



Association of Professional Wireless
Production Technologies e. V.
Pappelallee 78/79
10437 Berlin, Germany

Frequencies for wireless microphones

*This is how it works in Australia, Austria,
Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Canada,
Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Italy, Japan,
Latvia, Luxembourg, Malta, The Netherlands, New Zealand, Norway, Portugal, Romania,
Serbia, Slovenia, Spain, South Africa, South Korea, Sweden, Switzerland, USA, UAE, Ukraine
and UK.*

This document is a collection of information created by APWPT.

The information is updated whenever updates become available.

**We try to always mention explicitly the reference documents from which the information
is taken.**

- Revision December 2022 -

Frequency Scans: <https://fmscan.org/> / * <https://www.dvbtmap.eu/>

* not complete e.g. for Germany, hint: use google maps and search for "Fernmeldeturm" there

We assume no responsibility for external links.

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Australia

Current status

Television broadcasting uses spectrum in two frequency bands known as the Very High Frequency (VHF) and Ultra High Frequency (UHF) bands. Based on the historical television standards used in Australia, the spectrum allocated for television broadcasting is divided into spectrum channels with a bandwidth of 7 MHz. Spectrum in the VHF range (174–230 MHz) is referred to as channels 6–12 and spectrum in the UHF range (526–694 MHz) as channels 28–51. The amount of VHF and UHF spectrum currently used for broadcasting includes unallocated channels.

Source: "Media Reform Green Paper - Modernising television regulation in Australia" 2020

Wireless audio devices operate under a "Class Licence", meaning that no special approvals or licence is required to operate equipment that meets the following frequency and power specs.

- Use of free frequencies (no approval needed) from 174 - 230 MHz, max. e.i.r.p. 3 mW
- Use of free frequencies (no approval needed) between 520 - 694 MHz, max e.i.r.p. 100mW
- Use of free frequencies (no approval needed) between 1785 - 1800 MHz, max e.i.r.p. 100mW

Operation on the frequencies shown above is as a secondary service, sharing with DTV transmission, on the basis that you do not operate outdoors on the same frequency as a DTV service licenced in the location, and that you operate on a "no interference – no protection" basis.

Application can be made to operate outdoors on the same frequency as a DTV service licenced in the location for special events.

Note that DTV channels are allocated on a "Block Planning" approach in Australia, with 6 consecutive channels, each 7 MHz wide, allocated to each DTV market. This means that in any location there will be at least one complete block of 42 MHz fully occupied by DTV transmission. In some locations more than 1 Block is in use – refer to www.frequencyfinder.com.au for up to date information about VHF & UHF DTV frequency allocation in any area of Australia

Approval can be requested to operate on higher power levels within these bands for defined "Special Events"

Note: information as of February 2017

Austria

Individual assignment / License required

- 174 - 216 MHz, 50 mW ERP, FSB-LT015
- 230 - 250 MHz, 50 mW ERP, FSB-LT001
- 470 - 694 MHz, 50 mW ERP, FSB-LT009 (currently under revision)
- 694 - 703 MHz, 12 mW ERP, FSB-LT016 (currently under revision)
- 733 - 758 MHz, 12 mW ERP, FSB-LT016 (currently under revision)
- 788 - 790 MHz, 12 mW ERP, FSB-LT016 (currently under revision)
- 823 - 826 MHz, 20 mW e.i.r.p. or 100 mW e.i.r.p. for body-worn wireless microphones, FSB-LT017
- 826 - 832 MHz, 100 mW e.i.r.p., FSB-LT018
- 863 - 865 MHz, 10 mW ERP
- 1350 - 1400 MHz, 20 mW e.i.r.p. or 50 mW e.i.r.p. for body-worn wireless microphones, FSB-LT019 (currently in preparation)
- 1518 - 1525 MHz, 20 mW e.i.r.p. or 50 mW e.i.r.p. for body-worn wireless microphones. FSB-LT021 (currently in preparation)

For all frequency ranges above an application is mandatory with a maximum period of frequency assignment of 10 years.

No individual license required / License exempt frequencies (General license)

- 863 - 865 MHz, max. 10 mW ERP, SUB-Class 48
- 1785 - 1804.8 MHz, 20 mW e.i.r.p. or 50 mW e.i.r.p. for body-worn wireless, FSB-LT004
- 1880 - 1900 MHz, DECT equipment, 250 mW e.i.r.p.

Fees

Fees of € 53 per transmitter will be levied.

Information from EU study in Nov 2022

Source: <https://apwpt.org/wp-content/uploads/2022/10/study-on-the-use-of-the-sub-700-mhz-band-470-694-mhz-KK0722768ENN.pdf>

Within Austria, the following bands can be used for PMSE equipment under a light licensing regime:

- 470 – 694MHz;
- 694 – 703MHz;
- 733 – 758MHz;
- 788 – 790MHz;
- 823 – 826MHz;
- 826 – 832MHz;
- 1350 – 1400MHz;

- 1427 – 1518MHz; and
- 1518 – 1525MHz.

The following bands are made available under a general authorisation regime:

- 863 – 865MHz; and
- 1785 – 1804.8MHz.

Further information

- Contact addresses of the four responsible Local Telecommunication Offices:
- Fernmeldebüro
Fernmeldebehörde der Republik Österreich
office@fb.gv.at
+43 1 71100 654500
Radetzkystraße 2, 1030 Wien

<https://www.bmk.gv.at/behoerden/ofb/funk/frequenzverwaltung/natplan.html>

Note: preliminary information December 2022

Belgium

No individual license required / License exempt frequencies

- 29.7 - 47 MHz,
- 202 - 209 MHz, Radio microphones, max 50 mW ERP
- 518 - 526 MHz, Radio microphones, max 50 mW ERP
- 534 - 542 MHz, Radio microphones, max 50 mW ERP
Forbidden in the Province of Hainaut and in the Entre-Sambre et Meuse region
- 823 - 826 MHz, max 20 mW (hand micro), max 50 mW (pocket/belt micro)
- 826 - 832 MHz, max 100 mW
- 863 - 865 MHz, Radio microphones, max 10 mW ERP
- 1795 - 1800 MHz, Radio microphones, max 20 mW (hand micro), max 50 mW (pocket/belt micro)
- 1880 - 1900 MHz, DECT Equipment

see for 2022 (in German):

<https://www.bipt.be/file/cc73d96153bbd5448a56f19d925d05b1379c7f21/848660f5f3f6ff5cc04e86efa55c04e807c0f04c/BEL-DE-22-2.pdf>

in English: <https://www.bipt.be/consumers/free-use-of-radio>

Information from EU study in Nov 2022

Source: <https://apwpt.org/wp-content/uploads/2022/10/study-on-the-use-of-the-sub-700-mhz-band-470-694-mhz-KK0722768ENN.pdf>

Within Belgium, the following bands can be used for PMSE equipment:

- 29.7 – 47MHz;
- 174 – 216MHz;
- 470 – 789MHz;
- 823 – 832MHz;
- 863 – 865MHz;
- 1492 – 1518MHz; and
- 1785 – 1804.8MHz.

License required

All bands are permitted to be used on a licence exempt basis, with the exception of the 174 – 216MHz and 470 – 790MHz bands which both require individual licensing.

How to get a short- or long-term license for?

The form you can download from:

<https://www.bipt.be/consumers/publication/application-form-to-obtain-a-license-for-the-use-of-private-radio-communications-stations> (English)

Large events request form:

<https://www.bipt.be/consumers/publication/large-events-request-form>

Fees

no fees.

Information for 2022 (in German language)

<https://www.bipt.be/verbraucher/mikrofone>

Information for 2022 (in English language)

<https://www.bipt.be/consumers/microphones>

More information is at

Belgian Institute for Postal services and Communications, Service Radiolicences

Ellipse Building – building C

Koning Albert II-laan 35 (Boulevard du Roi Albert II 35 box 1)

1030 BRUSSELS

Note: preliminary information as of March 2022

Bosnia and Herzegovina

Bosnia and Herzegovina does not license microphones in general, on a tuning range basis ([Rule 81/2017](#), Annex X, the transposed ERC-REC 70-03 of that date) mic's can be used without licensing in the following bands:

RADIO MICROPHONE APPLICATIONS INCLUDING ASSISTIVE LISTENING DEVICES (ALD), WIRELESS AUDIO AND MULTIMEDIA STREAMING SYSTEMS

This annex covers frequency bands and regulatory parameters recommended for the use of radio microphone applications, hearing aids and wireless audio and multimedia streaming systems. It includes both professional and consumer radio microphones, both hand-held and body-worn, in-ear monitoring devices and Assistive Listening Devices (ALD). It also includes wireless audio and multimedia streaming (real-time playback including signal transmission and synchronization) devices, including wireless speakers, wireless headphones, low-power FM receivers that within the 87.5 to 108 MHz band create an RF connection between the transmission device and sound reproduction including cell phones, home entertainment systems or similar car systems, etc.

| Frequency Band | Power/Magnetic Field | Reference documents CEPT or EC | Reference standard | Notes |
|-------------------------|-------------------------------------|--|--------------------|--|
| 1 29,7-47 MHz | 10 mW e.r.p. | ERC/REC 70-03 Annex 10 | EN 300 422 | Radio microphones. On a tuning range basis. Frequency bands 30.3-30.5 MHz, 32.15-32.45 MHz and 41.015-47.00 MHz are harmonized military bands. |
| 2 87,5-108 MHz | 50 nW e.r.p. | ERC/REC 70-03 Annex 10 (EU) 2017/1483 | EN 301 357 | Low power FM transmitters |
| 3 169,4-174 MHz | 10 mW e.r.p. | ERC/REC 70-03 Annex 10 | EN 300 422 | ALD—Assistive Listening Device On a tuning range basis |
| 4 169,4-169,475 MHz | 500 mW e.r.p. | ECC/DEC/(05)02 ERC/REC 70-03 Annex 10 (EU) 2017/1483 | EN 300 422 | ALD—Assistive Listening Device |
| 5 169,4875-169,5875 MHz | 500 mW e.r.p. | ECC/DEC/(05)02 ERC/REC 70-03 Annex 10 (EU) 2017/1483 | EN 300 422 | ALD—Assistive Listening Device |
| 6 173,965-216 MHz | 10 mW e.r.p. | ECC Report 230 (EU) 2017/1483 | EN 300 422 | Hearing aids ALD—Assistive Listening Device. On a tuning range basis. A threshold of 25 dB microvolts/m is required to ensure the protection of the DAB receiver set at 1.5 m from the hearing aid, depending on the measurement of the DAB signal strength near the field of hearing aids. Hearing aids should, in all conditions, operate at frequencies at least 300 kHz off the frequency of the used DAB channel. |
| 7 174-216 MHz | 50 mW e.r.p. | ERC/REC 70-03 Annex 10 | EN 300 422 | Radio microphones On a tuning range basis. |
| 8 470-786 MHz | 50 mW e.r.p. | ERC/REC 70-03 Annex 10 | EN 300 422 | Radio microphones On a tuning range basis. |
| 9 786-789 MHz | 12 mW e.r.p. | ERC/REC 70-03 Annex 10 Detailed in technical conditions for the operation of PMSE equipment in Annex 3 to ECC/DEC/(09)03 Part 3.1 | EN 300 422 | Radio microphones On a tuning range basis. |
| 10 823-826 MHz | 20 mW e.i.r.p. / 100 mW e.l.r.p. | ERC/REC 70-03 Annex 10 Detailed in technical conditions for the operation of PMSE equipment in Annex 3 to ECC/DEC/(09)03 Part 3.1 | EN 300 422 | Radio microphones The 100 mW limit applies to equipment that is body-worn. |
| 11 826-832 MHz | 100 mW e.i.r.p. | ERC/REC 70-03 Annex 10 Detailed in technical conditions for the operation of PMSE equipment in Annex 3 to ECC/DEC/(09)03 Part 3.1 | EN 300 422 | Radio microphones |

| | | | | | |
|----|---------------|------------------------------|---|--------------------------|--|
| 11 | 1625-1630 MHz | 100 mW e.i.p. | ERC/REC 70 Annex 10 (Detailed in national conditions for the operation of PMSE equipment in Annex A to ECC/REP 02/REP00 Part 1.3) | EN 300 422 | Radio microphones |
| 12 | 1625-1630 MHz | 10 mW e.i.p. | ERC/REC 70 03 Annex 10 (EU) 2017/1483 | EN 300 422 EN 301 357 | Radio microphones, wireless audio and multimedia streaming devices |
| 13 | 1735-1740 MHz | 20 mW e.i.p./50 mW e.l.p. | ERC/REC 70 Annex 10 | EN 300 422 | Radio microphones e.i.p./e.l.p. restricted to body worn equipment or equipment with Spectrum Scanning Procedure (SSP) implemented for the 1735-1740 MHz band |
| 14 | 1735-1740 MHz | 50 mW e.i.p. | ERC/REC 70 Annex 10 | EN 300 422 | Radio microphones On a sharing range basis Indoor use |
| 15 | 1738-1742 MHz | 50 mW e.i.p. | ERC/REC 70 03 Annex 10 | EN 300 422 | Radio microphones On a sharing range basis Indoor use |
| 16 | 1735-1740 MHz | 20 mW e.i.p./50 mW e.l.p. | ERC/REC 70 Annex 10 | EN 300 422 | Radio microphones e.i.p./e.l.p. restricted to body worn equipment or equipment with Spectrum Scanning Procedure (SSP) implemented for the 1735-1740 MHz band |
| 17 | 1735-1740 MHz | 20 mW e.i.p./50 mW e.l.p. | ERC/REC 70 Annex 10 | EN 300 422 EN 301 357 | Radio microphones, wireless audio and multimedia streaming devices. 50 mW restricted to body worn equipment or equipment with Spectrum Scanning Procedure (SSP) implemented for the 1735-1740 MHz band |
| 18 | 1735-1740 MHz | 20 mW e.i.p./50 mW e.l.p. | ERC/REC 70 Annex 10 | EN 300 422 | Radio microphones e.i.p./e.l.p. restricted to body worn equipment or equipment with Spectrum Scanning Procedure (SSP) implemented for the 1735-1740 MHz band |

Additionally, PMSE equipment is licensed (mostly with temporary licenses) in 2 GHz and 10 GHz bands according to the [Rule 91/2019](#), Article 4 - referencing to the CEPT documents ERC/REC 25-10, ECC REP 204, ECC REP 002, ERC REP 038, ERC REP 042. The Rule 91/2019 also stipulates that:

“In individual cases for the purpose of service in radio and TV broadcasting and programme making (PMSE applications) other bands outside the ranges listed in Table 1 of the Annex can be allocated to temporary and portable audio-video links in line with the Plan of Allocation and Utilization and CEPT documents ERC/REC 25-10, ECC REP 204, ECC REP 002, ERC REP 038, ERC REP 042.”

Brazil

Any equipment used in Brasil has to be tested and labeled by Anatel. Therefore, no further authorization is needed.

No individual license required / License exempt frequencies

- 54 - 72 MHz, 50 mW *1
- 76 - 88 MHz, 50 mW *1
- 174 - 216 MHz, 50 mW *2
- 470 - 608 MHz, 250 mW *3
- 614 - 698 MHz *3
- 902 - 907,5 MHz *3
- 915 - 927,75 MHz *3
- 1910 - 1920 MHz, DECT *4
- 2400 - 2495 MHz *4
- 5150 – 5350 MHz *4
- 5470 – 5725 MHz *4
- 5725 – 5850 MHz *4

Notes:

*1 Emission-Limit: 100 microvolt/metre, 3m distance of measurement

*2 Emission-Limit: 150 microvolt/metre, 3m distance of measurement

*3 Emission-Limit: 200 microvolt/metre, 3m distance of measurement

*4 Emission-Limit: 500 microvolt/metre, 3m distance of measurement

Further information

- Contact addresses of the responsible Local Telecommunication Offices:
<https://www.anatel.gov.br/institucional/contato>
- Plan of Allocation of Frequency Bands (available only in Portuguese):
<https://www.anatel.gov.br/institucional/>
- Temporary Use of Radio Frequencies (licensing):
<https://www.anatel.gov.br/grandeseventos/en/component/content/article?layout=edit&id=92>
- Approves the Regulations on the Authorization for the Temporary Use of Radiofrequencies (Resolution nº 635 of May 9th, 2014):
<https://www.anatel.gov.br/legislacao/en/resolutions/767-resolution-635>
- Update 2017 (Resolution nº 680, June 27th, 2017)
<https://www.anatel.gov.br/legislacao/en/resolucoes/2017/936-resolucao-680>
- Further Information on the analogue transition period:
 - https://www.itu.int/dms_pub/itu-d/opb/stg/D-STG-SG01.08.1-1-2017-PDF-E.pdf
 - <https://techinbrazil.com/transition-to-digital-tv-in-brazil>

Note: information as of February 2020

Bulgaria

License exempt frequencies / no license required

Audio PMSE

29.7-47.0 MHz,

Radio microphones, max. 10 mW ERP, channel spacing up to 50 kHz, on a tuning range basis

Reference: EN 300 422; EN 300 422-1; EN 300 422-2; EN 300 422-3; EN 301 489-1; EN 301 489-9; ERC/REC 25-10; ERC/REC 70-03, national documents – [Rules](#)¹, [Annex 2.9](#)

174-216 MHz,

Radio microphones, max. 50 mW ERP, on a tuning range basis

Reference: EN 300 422; EN 300 422-1; EN 300 422-2; EN 300 422-3; EN 301 489-1; EN 301 489-9; ERC/REC 25-10; ERC/REC 70-03, national documents – [Rules](#), [Annex 2.9](#)

470-694 MHz; 723-753 MHz; 778-786 MHz,

Radio microphones, max. 50 mW ERP

Reference: EN 300 422; EN 300 422-1; EN 300 422-2; EN 300 422-3; EN 301 489-1; EN 301 489-9; ERC/REC 25-10; ERC/REC 70-03, national documents – [Rules](#); [Annex 2.9](#)

786-789 MHz,

Radio microphones, max. 12 mW ERP, on a tuning range basis

Reference: EN 300 422; EN 300 422-1; EN 300 422-2; EN 300 422-3; EN 301 489-1; EN 301 489-9; ERC/REC 25-10; ERC/REC 70-03, national documents – [Rules](#); [Annex 2.9](#)

823-832 MHz,

Radio microphones

Reference: EN 300 422; EN 300 422-1; EN 300 422-2; EN 300 422-3; EN 301 489-1; EN 301 489-9; 2014/641/EC; ERC/REC 25-10; ERC/REC 70-03, national documents – [Rules](#); [Annex 2.9](#):

| Power limit/density limit | | Other usage restrictions |
|---------------------------|--|-------------------------------|
| Block edge mask | | |
| Frequencies below 821 MHz | Out-of-block equivalent isotropically radiated power (e.i.r.p.) is: –43 dBm/(5 MHz) e.i.r.p. | Wireless audio PMSE equipment |
| 821-823 MHz | Guard band (for protection against interference from PMSE into terrestrial systems capable of providing electronic communications services (downlink)) | |
| 823-826 MHz | in-block e.i.r.p. of 13 dBm (20 mW) for hand-held audio PMSE equipment; in-block e.i.r.p. of 20 dBm (100 mW) for body-worn audio PMSE equipment | |
| 826-832 MHz | in-block e.i.r.p. of 20 dBm (100 mW) | |
| Frequencies above 832 MHz | Out-of-block e.i.r.p. is –25 dBm/(5 MHz) | |

