The Swedish Post and Telecom Authority's Code of Statutes

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The Swedish Post and Telecom Authority's (Post- och telestyrelsen — PTS) Regulations on licence obligation exemptions for the use of certain radio transmitters;

decided on x XXXXX 20XX

The Swedish Post and Telecom Authority provides for[1] the following pursuant to Chapter 3, Section 26 of the Ordinance (2022:511) on Electronic Communications.

Chapter 1.Area of Application, etc.

Section 1 These regulations contain provisions on licence obligation exemptions, in accordance with Chapter 3, Section 4 of the Electronic Communications Act (2022:482), as well as technical requirements and other conditions which allow for radio transmitters to be used without individual licences.

Section 2 Provisions on exemptions from the licence requirement to use certain radio transmitters are listed in order of frequency in Chapter 3.

The frequencies are listed in the following intervals:

- in kilohertz (kHz), up to and including 3,000 kHz
- in megahertz (MHz), over 3 MHz, up to and including 3,000 MHz
- in gigahertz (GHz), over 3 GHz, up to and including 3,000 GHz

The Annex contains a list of provisions on licence obligation exemptions, listed by area of application.

Chapter 2. Terms and definitions

Section 1 For the purposes of these regulations, the following definitions apply:

amateur radio certificate: certificate of knowledge issued or approved by the Swedish Post and Telecom Authority or the body to whom the PTS has delegated the task, demonstrating that the knowledge test has been passed,

amateur radio entry-level certificate: a certificate of knowledge issued or approved by the Swedish Post and Telecom Authority or the body to whom the PTS has delegated the task, certifying that the knowledge test has been passed,

amateur radio transmitter: radio transmitter intended for use by persons who have an amateur radio certificate for transmission on frequencies intended for amateur radio communication,

amateur radio communications: non-commercial radio communications for training, communication, and technical investigations, based on personal interest in radio technology and without any profit motive,

antenna gain: gain relative to a reference antenna that is either isotropic or a dipole, and measured in dBi or dBd,

data network: several short-range devices, including the network termination point, such as network components and the wireless connections between them,

fixed installation: a device that is mounted, installed, and intended for permanent use at a fixed location,

inductive transmission: transmission of information over very short distances by exploiting the magnetic field of radio waves,

intelligent transport systems: systems and services, based on information and communications technologies, including processing, control, positioning, communication, and electronics, that are applied to a road transport system,

[1] See Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services.

alarm transmission: the use of radio communication to indicate an alarm state at a remote location,

HD-GBSAR: Ground-Based Synthetic Aperture Radar. HD-GBSAR is a radar system used to monitor changes in terrains and structures. The system measures deformations (changes in shape and structure) on land, buildings and other structures,

NMR: Nuclear Magnetic Resonance. NMR technology is a nuclear magnetic resonance excitation and magnetic field strength for measuring a material/object tested to obtain information about the material. Nuclear magnetic resonance imaging and magnetic resonance imaging are excluded from this area of application,

closed NMR sensors: devices where the examined material/object is placed inside the enclosure of the NMR device,

security scanner: a radio-based application used to detect, without physical contact, objects that a person carries or has on the body,

network termination point: a network termination point in a data network is a fixed terrestrial short-range device that acts as the coupling point for other short-range devices in the data network with service platforms located outside the data network,

direction finding: the use of radio communication to determine the direction to a radio transmitter,

radio control: the use of radio communication to transmit signals to remotely initiate, modify, or terminate functions in remote equipment,

satellite terminal: a station placed on the earth's surface or in its airspace and which is intended for communication with one or more satellites or with other stations via satellite,

duty cycle: total duration of active transmission in a 1-hour period expressed as a percentage of said period,

telemetry: the use of radio communication to remotely and automatically indicate or read the values of measuring instruments, as well as the signalling and data transmission of information other than measurement data.

