



European Radiocommunications Committee (ERC)  
within the European Conference of Postal and Telecommunications Administrations (CEPT)



**THE EUROPEAN TABLE OF FREQUENCY ALLOCATIONS AND UTILISATIONS  
COVERING THE FREQUENCY RANGE 9 kHz TO 275 GHz**

**Lisboa January 2002 Revised Dublin 2003**

**EUROPEAN TABLE OF FREQUENCY ALLOCATIONS AND UTILISATIONS  
FREQUENCY RANGE 9 kHz TO 275 GHz**

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**EUROPEAN TABLE OF FREQUENCY ALLOCATIONS AND UTILISATIONS  
FREQUENCY RANGE 9 kHz TO 275 GHz**

**1 INTRODUCTION**

Following the World Administrative Radio Conference in 1992 which allocated spectrum to new services in the 1 - 3 GHz frequency range CEPT began to develop a general plan to promote the harmonised European use of frequencies within the band 1350 - 2690 MHz. Particular importance was attached to the early development of such a general plan in order to provide a framework for the implementation of the decisions of WARC-92 and the consequential changes required, in a harmonised way, throughout CEPT member countries and to provide the necessary guidance for European radio equipment manufacturers to commence production.

Since then CEPT has endorsed the principle of adopting a harmonised European Table of Frequency Allocations and Utilisations by the year 2008. This work is being progressed by the CEPT European Radiocommunications Office (ERO) through a series of Detailed Spectrum Investigations (DSIs) which consider in turn different frequency ranges. The DSIs were developed as a major open and transparent consultation process in close cooperation with industry, organizations, administrations and users within the following frequency bands:

- The DSI Phase I covering the frequency range 3400 – 105 GHz developed in 1992-93
- The DSI Phase II covering the frequency range 29.7-960 MHz developed in 1994-95
- The DSI Phase III covering the frequency range 862-3400 MHz developed in 1998-2000

As a result of the DSIs the CEPT adopted the Harmonised European Table of Frequency Allocations and Utilisations. The first table was agreed upon in June 1994 and several updates have been agreed until the current version (Lisbon January 2002)

**2 WARC-92, WRC-95 ,WRC-97 and WRC-2000**

Due account has been taken of the relevant decisions of the World Radio Conferences WARC-92, WRC-95 ,WRC-97 and WRC-2000 and of strategies developed by other international fora concerning, in particular, the introduction and development of mobile and mobile-satellite services.

**3 EUROPEAN TABLE OF FREQUENCY ALLOCATIONS AND UTILISATIONS**

A European Table of Frequency Allocations and Utilisations for the frequency band 9 kHz to 275 GHz expected beyond the year 2008 has been developed and is attached as Annex 1 to this Report. Although the implementation of this Table has been arranged for the year 2008 it is expected that CEPT member countries will endeavour to implement, as soon as possible, as many parts of the Table as they are able. It is also expected that the Table will be used as a source document by CEPT member countries for the development of Recommendations, Decisions, and European Common Proposals (ECPs) for future Radio Conferences of the ITU and as background for development of national frequency allocation tables and national frequency usage plans.

This Report and its associated table will be reviewed periodically (once a year) and revised as necessary by the ECC taking into account the results of World Radio Conferences, future DSIs, ECC/ERC Decisions and other relevant developments.

#### 4 CEPT DECISIONS AND RECOMMENDATIONS

During the preparation of the Table account was taken of work already completed by CEPT in respect of systems expected to operate in this frequency range. The ECC/ERC Decisions and ECC/ERC Recommendations, which are relevant to frequency management issues, have been incorporated into the Table and are listed in Annex 4.

#### 5 MILITARY REQUIREMENTS

Liaison with military authorities from CEPT countries has also been necessary in view of their use of, and requirements in, this frequency range. Although no single representative military body exists for all CEPT member countries, the North Atlantic Treaty Organisation (NATO) has a Joint Civil/Military Frequency Agreement (NJFA) which was felt to be a useful basis from which to develop a view of military frequency requirements. A forum that allows both civil and military frequency managers from all CEPT countries to meet has also been established by CEPT. This forum established a project team (JPT1) which has looked in detail at the requirements for harmonised military usage of spectrum to meet the needs of both NATO and non-NATO CEPT countries. The results of the studies by JPT1 are reflected in the Table.

Military requirements vary both between activities and countries. In some countries national requirements may be more than the harmonised band, in other countries for the time being there may be no national requirements in a specific harmonised band.

In general, the harmonised military bands should provide *a common military frequency resource* in order to allow systems to operate in common border areas, facilitate common exercises and Peace Keeping Operations (PKO), include the core frequency assets for day-to-day training, exercise, combat readiness and employment and support electronic countermeasures (ECM) training.

Any spectrum reorganisation should aim at a provision of a common military frequency resource in accordance with the ECA.

## ANNEX 1

**EUROPEAN TABLE OF FREQUENCY ALLOCATIONS AND UTILISATIONS  
IN THE RANGE 9 kHz TO 275 GHz EXPECTED BEYOND THE YEAR 2008**

**EXPLANATORY NOTES TO THE TABLE**

The heading of this table includes a number of columns, with the following contents:

- Column 1:        Frequency Band  
Indicates the frequency band referred to in that row of the table
- Column 2:        RR Region 1 Allocations and relevant footnotes  
Contains in each frequency band:  
- Current RR Article 5 allocations which correspond to Region 1.  
- Current RR Article 5 footnotes relevant to CEPT countries
- See Annex 3 for description of the RR Article 5 footnotes included in the table.
- Column 3:        European Common Allocation (ECA)  
Contains in each frequency band:
- Allocations of major use or major interest in CEPT member countries expected beyond 2008.
  - RR Art. 5 footnotes affecting a major number of CEPT countries beyond 2008. RR Art 5 footnotes with specific allocation to CEPT countries are only included in the European Table if 10 or more CEPT countries are included in the footnote
  - EU footnotes relevant to the European allocation. See Annex 2
- Column 4:        Major utilisation  
This column includes where appropriate in each frequency band and for the services allocated in the European Common Allocation:
- The major uses in CEPT member countries expected beyond 2008.
  - Mention of systems expected to be in use in a major number of CEPT member countries beyond the year 2008.
- Mention of specific utilisations of a given service does not preclude the use of other services mentioned in the European Common Allocation.
- Column 5:        EU footnotes  
This column contains EU footnotes relevant to the particular utilization.
- Column 6:        ECC/ERC document  
This column contains information about ECC/ERC Decisions and Recommendations relevant to the particular utilization. The ECC/ERC documents are described in Annex 4
- Column 7:        Standards  
This column contains information about the relevant standards.  
For Harmonised Standards as defined in the R&TTE Directive see Annex 5

Column 5:

Notes

This column indicates where appropriate in each frequency band:

Where applicable, the date of entry into force of:

- a) a specific allocation of the European Common Allocation column.
- b) ERC Decision / ERC Recommendation mentioned in the utilisations column.
- c) major utilisation contained in the utilisation column.

Any other relevant information such as the nature of use of a major utilisation.

In respect of **defence systems** two terms are used with the associated definitions:

1) Common military tuning range:- A common military tuning range is normally a recommended tuning range for radio equipment operating across harmonised military bands. Such a tuning range forms the basis for planning of future military equipment procurement.

2) Harmonised military band:- A frequency band which is in general military use in Europe and identified for military utilisation in the European Common Allocation Table (ECA). Such a frequency band forms a basis for military use and planning. The band can be shared between civil and military users according to national requirements and legislation.

# European Common Allocation Table - Frequency bands within 9 kHz - 275 GHz

ERC Report 25 Annex 1

RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band

European Common Allocation

Utilisation

EU-footnote

ERC Document

Standard

Note

## 9 - 14 kHz

RADIONAVIGATION

RADIONAVIGATION  
EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

ISM applications

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

## 14 - 19.95 kHz

FIXED  
MARITIME MOBILE 5.57  
5.55  
5.56

FIXED  
MARITIME MOBILE 5.57  
5.56 EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

Maritime applications

Military applications

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

## 19.95 - 20.05 kHz

STANDARD FREQUENCY AND TIME  
SIGNAL (20 kHz)

STANDARD FREQUENCY AND TIME  
SIGNAL (20 kHz)

## 20.05 - 70 kHz

FIXED  
MARITIME MOBILE 5.57  
5.56  
5.58

FIXED  
MARITIME MOBILE 5.57  
5.56 EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

Maritime applications

Military applications

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**70 - 72 kHz**

RADIONAVIGATION 5.60

RADIONAVIGATION 5.60  
EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

**72 - 84 kHz**

FIXED  
MARITIME MOBILE 5.57  
RADIONAVIGATION 5.60  
5.56

FIXED  
MARITIME MOBILE 5.57  
RADIONAVIGATION 5.60  
5.56 EU2

DCF time signal

77.5 kHz

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

Maritime applications

Military applications

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

**84 - 86 kHz**

RADIONAVIGATION 5.60

RADIONAVIGATION 5.60  
EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

Military applications

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

**86 - 90 kHz**

FIXED  
MARITIME MOBILE 5.57  
RADIONAVIGATION  
5.56

FIXED  
MARITIME MOBILE 5.57  
RADIONAVIGATION  
5.56 EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

Maritime applications

Military applications

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

**90 - 110 kHz**

RADIONAVIGATION 5.62  
Fixed  
5.64

RADIONAVIGATION 5.62  
Fixed  
5.64 EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

LORAN-C

Military applications

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

**110 - 112 kHz**

FIXED  
MARITIME MOBILE  
RADIONAVIGATION  
5.64

FIXED  
MARITIME MOBILE  
RADIONAVIGATION  
5.64 EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

Maritime applications

Military applications

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**112 - 115 kHz**

RADIONAVIGATION 5.60

RADIONAVIGATION 5.60  
EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

Maritime applications

Military applications

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

**115 - 117.6 kHz**

RADIONAVIGATION 5.60  
Fixed  
Maritime mobile  
5.64  
5.66

RADIONAVIGATION 5.60  
Fixed  
Maritime mobile  
5.64 EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

Maritime applications

Military applications

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

**117.6 - 126 kHz**

FIXED  
MARITIME MOBILE  
RADIONAVIGATION 5.60  
5.64

FIXED  
MARITIME MOBILE  
RADIONAVIGATION 5.60  
5.64 EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

Maritime applications

Military applications

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**126 - 129 kHz**

RADIONAVIGATION 5.60

RADIONAVIGATION 5.60  
EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

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Maritime applications  
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Military applications  
-----

-----  
Ultra Low Power Active Medical Implants  
-----

ERC REC 70-03

EN 300 330

**129 - 130 kHz**

FIXED  
MARITIME MOBILE  
RADIONAVIGATION 5.60  
5.64

FIXED  
MARITIME MOBILE  
RADIONAVIGATION 5.60  
5.64 EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

-----  
Maritime applications  
-----

-----  
Military applications  
-----

-----  
Ultra Low Power Active Medical Implants  
-----

ERC REC 70-03

EN 300 330

**130 - 148.5 kHz**

FIXED  
MARITIME MOBILE  
5.64  
5.67

FIXED  
MARITIME MOBILE  
5.64 EU2

Amateur applications

ERC REC 62-01

EN 301 783

Within the band 135.7-137.8 kHz

-----  
Inductive SRD

ERC REC 70-03  
ERC DEC (01)13

EN 300 330

-----  
Maritime applications  
-----

-----  
Military applications  
-----

-----  
Ultra Low Power Active Medical Implants  
-----

ERC REC 70-03

EN 300 330

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**148.5 - 255 kHz**

BROADCASTING

BROADCASTING

Broadcasting

Assignment plan GE75  
Digital systems to be introduced

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

**255 - 283.5 kHz**

AERONAUTICAL RADIONAVIGATION  
BROADCASTING

AERONAUTICAL RADIONAVIGATION  
BROADCASTING

Aeronautical Radio Beacons

Broadcasting

Frequency assignment plan GE75  
Digital systems to be introduced

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

**283.5 - 315 kHz**

AERONAUTICAL RADIONAVIGATION  
MARITIME RADIONAVIGATION  
(RADIOBEACON) 5.73  
5.72  
5.75  
5.74

AERONAUTICAL RADIONAVIGATION  
MARITIME RADIONAVIGATION  
(RADIOBEACON) 5.73  
5.74 EU2

Aeronautical Radio Beacons

Frequency assignment plan GE85 NDB

Maritime Radio Beacons

Frequency Assignment plan GE85  
IALA - plan to allow differential GPS

Ultra Low Power Active Medical Implants

ERC REC 70-03

EN 300 330

**315 - 325 kHz**

AERONAUTICAL RADIONAVIGATION  
Maritime Radionavigation (radiobeacons) 5.73  
5.72  
5.75

AERONAUTICAL RADIONAVIGATION  
Maritime Radionavigation (radiobeacons)  
5.73

Aeronautical Radio Beacons

NDB

Maritime Radio Beacons

IALA - plan to allow differential GPS

EU2

**325 - 405 kHz**

AERONAUTICAL RADIONAVIGATION  
5.72

AERONAUTICAL RADIONAVIGATION  
EU2

Aeronautical Radio Beacons

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**405 - 415 kHz**

RADIONAVIGATION 5.76  
5.72

RADIONAVIGATION 5.76  
EU2

Aeronautical Radio Beacons

Maritime Radio Beacons

**415 - 435 kHz**

AERONAUTICAL RADIONAVIGATION  
MARITIME MOBILE 5.79  
5.72

AERONAUTICAL RADIONAVIGATION  
MARITIME MOBILE 5.79  
EU2

Aeronautical Radio Beacons

Frequency Assignment plan GE85

Maritime applications

Frequency assignment plan GE85

**435 - 495 kHz**

MARITIME MOBILE 5.79 5.79A  
Aeronautical Radionavigation  
5.72  
5.82

MARITIME MOBILE 5.79 5.79A  
Aeronautical Radionavigation  
5.82 EU2

Detection of avalanche victims

ERC REC 70-03

EN 300 718

457 kHz

Maritime applications

Frequency assignment plan GE85

Navtex transmissions national language

EN 300 065

490 kHz

Receiver IF

455-457 kHz

**495 - 505 kHz**

MOBILE (distress and calling)  
5.83

MOBILE (distress and calling)  
5.83

Maritime GMDSS

**505 - 526.5 kHz**

AERONAUTICAL RADIONAVIGATION  
MARITIME MOBILE 5.79 5.79A 5.84  
5.72

AERONAUTICAL RADIONAVIGATION  
MARITIME MOBILE 5.79 5.79A 5.84  
EU2

Aeronautical Radio Beacons

Frequency assignment plan GE85

Maritime applications

Frequency assignment plan GE85

Navtex transmissions International

EN 300 065

518 kHz

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**526.5 - 1606.5 kHz**

BROADCASTING

BROADCASTING

Broadcasting

Assignment plan GE75  
Digital systems to be introduced

**1606.5 - 1625 kHz**

FIXED

FIXED

Maritime applications

Frequency assignment plan GE85

LAND MOBILE

LAND MOBILE

MARITIME MOBILE 5.90

MARITIME MOBILE 5.90

Military applications

5.92

5.92 EU2

Radiodetermination applications

**1625 - 1635 kHz**

RADIOLOCATION

RADIOLOCATION

Radiodetermination applications

Brussels Agreement 67

5.93

5.93 EU2

**1635 - 1800 kHz**

FIXED

FIXED

Maritime applications

Frequency assignment plan GE85

LAND MOBILE

LAND MOBILE

MARITIME MOBILE 5.90

MARITIME MOBILE 5.90

Military applications

5.92

5.92 EU2

5.96

5.96

Radiodetermination applications

Brussels Agreement 67

**1800 - 1810 kHz**

RADIOLOCATION

RADIOLOCATION

Radiodetermination applications

Brussels Agreement 67

5.93

5.93 EU2

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**1810 - 1850 kHz**

AMATEUR	AMATEUR		Amateur applications		EN 301 783	
5.98	5.100	EU2				
5.99	5.98					
5.100						

**1850 - 2000 kHz**

FIXED	FIXED		Amateur applications		EN 301 783	
MOBILE except aeronautical mobile	MOBILE					
5.92	5.103	EU2	Maritime applications			
5.96	5.92					
5.103	5.96		Military applications			
			Radiodetermination applications			Brussels Agreement 67

**2000 - 2025 kHz**

FIXED	FIXED		Maritime applications			
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)					
5.92	5.103	EU2	Military applications			
5.103	5.92					
			Radiodetermination applications			Brussels Agreement 67

**2025 - 2045 kHz**

FIXED	FIXED		Maritime applications			
MOBILE except aeronautical mobile (R)	MOBILE					
Meteorological Aids 5.104	MOBILE except aeronautical mobile (R)		Military applications			
5.92	5.103	EU2				
5.103	5.92		Radiodetermination applications			Brussels Agreement 67

**2045 - 2160 kHz**

FIXED	FIXED	International Merchand shipping	International telephony frequencies (ship TX) in accordance with RR 52.202 - 52.204
LAND MOBILE	LAND MOBILE		
MARITIME MOBILE	MARITIME MOBILE	Maritime applications	Frequency assignment plan GE85
5.92	5.92	Military applications	

**2160 - 2170 kHz**

RADIOLOCATION	RADIOLOCATION	Radiodetermination applications	Brussels Agreement 67
5.93	5.93 EU2		

**2170 - 2173.5 kHz**

MARITIME MOBILE	MARITIME MOBILE	Maritime applications	Frequency assignment plan GE85
	EU2		

**2173.5 - 2190.5 kHz**

MOBILE (distress and calling)	MOBILE (distress and calling)	DSC distress and calling	2187.5 kHz
5.108	5.108 EU2		
5.109	5.109	Maritime GMDSS	2182 kHz distress and calling
5.110	5.110		
5.111	5.111	Telex distress traffic	2174.5 kHz

**2190.5 - 2194 kHz**

MARITIME MOBILE	MARITIME MOBILE	Maritime applications	
	EU2		

**2194 - 2300 kHz**

FIXED	FIXED	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	
5.92	5.103	EU2
5.103	5.92	
5.112		

Maritime applications

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Military applications

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**2300 - 2498 kHz**

BROADCASTING 5.113	FIXED	
FIXED	MOBILE except aeronautical mobile (R)	
MOBILE except aeronautical mobile (R)	5.103	EU2
5.103		

Maritime applications

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Military applications

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**2498 - 2501 kHz**

STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (2500 kHz)	
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**2501 - 2502 kHz**

STANDARD FREQUENCY AND TIME SIGNAL	STANDARD FREQUENCY AND TIME SIGNAL	
Space Research	Space Research	

**2502 - 2625 kHz**

FIXED	FIXED	
MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	
5.92	5.103	EU2
5.103	5.92	
5.114		

Military applications

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Radiodetermination applications

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*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**2625 - 2650 kHz**

MARITIME MOBILE  
MARITIME RADIONAVIGATION  
5.92

MARITIME MOBILE  
MARITIME RADIONAVIGATION  
EU2  
5.92

Maritime applications

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Military applications

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**2650 - 2850 kHz**

FIXED  
MOBILE except aeronautical mobile (R)  
5.92  
5.103

FIXED  
MOBILE except aeronautical mobile (R)  
5.103  
5.92

Military applications

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Radiodetermination applications

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**2850 - 3025 kHz**

AERONAUTICAL MOBILE (R)  
5.111  
5.115

AERONAUTICAL MOBILE (R)  
5.111  
5.115

Aeronautical Mobile (R) applications

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Appendix 27 Allotment Plan

Telephony distress traffic

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3023 kHz

**3025 - 3155 kHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Aeronautical Mobile (OR) applications

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Appendix 26 Allotment Plan

**3155 - 3200 kHz**

FIXED  
MOBILE except aeronautical mobile (R)  
5.116  
5.117

FIXED  
MOBILE except aeronautical mobile (R)  
5.116 EU2

Inductive SRD

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ERC REC 70-03

EN 300 330

Maritime applications

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Military applications

---

**3200 - 3230 kHz**

BROADCASTING 5.113  
FIXED  
MOBILE except aeronautical mobile (R)  
5.116

FIXED  
MOBILE except aeronautical mobile (R)  
5.116 EU2

Inductive SRD

ERC REC 70-03

EN 300 330

Maritime applications

Military applications

**3230 - 3400 kHz**

BROADCASTING 5.113  
FIXED  
MOBILE except aeronautical mobile  
5.116

FIXED  
MOBILE except aeronautical mobile  
5.116 EU2

Inductive SRD

ERC REC 70-03

EN 300 330

Maritime applications

Military applications

**3400 - 3500 kHz**

AERONAUTICAL MOBILE (R)

AERONAUTICAL MOBILE (R)

Aeronautical Mobile (R) applications

Appendix 27 Allotment Plan  
Including HF Data Links

**3500 - 3800 kHz**

AMATEUR  
FIXED  
MOBILE except aeronautical mobile  
5.92

AMATEUR  
FIXED  
MOBILE except aeronautical mobile  
5.92 EU2

Amateur applications

EN 301 783

Military applications

**3800 - 3900 kHz**

AERONAUTICAL MOBILE (OR)  
FIXED  
LAND MOBILE

AERONAUTICAL MOBILE (OR)  
FIXED  
LAND MOBILE  
EU2

Aeronautical Mobile (OR) applications

*RR Region 1 Allocations and  
RR footnotes relevant to  
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*European Common Allocation*

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*Note*

**3900 - 3950 kHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Aeronautical Mobile (OR) applications

Appendix 26 Allotment Plan

**3950 - 4000 kHz**

BROADCASTING  
FIXED

BROADCASTING  
FIXED

Broadcasting

Digital systems to be introduced

EU2

Military applications

**4000 - 4063 kHz**

FIXED  
MARITIME MOBILE 5.127

FIXED  
MARITIME MOBILE 5.127  
EU2

Maritime applications

Appendix 17 channeling plan  
Appendix 25 allotment plan

**4063 - 4438 kHz**

MARITIME MOBILE 5.79A 5.109 5.110  
5.130 5.131 5.132  
5.128  
5.129

MARITIME MOBILE 5.79A 5.109 5.110  
5.130 5.131 5.132  
5.129 EU2

DSC calling

4208, 4208.5, 4209, 4219.5, 4220, 4220.5  
kHz

DSC distress traffic

4207.5 kHz

Maritime applications

Appendix 17 channeling plan  
Appendix 25 allotment plan

Maritime Safety Information (MSI)

4210 kHz

Meteorological and navigational warnings

4209.5 kHz

Telephony distress traffic

4125 kHz

Telex distress traffic

4177.5 kHz

**4438 - 4650 kHz**

FIXED  
MOBILE except aeronautical mobile (R)

FIXED  
MOBILE except aeronautical mobile (R)  
EU2

Military applications

Railway applications

ERC REC 70-03

EN 300 330

4515 kHz Euroloop

**4650 - 4700 kHz**

AERONAUTICAL MOBILE (R)

AERONAUTICAL MOBILE (R)

Aeronautical Mobile (R) applications

Appendix 27 Allotment Plan  
Including HF Data Links

**4700 - 4750 kHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Aeronautical Mobile (OR) applications

Appendix 26 Allotment Plan

**4750 - 4850 kHz**

AERONAUTICAL MOBILE (OR)  
BROADCASTING 5.113  
FIXED  
LAND MOBILE

AERONAUTICAL MOBILE (OR)  
FIXED  
LAND MOBILE

Aeronautical Mobile (OR) applications

**4850 - 4995 kHz**

BROADCASTING 5.113  
FIXED  
LAND MOBILE

FIXED  
LAND MOBILE  
EU2

Military applications

**4995 - 5003 kHz**

STANDARD FREQUENCY AND TIME  
SIGNAL (5000 kHz)

STANDARD FREQUENCY AND TIME  
SIGNAL (5000 kHz)

**5003 - 5005 kHz**

STANDARD FREQUENCY AND TIME  
SIGNAL  
Space Research

STANDARD FREQUENCY AND TIME  
SIGNAL  
Space Research

**5005 - 5060 kHz**

BROADCASTING 5.113  
FIXED

FIXED  
EU2

Military applications

**5060 - 5250 kHz**

FIXED  
Mobile except aeronautical mobile  
  
5.133

FIXED  
Mobile except aeronautical mobile  
EU2

Military applications

**5250 - 5450 kHz**

FIXED  
MOBILE except aeronautical mobile

FIXED  
MOBILE except aeronautical mobile  
EU2

Military applications

**5450 - 5480 kHz**

AERONAUTICAL MOBILE (OR)  
FIXED  
LAND MOBILE

AERONAUTICAL MOBILE (OR)  
FIXED  
LAND MOBILE  
EU2

Aeronautical Mobile (OR) applications

Military applications

**5480 - 5680 kHz**

AERONAUTICAL MOBILE (R)  
5.111  
5.115

AERONAUTICAL MOBILE (R)  
5.111  
5.115

Aeronautical Mobile (R) applications

Telephony distress traffic

Appendix 27 Allotment Plan  
Including HF Data Links

5680 kHz

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**5680 - 5730 kHz**

AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	Aeronautical Mobile (OR) applications			Appendix 26 Allotment Plan
5.111	5.111				
5.115	5.115	Telephony distress traffic			5680 kHz

**5730 - 5900 kHz**

FIXED	FIXED	Military applications			
LAND MOBILE	LAND MOBILE				
	EU2				

**5900 - 5950 kHz**

BROADCASTING 5.134	BROADCASTING 5.134	Broadcasting			WARC92 bands to be implemented 2007
5.136	5.136				Digital systems to be introduced

**5950 - 6200 kHz**

BROADCASTING	BROADCASTING	Broadcasting			Article 12 planning procedure
					Digital systems to be introduced

**6200 - 6525 kHz**

MARITIME MOBILE 5.109 5.110 5.130 5.132	MARITIME MOBILE 5.109 5.110 5.130 5.132	DSC calling			6312.5, 6313, 6313.5, 6331, 6331.5, 6332 kHz
5.137	5.137 EU2	DSC distress traffic			6312 kHz
		Maritime applications			Appendix 17 channeling plan
		Maritime Safety Information (MSI)			Appendix 25 allotment plan
					6314 kHz
		Telephony distress traffic			6215 kHz
		Telex distress traffic			6268 kHz

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**6525 - 6685 kHz**

AERONAUTICAL MOBILE (R)

AERONAUTICAL MOBILE (R)

Aeronautical Mobile (R) applications

Appendix 27 Allotment Plan  
Including HF Data Links

**6685 - 6765 kHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Aeronautical Mobile (OR) applications

Appendix 26 Allotment Plan

**6765 - 7000 kHz**

FIXED  
Land Mobile 5.139  
5.138

FIXED  
Land Mobile 5.139  
5.138 EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)14

EN 300 330

6765-6795 kHz

ISM applications

Military applications

Non Specific SRD applications

ERC REC 70-03  
ERC DEC (01)01

EN 300 330

6765-6795 kHz

**7000 - 7100 kHz**

AMATEUR  
AMATEUR-SATELLITE

AMATEUR  
AMATEUR-SATELLITE

Amateur applications

EN 301 783

Amateur-satellite applications

**7100 - 7300 kHz**

BROADCASTING

BROADCASTING

Broadcasting

Article 12 planning procedure  
Digital systems to be introduced

**7300 - 7350 kHz**

BROADCASTING 5.134  
5.143

BROADCASTING 5.134  
5.143

Broadcasting

WARC92 bands to be implemented 2007  
Digital systems to be introduced

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**7350 - 8100 kHz**

FIXED Land Mobile	FIXED Land Mobile		Inductive SRD	ERC REC 70-03 ERC DEC (01)15	EN 300 330	7400-8800 kHz
		EU2	Military applications			

**8100 - 8195 kHz**

FIXED MARITIME MOBILE	FIXED MARITIME MOBILE		Inductive SRD	ERC REC 70-03 ERC DEC (01)15	EN 300 330	7400-8800 kHz
		EU2	Maritime applications			Appendix 17 channeling plan

**8195 - 8815 kHz**

MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145		DSC calling			8415, 8415.5, 8416, 8436.5, 8437, 8437.5 kHz
5.111	5.111	EU2	DSC distress traffic			8364 kHz and 8414.5 kHz
			Inductive SRD	ERC REC 70-03 ERC DEC (01)15	EN 300 330	
			Maritime applications			Appendix 17 channeling plan Appendix 25 allotment plan
			Maritime Safety Information (MSI)			8416.5 kHz
			Telephony distress traffic			8291 kHz
			Telex distress traffic			8376.5 kHz

**8815 - 8965 kHz**

AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)		Aeronautical Mobile (R) applications			Appendix 27 Allotment Plan Including HF Data Links
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*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**8965 - 9040 kHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Aeronautical Mobile (OR) applications

Appendix 26 Allotment Plan

Military applications

**9040 - 9400 kHz**

FIXED

FIXED

EU2

Military applications

**9400 - 9500 kHz**

BROADCASTING 5.134

BROADCASTING 5.134

5.146

5.146

Broadcasting

WARC92 bands to be implemented 2007  
Digital systems to be introduced

**9500 - 9900 kHz**

BROADCASTING

BROADCASTING

5.147

5.147

Broadcasting

Article 12 planning procedure  
Digital systems to be introduced

**9900 - 9995 kHz**

FIXED

FIXED

EU2

Military applications

**9995 - 10003 kHz**

STANDARD FREQUENCY AND TIME  
SIGNAL (10000 kHz)

STANDARD FREQUENCY AND TIME  
SIGNAL (10000 kHz)

**10003 - 10005 kHz**

STANDARD FREQUENCY AND TIME  
SIGNAL  
Space Research  
5.111

STANDARD FREQUENCY AND TIME  
SIGNAL  
Space Research  
5.111

**10005 - 10100 kHz**

AERONAUTICAL MOBILE (R)  
5.111

AERONAUTICAL MOBILE (R)  
5.111

Aeronautical Mobile (R) applications

Appendix 27 Allotment Plan  
Including HF Data Links

**10100 - 10150 kHz**

Amateur  
FIXED

Amateur  
FIXED

EU2

Amateur applications

EN 301 783

Military applications

**10150 - 11175 kHz**

FIXED  
Mobile except aeronautical mobile (R)

FIXED  
Mobile except aeronautical mobile (R)  
EU2

Military applications

**11175 - 11275 kHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Aeronautical Mobile (OR) applications

Appendix 26 Allotment Plan

**11275 - 11400 kHz**

AERONAUTICAL MOBILE (R)

AERONAUTICAL MOBILE (R)

Aeronautical Mobile (R) applications

Appendix 27 Allotment Plan  
Including HF Data Links

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**11400 - 11600 kHz**

FIXED

FIXED

EU2

Military applications

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**11600 - 11650 kHz**

BROADCASTING 5.134  
5.146

BROADCASTING 5.134  
5.146

Broadcasting

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WARC92 bands to be implemented 2007  
Digital systems to be introduced

**11650 - 12050 kHz**

BROADCASTING  
5.147

BROADCASTING  
5.147

Broadcasting

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Article 12 planning procedure  
Digital systems to be introduced

**12050 - 12100 kHz**

BROADCASTING 5.134  
5.146

BROADCASTING  
5.146

Broadcasting

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WARC92 bands to be implemented 2007  
Digital systems to be introduced

**12100 - 12230 kHz**

FIXED

FIXED

EU2

Military applications

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**12230 - 13200 kHz**

MARITIME MOBILE 5.109 5.110 5.132 5.145

MARITIME MOBILE 5.109 5.110 5.132  
5.145

EU2

DSC calling

12577.5, 12578, 12578.5, 12657, 12657.5,  
12658 kHz

DSC distress traffic

12577 kHz

Maritime applications

Appendix 17 channeling plan  
Appendix 25 allotment plan

Maritime Safety Information (MSI)

12579 kHz

Telephony distress traffic

12290 kHz

Telex distress traffic

12520 kHz

**13200 - 13260 kHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Aeronautical Mobile (OR) applications

Appendix 26 Allotment Plan

**13260 - 13360 kHz**

AERONAUTICAL MOBILE (R)

AERONAUTICAL MOBILE (R)

Aeronautical Mobile (R) applications

Appendix 27 Allotment Plan  
Including HF Data Links

**13360 - 13410 kHz**

FIXED  
RADIO ASTRONOMY  
5.149

FIXED  
RADIO ASTRONOMY  
5.149 EU2

Military applications

Radioastronomy

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**13410 - 13570 kHz**

FIXED  
Mobile except aeronautical mobile (R)  
5.150

FIXED  
Mobile except aeronautical mobile (R)  
5.150 EU2

Inductive SRD

ERC REC 70-03  
ERC DEC (01)14

EN 300 330

13553-13567 kHz

ISM applications

13553-13567 kHz

Military applications

Non Specific SRD applications

ERC REC 70-03  
ERC DEC (01)01

EN 300 330

13553-13567 kHz

**13570 - 13600 kHz**

BROADCASTING 5.134  
5.151

BROADCASTING 5.134  
5.151

Broadcasting

WARC92 bands to be implemented 2007  
Digital systems to be introduced

**13600 - 13800 kHz**

BROADCASTING

BROADCASTING

Broadcasting

Article 12 planning procedure  
Digital systems to be introduced

**13800 - 13870 kHz**

BROADCASTING 5.134  
5.151

BROADCASTING 5.134  
5.151

Broadcasting

WARC92 bands to be implemented 2007  
Digital systems to be introduced

**13870 - 14000 kHz**

FIXED  
Mobile except aeronautical mobile (R)

FIXED  
Mobile except aeronautical mobile (R)  
EU2

Military applications

**14000 - 14250 kHz**

AMATEUR  
AMATEUR-SATELLITE

AMATEUR  
AMATEUR-SATELLITE

Amateur applications

EN 301 783

Amateur-satellite applications

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**14250 - 14350 kHz**

AMATEUR  
5.152

AMATEUR

Amateur applications

EN 301 783

**14350 - 14990 kHz**

FIXED  
Mobile except aeronautical mobile (R)

FIXED  
Mobile except aeronautical mobile (R)  
EU2

Military applications

**14990 - 15005 kHz**

STANDARD FREQUENCY AND TIME  
SIGNAL (15000 kHz)  
5.111

STANDARD FREQUENCY AND TIME  
SIGNAL (15000 kHz)  
5.111

**15005 - 15010 kHz**

STANDARD FREQUENCY AND TIME  
SIGNAL  
Space Research

STANDARD FREQUENCY AND TIME  
SIGNAL  
Space Research

**15010 - 15100 kHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Aeronautical Mobile (OR) applications

Appendix 26 Allotment Plan

**15100 - 15600 kHz**

BROADCASTING

BROADCASTING

Broadcasting

Article 12 planning procedure  
Digital systems to be introduced

**15600 - 15800 kHz**

BROADCASTING 5.134  
5.146

BROADCASTING 5.134  
5.146

Broadcasting

WARC92 bands to be implemented 2007  
Digital systems to be introduced

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**15800 - 16360 kHz**

FIXED

FIXED

EU2

Military applications

**16360 - 17410 kHz**

MARITIME MOBILE 5.109 5.110 5.132 5.145

MARITIME MOBILE 5.109 5.110 5.132  
5.145

EU2

DSC calling

16805, 16805.5, 16806, 16903, 16903.5,  
16904 kHz

DSC distress traffic

16804.5 kHz

Maritime applications

Appendix 17 channeling plan  
Appendix 25 allotment plan

Maritime Safety Information (MSI)

16806.5 kHz

Telephony distress traffic

16420 kHz

Telex distress traffic

16695 kHz

**17410 - 17480 kHz**

FIXED

FIXED

EU2

Military applications

**17480 - 17550 kHz**

BROADCASTING 5.134  
5.146

BROADCASTING 5.134  
5.146

Broadcasting

WARC92 bands to be implemented 2007  
Digital systems to be introduced

**17550 - 17900 kHz**

BROADCASTING

BROADCASTING

Broadcasting

Article 12 planning procedure  
Digital systems to be introduced

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**17900 - 17970 kHz**

AERONAUTICAL MOBILE (R)

AERONAUTICAL MOBILE (R)