863-865 MHz,

Wireless audio and multimedia streaming devices, max 10 mW ERP

Reference: EN 300 422; EN 300 422-1; EN 300 422-2; EN 300 422-3; EN 301 357; EN 301 357-1; EN 301 357-2; EN 301 489-1; EN 301 489-9; ERC/REC 25-10; 2006/771/EO, as amended, band 46b; ERC/REC 70-03, national documents – [Rules](#); [Annex 2.9](#)

¹ [Rules for operation of electronic communications through radio equipment using frequency spectrum, which does](#)

1350-1400 MHz,

Radio microphones, max 20 mW e.i.r.p./50 mW e.i.r.p. restricted to body worn equipment or equipment with Spectrum Scanning Procedure

Reference: EN 300 422; EN 300 422-1; EN 300 422-2; EN 300 422-3; EN 301 489-1; EN 301 489-9; ERC/REC 25-10; ERC/REC 70-03, national documents – [Rules](#); [Annex 2.9](#)

1492-1518 MHz,

Radio microphones, max 50 mW e.i.r.p., on a tuning range basis, restricted to indoor use

Reference: EN 300 422; EN 300 422-1; EN 300 422-2; EN 300 422-3; EN 301 489-1; EN 301 489-9; ERC/REC 70-03, national documents - [Rules](#); [Annex 2.9](#)

1518-1525 MHz,

Radio microphones, max 50 mW e.i.r.p., on a tuning range basis, restricted to indoor use

Reference: EN 300 422; EN 300 422-1; EN 300 422-2; EN 300 422-3; EN 301 489-1; EN 301 489-9; ERC/REC 25-10; ERC/REC 70-03, national documents - [Rules](#); [Annex 2.9](#)

1785-1805 MHz,

Radio microphones

Reference: EN 300 422; EN 300 422-1; EN 300 422-2; EN 300 422-3; EN 301 489-1; EN 301 489-9; 2014/641/EC; ERC/REC 25-10; ERC/REC 70-03, national documents - [Rules](#); [Annex 2.9](#):

| Power limit/density limit | | Other usage restrictions |
|--|---|---|
| Block edge mask | | Wireless audio PMSE equipment for handheld equipment |
| Frequencies below 1785 MHz (Out-of-block) | –17 dBm/200 kHz e.i.r.p. | |
| 1785-1785.2 MHz (Restricted frequency range) | 4 dBm/200 kHz e.i.r.p. | |
| 1785.2-1803.6 MHz | 13 dBm/ channel e.i.r.p. | |
| 1803.6-1804.8 MHz | 10 dBm/200 kHz e.i.r.p. with a limit of 13 dBm/channel. | |
| 1804.8-1805 MHz (Restricted frequency range) | –14 dBm/200 kHz e.i.r.p. | |
| Frequencies above 1805 MHz (Out-of-block) | –37 dBm/200 kHz e.i.r.p. | |
| Block edge mask | | Wireless audio PMSE equipment for body-worn equipment |
| Frequencies below 1785 MHz (Out-of-block) | –17 dBm/200 kHz e.i.r.p. | |
| 1785-1804.8 MHz | 17 dBm/ channel e.i.r.p. | |
| 1804.8-1805 MHz (Restricted frequency range) | 0 dBm/200 kHz e.i.r.p. | |
| Frequencies above 1805 MHz (Out-of-block) | –23 dBm/200 kHz e.i.r.p. | |

1880-1900 MHz,

DECT (Digital European Cordless Telecommunications) systems, 250 mW (24 dBm) nominal transmit power, max 26 dBm (400 mW) EIRP for omni-directional antennas, max 30 dBm (1 W) EIRP for directional antennas; channel spacing 1728 kHz, instant dynamic channel selection

Reference: EN 301 406, EN 301 489-1, EN 301 489-6, 91/287/EEC, ERC/DEC/(98)22, ERC/DEC/(94)03, ERC/REC 70-03, national documents - [Rules](#); [Annex 2.13](#)

Video PMSE

2010-2025 MHz, 2025-2110 MHz, 2300-2400 MHz, 10.00-10.15 GHz, 21.2-21.4 GHz, 47.20-48.50 GHz,

Cordless Cameras,

–7 dBW e.i.r.p. for band 2010-2025 MHz,

6 dBW e.i.r.p. for bands 2025-2110 MHz, 2300-2400 MHz and 10.00-10.15 GHz,

13 dBW e.i.r.p. for bands 21.2-21.4 GHz and 47.20-48.50 GHz,

service area <500 m, Tx antenna gain 0 dBi, Rx antenna gain 6 dBi

Reference: EN 302 064, EN 302 064-1, EN 302 064-2, EN 301 489-1, EN 301 489-28, 2016/339/EC, ERC/REC 25-10, national documents - [Rules](#); [Annex 4](#)

2010-2025 MHz, 2025-2110 MHz, 2300-2400 MHz, 10.00-10.15 GHz,

Portable video link, 16 dBW e.i.r.p., service area <2 km, Tx antenna gain 6 dBi, Rx antenna gain 17 dBi

Reference: EN 302 064, EN 302 064-1, EN 302 064-2, EN 301 489-1, EN 301 489-28, 2016/339/EC, ERC/REC 25-10, national documents - [Rules](#); [Annex 4](#)

2010-2025 MHz, 2025-2110 MHz, 2300-2400 MHz,

Mobile video link (vehicle or aircraft),

10 dBW e.i.r.p. for band 2010-2025 MHz,

26 dBW e.i.r.p. for bands 2025-2110 MHz and 2300-2400 MHz,

service area <10 km, Tx antenna gain 3 dBi, Rx antenna gain 13 dBi

Reference: EN 302 064, EN 302 064-1, EN 302 064-2, EN 301 489-1, EN 301 489-28, 2016/339/EC, ERC/REC 25-10, national documents - [Rules](#); [Annex 4](#)

10.00-10.15 GHz, 21.2-21.4 GHz,

Temporary point-to-point video links, 40 dBW e.i.r.p., service area <80 km, Tx antenna gain 13 dBi, Rx antenna gain 17 dBi

Reference: EN 302 064, EN 302 064-1, EN 302 064-2, EN 301 489-1, EN 301 489-28, 2016/339/EC, ERC/REC 25-10, national documents - [Rules](#); [Annex 4](#)

Fees

No fees are required

Further information

Contact addresses of the responsible Local Telecommunication Offices:

Communications Regulation Commission (CRC), www.crc.bg

Mail: info@crc.bg

Sofia 1000, Bulgaria, 6 General Yosif V. Gourko Str.

Note: information as of March 2020

Canada

(Preliminary information)

License exempt frequencies / no license required

- * 72-73 MHz, 74.6-74.8 MHz and 75.2-76 MHz, information in [RSS-210 Annex C](#)
- * 54-72 MHz, 76-88 MHz, information in [RSS-210 Annex G](#)
- * 174-216 MHz, information in [RSS-210 Annex G](#)
- * 470-608 MHz, information in [RSS-210 Annex G](#)
- * 614-616 MHz and 653-663 MHz, information in [RSS-210 Annex G](#)
- * 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz, information in [RSS-210 Annex B](#)

Individual assignment / Licence required

- * 26.10-26.48 MHz, 88-107.5, 450-451 MHz and 455-456 MHz, ≤ 1 W ERP, 200 kHz RF bandwidth
- * 150-174 MHz, ≤ 50 mW output power, 200 kHz RF bandwidth
- * 941.5-952 MHz and 953-959.85 MHz, ≤ 1 W output power, 200 kHz RF bandwidth

Further frequencies and information are published in the Radio standard specification [RSS-123](#)

The licensing procedure is described in [CPC-2-1-11, Licensed Wireless Microphones](#)

Notes

The update of RSS-210, as of April 2020, removes the bands 616-652 MHz and 663-698 MHz to reflect decisions in these references:

- * SAB-003-17 "Low-power Radio Apparatus, Including Wireless Microphones, in the Band 614-698 MHz": <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11341.html>
- * Decision on the Technical, Policy and Licensing Framework for Wireless Microphones: <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11490.html>

Further information

- * Link to the official website of the Government of Canada:
<https://www.canada.ca/en.html>
- * Addresses and Telephone Numbers of District Offices:
<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01742.html>
- * Voluntary Licensing of Licence-Exempt Wireless Microphones in the TV Bands:
<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf10931.html>
- * Decision on the Technical, Policy and Licensing Framework for Wireless Microphones:
<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11490.html>
- * Permits, licences and regulations:
<https://www.canada.ca/en/services/business/permits.html>
- * Link to Industry Canada:
<http://www.ic.gc.ca/eic/site/icgc.nsf/eng/home>

Note: information as of October 2020

Cyprus

Within Cyprus, radio PMSE equipment be used within the following bands:

- 29.7 - 47MHz;
- 169.8125 - 261MHz;
- 470 - 789MHz;
- 823 - 832MHz;
- 863 - 865MHz;
- 1350 - 1400MHz;
- 1492 - 1525MHz; and
- 1785 - 1804.8MHz.

PMSE equipment in Cyprus that conforms to the technical specifications outlined in ERC/REC 25-10 and ERC/REC 70-03 is generally permitted to be operated on a licence exempt basis. As such, much of the PMSE usage within the sub-700MHz UHF spectrum is licence exempt within Cyprus.

Note: information as of November 2022

Czech Republic

License exempt frequencies / no license required

- 174 - 216 MHz, max. 50 mW ERP, reference to national publication documents: Article 10 of General Authorization No. VO-R/10/12.2019-9 *
- 470 - 694 MHz, max. 50 mW ERP, reference to national publication documents: Article 10 of General Authorization No. VO-R/10/12.2019-9 *
- 863 - 865 MHz, max. 10 mW ERP, reference to national publication documents: Article 10 of General Authorization No. VO-R/10/12.2019-9 *
- 1785 - 1804,8 MHz, max. 30.49 (body-worn) / 12.2 mW ERP, reference to national publication documents: Article 10 of General Authorization No. VO-R/10/12.2019-9 *
- 1880 - 1900 MHz (standard DECT), max. 152,44 mW ERP, reference to national publication documents: General Authorization No. [VO-R/8/08.2005-23](#)
- 2400 - 2483 MHz:
 - according to ETSI EN 300 440: max. 25 mW e.i.r.p., reference to national publication documents: Article 3 of General Authorization No. VO-R/10/12.2019-9 *
 - according to ETSI EN 300 328: max. 100 mW e.i.r.p., reference to national publication documents: General Authorization No. [VO-R/12/12.2019-10](#)

* Links: [Document in Czech language](#); [older version in English](#) (no changes regarding mics; “This is an unofficial translation (2019). The legally binding text is the original Czech version”).

Individual assignment / Licence required

- 174 - 230 MHz, Technical conditions e.g. max. 100 mW ERP, Reference to national publication documents: [RSUP-P/21](#)

(Note: for 174 - 216 MHz, max. 50 mW ERP see „License exempt frequencies“ above.)

Fees

See <https://www.ctu.eu/charges-individual-and-short-time-authorisations-use-radio-frequencies>

Further information

Contact addresses of the responsible Local Telecommunication Offices:

see

<https://www.ctu.eu/telefonicke-kontakty-odboru-spravy-kmitoctoveho-spektra-ctu>

and

<https://www.ctu.eu/contacts>

Note: information as of March 2022

Denmark

No individual license required / License exempt frequencies

In the Danish frequency plan some frequency bands have been allocated to be used for wireless microphones. In all of those bands the frequencies can be used without a licence (licence exemption).

- 138.2 - 142.070 MHz, 50 mW ERP, 200 kHz - Only some frequencies are allowed
- 470 – 695 MHz, 50 mW ERP, 200 kHz - White spaces only

It is possible to use wireless microphones without permission in parts of the frequency band 470-695 MHz. Which parts you may use depends on where in Denmark you use the wireless microphones.

Find frequencies on maps

Wireless microphones can use 470-695 MHz (and in addition 695-703 MHz) without permission, as long as they live up to the technical requirements given in the Executive Order on the use of radio frequencies without permission as well as amateur radio tests and call signals etc. and radio interface no. 00 025, cf. executive order on radio interfaces.

A Frequency app has been developed for Android and iPhone. With the app you can always find a frequency in 470-695 MHz - even when you are out in the field.

The available frequencies will change as the TV network is rebuilt. Therefore, one should regularly check the available frequencies at lengthy events.

- 695 – 703 MHz, 60 mW ERP, 200 KHz
- 823 – 832 MHz, 100 mW e.i.r.p. 200 kHz - Handheld only 20mW in 823-826 MHz
- 863 – 865 MHz, 10 mW ERP, 200 kHz
- 1785 – 1804,8 MHz, 50 mW e.i.r.p., 200 kHz - Handheld only 20mW

| Frequency Band (MHz) | Maximum Transmission Power (mW ERP) | Maximum Bandwidth (kHz) | Comments |
|----------------------|---|-------------------------|---|
| 32-39,4 | 2 | 50 | Only certain frequencies in the band may be used. |
| 138,250-142,070 | 50 | 200 | Only certain frequencies in the band may be used. |
| 169,4000-169,5875 | 500 | 50 | Radio system for use by the hearing impaired. |
| 169,8250-173,9625 | 10 | 50 | Radio system for use by the hearing impaired. |
| | | | Only certain frequencies in the band may be used. |
| 180,5-222,5 | 2 | 50 | Radio system for use by the hearing impaired. |
| | | | Only certain frequencies in the band may be used. |
| 470-695 | 50 | 200 | Only "white spaces " may be used. |
| 695-703 | 60 | 200 | |
| 733-736 | 60 | 200 | NB: May only be used until 31 December 2021. |
| 823-832 | As specified in Table 1 of Radio Interface 00 025 of the Executive Order on Radio Interfaces. | 200 | |
| 863-865 | 10 | 200 | |
| 1785-1804,8 | 10 | 200 | |

Link to administrations homepage regarding Wireless Microphones

<https://ens.dk/ansvarsomraader/frekvenser/traadloese-mikrofoner-og-kystradio>

Danish radio interface (No 00 025) for audio PMSE

<https://www.retsinformation.dk/pdfPrint.aspx?id=184975&exp=1>

Further Information

Online tool to find legal location specific whitespaces

<https://frekvens.erhvervsstyrelsen.dk/>

Note: information as of July 2021, Chart from Nov. 2022 = EU study (<https://apwpt.org/wp-content/uploads/2022/10/study-on-the-use-of-the-sub-700-mhz-band-470-694-mhz-KK0722768ENN.pdf>)

Estonia

License exempt frequencies / no license required

- 37.6 - 38.6. max 10 mW ERP; Estonian Frequency Allocation Plan (in Estonian language only) https://www.riigiteataja.ee/akt/1250/1201/9006/MKM_22012019_m6lisa1.pdf#, national documents
- 174 - 216 MHz, 50 mW ERP; Estonian Frequency Allocation Plan, national documents
- 470 - 694 MHz, 50 mW ERP; Estonian Frequency Allocation Plan, national documents
- 823 - 826 MHz, 100 mW e.i.r.p. for body-worn wireless microphones, otherwise max. 20 mW e.i.r.p. Estonian Frequency Allocation Plan, national documents
- 826 - 832 MHz, 100 mW e.i.r.p.; Estonian Frequency Allocation Plan, national documents,
- 863 - 865 MHz, ERP; 10mW Estonian Frequency Allocation Plan, national documents
- 1785 - 1804.8 MHz, max. 50 mW e.i.r.p. for body-worn wireless microphones, otherwise max. 20 mW e.i.r.p.; Estonian Frequency Allocation Plan, national documents
- 1880 - 1900 MHz, DECT equipment only*
- 2400 - 2483 MHz; Estonian Frequency Allocation Plan*

Further information

- Consumer Protection and Technical Regulatory Authority:

Endla 10a, 10142 Tallinn
 Telephone: (+372) 667 2000
 Fax: (+372) 667 2001
 Reg. nr. 70003218
 E-mail: info@ttja.ee
www.ttja.ee / www.ttja.ee/en

- Applying for a frequency licence:
<https://www.ttja.ee/en/fields-services/communications-services/radio-communications/applying-frequency-licence>
- Estonian Frequency Allocation Plan:
<https://www.riigiteataja.ee/akt/102102014004>

Note: information as of November 2022, * = not yet re-confirmed in Nov. 2022

Finland

License exempt frequencies / No individual license required

- 174 – 195; 216 - 225 MHz, max. 50 mW ERP
- 470 - 694 MHz, max. 50 mW ERP
- 823 - 832 MHz
823-826 MHz: max. 12 mW ERP or max. 60 mW ERP for body-worn wireless microphones
826-832 MHz: max. 60 mW ERP
- 863 - 865 MHz, max. 10 mW ERP
- 1785 - 1804.8 MHz, max. 20 mW e.i.r.p. or max. 50 mW e.i.r.p. for body-worn wireless microphones
- 1881.792 MHz + (0...9) x 1.728 MHz, DECT equipment, max. 250 mW ERP.*

To get further information on license-exempt radio microphones and frequency selection, see TRAFICOM's website <http://mics.traficom.fi/>

Regulation on collective frequencies for license-exempt radio transmitters (includes DECT devices) and on their use.

<https://www.traficom.fi/en/regulations/regulation-15-collective-frequencies-licence-exempt-radio-transmitters-and-their-use>

Mandatory application / Applying for a short-term license (PMSE-license)

- The radio microphones will be license-exempted if they operate on the allowed frequencies and accordance with the standard. In cases where parameters of use such like maximum ERP (10 mW - 60 mW) or bandwidth (≤ 200 kHz) deviates from those exempted from license TRAFICOM grants a radio license if necessary to the radio microphone. The radio licenses are applied for from TRAFICOM using the form on the website and TRAFICOM assigns parameters and the frequencies to be used in the radio license.
<https://www.traficom.fi/en/contact-form-event-organizers>

Fees

- The frequency fee of a license bases on the number of equipment and frequencies used. The frequency fee of a short-term license is at least one fourth of an annual frequency fee but no less than EUR 18.
- Typical fees (for using a bandwidth of 200 kHz):
 - 18 EUR for a single microphone up to 12 months
 - 18 EUR for 8 microphones up to 3 months
 - 65 EUR for 8 microphones up to 12 months

Link to administrations homepage

<https://www.traficom.fi/en/>

Note: information as of August 8th, 2021, updated August 16th, 2021 and Nov 2022; * = not yet reconfirmed

France

License exempt frequencies / No license required

The access to spectrum for PMSE (wireless microphones, In-Ear monitor systems, talk-back applications) is subject to a licence-exempt regime, authorized by the national regulatory authority ARCEP (Autorité de régulation des communications électroniques et des postes).

Such use is allowed in the following bands and is restricted to professional users.

- 174 - 223 MHz, max. 50mW ERP
- 470 - 694 MHz, max. 50 mW ERP
- 823 - 826 MHz, max. 20 mW e.i.r.p. or
max. 100 mW e.i.r.p. for body-worn wireless microphones
- 826 - 832 MHz, max. 100 mW e.i.r.p.
- 863 - 865 MHz, max. 10 mW ERP **NOT RE-CONFIRMED IN 2022**
- 1785 - 1800 MHz, max. 50 mW e.i.r.p. for body-worn wireless microphones
otherwise max. 20 mW e.i.r.p.

Question

What the effect of change in 700 MHz?

