existing links to ITU-R Rec. 637-2 (21.4 -23.6 GHz) to be relocated.
22.21 - 22.5	EARTH EXPLORATION – SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) S5.149 S5.532	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 13-02 E, Annex A 23 GHz band (22 - 23.6 GHz) Typical capacity ≥ 2 Mbit/s CEPT/ERC/DEC/(96)09, I.S./ETS 300 198 REF: Links Guidelines,Doc:ODTR 98/14R Existing links to ITU-R Rec. 637-2 (21.4-23.6 GHz) to be relocated.
22.5 - 22.55	FIXED MOBILE	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 13-02 E, Annex A 23 GHz band (22 - 23.6 GHz) Typical capacity ≥ 2 Mbit/s CEPT/ERC/DEC/(96)09, EN 300 198 REF: Links Guidelines, Doc: ODTR 98/14R Existing links to ITU-R Rec. 637-2 (21.4-23.6 GHz) to be relocated.
22.55 - 23.55	FIXED INTER - SATELLITE MOBILE S5.149	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 13-02 E, Annex A 23 GHz band (22-23.6 GHz) Typical capacity ≥ 2 Mbit/s CEPT/ERC/DEC/(96)09, I.S./ETS 300 198 Existing links to ITU-R Rec. 637-2 (21.4-23.6 GHz) to be relocated.

Part C – The Radio Spectrum: 10 GHz to 1000 GHz

Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
23.55 - 23.6	FIXED MOBILE	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 13-02 E, Annex A 23 GHz band (22 - 23.6 GHz) Typical capacity ≥ 2 Mbit/s CEPT/ERC/DEC/(96)09, I.S./ETS 300 198 REF: Links Guidelines, Doc: ODTR 98/14R Existing links to ITU-R Rec. 637-2 (21.4-23.6 GHz) to be relocated.
23.6 - 24	EARTH EXPLORATION –SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	Radio Astronomy (all emissions prohibited)	
24 - 24.05	AMATEUR AMATEUR - SATELLITE S5.150	AMATEUR AMATEUR - SATELLITE Short Range Devices (24 - 24.25 GHz.) ISM (24-24.25 GHz)	Low Power Devices – See Annex 4
24.05 - 24.25	RADIOLOCATION Amateur Earth Exploration - Satellite (active) S5.150	Short Range Devices (24 - 24.25 GHz.) ISM (24 - 24.25 GHz)	Low Power Devices – See Annex 4
24.25 - 24.45	FIXED		
24.45 - 24.65	FIXED INTER – SATELLITE	Fixed FWA (24.5 – 26.5 GHz)	CEPT/ERC/REC 13 – 02 Annex B 26 GHz band (24.5 – 26.5 GHz) Typical capacity ≥ 2 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R National licences issued July 2000
24.65 - 24.75	FIXED INTER – SATELLITE	Fixed FWA (24.5 – 26.5 GHz)	CEPT/ERC/REC 13 – 02 Annex B 26 GHz band (24.5 – 26.5 GHz) Typical capacity ≥ 2 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R National licences issued July 2000

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
24.75 - 25.25	FIXED	Fixed FWA (24.5 – 26.5 GHz)	CEPT/ERC/REC 13 – 02 Annex B 26 GHz band (24.5 – 26.5 GHz) Typical capacity ≥ 2 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R National licences issued July 2000
25.25 - 25.5	FIXED MOBILE INTER – SATELLITE S5.536 Standard Frequency and Time Signal - Satellite (Earth – Space)	Fixed FWA (24.5 – 26.5 GHz)	CEPT/ERC/REC 13 – 02 Annex B 26 GHz band (24.5 – 26.5 GHz) Typical capacity ≥ 2 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R National licences issued July 2000
25.5 - 27	EARTH EXPLORATION –SATELLITE (space - Earth) S5.536A S5.536B FIXED INTER – SATELLITE S5.536 MOBILE Standard Frequency and Time Signal - Satellite (Earth – space)	Fixed FWA (24.5 – 26.5 GHz)	CEPT/ERC/REC 13 – 02 Annex B 26 GHz band (24.5 – 26.5 GHz) Typical capacity ≥ 2 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R National licences issued July 2000
27 -27.5	FIXED MOBILE INTER – SATELLITE S5.536		

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
27.5 - 28.5	FIXED S5.351A FIXED – SATELLITE (Earth -space) S5.484A S5.539 MOBILE S5.538 S5.540	Fixed	CEPT/ERC/REC 13 – 02 Annex c 28 GHz band (part of 27.5 – 29.5 GHz) Typical capacity ≥ 2 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R Designated for FWA services (27.5 – 29.5 GHz) – Subject to review.
28.5 - 29.1	FIXED FIXED - SATELLITE (Earth -space) S5.484A S5.523A S5.539 MOBILE Earth Exploration - Satellite (Earth - space) S5.541 S5.540	Fixed	CEPT/ERC/REC 13 – 02 Annex c 28 GHz band (part of 27.5 – 29.5 GHz) Typical capacity ≥ 2 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R Designated for FWA services (27.5 – 29.5 GHz) – Subject to review.
29.1 - 29.5	FIXED FIXED - SATELLITE (Earth -space) S5.523C S5.523E S5.535A S5.539 S5.541A MOBILE Earth Exploration - Satellite (Earth - space) S5.541 S5.540	Fixed	CEPT/ERC/REC 13 – 02 Annex c 28 GHz band (part of 27.5 – 29.5 GHz) Typical capacity ≥ 2 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R Designated for FWA services (27.5 – 29.5 GHz) – Subject to review.
29.5 –29.9	FIXED - SATELLITE (Earth – space) S5.484A S5.539 Mobile - Satellite (Earth – space) Earth Exploration - Satellite (Earth - space) S5.541 S5.540		
29.9 - 30	FIXED - SATELLITE (Earth – space) S5.484A S5.539 MOBILE – SATELLITE (Earth – space) Earth Exploration - Satellite (Earth - space) S5.541 S5.543 S5.525 S5.526 S5.527 S5.538 S5.540		
30 - 31	FIXED - SATELLITE (Earth – space) MOBILE – SATELLITE (Earth – space) Standard Frequency and Time Signal - Satellite (space - Earth)		

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
31 - 31.3	FIXED MOBILE Standard Frequency and Time Signal - Satellite (space – Earth) Space Research S5.544 S5.149		
31.3 - 31.5	EARTH EXPLORATION -SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	Radio Astronomy (all emissions prohibited)	
31.5 - 31.8	EARTH EXPLORATION - SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile S5.149		
31.8 - 32	FIXED S5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space - Earth) S5.547 S5.548		
32 - 32.3	FIXED S5.547A INTER – SATELLITE RADIONAVIGATION SPACE RESEARCH (deep space) (space - Earth) S5.547 S5.548		
32.3 - 33	FIXED S5.547A INTER-SATELLITE RADIONAVIGATION S5.547 S5.548		
33 - 33.4	FIXED S5.547A RADIONAVIGATION S5.547		

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
33.4 - 34.2	RADIOLOCATION		
34.2 - 34.7	RADIOLOCATION SPACE RESEARCH (deep space) (Earth - space)		
34.7 - 35.2	RADIOLOCATION Space Research		
35.2 - 35.5	METEOROLOGICAL AIDS RADIOLOCATION		
35.5 - 36	EARTH EXPLORATION –SATELLITE (active) METEOROLOGICAL AIDS RADIOLOCATION SPACE RESEARCH (active) S5.551A		
36 - 37	EARTH EXPLORATION –SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.149		
37 -37.5	FIXED MOBILE SPACE RESEARCH (space – Earth) S5.547	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 12-01 E Annex A, CEPT/REC/DEC(98)08, 38 GHz band (37 - 39.5 GHz) Typical capacity ≥ 2 Mbit/s CEPT/ERC/DEC/(96)08, EN 300 197 REF: Links Guidelines, Doc: ODTR 98/14R
37.5 - 38	FIXED FIXED-SATELLITE (space – Earth) MOBILE SPACE RESEARCH (space - Earth) Earth Exploration - Satellite (space - Earth) S5.551AA S5.547	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 12-01 E Annex A, CEPT/REC/DEC(98)08, 38 GHz band (37 - 39.5 GHz) Typical capacity ≥ 2 Mbit/s CEPT/ERC/DEC/(96)08, EN.300 197 REF: Links Guidelines, Doc:ODTR 98/14R
38 - 39.5	FIXED FIXED – SATELLITE (space - Earth) MOBILE Earth Exploration – Satellite (space - Earth) S5.551AA S5.547	Fixed: Point - Point Radio Links (Infrastructure)	CEPT/ERC/REC 12-01 E Annex A, CEPT/REC/DEC(98)08, 38 GHz band (37 - 39.5 GHz) Typical capacity ≥ 2 Mbit/s CEPT/ERC/DEC/(96)08, EN 300 197 REF: Links Guidelines, Doc: ODTR 98/14R

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
39.5 - 40	FIXED FIXED – SATELLITE (space – Earth) MOBILE MOBILE – SATELLITE (space – Earth) Earth Exploration – Satellite (space – Earth) S5.551AA S5.547		
40 - 40.5	FIXED FIXED – SATELLITE (space - Earth) MOBILE MOBILE – SATELLITE (space - Earth) EARTH EXPLORATION – SATELLITE (Earth – space) SPACE RESEARCH (Earth - space) Earth Exploration – Satellite (space - Earth)		
40.5 - 41	FIXED FIXED-SATELLITE (space-Earth) BROADCASTING BROADCASTING – SATELLITE Mobile S5.547		MWS and MVDS under consideration: CEPT/ERC/DEC/(99)15
41 - 42	FIXED FIXED-SATELLITE (space-Earth) BROADCASTING BROADCASTING – SATELLITE Mobile S5.547 S5.551G		MWS and MVDS under consideration: CEPT/ERC/DEC/(99)15
42.5 - 42.5	FIXED FIXED-SATELLITE (space-Earth) BROADCASTING BROADCASTING – SATELLITE Mobile S5.547 S5.551G S5.551AA		MWS and MVDS under consideration: CEPT/ERC/DEC/(99)15

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
42.5 - 43.5	FIXED FIXED – SATELLITE (Earth - space) S5.552 MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149		MWS and MVDS under consideration: CEPT/ERC/DEC/(99)15
43.5 - 47	MOBILE S5.553 MOBILE – SATELLITE RADIONAVIGATION RADIONAVIGATION – SATELLITE S5.554		
47 - 47.2	AMATEUR AMATEUR - SATELLITE		
47.2 - 50.2	FIXED FIXED-SATELLITE (Earth – space) S5.552 MOBILE S5.149 S5.340 S5.552A S5.555	Radio Astronomy (48.94-49.04 GHz) (emissions from airborne stations prohibited)	
50.2 - 50.4	EARTH EXPLORATION – SATELLITE (passive) SPACE RESEARCH (passive) S5.340 S5.555A		
50.4 - 51.4	FIXED FIXED – SATELLITE (Earth – space) MOBILE Mobile – Satellite (Earth – space)		
51.4 - 52.6	FIXED MOBILE S5.547 S5.556		
52.6 - 54.25	EARTH EXPLORATION –SATELLITE (passive) SPACE RESEARCH (passive) S5.340 S5.556	Radio Astronomy (all emissions prohibited)	
54.25 - 55.78	EARTH EXPLORATION –SATELLITE (passive) INTER – SATELLITE S5.556A SPACE RESEARCH (passive)	Fixed Mobile	REF: Links Guidelines, Doc: ODTR 98/14R CEPT Rec. T/R 22-03 Links for local infrastructure. Support infrastructure for large-scale public mobile networks. (54.25 - 57.2 GHz)

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
55.78 - 56.9	EARTH EXPLORATION –SATELLITE (passive) FIXED S5.557A INTER – SATELLITE S5.556A MOBILE S5.558 SPACE RESEARCH (passive) S5.547	Fixed Mobile	CEPT/ERC/REC 12-12 E 58 GHz band (55.78-59 GHz) Typical capacity ≥ 2 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R CEPT Rec. T/R 22-03 Links for local infrastructure. Support infrastructure for large-scale public mobile networks. (54.25 - 57.2 GHz)
56.9 - 57	EARTH EXPLORATION –SATELLITE (passive) FIXED INTER – SATELLITE S5.558A MOBILE S5.558 SPACE RESEARCH (passive) S5.547	Fixed Mobile	CEPT/ERC/REC 12-12 E 58 GHz band (55.78-59 GHz) Typical capacity ≥ 2 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R CEPT Rec. T/R 22-03 Links for local infrastructure. Support infrastructure for large-scale public mobile networks. (54.25 - 57.2 GHz)
57 - 58.2	EARTH EXPLORATION –SATELLITE (passive) FIXED INTER – SATELLITE S5.556A MOBILE S5.558 SPACE RESEARCH (passive) S5.547 S5.557	Fixed Mobile	CEPT/ERC/REC 12-12 E 58 GHz band (55.78-59 GHz) Typical capacity ≥ 2 Mbit/s REF: Links Guidelines, Doc: ODTR 98/14R CEPT Rec. T/R 22-03 Links for local infrastructure. Support infrastructure for large-scale public mobile networks. (54.25 - 57.2 GHz) Unplanned low power fixed and mobile systems. (57.2 - 58.2 GHz), ETS 300 408
58.2 - 59	EARTH EXPLORATION - SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) S5.547 S5.556	Radio Astronomy (all emissions prohibited)	

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
59 - 59.3	EARTH EXPLORATION – SATELLITE (passive) FIXED INTER – SATELLITE S5.556A MOBILE S5.558 RADIOLOCATION S5.559 SPACE RESEARCH (passive)	Fixed Mobile Radiolocation	
59.3 - 64	FIXED INTER – SATELLITE MOBILE S5.558 RADIOLOCATION S5.559 S5.138	Fixed Mobile Radiolocation Low power devices (61 – 61.5 Ghz) ISM (61 - 61.5 GHz)	Radiolocation (59 - 64 GHz) CEPT Rec T/R 22 – 03 Cordless Local Area Networks (59-62 GHz) Broadband Mobile Systems (62-63GHz) Road Traffic Informatics (63 - 64 GHz)
64 - 65	FIXED INTER - SATELLITE MOBILE except aeronautical mobile S5.547 S5.556		
65 - 66	EARTH EXPLORATION –SATELLITE FIXED INTER - SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH S5.547	Fixed Mobile	CEPT Rec. T/R 22-03 Broadband Mobile Systems
66 - 71	INTER - SATELLITE MOBILE S5.553 S5.558 MOBILE - SATELLITE RADIONAVIGATION RADIONAVIGATION – SATELLITE S5.554		
71 - 74	FIXED FIXED - SATELLITE (space-Earth) MOBILE MOBILE – SATELLITE (space-Earth)		

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
74 - 75.5	FIXED FIXED – SATELLITE (space-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space Research (space - Earth) S5.561		
75.5 - 76	FIXED FIXED SATELLITE (space-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITES Space Research (space - Earth) S5.561 S5.559A		
76 - 77.5	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur - Satellite Space Research (space – Earth) S5.149	Short Range Devices	RTTT Radar – See Annex 4
77.5 - 78	AMATEUR AMATEUR-SATELLITE Radio Astronomy Space Research (space – Earth) S5.149		
78 - 79	RADIOLOCATION Amateur Amateur - Satellite Radio Astronomy Space Research (space – Earth) S5.149 S5.560		

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
79 - 81	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur – Satellite Space Research (space – Earth) S5.149		
81 - 84	FIXED FIXED – SATELLITE (Earth – space) MOBILE MOBILE – SATELLITE (Earth - space RADIO ASTRONOMY Space Research (space – Earth) S5.149 S5.560A		
84 - 86	FIXED MOBILE FIXED-SATELLITE (Earth – space) RADIO ASTRONOMY S5.149		
86 - 92	EARTH EXPLORATION – SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340	Radio Astronomy (all emission prohibited)	
92 - 94	FIXED RADIO ASTRONOMY MOBILE RADIOLOCATION S5.149 S5.556		
94 - 94.1	EARTH EXPLORATION – SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio Astronomy S5.562 S5.562A		

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
94.1 - 95	FIXED RADIO ASTRONOMY MOBILE RADIOLOCATION S5.149		
95 - 100	FIXED MOBILE S5.553 RADIONAVIGATION RADIONAVIGATION –SATELLITE RADIO ASTRONOMY RADIOLOCATION S5.149 S5.554		
100 - 102	EARTH EXPLORATION –SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.341		
102 - 105	FIXED RADIO ASTRONOMY MOBILE S5.149 S5.341		
105 - 109.5	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) S5.562B S5.149 S5341	Radio Astronomy (all emissions prohibited)	
109.5 - 111.8	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5341		
111.8 - 114.25	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) S5.562B S5.149 S5.341		

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
114.25 - 116	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5341		
116 - 119.98	EARTH EXPLORATION –SATELLITE (passive) INTER SATELLITE S5.562C SPACE RESEARCH (passive) S5.341		
119.98 - 120.02	EARTH EXPLORATION –SATELLITE (passive) INTER - SATELLITE S5.562C SPACE RESEARCH (passive) S5.341		
120.02 - 122.25	EARTH EXPLORATION – SATELLITE (passive) INTER – SATELLITE S5.562C SPACE RESEARCH (passive) S5.138		
122.25 - 123	FIXED INTER – SATELLITE MOBILE S5.558 Amateur S5.138	ISM (122 - 123 GHz)	
123 - 126	FIXED-SATELLITE (space - Earth) MOBILE-SATELLITE (space - Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio Astronomy S5.554		
126 - 130	FIXED-SATELLITE (space - Earth) MOBILE-SATELLITE (space - Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio Astronomy S5.149 S5.554		

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
130 - 134	EARTH EXPLORATION – SATELLITE (active) S5.562E FIXED INTER-SATELLITE MOBILE S5.558 RADIO ASTRONOMY S5.149 S5.562A		
134 - 136	AMATEUR AMATEUR-SATELLITE Radio astronomy		
136 - 141	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite S5.149	Radio Astronomy (140.69 -140.98 GHz)	
141 - 148.5	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION S5.149		
148.5 - 151.5	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340		
151.5 - 155.5	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION S5.149		
155.5 - 158.5	EARTH EXPLORATION-SATELLITE (passive) S5.562F FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) S5.562B S5.149 S5.562G		

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Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
158.5 - 164	FIXED FIXED - SATELLITE (space -Earth) MOBILE MOBILE - SATELLITE (space-earth)		
164 - 167	EARTH EXPLORATION – SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340		
167 - 168	FIXED FIXED-SATELLITE (space-Earth) INTER-SATELLITE MOBILE S5.558		
168 - 170	FIXED FIXED-SATELLITE (space-Earth) INTER-SATELLITE MOBILE S5.558 S5.149		
170 - 174.5	FIXED FIXED-SATELLITE (space-Earth) INTER-SATELLITE MOBILE S5.558 S5.149		
174.5 - 174.8	FIXED INTER-SATELLITE MOBILE S5.558		
174.8 - 182	EARTH EXPLORATION -SATELLITE (passive) INTER – SATELLITE S5.562H SPACE RESEARCH (passive)		
182 - 185	EARTH EXPLORATION –SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.563	Radio Astronomy (all emissions prohibited)	
185 - 190	EARTH EXPLORATION –SATELLITE (passive) INTER - SATELLITE S5.562H SPACE RESEARCH (passive)		

Part C – The Radio Spectrum: 10 GHz to 1000 GHz

Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
190 - 191.8	EARTH EXPLORATION –SATELLITE (passive) SPACE RESEARCH (passive) S5.340		
191.8 - 200	FIXED INTER-SATELLITE MOBILE S5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE S5.149 S5.341 S5.554		
200 - 202	EARTH EXPLORATION –SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.341 S5.563A		
202 - 209	EARTH EXPLORATION –SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340 S5.341 S5.563A		
209 - 217	FIXED FIXED - SATELLITE (Earth - space) MOBILE RADIO ASTRONOMY S5.149 S5.341		
217 - 226	FIXED FIXED-SATELLITE (Earth-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) S5.562B S5.149 S5.341	Radio Astronomy (all emissions prohibited)	
226 - 231.5	EARTH EXPLORATION –SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) S5.340		

Part C – The Radio Spectrum: 10 GHz to 1000 GHz

Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
231.5 - 232	FIXED MOBILE Radiolocation		
232 - 235	FIXED FIXED – SATELLITE (space - Earth) MOBILE Radiolocation		
235 - 238	EARTH EXPLORATION -SATELLITE (passive) FIXED – SATELLITE (space – Earth) SPACE RESEARCH (passive) S5.563A S5.563B		
238 - 240	FIXED FIXED – SATELLITE (space - Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE		
240 - 241	FIXED MOBILE RADIOLOCATION		
241 - 248	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur – Satellite S5.138 S5.149	ISM (244-246 GHz)	
248 - 250	AMATEUR AMATEUR – SATELLITE Radio Astronomy S5.149		
250 - 252	EARTH EXPLORATION - SATELLITE (passive) SPACE RESEARCH (passive) RADIO ASTRONOMY S5.340 S5.563A		

Part C – The Radio Spectrum: 10 GHz to 1000 GHz

Frequency Band (GHz)	ITU Allocations (Applicable to Ireland)	National Usage	Notes / Future Developments
252 - 265	FIXED MOBILE MOBILE – SATELLITE (Earth-space) RADIONAVIGATION RADIONAVIGATION -SATELLITE RADIO ASTRONOMY S5.149 S5.554		
265 - 275	FIXED FIXED – SATELLITE (Earth - space) MOBILE RADIO ASTRONOMY S5.149 S5.563A		
275 - 1000	(Not Allocated) S5.565		

Annex 1

Relevant Footnotes from Radio Regulations

Reference is made in the Table of Allocations to the following footnotes. These Footnotes are taken from Article S5 of the Radio Regulations, as amended at WRC-2000. Additional information can be obtained from the ITU (See Annex 5).