Section 2 For the purposes of these regulations, the following definitions apply:

AES: Aircraft Earth Station (satellite terminal on aircraft),

DAA: Detect and Avoid,

dBd: Decibels dipole (antenna gain relative to a reference dipole antenna. This antenna is defined as: dBd = dBi -2.15.),

dBi: decibels isotropic (antenna gain of power in relation to a theoretical antenna that radiates equally in all directions),

dBm: decibels milliwatt (power relative to 1 milliwatt),

dBmikroA/m: decibel microamperes per metre (field strength relative to 1 microampere per metre),

dBW: decibel watt (power relative to 1 watt),

DECT Digital Enhanced Cordless Telecommunications system,

EAS: Electronic Article Surveillance (retail theft prevention system),

EC-GSM IoT: Extended Coverage-GSM-Internet of Things,

EIRP: Equivalent Isotropically Radiated Power,

ERP: Effective Radiated Power (relative to a half-wave dipole),

ESV: Earth Stations on Vessels (satellite terminal on board a vessel),

GSM: Global System for Mobile Telecommunications,

FDD: Frequency Division Duplex,

LBT: Listen Before Talk.

LDC: Low Duty Cycle,

LTE: Long Term Evolution,

ms: millisecond,

PEP: Peak Envelope Power,

RFID (radio frequency identification): the RFID category covers tag/interrogator-based radio communications systems that consist of radio devices (tags) attached to objects or live creatures and of transmitter/receiver units (RFID readers) which activate the tags and receive data back from them. Typical uses include the tracking and identification of items, such as for electronic article surveillance (EAS), and collecting and transmitting data relating to the items to which tags are attached, which may be either battery-less, battery-assisted, or battery-powered. The answers from a tag are validated by an RFID reader,

RMS: root mean square,

TPC: Transmitter Power Control,

TRP: Total Radiated Power,

UMTS: Universal Mobile Telecommunications System,

UWB: Ultra-wide band (short-range radio transmission that uses radio frequency energy over a spectrum broader than 50 MHz),

VHF: Very High Frequency (frequency range of 30–300 MHz),

WiMAX: Worldwide Interoperability for Microwave Access.

Chapter 3. Provisions on licence requirement exemptions

Section 1 Licence obligation exemptions for the use of certain radio transmitters, in accordance with Chapter 3, Section 4 of the Electronic Communications Act (2022:482), applies to those radio transmitters specified in Sections 2 to 239 and under the conditions specified therein.

Section 2 Terminals connected to terrestrial electronic communications networks, if the communications network controls the terminal's transmission and the terminal only has one termination function in the frequency range concerned. The exemption only applies to electronic communications networks for which the licence holder is entitled to plan the radio network.

Terminals not covered by the first paragraph, if they are connected to a radio network through which a responsible network operator provides mobile electronic communication services and the exemption is indicated in the operator's license.

Radio transmitters that are covered by the first or second paragraph are exempt from licence requirements only if they meet the additional conditions laid down in the provisions of this chapter.

Section 3 Radio transmitters on foreign vessels in Swedish internal waters and within the Swedish territorial sea at frequencies covered by international agreements on maritime communication via long and medium wave, marine band ('gränsvåg'), and short wave, VHF, satellite networks, and for on-board communication within the 457.525–457.575 MHz and 467.525–467.575 MHz frequency ranges.

In the case of communication via satellite networks, the satellite terminal shall be included in the notified satellite network with which communication occurs.

The State in which the vessel is registered shall have issued a licence, or equivalent, to use the radio transmitter.

Section 4 Radio transmitters in foreign aircraft which are located within Swedish airspace or at Swedish aerodromes at frequencies covered by international agreements on aviation communication via long, medium, marine band ('gränsvåg'), and short wave, VHF, as well as for communication over satellite networks.

In the case of communication via satellite networks, the satellite terminal shall be included in the notified satellite network with which communication occurs.

The State in which the aircraft is registered shall have issued a licence, or equivalent, to use the radio transmitter.

Section 5 Radio transmitters that are included in rescue equipment for transmissions on frequencies allocated to emergency services in the area in question and for such purposes as set out in Sweden's international agreement SÖ 1991:51 on collaboration across territorial boundaries[2].

Section 6 Radio transmitters for generic UWB use.[3]

The exemption does not apply to radio transmitters used outdoors, if the radio transmitter is connected to a fixed system, fixed infrastructure, or a fixed outdoor antenna.