PMSE Help Portal: <https://aidepmse.anfr.fr/#/>

Further Information

Link to France administrations homepage, see;

Audio PMSE:

<https://www.arcep.fr/la-regulation/grands-dossiers-reseaux-mobiles/les-frequences-pour-les-professionnels-de-laudiovisuel-et-du-spectacle/les-equipements-auxiliaires-sonores-de-conception-de-programmes-et-de-radiodiffusion.html>

Video PMSE:

<https://www.arcep.fr/la-regulation/grands-dossiers-reseaux-mobiles/les-frequences-pour-les-professionnels-de-laudiovisuel-et-du-spectacle/les-liaisons-video-mobiles.html>

Temporary authorizations too meet certain specific needs, particularly during major events:

Downloadable application form on the website of ARCEP, 'Formulaire de demande d'autorisation temporaire d'utilisation de fréquences':

<https://www.arcep.fr/fileadmin/cru-1582218129/reprise/dossiers/licences/EN-17-54.xlsx>

Note: information as of July 2021, upadted Nov. 2022

Germany

Generally assigned frequencies / No individual license required (see VVnöml for details)

- 32.475 - 34.325 and 36.610 - 38.125 MHz, 10 mW ERP, [permit 53/2015](#) - <https://bit.ly/3t9sxle>
- 174 - 230 MHz, 50 mW ERP, [permit 59/2015](#) <https://bit.ly/3JbsKQO>
- 470 - 608 MHz, 614 – 698 (since 2022*), 694 (until 2022) MHz, 50 mW ERP, [permit 34/2020](#) <https://bit.ly/3i3bdhR>
 * The four MHz 694 - 698 MHz are new in 2022. This was originally a guard band to protect / decouple Broadcast from Mobile IMT. Since it is the uplink from the smartphones, we are not sure how much spurious emissions come in in the four MHz, i.e. whether there can be interference. BNetzA-Verfügungen 99/2022 und 100/2022 (Amtsblatt 20/2022 vom 19.10.2022) = <https://bit.ly/3VoFDfR>
- 736-753 MHz: BNetzA-Verfügungen 99/2022 und 100/2022 (Amtsblatt 20/2022 vom 19.10.2022 = <https://bit.ly/3VoFDfR>)
- 823 - 832 MHz, 82/100mW e.i.r.p., [permit 2/2015](#) <https://bit.ly/3CFKUyS>
- 863 - 865 MHz, 10mW ERP, [permit 107/2018](#) <https://bit.ly/3IcYfIO>
- 1350 - 1400 MHz, 50 mW e.i.r.p., indoor only, permit 06/2022 <https://bit.ly/3q5ZRhl>
- 1785 - 1805 MHz, 82mW e.i.r.p., [permit 3/2015](#) <https://bit.ly/3i2Vtva>
- 1795 - 1800 MHz, 20mW ERP, [permit 21/2017](#), see also [permit 43/2020](#)
- 1880 – 1900 MHz, 250 mW ERP, [permit 25/2015](#), **DECT only**

Individual assignment up to 10 years / Individual license required (see VVnöml for details)

- Single frequencies in 34.25 to 38.05 MHz, see [VVnöml](#)
- 733 - 823 MHz, 50 mW ERP;
758-788 and 791-821 additional optional capacity, see [VVnöml](#)
- 1452 - 1492 MHz, 50 mW e.i.r.p., additional optional capacity, see [VVnöml](#)
- 1492 - 1518 MHz, 50 mW e.i.r.p., indoor only
- 1518 - 1525 MHz, 50 mW e.i.r.p., indoor only

Fees for a "PA system" (wireless microphone systems) - long term frequency assignment up to 10 years

- Fees are charged for the allocation of frequencies in accordance with the Special Fees Ordinance of the Federal Network Agency - Frequency Allocations (BNetzA BGebV-FreqZut). The allocation fees are steering fees. The actual fee amount is calculated depending on the specific allocation parameters (Info from March 2022).
- Non recurrent fee was around € 130.00 per application before 2021. This amount included one-time administration costs regardless of the number of wireless microphones and the number of frequencies that are used in the system (wireless station).
- Now, there is a new fee scheme. It is not more expensive, but hard to calculate. Often it is cheaper; see B.43 in: <https://www.gesetze-im-internet.de/bnetzafreqzutbgebv/anlage.html>
- Get possibly updates here:
https://www.bundesnetzagentur.de/DE/Sachgebiete/Telekommunikation/Unternehmen_Institutionen/Frequenzen/Grundlagen/GebuehrenundBeitraege/gebuehrenundbeitraege-node.html

Administrative provisions relating to frequency assignments in the private land mobile radio

VVnöml

https://www.bundesnetzagentur.de/SharedDocs/Downloads/DE/Sachgebiete/Telekommunikation/Unternehmen_Institutionen/Frequenzen/Verwaltungsvorschriften/VVnoemL.pdf?__blob=publicationFile&v=22

(in German language only)

General licenses (Allgemeinzuteilung)

www.bundesnetzagentur.de/allgemeinzuteilungen (in German language only)

PMSE Programme Making and Special Events (Drahtlose Mikrofone)

www.bundesnetzagentur.de/drahtlosemikrofone (in German language only)

Short-term frequency assignment

www.bundesnetzagentur.de/shortterm

Zuteilungsgebiete Deutsche Motorsportrennstrecken / Allocation areas German motor racing circuits (pdf / 124 KB):

[ZuteilungsflaechenMotorsport.pdf \(bundesnetzagentur.de\)](#) = <http://bitly.ws/x2ZK>

Note: information as of November 2022

Greece

Individual license required

- 174 - 216 MHz, BW=50 kHz, max. >50 mW ERP, Wireless Microphones
- 470 - 786 MHz, max. >50 mW ERP, Wireless Microphones

No individual license required / License exempt frequencies

- 29.70 - 47.05 MHz, maximum transmitted power up to 10mW ERP, Wireless Microphones
- 174 - 216 MHz, maximum transmitted power up to 50 mW ERP, Wireless Microphones
- 470 - 786 MHz, maximum transmitted power up to 50mW ERP, Wireless Microphones
- 786 - 789 MHz, BW=200kHz, up to 12mW ERP, Wireless Microphones

NOT CONFIRMED in 2022:

- 823 - 826 MHz, BW=200kHz, up to 20mW e.i.r.p restricted to mobile devices or up to 100mW e.i.r.p restricted to body worn microphones
- 826 - 832 MHz, BW=200kHz, up to 100mW e.i.r.p, Wireless Microphones
- 863 - 865 MHz, up to 10 mW ERP, Wireless Microphones
- 1785 - 1804.8 MHz, up to 20 mW e.i.r.p. restricted to mobile devices or up to 50 mW restricted to body worn microphones
- 1880 - 1900 DECT equipment, up to 250 mW e.i.r.p

Fees

General Notes and Information for PMSE licensing can be found here:

https://www.eett.gr/opencms/export/sites/default/EETT_EN/Electronic_Communications/Radio_Communications/Rights_Of_Use/guidelines.pdf

The general rule for the fees is the following: The cost for any temporary license issued for a maximum period of 2 months is 300 Euros per frequency per area of use except for SNG, which is 1000 Euros per station.

Further information

Contact address of the responsible Local Telecommunication Offices: info@eett.gr

Downloadable application form on the website of add your relevant organization web space.

The form can be found here

https://www.eett.gr/opencms/opencms/EETT_EN/Electronic_Communications/Radio_Communications/Rights_Of_Use/temporary.html

...by clicking on SAP/SAB and ENG/OB Temporary License Application Form.

Note: the information as of November 2022.

Hungary

No individual license required / License exempt frequencies

In the following bands license exemption applies for frequency usages employing transmit parameters that match license exemption criteria (check the spectrum information system for details via this link; <http://stir.nmhh.hu/?lang=2>). Otherwise a license has to be asked for and the requested transmission parameters will be subject of thorough investigation (for possible interference), based on which a temporary license might be issued (see note 1):

- 174 - 216 MHz, max. 50 mW ERP
- 470 - 694 MHz, max. 50 mW ERP
- 694 - 703 MHz, 733 - 758 MHz, 50 mW ERP; available until 05.09.2020
- 786 - 789 MHz, 12 mW ERP; available until 05.09.2020
- 823 - 826 MHz, max. 20 mW e.i.r.p. or max. 100 mW e.i.r.p. for body-worn wireless microphones
- 826 - 832 MHz, max. 100 mW e.i.r.p.
- 863 - 865 MHz, max. 10 mW ERP
- 1350 - 1400 MHz, max. 20 mW e.i.r.p. or max. 50 mW e.i.r.p. for body-worn wireless microphones or for use with SSP (Spectrum Scanning Procedure)
- 1492 - 1518 MHz, 50 mW e.i.r.p.
- 1518 - 1525 MHz, 50 mW e.i.r.p.
- 1785-1804.8 MHz, max. 20 mW e.i.r.p. or max. 50 mW e.i.r.p. for body-worn wireless microphones or for use with SSP
- 1880 - 1900 MHz, for DECT equipment, max 250 mW e.i.r.p. (see note 2).

Notes:

1) In fortunate cases when the tuning range of an equipment falls outside the listed frequency ranges but harmful interference will probably not be caused (based on the interference check of the Authority) a license might also be issued. In such cases please request information from our licensing department.

2) Stations fulfilling the requirements of Decision ERC/DEC/(98)22 are exempted from the obligation of individual licensing. It is not forbidden to use the band for audio PMSE although it is originally not meant for this purpose.

Fees

Fees of HUF 4000 per transmitter will be levied (fee of temporary license for shorter than 1 month of operation).

The relevant rules can be found in the Decree NMHH 1/2011 (III. 31.):

http://njt.hu/cgi_bin/njt_doc.cgi?docid=136918

Further information

Contact addresses:

- Web address with further information: <http://english.nmhh.hu/>
- Contact for general regulatory issues: berecz.laszlo@nmhh.hu
- Direct contact for licensing issues: feo@nmhh.hu
- Downloadable application form on the website of the National Media and Infocommunications Authority of Hungary:
http://english.nmhh.hu/dokumentum/173145/temporary_licence_application_hng.xlsx
(this refers to the form for the temporary licensing of PMSE use)

Note

Please always check before use the valid frequency usage regulation at the Authority's spectrum information system at:

<http://stir.nmhh.hu/?lang=2>

Note: information as of February 2020, data checked Nov 2022 (not the links)

Iceland (see list in attachment / 2022)

Ireland

Link for the temporary frequency request:

| Frequency Band (MHz) | Maximum Transmission Power for Licence Exemption | Comment |
|----------------------|--|---|
| 174 – 230 | 50mW ERP | Radio microphones (licence exempt in 173.965 - 174.015 MHz at max 2mW only) |
| 470 – 703 | 50mW ERP | Radio microphones |
| 733 – 753 | 50mW ERP | Radio microphones |
| 823 – 826 | 20mW EIRP 100mW EIRP (body worn equipment) | Radio microphones |
| 826 - 832 | 100mW EIRP | Radio microphones (licence exempt in 863-865 MHz only at 10 mW) |
| 1785 – 1785.2 | 20mW EIRP 50mW EIRP (body worn equipment or spectrum sharing procedure, SSP, equipment) | Radio microphones |
| 1785.2 – 1803.6 | 20mW EIRP 50mW EIRP (body worn equipment or spectrum sharing procedure, SSP, equipment) | Radio microphones |
| 1803.6 – 1804.8 | 20mW EIRP 50mW EIRP (body worn equipment or spectrum sharing procedure, SSP, equipment) | Radio microphones |
| 1804.8 - 1805 | N/A | |

Note: information as of November 2022 from the EU study

Italy

No individual license required / License exempt frequencies

- 823 - 832 MHz, Radio microphones, max 10 mW ERP
- 863 – 865 MHz, Radio microphones, max 10 mW ERP
- 174 - 230 MHz, Radio microphones, max 50 mW ERP
- 470 - 694 MHz, Radio microphones, max 50mW ERP
Comunicato stampa 22 April 2021 → Refarming 700 MHz til spring 2022
- 786 - 790 MHz, Radio microphones, max 12mW ERP
- 1785 - 1805 MHz, Radio microphones, max 20 mW e.i.r.p. or
max 50 mW e.i.r.p. for body-worn

Individual assignment / individual license required /

- 174 - 230 MHz, Radio microphones, > 50mW ERP
- 470 - 786 MHz, Radio microphones, > 50mW ERP

How to get a short- or long-term license?

Link for the temporary frequency request:

<https://www.mise.gov.it/index.php/en/201-contents/2034593-temporary-frequencies-use#1>

= <https://bit.ly/3q4gFFp>

https://www.mise.gov.it/images/stories/moduli/frequenze/GUIDELINES-FOR-TEMPORARY_FREQUENCIES%20USE%2026_5_2017.pdf

One can find specific form on the following link:

<http://www.sviluppoeconomico.gov.it/images/stories/documenti/riciesta%20autorizzazione%20temporanea%20GB.pdf>

Fees for a license

Note: fees might vary depending the region

Mail contact address of Italian administrations

frq.temp@mise.gov.it

Note: information as of March 2022

Japan

License exempt frequencies / no individual license required

- 74.58 - 74.76 MHz, Radio Microphones (Unlicensed low-power), Transmitting power max. 10mW
- 322.025 - 322.150, 322.250 - 322.400 MHz, Radio Microphones (Unlicensed low-power), Transmitting power max. 1mW
- 806.125 - 809.750 MHz, Radio Microphones (Unlicensed low-power), Transmitting power max. 10mW
- 1893.5 - 1906.1 MHz, DECT equipment
- 2400 - 2483.5 MHz, ISM band

Individual assignment / individual licence required

- 470 - 710 MHz, Radio microphones, Transmitting power for analogue system max. 10mW / digital system max. 50mW
- 710 - 714 MHz, Radio microphones, Transmitting power for analogue system max. 10mW / digital system max. 50mW
- 1240 - 1260 MHz, Radio microphones, Transmitting power for analogue system max. 50mW / digital system max. 50mW

Fees

Spectrum user fees per year for individual licensees, Revised in October 1, 2019

- 470 - 710 MHz, Radio microphones, Fee of 400 YEN per transmitter
- 710 - 714 MHz, Radio microphones, Fee of 400 YEN per transmitter
- 470 - 710 MHz and 710-714MHz Radio microphone, Fee of 900 YEN per transmitter
- 1240 - 1260 MHz, Radio microphones, Fee of 900 YEN per transmitter

Please find further information by this link:

<https://www.tele.soumu.go.jp/e/fees/index.htm>

Further information

- Contact addresses of the responsible Local Telecommunication Offices:
<https://www.tele.soumu.go.jp/e/index.htm>
- Downloadable application form:
<https://www.tele.soumu.go.jp/e/index.htm>
- Frequency assignment Plan
<https://www.tele.soumu.go.jp/e/adm/freq/search/index.htm>

Note: information as of February 2020

Latvia

According to [rules of the Cabinet of Ministers of the Republic of Latvia No. 1151](#) (interface RS PMSE.01 and table 8.10 and 8.14.2) the following frequency bands can be used for radio microphones:

License exempt frequencies / no license required

- 29.7 - 47 MHz, max. 10 mW e.r.p.
- 863 - 865 MHz, max. 10 mW e.r.p.
- 1785 - 1804.8 MHz, max. 50 mW e.i.r.p. for body-worn wireless microphones
otherwise max. 20 mW e.i.r.p.
- 1880 - 1900 MHz, max. 250 mW e.i.r.p. (DECT only)
- 2400 - 2483.5 MHz, max. 10 mW e.i.r.p.
- 5725 - 5875 MHz, max. 25 mW e.i.r.p.

Individual assignment / Licence required

- 174 - 216 MHz, max. 50 mW e.r.p.
- 470 - 694 MHz, max. 50 mW e.r.p.
- 823 - 826 MHz, max. 100 mW e.i.r.p. for body-worn wireless microphones
otherwise max. 20 mW e.i.r.p.
- 826 - 832 MHz, max. 100 mW e.i.r.p.

Fees

In accordance with the [Electronic Communications Law](#) Section 50 it is permitted to utilise the radio frequency spectrum for radio equipment operations after the receipt of a radio frequency assignment use permit from the State stock company "Electronic Communications Office" or in accordance with a common radio frequency assignment use permit according to the procedures stipulated by the Cabinet.

Fees are imposed for each permit request consideration and in addition depend from the duration of the use according to [rules of the Cabinet of Ministers of the Republic of Latvia No. 652](#):

1. Consideration of a request for short-time use of radio frequency spectrum
- EUR 35.57 (single-payment);
2. Providing of EMC for low-power radio equipment on secondary service bases
- EUR 8.06 per month or proportion to the duration of the use.

Further information

Requests for an individual license (frequency assignment usage permit) should be submitted to:

[Electronic Communications Office](#)

5 Eksporta Street,
Riga, LV-1010
Latvia
vases@vases.lv

+37167333157

Note: information as of July 2021

Lithuania

Audio PMSE within Lithuania is permitted in the following bands:

- 30.01 – 30.3MHz;
- 30.5 – 32.15MHz;
- 32.45 – 37.5MHz;
- 174 – 216MHz;
- 470 – 694MHz;
- 736 – 753MHz;
- 823 – 832MHz;
- 1164 – 1260MHz;
- 1350 – 1400MHz;
- 1492 – 1525MHz; and
- 1785 – 1805MHz.

Audio PMSE spectrum is made available on a licence exempt basis. Regulator is RRT
(Communications Regulatory Authority for the Republic of Lithuania)

Note: information as of November 2022

Luxembourg

We recommend to use the band 470 - 694 MHz in Luxembourg! (Nov. 2022)

License exempt frequencies / no license required

- 29.7 - 47 MHz, Technical conditions max. 10 mW e.r.p., Radio Interface:
https://assets.ilr.lu/frequencies/Documents/ILRLU-1723895916-182.pdf#SRD-A10_01
Wireless microphones operating on a tuning basis, excluding the 34.995-35.225 MHz frequency band.
- 174 - 216 MHz, Technical conditions max. 50 mW e.r.p. , Radio interface:
https://assets.ilr.lu/frequencies/Documents/ILRLU-1723895916-182.pdf#SRD-A10_04
- 470 - 694 MHz, Technical conditions max 50 mW e.r.p, Radio Interface:
https://assets.ilr.lu/frequencies/Documents/ILRLU-1723895916-182.pdf#SRD-A10_05
 (Interface 470-786 MHz but the band 694-790 MHz no longer applicable for PMSE)
- 823 - 826 MHz, Technical conditions 20 mW e.i.r.p or 100 mW restricted to body worn microphones see technical conditions for PMSE (including radio microphones) in Annex 3 of Decision ECC/DEC/(09)03 section 3.1, Radio interface:
https://assets.ilr.lu/frequencies/Documents/ILRLU-1723895916-182.pdf#SRD-A10_12
- 826 - 832 MHz, Technical conditions max 100 mW e.i.r.p , Radio Interface:
https://assets.ilr.lu/frequencies/Documents/ILRLU-1723895916-182.pdf#SRD-A10_13
- 863 - 865 MHz, Technical conditions max 10 mW e.r.p , Radio Interface:
https://assets.ilr.lu/frequencies/Documents/ILRLU-1723895916-182.pdf#SRD-A10_03
- 1492 - 1518 MHz, Technical conditions max 50 mW e.i.r.p, Radio Interface:
https://assets.ilr.lu/frequencies/Documents/ILRLU-1723895916-182.pdf#SRD-A10_14

"The frequency band 1 492-1 518 MHz, which is currently authorized for wireless microphones, will be analyzed in the near future at the European level for possible harmonization for IMT systems. As a result, it is likely that the band will no longer be available in the medium term for wireless microphone applications."
- 1785 - 1795 MHz, Technical conditions max 20 mW e.i.r.p or 50 mW e.i.r.p. restricted to body worn microphones, Radio Interface:
https://assets.ilr.lu/frequencies/Documents/ILRLU-1723895916-182.pdf#SRD-A10_06
- 1795 - 1800 MHz, Technical conditions max 20 mW e.i.r.p or 50 mW e.i.r.p. restricted to body worn microphones, Radio Interface:
https://assets.ilr.lu/frequencies/Documents/ILRLU-1723895916-182.pdf#SRD-A10_07
- 1800 - 1804.8 MHz, Technical conditions max 20 mW e.i.r.p or 50 mW e.i.r.p. restricted to body worn microphones, Radio Interface:
https://assets.ilr.lu/frequencies/Documents/ILRLU-1723895916-182.pdf#SRD-A10_15

- 1880 - 1900 MHz, DECT equipment only

*Note: Applications are authorized subject to the conditions as contained in the Radio Interfaces

Fees

No fees for the provision of radio frequencies are due.