S5.43 Where it is indicated in these Regulations that a service or stations in a service may operate in a specific frequency band subject to not causing harmful interference to another service or to another station in the same service, this means also that the service which is subject to not causing harmful interference cannot claim protection from harmful interference caused by the other service or other station in the same service.

S5.43A Where it is indicated in these Regulations that a service or stations in a service may operate in a specific frequency band subject to not claiming protection from another service or from another station in the same service, this means also that the service which is subject to not claiming protection shall not cause harmful interference to the other service or other station in the same service.

S5.53 Administrations authorizing the use of frequencies below 9 kHz shall ensure that no harmful interference is caused thereby to the services to which the bands above 9 kHz are allocated.

S5.54 Administrations conducting scientific research using frequencies below 9 kHz are urged to advise other administrations that may be concerned in order that such research may be afforded all practicable protection from harmful interference.

S5.56 The stations of services to which the bands 14-19.95 kHz and 20.05-70 kHz and in Region 1 also the bands 72-84 kHz and 86-90 kHz are allocated may transmit standard frequency and time signals. Such stations shall be afforded protection from harmful interference. In Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the frequencies 25 kHz and 50 kHz will be used for this purpose under the same conditions. (WRC-97)

S5.57 The use of the bands 14-19.95 kHz, 20.05-70 kHz and 70-90 kHz (72-84 kHz and 86-90 kHz in Region 1) by the maritime mobile service is limited to coast radiotelegraph stations (A1A and F1B only). Exceptionally, the use of class J2B or J7B emissions is authorized subject to the necessary bandwidth not exceeding that normally used for class A1A or F1B emissions in the band concerned.

S5.60 In the bands 70-90 kHz (70-86 kHz in Region 1) and 110-130 kHz (112-130 kHz in Region 1), pulsed radionavigation systems may be used on condition that they do not cause harmful interference to other services to which these bands are allocated.

S5.61 In Region 2, the establishment and operation of stations in the maritime radionavigation service in the bands 70-90 kHz and 110-130 kHz shall be subject to agreement obtained under **No. S9.21** with administrations whose services, operating in accordance with the Table, may be affected. However, stations of the fixed, maritime mobile and radiolocation services shall not cause harmful interference to stations in the maritime radionavigation service established under such agreements.

S5.62 Administrations which operate stations in the radionavigation service in the band 90-110 kHz are urged to coordinate technical and operating characteristics in such a way as to avoid harmful interference to the services provided by these stations.

S5.64 Only classes A1A or F1B, A2C, A3C, F1C or F3C emissions are authorized for stations of the fixed service in the bands allocated to this service between 90 kHz and 160 kHz (148.5 kHz in Region 1) and for stations of the maritime mobile service in the bands allocated to this service between 110 kHz and 160 kHz (148.5 kHz in Region 1). Exceptionally, class J2B or J7B emissions are also authorized in the bands between 110 kHz and 160 kHz (148.5 kHz in Region 1) for stations of the maritime mobile service.

S5.72 Norwegian stations of the fixed service situated in northern areas (north of 60° N) subject to auroral disturbances are allowed to continue operation on four frequencies in the bands 283.5-490 kHz and 510-526.5 kHz.

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S5.73 The band 285-325 kHz (283.5-325 kHz in Region 1) in the maritime radionavigation service may be used to transmit supplementary navigational information using narrow-band techniques, on condition that no harmful interference is caused to radiobeacon stations operating in the radionavigation service. (WRC-97)

S5.76 The frequency 410 kHz is designated for radio direction-finding in the maritime radionavigation service. The other radionavigation services to which the band 405-415 kHz is allocated shall not cause harmful interference to radio direction-finding in the band 406.5-413.5 kHz.

S5.79 The use of the bands 415-495 kHz and 505-526.5 kHz (505-510 kHz in Region 2) by the maritime mobile service is limited to radiotelegraphy.

S5.79A When establishing coast stations in the NAVTEX service on the frequencies 490 kHz, 518 kHz and 4 209.5 kHz, administrations are strongly recommended to coordinate the operating characteristics in accordance with the procedures of the International Maritime Organization (IMO) (see Resolution **339 (Rev.WRC-97)**). (WRC-97)

S5.82 In the maritime mobile service, the frequency 490 kHz is, from the date of full implementation of the GMDSS (see Resolution **331 (Rev.WRC-97)**), to be used exclusively for the transmission by coast stations of navigational and meteorological warnings and urgent information to ships, by means of narrow-band direct-printing telegraphy. The conditions for use of the frequency 490 kHz are prescribed in Articles **S31** and **S52.** In using the band 415-495 kHz for the aeronautical radionavigation service, administrations are requested to ensure that no harmful interference is caused to the frequency 490 kHz. (WRC-97)

S5.83 The frequency 500 kHz is an international distress and calling frequency for Morse radiotelegraphy. The conditions for its use are prescribed in Articles **S31** and **S52,** and in Appendix **S13.**

S5.84 The conditions for the use of the frequency 518 kHz by the maritime mobile service are prescribed in **Articles S31** and **S52** and in **Appendix S13**. (WRC-97)

S5.90 In the band 1 605-1 705 kHz, in cases where a broadcasting station of Region 2 is concerned, the service area of the maritime mobile stations in Region 1 shall be limited to that provided by ground-wave propagation.

S5.92 Some countries of Region 1 use radiodetermination systems in the bands 1 606.5-1 625 kHz, 1 635-1 800 kHz, 1 850-2 160 kHz, 2 194-2 300 kHz, 2 502-2 850 kHz and 3 500-3 800 kHz, subject to agreement obtained under No. **S9.21**. The radiated mean power of these stations shall not exceed 50 W.

S5.96 In Germany, Armenia, Austria, Azerbaijan, Belarus, Denmark, Estonia, Finland, Georgia, Hungary, Ireland, Israel, Jordan, Kazakstan, Latvia, Liechtenstein, Lithuania, Malta, Moldova, Norway, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, the United Kingdom, the Russian Federation, Sweden, Switzerland, Tajikistan, Turkmenistan and Ukraine, administrations may allocate up to 200 kHz to their amateur service in the bands 1 715-1 800 kHz and 1 850-2 000 kHz. However, when allocating the bands within this range to their amateur service, administrations shall, after prior consultation with administrations of neighbouring countries, take such steps as may be necessary to prevent harmful interference from their amateur service to the fixed and mobile services of other countries. The mean power of any amateur station shall not exceed 10 W.

S5.100 In Region 1, the authorization to use the band 1 810-1 830 kHz by the amateur service in countries situated totally or partially north of 40° N shall be given only after consultation with the countries mentioned in Nos. **S5.98** and **S5.99** to define the necessary steps to be taken to prevent harmful interference between amateur stations and stations of other services operating in accordance with Nos. **S5.98** and **S5.99.**

S5.103 In Region 1, in making assignments to stations in the fixed and mobile services in the bands 1 850-2 045 kHz, 2 194-2 498 kHz, 2 502-2 625 kHz and 2 650-2 850 kHz, administrations should bear in mind the special requirements of the maritime mobile service.

S5.104 In Region 1, the use of the band 2 025-2 045 kHz by the meteorological aids service is limited to oceanographic buoy stations.

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S5.108 The carrier frequency 2 182 kHz is an international distress and calling frequency for radiotelephony. The conditions for the use of the band 2 173.5-2 190.5 kHz are prescribed in Articles **S31** and **S52** and in Appendix **S13.**

S5.109 The frequencies 2 187.5 kHz, 4 207.5 kHz, 6 312 kHz, 8 414.5 kHz, 12 577 kHz and 16 804.5 kHz are international distress frequencies for digital selective calling. The conditions for the use of these frequencies are prescribed in Article **S31**.

S5.110 The frequencies 2 174.5 kHz, 4 177.5 kHz, 6 268 kHz, 8 376.5 kHz, 12 520 kHz and 16 695 kHz are international distress frequencies for narrow-band direct-printing telegraphy. The conditions for the use of these frequencies are prescribed in Article **S31.**

S5.111 The carrier frequencies 2 182 kHz, 3 023 kHz, 5 680 kHz, 8 364 kHz and the frequencies 121.5 MHz, 156.8 MHz and 243 MHz may also be used, in accordance with the procedures in force for terrestrial radiocommunication services, for search and rescue operations concerning manned space vehicles. The conditions for the use of the frequencies are prescribed in Article **S31** and in Appendix **S13.**

The same applies to the frequencies 10 003 kHz, 14 993 kHz and 19 993 kHz, but in each of these cases emissions must be confined in a band of ± 3 kHz about the frequency.

S5.113 For the conditions for the use of the bands 2 300-2 495 kHz (2 498 kHz in Region 1), 3 200-3 400 kHz, 4 750-4 995 kHz and 5 005-5 060 kHz by the broadcasting service, see Nos. **S5.16** to **S5.20**, **S5.21** and **S23.3** to **S23.10.**

S5.115 The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may also be used, in accordance with Article **S31** and Appendix **S13** by stations of the maritime mobile service engaged in coordinated search and rescue operations.

S5.116 Administrations are urged to authorize the use of the band 3 155-3 195 kHz to provide a common worldwide channel for low power wireless hearing aids. Additional channels for these devices may be assigned by administrations in the bands between 3 155 kHz and 3 400 kHz to suit local needs.

It should be noted that frequencies in the range 3 000 kHz to 4 000 kHz are suitable for hearing aid devices which are designed to operate over short distances within the induction field.

S5.127 The use of the band 4 000-4 063 kHz by the maritime mobile service is limited to ship stations using radiotelephony (see No. **S52.220** and Appendix **S17**).

S5.129 On condition that harmful interference is not caused to the maritime mobile service, the frequencies in the bands 4 063-4 123 kHz and 4 130-4 438 kHz may be used exceptionally by stations in the fixed service communicating only within the boundary of the country in which they are located with a mean power not exceeding 50 W.

S5.130 The conditions for the use of the carrier frequencies 4 125 kHz and 6 215 kHz are prescribed in Articles **S31** and **S52** and in Appendix **S13.**

S5.131 The frequency 4 209.5 kHz is used exclusively for the transmission by coast stations of meteorological and navigational warnings and urgent information to ships by means of narrow-band direct-printing techniques. (WRC-97)

S5.132 The frequencies 4 210 kHz, 6 314 kHz, 8 416.5 kHz, 12 579 kHz, 16 806.5 kHz, 19 680.5 kHz, 22 376 kHz and 26 100.5 kHz are the international frequencies for the transmission of maritime safety information (MSI) (see Appendix **S17**).

S5.134 The use of the bands 5 900-5 950 kHz, 7 300-7 350 kHz, 9 400-9 500 kHz, 11 600-11 650 kHz, 12 050-12 100 kHz, 13 570-13 600 kHz, 13 800-13 870 kHz, 15 600-15 800 kHz, 17 480-17 550 kHz and 18 900-19 020 kHz by the broadcasting service is limited to single-sideband emissions with the characteristics specified in Appendix **S11** or to any other spectrum-efficient modulation techniques recommended by ITU-R. Access to these bands shall be subject to the decisions of a competent conference. (WRC-97)

S5.136 The band 5 900-5 950 kHz is allocated, until 1 April 2007, to the fixed service on a primary basis, as well as to the following services: in Region 1 to the land mobile service on a primary basis, in Region 2 to the mobile except aeronautical mobile (R) service on a primary basis, and in Region 3 to the mobile except aeronautical mobile (R) service on a secondary basis, subject to application of the procedure referred to in

Resolution **21 (Rev.WRC-95)**. After 1 April 2007, frequencies in this band may be used by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.137 On condition that harmful interference is not caused to the maritime mobile service, the bands 6 200-6 213.5 kHz and 6 220.5-6 525 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W. At the time of notification of these frequencies, the attention of the Bureau will be drawn to the above conditions.

S5.138 The following bands:

6 765-6 795 kHz	(centre frequency 6 780 kHz),
433.05-434.79 MHz	(centre frequency 433.92 MHz) in Region 1 except in the countries mentioned in No. **S5.280,**
61-61.5 GHz	(centre frequency 61.25 GHz),
122-123 GHz	(centre frequency 122.5 GHz), and
244-246 GHz	(centre frequency 245 GHz)

are designated for industrial, scientific and medical (ISM) applications. The use of these frequency bands for ISM applications shall be subject to special authorization by the administration concerned, in agreement with other administrations whose radiocommunication services might be affected. In applying this provision, administrations shall have due regard to the latest relevant ITU-R Recommendations.

S5.142 The use of the band 7 100-7 300 kHz in Region 2 by the amateur service shall not impose constraints on the broadcasting service intended for use within Region 1 and Region 3.

S5.143 The band 7 300-7 350 kHz is allocated, until 1 April 2007, to the fixed service on a primary basis and to the land mobile service on a secondary basis, subject to application of the procedure referred to in Resolution **21 (Rev.WRC-95).** After 1 April 2007, frequencies in this band may be used by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.145 The conditions for the use of the carrier frequencies 8 291 kHz, 12 290 kHz and 16 420 kHz are prescribed in Articles **S31** and **S52** and in Appendix **S13.**

S5.146 The bands 9 400-9 500 kHz, 11 600-11 650 kHz, 12 050-12 100 kHz, 15 600-15 800 kHz, 17 480-17 550 kHz and 18 900-19 020 kHz are allocated to the fixed service on a primary basis until 1 April 2007, subject to application of the procedure referred to in Resolution **21 (Rev.WRC-95)**. After 1 April 2007, frequencies in these bands may be used by stations in the fixed service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies in the fixed service, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.147 On condition that harmful interference is not caused to the broadcasting service, frequencies in the bands 9 775-9 900 kHz, 11 650-11 700 kHz and 11 975-12 050 kHz may be used by stations in the fixed service communicating only within the boundary of the country in which they are located, each station using a total radiated power not exceeding 24 dBW.

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S5.149 In making assignments to stations of other services to which the bands:

13 360-13 410 kHz,	31.2-31.3 GHz,
25 550-25 670 kHz,	31.5-31.8 GHz in Regions 1 and 3,
37.5-38.25 MHz,	36.43-36.5 GHz,
73-74.6 MHz in Regions 1 and 3,	42.5-43.5 GHz,
150.05-153 MHz in Region 1,	42.77-42.87 GHz,
322-328.6 MHz,	43.07-43.17 GHz,
406.1-410 MHz,	43.37-43.47 GHz,
608-614 MHz in Regions 1 and 3,	48.94-49.04 GHz,
1 330-1 400 MHz,	76-86 GHz,
1 610.6-1 613.8 MHz,	92-94 GHz,
1 660-1 670 MHz,	94.1-100 GHz,
1 718.8-1 722.2 MHz,	102-109.5 GHz,
2 655-2 690 MHz,	111.8-114.25 GHz,
3 260-3 267 MHz,	128.33-128.59 GHz,
3 332-3 339 MHz,	129.23-129.49 GHz,
3 345.8-3 352.5 MHz,	130-134 GHz,
4 825-4 835 MHz,	136-148.5 GHz,
4 950-4 990 MHz,	151.5-158.5 GHz,
4 990-5 000 MHz,	168.59-168.93 GHz,
6 650-6 675.2 MHz,	171.11-171.45 GHz,
10.6-10.68 GHz,	172.31-172.65 GHz,
14.47-14.5 GHz,	173.52-173.85 GHz,
22.01-22.21 GHz,	195.75-196.15 GHz,
22.21-22.5 GHz,	209-226 GHz,
22.81-22.86 GHz,	241-250 GHz,
23.07-23.12 GHz,	252-275 GH

are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **S4.5** and **S4.6** and Article **S29**)

S5.150 The following bands:

13 553-13 567 kHz	(centre frequency 13 560 kHz),
26 957-27 283 kHz	(centre frequency 27 120 kHz),
40.66-40.70 MHz	(centre frequency 40.68 MHz),
902-928 MHz in Region 2	(centre frequency 915 MHz),
2 400-2 500 MHz	(centre frequency 2 450 MHz),
5 725-5 875 MHz	(centre frequency 5 800 MHz), and
24-24.25 GHz	(centre frequency 24.125 GHz)

are also designated for industrial, scientific and medical (ISM) applications. Radiocommunication services operating within these bands must accept harmful interference which may be caused by these applications. ISM equipment operating in these bands is subject to the provisions of No. **S15.13.**

S5.151 The bands 13 570-13 600 kHz and 13 800-13 870 kHz are allocated, until 1 April 2007, to the fixed service on a primary basis and to the mobile except aeronautical mobile (R) service on a secondary basis, subject to application of the procedure referred to in Resolution **21 (Rev.WRC-95)**. After 1 April 2007, frequencies in these bands may be used by stations in the above-mentioned services, communicating only within the boundary of the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service. When using frequencies in these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations.

S5.155B The band 21 870-21 924 kHz is used by the fixed service for provision of services related to aircraft flight safety.

S5.156A The use of the band 23 200-23 350 kHz by the fixed service is limited to provision of services related to aircraft flight safety.

S5.157 The use of the band 23 350-24 000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.

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S5.162A *Additional allocation:* in Germany, Austria, Belgium, Bosnia and Herzegovina, China, Vatican, Denmark, Spain, Estonia, Finland, France, Ireland, Iceland, Italy, Latvia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Lithuania, Luxembourg, Moldova, Monaco, Norway, the Netherlands, Poland, Portugal, Slovakia, the Czech Republic, the United Kingdom, the Russian Federation, Sweden and Switzerland the band 46-68 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution **217 (WRC-97)**.

S5.164 *Additional allocation:* in Albania, Germany, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Côte d'Ivoire, Denmark, Spain, Finland, France, Gabon, Greece, Ireland, Israel, Italy, Jordan, Lebanon, Libya, Liechtenstein, Luxembourg, Madagascar, Mali, Malta, Morocco, Mauritania, Monaco, Nigeria, Norway, the Netherlands, Poland, Syria, the United Kingdom, Senegal, Slovenia, Sweden, Switzerland, Swaziland, Togo, Tunisia, Turkey and Yugoslavia the band 47-68 MHz, in Romania the band 47-58 MHz and in the Czech Republic the band 66-68 MHz, are also allocated to the land mobile service on a primary basis. However, stations of the land mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations of countries other than those mentioned in connection with the band. (WRC-97)

S5.180 The frequency 75 MHz is assigned to marker beacons. Administrations shall refrain from assigning frequencies close to the limits of the guardband to stations of other services which, because of their power or geographical position, might cause harmful interference or otherwise place a constraint on marker beacons.

Every effort should be made to improve further the characteristics of airborne receivers and to limit the power of transmitting stations close to the limits 74.8 MHz and 75.2 MHz.

S5.198 *Additional allocation:* the band 117.975-136 MHz is also allocated to the aeronautical mobile-satellite (R) service on a secondary basis, subject to agreement obtained under No. **S9.21.** (WRC-97)

S5.199 The bands 121.45-121.55 MHz and 242.95-243.05 MHz are also allocated to the mobile-satellite service for the reception on board satellites of emissions from emergency position-indicating radiobeacons transmitting at 121.5 MHz and 243 MHz (see Appendix **S13**).

S5.200 In the band 117.975-136 MHz, the frequency 121.5 MHz is the aeronautical emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime mobile service may communicate on these frequencies under the conditions laid down in Article **S31** and Appendix **S13** for distress and safety purposes with stations of the aeronautical mobile service.