The concept of maximum mean power spectral density (indicated as EIRP at a specific frequency for the radio equipment) refers below to the mean power per unit bandwidth (centred around the frequency) radiated in the direction of the maximum level under the specified conditions of measurement.

The concept of peak power refers below to power within a bandwidth of 50 MHz at the frequency at which the highest mean radiated power occurs, radiated in the direction of the maximum level under the specified conditions of measurement.

Frequency range	**Maximum mean power spectral density (EIRP)** **(dBm/MHz)**	**Maximum peak power (EIRP) (defined within 50 MHz)** **(dBm)**
f ≤ 1.6 GHz	-90.0	-50.0
1.6 < f ≤ 2.7 GHz	-85.0	-45.0
2.7 < f ≤ 3.1 GHz	-70.0	-36.0
3.1 < f ≤ 3.4 GHz	-70.0	-36.0

[2] Sweden's SÖ 1991:51 international agreements; agreements between Denmark, Finland, Norway, and Sweden concerning collaboration across territorial boundaries in the context of accidents for the purpose of preventing or limiting injuries to persons or damage to property or the environment, Stockholm, 20 January 1989.

[3] See Commission Implementing Decision (EU) 2019/785 of 14 May 2019 on the harmonisation of the radio spectrum for equipment using ultra-wideband technology in the Union and repealing Decision 2007/131/EC.

3.1 < f ≤ 3.4 GHz	-41,3 when using LDC[a)] or DAA[b)]	0
3.4 < f ≤ 3.8 GHz	-80.0	-40.0
3.4 < f ≤ 3.8 GHz	-41,3 when using LDC[a)] or DAA[b)]	0
3.8 < f ≤ 4.8 GHz	-70.0	-30.0
3.8 < f ≤ 4.8 GHz	-41,3 when using LDC[a)] or DAA[b)]	0
4.8 < f ≤ 6 GHz	-70.0	-30.0
6 < f ≤ 8.5 GHz	-41.3	0
8.5 < f ≤ 9.0 GHz	-65	-25.0
8.5 < f ≤ 9.0 GHz	-41.3 when using DAA[b)]	0
9.0 < f ≤ 10.6 GHz	-65	-25
f > 10.6 GHz	-85.0	-45.0

a) The LDC (Low Duty Cycle) mitigation technique in the 3.1–4.8 GHz frequency band and its limit values are defined in the relevant harmonised standard.

b) The Detect and Avoid (DAA) mitigation technique in the 3.1–4.8 GHz and 8.5–9 GHz frequency bands and its limits are defined in the relevant harmonised standard.

~~The exemption does not apply to radio transmitters used outdoors if the radio transmitter is connected to a fixed system, fixed infrastructure, or a fixed outdoor antenna.~~

Section 7 UWB radio transmitters used in equipment for tracking and tracing.[4]

The exemption does not apply to radio transmitters used outdoors if the radio transmitter is connected to a fixed system, fixed infrastructure, or a fixed antenna located outdoors. The concept of maximum mean power spectral density (indicated as EIRP at a specific frequency for the radio equipment) refers below to the mean power per unit bandwidth (centred around the frequency) radiated in the direction of the maximum level under the specified conditions of measurement.

The concept of peak power refers below to power within a bandwidth of 50 MHz at the frequency at which the highest mean radiated power occurs, radiated in the direction of the maximum level under the specified conditions of measurement.

Frequency range	**Maximum mean power spectral density (EIRP)** **(dBm/MHz)**	**Maximum peak power (EIRP) (defined within 50 MHz)** **(dBm)**
f ≤ 1.6 GHz	-90.0	-50.0
1.6 < f ≤ 2.7 GHz	-85.0	-45.0
2.7 < f ≤ 3.4 GHz	-70.0	-36.0
3.4 < f ≤ 3.8 GHz	-80.0	-40.0
3.8 < f ≤ 6.0 GHz	-70.0	-30.0
6 < f ≤ 8.5 GHz	-41.3	0
8.5 < f ≤ 9.0 GHz	-65.0	-25.0
8.5 < f ≤ 9.0 GHz	-41.3 when using DAA[a)]	0
9.0 < f ≤ 10.6 GHz	-65.0	-25.0
f > 10.6 GHz	-85.0	-45.0

a) The DAA mitigation technique (Detect and Avoid) and its limit values are defined in the relevant harmonised standard.