Further information

<https://web.ilr.lu/FR/Particuliers/Frequences-radioelectriques/Utilisation-de-frequences/Microphones-sans-fil>

- National Frequency Allocation Table (10. Sept. 2020):
<https://web.ilr.lu/FR/Professionnels/Frequences-radioelectriques/Utilisation-de-frequences/Plan-des-frequences/Pages/default.aspx>
- Institut Luxembourgeois de Regulation (ILR): <https://web.ilr.lu/FR/ILR>
17, rue du Fossé
L-1536 Luxembourg
Luxembourg
Tél.: (+352) 28 228 228
Languages: French, German, English, Luxembourgish.

Note: information as of March 2022

Malta

License exempt frequencies / no licence required (refer to SL399.40)

- 29.7 - 34.9 MHz, 30 mW ERP
- 37.5 - 40.98 MHz, 30 mW ERP
- 470 - 526 MHz, 50 mW ERP (currently under review)
- 534 - 550 MHz, 50 mW ERP (currently under review)
- 558 - 566 MHz, 50 mW ERP (currently under review)
- 574 - 582 MHz, 50 mW ERP (currently under review)
- 590 - 606 MHz, 50 mW ERP (currently under review)
- 614 - 646 MHz, 50 mW ERP (currently under review)
- 654 - 662 MHz, 50 mW ERP (currently under review)
- 670 - 694 MHz, 50 mW ERP (currently under review)
- 694 - 750 MHz, 50 mW ERP (currently under review), permitted until 31 December 2020
- 758 - 766 MHz, 50 mW ERP (currently under review), permitted until 31 December 2020
- 774 - 782 MHz, 50 mW ERP (currently under review), permitted until 31 December 2020
- 823 - 826 MHz, 20mW e.i.r.p. for hand-held wireless devices and 100 mW e.i.r.p. for body-worn wireless devices
- 826 - 832 MHz, 100 mW e.i.r.p.
- 863 - 865 MHz, 10 mW ERP
- 1785 - 1805 MHz, 20 mW e.i.r.p. for hand-held wireless devices and 50 mW e.i.r.p. for body-worn wireless devices
- 1880 - 1900 MHz, 250 mW e.i.r.p. using DECT technology only

Individual assignment / Licence required

- 174 - 223 MHz, 50 mW ERP

Fees

- The annual licence fee for the grant of individual licenses is €23.20 per transmitter. The fee for the grant of temporary licenses is calculated on a pro-rata basis.

Further information

- Contact address of the responsible Local Telecommunication Office:
Malta Communications Authority
Valletta Waterfront, Pinto Wharf, Floriana FRN 1913, Malta
<https://www.mca.org.mt> / info@mca.org.mt
- Downloadable application form (for individual licences only):
<https://www.mca.org.mt/downloadable-eforms> - Refer to Form no. MCA/F/11-0579
- SL399.40 – General Authorisation (Radiocommunications Apparatus) Regulation:
<http://www.justiceservices.gov.mt/DownloadDocument.aspx?app=lom&itemid=11475&l=1>

Note: information as of March 2020

The Netherlands

No individual license required / License exempt frequencies

Regulations for license free use of frequencies (*see below), subcategory 8 refers to radio transmission equipment intended for low power wireless audio connections (PMSE). The use of free frequencies (no approval needed) is permitted among others in these tuning ranges:

- 36,6 - 36,8 MHz, ≤ ERP 10 mW, 200 kHz
- 37,0 - 37,2 MHz, ≤ ERP 10 mW, 200 kHz
- 37,8 - 38,0 MHz, ≤ ERP 10 mW, 200 kHz
- 38,2 - 38,4 MHz, ≤ ERP 10 mW, 200 kHz
- 38,6 - 38,8 MHz, ≤ ERP 10 mW, 200 kHz

- 37,480 - 37,6 MHz, ≤ ERP 10 mW, 50 kHz

- 87,5 - 108 MHz, ≤ ERP 50 nanoW, 200 kHz

- 195 - 202 MHz, ≤ ERP 50 mW, 200 kHz

- 470 - 556 MHz, ≤ ERP 50mW
- 558 - 564 MHz, ≤ ERP 50mW
- 566 - 572 MHz, ≤ ERP 50mW
- 574 - 580 MHz, ≤ ERP 50mW
- 582 - 588 MHz, ≤ ERP 50mW
- 590 - 596 MHz, ≤ ERP 50mW
- 598 - 604 MHz, ≤ ERP 50mW
- 614 - 694 MHz, ≤ ERP 50mW

- 736 - 753 MHz, ≤ ERP 50mW

- 823 - 826 MHz, hand-held ≤ e.i.r.p. 20 mW, body-worn ≤ e.i.r.p. 100 mW

- 826 - 832 MHz, ≤ e.i.r.p 100 mW

- 863 - 865 MHz, ≤ ERP 10mW

- 1785 - 1805 MHz, portable ≤ e.i.r.p. 20 mW, body-worn ≤ e.i.r.p. 50mW

Individual license required

- 608 - 614 MHz, coordination with RAS and only in case of demonstrable frequency shortage related to the event in question.
- 1350 - 1400 MHz, ≤ ERP 50 mW, 200 kHz
- 1518 - 1525 MHz, ≤ ERP 50 mW, 200 kHz, only indoor

(*) Regeling gebruik van frequentieruimte zonder vergunning en zonder meldingsplicht 2015 (Dutch)
<http://wetten.overheid.nl/BWBR0036378/2016-12-28>

Further Information

Nationaal Frequentieplan 2014:

<http://wetten.overheid.nl/BWBR0035791/2017-02-01> (Dutch)

Programme Making and Special Events (Dutch)

<https://www.agentschaptelecom.nl/onderwerpen/microfoons---draadloos-gebruik-en-frequenties>

Application-form-events:

<https://www.agentschaptelecom.nl/documenten/formulieren/2017/april/4/application-form-for-the-use-of-frequencies-during-events-in-the-netherlands> (English)

Frequencytool for wireless microphones in the band 470-694 MHz:

<https://www.microfoonbanden.nl/>

Note: information as of July 2021, checked Nov. 2022

Norway

No individual license required / License exempt frequencies

In the Norwegian frequency plan some frequency bands have been allocated to be used for low power audio devices. In these bands the frequencies can be used without a license (license exemption).

| | |
|--------------------------------|---|
| 41 - 43.6 MHz, 10 mW e.r.p. | Wireless microphones |
| 494- 694 MHz, 50 mW e.r.p. | Wireless microphones can be used in white spaces only. Vacant frequencies are given by an online tool (link below). |
| 823 - 826 MHz, 20 mW e.i.r.p. | Wireless microphones |
| 823 - 826 MHz, 100 mW e.i.r.p. | Body worn microphones |
| 826 - 832 MHz, 100 mW e.i.r.p. | Wireless microphones |
| 863 - 865 MHz, 10 mW e.r.p. | Wireless microphones |

1785 - 1805 MHz allowed used for handheld microphones with maximum permitted e.i.r.p. spectral density limitations:

| Frequency Range | Max permitted e.i.r.p. spectral density |
|------------------------|--|
| <1785 MHz | -17 dBm/200 kHz |
| 1785–1785,2 MHz | 4 dBm/200 kHz |
| 1785,2–1803,6 MHz | 13 dBm/channel |
| 1803,6–1804,8 MHz | 10 dBm/200kHz, with a limit of 13 dBm/channel |
| 1804,8–1805 MHz | -14 dBm/200 kHz |
| >1805 MHz | -37 dBm/200 kHz |

1785–1805 MHz allowed used for body worn microphones and wireless microphones with Spectrum Scanning Procedure (SSP) implemented in the 1785-1804.5 MHz band, and with maximum permitted e.i.r.p. spectral density limitations:

| Frequency Range | Max permitted e.i.r.p. spectral density |
|------------------------|--|
| <1785 MHz | -17 dBm/200 kHz |
| 1785–1804,8 MHz | 17 dBm/channel |
| 1804,8–1805 MHz | 0 dBm/200 kHz |
| >1805 MHz | -23 dBm/200 kHz |

Online tool that shows vacant white space frequencies for wireless microphones:

<https://finnsenderen.no/#/ledige?type=mikrofon>

Assistive listening devices: <https://finnsenderen.no/#/ledige?type=ald>

Video PMSE: https://www.nkom.no/english/frequency-licences#temporary_frequency_use_for_events_and_research_campaigns

Individual license required

Information regarding individual licenses and how to apply

https://www.nkom.no/english/frequency-licences#temporary_frequency_use_for_events_and_research_campaigns

Note: information as of August 2021

New Zealand

No individual license required / License exempt frequencies

Wireless audio devices are permitted to operate in New Zealand between the frequencies of 510 MHz and 606 MHz and between 622 MHz and 698 MHz, under class licence provisions which limit maximum e.i.r.p. to 250 mW and can operate on blocks used by DTV on the “no interference – no protection” basis.

At the time of writing no DTV channels are planned to operate between 622 MHz and 698 MHz from March 11th, 2015, however the lower block between 526 MHz to 606 MHz is used for DTV throughout most of the country. TV Channels in New Zealand are 8 MHz wide, and in some places frequencies of operation start at 510 MHz.

Operation under the General User Licence is as a secondary service, sharing with DTV transmission, on the basis that you do not operate on the same frequency as a DTV service licenced in the location, and that you operate on a “no interference - no protection” basis.

From 11 March 2015, radio microphones (and other wireless audio devices such as in-earpieces) are no longer permitted to operate in the 698-806 MHz frequency range (the 700 MHz band).

Note 1: 502 MHz to 510 MHz may also be used with the maximum power limit of -10 dBW e.i.r.p. which is equivalent to around 100 mW.

Operation under the class licence means there is no need to apply for a licence to operate equipment that complies, and there are no fees or charges applicable.

Further Information

Further information can be found here:

- UHF radio microphone devices
<https://www.rsm.govt.nz/licensing/types-of-licences/general-user-spectrum-licence/uhf-radio-microphone-devices>
- Change to radio microphone operating frequencies
<https://www.rsm.govt.nz/cms/policy-and-planning/projects/radio-microphone-changes>
- Radio Spectrum Management website
<https://www.rsm.govt.nz/>
- Wireless Users New Zealand
<http://www.wunz.co.nz>

Note: information as of March 2017

Poland

PMSE equipment within Poland is mainly used in the following bands:

- 29.7 – 47MHz (audio PMSE);
- 174 – 216MHz (audio PMSE); and
- 470 – 694MHz (audio PMSE, with channels for PMSE equipment are chosen individually so as to avoid potential interference to and from DTT).

Generally, audio PMSE applications are licence exempt.

Note: information as of Nov. 2022

Portugal

No individual license required / License exempt frequencies

- 174 – 223 MHz, Radio microphones and in-ear monitor systems, ≤ 50 mW e.r.p.
- 470 – 694 MHz, Radio microphones and in-ear monitor systems, ≤ 50 mW e.r.p.
- 823 – 826 MHz, Radio microphones, ≤ 20 mW e.i.r.p.
- 823 - 832 MHz, Radio microphones (body- worn audio PMSE equipment), ≤ 100 mW e.i.r.p.
- 863 - 865 MHz, Radio microphones, ≤ 10 mW e.r.p.
- 1785 – 1795 MHz, Radio microphones, ≤ 20 mW e.i.r.p.
- 1785 – 1795 MHz, Radio microphones (body- worn audio PMSE equipment), ≤ 50 mW e.i.r.p.
- 1795 – 1800 MHz, Radio microphones, ≤ 20 mW e.i.r.p.
- 1795 – 1800 MHz, Radio microphones (body- worn audio PMSE equipment), ≤ 50 mW e.i.r.p.
- 1800 – 1804.8 MHz, Radio microphones, ≤ 20 mW e.i.r.p.
- 1800 – 1804.8 MHz, Radio microphones (body- worn audio PMSE equipment), ≤ 50 mW e.i.r.p.
- 1880 - 1900 MHz, DECT equipment up to 250 mW e.i.r.p

Individual assignment / License required

- 174 - 223 MHz, if ERP > 50 mW
- 470 - 694 MHz, if ERP > 50 mW, In-ear monitor systems and Radio microphones

For other cases that are not covered by the licence exemption regime, or by the specific cases referred above, a radio licence shall be requested.

Additional information available at

<https://www.anacom.pt/render.jsp?contentId=1364270&languageId=1>

How to get a short- or long-term license?

Any request for license should be addressed to ANACOM using our virtual desk, available at: https://www.anacom.pt/bvirtual/bvru/index.do?do=/acesso_direto.do&languageId=1

Fees for a short-term license

For temporary licences, the value of the usage fees to be collected is reached by using the following formula: Applicable annual fee x (no. of days of licence validity / 360 days). For occasional audio links, the applicable annual fee is as follows:

| SAP/SAB -Annual fee | |
|-----------------------------|------------|
| Audio links (per frequency) | € 2 250,00 |

We would also like to point out that minimum and urgency (when applicable) fees will be applied. See below:

- **Minimum Fee:** The value of 50 euros is the minimum value of spectrum fee applicable to stations or networks of each Radiocommunications Service/Application to be used for temporary events.
- **Urgency Fee:** If the application for temporary licensing is not submitted to ANACOM up to ten days prior to the date on which it is proposed the radio licence should come into force, the applicable fee will be increased by 50% of its value, with a minimum of 75 euros.

Link to Table of Frequency Allocation (eQNAF), which is electronic format (Source of implementation)

PT: <https://www.anacom.pt/render.jsp?categoryId=348130>

EN: <https://www.anacom.pt/render.jsp?categoryId=343582&languageId=1>

More information is at: [Station license exemptions](#)

Note: information as of July 2021

Romania

No individual license required / License exempt frequencies

In the Romanian frequency plan some frequency bands have been allocated to be used for wireless microphones. In all those bands the frequencies can be used without a license (license exemption).

Short Range Devices / Radio microphones

- 29.7 - 30.3 MHz, 10 mW ERP, 50 kHz - on a tuning range basis
- 30.5 - 32.15 MHz, 10 mW ERP, 50 kHz - on a tuning range basis
- 32.45 - 33.1 MHz, 10 mW ERP, 50 kHz - on a tuning range basis
- 33.6 - 34.975 MHz, 10 mW ERP, 50 kHz - on a tuning range basis
- 37.5 - 40.02 MHz, 10 mW ERP, 50 kHz - on a tuning range basis
- 40.66 - 41.015 MHz, 10 mW ERP, 50 kHz - on a tuning range basis
- 44.5 - 45.2 MHz, 10 mW ERP, 50 kHz - on a tuning range basis
- 174 - 216 MHz, 50 mW ERP - in accordance with Annex 10 of ERC/REC 70-03; On a tuning range basis; Geographical restrictions for the sharing usage with the TV Broadcasting; It is needed to contact the National Spectrum Management Authority (ANCOM)
- 470 - 574 MHz, 582 – 694, 50 mW ERP - in accordance with Annex 10 of ERC/REC 70-03; On a tuning range basis; Geographical restrictions for the sharing usage with the TV Broadcasting; It is needed to contact the National Spectrum Management Authority

In the frequency band 470-694 MHz, the use of the 574-582 MHz frequency band is performed under licensing authorisation regime. Therefore, the technical specification for RO-IR MICRO 04 radio interface (former RO-IR 10-04) shall include only the frequency bands 470–574 MHz and 582–694 MHz.

- 823 - 826
- 1785 – 1804.8 MHz, 20 mW EIRP (50 mW EIRP restricted to body worn equipment)

Wireless audio / multimedia applications

- 87.5 - 108 MHz, 50 nW ERP, 200 kHz - when audio signals are not present, apparatus must employ a transmission time out of facility. Pilot tones that ensure continuity of transmission are not permitted
- 863 - 865 MHz, 10 mW ERP
- 864.8 - 865 MHz, 10 mW ERP
- 1795 - 1800 MHz, 20 mW EIRP

For the purpose of this technical regulation, Short-Range Device (SRD) means radio transmitters, which provide either unidirectional or bidirectional communication and which transmit over a short distance at low power.

For the purpose of this Technical Regulation, radio microphones are small, low power (typically 50 mW or less) transmitters designated to be worn on the body, or hand held, for the transmission of sound.

For the purpose of this technical regulation, non-interference and non-protected basis means the interdiction that no harmful interference may be caused to any radio communications service and that no claim may be made for protection of these devices against harmful interference originating from radio communications services.

Temporary Spectrum Licences and Fees

See: http://www.ancom.org.ro/en/temporary-spectrum-licences_4689

http://www.ancom.org.ro/reglementari-interfete_2723

To get an idea of the amount of these tariffs, for example, for a frequency in Bucharest, for up to 30 days, the price shall not exceed 50 euros.

Further information

Contact addresses of the four responsible Local Telecommunication Offices:

<http://www.ancom.org.ro/en/harta-locatii>

Note: see on the map the addresses for the Bucharest, Iasi, Timisoara and Cluj Regional Headquarters

Downloadable application form on the website of add ANCOMs web space:

http://www.ancom.org.ro/en/temporary-spectrum-licences_4689

Interface Regulations:

<http://www.ancom.org.ro/en/interface-regulations-2723>

Further information can be found here - Romanian Regulation:

http://www.ancom.org.ro/en/romanian-regulation_2719

Note: information as of July 2021

Serbia

Pursuant to Article 83, paragraph 4 of the Law on Electronic Communications ("Official Gazette of RS", No. 44/10, 60/13 - US, 62/14 and 95/18) and Article 42, paragraph 1. Law on Government ("Official Gazette of RS", No. 55/05, 71/05 - correction, 101/07, 65/08, 16/11, 68/12 - US, 72/12, 7 / 14 - US, 44/14 and 30/18 - other law), the Government adopts (25 June 2020):

To find information in the National Allocation Plan (not available in English), search "радио-микрофони" (= radio microphones).

In the Table (<https://t1p.de/oo2z>), last column is a manner of granting individual licences. Almost in all bands for radio microphones you could find the acronym OO - Use of Radio-frequencies on the Basis of General Authorization. And one exception ПЗ - Use of Radio frequency on the basis of an individual licence issuance procedure, upon request.

29.7-47.0 MHz

173.965-216 MHz

216–223 MHz (with DAB+)

470-789 MHz

823–832 MHz

863–865 MHz

1350–1400 MHz

1492–1518 MHz

1785–1804.8 MHz

Source:

<https://t1p.de/oo2z>

=

https://www.ratel.rs/uploads/documents/empire_plugin/%D0%9F%D0%BB%D0%B0%D0%BD%20%D0%BD%D0%B0%D0%BC%D0%B5%D0%BD%D0%B5%20%D1%80%D0%B0%D0%B4%D0%B8%D0%BE-%D1%84%D1%80%D0%B5%D0%BA%D0%B2%D0%B5%D0%BD%D1%86%D0%B8%D1%98%D1%81%D0%BA%D0%B8%D1%85%20%D0%BE%D0%BF%D1%81%D0%B5%D0%B3%D0%B0.pdf

Note: information as of July 2021

Slovenia

*No individual license required / Individual license exempt frequencies
(General authorisation according to Art. 31 of our Electronic communication act)*

- 29.7 - 47 MHz, Radio microphones 10 mW ERP - bandwidth max. 50 kHz
- 174 - 216 MHz, Radio microphones 50 mW ERP
- 470 - 694 MHz, Radio microphones 50 mW ERP
- 694 - 698 MHz, Radio microphones 20mW ERP

- 736 – 738, 12 mW ERP Radio microphones ERP (?, should be checked)

- 1518 - 1530 MHz, Radio microphones 50 mW e.i.r.p.
- 1785 - 1804.8 MHz, Radio microphones 20 mW e.i.r.p., body worn restricted to 50 mW EIRP
- 1880 - 1900 MHz, DECT equipment up to 250 mW e.i.r.p.