S5.203 In the band 136-137 MHz, existing operational meteorological satellites may continue to operate, under the conditions defined in No. **S4.4** with respect to the aeronautical mobile service, until 1 January 2002. Administrations shall not authorize new frequency assignments in this band to stations in the meteorological-satellite service. (WRC-97)

S5.208 The use of the band 137-138 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A.** (WRC-97)

S5.208A In making assignments to space stations in the mobile-satellite service in the bands 137-138 MHz, 387-390 MHz and 400.15-401 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the bands 150.05-153 MHz, 322-328.6 MHz, 406.1-410 MHz and 608-614 MHz from harmful interference from unwanted emissions. The threshold levels of interference detrimental to the radio astronomy service are shown in Table 1 of Recommendation ITU-R RA.769-1. (WRC-97)

S5.209 The use of the bands 137-138 MHz, 148-150.05 MHz, 399.9-400.05 MHz, 400.15-401 MHz, 454-456 MHz and 459-460 MHz by the mobile-satellite service is limited to non-geostationary-satellite systems. (WRC-97)

S5.211 *Additional allocation:* in Germany, Saudi Arabia, Austria, Bahrain, Belgium, Bosnia and Herzegovina, Denmark, the United Arab Emirates, Spain, Finland, Greece, Ireland, Israel, Kenya, Kuwait, The Former Yugoslav Republic of Macedonia, Liechtenstein,

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Luxembourg, Mali, Malta, Norway, the Netherlands, Qatar, the United Kingdom, Somalia, Sweden, Switzerland, Tanzania, Tunisia, Turkey and Yugoslavia, the band 138-144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis.

S5.218 *Additional allocation:* the band 148-149.9 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. **S9.21.** The bandwidth of any individual transmission shall not exceed ± 25 kHz.

S5.219 The use of the band 148-149.9 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A.** The mobile-satellite service shall not constrain the development and use of the fixed, mobile and space operation services in the band 148-149.9 MHz.

S5.220 The use of the bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A.** The mobile-satellite service shall not constrain the development and use of the radionavigation-satellite service in the bands 149.9-150.05 MHz and 399.9-400.05 MHz. (WRC-97)

S5.221 Stations of the mobile-satellite service in the band 148-149.9 MHz shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations in the following countries: Albania, Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Benin, Bosnia and Herzegovina, Brunei Darussalam, Bulgaria, Cameroon, China, Cyprus, Congo, Korea (Rep. of), Croatia, Cuba, Denmark, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Ethiopia, Finland, France, Gabon, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, Iran (Islamic Republic of), Ireland, Iceland, Israel, Italy, Jamaica, Japan, Jordan, Kazakstan, Kenya, Kuwait, Latvia, The Former Yugoslav Republic of Macedonia, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, Malaysia, Mali, Malta, Mauritania, Moldova, Mongolia, Mozambique, Namibia, Norway, New Zealand, Oman, Uganda, Uzbekistan, Pakistan, Panama, Papua New Guinea, Paraguay, the Netherlands, the Philippines, Poland, Portugal, Qatar, Syria, Kyrgyzstan, Slovakia, Romania, the United Kingdom, the Russian Federation, Senegal, Sierra Leone, Singapore, Slovenia, Sri Lanka, South Africa, Sweden, Switzerland, Swaziland, Tanzania, Chad, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Viet Nam, Yemen, Yugoslavia, Zambia, and Zimbabwe.

S5.222 Emissions of the radionavigation-satellite service in the bands 149.9-150.05 MHz and 399.9-400.05 MHz may also be used by receiving earth stations of the space research service.

S5.223 Recognizing that the use of the band 149.9-150.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation-satellite service, administrations are urged not to authorize such use in application of No. **S4.4.**

S5.224A The use of the bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service (Earth-to-space) is limited to the land mobile-satellite service (Earth-to-space) until 1 January 2015. (WRC-97)

S5.224B The allocation of the bands 149.9-150.05 MHz and 399.9-400.05 MHz to the radionavigation-satellite service shall be effective until 1 January 2015. (WRC-97)

S5.226 The frequency 156.8 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service. The conditions for the use of this frequency are contained in Article **S31** and Appendix **S13.**

In the bands 156-156.7625 MHz, 156.8375-157.45 MHz, 160.6-160.975 MHz and 161.475-162.05 MHz, each administration shall give priority to the maritime mobile service on only such frequencies as are assigned to stations of the maritime mobile service by the administration (see Articles **S31** and **S52,** and Appendix **S13).**

Any use of frequencies in these bands by stations of other services to which they are allocated should be avoided in areas where such use might cause harmful interference to the maritime mobile VHF radiocommunication service. However, the frequency 156.8 MHz and the frequency bands in which priority is given to the maritime mobile service may be used for radiocommunications on inland waterways subject to agreement between interested and affected administrations and taking into account current frequency usage and existing agreements.

S5.227 In the maritime mobile VHF service the frequency 156.525 MHz is to be used exclusively for digital selective calling for distress, safety and calling. The conditions for

the use of this frequency are prescribed in Articles **S31** and **S52,** and Appendices **S13** and **S18.**

S5.235 *Additional allocation:* in Germany, Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Malta, Monaco, Norway, the Netherlands, the United Kingdom, Sweden and Switzerland, the band 174-223 MHz is also allocated to the land mobile service on a primary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.

S5.254 The bands 235-322 MHz and 335.4-399.9 MHz may be used by the mobile-satellite service, subject to agreement obtained under No. **S9.21,** on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table of Frequency Allocations.

S5.255 The bands 312-315 MHz (Earth-to-space) and 387-390 MHz (space-to-Earth) in the mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to coordination under No. **S9.11A.**

S5.256 The frequency 243 MHz is the frequency in this band for use by survival craft stations and equipment used for survival purposes (see Appendix **S13).**

S5.257 The band 267-272 MHz may be used by administrations for space telemetry in their countries on a primary basis, subject to agreement obtained under No. **S9.21.**

S5.258 The use of the band 328.6-335.4 MHz by the aeronautical radionavigation service is limited to Instrument Landing Systems (glide path).

S5.260 Recognizing that the use of the band 399.9-400.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation satellite service, administrations are urged not to authorize such use in application of No. **S4.4.**

S5.261 Emissions shall be confined in a band of ± 25 kHz about the standard frequency 400.1 MHz.

S5.263 The band 400.15-401 MHz is also allocated to the space research service in the space-to-space direction for communications with manned space vehicles. In this application, the space research service will not be regarded as a safety service.

S5.264 The use of the band 400.15-401 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A.** The power flux-density limit indicated in Annex 1 of Appendix **S5** shall apply until such time as a competent world radiocommunication conference revises it.

S5.266 The use of the band 406-406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radiobeacons (see also Article **S31** and Appendix **S13).**

S5.267 Any emission capable of causing harmful interference to the authorized uses of the band 406-406.1 MHz is prohibited.

S5.268 Use of the band 410-420 MHz by the space research service is limited to communications within 5 km of an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from extra-vehicular activities shall not exceed –153 dB(W/m^2) for for $0° \le \partial \le 5°$, -153 + 0.077 (∂ – 5) dB(W/m^2) for $5° \le \partial \le 70°$ and –148 dB(W/m^2) for $70° \le \partial \le 90°$, where ∂ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. No. **S4.10** does not apply to extra-vehicular activities. In this frequency band the space research (space-to-space) service shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services. (WRC-97)

S5.282 In the bands 435-438 MHz, 1 260-1 270 MHz, 2 400-2 450 MHz, 3 400-3 410 MHz (in Regions 2 and 3 only) and 5 650-5 670 MHz, the amateur-satellite service may operate subject to not causing harmful interference to other services operating in accordance with the Table (see No. **S5.43).** Administrations authorizing such use shall ensure that any harmful interference caused by emissions from a station in the amateur-satellite service is immediately eliminated in accordance with the provisions of No. **S25.11.** The use of the bands 1 260-1 270 MHz and 5 650-5 670 MHz by the amateur-satellite service is limited to the Earth-to-space direction.

Annex 1

S5.286 The band 449.75-450.25 MHz may be used for the space operation service (Earth-to-space) and the space research service (Earth-to-space), subject to agreement obtained under No. **S9.21.**

S5.286A The use of the bands 454-456 MHz and 459-460 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A.** (WRC-97)

S5.286B The use of the band 454-455 MHz in the countries listed in No. **S5.286D,** 455-456 MHz and 459-460 MHz in Region 2, and 454-456 MHz and 459-460 MHz in the countries listed in No. **S5.286E,** by stations in the mobile-satellite service, shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations. (WRC-97)

S5.286C The use of the band 454-455 MHz in the countries listed in No. **S5.286D,** 455-456 MHz and 459-460 MHz in Region 2, and 454-456 MHz and 459-460 MHz in the countries listed in No. **S5.286E,** by stations in the mobile-satellite service, shall not constrain the development and use of the fixed and mobile services operating in accordance with the Table of Frequency Allocations. (WRC-97)

S5.287 In the maritime mobile service, the frequencies 457.525 MHz, 457.550 MHz, 457.575 MHz, 467.525 MHz, 467.550 MHz and 467.575 MHz may be used by on-board communication stations. Where needed, equipment designed for 12.5 kHz channel spacing using also the additional frequencies 457.5375 MHz, 457.5625 MHz, 467.5375 MHz and 467.5625 MHz may be introduced for on-board communications. The use of these frequencies in territorial waters may be subject to the national regulations of the administration concerned. The characteristics of the equipment used shall conform to those specified in Recommendation ITU-R M.1174 (see Resolution **341 (WRC-97)).** (WRC-97)

S5.289 Earth exploration-satellite service applications, other than the meteorological-satellite service, may also be used in the bands 460-470 MHz and 1 690-1 710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the Table.

S5.296 *Additional allocation:* in Germany, Austria, Belgium, Cyprus, Denmark, Spain, Finland, France, Ireland, Israel, Italy, Libya, Lithuania, Malta, Morocco, Monaco, Norway, the Netherlands, Portugal, Syria, the United Kingdom, Sweden, Switzerland, Swaziland and Tunisia, the band 470-790 MHz is also allocated on a secondary basis to the land mobile service, intended for applications ancillary to broadcasting. Stations of the land mobile service in the countries listed in this footnote shall not cause harmful interference to existing or planned stations operating in accordance with the Table of Frequency Allocations in countries other than those listed in this footnote.

S5.302 *Additional allocation:* in the United Kingdom, the band 590-598 MHz is also allocated to the aeronautical radionavigation service on a primary basis. All new assignments to stations in the aeronautical radionavigation service, including those transferred from the adjacent bands, shall be subject to coordination with the Administrations of the following countries: Germany, Belgium, Denmark, Spain, France, Ireland, Luxembourg, Morocco, Norway and the Netherlands.

S5.306 *Additional allocation:* in Region 1, except in the African Broadcasting Area (see Nos. **S5.10** to **S5.13),** and in Region 3, the band 608-614 MHz is also allocated to the radio astronomy service on a secondary basis.

S5.311 Within the frequency band 620-790 MHz, assignments may be made to television stations using frequency modulation in the broadcasting-satellite service subject to agreement between the administrations concerned and those having services, operating in accordance with the Table, which may be affected (see Resolutions **33 (Rev. WRC-97)** and **507).** Such stations shall not produce a power flux-density in excess of the value –129 dB(W/m^2) for angles of arrival less than 20° (see Recommendation **705)** within the territories of other countries without the consent of the administrations of those countries.

S5.317A Administrations wishing to implement International Mobile Telecommunications-2000 (IMT-2000) may use those parts of the band 806-960 MHz which are allocated to the mobile service on a primary basis and are used or planned to be used for mobile systems (see Resolution **224 (WRC-2000)).** This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations.

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S5.322 In Region 1, in the band 862-960 MHz, stations of the broadcasting service shall be operated only in the African Broadcasting Area (see Nos. **S5.10** to **S5.13)** excluding Algeria, Egypt, Spain, Libya, Morocco, Namibia, Nigeria, South Africa, Tanzania, Zimbabwe and Zambia, subject to agreement obtained under No. **S9.21.**

S5.328 The use of the band 960-1 215 MHz by the aeronautical radionavigation service is reserved on a worldwide basis for the operation and development of airborne electronic aids to air navigation and any directly associated ground-based facilities.

S5.328A *Additional allocation:* the band 1 164-1 215 MHz is also allocated to the radionavigation-satellite service (space-to-Earth) (space-to-space) on a primary basis. The aggregate power flux-density produced by all the space stations of all radionavigation-satellite systems at the Earth's surface shall not exceed the provisional value of -115 dB(W/m^2) in any 1 MHz band for all angles of arrival. Stations in the radionavigation-satellite service shall not cause harmful interference to, nor claim protection from, stations of the aeronautical-radionavigation service. The provisions of Resolution **605 (WRC-2000)** apply.

S5.329 Use of the radionavigation-satellite service in the band 1 215-1 300 MHz shall be subject to the condition that no harmful interference is caused to, and no protection is claimed from, the radionavigation service authorized under No. **S5.331.** See also Resolution **606 (WRC-2000).**

S5.329A Use of systems in the radionavigation-satellite service (space-to-space) operating in the bands 1 215-1 300 MHz and 1 559-1 610 MHz is not intended to provide safety service applications, and shall not impose any additional constraints on other systems or services operating in accordance with the Table of Frequency Allocations.

S5.332 In the band 1 215-1 260 MHz, active spaceborne sensors in the earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the radionavigation-satellite service and other services allocated on a primary basis.

S5.335A In the band 1 260-1 300 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service and other services allocated by footnotes on a primary basis.

S5.337 The use of the bands 1 300-1 350 MHz, 2 700-2 900 MHz and 9 000-9 200 MHz by the aeronautical radionavigation service is restricted to ground-based radars and to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars operating in the same band.

S5.337A The use of the band 1 300-1 350 MHz by earth stations in the radionavigation-satellite service and by stations in the radiolocation service shall not cause harmful interference to, nor constrain the operation and development of, the aeronautical-radionavigation service.

S5.339 The bands 1 370-1 400 MHz, 2 640-2 655 MHz, 4 950-4 990 MHz and 15.20-15.35 GHz are also allocated to the space research (passive) and earth exploration-satellite (passive) services on a secondary basis.

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S5.340 All emissions are prohibited in the following bands:

1 400-1 427 MHz,	
2 690-2 700 MHz,	except those provided for by Nos. **S5.421** and **S5.422**,
10.68-10.7 GHz,	except those provided for by No. **S5.483**,
15.35-15.4 GHz,	except those provided for by No. **S5.511**,
23.6-24 GHz,	
31.3-31.5 GHz,	
31.5-31.8 GHz,	in Region 2,
48.94-49.04 GHz,	from airborne stations,
50.2-50.4 GHz1,	except those provided for by No. **S5.555A**,
52.6-54.25 GHz,	
86-92 GHz,	
100-102 GHz,	
109.5-111.8 GHz,	
114.25-116 GHz	
148.5-151.5 GHz,	
164-167 GHz,	
182-185 GHz,	except those provided for by No. **S5.563**,
190-191.8 GHz,	
200-209 GHz,	
226-231.5 GHz,	
250-252 GHz.	
140.69-140.98 GHz,	from airborne stations and from space stations in the space-to-Earth direction,
182-185 GHz,	except those provided for by No. **S5.563,**
217-231 GHz.	WRC-97)

[1] **S5.340.1** The allocation to the earth exploration-satellite service(passive) and the space research service (passive) in the band 50.2-50.4 GHz should not impose undue constriants on the use of the adjacent bands by the primary allocated serivces in those bands. (WRC-97)

S5.341 In the bands 1 400-1 727 MHz, 101-120 GHz and 197-220 GHz, passive research is being conducted by some countries in a programme for the search for intentional emissions of extraterrestrial origin.

S5.345 Use of the band 1 452-1 492 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (WARC-92).**

S5.347 *Different category of service*: in Bangladesh, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Cuba, Denmark, Egypt, Greece, Ireland, Italy, Kenya, Mozambique, Portugal, Sri Lanka, Swaziland, Yemen, Yugoslavia and Zimbabwe, the allocation of the band 1 452-1 492 MHz to the broadcasting-satellite service and the broadcasting service is on a secondary basis until 1 April 2007.

S5.348 The use of the band 1 492-1 525 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A.** However, no coordination threshold in Article **S21** for space stations of the mobile-satellite service with respect to terrestrial services shall apply to the situation referred to in No. **S5.343.** With respect to the situation referred to in No. **S5.343,** the requirement for coordination in the band 1492-1525 MHz will be determined by band overlap.

S5.348A In the band 1 492-1 525 MHz, the coordination threshold in terms of the power flux-density levels at the surface of the Earth in application of No. **S.9.11A** for space stations in the mobile-satellite (space-to-Earth) service, with respect to the land mobile service use for specialized mobile radios or used in conjunction with public switched telecommunication networks (PSTN) operating within the territory of Japan, shall be –150 dB(W/m^2) in any 4 kHz band for all angles of arrival, instead of those given in Table S5-2 of Appendix **S5.** The above threshold level of the power flux-density shall apply until it is changed by a competent world radiocommunication conference.

Annex 1

S5.351 The bands 1 525-1 544 MHz, 1 545-1 559 MHz, 1 626.5-1 645.5 MHz and 1 646.5-1 660.5 MHz shall not be used for feeder links of any service. In exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorized by an administration to communicate via space stations using these bands.

S5.351A For the use of the bands 1 525-1 544 MHz, 1 545-1 559 MHz, 1 610-1 626.5 MHz, 1 626.5-1 645.5 MHz, 1 646.5-1 660.5 MHz, 1 980-2 010 MHz, 2 170-2 200 MHz, 2 483.5-2 500 MHz, 2 500-2 520 MHz and 2 670-2 690 MHz by the mobile-satellite service, see Resolutions **212 (Rev.WRC-97)** and **225 (WRC-2000).**

S5.352A In the band 1 525-1 530 MHz, stations in the mobile-satellite service, except stations in the maritime mobile-satellite service, shall not cause harmful interference to, or claim protection from, stations of the fixed service in France and French overseas territories in Region 3, Algeria, Saudi Arabia, Egypt, Guinea, India, Israel, Italy, Jordan, Kuwait, Mali, Malta, Morocco, Mauritania, Nigeria, Oman, Pakistan, Philippines, Qatar, Syria, Tanzania, Viet Nam and Yemen notified prior to 1 April 1998. (WRC-97)

S5.353A In applying the procedures of Section II of Article **S9** to the mobile-satellite service in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz, priority shall be given to accommodating the spectrum requirements for distress, urgency and safety communications of the Global Maritime Distress and Safety System (GMDSS). Maritime mobile-satellite distress, urgency and safety communications shall have priority access and immediate availability over all other mobile satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, distress, urgency and safety communications of the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution **222 (WRC-2000)** shall apply.)

S5.354 The use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite services is subject to coordination under No. **S9.11A.**

S5.356 The use of the band 1 544-1 545 MHz by the mobile-satellite service (space-to-Earth) is limited to distress and safety communications (see Article **S31**).

S5.357 Transmissions in the band 1 545-1 555 MHz from terrestrial aeronautical stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorized when such transmissions are used to extend or supplement the satellite-to-aircraft links.

S5.357A In applying the procedures of Section II of Article **S9** to the mobile-satellite service in the bands 1 545-1 555 MHz and 1 646.5-1 656.5 MHz, priority shall be given to accommodating the spectrum requirements of the aeronautical mobile-satellite (R) service providing transmission of messages with priority 1 to 6 in Article **S44.** Aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article **S44** shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article **S44.** Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution **222 (WRC-2000)** shall apply.)

S5.364 The use of the band 1 610-1 626.5 MHz by the mobile-satellite service (Earth-to-space) and by the radiodetermination-satellite service (Earth-to-space) is subject to coordination under No. **S9.11A.** A mobile earth station operating in either of the services in this band shall not produce a peak e.i.r.p. density in excess of -15 dB(W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. **S5.366** (to which No. **S4.10** applies), unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, the mean e.i.r.p. density of a mobile earth station shall not exceed –3 dB(W/4 kHz). Stations of the mobile-satellite service shall not claim protection from stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. **S5.366** and stations in the fixed service operating in accordance with the provisions of No. **S5.359.** Administrations responsible for the coordination of mobile-satellite networks shall make all practicable efforts to ensure protection of stations operating in accordance with the provisions of No. **S5.366.**

Annex 1

S5.365 The use of the band 1 613.8-1 626.5 MHz by the mobile-satellite service (space-to-Earth) is subject to coordination under No. **S9.11A.**

S5.366 The band 1 610-1 626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is subject to agreement obtained under No. **S9.21.**

S5.367 *Additional allocation:* The bands 1 610-1 626.5 MHz and 5 000-5 150 MHz are also allocated to the aeronautical mobile-satellite (R) service on a primary basis, subject to agreement obtained under No. **S9.21.**

S5.368 With respect to the radiodetermination-satellite and mobile-satellite services the provisions of No. **S4.10** do not apply in the band 1 610-1 626.5 MHz, with the exception of the aeronautical radionavigation-satellite service.