~~The exemption does not apply to radio transmitters used outdoors if the radio transmitter is connected to a fixed system, fixed infrastructure, or a fixed antenna located outdoors.~~

Section 8 UWB radio transmitters used in equipment in power-driven vehicles and railway vehicles.[5]

The concept of maximum mean power spectral density (indicated as EIRP at a specific frequency for the radio equipment) refers below to the mean power per unit bandwidth (centred around the frequency) radiated in the direction of the maximum level under the specified conditions of measurement.

[4] See note 3.

[5] See note 3.

The concept of peak power refers below to power within a bandwidth of 50 MHz at the frequency at which the highest mean radiated power occurs, radiated in the direction of the maximum level under the specified conditions of measurement.

Frequency range	**Maximum mean power spectral density (EIRP)** **(dBm/MHz)**	**Maximum peak power (EIRP) (defined within 50 MHz)** **(dBm)**	**Additional conditions of use**
f ≤ 1.6 GHz	-90.0	-50.0	
1.6 < f ≤ 2.7 GHz	-85.0	-45.0	
2.7 < f ≤ 3.1 GHz	-70.0	-36.0	
3.1 < f ≤ 3.4 GHz	-70.0	-36.0	
	-41.3 outside the vehicle: -53.3	0	Use of LDC or TPC and DAA
3.4 < f ≤ 3.8 GHz	-80	-0.40	
	-41.3 outside the vehicle: -53.3	0	Use of LDC or TPC and DAA
3.8 < f ≤ 4.8 GHz	-70	-30	
	-41.3 outside the vehicle: -53.3	0	Use of LDC or TPC and DAA
4.8 < f ≤ 6.0 GHz	-70	-30	
6.0 < f ≤ 8.5 GHz	-53.3	-13.3	
	-41.3 outside the vehicle: -53.3	0	Use of LDC or TPC and DAA
	-41.3	0	Fixed outdoor transmitters with a downward antenna and a maximum antenna height of 10 m. Duty cycle: ≤ 5 % per second
	-41.3 outside the vehicle: -53.3	0	Transmitters mounted on vehicles or railway vehicles and a maximum antenna height of 4 m. Duty cycle: ≤ 1 % per second
	-31.3	10	Transmitters mounted on vehicles or railway vehicles and a maximum antenna height of 4 m. Duty cycle: ≤ 1 % per second
8.5 < f ≤ 9.0 GHz	-65	-25	
	-41.3 outside the vehicle: -53.3	0.0	Use of TPC and DAA

9.0 < f ≤ 10.6 GHz	-65	-25	
f > 10.6 GHz	-85	-45	

~~a) a) The LDC mitigation technique (Low Duty Cycle), the DAA mitigation technique (Detect and Avoid), and the TPC mitigation technique (Transmitter Power Control) as well as their limit values are defined in the relevant harmonised standards for each respective technique.~~

~~b) b) The external limit value is defined in the relevant harmonised standards.~~

Section 9 Radio transmitters for UWB used in equipment in wireless key systems for vehicles that use trigger-before-transmit in motor vehicles and rail vehicles. [6]

Frequency range	**Maximum mean power spectral density (EIRP)** **(dBm/MHz)**	**Maximum peak power (EIRP) (defined within 50 MHz)** **(dBm)**
3.8 < f ≤ 4.2 GHz	-41,3 with trigger-before-transit[a)] and LDC[b)] ≤ 0.5 % (within 1 h)	0
6 < f ≤ 8.5 GHz	-41.3 with trigger-before-transmit[a)] and LDC[b)] ≤ 0.5% (within 1 hour or TPC[c)])	0

a) a) Trigger-before-transmit is defined as a UWB transmission which is initiated only when necessary, especially if the system indicates that UWB equipment is located nearby. The communication is triggered either by a user or by the vehicle.

b) Low Duty Cycle (LDC) mitigation techniques

c) Transmitter Power Control (TPC) mitigation techniques

Section 10 UWB radio transmitters used in equipment on board aircraft. [7]

The concept of maximum mean power spectral density (indicated as EIRP at a specific frequency for the radio equipment) refers below to the mean power per unit bandwidth (centred around the frequency) radiated in the direction of the maximum level under the specified conditions of measurement.