All bands, stated in document have technical limitations written in ERC/REC 70-03, 2014/641/EU - Commission implementing decision of EU on PMSE and radio equipment class 1, in particular subclasses SC86 and SC48 for continuous transmissions.

All above radio equipment is allowed to operate on license - exempt and non-interference basis.

Further information

One can get additional information regarding other usage of radio spectrum in Slovenia at:

<https://www.akos-rs.si/en/>

National Table of Frequency Allocations - NTFA / NURF-4:

https://www.akos-rs.si/fileadmin/user_upload/NURF-4.4a.NUPB.pdf

Note: information as of November 2022

Spain / Andorra

Spectrum is made available through a mixture of licence exemptions (without a fee, and typically with an EIRP of <50mW) and individual licensing (subject to a fee).

No individual license required / License exempt frequencies

- 30 MHz band, 50 mW ERP, 25 kHz, see [IR-98](#)
- 174.100 / 179.300, 50 mW ERP, see [IR-99](#)
- 188.100 / 194.500, 50 mW ERP, see [IR-99](#)
- 470 - 786 MHz, up to 50 mW ERP, 200 kHz, see [IR-216](#)

Note:

- Secondary use. There should not be any interference to other emissions from the same band.
- For use in public spaces, multimedia productions, artistic and sport events, of temporary character.
- Compatible with TV service in the zone of use.

- 823 - 832 MHz, 20mW EIRP hand-held, 100mW EIRP body-worn, 200 kHz, see [IR-210](#)
- 1785 – 1805 MHz, 20mW hand-held and 50 mW EIRP body-worn, see [IR-101](#)

Fees

No fees are required

Further information

- 30 MHz band, 50 mW ERP, 25 kHz, see IR-98
- UN36: 470 - 786 MHz
- UN118: 863 - 865 MHz
- UN119: 1785 - 1805 MHz
- UN48: 1785 – 1805 MHz
- UN-95, UN-106 and UN-127: 174.1 - 194.5 MHz
- UN151: 823 - 832 MHz

Contact addresses for responsible Local Telecommunication Offices

* Local Telecommunication Offices list:

<http://www.minetad.gob.es/telecomunicaciones/es-ES/Jefaturas/Paginas/Jefaturas-Provinciales.aspx>

Local contact for information

AFIAL (Sound and Light Manufacturers and Importers Organization)

WEB : <http://www.afial.net> / Mail: afial@afial.net

Wireless interfaces

Cuadro Nacional de Atribución de Frecuencias (CNAF) :

<http://www.minetad.gob.es/telecomunicaciones/espectro/Paginas/cnaf.aspx>

Here you can select the different regions and then display the DVB-T stations of the provinces in Spain, and Andorra: <https://www.tdt1.com>

Note: information as of April 2018

South Africa

License exempt frequencies / no license required

- 174 - 216 MHz, max 50 mW ERP
- 402 - 406 MHz, max 10 mW ERP
- 470 - 786 MHz, max 50 mW ERP
- 786 - 789 MHz, max 50 mW ERP
- 823 - 832 MHz, max 100 mW ERP
- 863 - 865 MHz, max 10 mW ERP
- 1350 - 1400 MHz, max 20 mW ERP
- 1492 - 1525 MHz, max 50 mW ERP
- 1785 - 1795 MHz, max 20 mW ERP
- 1795 – 1804.9 MHz, max 20 ERP

Further information

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA, NOTICE 737 OF 2021

<https://www.ellipsis.co.za/radio-frequency-spectrum-regulations-2015/>

- Electronic Communications Act: Final Radio Frequency Spectrum Assignment Plan for Frequency Band 470 to 694 MHz
https://www.gov.za/sites/default/files/gcis_document/202005/43341gen284s.pdf

Note: information as of March 2022

South Korea

Individual licence required / Mandatory application

- 470 - 698 MHz, max. 50mW ERP – Broadcast
- 470 - 698MHz, max. 30mW ERP – Non-Broadcast market (Authorized sites)

No individual license required / License exempt frequencies

- 72.610 - 73.910MHz, 10mW ERP
- 74.000 - 74.800MHz, 10mW ERP
- 75.620 - 75.790MHz, 10mW ERP
- 173.020 - 173.280MHz, 10mW ERP
- 217.250 - 220.110MHz, 10mW ERP
- 223.000 - 225.000MHz, 10mW ERP
- 925 - 937.5 MHz, 10mW, ERP
- 2400 - 2483.5 MHz, 10mW ERP

Fees

One-time fee for 5 years: about 12 € (converted).

In addition, per link and year: about 10 € (converted)

Further information

Contact addresses of the four responsible Local Telecommunication Offices

(Korea Radio Promotion Association): www.rapa.or.kr /

<http://www.rapa.or.kr/design/contents10.asp?code=1010&lang=eng&left=1&mncode=18>

Ministry of Science and ICT:

<http://www.msip.go.kr> / <http://english.msit.go.kr/english/main/main.do>

Note: information as of April 2018

Sweden

Individual licence required - Generally approved

- 174 - 240 MHz, 50mW ERP
- 470 - 694 MHz, 50mW, ERP
- 1785 - 1805 MHz, 20mW ERP, Handheld TX, 50mW ERP, Body Worn TX

No individual license required / License exempt frequencies

- 41 - 43.6 MHz, 10mW
- 823 - 826 MHz, 10mW ERP, Handheld TX, 50mW ERP, Body worn TX
- 826 - 832 MHz, 50mW ERP
- 863 - 865 MHz, 10mW ERP

Fees per year (from 1.1.2021 on)

- 100 - 5000 SEK or more per transmitter

Fee according to the Radio Equipment Act / Section 6 A / person who conducts activities that are notified in accordance with ch. § 1 of the law (2003: 389) on electronic communication and which has an annual turnover of less than SEK 5,000,000, must pay an annual fee of SEK 100 for market control according to the Radio Equipment Act (2016: 392). If the annual turnover amounts to SEK 5,000,000 or more, the person conducting it must the business pay an annual fee of 0.0065 percent of annual sales for market control according to the Radio Equipment Act. (non-binding translation from swedish by Jochen Zenthöfer)

<https://www.pts.se/globalassets/startpage/dokument/legala-dokument/foreskrifter/avgifter/ptsfs-2020-6-avgifter.pdf>

Here is also a look-up tool, like the British have in which you can select a location and the DVB-T usage is displayed:

<https://www.pts.se/en/english-b/radio/application/wireless-audio-transmission/>

= shorturl.at/hlsN6

The UHF frequencies have to be registered

<https://www.pts.se/en/english-b/radio/application/temporary-licences-for-events/>

= shorturl.at/aces2

A short time allocation per range cheated approx. 300SEK (for microphones in the corresponding ranges VHF, UHF etc. ...)

Information

Trådlösa mikrofoner och hörseltekniska hjälpmedel:

<http://www.pts.se/sv/bransch/radio/radiotillstand/tradlosa-mikrofoner-och-horseltekniska-hjalpmedel/>

or

Wireless audio transmission:

<http://www.pts.se/en/english-b/radio/application/wireless-audio-transmission/>

Application form:

<https://www.pts.se/contentassets/e4dc23b3aab04da4aa072dfc91679482/ansbl-horselhjalpmedel-tradlosa-mikrofoner.pdf>

Note: information as of November 2022

Switzerland

No individual license required / License exempt frequencies

The table below indicates the authorized power and the technical regulations for each frequency band in which wireless microphones and In-Ear monitor systems can be operated

- 31.4 - 39.6 MHz, 100 mW ERP, use only in the channels indicated in RIR 1009-01
- 174 - 223 MHz, 50 mW ERP, RIR1009-02
- 470 - 694 MHz, 50 mW ERP, RIR1009-10
- 477 - 694 MHz, 250 mW ERP, use only in the channels indicated in RIR 1009-11
- 823 - 826 MHz, 20 mW e.i.r.p., 100 mW e.i.r.p., for wireless microphones carried on the body, RIR1009-18
- 826 - 832 MHz, 100 mW e.i.r.p., RIR1009-13
- 863 - 865 MHz, 10 mW ERP, RIR1009-05
- 1350 - 1400 MHz, indoor only, 20 mW e.i.r.p., 50 mW e.i.r.p. for wireless microphones carried on the body or with built-in Spectrum Scanning Procedure (SSP), RIR1009-20
- 1785 - 1804.8 MHz, 20 mW e.i.r.p., 50 mW e.i.r.p. for wireless microphones carried on the body or with built-in Spectrum Scanning Procedure (SSP), RIR1009-09
- 1880 - 1900 MHz, 250 mW e.i.r.p., DECT only, 250 mW e.i.r.p., RIR0503-01.

Notes:

- The use of radio microphones in the bands 789 - 823 MHz and 832 - 862 MHz is forbidden.
- Wireless microphones can also operate in some other frequency bands. For example, in the frequency ranges intended for non-specific short-distance radio applications or in the frequency range for DECT (Digital Enhanced Cordless Telecommunications) at 1880 MHz. The technical interface requirements RIR1008 define the frequency ranges and radio parameters for non-specific applications, the RIR0503-01 for DECT in the 1880 MHz frequency range.

Frequency coordination for licence exempted PMSE users

Licence exempted PMSE users can register equipment on a voluntary basis to the database provided by a third party in order to coordinate frequency use at events: [PMSE Database](#)

Other equipment may only be used with a valid radiocommunication license

[Link to the application forms](#)

Further Information

[Radio microphones](#) (E) / [Drahtlose Mikrofone](#) (D) / [Microphones sans fil](#) (F) / [Microfoni senza filo](#) (I)

Nationaler Frequenzzuweisungsplan

[Nationaler Frequenzzuweisungsplan \(admin.ch\)](#)

Frequency Allocation Plan

<https://www.ofcomnet.ch/#/fatTable>

Note: information as of February 2020, addition Nov. 2022

United Arab Emirates

The table below indicates the authorized power and the technical regulations for each frequency band in which Audio PMSE can be operated:

| Frequency Range [MHz] | Intended Use | Usage conditions | Authorization method | Notes |
|-----------------------|-------------------------------------|--|--|---|
| 66.0 - 74.8 | Radio microphones | Maximum 10 mW e.r.p. | Authorization | Above 73 MHz indoor only |
| 138 - 156 | Talkback | Maximum 1 W e.r.p. | Authorization | Based on sharing with PMR |
| 174 - 230 | Radio microphones | Maximum 100 mW e.r.p. | Authorization | Based on tuning range. Exact available channels for each location will be updated on the TRA Web. |
| 406.1 - 450 | Talkback | Maximum 1 W e.r.p. | Authorization | Based on sharing with PMR |
| 470 - 694 | Radio microphones, Talkback and IEM | Maximum 100 mW e.r.p. | Authorization | Based on tuning range. Exact available channels for each location will be updated on the TRA Web. |
| 823 - 826 | Radio microphones and IEM | Maximum 20 mW e.i.r.p. | Short Range Device (Class Authorization) | |
| 826 - 832 | Radio microphones and IEM | Maximum 100 mW e.i.r.p. | Short Range Device (Class Authorization) | |
| 863 - 870 | Radio microphones and IEM | Maximum 50 mW e.i.r.p. | Short Range Device (Class Authorization) | |
| 1350 - 1400 | Radio microphones and IEM | As authorized | Authorization | |
| 1675 - 1710 | Radio microphones and IEM | As authorized | Authorization | |
| 1785 - 1804.8 | Radio microphones and IEM | Maximum 20 mW e.i.r.p. (handheld) and 50 mW e.i.r.p. (body worn) | Short Range Device (Class Authorization) | |
| 1880 - 1900 | Radio microphones | Maximum 250 mW e.i.r.p. | Short Range Device (Class Authorization) | Using DECT technology only |
| 2400 - 2483.5 | Radio microphones | Maximum 10 mW e.i.r.p. | Short Range Device (Class Authorization) | Shared with SRD including wireless video |
| 5150 - 5875 | Indoor conference systems | 160 mW | Short Range Device (Class Authorization) | Shared with SRD |

How to get a Temporary or Annual Spectrum Authorization?

One can find online application on the following link: <https://www.tra.gov.ae>

Fees for a Spectrum Authorization

Find information about the UAE Frequency Spectrum Fees Regulations for SAB/SAP (PMSE) by using this link: <https://www.tra.gov.ae/en/about-tra/telecommunication-sector/regulations-and-ruling/details.aspx#documents>

Further Information

Find information about the UAE Spectrum Regulations for SAB/SAP (PMSE) by using this link:

<https://www.tra.gov.ae/en/about-tra/telecommunication-sector/regulations-and-ruling/details.aspx#documents>

Contact address of UAE administration

WEB: <https://www.tra.gov.ae/en/contact-us.aspx> / Email : info@tra.gov.ae

Note: information as of March 2020

United States of America

No individual license required / License exempt frequencies

- 54 - 72 MHz, 50 mW (EIRP), Title 47 Vol. 1 Part 15.236ff.
- 76 - 88 MHz, 50 mW (EIRP), Title 47 Vol. 1 Part 15.236ff.
- 174 - 216 MHz, 50 mW (EIRP), Title 47 Vol. 1 Part 15.236ff.
- 470 - 608 MHz, 50 mW (EIRP), Title 47 Vol. 1 Part 15.236ff.
- 614 – 616 & 657-663 MHz, 20 mW (EIRP), Title 47 Vol. 1 Part 15.236ff (when these frequencies become available or following the conclusion of the Incentive Auction transition).
- 902 - 928 MHz, 1W peak^{Note1}, Title 47 Vol. 1 Part 15.247ff.
- 1 920 - 1 930 MHz, 100μW multiplied by the square root of the emission BW in Hz, Title 47 Vol. 1 Part 15.301ff.
- 2 400 - 2 483.5 MHz, 1W peak^{Note1}, Title 47 Vol. 1 Part 15.247ff.
- 5 725 - 5 850 MHz, 1W* peak^{Note1}, Title 47 Vol. 1 Part 15.247ff.

Note1: maximum power depends on emission characteristics.

Individual license (up to 10 years) ^{Note2}

- 54 - 72 MHz, 50 mW (EIRP), Title 47 Vol. 1 Part 74.861ff.
- 76 - 88 MHz, 50 mW (EIRP), Title 47 Vol. 1 Part 74.861ff.
- 174 - 216 MHz, 50 mW (EIRP), Title 47 Vol. 1 Part 74.861ff.
- 470 - 608 MHz, 250 mW (conducted), Title 47 Vol. 1 Part 74.861ff.
- 653 - 657 MHz, 20 mW (EIRP), Title 47 Vol. 1 Part 74.861ff (when these frequencies become available or following the conclusion of the Incentive Auction transition).
- 941.5 - 952.0, 952.85 - 956.25, 956.45 - 959.85 MHz, 1 W (conducted), Title 47 Vol. 1 Part 74.801ff.
- 1 435 - 1 525 MHz, 250 mW (conducted), Title 47 Vol. 1 Part 74.861ff. ^{Note3}
- 6 875 - 6 900 MHz, up to 1 W (conducted), Title 47 Vol. 1 Part 74.861ff. ^{Note4}
- 7 100 - 7 125 MHz, up to 1 W (conducted), Title 47 Vol. 1 Part 74.861ff. ^{Note4}

Note2: the license term can vary but will be for up to 10 years, see <https://www.law.cornell.edu/cfr/text/47/74.15>

Note3: requires FCC license and advance frequency coordination with AFTRCC; <https://www.afrcc.org/>

Note4: FCC had discussed limiting the power to 250 mW but it appears they settled on 1 Watt for this band, see: https://apps.fcc.gov/edocs_public/attachmatch/FCC-15-100A1.pdf

Fees for wireless microphone systems

- \$165 for 10-year term

Further information

- FCC ULS: <http://wireless.fcc.gov/uls/index.htm?job=home>
- See: <https://magazine.local695.com/fcc-licensing/how-to-get-license>
- Downloadable application form:
<https://transition.fcc.gov/Forms/Form601/601.pdf>

Licensed and Unlicensed Operation Permitted

It is permissible to operate wireless microphones and in ear monitoring systems on either a licensed or unlicensed basis in several bands. In the television broadcasting bands, a power limit of 50 mW applies for unlicensed operation; licensed microphones and in ear monitor transmitters may operate with up to 250 mW in the UHF television band.

Wireless microphones may operate on locally unused television channels within the VHF and UHF television broadcasting bands between 54-72, 76-88, 174-216, and 470-698 MHz ^{Note5}.

Locally unused television channels may be determined by consulting one of the wireless microphone manufacturers' online frequency finders, or the website of one of the FCC approved database operators.

Licensed users may register TV channels they intend to use with one of the FCC approved database operators to receive interference protection from White Space Devices operating in the TV bands. Unlicensed users are no longer able to register with a database.

In addition to the television bands, wireless microphones can also operate in one of the three license-exempt (ISM) bands at 902 - 928 MHz, 2 400 - 2 483.5 MHz or 5 725 - 5 850 MHz as well as the UPCS (DECT) band at 1 920 - 1 930 MHz. Microphones operating in these bands have different technical requirements than those for use in the television bands. They are shared with other devices and may be congested at certain times and places.

As a result of the Incentive Auction of UHF (600 MHz) television band frequencies, wireless microphones and in ear monitoring systems must stop operating in the 600 MHz band except in designated guard band frequencies by the end of the transition period on July 13, 2020. Those who do not comply may experience high levels of interference and could also face fines. The 600 MHz frequencies that will continue to be available for wireless microphone use include a 2 MHz guard band from 614 - 616 MHz, plus a 10 MHz portion of the duplex gap from 653 - 663 MHz. The lower 4 MHz of the duplex gap will be exclusively for licensed wireless microphones, and the upper 6 MHz will be shared between wireless microphones and White Space Devices on a co-equal basis. Unlicensed operation will be permitted in 614 - 616 MHz and 657 - 663 MHz, and licensed operation will be permitted in 653 - 657 MHz. The spectrum below Channel 37 will continue to be used for television broadcasting. Wireless microphone users are advised to check with one of the TV Bands databases to determine the available channels at the location where they plan to operate.

Additional spectrum for licensed users is available in the 941.5 – 952, 952.85 – 956.25, 956.45 – 959.85, 1 435 - 1 525, 6 875 - 6 900, and 7 100 - 7 125 MHz ranges^{Note6}. Technical standards for these bands have now been finalized. Users must check with a local frequency coordinator before operation begins. There are special conditions for operation in the 1 435 - 1 525 MHz band. Access protocols are currently being worked on with AFTRCC, the coordinator for that band.

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Note5: after the current transition phase ends on July 13, 2020, the UHF television broadcasting band will be limited to 470-608 MHz. Wireless microphones will be permitted in the lower guard band at 612-614 MHz and in the duplex gap band from 653-663 MHz.

Note6: the 6 875 – 6 900 and 7 100 – 7 125 MHz bands may be reallocated to other services in the future.