Aeronautical Mobile (R) applications

Appendix 27 Allotment Plan  
Including HF Data Links

**17970 - 18030 kHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Aeronautical Mobile (OR) applications

Appendix 26 Allotment Plan

**18030 - 18052 kHz**

FIXED

FIXED

EU2

Military applications

**18052 - 18068 kHz**

FIXED

Space Research

FIXED

Space Research

EU2

Military applications

**18068 - 18168 kHz**

AMATEUR

AMATEUR-SATELLITE

5.154

AMATEUR

AMATEUR-SATELLITE

Amateur applications

EN 301 783

Amateur-satellite applications

**18168 - 18780 kHz**

FIXED

Mobile except aeronautical mobile

FIXED

Mobile except aeronautical mobile

DSC calling

18898.5, 18899, 18899.5 kHz

Military applications

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**18780 - 18900 kHz**

MARITIME MOBILE

MARITIME MOBILE

EU2

Maritime applications

Appendix 17 channeling plan

**18900 - 19020 kHz**

BROADCASTING 5.134  
5.146

BROADCASTING 5.134  
5.146

Broadcasting

WARC92 bands to be implemented 2007  
Digital systems to be introduced

**19020 - 19680 kHz**

FIXED

FIXED

EU2

Military applications

**19680 - 19800 kHz**

MARITIME MOBILE 5.132

MARITIME MOBILE 5.132  
EU2

DSC calling

19703.5, 19704, 19704.5 kHz

Maritime applications

Appendix 17 channeling plan  
Appendix 25 allotment plan

Maritime Safety Information (MSI)

19680.5 kHz

**19800 - 19990 kHz**

FIXED

FIXED

EU2

Military applications

**19990 - 19995 kHz**

STANDARD FREQUENCY AND TIME  
SIGNAL  
Space Research  
5.111

STANDARD FREQUENCY AND TIME  
SIGNAL  
Space Research  
5.111

Search and rescue applications

19993 kHz (+/- 3 kHz) concerning manned  
space vehicles

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**19995 - 20010 kHz**

STANDARD FREQUENCY AND TIME  
SIGNAL (20000 kHz)

STANDARD FREQUENCY AND TIME  
SIGNAL (20000 kHz)

5.111

5.111

**20010 - 21000 kHz**

FIXED

FIXED

Mobile

Mobile

Military applications

EU2

**21000 - 21450 kHz**

AMATEUR

AMATEUR

AMATEUR-SATELLITE

AMATEUR-SATELLITE

Amateur applications

EN 301 783

Amateur-satellite applications

**21450 - 21850 kHz**

BROADCASTING

BROADCASTING

Broadcasting

Article 12 planning procedure  
Digital systems to be introduced

**21850 - 21870 kHz**

FIXED 5.155A

FIXED 5.155A

5.155

5.155

EU2

Military applications

**21870 - 21924 kHz**

FIXED 5.155B

FIXED 5.155B

EU2

Military applications

**21924 - 22000 kHz**

AERONAUTICAL MOBILE (R)

AERONAUTICAL MOBILE (R)

Aeronautical Mobile (R) applications

Appendix 27 Allotment Plan  
Including HF Data Links

**22000 - 22855 kHz**

MARITIME MOBILE 5.132

MARITIME MOBILE 5.132  
EU2

DSC calling

22374.5, 22375, 22375.5, 22444, 22444.5,  
22445 kHz

Maritime applications

Appendix 17 channeling plan  
Appendix 25 allotment plan

Maritime Safety Information (MSI)

22376 kHz

**22855 - 23000 kHz**

FIXED

FIXED  
EU2

Military applications

**23000 - 23200 kHz**

FIXED  
Mobile except aeronautical mobile (R)

FIXED  
Mobile except aeronautical mobile (R)  
EU2

Military applications

**23200 - 23350 kHz**

AERONAUTICAL MOBILE (OR)  
FIXED 5.156A

AERONAUTICAL MOBILE (OR)  
FIXED 5.156A

Aeronautical Mobile (OR) applications

Military applications

**23350 - 24000 kHz**

FIXED  
MOBILE except aeronautical mobile 5.157

FIXED  
MOBILE except aeronautical mobile 5.157  
EU2

Military applications

**24000 - 24890 kHz**

FIXED  
LAND MOBILE

FIXED  
LAND MOBILE  
EU2

Military applications

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**24890 - 24990 kHz**

AMATEUR  
AMATEUR-SATELLITE

AMATEUR  
AMATEUR-SATELLITE

Amateur applications

EN 301 783

Amateur-satellite applications

**24990 - 25005 kHz**

STANDARD FREQUENCY AND TIME  
SIGNAL (25000 kHz)

STANDARD FREQUENCY AND TIME  
SIGNAL (25000 kHz)

**25005 - 25010 kHz**

STANDARD FREQUENCY AND TIME  
SIGNAL  
Space Research

STANDARD FREQUENCY AND TIME  
SIGNAL  
Space Research

Space Research

Scientific and medical space research

**25010 - 25070 kHz**

FIXED  
MOBILE except aeronautical mobile

FIXED  
MOBILE except aeronautical mobile  
EU2

Military applications

**25070 - 25210 kHz**

MARITIME MOBILE

MARITIME MOBILE  
EU2

DSC calling

25208.5, 25209, 25209.5 kHz

Maritime applications

Appendix 17 channeling plan

**25210 - 25550 kHz**

FIXED  
MOBILE except aeronautical mobile

FIXED  
MOBILE except aeronautical mobile  
EU2

Military applications

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**25550 - 25670 kHz**

RADIO ASTRONOMY  
5.149

RADIO ASTRONOMY  
5.149

Radioastronomy

**25670 - 26100 kHz**

BROADCASTING

BROADCASTING

Broadcasting

Article 12 Planning procedure  
Digital systems to be introduced

**26100 - 26175 kHz**

MARITIME MOBILE 5.132

MARITIME MOBILE 5.132  
EU2

DSC calling

26121, 26121.5, 16122 kHz

Maritime applications

Appendix 17 channeling plan  
Appendix 25 allotment plan

Maritime Safety Information (MSI)

26100.5 kHz

**26175 - 27500 kHz**

FIXED  
MOBILE except aeronautical mobile  
5.150

FIXED  
MOBILE except aeronautical mobile  
5.150 EU2

CB

ERC DEC (98)11

ETS 300 135

26.960-27.410 MHz

ERC REC T/R 20-09

EN 300 433

Inductive SRD

ERC REC 70-03

EN 300 330

26.957-27-283 MHz

ERC DEC (01)16

ISM applications

26.957-27.283 MHz

Military applications

Model control SRD

ERC REC 70-03

EN 300 220

26.995, 27.045, 27.095, 27.145, 27.195 MHz

ERC DEC (01)10

Non Specific SRD applications

ERC REC 70-03

EN 300 330

26.957-27.283 MHz

ERC DEC (01)02

Railway applications

ERC REC 70-03

EN 300 330

27.095 MHz Eurobalise

*RR Region 1 Allocations and  
RR footnotes relevant to  
CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU-footnote*

*ERC Document*

*Standard*

*Note*

**27500 - 28000 kHz**

FIXED  
METEOROLOGICAL AIDS  
MOBILE

FIXED  
METEOROLOGICAL AIDS  
MOBILE  
EU2

Military applications

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**28000 - 29700 kHz**

AMATEUR  
AMATEUR-SATELLITE

AMATEUR  
AMATEUR-SATELLITE

Amateur applications

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EN 301 783

Amateur-satellite applications

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*RR Region 1 Allocation and RR footnotes relevant to CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU footnote*

*ECC/ERC document*

*Standard*

*Note*

**29.7 - 30.005 MHz**

FIXED	MOBILE	Defence systems	EU1			
MOBILE	EU2	Radio microphones		ERC REC 70-03	EN 300 422	Narrow band audio systems including tour guide systems on a tuning range basis

**30.005 - 30.01 MHz**

FIXED	MOBILE	Defence systems	EU1			
MOBILE	EU2	Radio microphones		ERC REC 70-03	EN 300 422	Narrow band audio systems including tour guide systems on a tuning range basis
SPACE OPERATION (satellite identification)						
SPACE RESEARCH						

**30.01 - 37.5 MHz**

FIXED	MOBILE	Defence systems	EU1			The bands 30.3-30.5 MHz and 32.15-32.45 MHz are harmonised military bands
MOBILE	EU2	Model control		ERC REC 70-03	EN 300 220	Model control in 34.995-35.225 MHz only for flying models.
	EU27			ERC DEC (01)11		
		PMR			EN 300 086	
					EN 300 113	
					EN 300 219	
					EN 300 296	
					EN 300 341	
					EN 300 390	
					EN 300 471	
		Radio microphones		ERC REC 70-03	EN 300 422	Within the band 30.01 - 34.90 MHz. Narrow band audio systems including tour guide systems on a tuning range basis

European Common Allocation

Utilisation

EU footnote

ECC/ERC document

Standard

Note

**37.5 - 38.25 MHz**

FIXED  
MOBILE  
Radio Astronomy  
5.149

MOBILE except Aeronautical Mobile  
Radio Astronomy  
5.149 EU2

Defence systems EU1

PMR  
EN 300 086  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

Radio astronomy applications Continuum measurements

Radio microphones ERC REC 70-03 EN 300 422 Narrow band audio systems including tour guide systems on a tuning range basis

**38.25 - 39.986 MHz**

FIXED  
MOBILE

MOBILE  
EU2

Defence systems EU1

Meteor-scatter applications ERC REC 00-04

Within the band 39.0-39.2 MHz

PMR  
EN 300 086  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

Radio microphones ERC REC 70-03 EN 300 422 Narrow band audio systems including tour guide systems on a tuning range basis

**39.986 - 40.02 MHz**

FIXED  
MOBILE  
Space Research

MOBILE  
Space Research  
EU2

Defence systems EU1

PMR  
EN 300 086  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

Radio microphones ERC REC 70-03 EN 300 422 Narrow band audio systems including tour guide systems on a tuning range basis

European Common Allocation

Utilisation

EU footnote

ECC/ERC document

Standard

Note

**40.02 - 40.66 MHz**

FIXED	MOBILE		Defence systems	EU1		
MOBILE			PMR		EN 300 086	
		EU2			EN 300 113	
					EN 300 219	
					EN 300 296	
					EN 300 341	
					EN 300 390	
					EN 300 471	
			Radio microphones	ERC REC 70-03	EN 300 422	Narrow band audio systems including tour guide systems on a tuning range basis

**40.66 - 40.7 MHz**

FIXED	MOBILE		Defence systems	EU1		
MOBILE			ISM			
5.150	5.150	EU2	Model control	ERC DEC (01)12	EN 300 220	
			Non specific SRD	ERC REC 70-03	EN 300 220	
				ERC DEC (01)03		
			Radio microphones	ERC REC 70-03	EN 300 422	Narrow band audio systems including tour guide systems on a tuning range basis

**40.7 - 40.98 MHz**

FIXED	MOBILE		Defence systems	EU1		
MOBILE			PMR		EN 300 086	
		EU2			EN 300 113	
					EN 300 219	
					EN 300 296	
					EN 300 341	
					EN 300 390	
					EN 300 471	
			Radio microphones	ERC REC 70-03	EN 300 422	Narrow band audio systems including tour guide systems on a tuning range basis

**40.98 - 41.015 MHz**

FIXED	MOBILE	Defence systems	EU1		
MOBILE	Space Research	PMR		EN 300 086	
Space Research				EN 300 113	
	EU2			EN 300 219	
				EN 300 296	
				EN 300 341	
				EN 300 390	
				EN 300 471	
		Radio microphones	ERC REC 70-03	EN 300 422	Narrow band audio systems including tour guide systems on a tuning range basis

**41.015 - 44 MHz**

FIXED	MOBILE	Defence systems	EU1		Harmonised military band
MOBILE		PMR		EN 300 086	
	EU27			EN 300 113	
				EN 300 219	
				EN 300 296	
				EN 300 341	
				EN 300 390	
				EN 300 471	
		Radio microphones	ERC REC 70-03	EN 300 422	Narrow band audio systems including tour guide systems on a tuning range basis

**44 - 46.4 MHz**

FIXED	MOBILE	Defence systems	EU1		Harmonised military band
MOBILE		PMR		EN 300 086	
5.162A	5.162A EU27			EN 300 113	
				EN 300 219	
				EN 300 296	
				EN 300 341	
				EN 300 390	
				EN 300 471	
		Radio microphones	ERC REC 70-03	EN 300 422	Narrow band audio systems including tour guide systems on a tuning range basis
		Wind profiler radars			In the range 46-68 MHz. Geographical sharing with other services.

European Common Allocation

Utilisation

EU footnote

ECC/ERC document

Standard

Note

**46.4 - 47 MHz**

Service	Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	MOBILE except Aeronautical Mobile	Defence systems	EU1			Harmonised military band
MOBILE		PMR			EN 300 086 EN 300 113 EN 300 219 EN 300 296 EN 300 341 EN 300 390 EN 300 471	
5.162A	5.162A EU27	Radio microphones		ERC REC 70-03	EN 300 422	Narrow band audio systems including tour guide systems on a tuning range basis
		Wind profiler radars				In the range 46-68 MHz. Geographical sharing with other services.

**47 - 48 MHz**

Service	Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
BROADCASTING	LAND MOBILE	Defence systems	EU1			
5.162A	5.162A EU2	On-site paging			EN 300 224	Onsite paging in the band 47.0-47.25 MHz
5.163	5.163 EU3	PMR		ERC REC T/R 25-08	EN 300 086 EN 300 113 EN 300 219 EN 300 296 EN 300 341 EN 300 390 EN 300 471	Single frequency applications
5.164	5.164	Wind profiler radars				In the range 46-68 MHz. Geographical sharing with other services.

**48 - 48.5 MHz**

Service	Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
BROADCASTING	LAND MOBILE	Defence systems	EU1			
5.162A	5.162A EU2	PMR		ERC REC T/R 25-08	EN 300 086 EN 300 113 EN 300 219 EN 300 296 EN 300 341 EN 300 390 EN 300 471	Single frequency applications
5.163	5.163 EU3	Wind profiler radars				In the range 46-68 MHz. Geographical sharing with other services.
5.164	5.164					

**48.5 - 50 MHz**

BROADCASTING

5.162A  
5.164

LAND MOBILE

5.162A EU2  
5.164 EU3

Defence systems

EU1

Non specific SRD

Non specific SRD in 49.5-50 MHz

PMR

ERC REC T/R 25-08

EN 300 086

Single frequency applications

EN 300 113

EN 300 219

EN 300 296

EN 300 341

EN 300 390

EN 300 471

Wind profiler radars

In the range 46-68 MHz. Geographical sharing with other services

**50 - 51 MHz**

BROADCASTING

5.162A  
5.164

LAND MOBILE

Amateur  
5.162A EU2  
5.164 EU3

Amateur applications

EN 301 783

Defence systems

EU1

PMR

ERC REC T/R 25-08

EN 300 086

Single frequency applications

EN 300 113

EN 300 219

EN 300 296

EN 300 341

EN 300 390

EN 300 471

Wind profiler radars

In the range 46-68 MHz. Geographical sharing with other services

**51 - 52 MHz**

BROADCASTING

5.162A  
5.164

LAND MOBILE

Amateur  
5.162A EU2  
5.164 EU3

Amateur applications

EN 301 783

Defence systems

EU1

PMR

ERC REC T/R 25-08

EN 300 086

Single frequency applications

EN 300 113

EN 300 219

EN 300 296

EN 300 341

EN 300 390

EN 300 471

Wind profiler radars

In the range 46-68 MHz. Geographical sharing with other services

**52 - 54 MHz**

BROADCASTING

5.162A  
5.164

LAND MOBILE

5.162A EU2  
5.164 EU3

Defence systems

EU1

PMR

ERC REC T/R 25-08

EN 300 086

single frequency applications

EN 300 113

EN 300 219

EN 300 296

EN 300 341

EN 300 390

EN 300 471

Wind profiler radars

In the range 46-68 MHz. Geographical sharing with other services

**54 - 61 MHz**

BROADCASTING

5.162A  
5.163  
5.164

LAND MOBILE

5.162A EU2  
5.163 EU3  
5.164

Defence systems

EU1

PMR

ERC REC T/R 25-08

EN 300 086

ML paired with 61-68 MHz

EN 300 113

EN 300 219

EN 300 296

EN 300 341

EN 300 390

EN 300 471

Wind profiler radars

In the range 46-68 MHz. Geographical sharing with other services

**61 - 68 MHz**

BROADCASTING

5.162A  
5.164

LAND MOBILE

5.162A EU2  
5.164 EU3

Defence systems

EU1

PMR

ERC REC T/R 25-08

EN 300 086

FB paired with 54-61 MHz

EN 300 113

EN 300 219

EN 300 296

EN 300 341

EN 300 390

EN 300 471

Wind profiler radars

In the range 46-68 MHz. Geographical sharing with other services

**68 - 70.45 MHz**

Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	MOBILE		Defence systems		
MOBILE except Aeronautical Mobile			EU1		
5.149	EU2		PMR	ERC REC T/R 25-08 EN 300 086	ML paired with 77.8-80.25 MHz
5.174	EU4			EN 300 113	
5.175				EN 300 219	
5.176				EN 300 296	
5.177				EN 300 341	
5.179				EN 300 390	
				EN 300 471	

**70.45 - 74.8 MHz**

Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	MOBILE except Aeronautical Mobile		Defence systems		Harmonised military band 73.3-74.1 MHz
MOBILE except Aeronautical Mobile	Radio Astronomy		EU1		
5.149	5.149 EU2		PMR	ERC REC T/R 25-08 EN 300 086	ML paired with 80.25-84.6 MHz
5.174	EU4			EN 300 113	
5.175	EU27			EN 300 219	
5.176				EN 300 296	
5.177				EN 300 341	
5.179				EN 300 390	
				EN 300 471	
			Radio astronomy applications		Continuum measurements. In 73-74.6 MHz RA for solar wind monitoring

**74.8 - 75.2 MHz**

Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION		ILS/marker beacons		
5.180	5.180				

**75.2 - 77.7 MHz**

Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	MOBILE		Defence systems		
MOBILE except Aeronautical Mobile			EU1		
5.175	EU2		PMR	ERC REC T/R 25-08 EN 300 086	ML paired with 85.0-87.5 MHz
5.179				EN 300 113	
5.184				EN 300 219	
5.187				EN 300 296	
				EN 300 341	
				EN 300 390	
				EN 300 471	

**77.7 - 77.8 MHz**

FIXED	MOBILE	Defence systems	EU1		
MOBILE except Aeronautical Mobile		PMR		ERC REC T/R 25-08	EN 300 086
5.175	EU2				EN 300 113
5.179					EN 300 219
5.184					EN 300 296
5.187					EN 300 341
					EN 300 390
					EN 300 471

**77.8 - 84.6 MHz**

FIXED	MOBILE	Defence systems	EU1		
MOBILE except Aeronautical Mobile		PMR		ERC REC T/R 25-08	EN 300 086
5.175	EU2				EN 300 113
5.179	EU27				EN 300 219
5.184					EN 300 296
5.187					EN 300 341
					EN 300 390
					EN 300 471

**84.6 - 85 MHz**

FIXED	MOBILE	Defence systems	EU1		
MOBILE except Aeronautical Mobile		PMR		ERC REC T/R 25-08	EN 300 086
5.175	EU2				EN 300 113
5.179					EN 300 219
5.184					EN 300 296
5.187					EN 300 341
					EN 300 390
					EN 300 471

**85 - 87.5 MHz**

FIXED  
MOBILE except Aeronautical Mobile  
5.175  
5.179  
5.184  
5.187

MOBILE

Defence systems

EU1

EU2

PMR

ERC REC T/R 25-08

EN 300 086

FB paired with 75.2-77.7 MHz

EN 300 113

EN 300 219

EN 300 296

EN 300 341

EN 300 390

EN 300 471

**87.5 - 100 MHz**

BROADCASTING  
5.190

BROADCASTING

FM Sound Broadcasting, Geneva Agreement 1984

**100 - 108 MHz**

BROADCASTING  
5.194

BROADCASTING

FM Sound Broadcasting, Geneva Agreement 1984

**108 - 117.975 MHz**

AERONAUTICAL RADIONAVIGATION

AERONAUTICAL RADIONAVIGATION

ILS/Localiser

Within the band 108-112 MHz

VOR

Within the band 108-117.975 MHz

**117.975 - 121.45 MHz**

AERONAUTICAL MOBILE (R)  
5.198  
5.200

AERONAUTICAL MOBILE (R)  
5.200

Aeronautical mobile communications for safety and regularity of flights

EU5

**121.45 - 121.55 MHz**

AERONAUTICAL MOBILE (R)

AERONAUTICAL MOBILE  
MOBILE-SATELLITE (E/S)

EPIRB

EN 300 152

Band only available for distress and safety

5.111  
5.198  
5.199  
5.200  
5.201

5.111  
5.199  
5.200

**121.55 - 136 MHz**

AERONAUTICAL MOBILE (R)

AERONAUTICAL MOBILE (R)

Aeronautical mobile  
communications for safety and  
regularity of flights, airline  
business and airport mobile  
communications

EU5

5.198  
5.200  
5.201

5.200  
5.201

**136 - 137 MHz**

AERONAUTICAL MOBILE (R)

AERONAUTICAL MOBILE (R)

Aeronautical mobile  
communications for safety and  
regularity of flights, airline  
business and airport mobile  
communications

EU5

5.202  
5.203

5.202

**137 - 137.025 MHz**

METEOROLOGICAL-SATELLITE (S/E)  
MOBILE-SATELLITE (S/E) 5.208A 5.209  
SPACE OPERATION (S/E)  
SPACE RESEARCH (S/E)  
Fixed  
Mobile except Aeronautical mobile (R)

METEOROLOGICAL-SATELLITE (S/E)  
MOBILE  
MOBILE-SATELLITE (S/E) 5.208A 5.209  
Space Operation (S/E)  
Space Research (S/E)

Low earth orbiting satellites

EU6

ERC DEC (99)06

EN 301 721

Meteorological Satellite

Mobile applications

Mobile restricted to Aeronautical Mobile (OR), including air sport

5.204  
5.206  
5.208

5.206  
5.208

**137.025 - 137.175 MHz**

METEOROLOGICAL-SATELLITE (S/E)  
 SPACE OPERATION (S/E)  
 SPACE RESEARCH (S/E)  
 Fixed  
 Mobile except Aeronautical mobile (R)  
 Mobile-Satellite (S/E) 5.208A 5.209  
 5.204  
 5.206  
 5.208

METEOROLOGICAL-SATELLITE (S/E)  
 MOBILE  
 Mobile-Satellite (S/E) 5.208A 5.209  
 Space Operation (S/E)  
 Space Research (S/E)  
 5.206  
 5.208

Low earth orbiting satellites EU6 ERC DEC (99)06 EN 301 721  
 -----  
 Meteorological Satellite  
 -----  
 Mobile applications

Mobile restricted to Aeronautical Mobile (OR), including air sport

**137.175 - 137.825 MHz**

METEOROLOGICAL-SATELLITE (S/E)  
 MOBILE-SATELLITE (S/E) 5.208A 5.209  
 SPACE OPERATION (S/E)  
 SPACE RESEARCH (S/E)  
 Fixed  
 Mobile except Aeronautical mobile (R)  
 5.204  
 5.206  
 5.208

METEOROLOGICAL-SATELLITE (S/E)  
 MOBILE  
 MOBILE-SATELLITE (S/E) 5.208A 5.209  
 Space Operation (S/E)  
 Space Research (S/E)  
 5.206  
 5.208

Low earth orbiting satellites EU6 ERC DEC (99)06 EN 301 721  
 -----  
 Meteorological Satellite  
 -----  
 Mobile applications

Mobile restricted to Aeronautical Mobile (OR), including air sport

**137.825 - 138 MHz**

METEOROLOGICAL-SATELLITE (S/E)  
 SPACE OPERATION (S/E)  
 SPACE OPERATION (S/E)  
 Fixed  
 Mobile except Aeronautical mobile (R)  
 Mobile-Satellite (S/E) 5.208A 5.209  
 5.204  
 5.206  
 5.208

METEOROLOGICAL-SATELLITE (S/E)  
 MOBILE  
 Mobile-Satellite (S/E) 5.208A 5.209  
 Space Operation (S/E)  
 Space Research (S/E)  
 5.206  
 5.208

Low earth orbiting satellites EU6 ERC DEC (99)06 EN 301 721  
 -----  
 Meteorological Satellite  
 -----  
 Mobile applications

Mobile restricted to Aeronautical Mobile (OR), including air sport

**138 - 143.6 MHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Air operation control

EU5

LAND MOBILE

Defence systems

Harmonised military band

Space Research (S/E)

Mobile applications

5.210

5.211 EU2

5.211

EU27

Short Range Devices

ERC REC 70-03

EN 300 220

SRDs in the band 138.2-138.45 MHz

5.214

**143.6 - 143.65 MHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Air operation control

EU5

SPACE RESEARCH (S/E)

LAND MOBILE

Defence systems

Harmonised military band

SPACE RESEARCH (S/E)

Mobile applications

5.211

5.211 EU2

5.214

EU27

**143.65 - 144 MHz**

AERONAUTICAL MOBILE (OR)

AERONAUTICAL MOBILE (OR)

Air operation control

EU5

LAND MOBILE

Defence systems

Harmonised military band

5.210

5.211 EU2

5.211

EU27

5.214

Mobile applications

**144 - 146 MHz**

AMATEUR  
AMATEUR-SATELLITE

AMATEUR  
AMATEUR-SATELLITE

Amateur applications

EN 301 783

Amateur Satellite applications

**146 - 146.8 MHz**

FIXED  
MOBILE except Aeronautical Mobile (R)

MOBILE

PMR

EU7

ERC REC T/R 25-08

EN 300 086

Single frequency applications

EN 300 113

EN 300 219

EN 300 296

EN 300 341

EN 300 390

EN 300 471

**146.8 - 148 MHz**

FIXED	MOBILE	PMR	EU7	ERC REC T/R 25-08	EN 300 086	ML paired with 151.4-152.6 MHz
MOBILE except Aeronautical Mobile (R)					EN 300 113	
					EN 300 219	
					EN 300 296	
					EN 300 341	
					EN 300 390	

**148 - 148.4 MHz**

FIXED	MOBILE	Low earth orbiting satellites	EU6	ERC DEC (99)06	EN 301 721	
MOBILE except Aeronautical Mobile (R)	MOBILE-SATELLITE (E/S) 5.209					
MOBILE-SATELLITE (E/S) 5.209		PMR	EU7	ERC REC T/R 25-08	EN 300 086	ML paired with 152.6-153 MHz
5.218	5.218				EN 300 113	
5.219	5.219				EN 300 219	
5.221	5.221				EN 300 296	
					EN 300 341	
					EN 300 390	

**148.4 - 149.9 MHz**

FIXED	MOBILE	Low earth orbiting satellites	EU6	ERC DEC (99)06	EN 301 721	
MOBILE except Aeronautical Mobile (R)	MOBILE-SATELLITE (E/S) 5.209					
MOBILE-SATELLITE (E/S) 5.209		PMR	EU7	ERC REC T/R 25-08	EN 300 086	ML paired with 153.0-154.5 MHz
5.218	5.218				EN 300 113	
5.219	5.219				EN 300 219	
5.221	5.221				EN 300 296	
					EN 300 341	
					EN 300 390	

**149.9 - 150.05 MHz**

MOBILE-SATELLITE (E/S) 5.209 5.224A	MOBILE	Low earth orbiting satellites	EU6	ERC DEC (99)06	EN 301 721	
RADIONAVIGATION-SATELLITE 5.224B	MOBILE-SATELLITE (E/S) 5.209 5.224A					
	RADIONAVIGATION-SATELLITE 5.224B	PMR		ERC REC T/R 25-08	EN 300 086	Single frequency applications
5.220	5.220				EN 300 113	
5.222	5.222				EN 300 219	
5.223	5.223				EN 300 296	
					EN 300 341	
					EN 300 390	

**150.05 - 151.4 MHz**

FIXED  
MOBILE except Aeronautical Mobile  
RADIO ASTRONOMY  
5.149

MOBILE except Aeronautical Mobile  
RADIO ASTRONOMY  
5.149

PMR

EU7

ERC REC T/R 25-08

EN 300 086  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

ML paired with 154.65-156.0 MHz

Radio astronomy applications

Continuum measurement and pulsar/solar observations

**151.4 - 153 MHz**

FIXED  
MOBILE except Aeronautical Mobile  
RADIO ASTRONOMY  
5.149

MOBILE except Aeronautical Mobile  
RADIO ASTRONOMY  
5.149

PMR

EU7

ERC REC T/R 25-08

EN 300 086  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

FB paired with 146.8-148.4 MHz

Radio astronomy applications

Continuum measurement and pulsar/solar observations

**153 - 154 MHz**

FIXED  
MOBILE except Aeronautical Mobile (R)  
Meteorological Aids

MOBILE except Aeronautical Mobile

PMR

EU7

ERC REC T/R 25-08

EN 300 086  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

FB paired with 148.4-149.4 MHz

**154 - 154.5 MHz**

FIXED  
MOBILE except Aeronautical Mobile (R)

MOBILE except Aeronautical Mobile

PMR

EU7

ERC REC T/R 25-08

EN 300 086  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

FB paired with 149.4-149.9 MHz

**154.5 - 154.65 MHz**

FIXED  
MOBILE except Aeronautical Mobile (R)

MOBILE except Aeronautical Mobile

PMR

EU7

ERC REC T/R 25-08

EN 300 086  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

Single frequency applications

**154.65 - 156 MHz**

FIXED  
MOBILE except Aeronautical Mobile (R)

MOBILE except Aeronautical Mobile

PMR

EU7

ERC REC T/R 25-08

EN 300 086  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

FB paired with 150.05-151.4 MHz

**156 - 156.5125 MHz**

FIXED  
MOBILE except Aeronautical Mobile (R)  
5.226

MOBILE except Aeronautical Mobile

RR Appendix 18

EU7  
EU8

EN 300 162  
EN 300 698  
EN 301 178  
EN 301 025

Ship stations paired with 160.6-160.625. Single frequency in 156.375-156.500 MHz

**156.5125 - 156.5375 MHz**

FIXED  
MOBILE except Aeronautical Mobile (R)  
5.226  
5.227

MARITIME MOBILE

Digital selective calling for distress, safety

EN 301 025

The frequency 156.525 MHz

**156.5375 - 156.7625 MHz**

FIXED  
MOBILE except Aeronautical Mobile (R)  
5.226

MOBILE except Aeronautical Mobile

RR Appendix 18

EU7  
EU8

EN 300 162  
EN 300 698  
EN 301 178  
EN 301 025

Single frequency applications

**156.7625 - 156.8375 MHz**

MARITIME MOBILE (distress and calling)  
5.111  
5.226

MARITIME MOBILE  
5.111  
5.226

International distress, safety and calling frequency

EN 300 162

The frequency 156.8 MHz + single frequencies

**156.8375 - 157.45 MHz**

FIXED  
MOBILE except Aeronautical Mobile  
5.226

MOBILE except Aeronautical Mobile  
5.226

RR Appendix 18

EU7  
EU8

EN 300 162  
EN 300 698  
EN 301 178  
EN 301 025

Ship stations paired with 161.5-162.0 MHz and Single frequencies

**157.45 - 160.6 MHz**

FIXED  
MOBILE except Aeronautical Mobile

MOBILE except Aeronautical Mobile

PMR

EU7

ERC REC T/R 25-08

EN 300 086  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

ML paired with 162.05-165.2 MHz

**160.6 - 160.975 MHz**

FIXED  
MOBILE except Aeronautical Mobile  
5.226

MOBILE except Aeronautical Mobile  
5.226

RR Appendix 18

EU7  
EU8

EN 300 162  
EN 300 698  
EN 301 178  
EN 301 025

Cost stations, paired with 156.250-156.350 MHz

**160.975 - 161.475 MHz**

FIXED  
MOBILE except Aeronautical Mobile

MOBILE except Aeronautical Mobile

PMR

EU7

ERC REC T/R 25-08

EN 300 086  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

Single frequency applications

<i>European Common Allocation</i>	<i>Utilisation</i>	<i>EU footnote</i>	<i>ECC/ERC document</i>	<i>Standard</i>	<i>Note</i>
<b>161.475 - 162.05 MHz</b> FIXED MOBILE except Aeronautical Mobile 5.226	MOBILE except Aeronautical Mobile  5.226	RR Appendix 18	EU7 EU8	EN 300 162 EN 301 025 EN 300 698 EN 301 178	Cost stations, paired with 156.9-157.4 MHz For DSC
			Shipborne Automatic Identification System (AIS)	ERC DEC (99)17	161.975 MHz and 162.025 MHz
<b>162.05 - 165.2 MHz</b> FIXED MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile	PMR	EU7	ERC REC T/R 25-08 EN 300 086 EN 300 113 EN 300 219 EN 300 296 EN 300 341 EN 300 390 EN 300 471	FB paired with 157.45-160.6 MHz
<b>165.2 - 165.225 MHz</b> FIXED MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile	PMR		ERC REC T/R 25-08 EN 300 086 EN 300 113 EN 300 219 EN 300 296 EN 300 341 EN 300 390 EN 300 471	Single frequency applications
<b>165.225 - 169.4 MHz</b> FIXED MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile	PMR	EU7	ERC REC T/R 25-08 EN 300 086 EN 300 113 EN 300 219 EN 300 296 EN 300 341 EN 300 390 EN 300 471	ML paired with 169.825-174.0 MHz

**169.4 - 169.825 MHz**

FIXED  
MOBILE except Aeronautical Mobile

MOBILE except Aeronautical Mobile

ERMES	EU7	ERC DEC (94)02		169.4125-169.8125 MHz
PMR	EU7	ERC REC T/R 25-08	EN 300 086 EN 300 113 EN 300 219 EN 300 296 EN 300 341 EN 300 390 EN 300 471	Single frequency applications

**169.825 - 174 MHz**

FIXED  
MOBILE except Aeronautical Mobile

MOBILE except Aeronautical Mobile

Aids for handicapped		ERC REC 70-03	EN 300 422	Within 173.965-174.015 MHz
PMR	EU7	ERC REC T/R 25-08	EN 300 086 EN 300 113 EN 300 219 EN 300 296 EN 300 341 EN 300 390 EN 300 471	FB paired with 165.225-169.4 MHz

**174 - 216 MHz**

BROADCASTING  
5.235

BROADCASTING  
LAND MOBILE  
5.235 EU9

Aids for handicapped		ERC REC 70-03	EN 300 422	Within 173.965-174.015 MHz
Radio microphones		ERC REC 70-03	EN 300 422	On a tuning range basis
T-DAB Wiesbaden special Arrangement, 1995 revised Maarstricht 2002				
TV Stockholm Agreement 1961.		ERC REC T/R 25-06		The band 174-230 MHz be reviewed for possible future applications after the introduction of T-DAB and DVB-T

**216 - 223 MHz**

BROADCASTING  
5.235

BROADCASTING  
5.235

T-DAB Wiesbaden special Arrangement, 1995 revised Maarstricht 2002				Existing TV transmitters according to stockholm Agreement 1961. The band 174-230 MHz be reviewed for possible future applications after the introduction of T-DAB and DVB-T
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**223 - 225 MHz**

BROADCASTING  
Fixed  
Mobile  
5.246

BROADCASTING

T-DAB Wiesbaden special Arrangement, 1995 revised  
Maarstricht 2002

The band 174-230 MHz be reviewed for possible future applications after the introduction of T-DAB and DVB-T

**225 - 230 MHz**

BROADCASTING  
Fixed  
Mobile  
5.246

BROADCASTING  
Land Mobile

T-DAB Wiesbaden special Arrangement, 1995 revised  
Maarstricht 2002

This band is within the military tuning range 225-400 MHz. T-DAB sharing with defence on national basis.  
The band 174-230 MHz be reviewed for possible future applications after the introduction of T-DAB and DVB-T

**230 - 235 MHz**

FIXED  
MOBILE

MOBILE

Defence systems

Harmonised military band

EU10  
EU27

T-DAB Wiesbaden special Arrangement, 1995 revised  
Maarstricht 2002

T-DAB sharing with defence on a national basis

**235 - 240 MHz**

FIXED  
MOBILE  
5.254

MOBILE

Defence systems

Harmonised military band.

5.254 EU10  
EU27

T-DAB Wiesbaden special Arrangement, 1995 revised  
Maarstricht 2002

T-DAB sharing with defence on a national basis

**240 - 242.95 MHz**

FIXED  
MOBILE  
5.254

MOBILE

Defence systems

Harmonised military band.  
Air traffic control.