S5.371 *Additional allocation:* in Region 1, the bands 1 610-1 626.5 MHz (Earth-to-space) and 2 483.5-2 500 MHz (space-to-Earth) are also allocated to the radiodetermination-satellite service on a secondary basis, subject to agreement obtained under No. **S9.21.**

S5.372 Harmful interference shall not be caused to stations of the radio astronomy service using the band 1 610.6-1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (No. **S29.13** applies).

S5.374 Mobile earth stations in the mobile-satellite service operating in the bands 1 631.5-1 634.5 MHz and 1 656.5-1 660 MHz shall not cause harmful interference to stations in the fixed service operating in the countries listed in No. **S5.359.** (WRC-97)

S5.375 The use of the band 1 645.5-1 646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter-satellite links is limited to distress and safety communications (see Article **S31).**

S5.376 Transmissions in the band 1 646.5-1 656.5 MHz from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorized when such transmissions are used to extend or supplement the aircraft-to-satellite links.

S5.376A Mobile earth stations operating in the band 1 660-1 660.5 MHz shall not cause harmful interference to stations in the radio astronomy service. (WRC-97)

S5.377 In the band 1 675-1 710 MHz, stations in the mobile-satellite service shall not cause harmful interference to, nor constrain the development of, the meteorological-satellite and meteorological aids services (see Resolution **213 (Rev.WRC-95))** and the use of this band shall be subject to coordination under No. **S9.11A.**

S5.379A Administrations are urged to give all practicable protection in the band 1 660.5-1 668.4 MHz for future research in radio astronomy, particularly by eliminating air-to-ground transmissions in the meteorological aids service in the band 1 664.4-1 668.4 MHz as soon as practicable.

S5.380 The bands 1 670-1 675 MHz and 1 800-1 805 MHz are intended for use, on a worldwide basis, by administrations wishing to implement aeronautical public correspondence. The use of the band 1 670-1 675 MHz by stations in the systems for public correspondence with aircraft is limited to transmissions from aeronautical stations and the use of the band 1 800-1 805 MHz is limited to transmissions from aircraft stations.

S5.384A The bands, or portions of the bands, 1 710-1 885 MHz and 2 500-2 690 MHz, are identified for use by administrations wishing to implement International Mobile Telecommunications-2000 (IMT-2000) in accordance with Resolution **223 (WRC-2000).** This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations.

S5.385 *Additional allocation*: the band 1 718.8-1 722.2 MHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations.

S5.388 The bands 1 885-2 025 MHz and 2 110-2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement International Mobile Telecommunications-2000 (IMT-2000). Such use does not preclude the use of these bands by other services to which they are allocated. The bands should be made available for IMT-2000 in accordance with Resolution **212 (Rev.WRC-97).** (See also Resolution **223 (WRC-2000).)**

Annex 1

S5.888A In Regions 1 and 3, the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz and, in Region 2, the bands 1 885-1 980 and 2 110-2 160 MHz may be used by high altitude platform stations as base stations to provide International Mobile Telecommunications-2000 (IMT-2000), in accordance with Resolution **221 (WRC-2000).** The use by IMT-2000 applications using high altitude platform stations as base stations does not preclude the use of these bands by any station in the services to which they are allocated and does not establish priority in the Radio Regulations.

S5.389A The use of the bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A** and to the provisions of Resolution **716 (WRC-95).** The use of these bands shall not commence before 1 January 2000; however the use of the band 1 980-1 990 MHz in Region 2 shall not commence before 1 January 2005.

S5.389C The use of the bands 2 010-2 025 MHz and 2 160-2 170 MHz in Region 2 by the mobile-satellite service shall not commence before 1 January 2002 and is subject to coordination under No. **S9.11A** and to the provisions of Resolution **716 (WRC-95).** (WRC-97)

S5.389E The use of the bands 2 010-2 025 MHz and 2 160-2 170 MHz by the mobile-satellite service in Region 2 shall not cause harmful interference to or constrain the development of the fixed and mobile services in Regions 1 and 3.

S5.391 In making assignments to the mobile service in the bands 2 025-2 110 MHz and 2 200-2 290 MHz, administrations shall not introduce high-density mobile systems, as described in Recommendation ITU-R SA.1154, and shall take that Recommendation into account for the introduction of any other type of mobile system. (WRC-97)

S5.392 Administrations are urged to take all practicable measures to ensure that space-to-space transmissions between two or more non-geostationary satellites, in the space research, space operations and Earth exploration-satellite services in the bands 2 025-2 110 MHz and 2 200-2 290 MHz, shall not impose any constraints on Earth-to-space, space-to-Earth and other space-to-space transmissions of those services and in those bands between geostationary and non-geostationary satellites.

S5.396 Space stations of the broadcasting-satellite service in the band 2 310-2 360 MHz operating in accordance with No. **S5.393** that may affect the services to which this band is allocated in other countries shall be coordinated and notified in accordance with Resolution **33 (Rev.WRC-97).** Complementary terrestrial broadcasting stations shall be subject to bilateral coordination with neighbouring countries prior to their bringing into use.

S5.398 In respect of the radiodetermination-satellite service in the band 2 483.5-2 500 MHz, the provisions of No. **S4.10** do not apply.

S5.399 In Region 1, in countries other than those listed in No. **S5.400,** harmful interference shall not be caused to, or protection shall not be claimed from, stations of the radiolocation service by stations of the radiodetermination satellite service.

S5.402 The use of the band 2 483.5-2 500 MHz by the mobile-satellite and the radiodetermination-satellite services is subject to the coordination under No. **S9.11A.** Administrations are urged to take all practicable steps to prevent harmful interference to the radio astronomy service from emissions in the 2 483.5-2 500 MHz band, especially those caused by second-harmonic radiation that would fall into the 4 990-5 000 MHz band allocated to the radio astronomy service worldwide.

S5.403 Subject to agreement obtained under No. **S9.21,** the band 2 520-2 535 MHz (until 1 January 2005 the band 2 500-2 535 MHz) may also be used for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The provisions of No. **S9.11A** apply.

S5.409 Administrations shall make all practicable efforts to avoid developing new tropospheric scatter systems in the band 2 500-2 690 MHz.

S5.410 The band 2 500-2 690 MHz may be used for tropospheric scatter systems in Region 1, subject to agreement obtained under No. **S9.21.**

S5.411 When planning new tropospheric scatter radio-relay links in the band 2 500-2 690 MHz, all possible measures shall be taken to avoid directing the antennae of these links towards the geostationary-satellite orbit.

S5.413 In the design of systems in the broadcasting-satellite service in the bands

between 2 500 MHz and 2 690 MHz, administrations are urged to take all necessary steps to protect the radio astronomy service in the band 2 690-2 700 MHz.

S5.414 The allocation of the frequency band 2 500-2 520 MHz to the mobile-satellite service (space-to-Earth) shall be effective on 1 January 2005 and is subject to coordination under No. **S9.11A.**

S5.415 The use of the bands 2 500-2 690 MHz in Region 2 and 2 500-2 535 MHz and 2 655-2 690 MHz in Region 3 by the fixed-satellite service is limited to national and regional systems, subject to agreement obtained under No. **S9.21,** giving particular attention to the broadcasting-satellite service in Region 1. In the direction space-to-Earth, the power flux-density at the Earth's surface shall not exceed the values given in Article **S21,** Table **S21-4.**

S5.416 The use of the band 2 520-2 670 MHz by the broadcasting-satellite service is limited to national and regional systems for community reception, subject to agreement obtained under No. **S9.21.** The power flux-density at the Earth's surface shall not exceed the values given in Article **S21,** Table **S21-4.**

S5.418B Use of the band 2 630-2 655 MHz by non-geostationary-satellite systems for which complete Appendix **S4** coordination information, or notification information, has been received after 2 June 2000, is subject to the application of the provisions of No. **S9.12.** Resolution **539 (WRC-2000)** applies.

S5.418C Use of the band 2 630-2 655 MHz by geostationary-satellite networks for which complete Appendix **S4** coordination information, or notification information, has been received after 2 June 2000 is subject to the application of the provisions of No. **S9.13** with respect to non-geostationary-satellite systems in the broadcasting-satellite service (sound), and No. **S22.2** does not apply. Resolution **539 (WRC-2000)** applies.

S5.419 The allocation of the frequency band 2 670-2 690 MHz to the mobile-satellite service shall be effective from 1 January 2005. When introducing systems of the mobile-satellite service in this band, administrations shall take all necessary steps to protect the satellite systems operating in this band prior to 3 March 1992. The coordination of mobile-satellite systems in the band shall be in accordance with No. **S9.11A.**

S5.420 The band 2 655-2 670 MHz (until 1 January 2005 the band 2 655-2 690 MHz) may also be used for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries, subject to agreement obtained under No. **S9.21.** The coordination under No. **S9.11A** applies.

S5.423 In the band 2 700-2 900 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the aeronautical radionavigation service.

S5.425 In the band 2 900-3 100 MHz, the use of the shipborne interrogator-transponder system (SIT) shall be confined to the sub-band 2 930 -2 950 MHz.

S5.426 The use of the band 2 900-3 100 MHz by the aeronautical radionavigation service is limited to ground-based radars.

S5.427 In the bands 2 900-3 100 MHz and 9 300-9 500 MHz, the response from radar transponders shall not be capable of being confused with the response from radar beacons (racons) and shall not cause interference to ship or aeronautical radars in the radionavigation service, having regard, however, to No. **S4.9.**

S5.438 Use of the band 4 200-4 400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground. However, passive sensing in the earth exploration-satellite and space research services may be authorized in this band on a secondary basis (no protection is provided by the radio altimeters).

S5.440 The standard frequency and time signal-satellite service may be authorized to use the frequency 4 202 MHz for space-to-Earth transmissions and the frequency 6 427 MHz for Earth-to-space transmissions. Such transmissions shall be confined within the limits of ± 2 MHz of these frequencies, subject to agreement obtained under No. **S9.21.**

S5.441 The use of the bands 4 500-4 800 MHz (space-to-Earth), 6 725-7 025 MHz (Earth-to-space) by the fixed-satellite service shall be in accordance with the provisions of Appendix **S30B.** The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the

fixed-satellite service shall be in accordance with the provisions of Appendix **S30B.** The use of the bands 10.7-10.95 GHz (space-to Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **S9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite system in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-GSO FSS systems and of the complete coordination or notification information, as appropriate, for the GSO networks, and No. **S5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated.

S5.442 In the bands 4 825-4 835 MHz and 4 950-4 990 MHz, the allocation to the mobile service is restricted to the mobile, except aeronautical mobile, service.

S5.443A *Additional allocation*: The band 5 000-5 010 MHz is also allocated to the radionavigation-satellite service (Earth-to-space) on a primary basis. See Resolution **603 (WRC-2000).**

S5.443B *Additional allocation:* The band 5 010-5 030 MHz is also allocated to the radionavigation-satellite service (space-to-Earth) (space-to-space) on a primary basis. In order not to cause harmful interference to the microwave landing system operating above 5 030 MHz, the aggregate power flux-density produced at the Earth's surface in the band 5 030-5 150 MHz by all the space stations within any radionavigation-satellite service system (space-to-Earth) operating in the band 5 010-5 030 MHz shall not exceed –124.5 dB(W/m^2) in a 150 kHz band. In order not to cause harmful interference to the radio astronomy service in the band 4 990-5 000 MHz, the aggregate power flux-density produced in the 4 990-5 000 MHz band by all the space stations within any RNSS (space-to-Earth) system operating in the 5 010-5 030 MHz band shall not exceed the provisional value of –171 dB(W/m^2) in a 10 MHz band at any radio astronomy observatory site for more than 2% of the time. For the use of this band, Resolution **604 (WRC-2000)** applies.

S5.444 The band 5 030-5 150 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. The requirements of this system shall take precedence over other uses of this band. For the use of this band, No. **S5.444A** and Resolution **114 (WRC-95)** apply.

S5.444A *Additional allocation*: the band 5 091-5 150 MHz is also allocated to the fixed-satellite service (Earth-to-space) on a primary basis. This allocation is limited to feeder links of non-geostationary mobile-satellite systems and is subject to coordination under **No. S9.11A.**

In the band 5 091-5 150 MHz, the following conditions also apply:

- prior to 1 January 2010, the use of the band 5 091-5 150 MHz by feeder links of non-geostationary-satellite systems in the mobile-satellite service shall be made in accordance with Resolution **114 (WRC-95);**
- prior to 1 January 2010, the requirements of existing and planned international standard systems for the aeronautical radionavigation service which cannot be met in the 5 000-5 091 MHz band, shall take precedence over other uses of this band;
- after 1 January 2008, no new assignments shall be made to stations providing feeder links of non-geostationary mobile-satellite systems;
- after 1 January 2010, the fixed-satellite service will become secondary to the aeronautical radionavigation service.

S5.446 *Additional allocation:* in the countries listed in Nos. **S5.369** and **S5.400,** the band 5 150-5 216 MHz is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis, subject to agreement obtained under No. **S9.21.** In Region 2, the band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis. In Regions 1 and 3, except those countries listed in Nos. **S5.369** and **S5.400,** the band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a secondary basis. The use by the radiodetermination-satellite service is limited to feeder

links in conjunction with the radiodetermination-satellite service operating in the bands 1 610-1 626.5 MHz and/or 2 483.5-2 500 MHz. The total power flux-density at the Earth's surface shall in no case exceed –159 dBW/m^2 in any 4 kHz band for all angles of arrival.

S5.447 *Additional allocation:* in Germany, Austria, Belgium, Denmark, Spain, Finland, France, Greece, Israel, Italy, Japan, Jordan, Lebanon, Liechtenstein, Luxembourg, Malta, Morocco, Norway, Pakistan, the Netherlands, Portugal, Syria, the United Kingdom, Sweden, Switzerland and Tunisia, the band 5 150-5 250 MHz is also allocated to the mobile service, on a primary basis, subject to agreement obtained under No. **S9.21.**

S5.447A The allocation to the fixed-satellite service (Earth-to-space) is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to coordination under No. **S9.11A.**

S5.447B *Additional allocation:* the band 5 150-5 216 MHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. This allocation is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to provisions of No. **S9.11A.** The power flux-density at the Earth's surface produced by space stations of the fixed-satellite service operating in the space-to-Earth direction in the band 5 150-5 216 MHz shall in no case exceed –164 dB(W/m^2) in any 4 kHz band for all angles of arrival.

S5.447C Administrations responsible for fixed-satellite service networks in the band 5 150-5 250 MHz operated under Nos. **S5.447A** and **S5.447B** shall coordinate on an equal basis in accordance with No. **S9.11A** with administrations responsible for non-geostationary-satellite networks operated under No. **S5.446** and brought into use prior to 17 November 1995. Satellite networks operated under No. **S5.446** brought into use after 17 November 1995 shall not claim protection from, and shall not cause harmful interference to, stations of the fixed-satellite service operated under Nos. **S5.447A** and **S5.447B.**

S5.447D The allocation of the band 5 250-5 255 MHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis. (WRC-97)

S5.448A The use of the frequency band 5 250-5 350 MHz by the earth exploration-satellite (active) and space research (active) services shall not constrain the future development and deployment of the radiolocation service. (WRC-97)

S5.448B The earth exploration-satellite (active) service operating in the band 5 350-5 460 MHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service. (WRC-97)

S5.449 The use of the band 5 350-5 470 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.

S5.451 *Additional allocation:* in the United Kingdom, the band 5 470-5 850 MHz is also allocated to the land mobile service on a secondary basis. The power limits specified in Nos. **S21.2, S21.3, S21.4** and **S21.5** shall apply in the band 5 725-5 850 MHz.

S5.452 Between 5 600 MHz and 5 650 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the maritime radionavigation service.

S5.458 In the band 6 425-7 075 MHz, passive microwave sensor measurements are carried out over the oceans. In the band 7 075-7 250 MHz, passive microwave sensor measurements are carried out. Administrations should bear in mind the needs of the Earth exploration-satellite (passive) and space research (passive) services in their future planning of the bands 6 425-7 025 MHz and 7 075-7 250 MHz.

S5.458A In making assignments in the band 6 700-7 075 MHz to space stations of the fixed-satellite service, administrations are urged to take all practicable steps to protect spectral line observations of the radio astronomy service in the band 6 650-6 675.2 MHz from harmful interference from unwanted emissions.

S5.458B The space-to-Earth allocation to the fixed-satellite service in the band 6 700-7 075 MHz is limited to feeder links for non-geostationary satellite systems of the mobile-satellite service and is subject to coordination under No. **S9.11A.** The use of the band 6 700-7 075 MHz (space-to-Earth) by feeder links for non-geostationary satellite systems in the mobile-satellite service is not subject to No. **S22.2.**

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S5.458C Administrations making submissions in the band 7 025-7 075 MHz (Earth-to-space) for geostationary-satellite systems in the fixed-satellite service after 17 November 1995 shall consult on the basis of relevant ITU-R Recommendations with the administrations that have notified and brought into use non-geostationary-satellite systems in this frequency band before 18 November 1995 upon request of the latter administrations. This consultation shall be with a view to facilitating shared operation of both geostationary-satellite systems in the fixed-satellite service and non-geostationary-satellite systems in this band.

S5.460 *Additional allocation:* the band 7 145-7 235 MHz is also allocated to the space research (Earth-to-space) service on a primary basis, subject to agreement obtained under No. **S9.21.** The use of the band 7 145-7 190 MHz is restricted to deep space; no emissions to deep space shall be effected in the band 7 190-7 235 MHz.

S5.461 *Additional allocation:* the bands 7 250-7 375 MHz (space-to-Earth) and 7 900-8 025 MHz (Earth-to-space) are also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. **S9.21.**

S5.461A The use of the band 7 450-7 550 MHz by the meteorological-satellite service (space-to-Earth) is limited to geostationary-satellite systems. Non-geostationary meteorological-satellite systems in this band notified before 30 November 1997 may continue to operate on a primary basis until the end of their lifetime. (WRC-97)

S5.461B The use of the band 7 750-7 850 MHz by the meteorological-satellite service (space-to-Earth) is limited to non-geostationary satellite systems. (WRC-97)

S5.462A In Regions 1 and 3 (except for Japan), in the band 8 025-8 400 MHz, the earth exploration-satellite service using geostationary satellites shall not produce a power flux-density in excess of the following provisional values for angles of arrival (Ø), without the consent of the affected administration:

-174 dB(W/m^2) in a 4 kHz band	for $0° \le Ø < 5°$
$-174 + 0.5\,(Ø - 5)$ dB(W/m^2) in a 4 kHz band	for $5° \le Ø < 25°$
-164 dB(W/m^2) in a 4 kHz band	for $25° \le Ø \le 90°$

These values are subject to study under Resolution 124 **(WRC-97).**

S5.463 Aircraft stations are not permitted to transmit in the band 8 025-8 400 MHz. (WRC-97)

S5.465 In the space research service, the use of the band 8 400-8 450 MHz is limited to deep space.

S5.467 *Alternative allocation:* in the United Kingdom, the band 8 400-8 500 MHz is allocated to the radiolocation and space research services on a primary basis.

S5.469A In the band 8 550-8 650 MHz, stations in the earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radiolocation service. (WRC-97)

S5.470 The use of the band 8 750-8 850 MHz by the aeronautical radionavigation service is limited to airborne Doppler navigation aids on a centre frequency of 8 800 MHz.

S5.472 In the bands 8 850-9 000 MHz and 9 200-9 225 MHz, the maritime radionavigation service is limited to shore-based radars.

S5.474 In the band 9 200-9 500 MHz, search and rescue transponders (SART) may be used, having due regard to the appropriate ITU-R Recommendation (see also Article **S31).**

S5.475 The use of the band 9 300-9 500 MHz by the aeronautical radionavigation service is limited to airborne weather radars and ground-based radars. In addition, ground-based radar beacons in the aeronautical radionavigation service are permitted in the band 9 300-9 320 MHz on condition that harmful interference is not caused to the maritime radionavigation service. In the band 9 300-9 500 MHz, ground-based radars used for meteorological purposes have priority over other radiolocation devices.