Information as of February 2020

United Kingdom

Preliminary remark

‘Site’ License required and issued where frequencies are not used for broadcasting or aeronautical services at a given geographical location – access could be for a limited period or on a long-term basis. UHF shared frequencies can be used anywhere in the UK once licensed. The licence can also cover anyone hiring from the licensee. Frequencies on this licence are provided on a non-protected basis as they could be shared with other users in the local area. Ofcom PMSE team does not coordinate the use of these frequencies.

- 470 - 606 MHz, max. 50 mW ERP
- 614 - 702 MHz
- 863 – 865 MHz (can be used without a Licence)
- 960 – 1164 MHz – three ‘sub-bands’
- 961 to 1015 MHz
- 1045 to 1075 MHz
- 1105 to 1154 MHz
- 1518-1525 MHz, max. 50 mW ERP
- 2400 – 2483.5 MHz (can be used without a Licence)

‘Shared’ License required – annual renewal

- 606 - 614 MHz, max. 50 mW ERP
- 823 – 832 MHz, max. 50 mW ERP
- 1785 - 1800 MHz, max 50 mW ERP

No individual license required / License exempt frequencies

- 863 - 865 MHz, max. 10 mW ERP
- 173.8 - 175 MHz max 50 mW ERP
- 2.4 - 2.485 GHz, 10 mW EIRP

Additional Information

Ofcom look up tool:

<https://pmse.ofcom.org.uk/pmse/wireless/public/microphone700.aspx>

Enter your location by list, postcode, NGR and see a list of the expected spectrum

<https://ukfree.tv/prediction>

Prediction by postcode with a map of transmitters including links to mobile phone coverage for different frequency ranges

<https://ukfree.tv/maps/tvregions/>

[https://ukfree.tv/section/TV Transmitters](https://ukfree.tv/section/TV%20Transmitters)

If you are looking for a special transmitter on a map:

<https://ukfree.tv/maps/freeview>

<https://ukfree.tv/maps/freeviewhd>

<https://ukfree.tv/maps/itv>

<https://ukfree.tv/maps/localtv>

<https://ukfree.tv/maps/bbc>

Example to get all details:

<https://ukfree.tv/maps/tvregions/>

choose an area/region

<https://ukfree.tv/maps/tvregions/5>

Scroll and zoom on the map

Click (once) on one transmitter on the map and it will show you the coverage of the transmitter (click once again to deactivate the coverage diagram)

If you double click on a special transmitter, you will be forwarded to the transmitter subsection of ukfree.tv

[https://ukfree.tv/transmitters/tv/Black Hill](https://ukfree.tv/transmitters/tv/Black%20Hill)

There you are able to look at the TV channel number with the frequency, the transmitter high, modulation , rf power and polarisation with the coverage direction diagram (There're also tables with the frequency transmission change over time and comparison of old analogue and current digital signal levels)

Education/interference hunting/expected problems with the weather conditions:

[https://ukfree.tv/section/Freeview Interference](https://ukfree.tv/section/Freeview%20Interference)

the actual article is:

[https://ukfree.tv/article/1107051977/High pressure causing channel loss through In versi](https://ukfree.tv/article/1107051977/High%20pressure%20causing%20channel%20loss%20through%20In%20versi)

Contacts:

Ofcom have taken the responsibility for licensing PMSE operation back 'in-house'.

For details of how to licence; <https://www.ofcom.org.uk/manage-your-licence/radiocommunication-licences/pmse>

Video PMSE:

<https://www.ofcom.org.uk/manage-your-licence/radiocommunication-licences/pmse/pmse-technical-info/video-links>

Note: information as of July 2021, addition in November 2022

Ukraine

Due to the situation in Ukraine (russian war of aggression), not all data could not be verified in November 2022.

Individual assignment / Individual license required

Bands allowed for cordless audio devices and radio microphones in Ukraine

| Radio Frequency Band, MHz | Radio Technology | Conditions for Usage |
|---------------------------|------------------------|--|
| 30.01 - 47 | Radio microphones | Radio microphones are permit- and fee-exempt, if operate in the frequency band of 30.01-33 MHz with the maximum radiated power up to 10 mW and upon availability of a non-directional integral/constructive antenna. Otherwise, operation of radio microphones is carried out on a permit-to-operate basis. |
| 66 - 74 | Radio microphones | Radio microphones are permit- and fee-exempt, if operate with the maximum radiated power up to 10 mW and upon availability of a non-directional integral/constructive antenna. Operation of radio microphone is carried out on the condition that it does not create interference to the other devices operating within the same frequency bands. |
| 87.5 - 92 | | |
| 100 - 108 | | |
| 89.9 – 90.2 | Cordless audio devices | Frequency band is used for sound transmission in TV broadcasting with radiated power up to 10 mW. |
| 174-216 | Radio microphones | Radio microphones are permit- and fee-exempt, if operate in the frequency bands of 174.4 – 174.6 MHz and 174.9 – 175.1 MHz with the maximum radiated power up to 10 mW and upon availability of a non-directional integral/constructive antenna. Otherwise, operation of radio microphones is carried out on a permit-to-operate basis. Operation of radio microphone is carried out on the condition that it does not create interference to the other devices operating within the same frequency bands. |
| 470-862 | | |
| 863 - 865 | Cordless audio devices | For voice transmission only. Algorithm of device shall ensure absence of emission when it is out of operation. Cordless audio devices are permit- and fee-exempt, if the maximum radiated power is up to 10 mW and upon availability of a non-directional integral / constructive antenna. Operation of device is carried out on the condition that it does not create interference to the other devices operating within the same frequency bands. |

Payment

Issuance of permissions for operation of radio electronic facilities (REFs) is performed on a fee paid basis. Information on the payment conditions is available on:

[National Commission for the State Regulation of electronic communications, radiofrequency spectrum and the provision of postal services | Registers \(nkrzi.gov.ua\)](https://nkrzi.gov.ua/index.php?r=site/index&pg=202&language=en)

<https://nkrzi.gov.ua/index.php?r=site/index&pg=202&language=en>

Additional Information

Contacts: National Commission for the State Regulation of Communications and Information:

<http://www.nkrzi.gov.ua/index.php?r=site/index&pg=1&id=0&language=en>

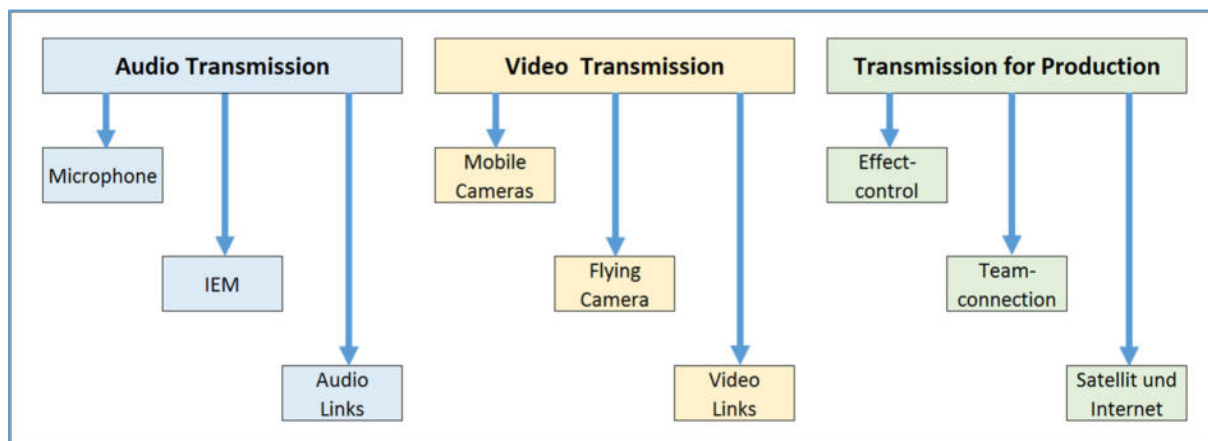
Ukrainian State Centre of Radio Frequencies:

<http://www.ucrf.gov.ua/en/>

Note: information as of March 2017; partly updated August 2021 and March 2022 and November 2022

Further information

This document is mainly focussing on audio PMSE. However, there are several PMSE in daily use:



Therefore, CEPT/ECO informs on a special homepage about “Programme making and special events applications (PMSE)”: <https://www.cept.org/ecc/topics/programme-making-and-special-events-applications-pmse>

PMSE contact points and regulatory processes in CEPT administrations:

<https://www.cept.org/ecc/topics/programme-making-and-special-events-applications-pmse#Contact>

In addition, CEPT/ECO provides a frequency database, called “EFIS”. This tool will be updated to improve its usability: <https://www.efis.dk/>

A similar database “APT Frequency Information System (AFIS)” is provided by the Asia-Pacific Telecommunity (APT): <http://www.aptafis.org/>

Note: information as of October 2020

Association for securing radio spectrum for the cultural and creative industries.

Association of Professional Wireless Production Technologies e. V.
Pappelallee 78/79
D-10437 Berlin | Germany

E-Mail: office@apwpt.org

APWPT is a sister organization of “SOS – Save Our Spectrum”
<https://sos-save-our-spectrum.org/?lang=en>

Responsible: Jochen Zenthöfer. Thanks to Marco Völzke, Berlin, for his help since 2022!

Attachment:

Iceland

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|---|---|
| 27.5 - 28 | METEOROLOGICAL AIDS FIXED MOBILE | METEOROLOGICAL AIDS MOBILE SRD - Short Range Devices (Inductive Devices 5-30 MHz) | ERC/REC 70-03 Commision Dec 2006/771/EC + amendments |
| 28 - 29.7 | AMATEUR AMATEUR-SATELLITE | AMATEUR AMATEUR-SATELLITE SRD - Short Range Devices (Inductive Devices 5-30 MHz) | Amateur reg. CEPT T/R 61-01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments |
| 29.7 - 30.005 | FIXED MOBILE | FIXED MOBILE SRD - Short Range Devices (Inductive Devices 5-30 MHz) (Wireless Microphone 29.7-47 MHz) | ERC/REC 70-03 Commision Dec 2006/771/EC + amendments |
| 30.005 - 30.01 | SPACE OPERATION (satellite identificat) FIXED MOBILE SPACE RESEARCH | SRD - Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC-REC 70-03 ECC/DEC/(06)08 |
| 30.01 - 37.5 | FIXED MOBILE | MOBILE Private Mobile Radio SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (ULP-AMI (30-37.5 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Model control (34.995 – 35.225 MHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ERC/DEC (01)11 |
| 37.5 - 38.25 | FIXED MOBILE Radio Astronomy 5.149 | MOBILE Private Mobile Service SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 38.25 - 39 | FIXED MOBILE | MOBILE SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 39-39.5 | FIXED MOBILE Radiolocation 5.132A 5.159 | MOBILE SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 39.5-39.986 | FIXED MOBILE | MOBILE SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

13. apríl 2022

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|---|---|--|
| 39.986 - 40.02 | FIXED MOBILE Space Research | SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 40.02 - 40.98 | FIXED MOBILE 5.150 | MOBILE Private Mobile Radio SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (Non specific SRD 40.66-40.70 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Model control 40.66-40.70 MHz) ISM - Industrial, Scientific and Medical Application (40.66 – 40.70) | CEPT T/R 70-03 ECC/DEC/(06)08 Commision Dec 2006/771/EC + amendments ERC/DEC (01)12 |
| 40.98 - 41.015 | FIXED MOBILE Space Research | MOBILE SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 41.015 - 42 | FIXED MOBILE | MOBILE SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 42 - 42.5 | FIXED MOBILE Radiolocation 5.132A 5.161B | MOBILE SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 42.5 - 44 | FIXED MOBILE | MOBILE SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 44 - 47 | FIXED MOBILE 5.162A | MOBILE SRD – Short Range Devices (Wireless Microphone 29.7-47 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 47 - 50 | BROADCASTING 5.162A 5.164 | BROADCASTING Radiolocation 5.162A SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|---|---|
| 50 - 52 | BROADCASTING Amateur 5.166B 5.166C 5.166E 5.169B 5.162A | BROADCASTING Amateur 50-52 MHz Radiolocation 5.162A SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | TV channels 2-4 Amateur reg. CEPT T/R 61-01 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 52 - 68 | BROADCASTING 5.162A 5.169B | BROADCASTING Radiolocation 5.162A SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | TV channels 2-4 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 68 - 74.8 | FIXED MOBILE except aeronautical mobile 5.149 | FIXED LAND MOBILE SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 74.8 - 75.2 | AERONAUTICAL RADIONAVIGATION 5.180 | AERONAUTICAL RADIONAVIGATION Aeronautical radio beacons – ILS/Glide path markers | ICAO Annex 10 |
| 75.2 - 87.5 | FIXED MOBILE except aeronautical mobile | FIXED LAND MOBILE SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 87.5 - 108 | BROADCASTING | BROADCASTING SRD – Short Range Devices (Wireless Audio 87.5-108 MHz) (Radiodetermin Appl. 30 MHz-12,4 GHz) | ERC/REC 54-01 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 108 - 117.975 | AERONAUTICAL RADIONAVIGATION | AERONAUTICAL RADIONAVIGATION ILS/Localizer 108 – 112 MHz VOR 108 – 117.975 MHz | ICAO Annex 10 |
| 117.975 - 137 | AERONAUTICAL MOBILE (R) 5.111, 5.200, 5.201, 5.202, | AERONAUTICAL MOBILE (R) ILS Localizer 108-112 MHz VOR 112-117.975 MHz 121.45-121.55 MHz EPIRB (earth to sp.) | RR Appendix S13 ICAO Annex 10 121.5 MHz EPIRB |
| 137 - 137.025 | SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.208 | METEOROLOGICAL-SATELLITE (space to earth) MOBILE-SATELLITE (space to earth) SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | ERC/DEC/(99)06 ERC/DEC/(99)05 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|--|--|
| 137.025 - 137.175 | SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.208 | METEOROLOGICAL-SATELLITE (space to earth) Mobile-Satellite (space to earth) SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | ERC/DEC/(99)06 ERC/DEC/(99)05 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 137.175 - 137.825 | SPACE OPERATION (space-to-Earth) 5.203C 5.209A METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.208 | METEOROLOGICAL-SATELLITE (space to earth) MOBILE-SATELLITE (space to earth) SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | ERC/DEC/(99)06 ERC/DEC/(99)05 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 137.825 - 138 | SPACE OPERATION (space-to-Earth) 5.203C METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 5.208 | METEOROLOGICAL-SATELLITE (space to earth) Mobile-Satellite (space to earth) SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | ERC/DEC/(99)06 ERC/DEC/(99)05 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 138 - 143.6 | AERONAUTICAL MOBILE (OR) | AERONAUTICAL MOBILE (OR) SRD – Short Range Devices (Non specific SRD 138.2-138.45 MHz) (Radiodetermin Appl. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 143.6 - 143.65 | AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space to earth) | AERONAUTICAL MOBILE (OR) SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 143.65 - 144 | AERONAUTICAL MOBILE (OR) | AERONAUTICAL MOBILE (OR) SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

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| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|------------------------|--|--|---|
| 144 - 146 | AMATEUR AMATEUR-SATELLITE | AMATEUR AMATEUR-SATELLITE SRD – Short Range Devices (Radiodetermin Applik. 30 MHz-12,4 GHz) | Amateur reg. CEPT T/R 61-01 CEPT T/R 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 146 - 148 | FIXED MOBILE except Aeronautical Mobile (R) | LAND MOBILE Private Mobile Radio SRD – Short Range Devices (Radiodetermin Applik. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 148 – 149.9 | FIXED MOBILE except Aeronautical Mobile (R) MOBILE-SATELLITE (earth to space) 5.209 5.218 5.219, 5.221 | LAND MOBILE Private Mobile Radio MOBILE-SATELLITE (earth to space) SRD – Short Range Devices (Radiodetermin Applik. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 ERC/DEC/(99)06 ERC/DEC/(99)05 CEPT T/R 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 149.9 – 150.05 | MOBILE-SATELLITE (earth to space) 5.209 5.220 | MOBILE-SATELLITE (earth to space) SRD – Short Range Devices (Radiodetermin Applik. 30 MHz-12,4 GHz) | ERC/DEC/(99)06 ERC/DEC/(99)05 CEPT T/R 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 150.05 - 153 | FIXED MOBILE except Aeronautical Mobile RADIO ASTRONOMY 5.149 | LAND MOBILE Private Mobile Radio SRD – Short Range Devices (Radiodetermin Applik. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 153 - 154 | FIXED MOBILE except Aeronautical Mobile (R) Meteorological Aids | LAND MOBILE Private Mobile Radio SRD – Short Range Devices (Radiodetermin Applik. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 154 – 156,4875 | FIXED MOBILE except aeronautical mobile (R) 5.226 | MARITIME MOBILE SRD – Short Range Devices (Radiodetermin Applik. 30 MHz-12,4 GHz) | RR Appendix 18 CEPT T/R 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 156.4875 – 156.5625 | MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227 | MARITIME MOBILE (distress and calling via DSC) | RR Appendix 18 156.525 MHz ch.70 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|--|--|
| 156.5625 – 156.7625 | FIXED MOBILE except aeronautical mobile (R) 5.226 | LAND MOBILE Private Mobile Radio MARITIME MOBILE SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | RR Appendix 18 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 156.7625 – 156.7875 | MARITIME MOBILE Mobile-satellite (Earth to space) 5.111 5.226 5.228 | MARITIME MOBILE SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | RR Appendix 18 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 156.7875 – 156.8125 | MARITIME MOBILE (distress and calling) 5.111 5.226 | MARITIME MOBILE (distress and calling) | RR Appendix 18 156.8 MHz ch.16 |
| 156.8125 – 156.8375 | MARITIME MOBILE Mobile-satellite (Earth to space) 5.111, 5.226, 5.228 | MARITIME MOBILE SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | RR Appendix 18 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 156.8375 – 161.9375 | FIXED MOBILE except aeronautical mobile (R) 5.226 | MARITIME MOBILE SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | RR Appendix 18 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 161.9375 – 161.9625 | FIXED MOBILE except aeronautical mobile (R) Maritime mobile satellite (Earth to space) 5.228AA 5.226 | SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 161.9625 – 161.9875 | FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth to space) 5.228F 5.226, 5.228A, 5.228B | MARITIME MOBILE SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | RR Appendix 18 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 161.9875 – 162.0125 | FIXED MOBILE except aeronautical mobile (R) Maritime mobile-satellite (Earth to space) 5.228AA 5.226 | MARITIME MOBILE SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | RR Appendix 18 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 162.0125 – 162.0375 | FIXED MOBILE except aeronautical mobile Mobile-satellite (Earth to space) 5.228F 5.226, 5.228A, 5.228B | MARITIME MOBILE SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | RR Appendix 18 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|--|--|
| 162.0375 - 174 | FIXED MOBILE except Aeronautical Mobile (R) 5.226 | FIXED (165.5 - 166.5 / 171 - 172 MHz) LAND MOBILE Private Mobile Radio SRD – Short Range Devices (Non-speci SRD 169,4-169.8125 MHz) (ALD systems 173.965-216 MHz, (ALD systems 169.4-169,5875 MHz (Tracking tracing & data aquisition 169.4-169.475 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | Single channel links ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/DEC/(05)02 |
| 174 - 223 | BROADCASTING | BROADCASTING Land Mobile SRD – Short Range Devices (Radio microphones 174-216 MHz) (ALD systems 173.965-216 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | TV channels 5-11 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 223 - 230 | BROADCASTING Fixed Mobile | BROADCASTING T-DAB – Terrestrial Digital Audio Broadcasting (223 – 230 MHz) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | TV channel 12 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 230 - 235 | FIXED MOBILE | MOBILE T-DAB – Terrestrial Digital Audio Broadcasting (230 – 240 MHz) | Planned |
| 235 - 267 | FIXED MOBILE 5.254, 5.256, 5.111 | MOBILE T-DAB – Terrestrial Digital Audio Broadcasting (230 – 240 MHz) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | Planned CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 267 - 272 | FIXED MOBILE Space Operation (space to earth) 5.254 | MOBILE SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 272 - 273 | FIXED MOBILE SPACE OPERATION (space to earth) 5.254 | MOBILE SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|---|--|
| 273 - 312 | FIXED MOBILE 5.254 | MOBILE SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 312 - 315 | FIXED MOBILE Mobile-Satellite (earth to space) 5.254, 5.255 | MOBILE SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 315 - 322 | FIXED MOBILE 5.254 | MOBILE SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 322 - 328.6 | FIXED MOBILE RADIO ASTRONOMY 5.149 | MOBILE SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 328.6 - 335.4 | AERONAUTICAL RADIONAVIGATION 5.258 | AERONAUTICAL RADIONAVIGATION | ILS (glide path) |
| 335.4 - 387 | FIXED MOBILE 5.254 | MOBILE - TETRA – Emergency Service (380 – 385 MHz) - TETRA (385 – 390 MHz) (planned) SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | ECC/DEC/(08)05 ERC/DEC/(01)19 ECC/DEC/(06)05 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 387 - 390 | FIXED MOBILE Mobile-Satellite (space to earth) 5.254, 5.255, 5.208A | FIXED (4-10 channel links) MOBILE - TETRA (385 – 390 MHz) SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | ECC/DEC/(08)05 ERC/DEC/(99)06 ERC/DEC/(99)05 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 390 - 399.9 | FIXED MOBILE 5.254 | FIXED (4-10 channel links) MOBILE - TETRA – Emergency Service (390 – 395 MHz) - TETRA (395 – 399.9 MHz) (planned) SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | ECC/DEC/(08)05 ERC/DEC (01)19 ECC/DEC/(06)05 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