5.254 EU10  
EU27

**242.95 - 243.055 MHz**

Service	Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	AERONAUTICAL MOBILE	EPIRB			EN 300 152	Band only available for distress and safety purposes
MOBILE	MOBILE-SATELLITE (E/S)					
5.111	5.111					
5.199	5.199					
5.254	5.254					
5.256	5.256					

**243.055 - 267 MHz**

Service	Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	MOBILE	Defence systems				Harmonised military band. Air traffic control.
MOBILE except Aeronautical Mobile						
5.254	5.254		EU10 EU27			

**267 - 272 MHz**

Service	Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	MOBILE	Defence systems				Harmonised military band. Air traffic control.
MOBILE						
Space Operation (S/E)						
5.254	5.254		EU10			
5.257	5.257		EU27			

**272 - 273 MHz**

Service	Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	MOBILE	Defence systems				Harmonised military band. Air traffic control.
MOBILE						
SPACE OPERATION (S/E)						
5.254	5.254		EU10 EU27			

*RR Region 1 Allocation and RR footnotes relevant to CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU footnote*

*ECC/ERC document*

*Standard*

*Note*

**273 - 312 MHz**

FIXED  
MOBILE  
5.254

MOBILE  
5.254 EU10  
EU27

Defence systems

Harmonised military band  
Air traffic control

**312 - 315 MHz**

FIXED  
MOBILE  
Mobile-Satellite (E/S) 5.254 5.255

MOBILE  
5.254 EU10  
5.255 EU27

Defence systems

Harmonised military band.  
Air traffic control.

**315 - 322 MHz**

FIXED  
MOBILE  
5.254

MOBILE  
5.254 EU10  
EU27

Defence systems

Harmonised military band  
Air traffic control.

**322 - 328.65 MHz**

FIXED  
MOBILE  
RADIO ASTRONOMY  
5.149

MOBILE  
RADIO ASTRONOMY  
5.149 EU10  
EU27

Defence systems

Harmonised military band

Radio astronomy applications

Continuum measurements, also VLBI

**328.65 - 335.4 MHz**

AERONAUTICAL RADIONAVIGATION  
5.258

AERONAUTICAL RADIONAVIGATION  
5.258 EU2

ILS/Glide path

*RR Region 1 Allocation and RR footnotes relevant to CEPT and frequency band*

*European Common Allocation*

*Utilisation*

*EU footnote*

*ECC/ERC document*

*Standard*

*Note*

**335.4 - 380 MHz**

FIXED	MOBILE		
MOBILE			
5.254	5.254	EU10	EU27

Defence systems EU7

Harmonised military band  
Air traffic control

**380 - 385 MHz**

FIXED	MOBILE		
MOBILE			
5.254	5.254	EU2	EU10 EU27

Defence systems

Harmonised military band

Emergency AGA ERC DEC (01)20 EN 300 113  
EN 300 390

384.8-385/394.8-395 MHz for AGA emergency

Emergency DMO ERC DEC (01)19 EN 300 113  
EN 300 390

380-380.15/390-390.15 MHz for DMO emergency

Emergency services ERC DEC (96)01 EN 303 035  
ERC REC T/R 02-02

ML paired with 390.0-395.0 MHz. Emergency services sharing with defence applications.

**385 - 387 MHz**

FIXED	MOBILE		
MOBILE			
5.254	5.254	EU2	EU10 EU27

Defence systems

Harmonised military band

Digital land mobile PMR/PAMR ERC DEC (96)04 EN 303 035  
ERC REC T/R 02-02

ML Paired with 395-397 MHz

**387 - 390 MHz**

FIXED	MOBILE		
Mobile-Satellite (S/E) 5.208A			
5.254	5.254	EU2	
5.255	5.255	EU10	EU27

Defence systems

Harmonised military band

Digital land mobile PMR/PAMR ERC DEC (96)04 EN 303 035  
ERC REC T/R 02-02

ML paired with 397-399.9 MHz

**390 - 395 MHz**

Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	MOBILE				Harmonised military band
MOBILE					Emergency services sharing with defence applications.
5.254	5.254 EU2 EU10 EU27		Emergency AGA ERC DEC (01)20	EN 300 113 EN 300 390	384.8-385/394.8-395 MHz for AGA emergency
			Emergency DMO ERC DEC (01)19	EN 300 113 EN 300 390	380-380.15/390-390.15 MHz for DMO emergency
			Emergency services ERC DEC (96)01	EN 303 035	FB paired with 380-385 MHz. Emergency services sharing with defence applications.
			ERC REC T/R 02-02		

**395 - 399.9 MHz**

Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	MOBILE				Harmonised military band
MOBILE					
5.254	5.254 EU2 EU10 EU27		Digital land mobile PMR/PAMR ERC DEC (96)04 ERC REC T/R 02-02	EN 303 035	FB paired with 385-389.9 MHz

**399.9 - 400.05 MHz**

Allocation	Utilisation
MOBILE-SATELLITE (E/S) 5.209 5.224A	MOBILE-SATELLITE (E/S) 5.209 5.224A
RADIONAVIGATION-SATELLITE 5.222 5.224B 5.260	RADIONAVIGATION-SATELLITE 5.222 5.224B 5.260
5.220	5.220

**400.05 - 400.15 MHz**

Allocation	Utilisation
STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz)	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz)
5.261	
5.262	

**400.15 - 401 MHz**

METEOROLOGICAL AIDS  
 METEOROLOGICAL-SATELLITE (S/E)  
 MOBILE-SATELLITE (S/E) 5.208A 5.209  
 SPACE RESEARCH (S/E) 5.263  
 Space Operation (S/E)  
 5.262  
 5.264

METEOROLOGICAL AIDS  
 METEOROLOGICAL-SATELLITE (E/S)  
 MOBILE-SATELLITE (S/E) 5.208A 5.209  
 SPACE OPERATION (S/E)  
 SPACE RESEARCH (S/E) 5.263  
 5.264

Low earth orbiting satellites  
 ERC DEC (99)06 EN 301 721  
 Meteorological radio sondes

**401 - 402 MHz**

EARTH EXPLORATION-SATELLITE (E/S)  
 METEOROLOGICAL AIDS  
 METEOROLOGICAL-SATELLITE (E/S)  
 SPACE OPERATION (S/E)  
 Fixed  
 Mobile except Aeronautical Mobile

EARTH EXPLORATION-SATELLITE (E/S)  
 METEOROLOGICAL AIDS  
 METEOROLOGICAL-SATELLITE (E/S)

EU2

Meteorological radio sondes  
 Meteorological satellites, data collection platform

**402 - 403 MHz**

EARTH EXPLORATION-SATELLITE (E/S)  
 METEOROLOGICAL AIDS  
 METEOROLOGICAL-SATELLITE (E/S)  
 Fixed  
 Mobile except Aeronautical Mobile

EARTH EXPLORATION-SATELLITE (E/S)  
 METEOROLOGICAL AIDS  
 METEOROLOGICAL-SATELLITE (E/S)

EU2

Medical implants SRD  
 ERC DEC (01)17 EN 300 220 Medical implants within 402-405 MHz  
 ERC REC 70-03  
 Meteorological radio sondes  
 Meteorological satellites, data collection platform

**403 - 406 MHz**

METEOROLOGICAL AIDS  
 Fixed  
 Mobile except Aeronautical Mobile

METEOROLOGICAL AIDS

EU2

Medical implants SRD  
 ERC DEC (01)17 EN 300 220 Medical implants within 402-405 MHz  
 ERC REC 70-03  
 Meteorological radio sondes

**406 - 406.1 MHz**

MOBILE-SATELLITE (E/S)

5.266  
5.267

MOBILE-SATELLITE (E/S)

5.266  
5.267

EPIRB

EN 300 066

Band only available for distress and safety purposes

**406.1 - 410 MHz**

FIXED  
MOBILE except Aeronautical Mobile  
RADIO ASTRONOMY  
5.149

LAND MOBILE  
RADIO ASTRONOMY

5.149

Analogue and digital land mobile  
PMR/PAMR

ERC REC T/R 25-08

EN 300 086

Single frequency applications

EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

Radio astronomy applications

Continuum measurement and pulsar observation

**410 - 420 MHz**

FIXED  
MOBILE except Aeronautical Mobile  
SPACE RESEARCH (S/S) 5.268

MOBILE except Aeronautical Mobile

Analogue and digital land mobile  
PMR/PAMR

EU7

ERC REC T/R 25-08

EN 300 086

ML paired with 420-430 MHz

EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471

Digital land mobile PMR/PAMR

ERC DEC (96)04  
ERC REC T/R 25-08  
ECC DEC (02)03

EN 303 035

ML paired with 420-430 MHz

**420 - 430 MHz**

FIXED  
MOBILE except Aeronautical Mobile  
Radiolocation  
5.269  
5.271

MOBILE except Aeronautical Mobile  
Radiolocation

-----  
Analogue and digital land mobile PMR/PAMR EU7 ERC REC T/R 25-08 EN 300 086 FB paired with 410-420 MHz  
EN 300 113  
EN 300 219  
EN 300 296  
EN 300 341  
EN 300 390  
EN 300 471  
-----

Digital land mobile PMR/PAMR ERC DEC (96)04 EN 303 035 FB paired with 410-420 MHz  
ERC REC T/R 25-08  
ECC DEC (02)03  
-----

**430 - 433.05 MHz**

AMATEUR  
RADIOLOCATION  
5.271  
5.272  
5.273  
5.274  
5.275  
5.276  
5.277

AMATEUR  
RADIOLOCATION  
5.277 EU2  
EU12

-----  
Amateur applications EN 301 783  
-----

**433.05 - 434.79 MHz**

AMATEUR  
RADIOLOCATION  
5.138  
5.271  
5.272  
5.276  
5.277  
5.280  
5.281

AMATEUR  
RADIOLOCATION  
Land Mobile  
5.138 EU2  
5.277 EU12  
5.280

-----  
Amateur applications EN 301 783  
-----  
ISM  
-----  
Non specific SRD ERC REC 70-03 EN 300 220  
-----

**434.79 - 438 MHz**

AMATEUR  
RADIOLOCATION

5.271  
5.276  
5.277  
5.282

AMATEUR  
AMATEUR-SATELLITE  
RADIOLOCATION

5.277 EU2  
EU12

Amateur applications

EN 301 783

Amateur Satellite Service restricted to 435-438 MHz

Amateur Satellite applications

EN 301 783

**438 - 440 MHz**

AMATEUR  
RADIOLOCATION

5.271  
5.273  
5.274  
5.275  
5.276  
5.277  
5.283

AMATEUR  
RADIOLOCATION

5.277 EU2  
EU12

Amateur applications

EN 301 783

**440 - 450 MHz**

FIXED  
MOBILE except Aeronautical Mobile  
Radiolocation

5.269  
5.271  
5.286

MOBILE except Aeronautical Mobile  
Radiolocation

EU31

Analogue and digital land mobile  
PMR/PAMR

EU7

ERC REC T/R 25-08

EN 300 086

Single frequency operation

EN 300 113

EN 300 219

EN 300 296

EN 300 341

EN 300 390

EN 300 471

Digital Land Mobile DMO

ERC DEC (01)21

Within the band 445.2-445.3 MHz

On-site paging

EN 300 224

Call-out & answer-back

PMR 446

ERC DEC (98)25

EN 300 296

In the band 446-446.1 MHz

**450 - 455 MHz**

FIXED  
MOBILE  
  
5.209  
5.271  
5.286  
5.286A  
5.286B

MOBILE

EU31

Analogue and digital land mobile PMR/PAMR	EU7 EU34	ERC REC T/R 25-08	EN 300 086	ML paired with 460-465 MHz
			EN 300 113	
			EN 300 219	
			EN 300 296	
			EN 300 341	
			EN 300 390	
			EN 300 471	
Digital land mobile PMR/PAMR		ERC DEC (96)04 ERC REC T/R 25-08 ECC DEC (02)03	EN 303 035	ML paired with 460-465 MHz
On-site paging			EN 300 224	Call-out & answer-back

**455 - 456 MHz**

FIXED  
MOBILE  
  
5.209  
5.271  
5.286A  
5.286B

MOBILE

EU31

Analogue and digital land mobile PMR/PAMR	EU7 EU34	ERC REC T/R 25-08	EN 300 086	ML paired with 465-466 MHz
			EN 300 113	
			EN 300 219	
			EN 300 296	
			EN 300 341	
			EN 300 390	
			EN 300 471	
Digital land mobile PMR/PAMR		ERC DEC (96)04 ERC REC T/R 25-08 ECC DEC (02)03	EN 303 035	ML paired with 465-466 MHz
Existing public cellular networks				
On-site paging			EN 300 224	Call-out & answer-back

European Common Allocation

Utilisation

EU footnote

ECC/ERC document

Standard

Note

**456 - 459 MHz**

FIXED	MOBILE		Analogue and digital land mobile	EU7	ERC REC T/R 25-08	EN 300 086	ML paired with 466-469 MHz. ERC REC T/R 22-01 to be withdrawn 2005 after implementation of GSM-R
MOBILE			PMR/PAMR	EU34			
5.271	5.287	EU31			ERC REC T/R 22-01	EN 300 113	
5.287						EN 300 219	
						EN 300 296	
						EN 300 341	
						EN 300 390	
						EN 300 471	
<hr/>							
			Digital land mobile PMR/PAMR		ERC DEC (96)04	EN 303 035	ML paired with 466-469 MHz
					ERC REC T/R 25-08		
					ECC DEC (02)03		
<hr/>							
			Existing public cellular networks	EU7			
<hr/>							
			Maritime on board communications		ERC REC T/R 32-02	EN 300 720	Within the band 457.525-457.575 MHz
<hr/>							
			On-site paging			EN 300 224	Call-out & answer-back
<hr/>							

**459 - 460 MHz**

FIXED	MOBILE		Analogue and digital land mobile	EU7	ERC REC T/R 25-08	EN 300 086	ML paired with 469-470 MHz
MOBILE			PMR/PAMR				
5.209	5.271	EU31				EN 300 113	
5.271						EN 300 219	
5.286A						EN 300 296	
5.286B						EN 300 341	
						EN 300 390	
						EN 300 471	
<hr/>							
			Digital land mobile PMR/PAMR		ERC DEC (96)04	EN 303 035	ML paired with 469-470 MHz
					ERC REC T/R 25-08		
					ECC DEC (02)03		
<hr/>							
			Existing public cellular networks				
<hr/>							
			On-site paging			EN 300 224	Call-out & answer-back
<hr/>							

**460 - 470 MHz**

FIXED	MOBILE	Analogue and digital land mobile	EU7	ERC REC T/R 25-08	EN 300 086	FB paired with 450-460 MHz ERC REC T/R 22-01 to be withdrawn 2005 after implementation of GSM-R
MOBILE		PMR/PAMR	EU34			
Meteorological-Satellite (S/E)				ERC REC T/R 22-01	EN 300 113	
5.287	5.287 EU31				EN 300 219	
5.289	5.289				EN 300 296	
5.290					EN 300 341	
					EN 300 390	
					EN 300 471	
<hr/>						
		Digital land mobile PMR/PAMR		ERC DEC (96)04 ERC REC T/R 25-08 ECC DEC (02)03	EN 303 035	FB paired with 450-460 MHz
<hr/>						
Existing public cellular networks						
<hr/>						
		Maritime on board communications		ERC REC T/R 32-02	EN 300 720	Within the band 467.525-467.575 MHz
<hr/>						
		On-site paging			EN 300 224	Call-out & answer-back
<hr/>						

**470 - 608 MHz**

BROADCASTING	BROADCASTING	Radio microphones		ERC REC 70-03	EN 300 422	On a tuning range basis
	Mobile	SAP/SAB				Mobile applications restricted to SAB/SAP including radio microphones
5.149	5.291A					
5.291A	5.296					
5.296		Stockholm Agreement 1961 complemented by the Chester 1997 Agreement	EU9			The band 470-862 be reviewed for possible future applications after the introduction of DVB-T
5.302						
5.306						

**608 - 614 MHz**

BROADCASTING	BROADCASTING	Radio astronomy applications				Continuum measurements and VLBI
	Mobile	Radio microphones		ERC REC 70-03	EN 300 422	On a tuning range basis
	Radio Astronomy	SAP/SAB				Mobile applications restricted to SAB including radio microphones
5.149	5.149					
5.291A	5.296					
5.296	5.306	Stockholm Agreement 1961 complemented by the Chester 1997 Agreement	EU9			The band 470-862 be reviewed for possible future applications after the introduction of DVB-T
5.306						

**614 - 790 MHz**

Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
BROADCASTING	BROADCASTING		ERC REC 70-03	EN 300 422	On a tuning range basis
	Mobile		SAP/SAB		Mobile applications restricted to SAB including radiomicrophones
5.149	5.296 EU13				
5.291A	5.312	EU9	Stockholm Agreement 1961 complemented by the Chester 1997 Agreement		The band 470-862 be reviewed for possible future applications after the introduction of DVB-T
5.296					
5.311					
5.312					

**790 - 838 MHz**

Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
BROADCASTING	BROADCASTING				Mobile applications restricted to tactical links and SAB/SAP including radio microphones
FIXED	Mobile				
5.312	5.316 EU2		ERC REC 70-03	EN 300 422	On a tuning range basis
5.314	EU13		SAP/SAB		Mobile applications restricted to tactical links and SAB/SAP including radio microphones
5.315					
5.316		EU9	Stockholm Agreement 1961 complemented by the Chester 1997 Agreement		The band 470-862 be reviewed for possible future applications after the introduction of DVB-T
5.319					

**838 - 862 MHz**

Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
BROADCASTING	BROADCASTING				Mobile applications restricted to tactical links and SAB/SAP including radio microphones
FIXED	MOBILE				
5.312	5.316 EU2		ERC REC 70-03	EN 300 422	On a tuning range basis
5.314	EU13		SAP/SAB		Mobile applications restricted to tactical links and SAB/SAP including radio microphones
5.316					
5.319		EU9	Stockholm Agreement 1961 complemented by the Chester 1997 Agreement		The band 470-862 be reviewed for possible future applications after the introduction of DVB-T
5.321					

**862 - 870 MHz**

BROADCASTING 5.322	MOBILE		Cordless Telephones	ECC DEC (01)02	EN 301 797	To be phased out in accordance with ECC Decisions (01)02
FIXED			Defence systems			
MOBILE except aeronautical mobile 5.317A						
5.319	5.323	EU2	Narrow band analogue voice devices	ERC REC 70-03	EN 300 220	864.8-865 MHz
5.323		EU13	Radio microphones	ERC REC 70-03	EN 300 422 EN 301 357	Within the band 863-865 MHz
			Social Alarms	ERC DEC (97)06 ERC REC 70-03	EN 300 220	Within the band 869.2-869.25 MHz
			SRD in 868-870 MHz	ERC REC 70-03	EN 300 220	Strategic Plan for the use of SRD within the band 862-870 MHz adopted
				ERC DEC (01)04		
			Wireless Audio	ERC DEC (01)18 ERC REC 70-03	EN 301 357	Within the band 863-865 MHz

**870 - 876 MHz**

BROADCASTING 5.322	MOBILE		Defence systems			The band 870-876 / 915-921 MHz is identified as a preferred band for Tactical Radio Relays (TRR), in particular for cross-border operations. In countries where this band is or will be in civil use according to ERC / ECC Decisions (e.g. digital PAMR), shared use of the band should be considered on a national basis. Other sub-bands within the tuning range 610-960 MHz may also be used on a national basis according to the national requirements
FIXED						
MOBILE except aeronautical mobile 5.317A						
5.319	5.323	EU2				
5.323		EU13				
			Digital land mobile PMR/PAMR	ERC DEC (96)04 ERC REC T/R 25-08	EN 303 035	ML paired with 915-921 MHz

**876 - 880 MHz**

BROADCASTING 5.322	MOBILE		Defence systems			Sharing on a national basis
FIXED			Digital land mobile			
MOBILE except aeronautical mobile 5.317A						
5.319	5.323	EU2	UIC Railway systems	ERC REC T/R 25-09 ECC DEC (02)05	EN 301 502 EN 301 511	ML paired with 921-925 MHz
5.323		EU13				

**880 - 890 MHz**

BROADCASTING 5.322  
FIXED  
MOBILE except aeronautical mobile 5.317A  
5.319  
5.323

MOBILE  
5.317A EU2  
5.323 EU13  
EU29

Defence systems  
-----  
EGSM EU32 ERC DEC (97)02 EN 301 502 EN 301 511  
-----  
ML paired with 925-935 MHz

**890 - 915 MHz**

BROADCASTING 5.322  
FIXED  
MOBILE except aeronautical mobile 5.317A  
Radiolocation  
5.323

MOBILE  
Radiolocation  
5.317A EU13  
5.323 EU14  
EU29

GSM EU32 ERC DEC (94)01 EN 301 502 EN 301 511  
-----  
ML paired with 935-960 MHz

**915 - 921 MHz**

BROADCASTING 5.322  
FIXED  
MOBILE except aeronautical mobile 5.317A  
Radiolocation  
5.323

MOBILE  
Radiolocation  
5.323 EU2  
EU13  
EU14

Defence systems  
-----  
Digital land mobile PMR/PAMR ERC DEC (96)04 EN 303 035  
ERC REC T/R 25-08  
-----  
The band 870-876 / 915-921 MHz is identified as a preferred band for Tactical Radio Relays (TRR), in particular for cross-border operations. In countries where this band is or will be in civil use according to ERC / ECC Decisions (e.g. digital PAMR), shared use of the band should be considered on a national basis. Other sub-bands within the tuning range 610-960 MHz may also be used on a national basis according to the national requirements  
-----  
FB paired with 870-876 MHz

**921 - 925 MHz**

BROADCASTING 5.322  
FIXED  
MOBILE except aeronautical mobile 5.317A  
Radiolocation  
5.323

MOBILE  
Radiolocation  
5.323 EU2  
EU13  
EU14

Defence systems  
-----  
Digital land mobile  
-----  
UIC Railway systems ERC REC T/R 25-09 EN 301 502  
ECC DEC (02)05 EN 301 511  
-----  
Sharing on a national basis  
-----  
FB paired with 876-880 MHz  
-----  
FB paired with 876-880 MHz

**925 - 935 MHz**

BROADCASTING 5.322  
 FIXED  
 MOBILE except aeronautical mobile 5.317A  
 Radiolocation  
 5.323

MOBILE  
 Radiolocation  
 5.317A EU2  
 5.323 EU13  
 EU14  
 EU29

Defence systems EU30 Sharing on a national basis  
 -----  
 EGSM EU30 ERC DEC (97)02 EN 301 502 FB paired with 880-890 MHz  
 EU32 EN 301 511  
 -----

**935 - 942 MHz**

BROADCASTING 5.322  
 FIXED  
 MOBILE except aeronautical mobile 5.317A  
 Radiolocation  
 5.323

MOBILE  
 Radiolocation  
 5.317A EU13  
 5.323 EU14  
 EU29

GSM EU32 ERC DEC (94)01 EN 301 502 FB paired with 890-897 MHz  
 EN 301 511  
 -----

**942 - 960 MHz**

BROADCASTING 5.322  
 FIXED  
 MOBILE except aeronautical mobile 5.317A  
 5.323

MOBILE  
 5.317A EU13  
 5.323 EU29

GSM EU32 ERC DEC (94)01 EN 301 502 FB paired with 897-915 MHz  
 EN 301 511  
 -----

**960 - 1215 MHz**

AERONAUTICAL RADIONAVIGATION  
 5.328  
 5.328A

AERONAUTICAL RADIONAVIGATION  
 5.328  
 5.328A

Flight Safety, Navigation and Information Distribution systems (DME,TACAN,SSR,MIDS)  
 -----  
 GNSS 1164-1215 MHz  
 -----

**1215 - 1240 MHz**

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 RADIONAVIGATION-SATELLITE (S/E) (S/S) 5.329 5.329A  
 SPACE RESEARCH (active)  
  
 5.331  
 5.332

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 RADIONAVIGATION 5.331  
 RADIONAVIGATION-SATELLITE (S/E) (S/S) 5.329 5.329A  
 SPACE RESEARCH (active)  
 5.332

GNSS  
 -----  
 Radar and Navigation systems and Active Sensors  
 -----

**1240 - 1260 MHz**

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 RADIONAVIGATION-SATELLITE (S/E) (S/S) 5.329 5.329A  
 SPACE RESEARCH (active)  
 Amateur  
  
 5.331  
 5.332

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 RADIONAVIGATION 5.331  
 RADIONAVIGATION-SATELLITE (S/E) (S/S) 5.329 5.329A  
 SPACE RESEARCH (active)  
 Amateur  
 5.332

Amateur applications  
 EN 301 783  
 -----  
 GNSS  
 -----  
 Radar and Navigation systems and Active Sensors  
 -----

**1260 - 1270 MHz**

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 RADIONAVIGATION-SATELLITE (S/E) (S/S) 5.329 5.329A  
 SPACE RESEARCH (active)  
 Amateur  
  
 5.282  
 5.331  
 5.335A

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 RADIONAVIGATION 5.331  
 RADIONAVIGATION-SATELLITE (S/E) (S/S) 5.329 5.329A  
 SPACE RESEARCH (active)  
 Amateur  
 Amateur-Satellite  
 5.282  
 5.335A

Amateur applications  
 EN 301 783  
 -----  
 Amateur Satellite applications  
 EN 301 783  
 -----  
 Radar and Navigation systems and Active Sensors  
 -----

**1270 - 1300 MHz**

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 RADIONAVIGATION-SATELLITE (S/E) (S/S) 5.329 5.329A  
 SPACE RESEARCH (active)  
 Amateur  
  
 5.282  
 5.331  
 5.335A

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 RADIONAVIGATION 5.331  
 RADIONAVIGATION-SATELLITE (S/E) (S/S) 5.329 5.329A  
 SPACE RESEARCH (active)  
 Amateur  
 5.335A

Amateur applications EN 301 783  
 -----  
 Radar and Navigation systems and Active Sensors  
 -----  
 Wind profiler radars Within the band 1270-1295 MHz  
 -----

**1300 - 1350 MHz**

AERONAUTICAL RADIONAVIGATION S5.337  
 RADIOLOCATION  
 RADIONAVIGATION-SATELLITE (E/S)  
 5.149  
 5.337A

AERONAUTICAL RADIONAVIGATION S5.337  
 RADIOLOCATION  
 RADIONAVIGATION-SATELLITE (E/S)  
 5.149  
 5.337A

Radar and Navigation systems  
 -----  
 Radio astronomy applications Spectral line observations 1330-1400 MHz  
 -----

**1350 - 1400 MHz**

FIXED  
 MOBILE  
 RADIOLOCATION  
 5.149  
 5.338  
 5.339

FIXED  
 MOBILE  
 RADIOLOCATION  
 5.149 EU2  
 5.339 EU15

Defence systems EU15A  
 -----  
 Low capacity fixed links ERC REC T/R 13-01 EN 301 751  
 -----  
 Radio astronomy applications Spectral line observations in 1330-1400 MHz  
 -----

**1400 - 1427 MHz**

EARTH EXPLORATION-SATELLITE (passive)  
 RADIO ASTRONOMY  
 SPACE RESEARCH (passive)  
 5.340  
 5.341

EARTH EXPLORATION-SATELLITE (passive)  
 RADIO ASTRONOMY  
 SPACE RESEARCH (passive)  
 5.340 EU15  
 5.341

Passive applications

**1427 - 1429 MHz**

FIXED  
 MOBILE except Aeronautical Mobile  
 SPACE OPERATION (E/S)  
 5.341

FIXED  
 MOBILE except Aeronautical Mobile  
 SPACE OPERATION (E/S)  
 5.341 EU2  
 EU15

Defence systems

EU15A

Low capacity fixed links

ERC REC T/R 13-01 EN 301 751

**1429 - 1452 MHz**

FIXED  
 MOBILE except Aeronautical Mobile  
 5.341  
 5.342

FIXED  
 MOBILE except Aeronautical Mobile  
 5.341 EU2  
 EU15

Defence systems

EU15A

Low capacity fixed links

ERC REC T/R 13-01 EN 301 751

**1452 - 1492 MHz**

BROADCASTING 5.345 5.347  
 BROADCASTING-SATELLITE 5.345 5.347  
 FIXED  
 MOBILE except Aeronautical Mobile  
 5.341  
 5.342

BROADCASTING 5.345  
 BROADCASTING-SATELLITE 5.345  
 Fixed  
 Mobile except Aeronautical Mobile  
 5.341 EU15

S-DAB

1479.5 - 1492 MHz

T-DAB Maastricht 2002 special arrangement

1452-1479.5 MHz

**1492 - 1517 MHz**

FIXED	FIXED
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile
5.341	5.341 EU2
5.342	EU15

Defence systems	EU15A	
-----		
Low capacity fixed links	ERC REC T/R 13-01	EN 301 751
-----		

**1517 - 1525 MHz**

FIXED	FIXED
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile
5.341	5.341 EU2
5.342	EU15

Defence systems	EU15A	
-----		
Unidirectional fixed links		EN 301 751
-----		

**1525 - 1530 MHz**

FIXED	FIXED
MOBILE-SATELLITE (S/E) 5.351A	MOBILE-SATELLITE (S/E) 5.351A
SPACE OPERATION (S/E)	SPACE OPERATION (S/E)
Earth Exploration-Satellite	
Mobile except Aeronautical Mobile 5.349	
5.341	5.341 EU15
5.342	5.351
5.350	5.354
5.351	
5.352A	
5.354	

Mobile satellite applications		EN 301 426
		EN 301 444
		EN 301 681
		EN 301 473
-----		
Unidirectional fixed links		EN 301 751
-----		

**1530 - 1533 MHz**

MOBILE-SATELLITE (S/E) 5.353A 5.351A  
 SPACE OPERATION (S/E)  
 Earth Exploration-Satellite  
 Fixed  
 Mobile except Aeronautical Mobile  
 5.341  
 5.342  
 5.351  
 5.354

MOBILE-SATELLITE (S/E) 5.353A 5.351A  
 SPACE OPERATION (S/E)  
 Earth Exploration-Satellite  
 Fixed  
 Mobile except Aeronautical Mobile  
 5.341 EU15  
 5.351  
 5.354

Mobile satellite applications

EN 301 426  
 EN 301 444  
 EN 301 681  
 EN 301 473

**1533 - 1535 MHz**

MOBILE-SATELLITE (S/E) 5.353A 5.351A  
 SPACE OPERATION (S/E)  
 Earth Exploration-Satellite  
 Fixed  
 Mobile except Aeronautical Mobile  
 5.341  
 5.342  
 5.351  
 5.354

MOBILE-SATELLITE (S/E) 5.353A 5.351A  
 SPACE OPERATION (S/E)  
 Earth Exploration-Satellite  
 Mobile except Aeronautical Mobile  
 5.341 EU15  
 5.351  
 5.354

Mobile satellite applications

EN 301 426  
 EN 301 444  
 EN 301 681  
 EN 301 473

**1535 - 1544 MHz**

MOBILE-SATELLITE (S/E) 5.351A  
 5.341  
 5.351  
 5.353A  
 5.354  
 5.355

MOBILE-SATELLITE (S/E) 5.351A  
 5.341 EU15  
 5.351  
 5.353A  
 5.354

Mobile satellite applications

EN 301 426  
 EN 301 444  
 EN 301 681  
 EN 301 473

**1544 - 1545 MHz**

MOBILE-SATELLITE (S/E) 5.351A  
5.341  
5.354  
5.355  
5.356

MOBILE-SATELLITE (S/E) 5.351A  
5.341 EU15  
5.354  
5.356

Mobile satellite applications

EN 301 426  
EN 301 444  
EN 301 681  
EN 301 473

-----  
Search and rescue satellite  
systems (incl GMDSS)  
-----

**1545 - 1555 MHz**

MOBILE-SATELLITE (S/E) 5.351A  
5.341  
5.351  
5.354  
5.355  
5.357  
5.357A  
5.359

MOBILE-SATELLITE (S/E) 5.351A  
5.341 EU15  
5.351  
5.354  
5.357  
5.357A  
5.359

Mobile satellite applications

EN 301 426  
EN 301 444  
EN 301 681  
EN 301 473

**1555 - 1559 MHz**

MOBILE-SATELLITE (S/E) 5.351A  
5.341  
5.351  
5.354  
5.355  
5.359

MOBILE-SATELLITE (S/E) 5.351A  
5.341 EU15  
5.351  
5.354  
5.359

Mobile satellite applications

EN 301 426  
EN 301 444  
EN 301 681  
EN 301 473

**1559 - 1610 MHz**

AERONAUTICAL RADIONAVIGATION  
RADIONAVIGATION-SATELLITE (S/E)  
(S/S) 5.329A  
5.341  
5.362B  
5.362C  
5.363

AERONAUTICAL RADIONAVIGATION  
RADIONAVIGATION-SATELLITE (S/E)  
(S/S) 5.329A  
5.341 EU15  
5.362B

GNSS  
-----

**1610 - 1610.6 MHz**

AERONAUTICAL RADIONAVIGATION  
MOBILE-SATELLITE (E/S) 5.351A

AERONAUTICAL RADIONAVIGATION  
MOBILE-SATELLITE (E/S) 5.351A

Mobile satellite applications

ERC DEC (97)03

EN 301 441  
EN 301 473

5.341	5.341	EU15
5.355	5.359	
5.359	5.364	
5.363	5.366	
5.364	5.367	
5.366	5.368	
5.367	5.371	
5.368	5.372	
5.371		
5.372		

**1610.6 - 1613.8 MHz**

AERONAUTICAL RADIONAVIGATION  
MOBILE-SATELLITE (E/S) 5.351A

AERONAUTICAL RADIONAVIGATION  
MOBILE-SATELLITE (E/S) 5.351A

Mobile satellite applications

ERC DEC (97)03

EN 301 441  
EN 301 473

RADIO ASTRONOMY

RADIO ASTRONOMY

Radio astronomy applications

Spectral line observations

5.149	5.149	EU15
5.341	5.341	
5.355	5.359	
5.359	5.364	
5.363	5.366	
5.364	5.367	
5.366	5.368	
5.367	5.371	
5.368	5.372	
5.371		
5.372		

**1613.8 - 1626.5 MHz**

AERONAUTICAL RADIONAVIGATION  
MOBILE-SATELLITE (E/S) 5.351A  
Mobile-Satellite (S/E)  
5.341  
5.355  
5.359  
5.363  
5.364  
5.365  
5.366  
5.367  
5.368  
5.371  
5.372

AERONAUTICAL RADIONAVIGATION  
MOBILE-SATELLITE (E/S) 5.351A  
Mobile-Satellite (S/E)  
5.341 EU15  
5.359  
5.364  
5.365  
5.366  
5.367  
5.368  
5.371  
5.372

Mobile satellite applications

ERC DEC (97)03

EN 301 441  
EN 301 473

**1626.5 - 1631.5 MHz**

MOBILE-SATELLITE (E/S) 5.351A  
5.341  
5.351  
5.353A  
5.354  
5.355  
5.359

MOBILE-SATELLITE (E/S) 5.351A  
5.341 EU15  
5.351  
5.353A  
5.354  
5.359

Mobile satellite applications

EN 301 426  
EN 301 444  
EN 301 681  
EN 301 473

**1631.5 - 1636.5 MHz**

MOBILE-SATELLITE (E/S) 5.351A  
5.341  
5.351  
5.353A  
5.354  
5.355  
5.359  
5.374

MOBILE-SATELLITE (E/S) 5.351A  
5.341 EU15  
5.351  
5.353A  
5.354  
5.359  
5.374

Mobile satellite applications

EN 301 426  
EN 301 444  
EN 301 681  
EN 301 473

**1636.5 - 1645.5 MHz**

MOBILE-SATELLITE (E/S) 5.351A  
5.341  
5.351  
5.353A  
5.354  
5.355  
5.359

MOBILE-SATELLITE (E/S) 5.351A  
5.341 EU15  
5.351  
5.353A  
5.354  
5.359

Mobile satellite applications

EN 301 426  
EN 301 444  
EN 301 681  
EN 301 473

**1645.5 - 1646.5 MHz**

MOBILE-SATELLITE (E/S) 5.351A  
5.341  
5.354  
5.375

MOBILE-SATELLITE (E/S) 5.351A  
5.341 EU15  
5.354  
5.375

Search and rescue satellite systems (incl GMDSS)