S5.476 In the band 9 300-9 320 MHz in the radionavigation service, the use of shipborne radars, other than those existing on 1 January 1976, is not permitted until 1 January 2001.

S5.476A In the band 9 500-9 800 MHz, stations in the earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or

constrain the use and development of, stations of the radionavigation and radiolocation services. (WRC-97)

S5.479 The band 9 975-10 025 MHz is also allocated to the meteorological-satellite service on a secondary basis for use by weather radars.

S5.482 In the band 10.6-10.68 GHz, stations of the fixed and mobile, except aeronautical mobile, services shall be limited to a maximum equivalent isotropically radiated power of 40 dBW and the power delivered to the antenna shall not exceed –3 dBW. These limits may be exceeded subject to agreement obtained under No. **S9.21.** However, in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Bangladesh, Belarus, China, the United Arab Emirates, Georgia, India, Indonesia, the Islamic Republic of Iran, Iraq, Japan, Kazakstan, Kuwait, Latvia, Lebanon, Moldova, Nigeria, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the restrictions on the fixed and mobile, except aeronautical mobile, services are not applicable.

S5.484 In Region 1, the use of the band 10.7-11.7 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

S5.484A The use of the bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 13.75-14.5 GHz (Earth-to-space), 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **S9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-GSO FSS systems and of the complete coordination or notification information, as appropriate, for the GSO networks, and No. **S5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated.

S5.487 In the band 11.7-12.5 GHz in Regions 1 and 3, the fixed, fixed-satellite, mobile, except aeronautical mobile, and broadcasting services, in accordance with their respective allocations, shall not cause harmful interference to, or claim protection from, broadcasting-satellite stations operating in accordance with the provisions of the Regions 1 and 3 Plan in **Appendix S30.**

S5.487A *Additional allocation:* in Region 1, the band 11.7-12.5 GHz, in Region 2, the band 12.2-12.7 GHz and, in Region 3, the band 11.7-12.2 GHz, are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis, limited to non-geostationary systems and subject to application of the provisions of No. **S9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the broadcasting-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-GSO FSS systems and of the complete coordination or notification information, as appropriate, for the GSO networks, and No. **S5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated.

S5.491 *Additional allocation:* in Region 3, the band 12.2-12.5 GHz is also allocated to the fixed-satellite (space-to-Earth) service on a primary basis. The power flux-density limits in Article **S21,** Table **S21-4** shall apply to this frequency band. The introduction of the service in relation to the broadcasting-satellite service in Region 1 shall follow the procedures specified in Article 7 of Appendix **S30,** with the applicable frequency band extended to cover 12.2-12.5 GHz.

S5.492 Assignments to stations of the broadcasting-satellite service which are in conformity with the appropriate regional Plan or included in the Regions 1 and 3 List in Appendix **S30** may also be used for transmissions in the fixed-satellite service (space-to-

Earth), provided that such transmissions do not cause more interference, or require more protection from interference, than the broadcasting-satellite service transmissions operating in conformity with the Plan or the List, as appropriate.

S5.497 The use of the band 13.25-13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.

S5.498A The Earth exploration-satellite (active) and space research (active) services operating in the band 13.25-13.4 GHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service. (WRC-97)

S5.501 *Additional allocation:* in Austria, Azerbaijan, Hungary, Japan, Mongolia, Kyrgyzstan, Romania, the United Kingdom and Turkmenistan, the band 13.4-14 GHz is also allocated to the radionavigation service on a primary basis.

S5.501A The allocation of the band 13.4-13.75 GHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis. (WRC-97)

S5.501B In the band 13.4-13.75 GHz, the Earth exploration-satellite (active) and space research (active) services shall not cause harmful interference to, or constrain the use and development of, the radiolocation service. (WRC-97)

S5.502 In the band 13.75-14 GHz, an earth station in the fixed-satellite service shall have a minimum antenna diameter of 4.5 m and the e.i.r.p. of any emission should be at least 68 dBW and should not exceed 85 dBW. In addition the e.i.r.p., averaged over one second, radiated by a station in the radiolocation or radionavigation services shall not exceed 59 dBW. The protection of assignments to receiving space stations in the fixed-satellite service operating with earth stations that, individually, have an e.i.r.p. of less than 68 dBW shall not impose constraints on the operation of the radiolocation and radionavigation stations operating in accordance with the Radio Regulations. No. **S5.43A** does not apply. See Resolution **733 (WRC-2000).**

S5.503 In the band 13.75-14 GHz, geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 shall operate on an equal basis with stations in the fixed-satellite service; after that date, new geostationary space stations in the space research service will operate on a secondary basis. Until those geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 cease to operate in this band:

a) the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in geostationary-satellite orbit shall not exceed 71 dBW in the 6 MHz band from 13.772 to 13.778 GHz;

b) the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in non-geostationary-satellite orbit shall not exceed 51 dBW in the 6 MHz band from 13.772 to 13.778 GHz.

Automatic power control may be used to increase the e.i.r.p. density in the 6 MHz band in this frequency range to compensate for rain attenuation, to the extent that the power-flux density at the fixed-satellite service space station does not exceed the value resulting from use by an earth station of an e.i.r.p. of 71 dBW or 51 dBW, as appropriate, in the 6 MHz band in clear-sky conditions.

S5.503A Until 1 January 2000, stations in the fixed-satellite service shall not cause harmful interference to non-geostationary space stations in the space research and Earth exploration-satellite services. After that date, these non-geostationary space stations will operate on a secondary basis in relation to the fixed-satellite service. Additionally, when planning earth stations in the fixed-satellite service to be brought into service between 1 January 2000 and 1 January 2001, in order to accommodate the needs of spaceborne precipitation radars operating in the band 13.793-13.805 GHz, advantage should be taken of the consultation process and the information given in Recommendation ITU-R SA.1071.

S5.504 The use of the band 14-14.3 GHz by the radionavigation service shall be such as to provide sufficient protection to space stations of the fixed-satellite service.

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S5.506 The band 14-14.5 GHz may be used, within the fixed-satellite service (Earth-to-space), for feeder links for the broadcasting-satellite service, subject to coordination with other networks in the fixed-satellite service. Such use of feeder links is reserved for countries outside Europe.

S5.508 *Additional allocation*: in Germany, Bosnia and Herzegovina, France, Greece, Ireland, Iceland, Italy, The Former Yugoslav Republic of Macedonia, Libya, Liechtenstein, Portugal, the United Kingdom, Slovenia, Switzerland and Yugoslavia, the band 14.25-14.3 GHz is also allocated to the fixed service on a primary basis.

S5.510 The use of the band 14.5-14.8 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. This use is reserved for countries outside Europe.

S5.511A The band 15.43-15.63 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. Use of the band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth and Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. **S9.11A.** The use of the frequency band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth) is limited to feeder links of non-geostationary systems in the mobile-satellite service for which advance publication information has been received by the Bureau prior to 2 June 2000. In the space-to-Earth direction, the minimum earth station elevation angle above and gain towards the local horizontal plane and the minimum coordination distances to protect an earth station from harmful interference shall be in accordance with Recommendation ITU-R S.1341. In order to protect the radio astronomy service in the band 15.35-15.4 GHz, the aggregate power flux-density radiated in the 15.35-15.4 GHz band by all the space stations within any non-GSO MSS feeder-link (space-to-Earth) system operating in the 15.43-15.63 GHz band shall not exceed the level of –156 dB(W/m^2) in a 50 MHz bandwidth, into any radio astronomy observatory site for more than 2% of the time.

S5.511C Stations operating in the aeronautical radionavigation service shall limit the effective e.i.r.p. in accordance with Recommendation ITU-R S.1340. The minimum coordination distance required to protect the aeronautical radionavigation stations (No. **S4.10** applies) from harmful interference from feeder-link earth stations and the maximum e.i.r.p. transmitted towards the local horizontal plane by a feeder-link earth station shall be in accordance with Recommendation ITU-R S.1340. (WRC-97)

S5.511D Fixed-satellite service systems for which complete information for advance publication has been received by the Bureau by 21 November 1997 may operate in the bands 15.4-15.43 GHz and 15.63-15.7 GHz in the space-to-Earth direction and 15.63-15.65 GHz in the Earth-to-space direction. In the bands 15.4-15.43 GHz and 15.65-15.7 GHz, emissions from a non-geostationary space station shall not exceed the power flux-density limits at the Earth's surface of –146 dB(W/m^2/MHz) for any angle of arrival. In the band 15.63-15.65 GHz, where an administration plans emissions from a non-geostationary space station that exceed –146 dB(W/m^2/MHz) for any angle of arrival, it shall coordinate under No. **S9.11A** with the affected administrations. Stations in the fixed-satellite service operating in the band 15.63-15.65 GHz in the Earth-to-space direction shall not cause harmful interference to stations in the aeronautical radionavigation service (No. **S4.10** applies). (WRC-97)

S5.513A Spaceborne active sensors operating in the band 17.2-17.3 GHz shall not cause harmful interference to, or constrain the development of, the radiolocation and other services allocated on a primary basis. (WRC-97)

S5.515 In the band 17.3-17.8 GHz, sharing between the fixed-satellite service (Earth-to-space) and the broadcasting-satellite service shall also be in accordance with the provisions of § 1 of Annex 4 of Appendix **S30A/30A.**

S5.516 The use of the band 17.3-18.1 GHz by geostationary-satellite systems in the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. The use of the band 17.3-17.8 GHz in Region 2 by systems in the fixed-satellite service (Earth-to-space) is limited to geostationary satellites. For the use of the band 17.3-17.8 GHz in Region 2 by feeder links for the broadcasting-satellite service in the band 12.2-12.7 GHz, see Article **S11.** The use of the bands 17.3-18.1 GHz (Earth-to-space) in Regions 1 and 3 and 17.8-18.1 GHz (Earth-to-space) in Region 2 by non-geostationary-satellite systems in the fixed-satellite service is subject to application of the provisions of No. **S9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall

not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-GSO FSS systems and of the complete coordination or notification information, as appropriate, for the GSO networks, and No. **S5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated.

S5.519 *Additional allocation:* the band 18.1-18.3 GHz is also allocated to the meteorological-satellite service (space-to-Earth) on a primary basis. Its use is limited to geostationary satellites and shall be in accordance with the provisions of Article **S21,** Table **S21-4.**

S5.520 The use of the band 18.1-18.4 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links of geostationary-satellite systems in the broadcasting-satellite service.

S5.522A The emissions of the fixed service and the fixed-satellite service in the band 18.6-18.8 GHz are limited to the values given in Nos. **S21.5A** and **S21.16.2,** respectively.

S5.522B The use of the band 18.6-18.8 GHz by the fixed-satellite service is limited to geostationary systems and systems with an orbit of apogee greater than 20 000 km.

S5.523A The use of the bands 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) by geostationary and non-geostationary fixed-satellite service networks is subject to the application of the provisions of No. **S9.11A** and No. **S22.2** does not apply. Administrations having geostationary-satellite networks under coordination prior to 18 November 1995 shall cooperate to the maximum extent possible to coordinate pursuant to No. **S9.11A** with non-geostationary-satellite networks for which notification information has been received by the Bureau prior to that date, with a view to reaching results acceptable to all the parties concerned. Non-geostationary-satellite networks shall not cause unacceptable interference to geostationary fixed-satellite service networks for which complete Appendix **S4** notification information is considered as having been received by the Bureau prior to 18 November 1995. (WRC-97)

S5.523B The use of the band 19.3-19.6 GHz (Earth-to-space) by the fixed-satellite service is limited to feeder links for non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. **S9.11A,** and No. **S22.2** does not apply.

S5.523C No. **S22.2** of the Radio Regulations shall continue to apply in the bands 19.3-19.6 GHz and 29.1-29.4 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix **S4** coordination information, or notification information, is considered as having been received by the Bureau prior to 18 November 1995. (WRC-97)

S5.523D The use of the band 19.3-19.7 GHz (space-to-Earth) by geostationary fixed-satellite service systems and by feeder links for non-geostationary-satellite systems in the mobile-satellite service is subject to the application of the provisions of No. **S9.11A,** but not subject to the provisions of No. S22.2. The use of this band for other non-geostationary fixed-satellite service systems, or for the cases indicated in Nos. **S5.523C** and **S5.523E,** is not subject to the provisions of No. **S9.11A** and shall continue to be subject to Articles **S9** (except No. **S9.11A)** and **S11** procedures, and to the provisions of No. **S22.2.** (WRC-97)

S5.523E No. **S22.2** of the Radio Regulations shall continue to apply in the bands 19.6-19.7 GHz and 29.4-29.5 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix **S4** coordination information, or notification information, is considered as having been received by the Bureau by 21 November 1997. (WRC-97)

S5.525 In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7-20.2 GHz and 29.5-30 GHz.

S5.526 In the bands 19.7-20.2 GHz and 29.5-30 GHz in Region 2, and in the bands 20.1-20.2 GHz and 29.9-30 GHz in Regions 1 and 3, networks which are both in the fixed-

satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.

S5.527 In the bands 19.7-20.2 GHz and 29.5-30 GHz, the provisions of No. **S4.10** do not apply with respect to the mobile-satellite service.

S5.528 The allocation to the mobile-satellite service is intended for use by networks which use narrow spot-beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7-20.1 GHz in Region 2 and in the band 20.1-20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. **S5.524.**

S5.530 In Regions 1 and 3, the allocation to the broadcasting-satellite service in the band 21.4-22 GHz shall come into effect on 1 April 2007. The use of this band by the broadcasting-satellite service after that date and on an interim basis prior to that date is subject to the provisions of Resolution **525 (WARC-92).**

S5.532 The use of the band 22.21-22.5 GHz by the Earth exploration-satellite (passive) and space research (passive) services shall not impose constraints upon the fixed and mobile, except aeronautical mobile, services.

S5.533 The inter-satellite service shall not claim protection from harmful interference from airport surface detection equipment stations of the radionavigation service.

S5.535 In the band 24.75-25.25 GHz, feeder links to stations of the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.

S5.535A The use of the band 29.1-29.5 GHz (Earth-to-space) by the fixed-satellite service is limited to geostationary-satellite systems and feeder links to non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. **S9.11A,** but not subject to the provisions of No. **S22.2,** except as indicated in Nos. **S5.523C** and **S5.523E** where such use is not subject to the provisions of No. **S9.11A** and shall continue to be subject to Articles **S9** (except No. **S9.11A)** and **S11** procedures, and to the provisions of No. **S22.2.** (WRC-97)

S5.536 Use of the 25.25-27.5 GHz band by the inter-satellite service is limited to space research and Earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space.

S5.536A Administrations installing earth exploration-satellite earth stations cannot claim protection from stations in the fixed and mobile services operated by neighbouring administrations. In addition, earth stations operating in the earth exploration-satellite service should take into account Recommendation ITU-R SA.1278.

S5.536B In Germany, Saudi Arabia, Austria, Belgium, Brazil, Bulgaria, China, the Republic of Korea, Denmark, Egypt, United Arab Emirates, Spain, Estonia, Finland, France, Hungary, India, Islamic Republic of Iran, Ireland, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Liechtenstein, Lithuania, Moldova, Norway, Oman, Uganda, Pakistan, the Philippines, Poland, Portugal, Syria, Slovakia, Czech Republic, Romania, the United Kingdom, Singapore, Sweden, Switzerland, Tanzania, Turkey, Viet Nam and Zimbabwe, earth stations operating in the Earth exploration-satellite service in the band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services. (WRC-97)

S5.537 Space services using non-geostationary satellites operating in the inter-satellite service in the band 27-27.5 GHz are exempt from the provisions of No. **S22.2.**

S5.538 *Additional allocation:* the bands 27.500-27.501 GHz and 29.999-30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for up-link power control. Such space-to-Earth transmissions shall not exceed an equivalent isotropically radiated power (e.i.r.p.) of _10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit. In the band 27.500-27.501 GHz, such space-to-Earth transmissions shall not produce a power flux-density in excess of the values specified in Article **S21,** Table **S21-4** on the Earth's surface.

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S5.539 The band 27.5-30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.

S5.540 *Additional allocation:* the band 27.501-29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up-link power control.

S5.541 In the band 28.5-30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.

S5.541A Feeder links of non-geostationary networks in the mobile-satellite service and geostationary networks in the fixed-satellite service operating in the band 29.1-29.5 GHz (Earth-to-space) shall employ uplink adaptive power control or other methods of fade compensation, such that the earth station transmissions shall be conducted at the power level required to meet the desired link performance while reducing the level of mutual interference between both networks. These methods shall apply to networks for which Appendix **S4** coordination information is considered as having been received by the Bureau after 17 May 1996 and until they are changed by a future competent world radiocommunication conference. Administrations submitting Appendix **S4** information for coordination before this date are encouraged to utilize these techniques to the extent practicable.

S5.543 The band 29.95-30 GHz may be used for space-to-space links in the Earth exploration-satellite service for telemetry, tracking, and control purposes, on a secondary basis.

S5.544 In the band 31-31.3 GHz the power flux-density limits specified in Article **S21,** Table **S21-4** shall apply to the space research service.

S5.547 The bands 31.8-33.4 GHz, 37-40 GHz, 40.5-43.5 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are available for high-density applications in the fixed service (see Resolutions **75 (WRC-2000)** and **79 (WRC-2000)).** Administrations should take this into account when considering regulatory provisions in relation to these bands. Because of the potential deployment of high-density applications in the fixed-satellite service in the bands 39.5-40 GHz and 40.5-42 GHz, administrations should further take into account potential constraints to high-density applications in the fixed service, as appropriate (see Resolution **84 (WRC-2000)).**

S5.547A Administrations should take practical measures to minimize the potential interference between stations in the fixed service and airborne stations in the radionavigation service in the 31.8-33.4 GHz band, taking into account the operational needs of the airborne radar systems.

S5.548 In designing systems for the inter-satellite and radionavigation services in the band 32-33 GHz, and for the space research service (deep space) in the band 31.8-32.3 GHz, administrations shall take all necessary measures to prevent harmful interference between these services, bearing in mind the safety aspects of the radionavigation service (see Recommendation **707).**

S5.551A In the band 35.5-36.0 GHz, active spaceborne sensors in the earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the meteorological aids service and other services allocated on a primary basis. (WRC-97)

S5.551AA In the bands 37.5-40 GHz and 42-42.5 GHz, non-GSO fixed-satellite service systems should employ power control or other methods of downlink fade compensation of the order of 10 dB, such that the satellite transmissions are at power levels required to meet the desired link performance while reducing the level of interference to the fixed service. The use of downlink fade compensation methods are under study by ITU-R (see Resolution **84 (WRC-2000)).**

S5.551G In order to protect the radio astronomy service in the band 42.5-43.5 GHz, the aggregate power flux-density in the 42.5-43.5 GHz band produced by all the space stations in any non-GSO FSS (space-to-Earth) or BSS (space-to-Earth) system operating in the 41.5-42.5 GHz band shall not exceed –167 dB(W/m^2) in any 1 MHz band at the site of a radio astronomy station for more that 2% of the time. The power flux-density in the band 42.5-43.5 GHz produced by any GSO FSS (space-to-Earth) or BSS (space-to-Earth) station

operating in the band 42.0-42.5 GHz shall not exceed –167 dB(W/m^2) in any 1 MHz band at the site of a radio astronomy station. These limits are provisional and will be reviewed in accordance with Resolution **128 (Rev.WRC-2000).**

S5.552 The allocation of the spectrum for the fixed-satellite service in the bands 42.5-43.5 GHz and 47.2-50.2 GHz for Earth-to-space transmission is greater than that in the band 37.5-39.5 GHz for space-to-Earth transmission in order to accommodate feeder links to broadcasting satellites. Administrations are urged to take all practicable steps to reserve the band 47.2-49.2 GHz for feeder links for the broadcasting-satellite service operating in the band 40.5-42.5 GHz.

S5.552A The allocation to the fixed service in the bands 47.2-47.5 GHz and 47.9-48.2 GHz is designated for use by high altitude platform stations. The use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz is subject to the provisions of Resolution **122 (WRC-97).** (WRC-97)

S5.553 In the bands 43.5-47 GHz and 66-71 GHz, stations in the land mobile service may be operated subject to not causing harmful interference to the space radiocommunication services to which these bands are allocated (see No. **S5.43).**

S5.554 In the bands 43.5-47 GHz, 66-71 GHz, 95-100 GHz, 123-130 GHz, 191.8-200 GHz and 252-265 GHz, satellite links connecting land stations at specified fixed points are also authorised when used in conjunction with the mobile-satellite service or the radionavigation-satellite service.