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| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|---|---|--|
| 399.9 - 400.05 | MOBILE-SATELLITE (earth to space) 5.209 5.220 5.260A 5.260B | SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/DEC/(99)06 ERC/DEC/(99)05 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 400.05 - 400.15 | STANDARD FREQUENCY AND TIME SIGNAL (400.1 MHz) 5.261 | | |
| 400.15 - 401 | METOROLOGICAL AIDS METOROLOGICAL-SATELLITE (space to earth) MOBILE-SATELLITE (space to earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space to earth) 5.263 Space Operation (space to earth) 5.264 | METOROLOGICAL AIDS METOROLOGICAL-SATELLITE (space to earth) MOBILE-SATELLITE (space to earth) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/DEC/(99)06 ERC/DEC/(99)05 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 401 - 402 | EARTH EXPLORATION-SATELLITE (earth to space) METOROLOGICAL AIDS SPACE OPERATION (space to earth) METOROLOGICAL-SATELLITE (earth to space) Fixed Mobile except aeronautical mobile 5.264A 5.264B | EARTH EXPLORATION-SATELLITE (earth to space) METOROLOGICAL AIDS METOROLOGICAL-SATELLITE (earth to space) Fixed Mobile except aeronautical mobile. SRD – Short Range Devoces (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ERC/DEC/(01)17 |
| 402 - 403 | EARTH EXPLORATION-SATELLITE (earth to space) METOROLOGICAL AIDS METOROLOGICAL-SATELLITE (earth to space) Fixed Mobile except aeronautical mobile 5.264A 5.264B | EARTH EXPLORATION-SATELLITE (earth to space) METOROLOGICAL AIDS METOROLOGICAL-SATELLITE (earth to space) Fixed Mobile except aeronautical mobile. SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ERC/DEC/(01)17 |
| 403 - 406 | METOOROLOGICAL AIDS Fixed Mobile except aeronautical mobile 5.265 | METOOROLOGICAL AIDS Fixed Mobile except aeronautical mobile. SRD – Short Range Devoces (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(06)08 ERC/REC 70-03 ERC/DEC/(01)17 Commision Dec 2006/771/EC + amendments |
| 406 - 406.1 | MOBILE SATELLITE (earth to space) 5.266 5.266 5.267 | MOBILE SATELLITE (earth to space) | COSPAS-SARSAT EPIRB Commission Dec 2005/631/EC |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|---|--|--|
| 406.1 – 410 | FIXED MOBILE except Aeronautical Mobile RADIOASTRONOMY 5.149 5.265 | FIXED (4-10 channel links) MOBILE SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 410 – 420 | FIXED MOBILE except Aeronautical Mobile Space Research (space to space) 5.268 | FIXED (4-10 channel links) MOBILE - Wideband Digital Land Mobile PMR/PAMR SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 ECC/DEC/(08)05 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 420 - 430 | FIXED MOBILE except Aeronautical Mobile Radiolocation | FIXED MOBILE except aeronautical mobile - Wideband Digital Land Mobile PMR/PAMR SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | 4-10 channel links ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 430 - 432 | AMATEUR RADIOLOCATION | AMATEUR SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | Amateur Reg. CEPT T/R 61-01 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 432 - 438 | AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138, 5.282 | AMATEUR SRD - Short Range Devices (Non-specific SRD 433.05-434.79 MHz) (Radiodetermin Appl. 30 MHz-12,4 GHz) ISM - Industrial, Scientific and Medical Applications (433.05 – 434.79 MHz) | Amateur Reg. CEPT T/R 61-01 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 438 - 440 | AMATEUR RADIOLOCATION | AMATEUR SRD – Short Range Devices (Radiodetermin Appl. 30 MHz-12,4 GHz) | Amateur Reg. CEPT T/R 61-01 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 440 - 450 | FIXED MOBILE except Aeronautical Mobile Radiolocation 5.286 | FIXED (single channel links) (441.5-442.5 paired with 451.5-452.5) LAND MOBILE - Private Mobile Radio SRD – Short Range Devoces (Radiodetermin Appl. 30 MHz-12,4 GHz) (PMR446 - 446.0-446.2 MHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/DEC/(15)05 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|---|---|--|
| 450 - 455 | FIXED MOBILE 5.286AA 5.209 5.286 5.286A | FIXED (Single channel links) (451.5-452.5 paired with 441.5-442.5) MOBILE - Private Mobile radio - Wideband Digital Land Mobile PMR/PAMR SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 455 - 456 | FIXED MOBILE 5.286AA 5.209 5.286A | MOBILE - Telemetry (458.5 – 459.0 MHz) - Private Mobile radio - Wideband Digital Land Mobile PMR/PAMR SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 456 - 459 | FIXED MOBILE 5.286AA 5.287 | MOBILE - Telemetry (458.5 – 459.0 MHz) - Private Mobile radio - On board communication (maritime) (457.5125-457.5875 MHz) - Wideband Digital Land Mobile PMR/PAMR SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 459 - 460 | FIXED MOBILE 5.286AA 5.209 5.286A | FIXED (Single channel links) (459.5-460.0 paired with 469.5-470.0) MOBILE - Private Mobile radio - Wideband Digital Land Mobile PMR/PAMR SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 460 - 470 | FIXED MOBILE 5.287 5.286AA Meteorological-Satellite (sp. to earth) 5.289 | FIXED (469.5-470.0 paired with 459.5-460.0) MOBILE - Private Mobile radio - On board communication (maritime) (467.5125-467.5875 MHz) - Private radio paging (469.0 – 469.5 MHz) - Wideband Digital Land Mobile PMR/PAMR SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | Single channel links ECC/DEC/(19)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|---|---|
| 470 - 694 | BROADCASTING 5.149 5.296 | BROADCASTING MOBILE SRD – Short Range Devices (Wireless microphones) (Radiodeterm Applic. 30 MHz-12,4 GHz) | TV channels 21-48 Commission Dec 2017/899/EU CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 694 - 790 | MOBILE except aeronautical mobile 5.312A. 317A BROADCASTING | MOBILE (703-733, 758-788 MHz) PPDR 703-713 / 758-768 MHz SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (Wireless Microph. 786-789 MHz) | ECC/DEC (15)01 Commission Dec 2017/899/EU Commission Dec 2016/687/EU ECC/DEC/(22)01 ECC/DEC/(16)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 790 - 862 | FIXED MOBILE except aeronautical mobile BROADCASTING 5.316B | MOBILE (791-821, 832-862 MHz) SRD – Short Range Devices (Wireless Microph. (823-832 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(09)03 Commission Dec 2010/267/EC Commission Dec 2014/641/EU ECC/DEC/(22)01 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 862 - 890 | FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 | FIXED MOBILE - GSM (880-915 and 925-960 MHz) SRD – Short Range Devices (Wireless Audio. (863-865 MHz) (Non-specific SRD 862-874,4 MHz) (Tracking tracing & data aquisition 865-868 and 870-874,4 MHz) (RFID (865-868 MHz) (SAS 869.2-869.25 MHz) (Alarms 868.6-868.7 MHz) (Alarms 869.25-869.4 MHz) (Alarms 869.65-869.7 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Wideb. data transm. syst 863-868 MHz) | ECC/DEC/(06)13 ERC/DEC/(97)02 ECC/DEC/(08)08 Commission Dec 2009/114/EC Commission Dec 2022/173/EC Commission Dec 2018/637/EC Commission Dec 2011/251/EC Commission Dec 2010/166/EC Commission Dec 2017/191/EC ECC/DEC/(22)01 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments Commission Dec 2018/1538/EC + amendment ECC/DEC/(06)08 |

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| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|---|---|
| 890 - 942 | FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 Radiolocation | FIXED MOBILE GSM – (880-915 and 925-960 MHz) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (RFID – 915-921 MHz) (Non specific SRD 915-919,4 MHz) (Wideb. data transm. syst. 915.8-919.4) (Tracking tracing & data aquisition 915-919,4 MHz) | ERC/DEC/(94)01 ECC/DEC/(08)08 ECC/DEC/(06)13 Commission Dec 2009/114/EC ERC/DEC/(97)02 Commission Dec 2022/173/EC Commission Dec 2018/637/EC Commission Dec 2011/251/EC Commission Dec 2010/166/EC Commission Dec 2017/191/EC ECC/DEC/(22)01 ERC/REC 70-03 Commison Dec 2006/771/EC + amendments Commission Dec 2018/1538/EC + amendment ECC/DEC/(06)08 |
| 942 - 960 | FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 | FIXED MOBILE GSM – (880-915 and 925-960 MHz) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/DEC/(94)01 ECC/DEC/(08)08 ECC/DEC/(06)13 ERC/DEC/(97)02 Commission Dec 2022/173/EC Commission Dec 2018/637/EC Commission Dec 2011/251/EC Commission Dec 2010/166/EC Commission Dec 2009/114/EC Commission Dec 2017/191/EC ECC/DEC/(22)01 ERC/REC 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC/(06)08 Commission Dec 2018/1538/EC |
| 960 - 1215 | AERONAUTICAL MOBILE (R) 5.327A AERONAUTICAL RADIONAVIGATION 5.328 5.328AA | AERONAUTICAL RADIONAVIGATION SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | Flight, Safety and Navigation Systems DME,TACAN,SSR ICAO Annex 10 ERC/REC 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

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| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|---|--|--|
| 1164 - 1215 | AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space to Earth) (space to space) 5.328B 5.328A | AERONAUTICAL RADIONAVIGATION SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | Flight, Safety and Navigation Systems DME,TACAN,SSR ICAO Annex 10 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1215 - 1240 | RADIOLOCATION RADIONAVIGATION-SATELLITE (space to earth) (space to space) 5.328B 5.329 5.329A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) 5.332 | RADIOLOCATION RADIONAVIGATION-SATELLITE (space to earth) - GPS - Global Positioning System SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1240 - 1300 | RADIOLOCATION RADIONAVIGATION-SATELLITE (space to earth) (space to space) 5.328B 5.329 5.329A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) Amateur 5.282, 5.332, 5.335A | RADIOLOCATION Amateur SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | Amateur reg. CEPT T/R 61-01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1300 - 1350 | AERONAUTICAL RADIONAVIGATION 5.337 RADIONAVIGATION –SATELLITE (Earth to space) RADIOLOCATION 5.149, 5.337A | RADIOLOCATION SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1350 - 1400 | FIXED MOBILE RADIOLOCATION 5.339, 5.149, 5.338A | FIXED RADIOLOCATION SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 13-01 Annex A and B ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1400 - 1427 | EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340, 5.341 | SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC (11)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|---|---|
| 1427 - 1429 | FIXED SPACE OPERATION (earth to space) MOBILE except aeronautical mobile 5.341A 5.341, 5.338A | MOBILE (MFCN SDL) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | Commision Decision 2018/661/EC ECC/DEC (17)06 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1429 - 1452 | FIXED MOBILE except aeronautical mobile 5.341A 5.341, 5.338A, | MOBILE (MFCN SDL) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | Commision Decision 2018/661/EC ECC/DEC (17)06 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1452 - 1492 | FIXED MOBILE except aeronautical mobile 5.346 BROADCASTING BROADCASTING SATELLITE SERVICE 5.208B 5.345 5.341 | MOBILE (MFCN SDL) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | Commission Dec 2015/750/EC Commision Decision 2018/661/EC ECC/DEC (13)03 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1492 - 1518 | FIXED MOBILE except aeronautical mobile 5.341A 5.341 | MOBILE (MFCN SDL) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | Commision Decision 2018/661/EC ECC/DEC (17)06 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1518 - 1525 | FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space to Earth) 5.348 5.348A 5.348B 5.351A 5.341 | MSS 1518-1525 MHz SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(04)09 ECC/DEC (12)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1525 - 1530 | SPACE OPERATION (space to earth) FIXED MOBILE-SATELLITE (space to earth) 5.208B 5.351A Earth Exploration-Satellite Mobile except aeronautical mobile 5.341, 5.351, 5.354 | MOBILE-SATELLITE (space to earth) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | INMARSAT earth Stations ECC/DEC (12)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|---|---|
| 1530 - 1535 | SPACE OPERATION (space to earth) MOBILE-SATELLITE (space to earth) 5.208B 5.353A 5.351A Earth Exploration-Satellite Fixed Mobile except aeronautical mobile 5.341, 5.351, 5.354 | MOBILE-SATELLITE (space to earth) SRD – Short Range Devices (Radiodetermin Applic. 30 MHz-12,4 GHz) | INMARSAT earth Stations ECC/DEC (12)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1535 - 1559 | MOBILE-SATELLITE (space to earth) 5.341 5.351 5.353A 5.354 5.356 5.357 5.357A 5.362A | MOBILE-SATELLITE (space to earth) SRD – Short Range Devices (Radiodetermin Applic. 30 MHz-12,4 GHz) | INMARSAT earth Stations ECC/DEC (12)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1559 - 1610 | AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space to earth) (space to space) 5.328B 5.208B 5.329A 5.341 | RADIONAVIGATION-SATELLITE (space to earth) - GPS - Global Positioning System SRD – Short Range Devices (Radiodetermin Applic. 30 MHz-12,4 GHz) | ECC/REC(11)08 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1610 - 1610.6 | MOBILE SATELLITE (earth to space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341, 5.364, 5.366, 5.367, 5.368, 5.371, 5.372 | MOBILE SATELLITE (earth to space) SRD – Short Range Devices (Radiodetermin Applic. 30 MHz-12,4 GHz) | ECC/DEC (12)01 ECC/DEC/(09)02 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1610.6 - 1613.8 | MOBILE SATELLITE (earth to space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.341, 5.364, 5.366, 5.367, 5.368, 5.371, 5.372, 5.149 | MOBILE SATELLITE (earth to space) SRD – Short Range Devices (Radiodetermin Applic. 30 MHz-12,4 GHz) | ECC/DEC (12)01 ECC/DEC/(09)02 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1613.8 – 1621,35 | MOBILE SATELLITE (earth to space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-Satellite (space to earth) 5.341, 5.364, 5.365, 5.366, 5.367, 5.368, 5.371, 5.372 | MOBILE SATELLITE (earth to space) SRD – Short Range Devices (Radiodetermin Applic. 30 MHz-12,4 GHz) | ECC/DEC (12)01 ECC/DEC/(09)02 ECC/DEC/(09)04 ECC/DEC/(06)08 ERC/REC 70-03 |
| 1621,35 – 1626,5 | MARITIME MOBILE SATELLITE (space-to-Earth) 5.373 5.373A MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) except maritime mobile satellite (space-to-Earth) 5.208B 5.341 5.364 5.365 5.366 5.367 5.368 5.371 5.372 | MOBILE SATELLITE (earth to space) SRD – Short Range Devices (Radiodetermin Applic. 30 MHz-12,4 GHz) | ECC/DEC (12)01 ECC/DEC/(09)02 ECC/DEC/(09)04 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|---|---|
| 1626.5 - 1660 | MOBILE-SATELLITE (earth to space) 5.341 5.351 5.353A 5.354 5.357A 5.374 5.375 5.376 | MOBILE-SATELLITE (earth to space) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC (12)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1660 - 1660.5 | MOBILE-SATELLITE (earth to space) 5.351A RADIO ASTRONOMY 5.149, 5.341, 5.351,5.354, 5.576A | SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC (12)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1660.5 - 1668 | RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149, 5.341, 5.379A | SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1668 – 1668,4 | MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379A | SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1668.4 - 1670 | METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E | SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1670 - 1675 | METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.341 5.379D 5.379E 5.380A | MOBILE MSS 1670-1675 MHz SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(04)09 ECC/DEC (12)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 1675 - 1690 | METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space to earth) MOBILE except aeronautical mobile 5.341 | SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