**1646.5 - 1656.5 MHz**

MOBILE-SATELLITE (E/S) 5.351A  
5.341  
5.351  
5.354  
5.355  
5.357A  
5.359  
5.376

MOBILE-SATELLITE (E/S) 5.351A  
5.341 EU15  
5.351  
5.354  
5.357A  
5.359  
5.376

Mobile satellite applications

EN 301 426  
EN 301 444  
EN 301 681  
EN 301 473

**1656.5 - 1660 MHz**

MOBILE-SATELLITE (E/S) 5.351A  
5.341  
5.351  
5.354  
5.355  
5.359  
5.374

MOBILE-SATELLITE (E/S) 5.351A  
5.341 EU15  
5.351  
5.354  
5.359  
5.374

Mobile satellite applications

EN 301 426  
EN 301 444  
EN 301 681  
EN 301 473

**1660 - 1660.5 MHz**

MOBILE-SATELLITE (E/S) 5.351A  
 RADIO ASTRONOMY  
 5.149  
 5.341  
 5.351  
 5.354  
 5.376A

MOBILE-SATELLITE (E/S) 5.351A  
 RADIO ASTRONOMY  
 5.149 EU15  
 5.341  
 5.351  
 5.354  
 5.376A

Mobile satellite applications  
 EN 301 426  
 EN 301 444  
 EN 301 681  
 EN 301 473

Radio astronomy applications  
 Continuum line and VLBI Measurements

**1660.5 - 1668.4 MHz**

RADIO ASTRONOMY  
 SPACE RESEARCH (passive)  
 Fixed  
 Mobile except Aeronautical Mobile  
 5.149  
 5.341  
 5.379A

RADIO ASTRONOMY  
 SPACE RESEARCH (passive)  
 Fixed  
 Mobile except Aeronautical Mobile  
 5.149 EU2  
 5.341 EU15  
 5.379A

Defence systems EU15A

Radio astronomy applications  
 Continuum line and VLBI measurements

**1668.4 - 1670 MHz**

FIXED  
 METEOROLOGICAL AIDS  
 MOBILE except Aeronautical Mobile  
 RADIO ASTRONOMY  
 5.149  
 5.341

FIXED  
 METEOROLOGICAL AIDS  
 RADIO ASTRONOMY  
 Mobile except Aeronautical Mobile  
 5.149 EU2  
 5.341 EU15

Defence systems EU15A

Meteorological applications  
 Radio astronomy applications

**1670 - 1675 MHz**

FIXED  
 METEOROLOGICAL AIDS  
 METEOROLOGICAL-SATELLITE (S/E)  
 MOBILE 5.380  
 Fixed  
 5.341

METEOROLOGICAL AIDS  
 METEOROLOGICAL-SATELLITE (S/E)  
 MOBILE 5.380  
 Fixed  
 5.341

Meteorological applications  
 TFTS  
 ERC REC T/R 42-01 EN 301 423  
 ECC DEC (02)07

**1675 - 1690 MHz**

FIXED	FIXED
METEOROLOGICAL AIDS	METEOROLOGICAL AIDS
METEOROLOGICAL-SATELLITE (S/E)	METEOROLOGICAL-SATELLITE (S/E)
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile
5.341	5.341 EU2
	EU15

Defence systems EU15A  
-----  
Meteorological applications  
-----

**1690 - 1700 MHz**

METEOROLOGICAL AIDS	METEOROLOGICAL AIDS
METEOROLOGICAL-SATELLITE (S/E)	METEOROLOGICAL-SATELLITE (S/E)
Fixed	Fixed
Mobile except Aeronautical Mobile	Mobile except Aeronautical Mobile
5.289	5.289 EU2
5.341	5.341 EU15
5.382	5.382

Defence systems EU15A  
-----  
Meteorological applications  
-----

**1700 - 1710 MHz**

FIXED	FIXED
METEOROLOGICAL-SATELLITE (S/E)	METEOROLOGICAL-SATELLITE (S/E)
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile
5.289	5.289 EU2
5.341	5.341 EU15

Defence systems EU15A  
-----  
Meteorological applications  
-----

**1710 - 1785 MHz**

FIXED	FIXED
MOBILE 5.384A	MOBILE 5.384A
5.149	5.149 EU15
5.341	5.341 EU29
5.385	5.385
5.387	

GSM1800 EU33 ERC DEC (95)03 EN 301 502  
-----  
ERC REC T/R 22-07 EN 301 511

**1785 - 1800 MHz**

FIXED	FIXED	
MOBILE 5.384A	MOBILE	
5.387		EU2
		EU15

Mobile applications				
Radio microphones		ERC REC 70-03	EN 301 840	Within the band 1785.7-1799.4 MHz

**1800 - 1805 MHz**

FIXED	MOBILE 5.380	
MOBILE S.380 5.384A	Fixed	
		EU15

TFTS		ERC REC T/R 42-01	EN 301 423	
		ECC DEC (02)07		

**1805 - 1880 MHz**

FIXED	FIXED	
MOBILE 5.384A	MOBILE 5.384A	
		EU15
		EU29

GSM1800		EU33	ERC DEC (95)03	EN 301 502
			ERC REC T/R 22-07	EN 301 511

**1880 - 1885 MHz**

FIXED	MOBILE 5.384A	
MOBILE 5.384A	Fixed	
		EU15

DECT		EU33	ERC DEC (94)03	EN 301 406
				EN 301 908

**1885 - 1900 MHz**

FIXED	MOBILE 5.388A	
MOBILE 5.388A	Fixed	
5.388	5.388	EU15

DECT		EU33	ERC DEC (94)03	EN 301 406
				EN 301 908

**1900 - 1930 MHz**

FIXED	FIXED	
MOBILE 5.388A	MOBILE 5.388A	
5.388	5.388	EU15
		EU16

UMTS/IMT-2000			ERC DEC (97)07	EN 301 908	For border coordination see also ERC REC(01)01
			ERC DEC (00)01		For harmonised spectrum scheme see also ERC DEC (99)25
			ERC DEC (99)25		

*European Common Allocation*

*Utilisation*

*EU footnote*

*ECC/ERC document*

*Standard*

*Note*

**1930 - 1970 MHz**

FIXED	FIXED	UMTS/IMT-2000		ERC DEC (97)07		For border coordination see also ERC REC(01)01
MOBILE 5.388A	MOBILE 5.388A			ERC DEC (00)01		For harmonised spectrum scheme see also ERC DEC (99)25
5.388	5.388 EU15					
	EU16					

**1970 - 1980 MHz**

FIXED	FIXED	UMTS/IMT-2000		ERC DEC (97)07		For border coordination see also ERC REC(01)01
MOBILE 5.388A	MOBILE 5.388A			ERC DEC (00)01		For harmonised spectrum scheme see also ERC DEC (99)25
5.388	5.388 EU15					
	EU16					

**1980 - 2010 MHz**

FIXED	FIXED	Mobile satellite applications		ERC DEC (97)03	EN 301 442	
MOBILE	MOBILE			ERC DEC (97)04	EN 301 473	
MOBILE-SATELLITE (E/S) 5.351A	MOBILE-SATELLITE (E/S) 5.351A	UMTS/IMT-2000 satellite component		ERC DEC (97)07		
5.388	5.388 EU15			ERC DEC (00)01		
5.389A	5.389A EU16			ERC DEC (99)25		

**2010 - 2025 MHz**

FIXED	FIXED	UMTS/IMT-2000		ERC DEC (97)07	EN 301 908	For border coordination see also ERC REC(01)01
MOBILE 5.388A	MOBILE 5.388A			ERC DEC (00)01		For harmonised spectrum scheme see also ERC DEC (99)25
5.388	5.388 EU15			ERC DEC (99)25		
	EU16					

**2025 - 2110 MHz**

EARTH EXPLORATION-SATELLITE (E/S) (S/S)	EARTH EXPLORATION-SATELLITE (E/S) (S/S)	Fixed links		ERC REC T/R 13-01	EN 301 751	
FIXED	FIXED	SAP/SAB	EU16A	ERC REC 25-10		On a tuning range basis
MOBILE 5.391	MOBILE 5.391	Space science services				
SPACE OPERATION (E/S) (S/S)	SPACE OPERATION (E/S) (S/S)	Tactical Radio Relay	EU16A			Harmonised military band for Tactical Radio Relay links for near cross border operation within the band 2025-2070 MHz
SPACE RESEARCH (E/S) (S/S)	SPACE RESEARCH (E/S) (S/S)					
5.392	5.392 EU2					
	EU15					
	EU27					

**2110 - 2120 MHz**

FIXED	FIXED	UMTS/IMT-2000		ERC DEC (97)07	EN 301 908	For border coordination see also ERC REC(01)01
MOBILE 5.388A	MOBILE 5.388A			ERC DEC (00)01		For harmonised spectrum scheme see also ERC DEC (99)25
SPACE RESEARCH (deep space) (E/S)	SPACE RESEARCH (deep space) (E/S)			ERC DEC (99)25		
5.388	5.388 EU15					
	EU16					

**2120 - 2170 MHz**

FIXED	FIXED	UMTS/IMT-2000		ERC DEC (97)07	EN 301 908	For border coordination see also ERC REC(01)01
MOBILE 5.388A	MOBILE 5.388A			ERC DEC (00)01		For harmonised spectrum scheme see also ERC DEC (99)25
5.388	5.388 EU15			ERC DEC (99)25		
5.392A	EU16					

**2170 - 2200 MHz**

FIXED	FIXED	Mobile satellite applications		ERC DEC (97)03	EN 301 442	
MOBILE	MOBILE			ERC DEC (97)04	EN 301 473	
MOBILE-SATELLITE (S/E) 5.351A	MOBILE-SATELLITE (S/E) 5.351A	UMTS/IMT-2000 satellite component		ERC DEC (97)07		
5.388	5.388 EU15					
5.389A	5.389A EU16			ERC DEC (00)01		
5.392A						

**2200 - 2290 MHz**

EARTH EXPLORATION-SATELLITE (S/E) (S/S)	EARTH EXPLORATION-SATELLITE (S/E) (S/S)	Fixed links		ERC REC T/R 13-01	EN 301 751	
FIXED	FIXED	Radio astronomy applications				VLBI
MOBILE 5.391	MOBILE 5.391	SAP/SAB	EU16A	ERC REC 25-10		On a tuning range basis
SPACE OPERATION (S/E) (S/S)	SPACE OPERATION (S/E) (S/S)	Space science services				
SPACE RESEARCH (S/E) (S/S)	SPACE RESEARCH (S/E) (S/S)	Tactical Radio Relay	EU16A			Harmonised military band for Tactical Radio Relay links for near cross border operation within the band 2200-2245 MHz.
5.392	5.392 EU15 EU27					

**2290 - 2300 MHz**

FIXED	FIXED	Mobile applications				
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile					
SPACE RESEARCH (deep space) (S/E)	SPACE RESEARCH (deep space) (S/E)					
	EU2					

**2300 - 2400 MHz**

FIXED	FIXED	Aeronautical Telemetry		ERC REC 62-02		Parts of the band are used for aeronautical telemetry on a national basis
MOBILE	MOBILE	Amateur applications			EN 301 783	
Amateur	Amateur	Mobile applications				
Radiolocation	Radiolocation	SAP/SAB		ERC REC 25-10		
5.395	EU2 EU15					

**2400 - 2450 MHz**

European Common Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	FIXED		Amateur applications	EN 301 783	
MOBILE	MOBILE		Amateur Satellite applications	EN 301 783	
Amateur	Amateur		Automatic Vehicle Identification	ERC REC 70-03	2446-2454 MHz
Radiolocation	Amateur-Satellite		ISM		
5.150	5.150 EU2		Motion sensors	ERC DEC (01)08	EN 300 440
5.282	5.282 EU15		Non specific SRD	ERC DEC (01)05 ERC REC 70-03	EN 300 440
			RFID	ERC REC 70-03	EN 300 440
			RLAN	ERC DEC (01)07 ERC REC 70-03	EN 300 328

**2450 - 2483.5 MHz**

FIXED	FIXED		Automatic Vehicle Identification	ERC REC 70-03	EN 300 761	2446-2454 MHz
MOBILE	MOBILE		ISM			
Radiolocation			Motion sensors	ERC DEC (01)08	EN 300 440	
5.150	5.150 EU2		Non specific SRD	ERC DEC (01)05 ERC REC 70-03	EN 300 440	
5.397	EU15		RFID	ERC REC 70-03	EN 300 440	
			RLAN	ERC DEC (01)07 ERC REC 70-03	EN 300 328	

**2483.5 - 2500 MHz**

FIXED	FIXED		Fixed links	ERC REC T/R 13-01	EN 301 751	
MOBILE	MOBILE		ISM			
MOBILE-SATELLITE (S/E) 5.351A	MOBILE-SATELLITE (S/E) 5.351A		Mobile applications			
Radiolocation			Mobile satellite applications	ERC DEC (97)03	EN 301 441	
5.150	5.150 EU15				EN 301 473	
5.371	5.371		SAP/SAB	ERC REC 25-10		
5.397	5.398					
5.398	5.402					
5.399						
5.402						

**2500 - 2520 MHz**

FIXED 5.409 5.410 5.411	MOBILE except aeronautical mobile 5.384A
MOBILE except aeronautical mobile 5.384A	MOBILE-SATELLITE (S/E) 5.403 5.351A
MOBILE-SATELLITE (S/E) 5.403 5.351A	Fixed
5.405	5.414 EU15
5.412	
5.414	

Mobile satellite applications	
UMTS/IMT-2000	ECC DEC (02)06

**2520 - 2655 MHz**

BROADCASTING-SATELLITE 5.413 5.416	FIXED
FIXED 5.409 5.410 5.411	MOBILE except aeronautical mobile 5.384A
MOBILE except aeronautical mobile 5.384A	
5.339	5.339 EU2
5.403	5.418B EU15
5.405	5.418C EU16
5.412	
5.418	
5.418B	
5.418C	

Defence systems		
Fixed links	ERC REC T/R 13-01 EN 301 751	
SAP/SAB	ERC REC 25-10	On a tuning range basis until UMTS/IMT2000 is implemented
Terrestrial UMTS/IMT-2000	ECC DEC (02)06	

**2655 - 2670 MHz**

BROADCASTING-SATELLITE 5.413 5.416	FIXED
FIXED 5.409 5.410 5.411	MOBILE except aeronautical mobile 5.384A
MOBILE except aeronautical mobile 5.384A	Earth Exploration-Satellite (passive)
Earth Exploration-Satellite (passive)	Radio Astronomy
Radio Astronomy	Space Research (passive)
Space Research (passive)	
5.149	5.149 EU2
5.412	EU15
5.420	EU16

Fixed links	ERC REC T/R 13-01 EN 301 751	
Radio astronomy applications	Continuum measurements	
SAP/SAB	ERC REC 25-10	On a tuning range basis until UMTS/IMT2000 is implemented
Terrestrial UMTS/IMT-2000	ECC DEC (02)06	

**2670 - 2690 MHz**

FIXED 5.409 5.410 5.411  
 MOBILE except aeronautical mobile 5.384A  
 MOBILE-SATELLITE (E/S) 5.351A  
 Earth Exploration-Satellite (passive)  
 Radio Astronomy  
 Space Research (passive)  
 5.149  
 5.412  
 5.419  
 5.420

MOBILE except aeronautical mobile 5.384A  
 MOBILE-SATELLITE (E/S) 5.351A  
 Fixed  
 Radio Astronomy  
 5.149 EU15  
 5.419  
 5.420

Mobile satellite applications  
 -----  
 Radio astronomy applications  
 -----  
 UMTS/IMT-2000  
 -----  
 ECC DEC (02)06  
 -----

Continuum measurements

**2690 - 2700 MHz**

EARTH EXPLORATION-SATELLITE (passive)  
 RADIO ASTRONOMY  
 SPACE RESEARCH (passive)  
 5.340  
 5.421  
 5.422

EARTH EXPLORATION-SATELLITE (passive)  
 RADIO ASTRONOMY  
 SPACE RESEARCH (passive)  
 5.340

Passive applications  
 -----

**2700 - 2900 MHz**

AERONAUTICAL RADIONAVIGATION S5.337  
 Radiolocation  
 5.423

AERONAUTICAL RADIONAVIGATION S5.337  
 Radiolocation  
 5.423

Meteorological radars  
 -----  
 Radar and Navigation systems  
 -----

**2900 - 3100 MHz**

RADIONAVIGATION 5.426  
 Radiolocation  
 5.425  
 5.427

RADIOLOCATION  
 RADIONAVIGATION 5.426  
 5.425  
 5.427

Radar and Navigation systems  
 -----

**3100 - 3300 MHz**

RADIOLOCATION  
Earth Exploration-Satellite (active)  
Space Research (active)  
5.149  
5.428

RADIOLOCATION  
Earth Exploration-Satellite (active)  
Space Research (active)  
5.149

Radars and active sensors

**3300 - 3400 MHz**

RADIOLOCATION  
5.149  
5.430

RADIOLOCATION  
5.149

Radars

Upper limit for airborne radars 3410 MHz.

**3400 - 3500 MHz**

FIXED  
FIXED-SATELLITE (S/E)  
Mobile  
Radiolocation  
5.431

FIXED  
FIXED-SATELLITE (S/E)  
MOBILE  
Amateur  
Radiolocation

Amateur applications

EU17

EN 301 783

EU17 within the band 3400-3410 MHz

Fixed links

ERC REC 14-03

EN 301 751

Including point to multipoint

EN 301 753

Fixed wireless access systems

ERC REC 13-04

EN 301 751

ERC REC 14-03

EN 301 753

Radars

Upper limit for airborne radars is 3410 MHz

SAP/SAB

EU17A

For coordinated SAB/SAP applications for occasional use

**3500 - 3600 MHz**

FIXED  
FIXED-SATELLITE (S/E)  
Mobile  
Radiolocation

FIXED  
FIXED-SATELLITE (S/E)  
MOBILE

Fixed links

ERC REC 14-03

EN 301 751

Including point to multipoint

EN 301 753

Fixed wireless access systems

ERC REC 13-04

EN 301 751

ERC REC 14-03

EN 301 753

Mobile applications

EU17A

For coordinated SAB/SAP applications for occasional use

**3600 - 4200 MHz**

FIXED  
FIXED-SATELLITE (S/E)  
Mobile

FIXED  
FIXED-SATELLITE (S/E)

Coordinated earth stations in FSS

EN 301 443

Priority for civil networks

Fixed wireless access systems

ERC REC 14-03

EN 301 751

3600-3800 MHz including point-to-multipoint

EN 301 753

Medium/high capacity fixed links

ERC REC 12-08

EN 301 751

**4200 - 4400 MHz**

AERONAUTICAL RADIONAVIGATION  
S5.338  
5.440

AERONAUTICAL RADIONAVIGATION  
S5.338  
5.440 EU18

Earth Exploration Satellite systems

For sea surface temperature measurements

Radio altimeters

**4400 - 4500 MHz**

FIXED  
MOBILE

FIXED  
MOBILE  
EU2  
EU27

Defence systems

EU20

Harmonised military band for fixed and mobile systems

Mobile applications

For coordinated SAB/SAP applicaitons for occasional use

Transhorizon links

EU20

**4500 - 4800 MHz**

FIXED  
FIXED-SATELLITE (S/E) 5.441  
MOBILE

FIXED  
FIXED-SATELLITE (S/E) 5.441  
MOBILE  
EU27

Coordinated earth stations in FSS

Fixed-Satellite service not to be implemented in NATO Europe.

Fixed-Satellite frequency plan in 4500-4800 MHz

Defence systems

EU20

Harmonised military band for fixed and mobile systems

Mobile applications

For coordinated SAB/SAP applicaitons for occasional use

Transhorizon links

**4800 - 4990 MHz**

FIXED  
MOBILE 5.442  
Radio Astronomy  
5.149  
5.339

FIXED  
MOBILE except Aeronautical Mobile  
Radio Astronomy  
5.149 EU27  
5.339

Defence systems

EU20

Harmonised military band for fixed and mobile systems

Mobile applications

For coordinated SAB/SAP applications for occasional use

Passive applications

Space Research and EES (passive) above 4950 MHz in some countries  
Continuum measurements.

Radio astronomy applications

Continuum measurements and VLBI

**4990 - 5000 MHz**

RR Region 1 Allocation and RR footnotes relevant to CEPT and frequency band	European Common Allocation	Utilisation	EU footnote	ECC/ERC document	Standard	Note
FIXED	FIXED	Defence systems	EU20			Harmonised military band for fixed and mobile systems
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile	Mobile applications				For coordinated SAB/SAP applications for occasional use
RADIO ASTRONOMY	RADIO ASTRONOMY	Radio astronomy applications				Continuum measurements and VLBI
Space Research (passive)						
5.149	5.149 EU27					

**5000 - 5030 MHz**

AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION					Aeronautical Radionavigation and Fixed Satellite Service envisaged in some countries
	Radio Astronomy					
	Space Research (passive)	Radio astronomy applications				VLBI observations
5.367	5.367					
5.443A	5.443A					
5.443B	5.443B					

**5030 - 5150 MHz**

AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	MLS				Aeronautical Radionavigation envisaged in some countries. Fixed Satellite Service in use in some countries
5.367	5.367 EU18					
5.444	5.443B					
5.444A	5.444					
	5.444A					

**5150 - 5250 MHz**

AERONAUTICAL RADIONAVIGATION	FIXED-SATELLITE (E/S) 5.447A	Feederlinks for MSS				Aeronautical Radionavigation and Fixed Satellite Service envisaged in some countries
FIXED-SATELLITE (E/S) 5.447A	MOBILE					
5.446	5.446	HIPERLANs		ERC DEC (99)23	EN 300 836	
5.447	5.447			ERC REC 70-03		
5.447B	5.447B					
5.447C	5.447C					

**5250 - 5255 MHz**

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 SPACE RESEARCH 5.447D  
  
 5.448  
 5.448A

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 SPACE RESEARCH 5.447D  
 Mobile  
 5.448A EU22

Active Sensors  
 -----  
 HIPERLANs ERC DEC (99)23 EN 300 836  
 ERC REC 70-03  
 -----  
 Position fixing  
 -----  
 Shipborne and VTS radar  
 -----  
 Tactical radars  
 -----  
 Weapon system radars  
 -----  
 Weather radars Ground based and airborne  
 -----

**5255 - 5350 MHz**

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 SPACE RESEARCH (active)  
  
 5.448  
 5.448A

EARTH EXPLORATION-SATELLITE (active)  
 RADIOLOCATION  
 SPACE RESEARCH (active)  
 Mobile  
 5.448A EU22

Active Sensors  
 -----  
 HIPERLANs ERC DEC (99)23 EN 300 836  
 ERC REC 70-03  
 -----  
 Position fixing  
 -----  
 Shipborne and VTS radar  
 -----  
 Tactical radars  
 -----  
 Weapon system radars  
 -----  
 Weather radars Ground based and airborne  
 -----

**5350 - 5450 MHz**

AERONAUTICAL RADIONAVIGATION S5.449  
 EARTH EXPLORATION-SATELLITE (active) 5.448B  
 Radiolocation

AERONAUTICAL RADIONAVIGATION S5.449  
 EARTH EXPLORATION-SATELLITE (active) 5.448B  
 Fixed  
 Radiolocation  
 EU22

Active Sensors  
 -----  
 Position fixing  
 -----  
 Shipborne and VTS radar  
 -----  
 Tactical radars  
 -----  
 Weapon system radars  
 -----  
 Weather radars Ground based and airborne  
 -----

**5450 - 5460 MHz**

AERONAUTICAL RADIONAVIGATION S5.449  
EARTH EXPLORATION-SATELLITE (active) 5.448B  
Radiolocation

AERONAUTICAL RADIONAVIGATION S5.449  
EARTH EXPLORATION-SATELLITE (active) 5.448B  
Radiolocation  
EU22

Active Sensors  
-----  
Position fixing  
-----  
Shipborne and VTS radar  
-----  
Tactical radars  
-----  
Weapon system radars  
-----  
Weather radars  
-----  
Ground based and airborne

**5460 - 5470 MHz**

RADIONAVIGATION 5.449  
Radiolocation

RADIONAVIGATION 5.449  
Radiolocation  
EU22

Position fixing  
-----  
Shipborne and VTS radar  
-----  
Tactical radars  
-----  
Weapon system radars  
-----  
Weather radars  
-----  
Ground based and airborne

**5470 - 5650 MHz**

MARITIME RADIONAVIGATION  
Radiolocation

MARITIME RADIONAVIGATION MOBILE  
Radiolocation  
5.452 EU22

HIPERLANs  
-----  
Position fixing  
-----  
Shipborne and VTS radar  
-----  
Tactical radars  
-----  
Weapon system radars  
-----  
Weather radars  
-----  
Ground based and airborne

ERC DEC (99)23 EN 300 836  
ERC REC 70-03

5.450  
5.451  
5.452

European Common Allocation

Utilisation

EU footnote

ECC/ERC document

Standard

Note

**5650 - 5725 MHz**

RADIOLOCATION	MOBILE	Amateur applications	EU17	EN 301 783	Within 5660-5670 MHz
Amateur	RADIOLOCATION	Amateur Satellite applications (E/S)	EU23	EN 301 783	Within 5660-5670 MHz
Space research (deep space)	Amateur	HIPERLANs		ERC DEC (99)23 ERC REC 70-03	
5.282	5.282 EU17				
5.451	EU22				
5.454					
5.455					
		Position fixing			
		Shipborne and VTS radar			
		Tactical radars			
		Weapon system radars			
		Weather radars			Ground based and airborne

**5725 - 5830 MHz**

FIXED-SATELLITE (E/S)	FIXED-SATELLITE (E/S)	Amateur applications		EN 301 783	
RADIOLOCATION	RADIOLOCATION	ISM			Within the band 5725-5875 MHz
Amateur	Amateur	Non civil radiolocation			
	Mobile	Non specific SRD		ERC DEC (01)06 ERC REC 70-03	Within the band 5725-5875 MHz
5.150	5.150 EU22				
5.451					
5.455		Road Transport and Traffic Telematic Systems (RTTT)		ECC DEC (02)01 ERC REC 70-03	Within the band 5795-5805 MHz. RTTT in the band 5805-5815 MHz on a national basis
5.456					
		Weather radars			Ground based and airborne

**5830 - 5850 MHz**

FIXED-SATELLITE (E/S)	FIXED-SATELLITE (E/S)	Amateur Satellite applications (S/E)	EU23		Within the band 5830-5850 MHz
RADIOLOCATION	RADIOLOCATION	ISM			Within the band 5725-5875 MHz
Amateur	Amateur	Non civil radiolocation			
Amateur-Satellite (S/E)	Amateur-Satellite (S/E)	Non specific SRD		ERC DEC (01)06 ERC REC 70-03	Within the band 5725-5875 MHz
5.150	5.150 EU22				
5.451					
5.455		Weather radars			Ground based and airborne
5.456					

**5850 - 5925 MHz**

FIXED  
FIXED-SATELLITE (E/S)  
MOBILE  
5.150

FIXED  
FIXED-SATELLITE (E/S)  
MOBILE  
5.150

Coordinated earth stations in FSS  
ISM  
Non specific SRD  
ERC DEC (01)06  
ERC REC 70-03  
EN 301 443  
EN 300 440  
Priority for civil networks  
Within the band 5725-5875 MHz  
Within the band 5725-5875 MHz

**5925 - 6425 MHz**

FIXED  
FIXED-SATELLITE (E/S)  
MOBILE

FIXED  
FIXED-SATELLITE (E/S)

Coordinated earth stations in FSS  
Medium/high capacity fixed links  
EN 301 443  
ERC REC 14-01  
EN 301 751  
Priority for civil networks

**6425 - 6700 MHz**

FIXED  
FIXED-SATELLITE (E/S)  
MOBILE  
5.149  
5.440  
5.458

FIXED  
FIXED-SATELLITE (E/S)  
Earth Exploration-Satellite (passive)  
5.149  
5.440  
5.458

Coordinated earth stations in FSS  
Earth Exploration Satellite systems  
Medium/high capacity fixed links  
EN 301 443  
ERC REC 14-02  
EN 301 751  
Priority for civil networks  
For sea surface temperature measurements

**6700 - 7075 MHz**

FIXED  
FIXED-SATELLITE (S/E) (E/S) 5.441  
MOBILE  
5.458  
5.458A  
5.458B  
5.458C

FIXED  
FIXED-SATELLITE (E/S) 5.441  
Earth Exploration-Satellite (passive)  
5.458  
5.458A  
5.458B  
5.458C

Earth Exploration Satellite systems  
Feederlinks for MSS  
Fixed Satellite applications  
Medium/high capacity fixed links  
EN 301 443  
ERC REC 14-02  
EN 301 751  
Priority for civil networks  
For sea surface temperature measurements  
Within the band 6925-7075 MHz  
Within the band 6725-7025 MHz

**7075 - 7125 MHz**

FIXED  
MOBILE  
5.458  
5.459

FIXED  
Earth Exploration-Satellite (passive)  
5.458

Earth Exploration Satellite systems  
For sea surface temperature measurements  
-----  
Medium/high capacity fixed links  
ERC REC 14-02 EN 301 751  
-----

**7125 - 7250 MHz**

FIXED  
MOBILE  
  
5.458  
5.459  
5.460

FIXED  
MOBILE  
Earth Exploration-satellite (E/S)  
Space Operation (E/S)  
Space Research (E/S)  
5.458  
5.460

Earth Exploration Satellite systems  
For sea surface temperature measurements  
-----  
Fixed links  
ECC REC 02-06 EN 301 751  
-----

**7250 - 7300 MHz**

FIXED  
FIXED-SATELLITE (S/E)  
MOBILE  
5.461

FIXED  
FIXED-SATELLITE (S/E)  
MOBILE  
5.461 EU2  
EU27

Defence systems  
Harmonised military band for satellite operation  
-----  
Fixed links  
ECC REC 02-06 EN 301 751  
FIXED and MOBILE services not to be implemented in most NATO countries  
-----  
Mobile satellite applications  
Within the band 7250-7375 MHz  
-----

**7300 - 7450 MHz**

FIXED  
FIXED-SATELLITE (S/E)  
MOBILE except Aeronautical Mobile  
5.461

FIXED  
FIXED-SATELLITE (S/E)  
MOBILE except Aeronautical Mobile  
5.461 EU2  
EU27

Defence systems  
Harmonised military band for satellite operation  
-----  
Fixed links  
ECC REC 02-06 EN 301 751  
-----  
Mobile satellite applications  
Within the band 7250-7375 MHz  
-----

**7450 - 7550 MHz**

FIXED  
FIXED-SATELLITE (S/E)  
METEOROLOGICAL-SATELLITE (S/E)  
MOBILE except Aeronautical Mobile  
5.461A

FIXED  
FIXED-SATELLITE (S/E)  
METEOROLOGICAL-SATELLITE (S/E)  
MOBILE except Aeronautical Mobile  
5.461A EU2  
EU27

Defence systems  
Fixed links  
Meteorological Satellite

ECC REC 02-06  
EN 301 751

Harmonised military band for satellite operation  
Limited to geostationary systems

**7550 - 7750 MHz**

FIXED  
FIXED-SATELLITE (S/E)  
MOBILE except Aeronautical Mobile

FIXED  
FIXED-SATELLITE (S/E)  
MOBILE except Aeronautical Mobile  
EU2  
EU27

Defence systems  
Fixed links

ECC REC 02-06  
EN 301 751

Harmonised military band for satellite operation

**7750 - 7850 MHz**

FIXED  
METEOROLOGICAL-SATELLITE (S/E)  
5.461B  
MOBILE except Aeronautical Mobile

FIXED  
METEOROLOGICAL-SATELLITE (S/E)  
5.461B  
MOBILE except Aeronautical Mobile  
EU2

Defence systems  
Fixed links  
Meteorological Satellite

ECC REC 02-06  
EN 301 751

Limited to non-geostationary systems

**7850 - 7900 MHz**

FIXED  
MOBILE except Aeronautical Mobile

FIXED  
MOBILE except Aeronautical Mobile

Defence systems  
Fixed links

ECC REC 02-06  
EN 301 751

**7900 - 8025 MHz**

FIXED  
FIXED-SATELLITE (E/S)  
MOBILE  
5.461

FIXED  
FIXED-SATELLITE (E/S)  
MOBILE  
5.461 EU2  
EU27

Defence systems  
Fixed links  
Mobile satellite applications

ECC REC 02-06  
EN 301 751

FIXED and MOBILE services not to be implemented above 7975 MHz in NATO countries

**8025 - 8175 MHz**

EARTH EXPLORATION-SATELLITE (S/E) FIXED	EARTH EXPLORATION-SATELLITE (S/E) FIXED
FIXED-SATELLITE (E/S)	FIXED-SATELLITE (E/S)
MOBILE 5.463 5.462A	MOBILE 5.463 5.462A EU2 EU27

Defence systems			Harmonised military band for satellite operation
Earth Exploration Satellite systems			
Fixed links	ECC REC 02-06	EN 301 751	
Mobile applications			Within the band 8025-8200 MHz

**8175 - 8215 MHz**

EARTH EXPLORATION-SATELLITE (S/E) FIXED	EARTH EXPLORATION-SATELLITE (S/E) FIXED
FIXED-SATELLITE (E/S)	FIXED-SATELLITE (E/S)
METEOROLOGICAL-SATELLITE (E/S)	METEOROLOGICAL-SATELLITE (E/S)
MOBILE 5.463 5.462A	MOBILE 5.463 5.462A EU2 EU27

Defence systems			Harmonised military band for satellite operation
Earth Exploration Satellite systems			
Fixed links	ECC REC 02-06	EN 301 751	
Mobile applications			Within the band 8025-8200 MHz

**8215 - 8400 MHz**

EARTH EXPLORATION-SATELLITE (S/E) FIXED	EARTH EXPLORATION-SATELLITE (S/E) FIXED
FIXED-SATELLITE (E/S)	FIXED-SATELLITE (E/S)
MOBILE 5.463 5.462A	MOBILE 5.463 5.462A EU2 5.463 EU27

Defence systems			Harmonised military band for satellite operation
Earth Exploration Satellite systems			
Fixed links	ECC REC 02-06	EN 301 751	
Radio astronomy applications			VLBI observations

**8400 - 8500 MHz**

FIXED	FIXED
MOBILE except Aeronautical Mobile	SPACE RESEARCH (S/E) 5.465
SPACE RESEARCH (S/E) 5.465 5.467	Radiolocation

Fixed links	ECC REC 02-06	EN 301 751	
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**8500 - 8550 MHz**

RADIOLOCATION  
5.469

RADIOLOCATION  
5.469 EU2  
EU24

Civil and military aeronautical radionavigation e.g. airfield approach  
-----  
Shipborne, land and airborne surveillance and weapon radars  
-----

**8550 - 8650 MHz**

EARTH EXPLORATION-SATELLITE (active)  
RADIOLOCATION  
SPACE RESEARCH (active)  
5.469  
5.469A

EARTH EXPLORATION-SATELLITE (active)  
RADIOLOCATION  
SPACE RESEARCH (active)  
5.469 EU2  
5.469A EU24

Civil and military aeronautical radionavigation e.g. airfield approach  
-----  
Shipborne, land and airborne surveillance and weapon radars  
-----  
Spaceborne active sensors  
-----

**8650 - 8750 MHz**

RADIOLOCATION  
5.469

RADIOLOCATION  
5.469 EU2  
EU24

Civil and military aeronautical radionavigation e.g. airfield approach  
-----  
Shipborne, land and airborne surveillance and weapon radars  
-----

**8750 - 8850 MHz**

AERONAUTICAL RADIONAVIGATION S5.470  
RADIOLOCATION  
5.471

AERONAUTICAL RADIONAVIGATION S5.470  
RADIOLOCATION  
Space Research  
EU2  
EU24

Civil and military aeronautical radionavigation e.g. airfield approach  
-----  
Shipborne, land and airborne surveillance and weapon radars  
-----

**8850 - 9000 MHz**

MARITIME RADIONAVIGATION 5.472  
RADIOLOCATION  
5.473

MARITIME RADIONAVIGATION 5.472  
RADIOLOCATION  
Space Research  
5.473 EU2  
EU24

Civil and military aeronautical radionavigation e.g. airfield approach  
-----  
Shipborne, land and airborne surveillance and weapon radars  
-----