The concept of peak power refers below to power within a bandwidth of 50 MHz at the frequency at which the highest mean radiated power occurs, radiated in the direction of the maximum level under the specified conditions of measurement.

Frequency range	**Maximum mean power spectral density (EIRP)** **(dBm/MHz)**	**Maximum peak power (EIRP) (defined within 50 MHz)** **(dBm)**	**Requirements for mitigation methods**
f ≤ 1.6 GHz	-90.0	-50.0	
1.6 < f ≤ 2.7 GHz	-85.0	-45.0	
2.7 < f ≤ 3.4 GHz	-70.0	-36.0	
3.4 < f ≤ 3.8 GHz	-80	-40.0	
3.8 < f ≤ 6.0 GHz	-70.0	-30.0	
6.0 < f ≤ 6.650 GHz	-41.3	0.0	
6.650 < f ≤ 6.6752 GHz	-62.3	-21.0	Filter attenuation: 21 dB[a)]

[6] See note 3.

[7] See note 3.

6.6752 < f ≤ 8.5 GHz	-41.3	0.0	7.25–7.75 GHz (FSS protection)[(a),] [(b)]7,45-7.55 GHz (MetSat protection)[(a),] [(b)], 7.75–7.9 GHz (MetSat protection)[a),c)]
8.5 < f ≤ 10.6 GHz	-65.0	-25.0	
f > 10.6 GHz	-85.0	-45.0	

a) Alternative mitigation methods that provide equivalent protection may be used.

b) In order to protect fixed satellite service (FSS) in the 7.25–7.75 GHz band and protect meteorological satellites (MetSat) in the 7.45–7.55 GHz band, the maximum mean power spectral density (EIRP) shall be restricted as follows: -51.3 - 20 * log10(10 [km]/x[km]) dBm/MHz for altitudes more than 1,000 metres above ground level, where x is the aircraft's altitude above ground level in kilometres; -71.3 dBm/MHz for altitudes 1,000 metres or less above ground level.

c) In order to protect meteorological satellite (MetSat) in the 7.75–7.9 GHz band, the maximum mean power spectral density (EIRP) shall be limited as follows: -44.3 - 20 * log10(10 [km]/x[km]) dBm/MHz for altitudes exceeding 1,000 metres above ground level, where x is the aircraft's altitude above ground level in kilometres; -64.3 dBm/MHz for altitudes 1,000 metres or less above ground level.

Section 11 UWB radio transmitters used in contact-based material sensing devices.[8] The exemption does not apply to radio transmitters used outdoors, if the radio transmitter is connected to a fixed system, fixed infrastructure, or a fixed outdoor antenna. Contact-based UWB material sensing device means that the UWB transmitter is switched on only when it is in direct contact with the investigated material.

The concept of maximum mean power spectral density (indicated as EIRP at a specific frequency for the radio equipment) refers below to the mean power per unit bandwidth (centred around the frequency) radiated in the direction of the maximum level under the specified conditions of measurement.

The concept of peak power refers below to power within a bandwidth of 50 MHz at the frequency at which the highest mean radiated power occurs, radiated in the direction of the maximum level under the specified conditions of measurement.