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| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|---|---|---|
| 2010 - 2025 | FIXED MOBILE 5.388A 5.388 | MOBILE - Video PMSE SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | Commission Dec 2016/339/EC ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2025 - 2110 | FIXED SPACE OPERATION (earth to space) (space to space) EARTH EXPLORATION-SATELLITE (earth to space) (space to space) MOBILE 5.391 SPACE RESEARCH (earth to space) (space to space) 5.392 | FIXED EARTH EXPLORATION-SATELLITE (earth to space) (space to space) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 13-01 Annex C.. ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2110 - 2120 | FIXED MOBILE 5.388A SPACE RESEARCH (deep space) (earth to space) 5.388 | MOBILE - UMTS - Universal Mobile Tele- communications System (2110-2170 MHz) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(06)01 ECC/DEC/(06)07 Commission Dec 2012/688/EC Commission Dec 2020/667/EC Commission Dec 2013/654/EC Commission Dec 2016/2317/EC Commission Dec 2017/191/EC ECC/DEC/(22)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2120 - 2170 | FIXED MOBILE 5.388A 5.388 | MOBILE - UMTS - Universal Mobile Tele- communications System (2110-2170 MHz) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(06)01 ECC/DEC (12)01 ECC/DEC/(06)07 Commission Dec 2013/654/EC Commission Dec 2016/2317/EC Commission Dec 2017/191/EC Commission Dec 2012/688/EC Commission Dec 2020/667/EC ECC/DEC/(22)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|---|---|--|
| 2170 - 2200 | FIXED MOBILE MOBILE-SATELLITE (space to earth) 5.351A 5.388, 5.389A | MOBILE MOBILE-SATELLITE (space to earth) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC/(06)09 ECC/DEC (12)01 Commission Dec 2007/98/EC ECC/DEC/(06)10 ERC/REC 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2200 - 2290 | FIXED SPACE OPERATION (space to earth) (space to space) EARTH EXPLORATION-SATELLITE (space to earth) (space to space) MOBILE 5.391 SPACE RESEARCH (space to earth) (space to space) 5.392 | FIXED SPACE OPERATION (space to earth) (space to space) EARTH EXPLORATION-SATELLITE (space to earth) (space to space) SPACE RESEARCH (space to earth) (space to space) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 13-01 Annex C. ERC/REC 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2290 - 2300 | FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space to earth) | SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ERC/REC 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2300 - 2450 | FIXED MOBILE 5.384A Amateur Radiolocation 5.150 | FIXED MOBILE (MFCN) Amateur SRD – Short Range Devices (Wideband data transmission systems 2400- 2483.5 MHz) (RFID – 2446-2454 MHz (Non-specific SRD 2400-2483,5 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) ISM - Industrial Scientific and Medical applications (2400-2483.5 MHz) | ECC/DEC (14)02 ECC/REC (15)04 ECC/DEC/(22)01 Amateur Reg. CEPT T/R 61-01 ERC/REC 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2450 - 2483.5 | FIXED MOBILE Radiolocation 5.150 | SRD – Short Range Devices (Wideband data transmission systems 2400- 2483.5 MHz) (RFID – 2446-2454 MHz (Non-specific SRD 2400-2483,5 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) ISM - Industrial Scientific and Medical applications (2400-2483.5 MHz) | CEPT T/R 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|--|---|
| 2483.5 - 2500 | FIXED MOBILE MOBILE-SATELLITE (space to earth) 5.351A RADIODETERMINATION-SATELLITE (space to Earth) 5.398 Radiolocation 5.150, 5.399, 5.402 | MOBILE MOBILE-SATELLITE (space to earth) SRD – Short Range Devices (Active medical Implants devices) (Medical data acquisition) (Tracking, Tracing and data quisation) (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC (12)01 ECC/DEC/(09)02 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2500 - 2520 | FIXED 5.410 MOBILE except aeronautical mobile 5.384A | MOBILE (2500-2690 MHz IMT) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC (05)05 ECC/DEC/(08)08 Commission Dec 2008/477/EC Commission Dec 2020/636/EC Commission Dec 2017/191/EC ECC/DEC/(22)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2520 - 2655 | FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413, 5.416 5.339, 5.403, 5.418B, 5.418C | MOBILE (2500-2690 MHz IMT) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC (05)05 ECC/DEC/(08)08 Commission Dec 2008/477/EC Commission Dec 2020/636/EC Commission Dec 2017/191/EC ECC/DEC/(22)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2655 - 2670 | FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413, 5.416 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 5.149, 5.420 | MOBILE (2500-2690 MHz IMT) SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) | ECC/DEC (05)05 ECC/DEC/(08)08 Commission Dec 2008/477/EC Commission Dec 2020/636/EC Commission Dec 2017/191/EC ECC/DEC/(22)01 ERC/REC 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|--|--|
| 2670 – 2690 | FIXED 5.410 MOBILE except aeronautical mobile 5.384A MOBILE-SATELLITE (earth to space) 5.351A Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 5.149 | MOBILE (2500-2690 MHz IMT) SRD – Short Range Devices (Radiodeterministic Applic. 30 MHz-12,4 GHz) | ECC/DEC (05)05 ECC/DEC/(08)08 Commission Dec 2008/477/EC Commission Dec 2020/636/EC Commission Dec 2017/191/EC ECC/DEC/(22)01 ERC/REC 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2690 - 2700 | EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 | SRD – Short Range Devices (Radiodeterministic Applic. 30 MHz-12,4 GHz) | ERC/REC 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2700 - 2900 | AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 | AERONAUTICAL RADIONAVIGATION Radiolocation SRD – Short Range Devices (Radiodeterministic Applic. 30 MHz-12,4 GHz) | Navigation System Meteorolog. radar ECC/REC/(02)09 ERC/REC 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 2900 - 3100 | RADIONAVIGATION 5.424A RADIOLOCATION 5.426 5.425, 5.427 | RADIONAVIGATION SRD – Short Range Devices (Radiodeterministic Applic. 30 MHz-12, GHz) | Radar ERC/REC 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 3100 - 3300 | RADIOLOCATION Earth Exploration-Satellite (active) Space Research (active) 5.428, 5.149 | RADIOLOCATION SRD – Short Range Devices (Non-specific SRD 3.1-4.8 GHz) (Radiodeterministic Applic. 30 MHz-12,4 GHz) | Radar ERC/REC 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 3300 - 3400 | RADIOLOCATION 5.149 | RADIOLOCATION SRD – Short Range Devices (Non-specific SRD 3.1-4.8 GHz) (Radiodeterministic Applic. 30 MHz-12,4 GHz) | Radar ERC/REC 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|---|---|---|
| 3400 - 3600 | FIXED FIXED-SATELLITE (space to earth) MOBILE except aeronautical mobile 5.430A Radiolocation | MOBILE (3400-3800 MHz) SRD – Short Range Devices (Non-specific SRD 3.1-4.8 GHz) (Radiodetermin Appl. 30 MHz-12,4 GHz) | ERC/DEC/(99)26 ECC/DEC/(11)06 Commission Dec 2008/411/EC Commission Dec 2019/235/EC Commission Dec 2014/276/EC ERC/REC 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 3600 - 4200 | FIXED FIXED-SATELLITE (space to earth) Mobile | FIXED-SATELLITE (space to earth) - ESV 3700-4200 MHz down link MOBILE (3400-3800 MHz) SRD – Short Range Devices (Non-specific SRD 3.1-4.8 GHz) (Radiodetermin Appl. 30 MHz-12,4 GHz) | ECC/DEC/(05)09 ERC/DEC/(99)26 ECC/DEC/(22)01 ECC/DEC(11)06 Commission Dec 2008/411/EC Commission Dec 2019/235/EC Commission Dec 2014/276/EC ERC/REC 70-03 ECC/DEC/(06)04 ECC/DEC/(06)08 |
| 4200 - 4400 | AERONAUTICAL MOBILE (R)5.436 AERONAUTICAL RADIONAVIGATION 5.438 5.440 5.437 | AERONAUTICAL MOBILE (R) AERONAUTICAL RADIONAVIGATION SRD – Short Range Devices (Non-specific SRD 3.1-4.8 GHz) (Radiodetermin Appl. 30 MHz-12,4 GHz) | WAIC Radar Radio Altimeters ERC/REC 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 4400 - 4500 | FIXED MOBILE | SRD – Short Range Devices (Non-specific SRD 3.1-4.8 GHz) (Radiodetermin Appl. 30 MHz-12,4 GHz) | ERC/REC 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 4500 - 4800 | FIXED FIXED-SATELLITE (space to earth) 5.441 MOBILE | SRD – Short Range Devices (Tank Level Probing Radar 4.5-7 GHz) (Non-specific SRD 3.1-4.8 GHz) (Radiodetermin Appl. 30 MHz-12,4 GHz) | RR Appendix 30B ERC/REC 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 4800 - 4990 | FIXED MOBILE 5.442 Radio Astronomy 5.149 5.339 | SRD – Short Range Devices (Tank Level Probing Radar 4.5-7 GHz) (Radiodetermin Appl. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 4990 - 5000 | FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space Research (passive) 5.149 | SRD – Short Range Devices (Tank Level Probing Radar 4.5-7 GHz) (Radiodetermin Appl. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commission Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|--|---|
| 5000 - 5010 | AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth to space) | AERONAUTICAL RADIONAVIGATION SRD – Short Range Devices (Tank Level Probing Radar 4.5-7 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | ICAO Annex 10 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 5010 – 5030 | AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADONAVIGATION-SATELLITE (space to Earth) (space to space) 5.328B 5.443B | AERONAUTICAL RADIONAVIGATION SRD – Short Range Devices (Tank Level Probing Radar 4.5-7 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | ICAO Annex 10 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 5030 – 5091 | AERONAUTICAL-MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444 | AERONAUTICAL RADIONAVIGATION SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) | ICAO Annex 10 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 5091 – 5150 | FIXED-SATELLITE (Earth to space) 5.444A AERONAUTICAL-MOBILE 5.444B AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444 | AERONAUTICAL RADIONAVIGATION SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) | ICAO Annex 10 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 5150 - 5250 | AERONAUTICAL RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.446B FIXED-SATELLITE (Earth to space) 5.447A 5.446, 5.447B, 5.447C | MOBILE SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) - HIBERLAN – High Performance Radio Local Area Network WAS/RLAN (5150-5350 MHz) - BBDR | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/DEC/(04)08 Commission Dec 2022/179/EC Commission Dec 2007/90/EC ECC/REC (08)04 |
| 5250 - 5255 | EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH 5.447D 5.448A | SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) - HIBERLAN – High Performance Radio Local Area Network - WAS/RLAN (5150-5350 MHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/DEC/(04)08 Commission Dec 2022/179/EC Commission Dec 2007/90/EC |
| 5255 - 5350 | EARTH EXPLORATION-SATELLITE (active) MOBILE except aeronautical mobile 5.446A 5.447F RADIOLOCATION SPACE RESEARCH (active) 5.448A | SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) - HIBERLAN – High Performance Radio Local Area Network - WAS/RLAN (5150-5350 MHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/DEC/(04)08 Commission Dec 2022/179/EC Commission Dec 2007/90/EC |

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| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|---|--|
| 5350 - 5460 | AERONAUTICAL RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) 5.448B RADIOLOCATION 5.448D SPACE RESEARCH (active) 5.448C | METEOROLOGICAL RADAR SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 5460 - 5470 | RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.448D SPACE RESEARCH (active) 5.448B | Radiolocation SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 5470 - 5570 | MARITIME RADIONAVIGATION EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.450B SPACE RESEARCH (active) MOBILE except aeronautical mobile 5.446A 5.450A 5.448B | METEOROLOGICAL RADAR SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) - HIERLAN – High Performance Radio Local Area Network - WAS/RLAN (5470-5725 MHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/DEC/(04)08 Commission Dec 2022/179/EC |
| 5570 – 5650 | MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B MARITIME RADIONAVIGATION 5.452 | METEOROLOGICAL RADAR SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) - WAS/RLAN (5470-5725 MHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/DEC/(04)08 Commission Dec 2022/179/EC |
| 5650 - 5725 | RADIOLOCATION Amateur Space Research (deep space) MOBILE except aeronautical mobile 5.446A 5.450A 5.282 | Radiolocation SRD – Short Range Devices (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) - WAS/RLAN (5470-5725 MHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/DEC/(04)08 Commission Dec 2022/179/EC |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|---|---|---|
| 5725 - 5830 | FIXED-SATELLITE (earth to space) RADIOLOCATION Amateur 5.150 | Amateur SRD – Short Range Devices (Non specific SRD 5725-5875 MHz) (Transport & traffic telematics 5795-5815 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) BFWA 5725-5795 and 5815-5875 MHz ISM - Industrial, Scientific and Medical applications (5725-5875 MHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/REC(06)04 |
| 5830 - 5850 | FIXED-SATELLITE (earth to space) RADIOLOCATION Amateur Amateur-Satellite (space to earth) 5.150 | Amateur SRD – Short Range Devices (Non specific SRD 5725-5875 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) BFWA 5725-5795 and 5815-5875 MHz ISM - Industrial, Scientific and Medical applications (5725-5875 MHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/REC(06)04 |
| 5850 - 5925 | FIXED FIXED-SATELLITE (earth to space) MOBILE 5.150 | SRD – Short Range Devices (Non specific SRD 5725-5875 MHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Tank Level Probing Radar 4.5-7 GHz) BFWA 5725-5795 and 5815-5875 MHz (ITS 5875-5935 MHz) (ITS 5855-5875 MHz) ISM - Industrial, Scientific and Medical applications (5725-5875 MHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/REC(06)04 ECC/DEC/(08)01 Commission Dec 2020/1426 ECC/REC/(08)01 |
| 5925 - 6700 | FIXED 5.457 FIXED-SATELLITE (earth to space) 5.457A MOBILE 5.149, 5.440, 5.458 | FIXED (6425-7110 MHz) FIXED-SATELLITE (earth to space) - ESV 5925-6425 MHz uplink SRD – Short Range Devices (Tank Level Probing Radar 4.5-7 GHz) (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (ITS 5875-5935 MHz) (UWB applic. onboard aircr. 6-8,5 GHz) WAS/RLAN (5945-6425 MHz) | ERC/REC 14-02 ECC/DEC/(05)09 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 ECC/DEC(11)02 Commission Dec 2020/1426 ECC/DEC/(12)03 ECC/DEC/(20)01 Commission Dec 2021/1067/EC |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|--|---|
| 6700 - 7075 | FIXED FIXED-SATELLITE (earth to space) (space to earth) 5.441 MOBILE 5.458, 5.458A, 5.458B | FIXED (6425-7125 MHz) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8.5 GHz) (UWB applic. onboard aircr 6-8,5 GHz) | ERC/REC 14-02 CEPT T/R 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 7075 - 7145 | FIXED MOBILE 5.458 | FIXED (6425-7125 MHz) (7125-7750 MHz) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8.5 GHz) (UWB applic. onboard aircr. 6-8,5 GHz) | ERC/REC 14-02 ECC/REC (02)06 CEPT T/R 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 7145 – 7190 | FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) 5.460 5.458 | FIXED (7125-7750 MHz) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8.5 GHz) (UWB applic. onboard aircr. 6-8,5 GHz) | ERC/REC 14-02 ECC/REC (02)06 CEPT T/R 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 7190 - 7235 | FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 EARTH-EXPLORATION-SATELLITE (Earth to space) 5.460A 5.458 | FIXED (7125-7750 MHz) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | ERC/REC 14-02 ECC/REC (02)06 CEPT T/R 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 7235 - 7250 | FIXED EARTH-EXPLORATION-SATELLITE (Earth to space) 5.460A MOBILE 5.458 | FIXED (7125-7750 MHz) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | ERC/REC 14-02 ECC/REC (02)06 CEPT T/R 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 7250 - 7300 | FIXED FIXED-SATELLITE (space to Earth) MOBILE 5.461 | FIXED (7125-7750 MHz) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | ERC/REC 14-02 ECC/REC (02)06 CEPT T/R 70-03 Commison Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|---|---|--|
| 7300 - 7375 | FIXED FIXED-SATELLITE (space to earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space to Earth) 5.461 | FIXED (7125-7750 MHz) FIXED-SATELLITE (space to earth) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | ERC/REC 14-02 ECC/REC (02)06 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 7375 – 7450 | FIXED FIXED-SATELLITE (space to earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space to Earth) 5.461AA 5.461AB | FIXED (7125-7750 MHz) FIXED-SATELLITE (space to earth) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | ERC/REC 14-02 ECC/REC (02)06 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 7450 - 7550 | FIXED FIXED-SATELLITE (space to earth) METEOROLOGICAL-SATELLITE (space to earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space to Earth) 5.461AA 5.461AB 5.461A | FIXED (7125-7750 MHz) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | ERC/REC 14-02 ECC/REC (02)06 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 7550 - 7750 | FIXED FIXED-SATELLITE (space to earth) MOBILE except aeronautical mobile MARITIME MOBILE-SATELLITE (space to Earth) 5.461AA 5.461AB | FIXED (7125-7750 MHz) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | ERC/REC 14-02 ECC/REC (02)06 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 7750 - 7900 | FIXED METEOROLOGICAL-SATELLITE (space to earth) 5.461B MOBILE except aeronautical mobile | FIXED SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | Rec. ITU-R F 386-3 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|--|---|
| 7900 - 8025 | FIXED FIXED-SATELLITE (earth to space) MOBILE 5.461 | FIXED FIXED-SATELLITE (earth to space) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | Rec. ITU-R F 386-3 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 8025 - 8175 | FIXED FIXED-SATELLITE (earth to space) MOBILE 5.463 EARTH EXPLORATION-SATELLITE (space to earth) 5.462A | FIXED FIXED-SATELLITE (earth to space) EARTH EXPLORATION-SATELLITE (space to earth) FIXED-SATELLITE (earth to space) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | Rec. ITU-R F 386-3 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 8175 - 8215 | FIXED FIXED-SATELLITE (earth to space) MOBILE 5.463 EARTH EXPLORATION-SATELLITE (space to earth) METEOROLOGICAL-SATELLITE (earth to space) 5.462A | FIXED EARTH EXPLORATION-SATELLITE (space to earth) FIXED-SATELLITE (earth to space) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | Rec. ITU-R F 386-3 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 8215 - 8400 | FIXED FIXED-SATELLITE (earth to space) MOBILE 5.463 EARTH EXPLORATION-SATELLITE (space to earth) 5.462A | FIXED EARTH EXPLORATION-SATELLITE (space to earth) FIXED-SATELLITE (earth to space) SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | Rec. ITU-R F 386-3 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 8400 - 8500 | FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space to earth) 5.465 | FIXED SRD – Short Range Devices (Non-specific SRD 6-8,5 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Level Probing Radar 6-8,5 GHz) (UWB applic. onboard aircraft 6-8,5 GHz) | Rec. ITU-R F 386-3 CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC(11)02 ECC/DEC/(06)08 ECC/DEC/(12)03 |
| 8500 - 8550 | RADIOLOCATION | RADIOLOCATION SRD – Short Range Devices (Tank Level Prob Radar 8.5-10.6 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 8550 - 8650 | EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.469A | SRD – Tank Level Probing Radar (8.5-10.6 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|---|---|
| 8650 - 8750 | RADIOLOCATION | RADIOLOCATION SRD – Short Range Devices (Tank Level Prob Radar 8.5-10.6 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 8750 - 8850 | RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 | RADIOLOCATION AERONAUTICAL RADIONAVIGATION SRD – Short Range Devices (Tank Level Prob Radar 8.5-10.6 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 8850 - 9000 | RADIOLOCATION MARITIME RADIONAVIGATION 5.472 | RADIOLOCATION MARITIME RADIONAVIGATION S5.472 SRD – Short Range Devices (Tank Level Prob Radar 8.5-10.6 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | Radar CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 9000 - 9200 | AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION 5.473A | AERONAUTICAL RADIONAVIGATION RADIOLOCATION SRD – Short Range Devices (Tank Level Prob Radar 8.5-10.6 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 9200 - 9300 | MARITIME RADIONAVIGATION 5.472 RADIOLOCATION EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C 5.474 5.474D | MARITIME RADIONAVIGATION RADIOLOCATION SRD – Short Range Devices (Tank Level Prob Radar 8.5-10.6 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Movement detection 9,2-9,975 GHz) | Radar CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 9300 - 9500 | RADIONAVIGATION RADIOLOCATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) 5.427, 5.474, 5.475, 5.475A, 5.475B, 5.476A | RADIONAVIGATION RADIOLOCATION SRD – Short Range Devices (Tank Level Prob Radar 8.5-10.6 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Movement detection 9,2-9,975 GHz) | Radar CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 9500 - 9800 | RADIONAVIGATION SPACE RESEARCH (active) EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION 5.476A | RADIONAVIGATION RADIOLOCATION SRD – Short Range Devices (Tank Level Prob Radar 8.5-10.6 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Movement detection 9,2-9,975 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |
| 9800 - 9900 | RADIOLOCATION Earth exploration-satellite (active) Fixed Space research (active) 5.478A 5.478B | RADIOLOCATION SRD – Short Range Devices (Tank Level Prob Radar 8.5-10.6 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Movement detection 9,2-9,975 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |

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| Frequency band (MHz) | Allocation RR Region 1 | National use | Notes |
|----------------------|--|--|--|
| 9900-10000 | EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Fixed 5.474D 5.479 | SRD – Short Range Devices (Tank Level Prob Radar 8.5-10.6 GHz) (Radiodeterm Applic. 30 MHz-12,4 GHz) (Movement detection 9,2-9,975 GHz) | CEPT T/R 70-03 Commision Dec 2006/771/EC + amendments ECC/DEC/(06)08 |