**9000 - 9200 MHz**

AERONAUTICAL RADIONAVIGATION S5.337  
Radiolocation  
5.471

AERONAUTICAL RADIONAVIGATION S5.337  
Radiolocation  
Space Research  
EU2  
EU24

Civil and military aeronautical radionavigation e.g. airfield approach  
-----  
Shipborne, land and airborne surveillance and weapon radars  
-----

**9200 - 9300 MHz**

MARITIME RADIONAVIGATION 5.472  
RADIOLOCATION  
5.473  
5.474

MARITIME RADIONAVIGATION 5.472  
RADIOLOCATION  
Space Research  
5.473 EU2  
5.474 EU24

Civil and military aeronautical radionavigation e.g. airfield approach  
-----  
Motion sensors  
ERC REC 70-03 EN 300 440  
-----  
Shipborne, land and airborne surveillance and weapon radars  
-----

**9300 - 9500 MHz**

RADIONAVIGATION 5.476  
Radiolocation  
5.427  
5.474  
5.475

RADIONAVIGATION 5.476  
Radiolocation  
Space Research  
5.427 EU2  
5.474 EU24  
5.475

Civil and military aeronautical radionavigation e.g. airfield approach  
-----  
Motion sensors  
ERC REC 70-03 EN 300 440  
-----  
Shipborne, land and airborne surveillance and weapon radars  
-----

**9500 - 9800 MHz**

EARTH EXPLORATION-SATELLITE (active)  
RADIOLOCATION  
RADIONAVIGATION  
SPACE RESEARCH (active)  
5.476A

EARTH EXPLORATION-SATELLITE (active)  
RADIOLOCATION  
SPACE RESEARCH (active)  
5.476A EU2  
EU24

Civil and military aeronautical radionavigation e.g. airfield approach  
-----  
Motion sensors  
ERC REC 70-03 EN 300 440  
-----  
Shipborne, land and airborne surveillance and weapon radars  
-----  
Spaceborne active sensors  
-----

**9800 - 10000 MHz**

RADIOLOCATION

Fixed

5.477

5.478

5.479

RADIOLOCATION

Space Research

5.479 EU2

EU24

Civil and military aeronautical radionavigation e.g. airfield approach

Motion sensors

Shipborne, land and airborne surveillance and weapon radars

ERC REC 70-03

EN 300 440

Within the band 9500-9975 MHz

**10 - 10.15 GHz**

FIXED	FIXED	Amateur applications			EN 301 783	
MOBILE	MOBILE	Non civil radar				
RADIOLOCATION	RADIOLOCATION	SAP/SAB applications	EU17A	ERC REC 25-10		
Amateur	Amateur					
5.479	5.479 EU2					

**10.15 - 10.3 GHz**

FIXED	FIXED	Amateur applications			EN 301 783	
MOBILE	MOBILE	Civil and military radars				Low power radars in certain subbands
RADIOLOCATION	RADIOLOCATION	Fixed links		ERC REC 12-05	EN 301 751	
Amateur	Amateur	Fixed wireless access systems		ERC REC 13-04	EN 301 753	Including point- to- multipoint
	EU2	SAP/SAB applications	EU17A	ERC REC 25-10		

**10.3 - 10.45 GHz**

FIXED	FIXED	Amateur applications			EN 301 783	
MOBILE	RADIOLOCATION	Civil and military radars				Low power radars in certain subbands
RADIOLOCATION	Amateur	SAP/SAB applications	EU17A	ERC REC 25-10		
Amateur	Mobile					
	EU2					
	EU17					

**10.45 - 10.5 GHz**

RADIOLOCATION	FIXED	Amateur applications	EU23		EN 301 783	
Amateur	MOBILE	Amateur Satellite applications	EU23		EN 301 783	
Amateur-Satellite	RADIOLOCATION	Civil and military radars				
	Amateur	Fixed links		ERC REC 12-05	EN 301 751	
5.481	Amateur-Satellite	SAP/SAB applications	EU17A	ERC REC 25-10		
	EU2					
	EU17					

**10.5 - 10.55 GHz**

FIXED	FIXED	Fixed links		ERC REC 12-05	EN 301 751	
MOBILE	MOBILE	Fixed wireless access systems		ERC REC 13-04	EN 301 753	Including point- to- multipoint
Radiolocation	Radiolocation	Motion sensors		ERC REC 70-03	EN 300 440	
		SAP/SAB applications	EU17A	ERC REC 25-10		

**10.55 - 10.6 GHz**

FIXED	FIXED	Fixed links		ERC REC 12-05	EN 301 751	
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile	Fixed wireless access systems		ERC REC 13-04	EN 301 753	Including point- to- multipoint
Radiolocation	Radiolocation	Motion sensors		ERC REC 70-03	EN 300 440	
		SAP/SAB applications	EU17A	ERC REC 25-10		

**10.6 - 10.65 GHz**

EARTH EXPLORATION- SATELLITE (passive)	EARTH EXPLORATION- SATELLITE (passive)	Fixed links		ERC REC 12-05	EN 301 751	
FIXED	FIXED	Fixed wireless access systems		ERC REC 13-04	EN 301 753	Including point- to- multipoint
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile	Passive applications				Continuum measurements and VLBI Surface emissivity and precipitation measurements
RADIO ASTRONOMY	RADIO ASTRONOMY	SAP/SAB applications	EU17A	ERC REC 25-10		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)					
Radiolocation	Radiolocation					
5.149	5.149					
5.482	5.482					

**10.65 - 10.68 GHz**

EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)	Fixed links		ERC REC 12-05	EN 301 751	
FIXED	FIXED	Passive applications				Continuum measurements and VLBI Surface emissivity and precipitation measurements
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile	SAP/SAB applications	EU17A	ERC REC 25-10		
RADIO ASTRONOMY	RADIO ASTRONOMY					
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)					
Radiolocation						
5.149	5.149					
5.482	5.482					

**10.68 - 10.7 GHz**

EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)	Passive applications				Continuum measurements and VLBI Surface emissivity and precipitation
RADIO ASTRONOMY	RADIO ASTRONOMY					
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)					
5.340	5.340					
5.483						

**10.7 - 11.7 GHz**

FIXED	FIXED	Fixed links		ERC DEC (00)08	EN 301 751	Limited to high capacity fixed links
FIXED-SATELLITE (S/E) 5.441 (E/S) 5.484	FIXED-SATELLITE (S/E) 5.441 (E/S) 5.484			ERC REC 12-06		
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile	Fixed Satellite Service applications		ERC DEC (00)08	EN 301 427	Within the band 10.7-10.95/11.2-11.45 GHz in accordance with App 30B SIT/SUT - Eureltrack - VSAT
	Land Mobile-satellite (S/E)				EN 301 428	
					EN 301 430	
					EN 301 459	
					EN 301 360	

**11.7 - 12.5 GHz**

BROADCASTING  
BROADCASTING-SATELLITE  
FIXED  
Mobile except Aeronautical Mobile  
5.487  
5.487A  
5.492

BROADCASTING-SATELLITE  
FIXED  
Mobile except Aeronautical Mobile  
5.487 EU28  
5.487A  
5.492

Satellite Broadcasting

ERC DEC (00)08

In accordance with App S30

**12.5 - 12.75 GHz**

FIXED-SATELLITE (S/E) (E/S)  
5.484A  
5.495  
5.496

FIXED-SATELLITE (S/E) 5.484A  
5.495

Fixed Satellite Service applications

EN 301 427

Priority for civil networks.  
Low density carriers, including VSATs and digital  
SNG are encouraged to use this band  
VSAT - SIT/SUT

EN 301 428

EN 301 430

EN 301 459

EN 301 360

**12.75 - 13.25 GHz**

FIXED  
FIXED-SATELLITE (E/S) 5.441  
Space Research (deep space) (S/E)

FIXED  
FIXED-SATELLITE (E/S) 5.441

Fixed links

ERC REC 12-02

EN 301 751

Fixed Satellite Service applications

EN 301 430

**13.25 - 13.4 GHz**

AERONAUTICAL  
RADIONAVIGATION 5.497  
EARTH EXPLORATION-  
SATELLITE (active)  
SPACE RESEARCH (active)  
5.498A

AERONAUTICAL  
RADIONAVIGATION 5.497  
EARTH EXPLORATION-  
SATELLITE (active)  
SPACE RESEARCH (active)  
5.498A EU26

Doppler Navigation aids

Earth exploration observations

Ship berthing radars

**13.4 - 13.75 GHz**

RR Region 1 Allocation and RR footnote relevant to CEPT and frequency band	European Common Allocation	Utilisation	EU footnote	ECC ERC Document	Standard	Note
EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard Frequency and Time Signal-satellite (E/S) 5.499 5.500 5.501 5.501B	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A  5.501B EU2  EU26	Doppler Navigation aids ----- Military land, airborne and naval radars ----- Motion sensors ----- Ship berthing radars -----		ERC REC 70-03	EN 300 440	Within 13.4-14.0 GHz

**13.75 - 14 GHz**

FIXED-SATELLITE (E/S) 5.484A RADIOLOCATION Space Research Standard Frequency and Time Signal-satellite (E/S) 5.500 5.501 5.502 5.503 5.503A	FIXED-SATELLITE (E/S) 5.484A RADIOLOCATION Space Research  5.502 EU2 5.503 EU26	Fixed Satellite Service applications ----- Military land, airborne and naval radars ----- Motion sensors ----- Navigation radars ----- Passive applications ----- Ship berthing radars -----		ERC REC 70-03	EN 300 440	Within 13.4-14.0 GHz   Future VLBI observations
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**14 - 14.25 GHz**

FIXED-SATELLITE (E/S) 5.484A 5.506 RADIONAVIGATION 5.504 Mobile-Satellite (E/S) except aeronautical mobile-satellite Space Research	FIXED-SATELLITE (E/S) 5.484A Mobile-Satellite (E/S) except aeronautical mobile-satellite Space Research  5.504	Mobile satellite systems ----- VSAT/SNG applications ----- -----		ERC REC 13-03	EN 301 427 EN 301 428 EN 301 430	Priority for civil networks Low density carriers, including VSATs and digital SNG, are encouraged to use this band
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**14.25 - 14.3 GHz**

FIXED-SATELLITE (E/S) 5.484A 5.506 RADIONAVIGATION 5.504 Mobile-Satellite (E/S) except aeronautical mobile-satellite Space Research 5.508	FIXED-SATELLITE (E/S) 5.484A Mobile-Satellite (E/S) except aeronautical mobile-satellite Space Research 5.504 5.508	Mobile satellite systems  VSAT/SNG applications		EN 301 427  EN 301 428 EN 301 430	Priority for civil networks Fixed links to be coordinated with fixed satellite service on a national basis
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**14.3 - 14.4 GHz**

FIXED FIXED-SATELLITE (E/S) 5.484A 5.506 MOBILE except Aeronautical Mobile Mobile-Satellite (E/S) except aeronautical mobile-satellite Radionavigation-Satellite	FIXED-SATELLITE (E/S) 5.484A Mobile-Satellite (E/S) except aeronautical mobile-satellite	Fixed and Mobile Satellite Service applications  VSAT/SNG applications		EN 301 427  EN 301 428 EN 301 430	Priority for vicil networks Fixed links to be coordinated with fixed satellite services on a national basis
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**14.4 - 14.47 GHz**

FIXED FIXED-SATELLITE (E/S) 5.484A 5.506 MOBILE except Aeronautical Mobile Mobile-Satellite (E/S) except aeronautical mobile-satellite Space Research (S/E)	FIXED-SATELLITE (E/S) 5.484A Mobile-Satellite (E/S) except aeronautical mobile-satellite	Fixed and Mobile Satellite Service applications  VSAT/SNG applications		EN 301 427  EN 301 428 EN 301 430	Priority for vicil networks Fixed links to be coordinated with fixed satellite services on a national basis
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**14.47 - 14.5 GHz**

FIXED FIXED-SATELLITE (E/S) 5.484A 5.506 MOBILE except Aeronautical Mobile Mobile-Satellite (E/S) except aeronautical mobile-satellite Radio Astronomy 5.149	FIXED-SATELLITE (E/S) 5.484A Mobile-Satellite (E/S) except aeronautical mobile-satellite Radio Astronomy  5.149	Fixed and Mobile Satellite Service applications  Radio astronomy applications VSAT/SNG applications			EN 301 427   EN 301 428	Priority for vicil networks Fixed links to be coordinated with fixed satellite services on a national basis  Spectral line observations and future VLBI VSAT&SNG
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**14.5 - 14.8 GHz**

FIXED FIXED-SATELLITE (E/S) 5.510 MOBILE Space Research	FIXED MOBILE Radio Astronomy  EU27	Defence systems  Fixed links Radio astronomy applications	EU20  EU20			The band 14.62-15.23 GHz is a harmonised military band for fixed and mobile services  Future VLBI observations compatible with primary use
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**14.8 - 15.35 GHz**

FIXED MOBILE Space Research 5.339	FIXED MOBILE Radio Astronomy 5.339 EU27	Defence systems  Fixed links Radio astronomy applications	EU20  EU20		ERC REC 12-07 EN 301 753	The band 14.62-15.23 GHz is a harmonised military band for fixed and mobile services  Future VLBI observations compatible with primary use
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**15.35 - 15.4 GHz**

EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.511	EARTH EXPLORATION- SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	Passive applications				Continuum measurements and future VLBI
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**15.4 - 15.43 GHz**

AERONAUTICAL  
RADIONAVIGATION  
5.511D

AERONAUTICAL  
RADIONAVIGATION  
5.511D

Doppler radar low power sensing  
Ground movement radars

**15.43 - 15.63 GHz**

AERONAUTICAL  
RADIONAVIGATION  
FIXED-SATELLITE (E/S) 5.511A  
5.511C

AERONAUTICAL  
RADIONAVIGATION  
FIXED-SATELLITE (E/S) 5.511A  
5.511C

Doppler radar low power sensing  
Fixed Satellite Service applications  
Ground movement radars

MSS feeder links

**15.63 - 15.7 GHz**

AERONAUTICAL  
RADIONAVIGATION  
5.511D

AERONAUTICAL  
RADIONAVIGATION  
5.511D

Doppler radar low power sensing  
Ground movement radars

**15.7 - 16.6 GHz**

RADIOLOCATION  
5.512

RADIOLOCATION  
EU27

Defence systems

Harmonised military band for land, airborne and  
naval radars

**16.6 - 17.1 GHz**

RADIOLOCATION  
Space Research (deep space) (E/S)  
5.512

RADIOLOCATION  
Space Research (E/S)  
EU27

Defence systems

Harmonised military band for land, airborne and  
naval radars

**17.1 - 17.2 GHz**

RADIOLOCATION	RADIOLOCATION	Defence systems			Military radar applications
	Mobile	HIPERLANs		ERC REC 70-03	
5.512	EU2			ERC REC T/R 22-06	

**17.2 - 17.3 GHz**

EARTH EXPLORATION-SATELLITE (active)	EARTH EXPLORATION-SATELLITE (active)	Airborne terrain following radars			
RADIOLOCATION	MOBILE	Defence systems			Military radar applications
SPACE RESEARCH (active)	RADIOLOCATION	HIPERLANs		ERC REC 70-03	Mobile application for HIPERLANs which have priority over space services. HIPERLANs cannot claim protection from radiolocation service
5.512	5.513A EU2				
5.513A		Missile systems radars			

**17.3 - 17.7 GHz**

FIXED-SATELLITE (E/S) 5.516	FIXED-SATELLITE (E/S) 5.516	Defence systems			Missile systems radars
Radiolocation	Radiolocation	Feeder link plan			Feeder links for 11.7-12.5 GHz. Appendix S30A of RR
5.514	EU2				

**17.7 - 18.1 GHz**

FIXED	FIXED	Feeder link plan			Appendix S30A
FIXED-SATELLITE (S/E) 5.484A	FIXED-SATELLITE (S/E) 5.484A	Fixed links		ERC DEC (00)07	EN 301 751
(E/S) 5.516	(E/S) 5.516			ERC REC 12-03	
MOBILE		Fixed Satellite Service applications		ERC DEC (00)07	EN 301 360
					To coordinated earth stations Priority for civil networks

**18.1 - 18.3 GHz**

FIXED	FIXED	Feeder link band			
FIXED-SATELLITE (S/E) 5.484A (E/S) 5.520	FIXED-SATELLITE (S/E) 5.484A (E/S) 5.520	Fixed links	ERC REC 12-03	EN 301 751	
MOBILE	METEOROLOGICAL- SATELLITE (S/E)	Fixed Satellite Service applications		EN 301 360	To coordinated earth stations Priority for civil networks
5.519	5.519				
5.521					

**18.3 - 18.4 GHz**

FIXED	FIXED	Feeder link band			
FIXED-SATELLITE (S/E) 5.484A (E/S) 5.520	FIXED-SATELLITE (S/E) 5.484A (E/S) 5.520	Fixed links	ERC REC 12-03	EN 301 751	
MOBILE		Fixed Satellite Service applications		EN 301 360	To coordinated earth stations Priority for civil networks
5.521					

**18.4 - 18.6 GHz**

FIXED	FIXED	Fixed links	ERC DEC (00)07	EN 301 751	
FIXED-SATELLITE (S/E) 5.484A	FIXED-SATELLITE (S/E) 5.484A		ERC REC 12-03		
MOBILE		Fixed Satellite Service applications	ERC DEC (00)07	EN 301 360	To coordinated earth stations Priority for civil networks

**18.6 - 18.8 GHz**

EARTH EXPLORATION- SATELLITE (passive)	EARTH EXPLORATION- SATELLITE (passive)	Fixed links	ERC DEC (00)07	EN 301 751	
FIXED	FIXED		ERC REC 12-03		
FIXED-SATELLITE (S/E) 5.522B	FIXED-SATELLITE (S/E) 5.522B	Fixed Satellite Service applications	ERC DEC (00)07	EN 301 360	To coordinated earth stations Priority for civil networks
MOBILE except Aeronautical Mobile		Passive applications			EESS surface emissivity, snow, sea ice and preception. Earth Exploration Satellite is included.
Space Research (passive)					
5.522A	5.522A				

**18.8 - 19.3 GHz**

FIXED	FIXED	Fixed links	ERC DEC (00)07	EN 301 751	
FIXED-SATELLITE (S/E) 5.523A	FIXED-SATELLITE (S/E) 5.523A		ERC REC 12-03		
MOBILE		Fixed Satellite Service applications	ERC DEC (00)07	EN 301 360	To coordinated earth stations Priority for civil networks

**19.3 - 19.7 GHz**

FIXED	FIXED	Fixed links	ERC DEC (00)07	EN 301 751	
FIXED-SATELLITE (S/E) (E/S) 5.523B 5.523C 5.523D 5.523E	FIXED-SATELLITE (S/E) (E/S) 5.523B 5.523C 5.523D 5.523E		ERC REC 12-03		
MOBILE		Fixed Satellite Service applications	ERC DEC (00)07	EN 301 360	To coordinated earth stations Priority for civil networks

**19.7 - 20.1 GHz**

FIXED-SATELLITE (S/E) 5.484A Mobile-Satellite (S/E)	FIXED-SATELLITE (S/E) 5.484A Mobile-Satellite (S/E) 5.525	Fixed and Mobile Satellite Service applications		EN 301 459	For uncoordinated earth stations SUT
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**20.1 - 20.2 GHz**

FIXED-SATELLITE (S/E) 5.484A MOBILE-SATELLITE (S/E) 5.525 5.526 5.527 5.528	FIXED-SATELLITE (S/E) 5.484A MOBILE-SATELLITE (S/E) 5.525 5.526 5.527 5.528	Fixed and Mobile Satellite Service applications		EN 301 459	For uncoordinated earth stations SUT
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**20.2 - 21.2 GHz**

FIXED-SATELLITE (S/E) MOBILE-SATELLITE (S/E) Standard Frequency and Time Signal-satellite (S/E)	FIXED-SATELLITE (S/E) MOBILE-SATELLITE (S/E)  EU2 EU27	Fixed and Mobile Satellite Service applications			For uncoordinated earth stations Harmonised military band for satellite downlinks
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**21.2 - 21.4 GHz**

EARTH EXPLORATION- SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	EARTH EXPLORATION- SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	Passive applications Unidirectional temporary fixed or mobile links		ERC REC 25-10	Passive systems will be phased out by 2015 Including SAP/SAB
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**21.4 - 22 GHz**

BROADCASTING-SATELLITE FIXED MOBILE 5.530	BROADCASTING-SATELLITE  5.530	Wide band high definition television			Fixed service envisaged in some countries
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**22 - 22.21 GHz**

FIXED MOBILE except Aeronautical Mobile  5.149	FIXED MOBILE except Aeronautical Mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149	Fixed links Passive applications SAP/SAB applications		ERC REC T/R 13-02 EN 301 751  EU17A ERC REC 25-10	Spectral line observations (water line and redshifted water line under 22.5 GHz)
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**22.21 - 22.5 GHz**

EARTH EXPLORATION-SATELLITE (passive)	FIXED	Fixed links		ERC REC T/R 13-02	EN 301 751	
FIXED	MOBILE except Aeronautical	Radio astronomy applications				EESS systems will be phased out by 2015. Spectral line observations (water line and redshifted water line under 22.5 GHz) also VLBI
MOBILE except Aeronautical Mobile	MOBILE					
RADIO ASTRONOMY	RADIO ASTRONOMY	SAP/SAB applications	EU17A	ERC REC 25-10		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)					
Earth Exploration-Satellite (passive)	Earth Exploration-Satellite (passive)					
5.149	5.149					
5.532	5.532					

**22.5 - 22.55 GHz**

FIXED	FIXED	Fixed links		ERC REC T/R 13-02	EN 301 751	
MOBILE	MOBILE	Radio astronomy applications				
	RADIO ASTRONOMY	SAP/SAB applications	EU17A	ERC REC 25-10		
	SPACE RESEARCH (passive)					

**22.55 - 22.6 GHz**

FIXED	FIXED	Fixed links		ERC REC T/R 13-02	EN 301 751	
INTER-SATELLITE	MOBILE	Radio astronomy applications				
MOBILE	RADIO ASTRONOMY	SAP/SAB applications	EU17A	ERC REC 25-10		
	SPACE RESEARCH (passive)					
5.149	5.149					

**22.6 - 23 GHz**

FIXED	FIXED	Radio astronomy applications				Spectral line observations (Methyl Formate and Ammonia lines 22.81-22.86 GHz)
INTER-SATELLITE	MOBILE					
MOBILE	RADIO ASTRONOMY	SAP/SAB applications	EU17A	ERC REC 25-10		
	SPACE RESEARCH (passive)					
5.149	5.149					

<i>European Common Allocation</i>	<i>Utilisation</i>	<i>EU footnote</i>	<i>ECC ERC Document</i>	<i>Standard</i>	<i>Note</i>
<b>23 - 23.55 GHz</b>					
FIXED	FIXED		ERC REC T/R 13-02	EN 301 751	
INTER-SATELLITE	INTER-SATELLITE				Spectral line observations
MOBILE	MOBILE				
5.149	5.149		ERC REC 25-10		
<b>23.55 - 23.6 GHz</b>					
FIXED	FIXED		ERC REC T/R 13-02	EN 301 751	
MOBILE	INTER-SATELLITE				
	MOBILE		ERC REC 25-10		
<b>23.6 - 24 GHz</b>					
EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)	Passive applications			Continuum observations
RADIO ASTRONOMY	RADIO ASTRONOMY				Ammonia line
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)				Water vapour measurements
5.340	5.340				
<b>24 - 24.05 GHz</b>					
AMATEUR	AMATEUR	Amateur applications		EN 301 783	
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite applications		EN 301 783	
5.150	5.150	ISM			Within 24-24.25 GHz
		Non specific SRD	ERC REC 70-03	EN 300 440	
		SAP/SAB applications	ERC REC 25-10		

	European Common Allocation	Utilisation	EU footnote	ECC ERC Document	Standard	Note
<b>24.05 - 24.25 GHz</b>						
RADIOLOCATION Amateur Earth Exploration-Satellite (active)	RADIOLOCATION Amateur Earth Exploration-Satellite (active) Fixed Mobile	Amateur applications ----- Defence systems ----- ISM ----- Motion sensors ----- Non specific SRD ----- Rain radar from satellites ----- SAP/SAB applications -----				
5.150	5.150 EU2			ERC REC 70-03	EN 300 440	
				ERC REC 70-03	EN 300 440	
				ERC REC 25-10		
<b>24.25 - 24.45 GHz</b>						
FIXED	FIXED MOBILE	SAP/SAB applications ----- Unidirectional temporary fixed links -----	EU17A	ERC REC 25-10		
<b>24.45 - 24.5 GHz</b>						
FIXED INTER-SATELLITE	FIXED MOBILE	SAP/SAB applications ----- Unidirectional temporary fixed links -----	EU17A	ERC REC 25-10		
<b>24.5 - 24.65 GHz</b>						
FIXED INTER-SATELLITE	FIXED	Fixed links ----- Fixed wireless access systems -----		ERC REC T/R 13-02 ERC REC 00-05 ERC REC 13-04	EN 301 751 EN 301 753	CRS paired with 25.5-26.5 GHz for FDD systems
<b>24.65 - 24.75 GHz</b>						
FIXED INTER-SATELLITE	FIXED	Fixed links ----- Fixed wireless access systems -----		ERC REC T/R 13-02 ERC REC 00-05 ERC REC 13-04	EN 301 751 EN 301 753	CRS paired with 25.5-26.5 GHz for FDD systems

**24.75 - 25.25 GHz**

FIXED	FIXED	Fixed links		ERC REC T/R 13-02	EN 301 751	
		Fixed wireless access systems		ERC REC 00-05 ERC REC 13-04	EN 301 753	CRS paired with 25.5-26.5 GHz for FDD systems

**25.25 - 25.5 GHz**

FIXED	FIXED	Fixed links		ERC REC T/R 13-02	EN 301 751	
INTER-SATELLITE 5.536	INTER-SATELLITE 5.536	Fixed wireless access systems		ERC REC 00-05 ERC REC 13-04	EN 301 753	CRS paired with 25.5-26.5 GHz for FDD systems
MOBILE	MOBILE					
Standard Frequency and Time Signal-satellite (E/S)						

**25.5 - 26.5 GHz**

EARTH EXPLORATION-SATELLITE (S/E) 5.536A 5.536B	FIXED	Fixed links		ERC REC T/R 13-02	EN 301 751	
FIXED	INTER-SATELLITE 5.536	Fixed wireless access systems		ERC REC 00-05 ERC REC 13-04	EN 301 753	TS paired with 24.5-25.5 GHz for FDD systems
INTER-SATELLITE 5.536	MOBILE					
MOBILE	Earth Exploration-Satellite (S/E) 5.536A 5.536B					
Standard Frequency and Time Signal-satellite (E/S)						

**26.5 - 27 GHz**

EARTH EXPLORATION-SATELLITE (S/E) 5.536A 5.536B	FIXED	Defence systems				Harmonised military band for fixed and mobile systems
FIXED	INTER-SATELLITE 5.536					
INTER-SATELLITE 5.536	MOBILE					
MOBILE	Earth Exploration-Satellite (S/E) 5.536A 5.536B					
Standard Frequency and Time Signal-satellite (E/S)						

EU27

**27 - 27.5 GHz**

FIXED INTER-SATELLITE 5.536 MOBILE	FIXED INTER-SATELLITE 5.536 MOBILE Earth Exploration-Satellite (S/E) EU27	Defence systems				Harmonised military band for fixed and mobile systems
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**27.5 - 28.5 GHz**

FIXED 5.537A FIXED-SATELLITE (E/S) 5.484A 5.539 MOBILE 5.538 5.540	FIXED FIXED-SATELLITE (S/E) (E/S) 5.484A 5.539 5.538 5.540	Feeder link band Fixed links Fixed Satellite Service applications Fixed wireless access systems		ERC DEC (00)09 ERC REC T/R 13-02 ERC DEC (00)09 ERC REC 13-04 ERC REC 01-03	EN 301 751 EN 301 360 EN 301 753	Feeder links to Broadcasting satellites (HDTV) 27.5-29.5 GHz Within the band 28.0525-28.4445 GHz The Earth-to-Space direction for uncoordinated earth stations within the band 27.5-27.8285 GHz The Space-to-Earth direction is limited to beacons for uplink power control 27.5-27.501 GHz CRS paired with 28.5-29.5 GHz for FDD systems
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**28.5 - 29.1 GHz**

FIXED FIXED-SATELLITE (E/S) 5.484A 5.523A 5.539 MOBILE Earth Exploration-Satellite (E/S) 5.541 5.540	FIXED FIXED-SATELLITE (E/S) 5.484A 5.523A 5.539 Earth Exploration-Satellite (E/S) 5.541 5.540	Feeder link band Fixed links Fixed Satellite Service applications Fixed wireless access systems		ERC DEC (00)09 ERC DEC (00)09 ERC REC T/R 13-02 ERC DEC (00)09 ERC REC 13-04 ERC REC 01-03	EN 301 751 EN 301 360 EN 301 753	Priority for civil networks Feeder links to Broadcasting satellites (HDTV) 27.5-29.5 GHz Uncoordinated earth stations within the band 28.4445-28.8365 GHz TS paired with 27.5-28.5 GHz for FDD systems
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**29.1 - 29.5 GHz**

FIXED	FIXED	Feeder link band			Feeder links to Broadcasting satellites (HDTV) 27.5-29.5 GHz
FIXED-SATELLITE (E/S) 5.523C 5.523E 5.535A 5.539 5.541A	FIXED-SATELLITE (E/S) 5.523C 5.523E 5.535A 5.539 5.541A	Fixed links	ERC REC T/R 13-02	EN 301 751	Within the band 29.0605-29.4525 GHz
MOBILE	Earth Exploration-Satellite (E/S) 5.541	Fixed Satellite Service applications	ERC DEC (00)09	EN 301 360	Uncoordinated earth stations within the band 29.4525-29.5 GHz
Earth Exploration-Satellite (E/S) 5.541	5.541	Fixed wireless access systems	ERC REC 13-04 ERC REC 01-03	EN 301 753	TS paired with 27.5-28.5 GHz for FDD systems

**29.5 - 29.9 GHz**

FIXED-SATELLITE (E/S) 5.484A 5.539	FIXED-SATELLITE (E/S) 5.484A 5.539	Fixed and Mobile Satellite Service applications		EN 301 459	For uncoordinated earth stations
Earth Exploration-Satellite (E/S) 5.541	Earth Exploration-Satellite (E/S) 5.541				
Mobile-Satellite (E/S) 5.540	Mobile-Satellite (E/S) 5.540				

**29.9 - 30 GHz**

FIXED-SATELLITE (E/S) 5.484A 5.539	FIXED-SATELLITE (S/E) (E/S) 5.484A 5.539	Fixed Satellite Service applications	ERC DEC (01)03	EN 301 459	Limited to beacons for uplink power control 29.999-30 GHz
MOBILE-SATELLITE (E/S)	MOBILE-SATELLITE (E/S)	Mobile satellite systems			For uncoordinated earth stations
Earth Exploration-Satellite (E/S) 5.541	Earth Exploration-Satellite (E/S) 5.541				
5.525	5.525				
5.526	5.526				
5.527	5.527				
5.538	5.538				
5.540	5.540				
5.543	5.543				

**30 - 31 GHz**

FIXED-SATELLITE (E/S)  
MOBILE-SATELLITE (E/S)  
Standard Frequency and Time  
Signal-satellite (S/E)

FIXED-SATELLITE (S/E) (E/S)  
MOBILE-SATELLITE (E/S)

Fixed and Mobile Satellite Service  
applications

For uncoordinated earth stations  
Harmonised military band for satellite uplinks

EU2  
EU27

**31 - 31.3 GHz**

FIXED  
MOBILE  
Space Research 5.544  
Standard Frequency and Time  
Signal-satellite (S/E)

FIXED  
MOBILE

Fixed links  
Radio astronomy applications

ECC REC 02-02

EN 301 751

Continuum measurements

5.149  
5.545

5.149

**31.3 - 31.5 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.340

EARTH EXPLORATION-  
SATELLITE (passive)  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.340

Passive applications  
Surface temperature and emissivity,  
atmospheric attenuation

Continuum measurements

**31.5 - 31.8 GHz**

EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)	Fixed links			
RADIO ASTRONOMY	RADIO ASTRONOMY	Passive applications			Continuum measurements
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)	Surface temperature and emissivity, atmospheric attenuation			
Fixed	Fixed				
Mobile except Aeronautical Mobile	Mobile except Aeronautical Mobile				
5.149	5.149				
5.546	5.546				

**31.8 - 32 GHz**

FIXED 5.547A	FIXED 5.547A				Space research (deep space) in come countries
RADIONAVIGATION	RADIONAVIGATION	High density fixed links	ERC REC 01-02	EN 301 751	Both Point-to-Point and Point-to-Multipoint
SPACE RESEARCH (deep space) (S/E)	SPACE RESEARCH (S/E)			EN 301 753	
5.547	5.547				
5.548	5.548				

**32 - 32.3 GHz**

FIXED 5.547A	FIXED 5.547A				Space research (deep space) in come countries
INTER-SATELLITE	INTER-SATELLITE	High density fixed links	ERC REC 01-02	EN 301 751	Both Point-to-Point and Point-to-Multipoint
RADIONAVIGATION	RADIONAVIGATION			EN 301 753	
SPACE RESEARCH (deep space) (S/E)	SPACE RESEARCH (S/E)				
5.547	5.547				
5.548	5.548				

**32.3 - 33 GHz**

FIXED 5.547A	FIXED 5.547A	High density fixed links	ERC REC 01-02	EN 301 751	Both Point-to-Point and Point-to-Multipoint
INTER-SATELLITE	INTER-SATELLITE			EN 301 753	
RADIONAVIGATION	RADIONAVIGATION				
5.547	5.547				
5.548	5.548				

**33 - 33.4 GHz**

FIXED 5.547A RADIONAVIGATION 5.547	FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547	High density fixed links		ERC REC 01-02	EN 301 751 EN 301 753	Both Point-to-Point and Point-to-Multipoint
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**33.4 - 34.2 GHz**

RADIOLOCATION 5.549	RADIOLOCATION EU2 EU27	Defence systems Motion sensors Short range radar Surveying and measurement				Harmonised military band for radiolocation systems
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**34.2 - 34.7 GHz**

RADIOLOCATION SPACE RESEARCH (deep space) (E/S) 5.549	RADIOLOCATION SPACE RESEARCH (E/S) EU2 EU27	Defence systems Motion sensors Short range radar Surveying and measurement				Harmonised military band for radiolocation systems
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**34.7 - 35.2 GHz**

RADIOLOCATION Space Research 5.549 5.550	RADIOLOCATION Space Research EU2 EU27	Defence systems Motion sensors Short range radar Surveying and measurement				Harmonised military band for radiolocation systems
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**35.2 - 35.5 GHz**

METEOROLOGICAL AIDS RADIOLOCATION 5.549	METEOROLOGICAL AIDS RADIOLOCATION EU2 EU27	Defence systems ----- Rain radar from satellites -----				Harmonised military band for radiolocation systems
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**35.5 - 36 GHz**

EARTH EXPLORATION- SATELLITE (active) METEOROLOGICAL AIDS RADIOLOCATION SPACE RESEARCH (active) 5.549 5.551A	EARTH EXPLORATION- SATELLITE (active) METEOROLOGICAL AIDS RADIOLOCATION SPACE RESEARCH (active) 5.551A EU2 EU27	Defence systems ----- Rain radar from satellites -----				Harmonised military band for Radiolocaition systems
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**36 - 37 GHz**

EARTH EXPLORATION- SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149	EARTH EXPLORATION- SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) Radio Astronomy 5.149 EU27	Defence systems ----- Passive applications ----- Radio astronomy applications -----				Harmonised military band for fixed and mobile systems. ----- EESS surface emmissivity, snow, sea ice and preception. ----- Hydrogen cyanide and Hydroxil lines 36.43-36.5 GHz
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**37 - 37.5 GHz**

FIXED MOBILE SPACE RESEARCH (S/E) 5.547	FIXED SPACE RESEARCH (S/E) 5.547 EU2	High density fixed links ----- Low and medium capacity fixed links ----- Unplanned, uncoordinated use -----		ERC REC T/R 12-01	EN 301 751	For civil applications ----- For military applications ----- within the sub bands 37-37.142 GHz paired with 38.22-38.402 GHz subject to national decisions
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**37.5 - 38 GHz**