S5.555 *Additional allocation:* the band 48.94-49.04 GHz is also allocated to the radio astronomy service on a primary basis.

S5.555A The band 50.2-50.4 GHz is also allocated, on a primary basis, to the fixed and mobile services until 1 July 2000. (WRC-97)

S5.556 In the bands 51.4-54.25 GHz, 58.2-59 GHz and 64-65 GHz, radio astronomy observations may be carried out under national arrangements.

S5.556A Use of the bands 54.25-56.9 GHz, 57-58.2 GHz and 59-59.3 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, shall not exceed -147 dB(W/m^2/100 MHz) for all angles of arrival. (WRC-97)

S5.557A In the band 55.78-56.26 GHz, in order to protect stations in the Earth exploration-satellite service (passive), the maximum power density delivered by a transmitter to the antenna of a fixed service station is limited to –26 dB(W/MHz).

S5.558 In the bands 55.78-58.2 GHz, 59-64 GHz, 66-71 GHz, 122.25-123 GHz, 130-134 GHz, 167-174.8 GHz and 191.8-200 GHz, stations in the aeronautical mobile service may be operated subject to not causing harmful interference to the inter-satellite service (see No. **S5.43).**

S5.558A Use of the band 56.9-57 GHz by inter-satellite systems is limited to links between satellites in geostationary-satellite orbit and to transmissions from non-geostationary satellites in high-Earth orbit to those in low-Earth orbit. For links between satellites in the geostationary-satellite orbit, the single entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface, for all conditions and for all methods of modulation, shall not exceed –147 dB(W/m^2/100 MHz) for all angles of arrival. (WRC-97)

S5.559 In the band 59-64 GHz, airborne radars in the radiolocation service may be operated subject to not causing harmful interference to the inter-satellite service (see No. **S5.43).**

S5.559A The band 75.5-76 GHz is also allocated to the amateur and amateur-satellite services on a primary basis until the year 2006.

S5.560 In the band 78-79 GHz radars located on space stations may be operated on a primary basis in the Earth exploration-satellite service and in the space research service.

S5.560A The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis.

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S5.561 In the band 74-76 GHz, stations in the fixed, mobile and broadcasting services shall not cause harmful interference to stations of the fixed-satellite service or stations of the broadcasting-satellite service operating in accordance with the decisions of the appropriate frequency assignment planning conference for the broadcasting-satellite service.

S5.562 The use of the band 94-94.1 GHz by the Earth exploration-satellite (active) and space research (active) services is limited to spaceborne cloud radars. (WRC-97)

S5.562A Transmissions from space stations of the Earth exploration-satellite service (active) that are directed into the main beam of a radio astronomy antenna have the potential to damage some radio astronomy receivers. Space agencies operating the transmitters and the radio astronomy stations concerned should mutually plan their operations so as to avoid such occurrences to the maximum extent possible.

S5.562B Use of this allocation is limited to space-based radio astronomy only.

S5.562C Use of the band 116-122.25 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 km to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions occupied by passive sensors, shall not exceed –148 dB(W/(m^2. MHz)) for all angles of arrival.

S5.562E The allocation to the Earth exploration-satellite service (active) is limited to the band 133.5-134 GHz.

S5.562F In the band 155.5-158.5 GHz, the allocation to the Earth exploration-satellite (passive) and space research (passive) services shall terminate on 1 January 2018.

S5.562G The date of entry into force of the allocation to the fixed and mobile services in the band 155.5-158.5 GHz shall be 1 January 2018.

S5.562H Use of the bands 174.8-182 GHz and 185-190 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 km to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions occupied by passive sensors, shall not exceed
–144 dB(W/(m^2. MHz)) for all angles of arrival.

S5.563A In the bands 200-209 GHz, 235-238 GHz, 250-252 GHz and 265-275 GHz, ground-based passive atmospheric sensing is carried out to monitor atmospheric constituents.

S5.563B The band 237.9-238 GHz is also allocated to the Earth exploration-satellite service (active) and the space research service (active) for spaceborne cloud radars only.

S5.565 The frequency band 275-1 000 GHz may be used by administrations for experimentation with, and development of, various active and passive services. In this band a need has been identified for the following spectral line measurements for passive services:

- radio astronomy service: 275-323 GHz, 327-371 GHz, 388-424 GHz, 426-442 GHz, 453-510 GHz, 623-711 GHz, 795-909 GHz and 926-945 GHz;
- Earth exploration-satellite service (passive) and space research service (passive): 275-277 GHz, 294-306 GHz, 316-334 GHz, 342-349 GHz, 363-365 GHz, 371-389 GHz, 416-434 GHz, 442-444 GHz, 496-506 GHz, 546-568 GHz, 624-629 GHz, 634-654 GHz, 659-661 GHz, 684-692 GHz, 730-732 GHz, 851-853 GHz and 951-956 GHz.

Future research in this largely unexplored spectral region may yield additional spectral lines and continuum bands of interest to the passive services. Administrations are urged to take all practicable steps to protect these passive services from harmful interference until the date when the allocation table is established in the above-mentioned frequency band.

Annex 2

Glossary of Terms and Definitions

KEY TO ABBREVIATIONS

AIS ..... Universal Shipborne Automatic Identification System

AM ..... Amplitude Modulation

Appendix 16 ..... Appendix 16 of the Radio Regulations: Channelling of the maritime mobile radiotelephone bands between 4000 kHz and 23 000 kHz.

Appendix 18 ..... Appendix 18 of the Radio Regulations: Table of Transmitting frequencies in the band 156-174 MHz for stations in the maritime mobile service.

Appendix 27 aer2 ..... Appendix 27 aer2 of the Radio Regulations: Frequency allotment plan for the aeronautical mobile (R) service and related information between 2850 kHz and 22 000 kHz.

Appendix 30 ..... Appendix 30 of the Radio Regulations: Provisions for all services and associated plans for the broadcast-satellite service in frequency bands 11.7-12.2 GHz (in Region 3), 11.7-12.5 GHz (in Region 1), and 12.2-12.7 GHz (in Region 2).

Appendix 30A ..... Appendix 30A of the Radio Regulations: Provisions and associated plans for feeder links for the broadcasting-satellite services.

APT ..... Automatic Picture Transmission

AVI ..... Automatic Vehicle Identification.

CEPT ..... European Conference of Postal and Telecommunications Administrations.

CT2 ..... European Analogue cordless telephone system (second generation) (I-ETS 300 131)

DAB ..... Digital Audio Broadcasting.

DCS1800 ..... Digital Communications System, 1800 MHz band.

DECCA ..... A Radionavigation system (of the DECCA company) – discontinued 31 March 2000.

DECT ..... Digital European Cordless Telecommunications a pan-European standard for short-range cordless telephones.

DGPS ..... Differential Global Positioning System.

DSI ..... Detailed Spectrum Investigation (as conducted by CEPT/ERO)

DTT ..... Digital Terrestrial Television

Earth - space ..... Earth to space direction of transmission.

EESS ..... Earth Exploration Satellite Service.

EGSM ..... Extended Global System for Mobile Communications (see GSM)

ENG/OB ..... Electronic News Gathering/Outside Broadcast.

EPIRB ..... Emergency Position-Indicating Radio Beacon.

ERC ..... European Radiocommunications Committee - A committee of CEPT responsible for radio matters.

ERC/DEC/ ..... ERC Decision.

ERC/REC/ ..... ERC Recommendation

ERO ..... European Radiocommunications Office - A permanent office within CEPT dealing with radio matters.

ERMES ..... Enhanced Radio Message Service.

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e.r.p. ..... Equivalent radiated power.

e.i.r.p. ..... Equivalent isotropically radiated power.

ETACS ..... Extended Total Access Communications System.

ETS ..... European Telecommunication Standard.

ETSI ..... European Telecommunication Standards Institute.

EUTELSAT ..... European Telecommunications Satellite Organisation.

FDDA ..... Field Disturbance and Doppler Apparatus (Motion Detectors)

FM ..... Frequency Modulation.

FSS ..... Fixed Satellite Service.

FSTV ..... Fast Scan Television

FWPMA ..... Fixed Wireless Point to Multipoint Access

GHz ..... Gigahertz - 1,000,000,000 Hertz.

GLONASS ..... Global Satellite Navigation System (Russian Federation)

GMDSS ..... Global Maritime Distress and Safety System.

GPS ..... Global Positioning System.

GSM ..... Global System for Mobile Communications (Public mobile cellular system in the 900 MHz band.)

GSO ..... Geostationary Orbit.

HDTV ..... High Definition Television.

Hz ..... Hertz, The unit of frequency measurement, (1 kHz = 1000 Hz, 1 MHz = 1000,000 Hz, 1GHz = 1000,000,000 Hertz)

HIPERLAN ..... HIgh PErformance Radio Local Area Network.

HRPT ..... High Resolution Picture Transmission

IMT-2000 ..... International Mobile Telecommunications – 3rd generation Mobile Systems.

INTELSAT ..... International Telecommunications Satellite Organisation.

INMARSAT ..... International Maritime Satellite Organisation.

ISM ..... Industrial, Scientific and Medical applications

ITU ..... International Telecommunications Union.

ITU-R ..... Radiocommunication Sector of the ITU.

ITU Geneva 75 Plan ..... Plan for the assignment of frequencies to broadcasting stations in the medium frequency bands in Regions 1 and 3 and in the low frequency bands in Region 1.

ITU Geneva 84 Plan ..... Frequency assignment plan for FM sound broadcasting stations in Region 1 and part of Region 3 in the band 87.5-108 MHz.

ITU Geneva 85 Plan ..... Frequency assignment plan (Region 1) for stations of the maritime mobile service in the bands 85 415-495 kHz 505-kHz 1606.5-1625 kHz 1635-1800 kHz 2045 - 2160 kHz. Frequency assignment plan (Region 1) for stations of the aeronautical radionavigation service (radiobeacons) in the band 415-435 kHz and 510-526.5kHz Frequency assignment plan for stations of the radionavigation service (radiobeacons) for the European Maritime Area in the band 283.5-315 kHz.

ITU Stockholm 61 Plan ..... Plans annexed to the Regional agreement for the European Broadcasting Area concerning the use of frequencies by the broadcasting services in the VHF and UHF bands.

kHz ..... Kilohertz - 1000 Hertz.

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LAN ..... Local Area Network.

LEO ..... Low Earth Orbit

LORAN C ..... Radionavigation System.

LPD ..... Low Power Device (Low power radio transmitters used for general data telemetry and telecommand).

MEO ..... Medium Earth Orbit

MHz ..... Megahertz - 1,000,000 Hertz.

MLS ..... Microwave Landing System.

MSS ..... Mobile Satellite Service.

MVDS ..... Microwave (or Multi-point) Video Distribution System.

MWS ..... Multimedia Wireless System.

N-GSO ..... Non-Geostationary Orbit.

Primary ..... Where a band is indicated as allocated to more than one service and the name of the service is printed in "Capitals" (e.g. MOBILE) these are called "primary" services. Within a band, Primary services shall have prior choice of frequencies. (also see secondary services). Where a band is indicated in a footnote of the Table as allocated to a service "on a primary basis" in an area smaller than a region or in a particular country, this is a primary service in that country.

PMR Band ..... Private Mobile Radio Band (Frequency band mainly used for business radio purposes)

RACON ..... Radar Beacon.

RLAN ..... Radio Local Area Network.

RTTT ..... Road Transport & Traffic Telematics.

SAR ..... Search and Rescue.

S-DAB ..... Satellite Digital Audio Broadcasting.

SNG ..... Satellite News Gathering.

S-PCS ..... Satellite Personal Communications System.

space - Earth ..... space to Earth direction of transmission.

S.I. ..... Statutory Instrument (National Legislation)

SRD ..... Short Range Devices

STL ..... Studio to Transmitter Link.

SYLEDIS ..... A Position Fixing System.

T-DAB ..... Terrestrial Digital Audio Broadcasting.

TACS ..... Total Access Communications System (Analogue)

TETRA ..... TErrestrial Trunked RAdio (Digital)

TFTS ..... Terrestrial Flight Telephone System.

UIC ..... Union International Chemin de Fer (International railways Organisation)

UMTS ..... Universal Mobile Telecommunications Systems.

VSAT ..... Very Small Aperture Terminal.

WARC ..... World Administrative Radio Conference.

WRC ..... World Radiocommunication Conference

Annex 2

Terms and Definitions

Allocation:
Entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space radiocommunication services or the radio astronomy service under specified conditions. This term shall also be applied to the frequency band concerned.

Aeronautical Mobile Service:
A mobile service between aeronautical stations and aircraft stations, or between aircraft stations, in which survival craft stations may participate; emergency position-indicating radiobeacon stations may also participate in this service on designated distress and emergency frequencies.

Aeronautical Fixed Service:
A radiocommunication service between specified fixed points provided primarily for the safety of air navigation and for the regular efficient and economical operation of air transport.

Aeronautical Mobile - Satellite Service:
A mobile satellite service in which mobile earth stations are located on board aircraft; survival craft stations and emergency position indicating radiobeacon stations may also participate in this service.

Amateur Service:
A radiocommunication service for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Amateur - Satellite Service:
A radiocommunication service using space stations on earth satellites for the same purposes as those of the amateur service.

Broadcasting Service:
A radiocommunication service in which the transmissions are intended for direct reception by the general public. This service may include sound transmissions, television transmissions or other types of transmission.

Broadcasting - Satellite Service:
A radiocommunication service in which signals transmitted or retransmitted by space stations are intended for direct reception by the general public. In the broadcasting satellite service the term “direct reception” shall encompass both individual reception and community reception.

Deep Space:
Space at a distance from the Earth approximately equal to, or greater than, the distance between the earth and the moon.

Earth Exploration - Satellite Service:
A radiocommunication service between earth stations and one or more space stations which may include links between space stations, in which:

- information relating to the characteristics of the earth and its natural phenomena is obtained from active sensors or passive sensors on earth satellites;
- similar information is collected from airborne or earth based platforms;
- such information may be distributed to earth stations within the system concerned;
- platform interrogation may be included.

This service may also include feeder links necessary for its operation.

Emergency Position - Indicating Radiobeacon Station:
A station in the mobile service the emissions of which are intended to facilitate search and rescue operations.

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Fixed Service:
A radiocommunication service between specified fixed points.

Fixed - Satellite Service:
A radiocommunication service between earth stations at specified fixed points when one or more satellites are used; in some cases this service includes satellite-to-satellite links, which may also be effected in the inter-satellite service; the fixed-satellite service may also include feeder links for other space radiocommunication services.

Galileo:
A proposed Euroepan global satellite navigation system.

Inductive Loop Systems:
Systems which operate by producing a controlled magnetic field within which a predetermined recognisable signal is formed.

Industrial, Scientific and Medical (ISM) applications (of radio frequency energy):
Operation of equipment or appliances designed to generate and use locally, radio frequency energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of telecommunications.

Instrument Landing System (ILS):
A radionavigation system which provides aircraft with horizontal and vertical guidance just before and during landing and, at certain fixed points, indicates the distance to the reference point of landing.

Inter - Satellite Service:
A radiocommunication service providing links between artificial earth satellites.

Meteorological Aids Service:
A radiocommunication service used for meteorological, including hydrological, observations and exploration.

Meteorological - Satellite Service:
An earth exploration satellite service for meteorological purposes.

Land Mobile Service:
A mobile radiocommunications service between base stations and land mobile stations or between land mobile stations.

Mobile - Satellite Service:
A radiocommunication service between mobile earth stations and one or more space stations, or between space stations used by this service or between mobile earth stations by means of one or more space stations. This service may also include feeder links necessary for its operation.

Maritime Mobile Service:
A mobile service between coast stations and ship stations, or between ship stations, or between associated on board communication stations; survival craft stations and emergency position-indicating radiobeacon stations may also participate in this service.

Maritime Mobile - Satellite Service:
A mobile satellite service in which mobile earth stations are located on board ships; survival craft stations and emergency position-indicating radiobeacon stations may also participate in this service.

Radar:
A radiodetermination system based on the comparison of reference signals with radio signals reflected, or retransmitted, from the position to be determined.

Radar Beacon (Racon):
A transmitter-receiver associated with a fixed navigational mark which, when triggered by a radar, automatically returns a distinctive signal which can appear on the display of the triggering radar, providing range, bearing and identification information.

Radio Astronomy:
Astronomy based on the reception of radio waves of cosmic origin.

Radio Astronomy Service:
A service involving the use of radio astronomy.

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Radiocommunications Service:
A service involving the transmission, emission and/or reception of radio waves for specific telecommunications purposes.

Radiodetermination:
The determination of the position, velocity and/or other characteristics of an object, or the obtaining of information relating to these parameters, by means of the propagation properties of radio waves.

Radionavigation:
Radiodetermination used for the purposes of radionavigation, including obstruction warning.

Radiolocation:
Radiodetermination used for purposes other than radionavigation.

Radiosonde:
An automatic radio transmitter in the meteorological aids service usually carried on an aircraft, free balloon, kite or parachute, and which transmits meteorological data.

Safety Service:
Any radiocommunication service used permanently or temporarily for the safeguarding of human life and property.

Secondary
Where a band is indicated as allocated to more than one service and the name of the service is printed in normal characters (e.g. Mobile) these are called secondary services.

Stations of a secondary service:

- shall not cause harmful interference to stations of primary services to which the frequencies are already assigned or to which stations may be assigned at a later date
- cannot claim protection from harmful interference from stations of a primary service to which frequencies are already assigned or may be assigned at a later date;
- can claim protection, however, from harmful interference from stations of the same or other secondary service(s) to which frequencies may be assigned at a later date.

Where a band is indicated in a footnote of the Table as allocated to a service “on a secondary basis” in an area smaller than a region or in a particular country, this is a secondary service.

Space Research Service:
A radiocommunication service in which spacecraft or other objects in space are used for scientific or technological research purposes.

Standard frequency and Time Signal Service:
A radiocommunication service for scientific, technical and other purposes, providing the transmission of specified frequencies, time signals or both, of stated high precision, intended for general reception.

Standard Frequency and Time Signal - Satellite Service:
A radiocommunication service using space stations on earth satellites for the same purpose as those of the standard frequency and time signal service.

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Other Relevant Documentation

The documents listed below can be sourced from the relevant organisations, see Annex 5 for the addresses.

EC DIRECTIVES AND NATIONAL TRANSPOSITIONS THEREOF:
Reference is made to the Following EC Directives/National transpositions thereof in the Table of Frequency Allocations.

87/372/EEC	On the frequency bands to be reserved for the co-ordinated introduction of public Pan-European cellular digital land-based mobile communications in the community.
90/543/EEC	On the co-ordinated introduction of public Pan-European land-based public radio paging in the community.
91/287/EEC	On the frequency bands to be designated for the co-ordinated introduction of digital European cordless telecommunication (DECT) into the community.

CEPT DECISIONS AND RECOMMENDATIONS:
Reference is made to the following CEPT Decisions and Recommendations in the Table of Frequency Allocations.

CEPT DECISIONS:

CEPT/ERC/DEC(92)01
ERC Decision of 22 October 1992 on the frequency bands to be designated for the co-ordinated introduction of the Terrestrial Flight Telecommunications System 1992 Edition.

CEPT/ERC/DEC(92)02
ERC Decision of 22 October 1992 on the frequency bands to be designated for the co-ordinated introduction of Road Transport Telematic Systems 1992 Edition.

CEPT/ERC/DEC(94)02
ERC Decision of 24 October 1994 on the frequency band to be designated for the co-ordinated introduction of the European Radio Messaging System (ERMES)
Date: 1994 Edition

Remark: Intent of this Decision is met through the implementation of Directive 90/544/EEC

CEPT/ERC/DEC(95)02
ERC Decision of 1st December 1995 on the adoption of national type approval regulations for equipment to be used in the land mobile service using angle modulation based on the European Telecommunications Standard (ETS) 300 086 1995 Edition.

CEPT/ERC/DEC(95)03
ERC Decision of 1 December 1995 on the frequency bands to be designated for the introduction of DCS 1800

CEPT/ERC/DEC(96)01
ERC Decision of 7 March 1996 on the harmonised frequency band to be designated for the introduction of the Digital Land Mobile System for the Emergency Services
Turku 1996.

CEPT/ERC/DEC(96)02
ERC Decision of 7 March 1996 on the harmonised frequency band to be designated for CEPT PR 27 radio equipment and on the implementation of the technical standard for this equipment
Turku 1996
Remark: SI 436 of 1998 Applies

CEPT/ERC/DEC(96)04

ERC Decision of 7 March 1996 on the frequency bands for the introduction of the Trans European Trunked Radio System (TETRA)
Turku 1996.