Technical requirements for contact-based UWB material sensing devices		
Frequency range	**Maximum mean power spectral density (EIRP)**	**Maximum peak power, EIRP (defined within 50 MHz)**
f ≤ 1.73 GHz	-85 dBm/MHz [a)]	-45 dBm
1.73 < f ≤ 2.2 GHz	-65 dBm/MHz	-25 dBm
2.2 < f ≤ 2.5 GHz	-50 dBm/MHz	-10 dBm
2.5 < f ≤ 2.69 GHz	-65 dBm/MHz [a) b)]	-25 dBm
2.69 < f ≤ 2.7 GHz [d)]	-55 dBm/MHz [c)]	-15 dBm
2.7 < f ≤ 2.9 GHz	-70 dBm/MHz [a)]	-30 dBm
2.9 < f ≤ 3.4 GHz	-70 dBm/MHz [a) f) g)]	-30 dBm
3.4 < f ≤ 3.8 GHz [d)]	-50 dBm/MHz [b) f) g)]	-10 dBm
3.8< f ≤ 4.8 GHz	-50 dBm/MHz [f) g)]	-10 dBm
4.8 < f ≤ 5.0 GHz [d)]	-55 dBm/MHz [b) c)]	-15 dBm
5.0 < f ≤ 6.0 GHz	-50 dBm/MHz	-10 dBm
6.0 < f ≤ 8.5 GHz	-41,3 dBm/MHz [e)]	0 dBm
8.5 < f ≤ 9.0 GHz	-65 dBm/MHz[g)]	-25 dBm
9.0 < f ≤ 10.6 GHz	-65 dBm/MHz	-25 dBm
f > 10.6 GHz	-85 dBm/MHz	-45 dBm

a) Equipment using the 'Listen Before Talk' (LBT) mechanism may be used in the frequency range 1.215–1.73 GHz with a maximum average power spectral density (EIRP) of -70dBm/MHz and in the frequency ranges 2.5–2.69 GHz and 2.7–3.4 GHz with a maximum mean power spectral density (EIRP) of -50 dBm/MHz and a maximum peak power (EIRP) of -10 dBm/50 MHz. The LBT mechanism is defined in Clauses 4.5.2.1, 4.5.2.2 and 4.5.2.3 of ETSI Standard EN 302 065-4 V1.1.1. Alternative mitigation technology may be used, if it ensures at least an equivalent level of performance and spectrum protection that meets the corresponding essential requirements of Directive 2014/53/EU and complies with the technical requirements of this Decision.

b) In order to protect radio services, mobile installations must meet the following requirements for total radiated power spectral density:

i) In the frequency ranges 2.5–2.26 GHz and 4.8–5 GHz the total spectral power density must be 10 dB below the maximum spectral power density (EIRP).

[8] See note 3.

ii) In the frequency range 3.4–3.8 GHz, the total spectral power density must be 5 dB below the maximum spectral power density (EIRP).

c) In order to protect the 2.69–2.7 GHz and 4.8–5 GHz frequency bands for radio astronomy services, the total radiated power spectral density must be below -65 dBm/MHz.

d) Limitation of the Duty Cycle to 10 % per second.

e) No fixed outdoor installation is permitted.

f) Within the frequency band 3.1–4.8 GHz, equipment for conducting LDC mitigation technology is allowed to operate with a maximum mean power spectral density (EIRP) of -41.3 dBm/MHz and a maximum peak power (IERP) for power density at 0 dBm/MHz defined in 50 MHz. LDC mitigation technology and its limit values are defined in Clauses 4.5.3.1, 4.5.3.2, and 4.5.3.3 of ETSI Standard EN 302 065-1 V2.1.1. Alternative mitigation technology may be used, if it ensures at least an equivalent level of performance and spectrum protection that meets the corresponding essential requirements of Directive 2014/53/EU and complies with the technical requirements of this Decision. Note (e) applies when the LDC is completed.

g) Within the 3.1–4.8 GHz and 8.5–9 GHz frequency bands, equipment to implement DDA mitigation techniques is permitted to operate with a maximum mean power spectral density (EIRP) of -41.3 dBm/MHz and a maximum peak power (EIRP) of 0 dBm defined in 50 MHz. DAA mitigation technology and its limit values are defined in Clauses 4.5.1.1, 4.5.1.2, and 4.5.1.3 of ETSI Standard EN 302 065-1 V2.1.1. Alternative mitigation technology may be used if it ensures at least an equivalent level of performance and spectrum protection that meets the corresponding essential requirements of Directive 2014/53/EU and complies with the technical requirements of this Decision. Note (e) applies when the DAA is completed.