FIXED	FIXED	Fixed Satellite Service applications	ERC DEC (00)02		Uncoordinated Earth stations shall not claim protection from the Fixed Service
FIXED-SATELLITE (S/E)	FIXED-SATELLITE (S/E)				
MOBILE	SPACE RESEARCH (S/E)	High density fixed links	ERC DEC (00)02	EN 301 751	For civil applications
SPACE RESEARCH (S/E)	Earth Exploration-Satellite (S/E)		ERC REC T/R 12-01		
Earth Exploration-Satellite (S/E)		Low capacity fixed links			For military applications
5.547	5.547 EU2				
5.551AA	5.551AA				

**38 - 39.5 GHz**

FIXED	FIXED	Fixed Satellite Service applications	ERC DEC (00)02		Uncoordinated Earth stations shall not claim protection from the Fixed Service
FIXED-SATELLITE (S/E)	FIXED-SATELLITE (S/E)				
MOBILE	Earth Exploration-Satellite (S/E)	High density fixed links	ERC DEC (00)02	EN 301 751	For civil applications
Earth Exploration-Satellite (S/E)			ERC REC T/R 12-01		
5.547	5.547 EU2	Low capacity fixed links			For military applications
5.551AA	5.551AA	Unplanned, uncoordinated use			Within the sub bands 37-37.142 GHz apired with 38.26-38.402 GHz subject to national decisions

**39.5 - 40 GHz**

FIXED	FIXED	Fixed Satellite Service applications	ERC DEC (00)02		Coordinated and uncoordinated earth stations
FIXED-SATELLITE (S/E)	FIXED-SATELLITE (S/E)				
MOBILE	MOBILE				
MOBILE-SATELLITE (S/E)	MOBILE-SATELLITE (S/E)				
Earth Exploration-Satellite (S/E)	Earth Exploration-Satellite (S/E)				
5.547	5.547 EU2				
5.551AA	5.551AA				

**40 - 40.5 GHz**

EARTH EXPLORATION-SATELLITE (E/S)	FIXED	Broadband mobile systems			Possible future band
FIXED	FIXED-SATELLITE (S/E)	Fixed Satellite Service applications	ERC DEC (00)02		Coordinated and uncoordinated earth stations
FIXED-SATELLITE (S/E)	MOBILE				
MOBILE	MOBILE-SATELLITE (S/E)				
MOBILE-SATELLITE (S/E)	SPACE RESEARCH (E/S)				
SPACE RESEARCH (E/S)	Earth Exploration-Satellite (S/E)				
Earth Exploration-Satellite (S/E)					
	EU2				

**40.5 - 41 GHz**

BROADCASTING	BROADCASTING	Fixed Satellite Service applications	ECC DEC (02)04		
BROADCASTING-SATELLITE	BROADCASTING-SATELLITE	Multimedia Wireless Systems MWS	ERC DEC (99)15	EN 301 753	
FIXED	FIXED		ECC REC 01-04		
FIXED-SATELLITE (S/E)					
Mobile					
5.547	5.547				

**41 - 42 GHz**

BROADCASTING	BROADCASTING	Fixed Satellite Service applications	ECC DEC (02)04		
BROADCASTING-SATELLITE	BROADCASTING-SATELLITE	Multimedia Wireless Systems MWS	ERC DEC (99)15	EN 301 751	
FIXED	FIXED		ECC REC 01-04	EN 301 753	
FIXED-SATELLITE (S/E)					
Mobile					
5.547	5.547				
5.551G					

**42 - 42.5 GHz**

BROADCASTING	BROADCASTING	Fixed Satellite Service applications	ECC DEC (02)04		
BROADCASTING-SATELLITE	BROADCASTING-SATELLITE	Multimedia Wireless Systems MWS	ERC DEC (99)15	EN 301 751	
FIXED	FIXED		ECC REC 01-04	EN 301 753	
FIXED-SATELLITE (S/E)					
Mobile					
5.547					
5.551AA					
5.551G					

**42.5 - 43.5 GHz**

FIXED	FIXED	Broadband mobile systems			Possible future band
FIXED-SATELLITE (E/S) 5.552	FIXED-SATELLITE (E/S) 5.552	Fixed Satellite Service applications	ECC DEC (02)04		For fixed applications
MOBILE except Aeronautical	MOBILE except Aeronautical				Priority for civil networks
Mobile	Mobile	Multimedia Wireless Systems MWS	ERC DEC (99)15	EN 301 753	
RADIO ASTRONOMY	RADIO ASTRONOMY		ECC REC 01-04		
5.149	5.149	Radio astronomy applications			Silicon monoxide lines and many other spectral lines in this band
5.547	5.547				

**43.5 - 45.5 GHz**

MOBILE 5.553	MOBILE 5.553				Radionavigation envisaged in some countries
MOBILE-SATELLITE	MOBILE-SATELLITE	Defence systems			Harmonised military band for satellite uplinks and mobile systems
RADIONAVIGATION	Fixed-Satellite				
RADIONAVIGATION-SATELLITE					
5.554	5.554 EU27				

**45.5 - 47 GHz**

MOBILE 5.553	MOBILE 5.553
MOBILE-SATELLITE	MOBILE-SATELLITE
RADIONAVIGATION	RADIONAVIGATION
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE
5.554	5.554

**47 - 47.2 GHz**

AMATEUR	AMATEUR	Amateur applications	EN 301 783
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite applications	EN 301 783

**47.2 - 48.5 GHz**

FIXED	FIXED	Feeder link band	For 40 GHz broadcasting satellites
FIXED-SATELLITE (E/S) 5.552	FIXED-SATELLITE (E/S) 5.552	Fixed Satellite Service applications	For fixed applications Priority for civil networks
MOBILE	MOBILE	HAPS	Within the band 47.2-47.5 and 47.9-48.2 GHz
5.149	Amateur 5.552A	SAP/SAB applications	ERC REC 25-10
5.552A	5.555		
5.555			

**48.5 - 50.2 GHz**

FIXED	FIXED	Feeder link band	For 40 GHz broadcasting satellites 48.5-49.2 GHz
FIXED-SATELLITE (E/S) 5.552	FIXED-SATELLITE (E/S) 5.552	Fixed Satellite Service applications	For fixed applications Priority for civil networks
MOBILE	MOBILE	Low and medium capacity fixed links	ERC REC 12-10 EN 301 751
5.149	RADIO ASTRONOMY 5.149	Radio astronomy applications	Carbon monosulphide line 48.94-49.4 GHz
5.340	5.340	SAP/SAB applications	EU17A ERC REC 25-10
5.552A	5.555		
5.555			

**50.2 - 50.4 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
SPACE RESEARCH (passive)  
5.340  
5.555A

EARTH EXPLORATION-  
SATELLITE (passive)  
SPACE RESEARCH (passive)  
5.340

Passive applications

**50.4 - 51.4 GHz**

FIXED  
FIXED-SATELLITE (E/S)  
MOBILE  
Mobile-Satellite (E/S)

FIXED  
FIXED-SATELLITE (E/S)  
Mobile-Satellite (E/S)  
  
EU2

Future satellite and terrestrial  
systems

Shared civil and non civil allocation

**51.4 - 52.6 GHz**

FIXED  
MOBILE

5.547  
5.556

FIXED  
MOBILE  
RADIO ASTRONOMY  
5.547  
5.556

High density fixed links

ERC REC 12-11

EN 301 751

**52.6 - 54.25 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
SPACE RESEARCH (passive)  
5.340  
5.556

EARTH EXPLORATION-  
SATELLITE (passive)  
SPACE RESEARCH (passive)  
5.340  
5.556

Passive applications

Atmospheric temperature sounding

**54.25 - 55.78 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
INTER-SATELLITE 5.556A  
SPACE RESEARCH (passive)

EARTH EXPLORATION-  
SATELLITE (passive)  
SPACE RESEARCH (passive)

Passive applications

Atmospheric temperature sounding

**55.78 - 56.9 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
FIXED 5.557A  
INTER-SATELLITE 5.556A  
MOBILE 5.558  
SPACE RESEARCH (passive)

EARTH EXPLORATION-  
SATELLITE (passive)  
FIXED 5.557A  
INTER-SATELLITE 5.556A  
SPACE RESEARCH (passive)

High density fixed links

ERC REC T/R 22-03 EN 301 751  
ERC REC 12-12

Passive applications

5.547

5.547 EU21

5.558

**56.9 - 57 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
FIXED  
INTER-SATELLITE 5.558A  
SPACE RESEARCH (passive)  
5.547

EARTH EXPLORATION-  
SATELLITE (passive)  
FIXED  
MOBILE 5.558  
SPACE RESEARCH (passive)  
5.547 EU21  
5.558A

High density fixed links

ERC REC T/R 22-03 EN 301 751  
ERC REC 12-12

Passive applications

Atmospheric temperature sounding

**57 - 58.2 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
FIXED  
INTER-SATELLITE 5.556A  
MOBILE 5.558  
SPACE RESEARCH (passive)  
5.547

EARTH EXPLORATION-  
SATELLITE (passive)  
FIXED  
INTER-SATELLITE 5.556A  
MOBILE 5.558  
SPACE RESEARCH (passive)  
5.547

High density fixed links

ERC REC 12-09  
ERC REC T/R 22-03

EN 301 751

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Passive applications  
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Atmospheric temperature sounding  
-----

**58.2 - 59 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
FIXED  
MOBILE  
SPACE RESEARCH (passive)  
5.547  
5.556

EARTH EXPLORATION-  
SATELLITE (passive)  
FIXED  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.547 EU6  
5.556 EU19

High density fixed links

ERC REC 12-09  
ERC REC T/R 22-03

EN 301 751

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Passive applications  
-----

-----  
Atmospheric temperature sounding  
-----

**59 - 59.3 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
FIXED  
INTER-SATELLITE 5.556A  
MOBILE 5.558  
RADIOLOCATION 5.559  
SPACE RESEARCH (passive)

EARTH EXPLORATION-  
SATELLITE (passive)  
FIXED  
INTER-SATELLITE 5.556A  
MOBILE 5.558  
RADIOLOCATION 5.559  
SPACE RESEARCH (passive)  
EU2  
EU27

Defence systems

Frequency band 59-61 GHz is a harmonised  
military band for fixed, mobile and readiolocation  
systems

-----  
Passive applications  
-----

-----  
Atmospheric temperature sounding  
-----

**59.3 - 62 GHz**

FIXED	FIXED	Cordless local area networks			
INTER-SATELLITE	INTER-SATELLITE	Defence systems			Frequency band 59-61 GHz is a harmonised military band for fixed, mobile and radiolocation systems
MOBILE 5.558	MOBILE 5.558				
RADIOLOCATION 5.559	RADIOLOCATION 5.559				
5.138	EU2	High density fixed links		ERC REC T/R 22-03	
	5.138 EU27	ISM			Within the band 61-61.5 GHz
		Non specific SRD		ERC REC 70-03	Within the band 61-61.5 GHz

**62 - 63 GHz**

FIXED	INTER-SATELLITE	Broadband mobile systems		ERC REC T/R 22-03	For connection to IBCN paired with 65-66 GHz
INTER-SATELLITE	MOBILE 5.558	Short range non civil radiolocation			
MOBILE 5.558	RADIOLOCATION 5.559				
RADIOLOCATION 5.559					
5.138	EU2				

**63 - 64 GHz**

FIXED	INTER-SATELLITE	RTTT		ECC DEC (02)01	Road Transport and Traffic Telematic
INTER-SATELLITE	MOBILE 5.558				Vehicle to road/vehicle to vehicle
MOBILE 5.558	RADIOLOCATION 5.559			ERC REC 70-03	
RADIOLOCATION 5.559		Short range non civil radiolocation			
5.138					

**64 - 65 GHz**

FIXED	FIXED	High density fixed links		ERC REC T/R 22-03	
INTER-SATELLITE	INTER-SATELLITE				
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile				
5.547	5.447				
5.556	5.556				

**65 - 66 GHz**

EARTH EXPLORATION-SATELLITE	EARTH EXPLORATION-SATELLITE	Broadband mobile systems	ERC REC T/R 22-03	For connection to IBCN paired with 62-63 GHz
FIXED	FIXED	High density fixed links	ERC REC T/R 22-03	
INTER-SATELLITE	INTER-SATELLITE			
MOBILE except Aeronautical Mobile	MOBILE except Aeronautical Mobile			
SPACE RESEARCH	SPACE RESEARCH			
5.547	5.547			

**66 - 71 GHz**

INTER-SATELLITE	INTER-SATELLITE	Future civil systems		
MOBILE 5.553 5.558	MOBILE 5.553 5.558			
MOBILE-SATELLITE	MOBILE-SATELLITE			
RADIONAVIGATION	RADIONAVIGATION			
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE			
5.554	5.554			

**71 - 74 GHz**

FIXED	FIXED	Defence systems		Harmonised military band. Pairing with 81-84 GHz is envisaged
FIXED-SATELLITE (S/E)	FIXED-SATELLITE (S/E)			
MOBILE	MOBILE			
MOBILE-SATELLITE (S/E)	MOBILE-SATELLITE (S/E)			
	EU27			

**74 - 75.5 GHz**

BROADCASTING	BROADCASTING	Future civil systems			
BROADCASTING-SATELLITE	BROADCASTING-SATELLITE	Space science services			VLBI within the band 74-84 GHz
FIXED	FIXED				
FIXED-SATELLITE (S/E)	FIXED-SATELLITE (S/E)				
MOBILE	MOBILE				
Space Research (S/E)	Space Research (S/E)				
5.561	5.561				

**75.5 - 76 GHz**

BROADCASTING	BROADCASTING	Amateur applications		EN 301 783	Until 2006
BROADCASTING-SATELLITE	BROADCASTING-SATELLITE	Future civil systems			
FIXED	FIXED	Space science services			VLBI
FIXED-SATELLITE (S/E)	FIXED-SATELLITE (S/E)				
MOBILE	MOBILE				
Space Research (S/E)	Space Research (S/E)				
5.559A	5.559A EU2				
5.561	5.561				

**76 - 77.5 GHz**

RADIO ASTRONOMY	RADIO ASTRONOMY	Amateur applications		EN 301 783	
RADIOLOCATION	RADIOLOCATION	Amateur Satellite applications		EN 301 783	
Amateur	Amateur	Civil radiolocation			
Amateur-Satellite	Amateur-Satellite	Radio astronomy applications			Spectral line and wide band continuum observations
Space Research (S/E)	Space Research (S/E)				
5.149	5.149 EU2	RTTT		ECC DEC (02)01	Road Transport and Traffic Telematic 76-77 GHz Radar
				ERC REC 70-03	

**77.5 - 78 GHz**

AMATEUR AMATEUR-SATELLITE Radio Astronomy Space Research (S/E) 5.149	AMATEUR AMATEUR-SATELLITE Radio Astronomy Space Research (S/E) 5.149	Radio astronomy applications				Spectral line and wide band continuum observations
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**78 - 79 GHz**

RADIOLOCATION Amateur Amateur-Satellite Radio Astronomy Space Research (S/E) 5.149 5.560	RADIOLOCATION Amateur Amateur-Satellite Radio Astronomy Space Research (S/E) 5.149 5.560	Civil and military radiolocation Radio astronomy applications				Spectral line and wide band continuum observations
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**79 - 81 GHz**

RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-Satellite Space Research (S/E) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-Satellite Space Research (S/E) 5.149 EU2	Civil and military radiolocation Radio astronomy applications				Spectral line and wide band continuum observations
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**81 - 84 GHz**

FIXED	FIXED	Defence systems			Harmonised military band. Paring with 71-74 GHz is envisaged
FIXED-SATELLITE (E/S)	FIXED-SATELLITE (E/S)				
MOBILE	MOBILE	Radio astronomy applications			Spectral line and wide band continuum observations
MOBILE-SATELLITE (E/S)	MOBILE-SATELLITE (E/S)				
RADIO ASTRONOMY	RADIO ASTRONOMY				
Space Research (S/E)	Space Research (S/E)				
5.149	5.149 EU27				
5.560A	5.560A				

**84 - 86 GHz**

FIXED	FIXED	Future civil fixed and mobile systems			
FIXED-SATELLITE (E/S) 5.561A	FIXED-SATELLITE (E/S) 5.561A				
MOBILE	MOBILE	Radio astronomy applications			Spectral line and wide band continuum observations
RADIO ASTRONOMY	RADIO ASTRONOMY				
5.149	5.149				

**86 - 92 GHz**

EARTH EXPLORATION- SATELLITE (passive)	EARTH EXPLORATION- SATELLITE (passive)	Passive applications			Continuum and spectral line measurements
RADIO ASTRONOMY	RADIO ASTRONOMY				
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)				
5.340	5.340				

**92 - 94 GHz**

FIXED	FIXED	Radio astronomy applications			Diazenylium line and numerous other rspectral lines including wide band continuum observations
MOBILE	MOBILE				
RADIO ASTRONOMY	RADIO ASTRONOMY	Short range radar			
RADIOLOCATION	RADIOLOCATION				
5.149	5.149 EU2				

**94 - 94.1 GHz**

EARTH EXPLORATION-  
SATELLITE (active)  
RADIOLOCATION  
SPACE RESEARCH (active)  
Radio Astronomy  
5.562  
5.562A

EARTH EXPLORATION-  
SATELLITE (active)  
RADIOLOCATION  
SPACE RESEARCH (active)  
Radio Astronomy  
5.562 EU2  
5.562A

Cloud profiler radar  
-----  
Short range radar  
-----

**94.1 - 95 GHz**

FIXED  
MOBILE  
RADIO ASTRONOMY  
RADIOLOCATION  
5.149

FIXED  
MOBILE  
RADIO ASTRONOMY  
RADIOLOCATION  
5.149 EU2

Radio astronomy applications  
-----  
Short range radar  
-----

Spectral line and wide band continuum  
observations

**95 - 100 GHz**

FIXED  
MOBILE  
RADIO ASTRONOMY  
RADIOLOCATION  
RADIONAVIGATION  
RADIONAVIGATION-  
SATELLITE  
5.149  
5.554

FIXED  
MOBILE  
RADIO ASTRONOMY  
RADIOLOCATION  
RADIONAVIGATION  
RADIONAVIGATION-  
SATELLITE  
5.149 EU2  
5.554

Radio astronomy applications  
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Multiple line observations including wide band  
continuum observations.

**100 - 102 GHz**

EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)	Earth Exploration Satellite systems	Limb sounding of atmospheric constituents
RADIO ASTRONOMY	RADIO ASTRONOMY	Radio astronomy applications	Spectral line and wide band continuum observations
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340	5.340		
5.341	5.341		

**102 - 105 GHz**

FIXED	FIXED	Radio astronomy applications	Spectral line and wide band continuum observations
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
5.149	5.149		
5.341	5.341		

**105 - 109.5 GHz**

FIXED	FIXED		
MOBILE	MOBILE		
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.562B	5.562B		
5.149	5.149		
5.341	5.341		

**109.5 - 111.8 GHz**

EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)	Radio astronomy applications	Observations of CO lines at 109.8 and 110.2 GHz and for continuum observations
RADIO ASTRONOMY	RADIO ASTRONOMY		
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)		
5.340	5.340		
5.341	5.341		

**111.8 - 114.25 GHz**

FIXED	FIXED
MOBILE	MOBILE
RADIO ASTRONOMY	RADIO ASTRONOMY
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)
5.562B	5.562B
5.149	5.149
5.341	5.341

**114.25 - 116 GHz**

EARTH EXPLORATION- SATELLITE (passive)	EARTH EXPLORATION- SATELLITE (passive)
RADIO ASTRONOMY	RADIO ASTRONOMY
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)
5.340	5.340
5.341	5.341

Radio astronomy applications

Observations of the 115.3 GHz CO line

**116 - 119.98 GHz**

EARTH EXPLORATION- SATELLITE (passive)	EARTH EXPLORATION- SATELLITE (passive)
INTER-SATELLITE 5.562C	INTER-SATELLITE 5.562C
SPACE RESEARCH (passive)	
5.341	5.341

Passive applications

Passive sensing as part of the oxygen absorption band with peak at 118.75 GHz

**119.98 - 120.02 GHz**

EARTH EXPLORATION- SATELLITE (passive)	EARTH EXPLORATION- SATELLITE (passive)
INTER-SATELLITE 5.562C	INTER-SATELLITE 5.562C
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)
5.341	5.341

Passive applications

Passive sensing as part of the oxygen absorption band with peak at 118.75 GHz

**120.02 - 122.25 GHz**

EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)	Passive applications			Passive sensing as part of the oxygen absorption band with peak at 118.75 GHz
INTER-SATELLITE 5.562C	INTER-SATELLITE 5.562C				
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)				
5.138	5.138				

**122.25 - 123 GHz**

FIXED	FIXED	Amateur applications		EN 301 783	
INTER-SATELLITE	INTER-SATELLITE	Amateur Satellite applications		EN 301 783	
MOBILE 5.558	MOBILE 5.558	Non specific SRD	ERC REC 70-03		
Amateur	Amateur				
5.138	5.138				

**123 - 126 GHz**

FIXED-SATELLITE (S/E)	FIXED-SATELLITE (S/E)
MOBILE-SATELLITE (S/E)	MOBILE-SATELLITE (S/E)
RADIONAVIGATION	RADIONAVIGATION
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE
Radio Astronomy	Radio Astronomy
5.554	5.554

**126 - 130 GHz**

FIXED-SATELLITE (S/E)	FIXED-SATELLITE (S/E)
MOBILE-SATELLITE (S/E)	MOBILE-SATELLITE (S/E)
Radio Astronomy 5.562D	RADIONAVIGATION
RADIONAVIGATION	RADIONAVIGATION-SATELLITE
RADIONAVIGATION-SATELLITE	Radio Astronomy
5.149	5.149
	5.554

**130 - 134 GHz**

EARTH EXPLORATION-  
SATELLITE (active) 5.562E  
FIXED  
INTER-SATELLITE  
MOBILE 5.558  
RADIO ASTRONOMY  
5.149  
5.562A

EARTH EXPLORATION-  
SATELLITE (active) 5.562E  
FIXED  
INTER-SATELLITE  
MOBILE 5.558  
RADIO ASTRONOMY  
5.149  
5.562A

Radio astronomy applications

Spectral line and wide band continuum  
observations

**134 - 136 GHz**

AMATEUR  
AMATEUR-SATELLITE  
Radio Astronomy

AMATEUR  
AMATEUR-SATELLITE  
Radio Astronomy

Amateur applications

EN 301 783

Amateur Satellite applications

EN 301 783

**136 - 141 GHz**

RADIO ASTRONOMY  
RADIOLOCATION  
Amateur  
Amateur-Satellite  
5.149

RADIO ASTRONOMY  
RADIOLOCATION  
Amateur  
Amateur-Satellite  
5.149

Amateur applications

EN 301 783

Amateur Satellite applications

EN 301 783

Radio astronomy applications

Spectral line and wide band continuum  
observations

**141 - 148.5 GHz**

FIXED  
MOBILE  
RADIO ASTRONOMY  
RADIOLOCATION  
5.149

FIXED  
MOBILE  
RADIO ASTRONOMY  
RADIOLOCATION  
5.149

Radio astronomy applications

Spectral line and wide band continuum  
observations

**148.5 - 151.5 GHz**

EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)	Passive applications			Harmonised reference window for passive sensor observations
RADIO ASTRONOMY	RADIO ASTRONOMY				
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)				
5.340	5.340				

**151.5 - 155.5 GHz**

FIXED	FIXED	Radio astronomy applications			Spectral line and wide band continuum observations
MOBILE	MOBILE				
RADIO ASTRONOMY	RADIO ASTRONOMY				
RADIOLOCATION	RADIOLOCATION				
5.149	5.149				

**155.5 - 158.5 GHz**

EARTH EXPLORATION-SATELLITE (passive) 5.562F	EARTH EXPLORATION-SATELLITE (passive)	Earth Exploration Satellite systems			Protection until 1.1.2018.
FIXED	FIXED	Radio astronomy applications			Spectral line and wide band continuum observations
MOBILE	MOBILE				
RADIO ASTRONOMY	RADIO ASTRONOMY				
SPACE RESEARCH (passive) 5.562B	SPACE RESEARCH (passive) 5.562B				
5.149	5.149				
5.562G	5.562G				

**158.5 - 164 GHz**

FIXED	FIXED				
FIXED-SATELLITE (S/E)	FIXED-SATELLITE (S/E)				
MOBILE	MOBILE				
MOBILE-SATELLITE (S/E)	MOBILE-SATELLITE (S/E)				

**164 - 167 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.340

EARTH EXPLORATION-  
SATELLITE (passive)  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.340

Passive applications

Harmonised reference window for passive sensor observations of the 183.31 GHz water vapor line. Microwave limb sounding of the 164.38 GHz CO line

**167 - 168 GHz**

FIXED  
FIXED-SATELLITE (S/E)  
INTER-SATELLITE  
MOBILE 5.558

FIXED  
FIXED-SATELLITE (S/E)  
INTER-SATELLITE  
MOBILE 5.558

**168 - 170 GHz**

FIXED  
FIXED-SATELLITE (S/E)  
INTER-SATELLITE  
MOBILE 5.558  
5.149

FIXED  
FIXED-SATELLITE (S/E)  
INTER-SATELLITE  
MOBILE 5.558  
5.149

**170 - 174.5 GHz**

FIXED  
FIXED-SATELLITE (S/E)  
INTER-SATELLITE  
MOBILE 5.558  
5.149

FIXED  
FIXED-SATELLITE (S/E)  
INTER-SATELLITE  
MOBILE 5.558  
5.149

**174.5 - 174.8 GHz**

FIXED INTER-SATELLITE MOBILE 5.558	FIXED INTER-SATELLITE MOBILE 5.558	Passive applications				Passive sensing of the water vapour absorption line whose peak is at 183.31 GHz
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**174.8 - 182 GHz**

EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	Passive applications				Passive sensing of the water vapour absorption line whose peak is at 183.31 GHz
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**182 - 185 GHz**

EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563	Passive applications				Passive sensing of the water vapour absorption line whose peak is at 183.31 GHz
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**185 - 190 GHz**

EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	Passive applications				Passive sensing of the water vapour absorption line whose peak is at 183.31 GHz
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**190 - 191.8 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
SPACE RESEARCH (passive)  
5.340

EARTH EXPLORATION-  
SATELLITE (passive)  
SPACE RESEARCH (passive)  
5.340

Passive applications

Passive sensing of the water vapour absorption  
line whose peak is at 183.31 GHz

**191.8 - 200 GHz**

FIXED  
INTER-SATELLITE  
MOBILE 5.558  
MOBILE-SATELLITE  
RADIONAVIGATION  
RADIONAVIGATION-  
SATELLITE  
5.149  
5.341  
5.554

FIXED  
INTER-SATELLITE  
MOBILE 5.558  
MOBILE-SATELLITE  
RADIONAVIGATION  
RADIONAVIGATION-  
SATELLITE  
5.149  
5.341  
5.554

**200 - 202 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.340  
5.341  
5.563A

EARTH EXPLORATION-  
SATELLITE (passive)  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.340  
5.341  
5.563A

Earth exploration observations

Atmospheric chemistry (limb sounding) and  
atmospheric remote sensing of nitrous oxide at 201  
GHz.

Radio astronomy applications

Spectral line and wide band continuum  
observations

**202 - 209 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.340  
5.341  
5.563A

EARTH EXPLORATION-  
SATELLITE (passive)  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.340  
5.341  
5.563A

Earth exploration observations

Atmospheric chemistry (limb sounding) and  
atmospheric remote sensing of water vapor at  
203.4 GHz and ozone at 208.5 GHz.

**209 - 217 GHz**

FIXED  
FIXED-SATELLITE (E/S)  
MOBILE  
RADIO ASTRONOMY  
5.149  
5.341

FIXED  
FIXED-SATELLITE (E/S)  
MOBILE  
RADIO ASTRONOMY  
5.149  
5.341

Radio astronomy applications

Spectral line and wide band continuum  
observations

**217 - 226 GHz**

FIXED  
FIXED-SATELLITE (E/S)  
MOBILE  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.562B  
5.149  
5.341

FIXED  
FIXED-SATELLITE (E/S)  
MOBILE  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.562B  
5.149  
5.341

**226 - 231.5 GHz**

EARTH EXPLORATION-  
SATELLITE (passive)  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.340

EARTH EXPLORATION-  
SATELLITE (passive)  
RADIO ASTRONOMY  
SPACE RESEARCH (passive)  
5.340

Passive applications

Passive sensors for limb sounding of atmospheric  
constituents.  
Reference window for higher frequency water  
vapor measurements

Radio astronomy applications

Observations of the 230.5 GHz CO line

**231.5 - 232 GHz**

FIXED	FIXED
MOBILE	MOBILE
Radiolocation	Radiolocation

**232 - 235 GHz**

FIXED	FIXED
FIXED-SATELLITE (S/E)	FIXED-SATELLITE (S/E)
MOBILE	MOBILE
Radiolocation	Radiolocation

**235 - 238 GHz**

EARTH EXPLORATION- SATELLITE (passive)	Passive applications	Passive sensing limited to microwave sounding .
FIXED-SATELLITE (S/E)	Radio astronomy applications	Spectral line and wide band continuum observations
SPACE RESEARCH (passive)		
5.563A		
5.563B		

**238 - 240 GHz**

FIXED	FIXED
FIXED-SATELLITE (S/E)	FIXED-SATELLITE (S/E)
MOBILE	MOBILE
RADIOLOCATION	RADIOLOCATION
RADIONAVIGATION	RADIONAVIGATION
RADIONAVIGATION- SATELLITE	RADIONAVIGATION- SATELLITE

**240 - 241 GHz**

FIXED	FIXED
MOBILE	MOBILE
RADIOLOCATION	RADIOLOCATION

**241 - 248 GHz**

RADIO ASTRONOMY	RADIO ASTRONOMY	Amateur applications	EN 301 783	
RADIOLOCATION	RADIOLOCATION	Amateur Satellite applications	EN 301 783	
Amateur	Amateur	Non specific SRD	ERC REC 70-03	
Amateur-Satellite	Amateur-Satellite	Radio astronomy applications		Spectral line and wide band continuum observations
5.138	5.138			
5.149	5.149			

**248 - 250 GHz**

AMATEUR	AMATEUR	Amateur applications	EN 301 783	
AMATEUR-SATELLITE	AMATEUR-SATELLITE	Amateur Satellite applications	EN 301 783	
Radio Astronomy	Radio Astronomy			
5.149	5.149			

**250 - 252 GHz**

EARTH EXPLORATION-SATELLITE (passive)	EARTH EXPLORATION-SATELLITE (passive)	Earth exploration observations		Limb sounding of nitrous oxide near 251 GHz
RADIO ASTRONOMY	RADIO ASTRONOMY			
SPACE RESEARCH (passive)	SPACE RESEARCH (passive)			
5.340	5.340			
5.563A	5.563A			

**252 - 265 GHz**

<i>RR Region 1 Allocation and RR footnote relevant to CEPT and frequency band</i>	<i>European Common Allocation</i>	<i>Utilisation</i>	<i>EU footnote</i>	<i>ECC ERC Document</i>	<i>Standard</i>	<i>Note</i>
FIXED	FIXED	Radio astronomy applications				Spectral line and wide band continuum observations
MOBILE	MOBILE					
MOBILE-SATELLITE (E/S)	MOBILE-SATELLITE (E/S)					
RADIO ASTRONOMY	RADIO ASTRONOMY					
RADIONAVIGATION	RADIONAVIGATION					
RADIONAVIGATION-SATELLITE	RADIONAVIGATION-SATELLITE					
5.149	5.149					
5.554	5.554					

**265 - 275 GHz**

FIXED	FIXED
FIXED-SATELLITE (E/S)	FIXED-SATELLITE (E/S)
MOBILE	MOBILE
RADIO ASTRONOMY	RADIO ASTRONOMY
5.149	5.149
5.563A	5.563A

*EU-footnotes included in the European Common Allocation Table*

<i>EU-foot-number</i>	<i>EU-footnote text</i>
EU1	Within the frequency band 20-108 MHz the common military tuning range is 30-87.5 MHz, however, some equipment types use the lower (20 MHz) and upper (108 MHz) limits, regulated on a national basis. The harmonised military bands are:- 30.30-30.50 MHz; 32.15-32.45 MHz; 41.00-47.00 MHz; 73.30-74.10 MHz; 79.0-79.70 MHz. When providing for additional requirements, further blocks of frequencies should be spread out over the whole common military tuning range in order to supply frequencies for frequency hopping equipment and to support a larger force (corps size, three divisions). This should be done by the national frequency management organisation(s) concerned.
EU2	Civil-military sharing
EU3	CEPT administrations are urged to take all practical steps to clear the band 47-68 MHz of assignments to the broadcasting service. The broadcasting assignments according to Stockholm Agreement 1961 shall be protected.
EU4	CEPT administrations are urged to take all practical steps to clear the band 68 - 73 MHz of assignments to the broadcasting service. The broadcasting assignments according to the Final Acts of the Special Regional Conference, Geneva, 1961 shall be protected.
EU5	In parts of this band aeronautical stations and aircraft stations may utilise 8.33 kHz channel spacing for non secure communications requirements
EU6	The mobile-satellite service is limited to low earth orbiting satellites
EU7	This band can also be used by low capacity fixed links in rural areas on a national basis. These links need to be coordinated with mobile service and require full protection.
EU8	Any use of low capacity fixed links shall be avoided in areas where such use might cause harmful interference to the maritime mobile VHF radiocommunication service
EU9	This band is included in the Regional Radio Conference planned for 2004/2006 for the revision of the European Broadcasting Agreement, Stockholm 1961
EU10	The mobile service in the harmonised military band 225 - 400 MHz generally comprises land, air maritime and satellite mobile applications
EU12	The applicable RR S5 footnotes remain in force. Administrations are however urged to aim for the fullest possible harmonisation with the ITU Table of Allocations and ECA
EU13	CEPT Administrations are urged to take all practical steps to clear the band 645-960 MHz of the assignments to the aeronautical radionavigation service by the year 2008.
EU14	Radiolocation limited to military requirements for naval ship borne radars
EU15	In the frequency band 1350-2690 MHz tactical radio relay systems should be capable of tuning over the full range of this band. Requirements for tactical radio relay should be met from the following sub-bands: 1350-1400 MHz; 1427-1452 MHz; 1492-1525 MHz; 1660-1670 MHz; 1675-1710 MHz; 1785-1800 MHz; 2025-2110 MHz; 2200-2290 MHz; 2520-2575 MHz; 2615-2670 MHz. The common requirement of 2 x 45 MHz for tactical radio relay for cross/near border operations and exercises should be met from 2025-2110 MHz and 2200-2290 MHz and in particular the bands 2025-2070/2200-2245 MHz
EU15A	Use of the band by the mobile service is limited to tactical radio relay applications
EU16	On the introduction of IMT-2000, the fixed service will become secondary in appropriate parts of the band
EU16A	Use of the band by the mobile service is limited to tactical radio relay and SAP/SAB applications
EU17	In the sub-bands 3400 - 3410 MHz, 5660 - 5670 MHz, 10.36 - 10.37 GHz, 10.45 - 10.46 GHz the amateur service operates on a secondary basis. In making assignments to other services, CEPT administrations are requested wherever possible to maintain these sub-bands in such a way as to facilitate the reception of amateur emissions with minimal power flux densities.
EU17A	Use of the band by the mobile service is limited to SAP/SAB applications
EU18	This aeronautical radionavigation band shall be subject to further study to ascertain future requirements and developments.
EU19	This band is allocated to the radio astronomy service. CEPT administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or airborne stations in this and adjacent bands can cause serious harmful interference
EU20	This fixed service band is designated for common use by civil and non civil users. Any user priorities in respect of preferred channels or sub-bands are to be determined after discussions between interested parties
EU21	Not used
EU22	The band 5250 - 5850 MHz is utilised for a variety of radiodetermination applications falling within the radionavigation and radiolocation services. This band will be subject to further detailed consideration.