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CEPT/ERC/DEC(96)07
ERC Decision of 1 November 1996 on the adoption of approval regulations for radio equipment to be used in the land mobile service intended for the transmission of data (and speech) and having an antenna connector, based on the European Telecommunications Standard (ETS) 300 113
Vienna 1996.

CEPT/ERC/DEC(96)08
ERC Decision of 1 November 1996 on the adoption of approval regulations for equipment to be used for radio relay systems operating in the fixed service for the transmission of digital signals and analogue video signals operating between 37 GHz and 39.5 GHz, based on the European Telecommunications Standard (ETS) 300 197
Vienna 1996.

CEPT/ERC/DEC(96)09
ERC Decision of 1 November 1996 on the adoption of approval regulations for equipment to be used for radio relay systems operating in the fixed service for the transmission of digital signals and analogue video signals operating between 27.2 GHz and 23.6 GHz based on the European Telecommunications Standard (ETS) 300 198
Vienna 1996.

CEPT/ERC/DEC(96)10
ERC Decision of 1 November 1996 on the adoption of approval regulations for radio equipment to be used in the land mobile service for transmitting signals to initiate a specific response in the receiver based on the Interim European Telecommunications Standard (I-ETS) 300 219
Vienna 1996.

CEPT/ERC/DEC(96)11
ERC Decision of 1 November 1996 on the adoption of approval regulations for radio equipment to be used in the land mobile service using an integral antenna intended primarily for analogue speech based on the European Telecommunications Standard (ETS) 300 296
Vienna 1996.

CEPT/ERC/DEC(96)12
ERC Decision of 1 November 1996 on the adoption of approval regulations for radio equipment to be used in the land mobile service using an integral antenna transmitting signals to initiate a specific response in the receiver based on the European Telecommunications Standard (ETS) 300 341
Vienna 1996.

CEPT/ERC/DEC(96)13
ERC Decision of 1 November 1996 on the adoption of approval regulations for very high frequency (VHF), frequency modulated, sound broadcasting transmitters based on the European Telecommunications Standard (ETS) 300 384
Vienna 1996

CEPT/ERC/DEC(96)14
ERC Decision of 1 November 1996 on the adoption of approval regulations for radio equipment to be used in the land mobile service for the transmission of data (and speech) and using an integral antenna based on the European Telecommunications Standard (ETS) 300 390
Vienna 1996.

CEPT/ERC/DEC(96)15
ERC Decision of 1 November 1996 on the adoption of approval regulations for radio equipment to be used for wireless microphones in the 25 MHz to 3 GHz frequency range to be used in the mobile service based on the Interim European Telecommunications Standard (I-ETS) 300 422
Vienna 1996
Remark: Administrative in specified bands only

CEPT/ERC/DEC(96)17
ERC Decision of 1 November 1996 on the adoption of approval regulations for radio equipment to be used for wide band data transmission operating in the frequency range 2.4 GHz to 2.4835 GHz and using spread spectrum modulation techniques based on the European Telecommunications Standard (ETS) 300 328
Vienna 1996.

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CEPT/ERC/DEC(96)18
ERC Decision of 1 November 1996 on the adoption of approval regulations for radio equipment to be used for cordless telephone apparatus operating in the mobile service in the frequency range 864.1 MHz to 868.1 MHz, based on the Interim European Telecommunications Standard (I-ETS) 300 131
Vienna 1996.

CEPT/ERC/DEC(96)19
ERC Decision of 1 November 1996 on the adoption of approval regulations for radio equipment to be used for on-site paging systems, based on the European Telecommunications Standard (ETS) 300 224
Vienna 1996.

CEPT/ERC/DEC(96)20
ERC Decision of 1 November 1996 on the adoption of approval regulations for radiotelephone transmitters and receivers for the maritime mobile service operating in the frequency range 156 MHz to 174 MHz based on the European Telecommunications Standard (ETS) 300 162
Vienna 1996.

CEPT/ERC/DEC(97)02
ERC Decision of 21 March 1997 on the extended frequency bands to be used for the GSM Digital Pan-European Communication System
Luxembourg 1997

CEPT/ERC/DEC(97)03
ERC Decision of 30 June 1997 on the Harmonised Use of Spectrum for Satellite Personal Communication Services (S-PCS) operating within the bands 1610-1626.5 MHz, 2483.5-2500 MHz,1980-2010 MHz and 2170-2200 MHz
The Hague 1997
Remark: S.I. No. 214 of 1998 applies

CEPT/ERC/DEC(97)04
ERC Decision of 30 June 1997 on transitional arrangements for the Fixed Service and the Mobile-Satellite Service in the bands 1980-2010 MHz and 2170-2200 MHz in order to facilitate the harmonised introduction and development of Satellite Personal Communications Services
The Hague 1997
Remark: Fixed service to be phased out by 2000.

CEPT/ERC/DEC(97)05
ERC Decision of 30 June 1997 on free circulation, use and licensing of Mobile Earth Stations of Satellite Personal Communications Services (S-PCS) operating within the bands 1610-1626.5 MHz, 2483.5-2500 MHz, 1980-2010 MHz and 2170-2200 MHz within the CEPT
The Hague 1997
Remark: S.I. No. 214 of 1998 applies

CEPT/ERC/DEC(97)06
ERC Decision of 30 June 1997 on the harmonised frequency band to be designated for Social Alarm Systems
The Hague 1997

CEPT/ERC/DEC(97)07
ERC Decision of 30 June 1997 on the frequency bands for the introduction of the Universal Mobile Telecommunications System (UMTS)
The Hague 1997

CEPT/ERC/DEC(97)08
ERC Decision of 30 June 1997 on management of the Schiever Plan for the Terrestrial Flight Telecommunications System
The Hague 1997 Revision: Annex 2 updated 1999

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CEPT/ERC/DEC(97)11
ERC Decision of 5 December 1997 on free circulation and use of DCS 1800 mobile terminals in CEPT member countries enlarging the field of application of ERC/DEC/(95)01
Bucharest 1997
Remark: SI 107 of 1999 applies

CEPT/ERC/DEC(98)01
ERC Decision of 20 March 1998 on free circulation and use of Inmarsat-D terminals in CEPT member countries enlarging the field of application of ERC/DEC/(95)01
Paris 1998
Remark: SI 100 of 1999 applies

CEPT/ERC/DEC(98)02
ERC Decision of 20 March 1998 on free circulation and use of Inmarsat-phone (also known as Inmarsat Mini-M) terminals in CEPT member countries enlarging the field of application of ERC/DEC/(95)01
Paris 1998
Remark: SI 109 of 1999 applies

CEPT/ERC/DEC(98)03
ERC Decision of 20 March 1998 on free circulation and use of EMS-PRODAT terminals in CEPT member countries enlarging the field of application of ERC/DEC/(95)01
Paris 1998
Remark: SI 105 of 1999 applies

CEPT/ERC/DEC(98)04
ERC Decision of 20 March 1998 on free circulation and use of EMS-MSSAT terminals in CEPT member countries enlarging the field of application of ERC/DEC/(95)01
Paris 1998
Remark: SI 106 of 1999 applies

CEPT/ERC/DEC(98)08
ERC Decision of 20 March 1998 on the adoption of approval regulations for equipment to be used for radio relay systems operating in the fixed service for the transmission of digital signals and analogue video signals operating between 37 GHz and 39.5 GHz, based on the European Standard (Telecommunications series) EN 300 197 V1.2.1
Paris 1998
Remark: Channel options: 4, 5, 6, 7, 9, 10, 11, 12, 13, 16, 17 and 19. Priority will be given to the most spectrum efficient equipment

CEPT/ERC/DEC(98)09
ERC Decision of 20 March 1998 on the adoption of approval regulations for equipment to be used for radio relay systems operating in the fixed service for the transmission of digital signals and analogue video signals operating between 21.2 GHz and 23.6 GHz based on the European Standard (Telecommunications series) EN 300 198 V1.2.1
Paris 1998
Remark: Channel options: 1, 6, 7, 8, 10, 11, 12, 13, 14, 16, 17, 18, 19, 20 and 21. Priority will be given to the most spectrum efficient equipment

CEPT/ERC/DEC(98)11
ERC Decision of 23 November 1998 on the harmonised frequency band to be designated for CEPT PR 27 radio equipment and on the implementation of the technical standard for this equipment
Krakow 1998
Remark: Statutory Instrument SI No 436 of 1998 refers. Note that this also permits the use of AM equipment conforming to the relevant ETSI standard. It uses the title CB rather than PR-27

CEPT/ERC/DEC(98)15
ERC Decision of 23 November 1998 on Exemption from Individual Licensing of Omnitracs terminals for the Euteltracs system
Krakow 1998
Remark: Statutory Instruments SI No 103 of 1999 refers

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CEPT/ERC/DEC(98)17
ERC Decision of 23 November 1998 on Exemption from Individual Licensing of ARCANET Suitcase terminals
Krakow 1998
Remark: Statutory Instruments SI No 104 of 1999 refers

CEPT/ERC/DEC(98)25
ERC Decision of 23 November 1998 on the harmonised frequency band to be designated for PMR 446
Krakow 1998
Remark: Statutory Instruments SI No 93 of 1998 refers

CEPT/ERC/DEC(98)30
ERC Decision of 23 November 1998 on the adoption of approval regulations for Automatic Vehicle Identification (AVI) for railways based on the European Standard (Telecommunications series) EN 300 761 V1.1.1 (1998-01) (operating in the 2.45 GHz ISM band)
Krakow 1998

CEPT/ERC/DEC(99)06
ERC Decision of 10 March 1999 on the harmonised introduction of satellite personal communication systems operating in the bands below 1 GHz (S-PCS<1GHz)
Helsinki 1999 Revision: 2000
Remark: SI 173 of 2000 Applies

CEPT/ERC/DEC(99)07
ERC Decision of 10 March 1999 on the adoption of approval regulations for short range devices operating in the frequency range 1 GHz to 25 GHz based on the Interim European Telecommunications Standard (I-ETS) 300 440
Helsinki 1999

CEPT/ERC/DEC(99)08
ERC Decision of 10 March 1999 on the adoption of approval regulations for equipment to be used for low and medium capacity point-to-point Digital Radio Relay Systems (DRRS) operating in the frequency range 2.1 to 2.6 GHz, based on the European Telecommunications Standard (ETS) 300 633
Helsinki 1999
Remark: Sub-bands B1: 16, 19, 22, 25, 28, 31, 37, 40, 43, 46, 49, 53

CEPT/ERC/DEC(99)09
ERC Decision of 10 March 1999 on the adoption of approval regulations for equipment to be used for digital point-to-point radio relay systems operating in fixed service between 24.25 and 29.50 GHz, based on the European Telecommunications Standard (ETS) 300 431
Helsinki 1999
Remark: Sub-bands B1: 11, 13, 15, 17, 19, 21, 25, 27; B2: 12, 14, 16, 18, 20, 22, 26, 28

CEPT/ERC/DEC(99)11
ERC Decision of 10 March 1999 on the adoption of approval regulations for equipment to be used for low capacity point-to-point Digital Radio Relay Systems (DRRS) operating in the 1.4 GHz frequency band, based on the European Telecommunications Standard (ETS) 300 630
Helsinki 1999
Remark: Sub-bands B1: 1, 3, 5, 7, 9, 13, 15, 17, 19, 21, 23, 29, 31, 33, 35, 37; B2: 2, 3, 4, 5, 10, 12, 16, 18, 20, 22, 24, 30, 32, 34, 36, 38

CEPT/ERC/DEC(99)15
ERC Decision of 1 June 1999 on the designation of the harmonised frequency band 40.5 to 43.5 GHz for the introduction of Multimedia Wireless Systems (MWS) including Multipoint Video Distribution Systems (MVDS)
Dublin 1999

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CEPT/ERC/DEC(99)17
ERC Decision of 1 June 1999 on the Automatic Identification and Surveillance system (AIS) channels in the maritime VHF band
Dublin 1999

CEPT/ERC/DEC(99)23
ERC Decision of 29 November 1999 on the harmonised frequency bands to be designated for the introduction of High Performance Radio Local Area Networks (HIPERLANs)
Oslo 1999

CEPT/ERC/DEC(99)25
ERC Decision of 29 November 1999 on the harmonised utilisation of spectrum for terrestrial Universal Mobile Telecommunications System (UMTS) operating within the bands 1900 - 1980 MHz, 2010 - 2025 MHz and 2110 - 2170 MHz
Oslo 1999

CEPT/ERC/DEC(00)01
ERC Decision of 28 March 2000 extending ERC/DEC/(97)07 on the frequency bands for the introduction of terrestrial Universal Mobile Telecommunications System (UMTS)
Nicosia 2000

CEPT RECOMMENDATIONS:

CEPT/ERC/REC 12-02
Harmonised radio frequency channel arrangements for analogue and digital terrestrial fixed systems operating in the band 12.75 GHz to 13.25 GHz
Bonn 1994.

CEPT/ERC/REC 12-03 E
Harmonised radio frequency channel arrangements for digital terrestrial fixed systems operating in the band 17.7 GHz to 19.7 GHz
Bonn 1994.

CEPT/ERC/REC 14-01 E
Radio-frequency channel arrangements for high capacity analogue and digital radio-relay systems operating in the band 5925 MHz - 6425 MHz
Bonn 1995.

CEPT/ERC/REC 14-02 E
Radio-frequency channel arrangements for medium and high capacity analogue or high capacity digital radio-relay systems operating in the band 6425 MHz - 7125 MHz
Bonn 1995.

CEPT/ERC/REC 70-03
Relating to the use of Short Range Devices (SRD)
Date: Tromso 1997 and subsequent amendments Revision: Sept 2000

T/R 10-01 E
Wide band data transmission systems using spread-spectrum technology in the 2.5 GHz band
Oslo 1991 Revision: Madrid 1992.

T/R 12-01 E
Harmonised radio frequency channel arrangements for analogue and digital terrestrial fixed systems operating in the band 37-39.5 GHz.
Helsinki 1991.

T/R 13-01 E
Preferred channel arrangements for fixed services in the range 1-3 GHz.
Montreux 1993.
Annex A,B,C will be implemented; Annex D will not be implemented as band is used by MMDS

T/R 13-02 E
Preferred channel arrangements for fixed services in the range 22.0-29.5 GHz.
Montreux 1993.

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T/R 20-04 E
Low-power Narrow-Band Telecommand and Telemetry equipment for use outside the ISM frequency bands.
Montpellier 1984.

T/R 20-08 E
Frequency planning and frequency co-ordination for the GSM system.
Lecce 1989.

T/R 22-03 E
Provisional recommended use of the frequency range 54.25-66 GHz by terrestrial fixed and mobile systems.
Athens 1990.

T/R 32-02 - E
Frequencies to be used by on-board communication stations

T/R 72-01
Allocation of frequencies in the frequency bands between 29.7 and 960 MHz
Remark: Fixed services, as far as practicable, to be relocated above 1 GHz.

T/R 75-02
Use of frequencies in the band 862-960 MHz by the mobile except aeronautical mobile service
Remark: CEPT CT 1 not implemented in bands 914-915 MHz and 959-960 MHz

CEPT ARRANGEMENTS/AGREEMENTS:

Reference is made in the Table of Frequency Allocations to the following CEPT Arrangements/Agreements:

Final Acts of the CEPT T-DAB Planning Meeting	Wiesbaden	1995
Final Acts of the T-DAB Planning Meeting (2)	Bonn	7-8 November 1996
The Chester 1997 Multilateral Coordination Agreement relating to the Introduction of Terrestrial Digital Video Broadcasting (DVB-T)	Chester	25 July 1997

Copies of these agreements can be found at the ERO website: www.ero.dk

ITU-R RECOMMENDATIONS:

Reference is made to the following ITU-R Recommendations in the Table of Frequency Allocations, Ireland.

Rec.ITU-R F 386-6, Annex 1,3
Radio-frequency channel arrangements for radio-relay systems operating in the 8 GHz band.(Annex 1: 7725-8275 MHz (L 8 GHz Band), Annex 3: 8275-8500 MHz (U8 GHz Band))

Rec.ITU-R F 387-6, Annex 2
Radio-frequency channel arrangements for radio-relay systems operating in the 11 GHz band.

Rec.ITU-R F 385-6, Annex 1
Radio-frequency channel arrangements for radio-relay systems operating in the 7 GHz band.

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Rec. 595-3
Radio-frequency channel arrangements for radio-relay systems operating in the 18 GHz band.

Rec. 637-2
Radio-frequency channel arrangements for radio-relay systems operating in the 23 GHz band.

Rec. ITU-R F 636-3
Radio-frequency channel arrangements for radio-relay systems operating in the 15 GHz band.

Rec. 746 Annex 2
Radio-frequency channel arrangements for small and medium capacity analogue radio-relay systems or small and medium capacity digital radio-relay systems operating in the 2.3-2.5 GHz band.

EQUIPMENT SPECIFICATIONS:

The following specifications are referred to, either directly or within ERC Decisions, in the Table of Frequency Allocations.

ETS 300 086
Radio Equipment and Systems (RES); Land Mobile Group - Technical characteristics and test conditions for radio equipment with an internal or external RF connector intended primarily for analogue speech.

I-ETS 300 113
Radio Equipment and Systems (RES); Land Mobile Service - Technical characteristics and test conditions for radio equipment intended for the transmission of data (and speech) and having an antenna connector.

I-ETS 300 131
Radio Equipment and Systems (RES); Common air interface specification to be used for the interworking between cordless telephone apparatus in the frequency band 864.1-868.1 MHz, including public access services.

ETS 300 135
Radio Equipment and Systems(RAS); Angle-modulated citizens band radio equipment (CEPT PR 27 radio equipment) technical characteristics and methods of measurement.

ETS 300 162
Electromagnetic Compatibility and radio spectrum matters (ERM); Radiotelephone transmitters and receivers for the maritime mobile service operating in the VHF bands - Technical characteristics and methods of measurement.

EN 300 197
Transmission and Multiplexing (TM); Parameters for digital radio relay (DRRS) systems for the Transmission of Digital Signals and Analogue Video Signals Operating at 38 GHz.

EN 300 198
Transmission and Multiplexing (TM); Parameters for digital radio relay systems (DRRS) for the Transmission of Digital Signals and Analogue Video Signals Operating at 23 GHz.

I-ETS 300 219
Radio Equipment and Systems (RES); Land Mobile Service - Technical Characteristics and Test Conditions for Radio Equipment Transmitting Signals to Initiate a Specific Response in the Receiver.

I-ETS 300 220
Radio Equipment and Systems (RES); Short Range Devices (SRDs)- Technical Characteristics and Test Methods for Radio Equipment to be used in the 25 MHz to 1000 MHz Range with Power Levels Ranging up to 500 mW.

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ETS 300 224
Electromagnetic Compatibility and radio spectrum matters (ERM); On-Site Paging Service - Technical and Functional Characteristics for On-Site Paging Systems, including Test Methods.

I-ETS 300 296
Radio Equipment and Systems (RES); land mobile Service; Technical Characteristics and Test Conditions for Radio Equipment using Integral Antennas intended Primarily for Analogue Speech.

I-ETS 300 328
Wideband Transmission Systems; Technical Characteristics and Test Conditions for Data Transmission Equipment operating in the 2.4 GHz ISM band and using Spread Spectrum Modulation Techniques.

ETS 300 392
Terrestrial Trunked Radio (TETRA); Voice + Data (V+D) – *this specification has 67 parts to it.*

ETS 300 393
Terrestrial Trunked Radio (TETRA); Packet Data Optimised (PDO) – *this specification has 5 parts to it.*

ETS 300 408
Transmission and Multiplexing (TM); Parameters for Radio-Relay Systems for the Transmission of Digital Signals and Analogue Video Signals operating at around 58 GHz, which do not require Co-ordinated Frequency Planning.

EN 300 652
Broadband Radio Access Networks (BRAN); HIgh PErformance Radio Local Area Network (HIPERLAN) Type 1; Functional Specification

ETS 300 836-1/-2/-3/-4
Broadband Radio Access Networks (BRAN); HIgh PErformance Radio Local Area Network (HIPERLAN) - Various

STATUTORY INSTRUMENTS:

The following S.I.s relate to wireless telegraphy. A number are referred to in the Table of Frequency Allocations.