EU23	In the sub-bands 5660 - 5670 MHz (earth to space), 5830 - 5850 MHz (space to earth) and 10.45 - 10.50 GHz the amateur-satellite additionally operates on a secondary and non interference basis to other services. In making assignments to other services, CEPT administrations are requested wherever possible to maintain these allocations in such a way as to facilitate the reception of amateur emissions with minimal power flux densities.
EU24	The band 8500 - 10000 MHz is utilised for a variety of radiodetermination applications falling within the radionavigation and radiolocation services. This band will be subject to further detailed consideration in conjunction with the band 5250 - 5850 MHz (see EU20).
EU25	Not used.
EU26	The band 13.25 - 14.0 GHz is utilised for a variety of radiodetermination applications falling within the radionavigation and radiolocation services. This band will be subject to further detailed consideration
EU27	A frequency band that is in general military use in Europe and identified for major military utilisation in the ECA. Such a frequency band forms a basis for military use and planning. The band can be shared between civil and military users according to national requirements and legislation
EU28	CEPT administrations shall not deploy new fixed service systems in the band 11.7-12.5 GHz (ERC DEC (00) 08)
EU29	The frequency bands 890-915/935-960 MHz, 880-890/925-935 MHz and 1710-1785/1805-1880 MHz are reserved for public cellular mobile use only. Other services such as the fixed service should only be allowed in the above bands where coexistence with public mobile systems is possible i.e. in sparsely populated or rural areas where the frequency band is not needed for mobile cellular systems
EU30	National administrations should consider co-ordination zones around the EISCAT sites when using the band 925-935 MHz for mobile services including international planning for military services. Short Range Devices should not use this band.
EU31	The band 440-470 MHz is the tuning range for Private Wide Area Paging (PWAP)
EU32	The bands 880 - 915 MHz and 925 - 960 MHz are currently used for GSM (2nd generation terrestrial mobile system) in most CEPT member countries and are expected to be used by UMTS/IMT-2000 (3rd generation terrestrial mobile system) only in the longer term after the additional spectrum at 2.5 GHz has been utilised
EU33	RR 5.384A identifies the band 1710 – 1885 MHz, RR 5.388 identifies the bands 1885 – 2025 MHz and 2110 – 2200 MHz for IMT-2000, however the bands 1710 - 1785 MHz and 1805 - 1880 MHz are currently used for GSM (2nd generation terrestrial mobile system), and the band 1880 – 1900 MHz is currently used for DECT applications in most CEPT member countries. These bands are generally expected to be used by UMTS/IMT-2000 (3rd generation terrestrial mobile system) after the additional spectrum at 2.5 GHz has been utilized for UMTS/IMT-2000, subject to market demands and national licensing schemes
EU34	Parts of the bands 450-457.5/460-467.5 MHz may also be used for existing and evolving public cellular networks on a national basis

<i>RR-foot-no</i>	<i>Radio Regulation footnote text</i>
5.053	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
5.054	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.
5.055	Additional allocation: in Armenia, Azerbaijan, Bulgaria, the Russian Federation, Georgia, Kyrgyzstan, Tajikistan and Turkmenistan, the band 14-17 kHz is also allocated to the radionavigation service on a primary basis.
5.057	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.
5.058	Additional allocation: in Armenia, Azerbaijan, Georgia, Kazakstan, Kyrgyzstan, the Russian Federation, Tajikistan and Turkmenistan, the band 67-70 kHz is also allocated to the radionavigation service on a primary basis.
5.060	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.
5.062	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.
5.064	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
5.066	Different category of service: in Germany, the allocation of the band 115-117.6 kHz to the fixed and maritime mobile services is on a primary basis (see No. 5.33) and to the radionavigation service on a secondary basis (see No.5.32).
5.067	Additional allocation: in Azerbaijan, Bulgaria, Mongolia, Kyrgyzstan, Romania and Turkmenistan, the band 130-148.5 kHz is also allocated to the radionavigation service on a secondary basis. Within and between these countries this service shall have an equal right to operate.
5.072	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.
5.073	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)  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)
5.074	Additional Allocation: in Region 1, the frequency band 285.3-285.7 kHz is also allocated to the maritime radionavigation service (other than radiobeacons) on a primary basis.
5.075	Different category of service: in Armenia, Azerbaijan, Belarus, Georgia, Moldova, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan, Ukraine and the Black Sea areas of Bulgaria and Romania, the allocation of the band 315-325 kHz to the maritime radionavigation service is on a primary basis under the condition that in the Baltic Sea area, the assignment of frequencies in this band to new stations in the maritime or aeronautical radionavigation services shall be subject to prior consultation between the administrations concerned.
5.076	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.
5.079	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.
5.079A	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)
5.082	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 31 and 52. 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)

- 5.083 The frequency 500 kHz is an international distress and calling frequency for Morse radiotelegraphy. The conditions for its use are prescribed in Articles 31 and 52, and in Appendix 13.
- 5.084 The conditions for the use of the frequency 518 kHz by the maritime mobile service are prescribed in Articles 31 and 52 and in Appendix 13. (WRC-97)
- 5.090 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.
- 5.092 Some countries in Region 1 use radiodetermination systems in the bands 1606.5-1625 kHz, 1635-1800 kHz, 1850-2160 kHz, 2194-2300 kHz, 2502-2850 kHz and 3500-3800 kHz, subject to agreement obtained under No 9.21. The radiated mean power of these stations shall not exceed 50 W.
- 5.093 Additional allocation: in Angola, Armenia, Azerbaijan, Belarus, Georgia, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Nigeria, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, the Russian Federation, Tajikistan, Chad, Turkmenistan and Ukraine, the bands 1 625-1 635 kHz, 1 800-1 810 kHz and 2 160-2 170 kHz and, in Bulgaria, the bands 1 625-1 635 kHz and 1 800-1 810 kHz, are also allocated to the fixed and land mobile services on a primary basis, subject to agreement obtained under No. 9.21.
- 5.096 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.
- 5.098 Alternative allocation: in Angola, Armenia, Azerbaijan, Belarus, Belgium, Bulgaria, Cameroon, the Congo, Denmark, Egypt, Eritrea, Spain, Ethiopia, Georgia, Greece, Italy, Kazakstan, Lebanon, Lithuania, Moldova, the Netherlands, Syria, Kyrgyzstan, the Russian Federation, Somalia, Tajikistan, Tunisia, Turkmenistan, Turkey and Ukraine, the band 1 810-1 830 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.099 Additional allocation: in Saudi Arabia, Austria, Bosnia and Herzegovina, Iraq, Libya, Uzbekistan, Slovakia, the Czech Republic, Romania, Slovenia, Chad, Togo and Yugoslavia, the band 1 810-1 830 kHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.100 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. 5.98 and 5.99 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.
- 5.103 In Region 1, in making assignments to stations in the fixed and mobile services in the bands 1850-2045 kHz, 2194-2498 kHz, 2502-2 625 kHz and 2650-2850 kHz, administrations should bear in mind the special requirements of the maritime mobile service.
- 5.104 In Region 1, the use of the band 2 025-2 045 kHz by the meteorological aids service is limited to oceanographic buoy stations.
- 5.108 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 31 and 52 and in Appendix 13.
- 5.109 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 31
- 5.110 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 31
- 5.111 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 31 and in Appendix 13.  
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  $\pm 3$  kHz about the frequency.
- 5.112 Alternative allocation: in Bosnia and Herzegovina, Cyprus, Denmark, Greece, Iceland, Malta, Sri Lanka and Yugoslavia, the band 2 194-2 300 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.113 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. 5.16 to 5.20, 5.21 and 23.3 to 23.10.
- 5.114 Alternative allocation: in Bosnia and Herzegovina, Cyprus, Denmark, Greece, Iraq, Malta, and Yugoslavia, the band 2 502-2 625 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.115 The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may also be used, in accordance with Article 31 and Appendix 13 by stations of the maritime mobile service engaged in coordinated search and rescue operations.

- 5.116 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.
- 5.117 Alternative allocation: in Bosnia and Herzegovina, Cyprus, Côte d'Ivoire, Denmark, Egypt, Greece, Iceland, Liberia, Malta, Sri Lanka, Togo and Yugoslavia, the band 3 155-3 200 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis
- 5.126 In Region 3, the stations of those services to which the band 3 995-4 005 kHz is allocated may transmit standard frequency and time signals.
- 5.127 The use of the band 4 000-4 063 kHz by the maritime mobile service is limited to ship stations using radiotelephony (see No. 52.220 and Appendix 17).
- 5.128 In Afghanistan, Argentina, Armenia, Azerbaijan, Belarus, Botswana, Burkina Faso, Central African Republic, China, Georgia, India, Kazakstan, Mali, Niger, Kyrgyzstan, Russian Federation, Tajikistan, Chad, Turkmenistan and Ukraine, in the bands 4 063-4 123 kHz, 4 130-4 133 kHz and 4 408-4 438 kHz, stations of limited power in the fixed service which are situated at least 600 km from the coast may operate on condition that harmful interference is not caused to the maritime mobile service. (WRC-97)
- 5.129 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.
- 5.130 The conditions for the use of the carrier frequencies 4 125 kHz and 6 215 kHz are prescribed in Articles 31 and 52 and in Appendix 13.
- 5.131 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)
- 5.132 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 17).
- 5.133 Different category of service: in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 5 130-5 250 kHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. 5.33).
- 5.134 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 11 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)
- 5.136 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.
- 5.137 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.
- 5.138 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. 5.280,  
  
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 authorisation 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.
- 5.139 Different category of service: in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 6 765-7 000 kHz to the land mobile service is on a primary basis (see No. 5.33).
- 5.142 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.

- 5.143 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.
- 5.145 The conditions for the use of the carrier frequencies 8 291 kHz, 12 290 kHz and 16 420 kHz are prescribed in Articles 31 and 52 and in Appendix 13.
- 5.146 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.
- 5.147 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.

- 5.149 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 and 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,  
 129.23-129.49 GHz,  
 130-134 GHz,  
 136-148.5 GHz,  
 151.5-158.5 GHz,  
 168.59-168.93 GHz,  
 171.11-171.45 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. 4.5 and 4.6 and Article 29).
- 5.150 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. 15.13.
- 5.151 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.

- 5.152 Additional allocation: in Armenia, Azerbaijan, China, Côte d'Ivoire, Georgia, Iran (Islamic Republic of), Kazakstan, Moldova, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 14 250-14 350 kHz is also allocated to the fixed service on a primary basis. Stations of the fixed service shall not use a radiated power exceeding 24 dBW.
- 5.154 Additional allocation: in Armenia, Azerbaijan, Georgia, Kazakstan, Moldova, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 18 068-18 168 kHz is also allocated to the fixed service on a primary basis for use within their boundaries, with a peak envelope power not exceeding 1 kW.
- 5.155 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Kazakstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 21 850-21 870 kHz is also allocated to the aeronautical mobile (R) services on a primary basis.
- 5.155A In Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakstan, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the use of the band 21 850-21 870 kHz by the fixed service is limited to provision of services related to aircraft flight safety.
- 5.155B The band 21 870-21 924 kHz is used by the fixed service for provision of services related to aircraft flight safety.
- 5.156A 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
- 5.157 The use of the band 23 350-24 000 kHz by the maritime mobile service is limited to inter-ship radiotelegraphy.
- 5.162A 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).
- 5.163 Additional allocation: in Armenia, Azerbaijan, Belarus, Estonia, Georgia, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Russia, Tajikistan, Turkmenistan and Ukraine, the bands 47 - 48.5 MHz and 56.5 - 58 MHz are also allocated to the fixed and land mobile services on a secondary basis.
- 5.164 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.
- 5.174 Alternative allocation: in Bulgaria, Hungary, Poland and Romania, the band 68 - 73 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions in the Final Acts of the Special Regional Conference (Geneva, 1960).
- 5.175 Alternative allocation: in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 68-73 MHz and 76-87.5 MHz are allocated to the broadcasting service on a primary basis. The services to which these bands are allocated in other countries and the broadcasting service in the countries listed above are subject to agreements with the neighbouring countries concerned.
- 5.176 Additional allocation: in Australia, China, Korea (Rep. of), the Philippines, the Dem. People's Rep. of Korea, Estonia (subject to agreement obtained under No. 9.21) and Western Samoa, the band 68-74 MHz is also allocated to the broadcasting service on a primary basis.
- 5.177 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakstan, Latvia, Moldova, Uzbekistan, Poland, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 73-74 MHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. 9.21.
- 5.179 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, China, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Kyrgyzstan, Slovakia, the Czech Republic, Russia, Tajikistan, Turkmenistan and Ukraine, the bands 74.6 - 74.8 MHz and 75.2 - 75.4 MHz are also allocated to the aeronautical radionavigation service, on a primary basis, for ground-based transmitters only.
- 5.180 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.
- 5.184 Additional allocation: in Bulgaria and Romania, the band 76 - 87.5 MHz is also allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference (Geneva, 1960).

- 5.187 Alternative allocation: in Albania, the band 81 - 87.5 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference (Geneva, 1960).
- 5.190 Additional allocation: in Monaco, the band 87.5 - 88 MHz is also allocated to the land mobile service on a primary basis, subject to agreement obtained under No. 9.21.
- 5.194 Additional allocation: in Azerbaijan, Lebanon, Syria, Kyrgyzstan, Somalia and Turkmenistan, the band 104-108 MHz is also allocated to the mobile, except aeronautical mobile (R), service on a secondary basis.
- 5.198 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 Article 14/No. 9.21.
- 5.199 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 13).
- 5.200 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 31 and Appendix 13 for distress and safety purposes with stations of the aeronautical mobile service.
- 5.201 Additional allocation: in Angola, Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Hungary, the Islamic Republic of Iran, Iraq, Japan, Kazakstan, Latvia, Moldova, Mongolia, Mozambique, Uzbekistan, Papua New Guinea, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russia, Tajikistan, Turkmenistan and Ukraine, the band 132-136 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service.
- 5.202 Additional allocation: in Saudi Arabia, Armenia, Azerbaijan, Belarus, Bulgaria, the United Arab Emirates, Georgia, Iran (Islamic Republic of), Jordan, Latvia, Moldova, Oman, Uzbekistan, Poland, Syria, Kyrgyzstan, Slovakia, the Czech Republic, Romania, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 136-137 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service.
- 5.203 In the band 136-137 MHz, existing operational meteorological satellites may continue to operate, under the conditions defined in No. 4.4 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.
- 5.204 Different category of service: in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, Bosnia and Herzegovina, Brunei Darussalam, China, Cuba, the United Arab Emirates, India, Indonesia, the Islamic Republic of Iran, Iraq, Malaysia, Oman, Pakistan, Philippines, Qatar, Singapore, Sri Lanka, Thailand, Yemen and Yugoslavia, the band 137 - 138 MHz is allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis (see No. 5.33).
- 5.206 Different category of service: in Armenia, Azerbaijan, Belarus, Bulgaria, Egypt, Finland, France, Georgia, Greece, Kazakstan, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Syria, Slovakia, the Czech Republic, Romania, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 137-138 MHz to the aeronautical mobile (OR) service is on a primary basis (see No. 5.33).
- 5.208 The use of the band 137-138 MHz by the mobile-satellite service is subject to coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A.
- 5.208A 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.
- 5.209 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.
- 5.210 Additional allocation: in France, Italy, Liechtenstein, Slovakia, the Czech Republic, the United Kingdom and Switzerland, the bands 138-143.6 MHz and 143.65-144 MHz are also allocated to the space research service (space-to-Earth) on a secondary basis.
- 5.211 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, 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.
- 5.214 Additional allocation: in Bosnia and Herzegovina, Croatia, Eritrea, Ethiopia, Kenya, The Former Yugoslav Republic of Macedonia, Malta, Somalia, Sudan, Tanzania and Yugoslavia, the band 138-144 MHz is also allocated to the fixed service on a primary basis.
- 5.218 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. 9.21. The bandwidth of any individual transmission shall not exceed  $\pm$  25 kHz.

- 5.219 The use of the band 148 - 149.9 MHz by the mobile-satellite service is subject to coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A. 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.
- 5.220 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 Resolution 46 (Rev.WRC-97)/No. 9.11A. 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.
- 5.221 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, Kazakhstan, 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.
- 5.222 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.
- 5.222A 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. 21.5A and 21.16.2, respectively.
- 5.222B 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.
- 5.223 Recognising 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 authorise such use in application of No. 4.4.
- 5.224A 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.
- 5.224B 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.
- 5.226 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 31 and Appendix 13. 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 31 and 52, and Appendix 13). 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.
- 5.227 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 (see Resolution 323 (Mob-87)). The conditions for the use of this frequency are prescribed in Articles 31 and 52, and Appendices 13 and S18.
- 5.235 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.
- 5.246 Alternative allocation: in Spain, France, Israel and Monaco, the band 223 - 230 MHz is allocated to the broadcasting and land mobile services on a primary basis (see No. 5.33) on the basis that, in the preparation of frequency plans, the broadcasting service shall have prior choice of frequencies; and allocated to the fixed and mobile, except land mobile, services on a secondary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations in Morocco and Algeria.
- 5.254 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. 9.21, 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.
- 5.255 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 Resolution 46 (Rev.WRC-97)/No. 9.11A.
- 5.256 The frequency 243 MHz is the frequency in this band for use by survival craft stations and equipment used for survival purposes (see Appendix 13).

- 5.257 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. 9.21.
- 5.258 The use of the band 328.6 - 335.4 MHz by the aeronautical radionavigation service is limited to Instrument Landing Systems (glide path).
- 5.260 Recognising 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 authorise such use in application of No. 4.4.
- 5.261 Emissions shall be confined in a band of  $\pm 25$  kHz about the standard frequency 400.1 MHz.
- 5.262 Additional allocation: in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Bulgaria, Colombia, Costa Rica, Cuba, Egypt, the United Arab Emirates, Ecuador, Georgia, Hungary, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kazakstan, Kuwait, Liberia, Malaysia, Moldova, Nigeria, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Slovakia, Romania, the Russian Federation, Singapore, Somalia, Tajikistan, Turkmenistan, Ukraine and Yugoslavia, the band 400.05-401 MHz is also allocated to the fixed and mobile services on a primary basis.
- 5.263 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.
- 5.264 The use of the band 400.15 - 401 MHz by the mobile-satellite service is subject to coordination under Resolution 46 (Rev. WRC-97)/No. 9.11A. The power flux-density limit indicated in Annex 2 of Resolution 46 (Rev. WRC-95)/Annex 1 of Appendix 5 shall apply until such time as a competent world radiocommunication conference revises it.
- 5.266 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 31 and Appendix 13).
- 5.267 Any emission capable of causing harmful interference to the authorised uses of the band 406 - 406.1 MHz is prohibited.
- 5.268 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<sup>2</sup>) for  $0^\circ \leq \theta \leq 5^\circ$ ,  $-153 + 0.077(\theta - 5)$  dB(W/m<sup>2</sup>) for  $5^\circ \leq \theta \leq 70^\circ$  and  $-148$  dB(W/m<sup>2</sup>) for  $70^\circ \leq \theta \leq 90^\circ$ , where  $\theta$  is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. No. 4.10 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.
- 5.269 Different category of service: in Australia, the United States, India, Japan and the United Kingdom, the allocation of the bands 420 - 430 MHz and 440 - 450 MHz to the radiolocation service is on a primary basis (see No. 5.33).
- 5.271 Additional allocation: in Azerbaijan, Belarus, China, Estonia, India, Latvia, Lithuania, Kyrgyzstan and Turkmenistan, the band 420-460 MHz is also allocated to the aeronautical radionavigation service (radio altimeters) on a secondary basis.
- 5.272 Different category of service: in France, the allocation of the band 430 - 434 MHz to the amateur service is on a secondary basis (see No. 5.32).
- 5.273 Different category of service: in Denmark, Libya and Norway, the allocation of the bands 430 - 432 MHz and 438 - 440 MHz to the radiolocation service is on a secondary basis (see No. 5.32).
- 5.274 Alternative allocation: in Denmark, Norway and Sweden, the bands 430 - 432 MHz and 438 - 440 MHz are allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.275 Additional allocation: in Bosnia and Herzegovina, Croatia, Estonia, Finland, Latvia, The Former Yugoslav Republic of Macedonia, Libya, Slovenia and Yugoslavia, the bands 430-432 MHz and 438-440 MHz are also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.276 Additional allocation: in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burkina Faso, Burundi, Egypt, the United Arab Emirates, Ecuador, Eritrea, Ethiopia, Greece, Guinea, India, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Liechtenstein, Malaysia, Malta, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Democratic People's Republic of Korea, Singapore, Somalia, Switzerland, Tanzania, Thailand, Togo, Turkey and Yemen, the band 430-440 MHz is also allocated to the fixed service on a primary basis and the bands 430-435 MHz and 438-440 MHz are also allocated to the mobile, except aeronautical mobile, service on a primary basis.
- 5.277 Additional allocation: in Angola, Armenia, Azerbaijan, Belarus, Cameroon, Congo, Djibouti, Georgia, Hungary, Israel, Kazakstan, Latvia, Mali, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, the Russian Federation, Rwanda, Tajikistan, Chad, Turkmenistan and Ukraine, the band 430-440 MHz is also allocated to the fixed service on a primary basis.
- 5.280 In Germany, Austria, Bosnia and Herzegovina, Croatia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Portugal, Slovenia, Switzerland and Yugoslavia, the band 433.05 - 434.79 MHz (centre frequency 433.92 MHz) is designated for industrial, scientific and medical (ISM) applications. Radiocommunication services of these countries operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. 15.13.

- 5.281 Additional allocation: in the French Overseas Departments in Region 2 and India, the band 433.75 - 434.25 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis. In France and in Brazil, the band is allocated to the same service on a secondary basis.
- 5.282 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. 5.43). Administrations authorising 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.
- 5.283 Additional allocation: in Austria, the band 438 - 440 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.
- 5.286 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. 9.21.
- 5.286A The use of the bands 454 - 456 MHz and 459 - 460 MHz by the mobile-satellite service is subject to coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A.
- 5.286B The use of the band 454-455 MHz in the countries listed in No. 5.286D, 455-456 MHz and 459-460 MHz in Region 2, and 454-456 MHz and 459-460 MHz in the countries listed in No. 5.286E, 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.
- 5.287 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)).
- 5.289 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.
- 5.290 Different category of service: in Afghanistan, Azerbaijan, Belarus, China, Japan, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 460-470 MHz to the meteorological-satellite service (space-to-Earth) is on a primary basis (see No. 5.33), subject to agreement obtained under No. 9.21.
- 5.291A Additional allocation: in Germany, Austria, Denmark, Estonia, Finland, Liechtenstein, Norway, Netherlands, the Czech Republic and Switzerland, the band 470-494 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).
- 5.296 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
- 5.302 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.
- 5.306 Additional allocation: in Region 1, except in the African Broadcasting Area (see Nos. 5.10 to 5.13), and in Region 3, the band 608 - 614 MHz is also allocated to the radio astronomy service on a secondary basis.
- 5.311 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 and 507). Such stations shall not produce a power flux-density in excess of the value -129 dB(W/m<sup>2</sup>) 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.
- 5.312 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Kazakstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russia, Tajikistan, Turkmenistan and Ukraine, the band 645 - 862 MHz is also allocated to the aeronautical radionavigation service on a primary basis.
- 5.314 Additional allocation: in Austria, Italy, Moldova, Uzbekistan, the United Kingdom and Swaziland, the band 790-862 MHz is also allocated to the land mobile service on a secondary basis.
- 5.315 Alternative allocation: in Greece, Italy and Tunisia, the band 790-838 MHz is allocated to the broadcasting service on a primary basis.

- 5.316 Additional allocation: in Germany, Saudi Arabia, Bosnia and Herzegovina, Burkina Faso, Cameroon, Côte d'Ivoire, Croatia, Denmark, Egypt, Finland, Israel, Kenya, The Former Yugoslav Republic of Macedonia, Libya, Liechtenstein, Monaco, Norway, the Netherlands, Portugal, Syria, Sweden, Switzerland and Yugoslavia, the band 790-830 MHz, and in these same countries and in Spain, France, Gabon and Malta, the band 830-862 MHz, are also allocated to the mobile, except aeronautical mobile, service on a primary basis. However, stations of the 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, stations of services operating in accordance with the Table in countries other than those mentioned in connection with the band.
- 5.317A 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.
- 5.319 Additional Allocation: In Belarus, Russian Federation and Ukraine, the bands 806-840 MHz (E/S) and 856-890 MHz (S/E) are also allocated to the mobile-satellite, except aeronautical mobile satellite (R), service. The use of these bands by this service shall not cause harmful interference to, or claim protection from, services in other countries operating in accordance with the Table of Frequency Allocations and is subject to special agreements between the administrations concerned.
- 5.321 Alternative allocation: in Italy, the band 838 - 854 MHz is allocated to the broadcasting service on a primary basis as from 1 January 1995.
- 5.322 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 5.10 to 5.13) excluding Algeria, Egypt, Spain, Libya, Morocco, Nigeria, South Africa, Tanzania and Zimbabwe, subject to agreement obtained under No 9.21.
- 5.323 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, Hungary, Kazakhstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 862-960 MHz is also allocated to the aeronautical radionavigation service on a primary basis. Such use is subject to agreement obtained under No 9.21 with administrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime.
- 5.328 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.
- 5.328A 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<sup>2</sup>) 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.
- 5.329 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. 5.331. See also Resolution 606 (WRC-2000).
- 5.329A 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.
- 5.330 Additional allocation: in Azerbaijan, Bulgaria, Cuba, Mongolia, Kyrgyzstan, Romania and Turkmenistan, the band 3 300-3 400 MHz is also allocated to the radionavigation service on a primary basis
- 5.331 Additional allocation: in Algeria, Germany, Austria, Bahrain, Belgium, Benin, Bosnia and Herzegovina, Burundi, Cameroon, China, Croatia, Denmark, the United Arab Emirates, France, Greece, India, Iran (Islamic Republic of), Iraq, Kenya, The Former Yugoslav Republic of Macedonia, Liechtenstein, Luxembourg, Mali, Mauritania, Norway, Oman, the Netherlands, Portugal, Qatar, Senegal, Slovenia, Somalia, Sudan, Sri Lanka, Sweden, Switzerland, Turkey and Yugoslavia, the band 1 215-1 300 MHz is also allocated to the radionavigation service on a primary basis.
- 5.332 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.
- 5.335A 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.
- 5.337A 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.
- 5.338 In Azerbaijan, Bulgaria, Mongolia, Kyrgyzstan, Slovakia, the Czech Republic, Romania and Turkmenistan, existing installations of the radionavigation service may continue to operate in the band 1 350-1 400 MHz.
- 5.339 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.

- 5.340 All emissions are prohibited in the following bands:  
 1 400-1 427 MHz,  
 2 690-2 700 MHz, except those provided for by Nos. 5.421 and 5.422,  
 10.68-10.7 GHz, except those provided for by No. 5.483,  
 15.35-15.4 GHz, except those provided for by No. 5.511,  
 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 GHz, except those provided for by No. 5.555A,  
 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. 5.563,  
 190-191.8 GHz,  
 200-209 GHz,  
 226-231.5 GHz,  
 250-252 GHz.
- 5.341 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.
- 5.342 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, Uzbekistan, Kyrgyzstan, the Russian Federation and Ukraine, the band 1 429-1 535 MHz is also allocated to the aeronautical mobile service on a primary basis exclusively for the purposes of aeronautical telemetry within the national territory. As of 1 April 2007, the use of the band 1 452-1 492 MHz is subject to agreement between the administrations concerned
- 5.345 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).
- 5.347 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.
- 5.349 Different category of service: in Saudi Arabia, Azerbaijan, Bahrain, Bosnia and Herzegovina, Cameroon, Egypt, France, Iran (Islamic Republic of), Iraq, Israel, Kazakhstan, Kuwait, The Former Yugoslav Republic of Macedonia, Lebanon, Morocco, Qatar, Syria, Kyrgyzstan, Romania, Turkmenistan, Yemen and Yugoslavia, the allocation of the band 1 525-1 530 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. 5.33).
- 5.350 Additional allocation: in Azerbaijan, Kyrgyzstan and Turkmenistan, the band 1 525-1 530 MHz is also allocated to the aeronautical mobile service on a primary basis.
- 5.351 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 authorised by an administration to communicate via space stations using these bands.
- 5.351A 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).
- 5.352A 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.
- 5.353A 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.)
- 5.354 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 Resolution 46 (Rev. WRC-97)/No. 9.11A.
- 5.355 Additional allocation: in Bahrain, Bangladesh, Congo, Egypt, Eritrea, Iraq, Israel, Jordan, Kuwait, Lebanon, Malta, Morocco, Qatar, Syria, Somalia, Sudan, Chad, Togo and Yemen, the bands 1 540-1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a secondary basis
- 5.356 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 31).

- 5.357 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 authorised when such transmissions are used to extend or supplement the satellite-to-aircraft links.
- 5.357A 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 44. Aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article 44 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 44. 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.)
- 5.359 Additional allocation: in Germany, Saudi Arabia, Armenia, Austria, Azerbaijan, Belarus, Benin, Bosnia and Herzegovina, Bulgaria, Cameroon, Spain, France, Gabon, Georgia, Greece, Guinea, Guinea-Bissau, Hungary, Jordan, Kazakstan, Kuwait, Latvia, Lebanon, Libya, Lithuania, Mali, Morocco, Mauritania, Moldova, Mongolia, Nigeria, Uganda, Uzbekistan, Pakistan, Poland, Syria, Kyrgyzstan, the Dem. People's Rep. of Korea, Romania, the Russian Federation, Senegal, Swaziland, Tajikistan, Tanzania, Tunisia, Turkmenistan and Ukraine, the bands 1 550-1 559 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a primary basis. Administrations are urged to make all practicable efforts to avoid the implementation of new fixed-service stations in these bands.
- 5.362B Additional allocation: The band 1 559-1 610 MHz is also allocated to the fixed service on a primary basis until 1 January 2005 in Germany, Armenia, Azerbaijan, Belarus, Benin, Bosnia and Herzegovina, Bulgaria, Spain, France, Gabon, Georgia, Greece, Guinea, Guinea-Bissau, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Nigeria, Uganda, Uzbekistan, Pakistan, Poland, Kyrgyzstan, the Dem. People's Rep. of Korea, Romania, the Russian Federation, Senegal, Swaziland, Tajikistan, Tanzania, Turkmenistan and Ukraine, and until 1 January 2010 in Saudi Arabia, Cameroon, Jordan, Kuwait, Lebanon, Libya, Mali, Morocco, Mauritania, Syria and Tunisia. After these dates, the fixed service may continue to operate on a secondary basis until 1 January 2015, at which time this allocation shall no longer be valid. Administrations are urged to take all practicable steps to protect the radionavigation-satellite service and the aeronautical radionavigation service and not authorize new frequency assignments to fixed-service systems in this band.
- 5.362C Additional allocation: in Bahrain, Bangladesh, Congo, Egypt, Eritrea, Iraq, Israel, Jordan, Kuwait, Lebanon, Malta, Morocco, Qatar, Syria, Somalia, Sudan, Chad, Togo and Yemen, the band 1 559-1 610 MHz is also allocated to the fixed service on a secondary basis until 1 January 2015, at which time this allocation shall no longer be valid. Administrations are urged to take all practicable steps to protect the radionavigation-satellite service and not authorize new frequency assignments to fixed-service systems in this band.
- 5.363 Alternative allocation: in Sweden, the band 1 590 - 1 626.5 MHz is allocated to the aeronautical radionavigation service on a primary basis.
- 5.364 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 Resolution 46 (Rev.WRC-97)/No. 9.11A. 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. 5.366 (to which No. 4.10 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. 5.366 and stations in the fixed service operating in accordance with the provisions of No. 5.359. 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. 5.366.
- 5.365 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 Resolution 46 (Rev.WRC-97)/No. 9.11A.
- 5.366 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. 9.21.
- 5.367 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. 9.21.
- 5.368 With respect to the radiodetermination-satellite and mobile-satellite services the provisions of No. 4.10 do not apply in the band 1 610 - 1 626.5 MHz, with the exception of the aeronautical radionavigation-satellite service.
- 5.371 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. 9.21.
- 5.372 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. 29.13 applies).
- 5.374 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 the stations in the fixed service operating in the countries listed in No. 5.359.
- 5.375 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 31).

- 5.376 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 authorised when such transmissions are used to extend or supplement the aircraft-to-satellite links.
- 5.376A 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.
- 5.379A 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.
- 5.380 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.
- 5.382 Different category of service: in Saudi Arabia, Armenia, Austria, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Bulgaria, the Congo, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guinea, Hungary, Iraq, Israel, Jordan, Kazakhstan, Kuwait, the Former Yugoslav Republic of Macedonia, Lebanon, Mauritania, Moldova, Mongolia, Oman, Uzbekistan, Poland, Qatar, Syria, Kyrgyzstan, Romania, Russia, Somalia, Tajikistan, Tanzania, Turkmenistan, Ukraine, Yemen and Yugoslavia, the allocation of the band 1 690-1 700 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. 5.33), and in the Democratic People's Republic of Korea, the allocation of the band 1 690-1 700 MHz to the fixed service is on a primary basis (see No. 5.33) and to the mobile, except aeronautical mobile, service on a secondary basis.
- 5.384A 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.
- 5.385 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.
- 5.387 Additional allocation: in Azerbaijan, Belarus, Georgia, Kazakstan, Mali, Mongolia, Kyrgyzstan, Slovakia, Romania, Tajikistan and Turkmenistan, the band 1 770-1 790 MHz is also allocated to the meteorological-satellite service on a primary basis, subject to agreement obtained under No. 9.21.
- 5.388 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).)
- 5.388A 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.
- 5.389A 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 Resolution 46 (Rev.WRC-97)/No. 9.11A 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.
- 5.391 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.
- 5.392 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.
- 5.392A Additional allocation: in Russia, the band 2 160 - 2 200 MHz is also allocated to the space research service (space-to-Earth) on a primary basis until 1 January 2005. Stations in the space research service shall not cause harmful interference to, or claim protection from, stations in the fixed and mobile services operating in this frequency band.
- 5.395 In France, the use of the band 2 310 - 2 360 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service.
- 5.397 Different category of service: in France, the band 2 450 - 2 500 MHz is allocated on a primary basis to the radiolocation service (see No. 5.33). Such use is subject to agreement with administrations having services operating or planned to operate in accordance with the Table of Frequency Allocations which may be affected.
- 5.398 In respect of the radiodetermination-satellite service in the band 2 483.5 - 2 500 MHz, the provisions of No. 4.10 do not apply.
- 5.399 In Region 1, in countries other than those listed in No. 5.400, 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.

- 5.402 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 Resolution 46 (Rev.WRC-97)/No. 9.11A. 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.
- 5.403 Subject to agreement obtained under No. 9.21, 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 Resolution 46 (Rev.WRC-97)/No. 9.11A apply.
- 5.405 Additional allocation: in France, the band 2 500 - 2 550 MHz is also allocated to the radiolocation service on a primary basis. Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.
- 5.409 Administrations shall make all practicable efforts to avoid developing new tropospheric scatter systems in the band 2 500 - 2 690 MHz.
- 5.410 The band 2 500 - 2 690 MHz may be used for tropospheric scatter systems in Region 1, subject to agreement obtained under No. 9.21.
- 5.411 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.
- 5.412 Alternative allocation: in Azerbaijan, Bulgaria, Kyrgyzstan and Turkmenistan, the band 2 500-2 690 MHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis
- 5.413 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.
- 5.414 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 Resolution 46 (Rev.WRC-97)/No. 9.11A.
- 5.416 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. 9.21. The power flux-density at the Earth's surface shall not exceed the values given in Article 21, Table 21-4.
- 5.418 Additional allocation: in Bangladesh, Belarus, China, Rep. of Korea, India, Japan, Pakistan, Russia, Singapore, Sri Lanka, Thailand and Ukraine the band 2 535 - 2 655 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to provisions of Resolution 528 (WARC-92). The provisions of No. 5.416 and Article 21, Table 21-4, do not apply to this additional allocation.
- 5.418A In certain Region 3 countries listed in No. 5.418, use of the band 2 630-2 655 MHz by non-geostationary-satellite systems in the broadcasting-satellite service (sound) for which complete Appendix 4 coordination information, or notification information, has been received after 2 June 2000, is subject to the application of the provisions of No. 9.12A, in respect of geostationary-satellite networks for which complete Appendix 4 coordination information, or notification information, is considered to have been received after 2 June 2000, and No. 22.2 does not apply. No. 22.2 shall continue to apply with respect to geostationary-satellite networks for which complete Appendix 4 coordination information, or notification information, is considered to have been received before 3 June 2000. Use of the band by non-geostationary-satellite systems in the broadcasting-satellite service (sound) is subject to the provisions of Resolution 539 (WRC-2000), and such systems shall be in accordance with Resolution 528 (WARC-92).
- 5.418B Use of the band 2 630-2 655 MHz by non-geostationary-satellite systems for which complete Appendix 4 coordination information, or notification information, has been received after 2 June 2000, is subject to the application of the provisions of No. 9.12. Resolution 539 (WRC-2000) applies.
- 5.418C Use of the band 2 630-2 655 MHz by geostationary-satellite networks for which complete Appendix 4 coordination information, or notification information, has been received after 2 June 2000 is subject to the application of the provisions of No. 9.13 with respect to non-geostationary-satellite systems in the broadcasting-satellite service (sound), and No. 22.2 does not apply. Resolution 539 (WRC-2000) applies.
- 5.419 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 Resolution 46 (Rev.WRC-97)/No. 9.11A.
- 5.420 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. 9.21. The coordination under Resolution 46 (Rev.WRC-97)/No. 9.11A applies.
- 5.421 Additional allocation: in Germany and Austria, the band 2 690 - 2 695 MHz is also allocated to the fixed service on a primary basis. Such use is limited to equipment in operation by 1 January 1985.