LICENSING REGULATIONS

SI No. 330 of 1937
Wireless Telegraphy (Experimenters' Licence) Regulations, 1937

SI No. 232 of 1951
Wireless Telegraphy (Experimenters' Licence) Regulations, 1951

SI No. 320 of 1949
Wireless Telegraphy (Business Radio Licence) Regulations, 1949

SI No. 2 of 1956
Wireless Telegraphy (Business Radio Licence) Regulations, 1956

SI No. 8 of 1982
Wireless Telegraphy (Personal Radio Licence) Regulations, 1982

SI No. 67 of 1974
Wireless Telegraphy (Wired Broadcast Relay Licence) Regulations, 1974

SI No. 83 of 1988
Wireless Telegraphy (Community Repeater Licence) Regulations, 1988

SI No.39 of 1989
Wireless Telegraphy (TV Programme Retransmission) Regulations, 1989

SI No. 252 of 1991
Wireless Telegraphy (TV Programme Retransmission and Relay) Regulations, 1991

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SI No. 319 of 1992
Wireless Telegraphy (Radio Link Licence) Regulations, 1992

SI No. 73 of 1999
Wireless Telegraphy (Programme Service Distribution) Regulations, 1999

SI No. 486 of 1997
Wireless Telegraphy (GSM & TACS Mobile Telephony Licence) Regulations, 1997

SI No. 73 of 1999
Wireless Telegraphy (Programme Services Distribution) Regulations, 1999

SI No. 287 of 1999
Wireless Telegraphy (Fixed Wireless Point to Multi-point Access Licence) Regulations, 1999

AMENDMENTS TO LICENSING REGULATIONS

SI No. 82 of 1988
Wireless Telegraphy (Wired Broadcast Relay Licence) (Amendment) Regulations, 1988

SI No. 114 of 1992
Wireless Telegraphy (Business Radio Licence) (Amendment) Regulations, 1992

SI No. 132 of 1992
Wireless Telegraphy (Experimenter's Licence) (Amendment) Regulations, 1992

EXEMPTION ORDERS

SI No. 200 of 1976
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Certain Wired Broadcast Relay Stations) Order, 1976

SI No. 93 of 1998
Wireless Telegraphy Act, 1926 (Section 3)(Exemption of Short Range Business Radios) Order, 1998

SI No. 436 of 1998
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Citizen's Band - CB Radios) Order, 1998

SI No. 409 of 1997
Wireless Telegraphy (Mobile Telephones) Exemption Order, 1997

SI No. 410 of 1997
Wireless Telegraphy (Cordless Telephones) Exemption Order,

SI No. 214 of 1998
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Satellite Earth Stations for Satellite Personal Communications Services (S-PCS)) Order, 1998

SI No. 100 of 1999
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Inmarsat-D Terminals for Land Mobile Applications) Order, 1999

SI No. 101 of 1999
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Inmarsat-C Terminals for Land Mobile Applications) Order, 1999

SI No. 102 of 1999
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Inmarsat-M Terminals for Land Mobile Applications) Order, 1999

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SI No. 103 of 1999
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Omnitracs Terminals for the Euteltracs Systems) Order, 1999

SI No. 104 of 1999
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of (i) ARCANET Suitcase Terminals Order, 1999

SI No. 105 of 1999
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of EMS-PRODAT Terminals for Land Mobile Applications) Order, 1999

SI No. 106 of 1999
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of EMS-MSSAT Terminals for Land Mobile Applications) Order, 1999

SI No. 107 of 1999
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of DCS 1800 Mobile Terminals) Order, 1999

SI No. 108 of 1999
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of ERMES Paging Receivers) Order, 1999

SI No. 109 of 1999
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Inmarsat Mini-M Terminals for Land Mobile Applications) Order, 1999

SI No. 110 of 1999
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of (ii) ARCANET Suitcase Terminals) Order, 1999

SI No. 173 of 2000
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Mobile Satellite Earth Stations for Satellite Personal Communication Systems operating in bands below 1GHz (S-PCS<1 GHz)) Order, 2000

SI No. 273 of 2000
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Certain Fixed Satellite Receiving Earth Stations) Order, 2000

TRANSPOSITION OF EUROPEAN COMMUNITY DIRECTIVES

SI No. 258 of 1976
European Communities (Radio Interference from Tractor Ignition Systems) Regulations, 1976

SI No. 170 of 1979
European Communities (Radio Interference from Electric Household Appliances, Portable Tools and Similar Equipment) Regulations, 1979

SI No. 171 of 1979
European Communities (Radio Interference from Flourescent Lighting Luminaires) Regulations, 1979

SI No. 339 of 1983
European Communities (Radio Interference from Electrical Household Appliances, Portable Tools and Similar Equipment) (Amendment) Regulations, 1983

SI No. 340 of 1983
European Communities (Radio Interference from Flourescent Lighting Luminaires) (Amendment) Regulations, 1983

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SI No. 290 of 1990
European Communities (Radio Interference from Electrical Household Appliances, Portable Tools and Similar Equipment) (Amendment) Regulations, 1990

SI No. 291 of 1990
European Communities (Radio Interference from Flourescent Lighting Luminaires) (Amendment) Regulations, 1990

SI No. 168 of 1994
European Communities (Digital European Cordless Telecommunications DECT) Regulations, 1994

SI No. 416 of 1994
European Communities (Co-ordinated Introduction of Public Pan-European Cellular Digital Land-Based Mobile Communications – GSM)

SI No. 28 of 1995
European Communities (Pan-European Land Based Public Radio Paging Service – ERMES) Regulations, 1995

SI No. 123 of 1996
European Communities (Mobile and Personal Communications) Regulations, 1996

SI No. 372 of 1997
European Communities (Satellite Telecommunications Services) Regulations, 1997

SI No. 179 of 1998
European Communities (Satellite Earth Station Equipment) Regulations, 1998

SI No. 262 of 1998
European Communities (Use of Standards for the Transmission of TV Signals) Regulations, 1998

MISCELLANEOUS

SI No. 400 of 1981
Wireless Telegraphy (Control of Sale, Letting on Hire or Manufacture, and Importation of Radio Transceivers) Order, 1981

SI No. 108 of 1963
Wireless Telegraphy (Control of Interference from Electric Motors) Regulations, 1963

SI No. 223 of 1963
Wireless Telegraphy (Control of Interference from Ignition Apparatus) Regulations, 1963

SI No. 331 of 1973
Wireless Telegraphy (Radio Interference from Vehicle Ignition Systems) Regulations, 1973

SI No. 279 of 1961
Broadcasting (Receiving Licences) Regulations, 1961

SI No. 241 of 1971
Broadcasting (Receiving Licences) (Amendment) Regulations, 1971

SI No. 210 of 1972
Broadcasting (Receiving Licences) (Amendment) Regulations, 1972

SI No. 211 of 1972
Wireless Telegraphy Act, 1926 (Section 3) (Exemption of Sound Broadcasting Receivers) Order, 1972

SI No. 274 of 1973
Broadcasting (Receiving Licences) (Amendment) Regulations, 1973

SI No. 37 of 1986
Broadcasting (Receiving Licences) (Amendment) Regulations, 1986

Annex 4

Permitted Short Range Devices In Ireland

INTRODUCTION:

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

Within Ireland, short-range devices may be operated, within the confines of the technical parameters in Table 4-1, without the requirement of an individual license.

The terms of use, beyond those stipulated in Table 4-1 are that:

- SRDs in general operate in shared bands and are not permitted to cause harmful interference to other radio services
- in general SRDs cannot claim protection from other radio services
- due to the increasing interest in the use of SRDs for a growing number of applications it is necessary to harmonise frequencies and regulations for these devices
- there is a need to distinguish between different applications
- additional applications and associated annexes will be added as necessary

Table 4-1 indicates the short ranges devices (SRD) which are permitted in Ireland. Where possible CEPT/ERC/REC 70-03 has been followed. In addition, other bands such as the band 173.2-173.3MHz are also permitted for low power devices.

Table 4-1: Permitted Short Range Devices in Ireland

Frequency Bands K=kHz M=MHz G=GHz	Type of Device	Max Radiated Power or Field Strength Limits & Channel spacing*	Relevant ETSI Standard	Additional Requirements
9 – 59.75K	Inductive Loop System	72 dBµA/m @ 10 m	300 330	CEPT/ERC/REC 70-03
59.75-60.25K	Inductive Loop System	42 dBµA/m @ 10 m	300 330	CEPT/ERC/REC 70-03
60.25-70K	Inductive Loop System	72 dBµA/m @ 10 m	300 330	CEPT/ERC/REC 70-03
70-119K	Inductive Loop System	42 dBµA/m @ 10 m	300 330	CEPT/ERC/REC 70-03
119-135K	Inductive Loop System	72 dBµA/m @ 10 m	300 330	CEPT/ERC/REC 70-03
285 – 400 K	Inductive Loop System	38 dBµA/m @ 10 m	300 330	
1650 – 1950 K	Inductive Loop System	8 dBµA/m @ 10 m	300 330	

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Table 4-1: Permitted Short Range Devices in Ireland

Frequency Bands K=kHz M=MHz G=GHz	Type of Device	Max Radiated Power or Field Strength Limits & Channel spacing*	Relevant ETSI Standard	Additional Requirements
1800 – 2200 K	Inductive Loop System	-8 dBµA/m @ 10 m	300 330	
2540 – 3560 K	Inductive Loop System	-8 dBµA/m @ 10 m	300 330	
6.765 – 6.795 M	Inductive Loop System	42 dBµA/m @ 10 m	300 330	CEPT/ERC/REC 70-03
7400 – 8900 K	Inductive Loop System	9 dBµA/m @ 10 m	300 330	CEPT/ERC/REC 70-03
13.553 – 13.567 M	Inductive Loop System	42 dBµA/m @ 10 m	300 330	CEPT/ERC/REC 70-03
26.957 – 27.283 M	Inductive Loop System	42 dBµA/m @ 10 m	300 330	CEPT/ERC/REC 70-03
26.957 – 27.283 M	Non-specific SRD	10 mW erp	300 220	CEPT/ERC/REC 70-03
26.957 – 27.283 M	Low Power Radio Transmitters	10 mW erp	300 220	CEPT/ERC/REC 70-03
26.99 – 27.20 M	Surface Model Control	100 mW erp	300 220	CEPT/ERC/REC 70-03
31.025 – 31.325 M	Analogue cordless phones	10 mW erp	-	Radio info in National Std TTE 9
34.995 – 35.255 M	Aircraft Model Control Only	100 mW erp	300 220	CEPT/ERC/REC 70-03
39.925 – 40.225 M	Analogue cordless phones	10 mW erp	-	Radio info in National Std TTE 9
40.66 – 40.7 M	Surface Model Control	100 mW erp	300 220	CEPT/ERC/REC 70-03
40.66 – 40.7 M	Non-specific SRD	10 mW erp	300 220	CEPT/ERC/REC 70-03
49.82 – 49.98[2] M	Baby Monitors	10 mW erp	300 220	CEPT/ERC/REC 70-03
49.82 – 49.98 M	Low Power Radio transmitters	10 mW erp	300 220	CEPT/ERC/REC 70-03

2 When operating short range devices on these frequencies in close proximity to domestic television receivers care must be taken as the domestic television receivers may suffer interference

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Table 4-1: Permitted Short Range Devices in Ireland

Frequency Bands K=kHz M=MHz G=GHz	Type of Device	Max Radiated Power or Field Strength Limits & Channel spacing*	Relevant ETSI Standard	Additional Requirements
173.2125 – 173.2375M	Non-specific SRD - telecommand only	10 mW erp : 25 kHz	300 220	
173.2375 – 173.2875M	Non-specific SRD	10 mW erp : 25 kHz	300 220	
173.7 – 175.1 M	Wireless Microphones	10 mW erp	300 422	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (96)15
402 – 405 M	Medical Implants	25 µW erp	300 220	CEPT/ERC/REC 70-03
433.05 – 434.79 M	Non-specific SRD	10 mW erp	300 220	CEPT/ERC/REC 70-03
863 – 865 M	Wireless Audio Systems	10 mW erp	301 357	CEPT/ERC/REC 70-03
863 – 865 M	Wireless Microphones	10 mW erp	300 422	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (96)15
864.1 – 868.1M	CT2 cordless phones	10 mW erp	300 131	Subject to review
868 – 868.6 M	Non-specific SRD	25 mW erp	300 220	CEPT/ERC/REC 70-03
868.6 – 868.7 M	Alarms	10 mW erp : 25 kHz	300 220	CEPT/ERC/REC 70-03
868.7 – 869.2 M	Non-specific SRD	25 mW erp	300 220	CEPT/ERC/REC 70-03
869.2 – 869.25 M	Social Alarms	10 mW erp : 25 kHz	300 220	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (97)06

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Table 4-1: Permitted Short Range Devices in Ireland

Frequency Bands K=kHz M=MHz G=GHz	Type of Device	Max Radiated Power or Field Strength Limits & Channel spacing*	Relevant ETSI Standard	Additional Requirements
869.25 – 869.3 M	Alarms	10 mW erp : 25 kHz	300 220	CEPT/ERC/REC 70-03
869.4 – 869.65 M	Non-specific SRD	500 mW erp : 25 kHz	300 220	CEPT/ERC/REC 70-03
869.65 – 869.7 M	Alarms	25 mW erp : 25 kHz	300 220	CEPT/ERC/REC 70-03
869.7 – 870.0 M	Non-specific SRD	5 mW erp	300 220	CEPT/ERC/REC 70-03
1880 – 1900 M	DECT cordless phones	250 mW erp (peak)		DIR 91/287/EEC, S.I 168, 1994
2400 – 2483.5 M	Non-specific SRD	10 mW eirp	300 440	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (99)07
2400 – 2483.5 M	Wideband Wireless Systems	100 mW eirp	300 328	CEPT/ERC/REC 70-03
2400 – 2483.5 M	FDDA	25 mW eirp	300 440	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (99)07
2400 – 2483.5 M	Video Surveillance	25 mW eirp	300 440	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (99)07
2446 – 2454 M	AVI for railways	500 mW eirp	300 761	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (98)30
5150 – 5350M	Hiperlan: indoor use only	200 mW eirp	300 836	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (99)23
5470 – 5725M	Hiperlan: indoor and outdoor use	1 W eirp	300 836	CEPT/ERC/DEC (99)23
5725 – 5875 M	Non-specific SRD	25 mW eirp	300 440	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (99)07
5795 – 5805 M	RTTT data	2 W eirp	300 674 201 674	CEPT/ERC/REC 70-03
5805 – 5815 M	RTTT data	2 W eirp	300 674 201 674	CEPT/ERC/REC 70-03

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Table 4-1: Permitted Short Range Devices in Ireland

Frequency Bands K=kHz M=MHz G=GHz	Type of Device	Max Radiated Power or Field Strength Limits & Channel spacing*	Relevant ETSI Standard	Additional Requirements
9200 – 9500 M	FDDA	25 mW eirp	300 440	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (99)07
9500 – 9975 M	FDDA	25 mW eirp	300 440	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (99)07
10.5 – 10.6 G	FDDA	500 mW eirp	300 440	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (99)07
13.4 – 14 G	FDDA	25 mW eirp	300 440	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (99)07
17.1 – 17.3 G	Hiperlan	100 mW eirp		CEPT/ERC/REC 70-03
24.00 – 24.25 G	Non-specific SRD	100 mW eirp	300 440	CEPT/ERC/REC 70-03 CEPT/ERC/DEC (99)07
24.05 – 24.25 G	FDDA	100 mW eirp	300 440	CEPT/ERC/REC 70-03
76 – 77 G	RTTT radar	55dBm peak eirp	301 091	CEPT/ERC/REC 70-03

* NOTE: *When selecting parameters for new SRDs, which may have inherent safety of human life implications, manufacturers and users should pay particular attention to the potential for interference from other systems operating in the same or adjacent bands. Manufacturers should advice users on the risks of potential interference and its consequences*

Annex 4

SHORT RANGE DEVICE GLOSSARY OF TERMS:

Inductive Loop Systems are systems which operate by producing a controlled magnetic field within which a predetermined recognisable signal is formed. Examples include shop anti-theft tagging systems, car immobiliser keys and door access tokens.

Non specific SRDs are used for general **telemetry, telecommand, alarms** and **data** with a low duty cycle. Telemetry means the transmission of remotely measured data. Telecommand means remote control. Video applications only above 2.4 GHz.

Low Power Radio Transmitters are used for short range two-way voice communications e.g. toy walkie talkies.

Model Control apparatus is used to control the movement of the model in the air, on land or over or under the water surface.

Baby Monitors are used to transmit sound to a remote receiver. This device is commonly used to monitor the sound or movement of infants.

Wireless Microphones transmit speech or music over short distances to a remote receiver in studios, theatres etc.

Wireless Audio Sytems are typically used to replace the wired headphones or speakers in domestic hi-fi systems.

Wideband Wireless Systems are general purpose high bit rate spread spectrum radio systems.

FDDA means Field Disturbance and Doppler Apparatus. This is apparatus which operates by producing a radiated field and responding to any disturbance of that field caused by an intrusion or movement within the field by other devices, objects or persons. In this way it can detect or monitor the movement of objects or persons. Alarm systems sometimes use this type of equipment for intruder detection.

Video Surveillance Equipment is typically used for security camera purposes to replace the cable between a camera and a monitor.

AVI for Railways means Automatic Vehicle Identification for railways and is used to track and identify railway rolling stock.

RTTT means Road Transport and Traffic Telematics. This is apparatus used for traffic management. Applications include automatic road toll collection, route guidance systems, vehicle or container identification, instant traffic information, parking management, advance incident warning and on-vehicle anti-collision radar.

Hiperlan means a high performance radio local area network intended for indoor use, utilising spread-spectrum modulation techniques, to link computer nodes within a network.

Annex 5

Sources of Further Information

The International Telecommunications Union

This organisation is responsible for the publication of the Radio Regulations which includes the International Table of Frequency Allocations. The Radio Regulations also detail the footnotes, appendices and describe the different categories of service referred to in the Table of Frequency Allocations, Ireland.

Publications of the International Telecommunications Union (ITU) can be obtained from:

Sales and Marketing Service,
International Telecommunications Union,
Place Des Nations,Ch-1211,
Geneva 20,
Switzerland.
Tel: +41 22 730 61 41
Fax: +41 22 730 51 94
Email: sales@itu.ch
Web Site: http://www.itu.int

CEPT Documentation, including ERC Decisions, Recommendations, Reports and Publications of the European Radiocommunications Office (ERO) can be obtained from:

The European Radiocommunications Office,
Midtermolen 1,
DK 2100 Copenhagen,
Denmark.
Tel: +45 35 25 03 00
Fax: +45 35 25 03 30
E-mail: ero@ero.dk
Web Site: http://www.ero.dk

Publications of the European Telecommunications Standards Institute (ETSI) can be obtained from:

The Sales Office,
ETSI,
Sofia Antipolis,
Nice,
France
Tel: +33 92 94 42 41
Fax: +33 93 95 81 33
Email: secretariat@etsi.fr
Web Site: http://www.etsi.fr/

Irish Equipment Standards (Including ETSI transposed standards) can be obtained from the National Standards Authority of Ireland at the address below:

Sales Office,
NSAI,Glasnevin,
Dublin 9,
Tel: 01 807 3877 / 3878
Fax: 01 807 3841

Irish Government Publications, including Statutory Instruments, can be obtained from:

The Government Publications Office,
4/5 Harcourt Road,
Dublin 2.
Tel: 01 661 3111
Fax: 01 475 2760

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EC directives can be obtained from:

The European Commission Representation in Ireland,
European Union House,
18 Dawson Street,
Dublin 2.
Tel: 01 662 5113
Fax: 01 662 5118

General queries regarding radio or licensing matters can be directed to:

The Office of the Director of Telecommunications Regulation,
Abbey Court,
Irish Life Centre,
Lower Abbey Street,
Dublin 1.
Tel: 01 804 9600
Fax: 01 804 9680
Email: info@odtr.ie
Web Site: http://www.odtr.ie

Comments Form for changes to the National Table of Allocations

Comments would be very useful to us in preparing the next edition. Thank you.

Submitted by: _____

Organisation: _____

Phone Number: _____ Date: _____

Please detail below any changes you wish to have considered when the next edition is being prepared and forward to The ODTR, Abbey Court, Irish Life Centre, Lower Abbey Street, Dublin 1 or to info@odtr.ie or fax to + 353 1 804 9680.

Reason for proposed change or group of related change:

_____

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_____

Page _____ Frequency Band _____ Comments on Specific Entries _____

_____

Page _____ Frequency Band _____ Comments on Specific Entries _____

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Page _____ Frequency Band _____ Comments on Specific Entries _____

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Other Comments _____

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Annex 5