- 5.422 Additional allocation: in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Brunei Darussalam, Congo, Côte d'Ivoire, Cuba, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Georgia, Guinea, Guinea-Bissau, Iran (Islamic Republic of), Iraq, Israel, Jordan, Lebanon, Malaysia, Mali, Mauritania, Moldova, Mongolia, Nigeria, Oman, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, the Dem. Rep. of the Congo, Romania, the Russian Federation, Somalia, Tajikistan, Tunisia, Turkmenistan, Ukraine, Yemen and Yugoslavia, the band 2 690-2 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985.
- 5.423 In the band 2 700 - 2 900 MHz, ground-based radars used for meteorological purposes are authorised to operate on a basis of equality with stations of the aeronautical radionavigation service.
- 5.425 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.
- 5.426 The use of the band 2 900 - 3 100 MHz by the aeronautical radionavigation service is limited to ground-based radars.
- 5.427 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. 4.9 of these Regulations.
- 5.428 Additional allocation: in Azerbaijan, Bulgaria, Cuba, Mongolia, Kyrgyzstan, Romania and Turkmenistan, the band 3 100-3 300 MHz is also allocated to the radionavigation service on a primary basis.
- 5.429 Additional allocation: in Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, China, the Congo, the Republic of Korea, the United Arab Emirates, India, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Libya, Malaysia, Oman, Pakistan, Qatar, Syria, Democratic People's Republic of Korea and Yemen, the band 3 300-3 400 MHz is also allocated to the fixed and mobile services on a primary basis. The countries bordering the Mediterranean shall not claim protection for their fixed and mobile services from the radiolocation service.
- 5.430 Additional allocation: in Azerbaijan, Bulgaria, Cuba, Mongolia, Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 3 300-3 400 MHz is also allocated to the radionavigation service on a primary basis.
- 5.431 Additional allocation: in Germany, Israel, Nigeria and the United Kingdom, the band 3 400 - 3 475 MHz is also allocated to the amateur service on a secondary basis.
- 5.438 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 authorised in this band on a secondary basis (no protection is provided by the radio altimeters).
- 5.440 The standard frequency and time signal-satellite service may be authorised 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. 9.21.
- 5.441 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 30B. 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 30B. 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. 9.12 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. 5.43A 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.
- 5.442 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.
- 5.443A 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).
- 5.443B 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<sup>2</sup>) 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<sup>2</sup>) 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.
- 5.444 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. 5.444A and Resolution 114 (WRC-95) apply.

- 5.444A 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 Resolution 46 (Rev.WRC-97)/No. 9.11A.
- 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.
- 5.446 Additional allocation: in the countries listed in Nos. 5.369 and 5.400, 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. 9.21. 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. 5.369 and 5.400, 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 dB(W/m<sup>2</sup>) in any 4 kHz band for all angles of arrival.
- 5.447 Additional allocation: in Germany, Austria, Belgium, Denmark, Spain, Estonia, Finland, France, Greece, Israel, Italy, Japan, Jordan, Lebanon, Liechtenstein, Lithuania, Luxembourg, Malta, 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. 9.21
- 5.447A 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 Resolution 46 (Rev.WRC-97)/ No. 9.11A.
- 5.447B 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 Resolution 46 (Rev.WRC-97)/ No. 9.11A. 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<sup>2</sup>) in any 4 kHz band for all angles of arrival.
- 5.447C Administrations responsible for fixed-satellite service networks in the band 5 150 - 5 250 MHz operated under Nos. 5.447A and 5.447B shall coordinate on an equal basis in accordance with Resolution 46 (Rev.WRC-97)/No. 9.11A with administrations responsible for non-geostationary-satellite networks operated under No. 5.446 and brought into use prior to 17 November 1995. Satellite networks operated under No. 5.446 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. 5.447A and 5.447B.
- 5.447D 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.
- 5.448 Additional allocation: in Austria, Azerbaijan, Bulgaria, Libya, Mongolia, Kyrgyzstan, Slovakia, the Czech Republic, Romania and Turkmenistan, the band 5 250-5 350 MHz is also allocated to the radionavigation service on a primary basis.
- 5.448A 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.
- 5.448B 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.
- 5.449 The use of the band 5 350 - 5 470 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.
- 5.450 Additional allocation: in Austria, Azerbaijan, Bulgaria, the Islamic Republic of Iran, Mongolia, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Turkmenistan and Ukraine, the band 5 470-5 650 MHz is also allocated to the aeronautical radionavigation service on a primary basis.
- 5.451 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. 21.2, 21.3, 21.4 and 21.5 shall apply in the band 5 725 - 5 850 MHz.
- 5.452 Between 5 600 MHz and 5 650 MHz, ground-based radars used for meteorological purposes are authorised to operate on a basis of equality with stations of the maritime radionavigation service.
- 5.454 Different category of service: in Azerbaijan, Belarus, Georgia, Mongolia, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 5 670-5 725 MHz to the space research service is on a primary basis (see No. 5.33).
- 5.455 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, Cuba, Hungary, Kazakstan, Latvia, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, Russia, Tajikistan, Turkmenistan and Ukraine, the band 5 670 - 5 850 MHz is also allocated to the fixed service on a primary basis.

- 5.456 Additional allocation: in Germany and in Cameroon, the band 5 755 - 5 850 MHz is also allocated to the fixed service on a primary basis.
- 5.458 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.
- 5.458A 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.
- 5.458B 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 Resolution 46 (Rev.WRC-97)/No. 9.11A. 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. 22.2.
- 5.458C 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.
- 5.459 Additional allocation: in Russia, the frequency bands 7 100 - 7 155 MHz and 7 190 - 7 235 MHz are also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. 9.21.
- 5.460 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. 9.21. 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.
- 5.461 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. 9.21.
- 5.461A 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.
- 5.461B 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.
- 5.462A 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 (?), without the consent of the affected administration:  
 -174 dB(W/m<sup>2</sup>) in a 4 kHz band for 0° < ? < 5°  
 -174 + 0.5 (q - 5) dB(W/m<sup>2</sup>) in a 4 kHz band for 5° < ? < 25°  
 -164 dB(W/m<sup>2</sup>) in a 4 kHz band for 25° < ? < 90°  
 These values are subject to study under Resolution 124 (WRC-97).
- 5.463 Aircraft stations are not permitted to transmit in the band 8 025 - 8 400 MHz.
- 5.465 In the space research service, the use of the band 8 400 - 8 450 MHz is limited to deep space.
- 5.467 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.
- 5.469 Additional allocation: in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Lithuania, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 8 500-8 750 MHz is also allocated to the land mobile and radionavigation services on a primary basis.
- 5.469A 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.
- 5.470 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.
- 5.471 Additional allocation: in Algeria, Germany, Bahrain, Belgium, China, the United Arab Emirates, France, Greece, Indonesia, the Islamic Republic of Iran, Libya, the Netherlands, Qatar and Sudan, the bands 8 825 - 8 850 MHz and 9 000 - 9 200 MHz are also allocated to the maritime radionavigation service, on a primary basis, for use by shore-based radars only.
- 5.472 In the bands 8 850 - 9 000 MHz and 9 200 - 9 225 MHz, the maritime radionavigation service is limited to shore-based radars.

- 5.473 Additional allocation: in Armenia, Austria, Azerbaijan, Belarus, Bulgaria, Cuba, Georgia, Hungary, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 8 850-9 000 MHz and 9 200-9 300 MHz are also allocated to the radionavigation service on a primary basis
- 5.474 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 31).
- 5.475 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.
- 5.476 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.
- 5.476A 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 radio-navigation and radiolocation services.
- 5.477 Different category of service: in Algeria, Saudi Arabia, Austria, Bahrain, Bangladesh, Brunei, Darussalam, Cameroon, the Republic of Korea, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Guyana, India, Indonesia, the Islamic Republic of Iran, Iraq, Jamaica, Japan, Jordan Kuwait, Lebanon, Liberia, Malaysia, Negeria, Oman, Pakistan, Qatar, Democratic People's Republic of Korea, Singapore, Somalia Sudan Sweden, Trinidad and Tobago and Yemen, the allocation of the band 9800-10000 MHz to the fixed service is on a primary basis (see No. 5.33)
- 5.478 Additional allocation: in Azerbaijan, Bulgaria, Mongolia, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Turkmenistan and Ukraine, the band 9 800-10 000 MHz is also allocated to the radionavigation service on a primary basis.
- 5.479 The band 9 975 - 10 025 MHz is also allocated to the meteorological-satellite service on a secondary basis for use by weather radars.
- 5.481 Additional allocation: in Germany, Angola, Brazil, China, Costa Rica, El Salvador, Ecuador, Spain, Guatemala, Japan, Morocco, Nigeria, Oman, Uzbekistan, Paraguay, Peru, the Dem. People's Rep. of Korea, Sweden, Tanzania, Thailand and Uruguay, the band 10.45-10.5 GHz is also allocated to the fixed and mobile services on a primary basis.
- 5.482 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. 9.21. 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, Russia, Tajikistan, Turkmenistan and Ukraine, the restrictions on the fixed and mobile, except aeronautical mobile, services are not applicable.
- 5.483 Additional allocation: in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, China, Colombia, Korea (Rep. of), Costa Rica, Egypt, the United Arab Emirates, Georgia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kazakstan, Kuwait, Latvia, Lebanon, Moldova, Mongolia, Uzbekistan, Qatar, Kyrgyzstan, the Dem. People's Rep. of Korea, Romania, the Russian Federation, Tajikistan, Turkmenistan, Ukraine, Yemen and Yugoslavia, the band 10.68-10.7 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985
- 5.484 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.
- 5.484A 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. 9.12 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. 5.43A 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.
- 5.487 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 30.

- 5.487A 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. 9.12 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. 5.43A 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.
- 5.492 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 30 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.
- 5.495 Additional allocation: in Bosnia and Herzegovina, Croatia, Denmark, France, Greece, Liechtenstein, Monaco, Uganda, Portugal, Romania, Slovenia, Switzerland, Tanzania, Tunisia and Yugoslavia, the band 12.5-12.75 GHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis.
- 5.496 Additional allocation: in Austria, Azerbaijan, Kyrgyzstan and Turkmenistan, the band 12.5-12.75 GHz is also allocated to the fixed service and the mobile, except aeronautical mobile, service on a primary basis. However, stations in these services shall not cause harmful interference to fixed-satellite service earth stations of countries in Region 1 other than those listed in this footnote. Coordination of these earth stations is not required with stations of the fixed and mobile services of the countries listed in this footnote. The power flux-density limit at the Earth's surface given in Article 21, Table 21-4, for the fixed-satellite service shall apply on the territory of the countries listed in this footnote.
- 5.497 The use of the band 13.25 - 13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.
- 5.498A 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.
- 5.500 Additional allocation: in Algeria, Angola, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, Egypt, the United Arab Emirates, Gabon, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Madagascar, Malaysia, Mali, Malta, Morocco, Mauritania, Nigeria, Pakistan, Qatar, Syria, Senegal, Singapore, Sudan, Chad and Tunisia, the band 13.4-14 GHz is also allocated to the fixed and mobile services on a primary basis.
- 5.501 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.
- 5.501A 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.
- 5.501B 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.
- 5.502 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. 5.43A does not apply. See Resolution 733(WRC-2000).
- 5.503 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.
- 5.503A 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.
- 5.504 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 (see Recommendation 708).

- 5.506 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.
- 5.508 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.
- 5.510 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.
- 5.511 Additional allocation: in Saudi Arabia, Bahrain, Bosnia and Herzegovina, Cameroon, Egypt, the United Arab Emirates, Guinea, the Islamic Republic of Iran, Iraq, Israel, Kuwait, Lebanon, Libya, Pakistan, Qatar, Syria, Slovenia, Somalia and Yugoslavia, the band 15.35-15.4 GHz is also allocated to the fixed and mobile services on a secondary basis.
- 5.511A 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. 9.11A. 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<sup>2</sup>) in a 50 MHz bandwidth, into any radio astronomy observatory site for more than 2% of the time.
- 5.511C Stations operating in the aeronautical radionavigation service shall limit the effective e.i.r.p. in accordance with Recommendation ITU-R 1340. The minimum coordination distance required to protect the aeronautical radionavigation stations (No. 4.10 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 1340.
- 5.511D 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<sup>2</sup>/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<sup>2</sup>/MHz) for any angle of arrival, it shall coordinate under Resolution 46 (Rev.WRC-97)/No. 9.11A 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. 4.10 applies).
- 5.512 Additional allocation: in Algeria, Angola, Saudi Arabia, Austria, Bahrain, Bangladesh, Bosnia and Herzegovina, Brunei Darussalam, Cameroon, the Congo, Costa Rica, Egypt, El Salvador, the United Arab Emirates, Finland, Guatemala, India, Indonesia, the Islamic Republic of Iran, Jordan, Kuwait, Libya, Malaysia, Morocco, Mozambique, Nepal, Nicaragua, Oman, Pakistan, Qatar, Singapore, Slovenia, Somalia, Sudan, Swaziland, Tanzania, Chad, Yemen and Yugoslavia, the band 15.7-17.3 GHz is also allocated to the fixed and mobile services on a primary basis.
- 5.513A 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.
- 5.514 Additional allocation: in Algeria, Germany, Angola, Saudi Arabia, Austria, Bahrain, Bangladesh, Bosnia and Herzegovina, Cameroon, Costa Rica, El Salvador, the United Arab Emirates, Finland, Guatemala, Honduras, India, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Libya, Nepal, Nicaragua, Oman, Pakistan, Qatar, Slovenia, Sudan and Yugoslavia, the band 17.3-17.7 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits given in Nos. 21.3 and 21.5 shall apply.
- 5.516 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 11. 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. 9.12 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. 5.43A 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.
- 5.519 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 21, Table 21-4.
- 5.520 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

- 5.521 Alternative allocation: in Germany, Denmark, the United Arab Emirates, Greece and Slovakia, the band 18.1-18.4 GHz is allocated to the fixed, fixed-satellite (space-to-Earth) and mobile services on a primary basis (see No. 5.33). The provisions of No. 5.519 also apply
- 5.522A 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. 21.5A and 21.16.2, respectively
- 5.522B 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.
- 5.523A 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. 9.11A/Resolution 46 (Rev.WRC-97) and No. 22.2 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. 9.11A/Resolution 46 (Rev.WRC-97) 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 4 notification information is considered as having been received by the Bureau prior to 18 November 1995.
- 5.523B The use of the band 19.3 - 19.6 GHz (Earth-to-space) by the FSS is limited to feeder links for non-GSO systems in the MSS. Such use is subject to the application of the provisions of Resolution 46 (Rev.WRC-97)/No. 9.11A, and No. 22.2 does not apply.
- 5.523C No. 22.2 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 4 coordination information, or notification information, is considered as having been received by the Bureau prior to 18 November 1995.
- 5.523D 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 Resolution 46 (Rev.WRC-97)/ No. 9.11A, but not subject to the provisions of No. 22.2. The use of this band for other non-geostationary fixed-satellite service systems, or for the cases indicated in Nos. 5.523C and 5.523E, is not subject to the provisions of Resolution 46 (Rev.WRC-97)/No. 9.11A and shall continue to be subject to Articles S9 (except No. 9.11A) and 11 procedures, and to the provisions of No. 22.2.
- 5.523E No. 22.2 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 4 coordination information, or notification information, is considered as having been received by the Bureau by 21 November 1997.
- 5.525 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
- 5.526 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.
- 5.527 In the bands 19.7-20.2 GHz and 29.5-30 GHz, the provisions of No 4.10 do not apply with respect to the mobile-satellite service
- 5.528 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. 5.524.
- 5.530 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).
- 5.532 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.
- 5.535A 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 Resolution 46(Rev.WRC-97)/No. 9.11A, but not subject to the provisions of No. 22.2, except as indicated in Nos. 5.523C and 5.523E where such use is not subject to the provisions of Resolution 46 (Rev.WRC-97)/No. 9.11A and shall continue to be subject to Articles S9 (except No. 9.11A) and 11 procedures, and to the provisions of No. 22.2.
- 5.536 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.
- 5.536A 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.

- 5.536B 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.
- 5.538 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 21, Table 21-4 on the Earth's surface.
- 5.539 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.
- 5.540 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.
- 5.541 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.
- 5.541A 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 4 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 4 information for coordination before this date are encouraged to utilize these techniques to the extent practicable.
- 5.543 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.
- 5.544 In the band 31 - 31.3 GHz the power flux-density limits specified in Article 21, Table 21-4 shall apply to the space research service.
- 5.545 Different category of service: in Armenia, Azerbaijan, Belarus, Georgia, Mongolia, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 31-31.3 GHz to the space research service is on a primary basis (see No. 5.33).
- 5.546 Different category of service: in Saudi Arabia, Armenia, Azerbaijan, Belarus, Egypt, the United Arab Emirates, Spain, Estonia, Finland, Georgia, Hungary, Iran (Islamic Republic of), Israel, Jordan, Latvia, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Syria, Kyrgyzstan, Romania, the United Kingdom, the Russian Federation, Tajikistan, Turkmenistan, Turkey and Ukraine, the allocation of the band 31.5-31.8 GHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. 5.33).
- 5.547 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)).
- 5.547A 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
- 5.548 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 (WARC-79)).
- 5.549 Additional allocation: in Saudi Arabia, Bahrain, Bangladesh, Egypt, the United Arab Emirates, Gabon, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Malaysia, Mali, Malta, Morocco, Mauritania, Nepal, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Senegal, Singapore, Somalia, Sudan, Sri Lanka, Togo, Tunisia, Yemen and Zaire, the band 33.4-36 GHz is also allocated to the fixed and mobile services on a primary basis.
- 5.550 Different category of service: in Armenia, Azerbaijan, Belarus, Georgia, Mongolia, Uzbekistan, Kyrgyzstan, the Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 34.7-35.2 GHz to the space research service is on a primary basis (see No. 5.33).
- 5.551A 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, meteorological aids and other services allocated on a primary basis.

- 5.551AA 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)).
- 5.551G 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<sup>2</sup>) in any 1 MHz band at the site of a radio astronomy station for more than 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<sup>2</sup>) 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).
- 5.552 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.
- 5.552A 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).
- 5.553 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. 5.43).
- 5.554 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 authorized when used in conjunction with the mobile-satellite service or the radionavigation-satellite service
- 5.555 Additional allocation: the band 48.94-49.04 GHz is also allocated to the radio astronomy service on a primary basis.
- 5.555A The band 50.2-50.4 GHz is also allocated, on a primary basis, to the fixed and mobile services until 1 July 2000.
- 5.556 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
- 5.556A 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<sup>2</sup> /100 MHz) for all angles of arrival.
- 5.557A 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).
- 5.558 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. 5.43).
- 5.558A 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<sup>2</sup> /100 MHz) for all angles of arrival.
- 5.559 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. 5.43).
- 5.559A The band 75.5-76 GHz is also allocated to the amateur and amateur-satellite services on a primary basis until the year 2006.
- 5.56 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)
- 5.560 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.
- 5.560A The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis.
- 5.561 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.
- 5.562 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.

- 5.562A 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.
- 5.562B Use of this allocation is limited to space-based radio astronomy only
- 5.562C 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  $-148 \text{ dB(W/(m}^2 \text{ ? MHz))}$  for all angles of arrival.
- 5.562E The allocation to the Earth exploration-satellite service (active) is limited to the band 133.5-134 GHz.
- 5.562F 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
- 5.562G 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.
- 5.562H 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  $-144 \text{ dB(W/(m}^2 \text{ ? MHz))}$  for all angles of arrival.
- 5.563 In United Kingdom the band 182-185 GHz is also allocated to the fixed and mobile services on a primary basis
- 5.563A 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.
- 5.563B 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.
- 5.565 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.

**Relevant CEPT ECC/ERC Decisions and Recommendations**

<i>ECCERC document</i>	<i>ECCERC document title</i>
ECC DEC (01)02	CT2 applications in 900 MHz
ECC DEC (02)01	RTTT
ECC DEC (02)03	Narrow Band Digital Land Mobile PMR/PAMR
ECC DEC (02)04	Terrestrial (fixed service/broadcasting service) systems and uncoordinated Earth stations in the fixed satellite service and broadcasting-satellite service (space to Earth) in the band 40.5 – 42.5 GHz
ECC DEC (02)05	Frequency bands for railway purposes 876-880/921-925 MHz
ECC DEC (02)06	UMTS/IMT-2000 in the band 2500-2690 MHz
ECC DEC (02)07	Harmonised use of 1670-1675/1800-1805 MHz withdrawal of teh ERC Decision (92)01 TFTS
ERC DEC (00)01	Frequency bands for UMTS extending ERC DEC (97)07
ERC DEC (00)02	37.5-40.5 GHz for Fixed and Fixed Satellite Service
ERC DEC (00)07	Shared use of 17.7-19.7 GHz for Fixed and Fixed Satellite Service
ERC DEC (00)08	Use of 10.7-12.5 GHz by the Fixed and Broadcasting-satellite/Fixed-satellite service
ERC DEC (00)09	Use of 27.5-29.5 GHz by the Fixed and Fixed Satellite Service
ERC DEC (01)01	Non-specific SRD in 6765-6795 kHz and 13.553-13.567 MHz
ERC DEC (01)02	Non-specific SRD in 26.957-27.283 MHz
ERC DEC (01)03	Non-specific SRD in 40.660-40.700 MHz
ERC DEC (01)04	Non-specific SRD in 868-868.6 MHz, 868.7-869.2 MHz, 869.4-869.65 MHz and 869.7-870 MHz
ERC DEC (01)05	Non-specific SRD in 2400-2483.5 MHz
ERC DEC (01)06	Non-specific SRD in 5725-5875 MHz
ERC DEC (01)07	Radio-LAN SRDs in 2400-2483.5 MHz
ERC DEC (01)08	Movement Detection and Alert SRDs in 2400-2483.5 MHz
ERC DEC (01)09	Alarm SRDs in 868.6-868.7 MHz,
ERC DEC (01)10	Model control sRDs in 26.995, 27.045, 27.095, 27.145 and 27.195 MHz
ERC DEC (01)11	Flying Model control in 34.995-35.225 MHz
ERC DEC (01)12	Model control in 40.665, 40.675, 40.685 and 40.695 MHz
ERC DEC (01)17	Medical implant SRDs in 402-405 MHz
ERC DEC (01)18	Wireless Audio SRD Applications in 863-865 MHz
ERC DEC (01)19	DMO frequencies for emergency services
ERC DEC (01)20	Air-ground-Air (AGA) frequencies for emergency services
ERC DEC (01)21	DMO frequencies for digital land mobile systems
ERC DEC (94)01	Frequency bands for GSM systems
ERC DEC (94)02	Frequencies for ERMES
ERC DEC (94)03	Frequencies for DECT
ERC DEC (95)03	Frequency bands for DCS 1800
ERC DEC (96)01	Frequency bands for Emergency Services
ERC DEC (96)02	Frequency bands and implementation of standard for CEPT PR27 equipment
ERC DEC (96)04	Frequency bands for TETRA
ERC DEC (96)06	Harmonised frequency bands for Social Alarms
ERC DEC (97)02	Extended frequency bands for GSM
ERC DEC (97)03	S-PCS in 1610-1626.5 MHz, 2483.5-2500 MHz, 1980-2010 MHz and 2170-2200 MHz

ERC DEC (97)04	Transitional arrangements for Fixed and Mobile-satellite service in 1980-2010 MHz and 2170-2200 MHz
ERC DEC (97)06	Harmonised frequency bands for Social Alarms
ERC DEC (97)07	Frequency bands for UMTS
ERC DEC (98)25	Harmonised frequency band for PMR446
ERC DEC (99)06	Harmonised introduction of S-PCS <1GHz
ERC DEC (99)15	Harmonised frequency band 40.5-43.5 GHz for MWS including MVDS
ERC DEC (99)17	Frequencies for Shipborne Automatic Identification System (AIS)
ERC DEC (99)23	Harmonised frequency bands for HIPERLANs
ERC DEC (99)25	Harmonised spectrum for UMTS in 1900-1980 MHz, 2010-2025 MHz and 2110-2170 MHz
ECC REC 01-04	Multimedia Wireless Systems in the band 40.5 - 43.5 GHz
ECC REC 02-06	Digital Fixed Services Systems operating in the frequency range 7125-8500 MHz
ERC REC 00-04	Meteor scatter applications
ERC REC 00-05	Fixed wireless access in 24.5-26.5 GHz
ERC REC 01-01	Border coordination of UMTS/IMT-2000 systems
ERC REC 01-02	Channel arrangement for digital fixed service in 31.8-33.4 GHz
ERC REC 12-02	Channel arrangement for 12.75-13.25 GHz
ERC REC 12-03	Channel arrangement for 17.7-19.7 GHz
ERC REC 12-05	Channel arrangement for 10.0-10.68 GHz
ERC REC 12-06	Channel arrangement for 10.7-11.7 GHz
ERC REC 12-07	Channel arrangement for 15.23-15.35 GHz
ERC REC 12-08	Channel arrangement for 3600-4200 MHz
ERC REC 12-09	Channel arrangement for 57.0-59.0 GHz
ERC REC 12-10	Channel arrangement for 48.5-50.2 GHz
ERC REC 12-11	Channel arrangement for 51.4-52.6 GHz
ERC REC 12-12	Channel arrangement for 55.78-57.0 GHz
ERC REC 13-03	Use of the band 14.0-14.5 GHz for VSAT and SNG
ERC REC 13-04	Fixed Wireless Access in 3-29.5 GHz
ERC REC 14-01	Channel arrangement for 5925-6425 MHz
ERC REC 14-02	Channel arrangement for 6425-7125 MHz
ERC REC 14-03	Channel arrangement for 3400-3600 MHz
ERC REC 25-10	Frequencies for ENG/OB video links
ERC REC 62-01	135.7-137.8 kHz for the Amateur Service
ERC REC 62-02	Civil and Military Airborne Telemetry applications
ERC REC 70-03	ERC Recommendation relating to the use of Short Range Devices (SRD)
ERC REC T/R 02-02	Harmonised frequency band for the emergency services
ERC REC T/R 12-01	Channel arrangements for analogue and digital terrestrial fixed systems in 37-39.5 GHz
ERC REC T/R 13-01	Channel arrangement for fixed services in the range 1-3 GHz
ERC REC T/R 13-02	Channel arrangement for fixed services in the range 22.0-29.5 GHz
ERC REC T/R 22-01	Frequencies likely to be allocated to international railways
ERC REC T/R 22-03	Terrestrial fixed and mobile systems in 54.25-66 GHz
ERC REC T/R 22-05	Frequencies for mobile digital trunked radio systems

ERC REC T/R 22-06	HIPERLANs in the 5 GHz and 17 GHz frequency range
ERC REC T/R 22-07	Frequency bands for DCS1800
ERC REC T/R 25-05	Broadcasting and Land Mobile Service planning parameters for TV band I and III
ERC REC T/R 25-06	Broadcasting and Land Mobile Service planning parameters for TV band I and III
ERC REC T/R 25-08	Land Mobile Service in the range 29.7 - 960 MHz
ERC REC T/R 25-09	Frequencies in the 900 MHz band for railways
ERC REC T/R 32-02	On-board communication stations
ERC REC T/R 42-01	Frequencies for TFTS

<i>Standard name</i>	<i>Short Standard title</i>	<i>Harmonised Standard Art 3.2 of RTTE Directive</i>
<i>EN 300 065</i>	Navtex	EN 300 065-2
<i>EN 300 086</i>	PMR analogue speech	EN 300 082-2
<i>EN 300 113</i>	PMR Data and speech	EN 300 113-2
<i>EN 300 135</i>	CB - FM	EN 300 135-2
<i>EN 300 152</i>	EPIRB	EN 300 152-2
<i>EN 300 162</i>	Maritime mobile VHF	EN 300 162-2
<i>EN 300 219</i>	PMR internal antenna analogue speech	EN 300 219-2
<i>EN 300 220</i>	SRD 25 - 1000 MHz	EN 300 220-3
<i>EN 300 224</i>	On site paging	EN 300 224-2
<i>EN 300 296</i>	PMRintegral antenna analogue speech	EN 300 296-2
<i>EN 300 328</i>	RLANs	EN 300 328-2
<i>EN 300 330</i>	SRD 9 kHz - 25 MHz	EN 300 330-2
<i>EN 300 341</i>	PMR specific response	EN 300 341-2
<i>EN 300 390</i>	PMR data and speech integral antenna	EN 300 390-2
<i>EN 300 422</i>	Radio microphones	EN 300 442-2
<i>EN 300 433</i>	CB DSB and SSB	EN 300 433-2
<i>EN 300 440</i>	SRD 1-40 GHz	EN 300 440-2
<i>EN 300 471</i>	Access protocol	EN 300 471-2
<i>EN 300 674</i>	RTTT in 5.8 GHz	EN 300 674-2
<i>EN 300 698</i>	Maritime inland waterways	EN 300 698-3
<i>EN 300 718</i>	Avalanche Beacons	EN 300 718-2
<i>EN 300 720</i>	UHF on bord communication	EN 300 720-2
<i>EN 300 761</i>	AVI for railways	EN 300 761-2
<i>EN 300 836</i>	HIPERLANs	EN 300 836
<i>EN 301 025</i>	DCS VHF bands	EN 301 025-2
<i>EN 301 091</i>	RTTT in 76-77 GHz	EN 301 091-2
<i>EN 301 178</i>	Portable maritime non GMDSS	EN 301 178-2
<i>EN 301 357</i>	SRD Audio in 863-865 MHz	EN 301 357-2
<i>EN 301 360</i>	FSS - SIT	EN 301 360-2
<i>EN 301 406</i>	DECT	EN 301 406
<i>EN 301 419</i>	GSM	EN 301 502-3

<i>Standard name</i>	<i>Short Standard title</i>	<i>Harmonised Standard Art 3.2 of RTTE Directive</i>
<i>EN 301 423</i>	TFTS	EN 301 423
<i>EN 301 426</i>	LMES in 1.5/1.6 GHz	EN 301 426
<i>EN 301 427</i>	LMES in 11/12/14 GHz	EN 301 427
<i>EN 301 428</i>	VSAT in 11/12/14 GHz	EN 301 428
<i>EN 301 430</i>	SNG in 11/12/14 GHz	EN 301 430
<i>EN 301 441</i>	S-PCN in 1.6/2.4 GHz	EN 301 441
<i>EN 301 442</i>	S-PCN in 2 GHz	EN 301 442
<i>EN 301 443</i>	VSAT in 4 and 6 GHz	EN 301 443
<i>EN 301 444</i>	LMES in 1.5/1.6 GHz	EN 301 444
<i>EN 301 459</i>	SIT/SUT in 29.5-30 GHz	EN 301 459
<i>EN 301 502</i>	GSM base stations an repeater	EN 301 502
<i>EN 301 511</i>	GSM/DCS mobile stations	EN 301 511
<i>EN 301 681</i>	mobile earth st S-PCN 1.5/1.6 GHz	EN 301 681
<i>EN 301 721</i>	MES LEO below 1 GHz	EN 301 721
<i>EN 301 751</i>	Point to point digital fixed links	EN 301 751
<i>EN 301 753</i>	Point to multipoint digital fixed links	EN 301 753
<i>EN 301 783</i>	Amateur radio equipment	EN 301 783-2
<i>EN 301 796</i>	CT1 and CT1+	EN 301 796
<i>EN 301 797</i>	CT2	EN 301 797
<i>EN 301 840</i>	Radio microphones in 1785-1800 MHz	EN 301 840
<i>EN 303 035</i>	TETRA	EN 303 035-2

**LIST OF ABBREVIATIONS AS USED IN THIS DOCUMENT**

AGA	- Air Ground Air
BSS	- Broadcasting Satellite Service
CEPT	- European Conference of Postal and Telecommunications Administrations
CRS	- Central Radio Station
DCS 1800	- Digital Communication System
DEC	- ERC Decision
DECT	- Digital European Cordless Telecommunication System
DME	- Distance Measuring Equipment
DMO	- Direct Mode Operation
DSI	- Detailed Spectrum Investigation
DVB-T	- Terrestrial Digital Video Broadcasting
ECA	- European Common Allocation
ECC	- Electronic Communications Committee
ECP	- European Common Proposal
EESS	- Earth Exploration-Satellite Service
EGSM	- Extended GSM
ENG	- Electronic News Gathering
EPIRB	- Emergency Position-Indicating Radiobeacon
ERC	- European Radiocommunications Committee
ERMES	- European Radio Messaging System
ERO	- European Radiocommunications Office
FB	- Base station (in a mobile radio system)
FDD	- Frequency Division Duplex
FM	- Frequency modulation
FSS	- Fixed Satellite Service
FWA	- Fixed Wireless Access
GMDSS	- Global Maritime Distress and Safety System
GNSS	- Global Navigation Satellite System
GSM	- Global System for Mobile Communications
HAPS	- High Altitude Platform Systems
HDTV	- High Definition Television
HIPERLAN	- High Performance Radio Local Area Network
IBCN	- Integrated Broadband Communications Network
ILS	- Instrument Landing System
UMTS/IMT-2000-	International Mobile Telecommunications
ISM	- Industrial, Scientific and Medical applications
ITU	- International Telecommunication Union
JTIDS	- Joint Tactical Information Distribution System
MIDS	- Multifunctional Information Distribution System

ML	- Mobile station (in a mobile radio system)
MLS	- Microwave Landing System
MSI	- Maritime Safety Information
MSS	- Mobile Satellite Service
MWS	- Multimedia Wireless Systems
NATO	- North Atlantic Treaty Organisation
NGSO	- Non-geostationary Satellite Orbit
OB	- Outside Broadcasting
OR	- Off-Route
PAMR	- Public Access Mobile Radio (PMR)
PMR	- Professional Mobile Radio, Private Mobile Radio
R	- Route
RA	- Radio Astronomy
SAB	- Services Ancillary to Broadcasting
SAP	- Services Ancillary to Programming
S-PCS	- Satellite Personal Communication System
TETRA	- Trans European Trunked Radio
RFID	- Radio Frequency Identification systems
RLAN	- Radio Local Area Network
RR	- Radio Regulations
RTTT	- Road Transport & Traffic Telematics
SNG	- Satellite News Gathering
SRD	- Short Range Devices
SSR	- Secondary Surveillance Radar
T-DAB	- Terrestrial Digital Audio Broadcasting
TACAN	- Tactical Air Navigation System
TFTS	- Terrestrial Flight Telecommunications System
TS	- Terminal Station
UMTS/IMT-2000-	International Mobile Telecommunications
VLBI	- Very Long Baseline Interferometry (Radio Astronomy)
VOR	- VHF Omni-directional Range
VTS	- Vessel Traffic System (radar)
VSAT	- Very Small Aperture Terminal
WARC-92	- World Administrative Radio Conference 1992
WRC(95)	- World Radiocommunication Conference 1995 (or other year)