~~The exemption does not apply to radio transmitters used outdoors if the radio transmitter is connected to a fixed system, fixed infrastructure, or a fixed outdoor antenna.~~

Section 12 Radio transmitters for UWB used in non-contact-based material sensing.[9]

The exemption does not apply to radio transmitters used outdoors, if the radio transmitter is connected to a fixed system, fixed infrastructure, or a fixed outdoor antenna. Non-contact-based means that the UWB transmitter is switched on only when it is in the vicinity of the examined material and the UWB transmitter is directed towards the investigated material (e.g. manually using a proximity sensor or by mechanical design).

The concept of maximum mean power spectral density (indicated as EIRP at a specific frequency for the radio equipment) refers below to the mean power per unit bandwidth (centred around the frequency) radiated in the direction of the maximum level under the specified conditions of measurement.

The concept of peak power refers below to power within a bandwidth of 50 MHz at the frequency at which the highest mean radiated power occurs, radiated in the direction of the maximum level under the specified conditions of measurement.

Technical requirements for non-contact-based UWB material sensing devices		
Frequency range	**Maximum mean power spectral density (EIRP)**	**Maximum peak power (EIRP) (defined within 50 MHz)**
f ≤ 1.73 GHz	-85 dBm/MHz a)	-60 dBm
1.73 < f ≤ 2.2 GHz	-65 dBm/MHz	-45 dBm
2.2 < f ≤ 2.5 GHz	-50 dBm/MHz	-25 dBm
2.5 < f ≤ 2.69 GHz	-65 dBm/MHz a) b)	-40 dBm
2.69 < f ≤ 2.7 GHz d)	-55 dBm/MHz c)	-45 dBm
2.7 < f ≤ 2.9 GHz	-70 dBm/MHz a)	-45 dBm
2.9 < f ≤ 3.4 GHz	-70 dBm/MHz a) f) g)	-45 dBm
3.4 < f ≤ 3.8 GHz	-50 dBm/MHz b) f) g)	-45 dBm
3.8< f ≤ 4.8 GHz	-50 dBm/MHz g) h)	-25 dBm
4.8 < f ≤ 5.0 GHz	-55 dBm/MHz b) c)	-30 dBm
5.0 < f ≤ 5.25 GHz	-50 dBm/MHz	-30 dBm
5.25 < f ≤ 5.65 GHz	-50 dBm/MHz	-25 dBm
5.65 < f ≤ 5.725 GHz	-50 dBm/MHz	-40 dBm
5.725 < f ≤ 6.0 GHz	-50 dBm/MHz	-35 dBm
6.0 < f ≤ 8.5 GHz	-41.3 dBm/MHz e)	0 dBm
8.5 < f ≤ 9.0 GHz	-65 dBm/MHz g)	-25 dBm
9.0 < f ≤ 10.6 GHz	-65 dBm/MHz	-25 dBm
f ≤ 10.6 GHz	-85 dBm/MHz	-45 dBm

a) Equipment using the “Listen Before Talk” (LBT) mechanism may operate in the 1.215–1.73 GHz frequency range with a maximum mean power spectral density (EIRP) of -70 dBm/MHz and in the frequency ranges 2.5–2.69 GHz and 2.7–3.4 GHz

[9] See note 3.

with a maximum mean power spectral density (EIRP) of -50 dBm/MHz and a maximum peak power (EIRP) of -10 dBm/50 MHz. The LBT mechanism is defined in Clauses 4.5.2.1, 4.5.2.2 and 4.5.2.3 of ETSI Standard EN 302 065-4 V1.1.1. Alternative mitigation technology may be used, if it ensures at least an equivalent level of performance and spectrum protection that meets the corresponding essential requirements of Directive 2014/53/EU and complies with the technical requirements of this Decision.

b) In order to protect radio services, mobile installations shall meet the following requirements for total radiated power spectral density:
   i) In the frequency ranges 2.5–2.69 GHz and 4.8–5 GHz, the total spectral power density must be 10 dB below the maximum spectral power density (EIRP).
   ii) In the frequency range 3.4–3.8 GHz, the total spectral power density must be 5 dB below the maximum spectral power density (EIRP).

c) In order to protect the 2.69–2.7 GHz and 4.8–5 GHz frequency bands for radio astronomy services, the total radiated power spectral density must be below -65 dBm/MHz.

d) Limitation of the Duty Cycle to 10 % per second.

e) No fixed outdoor installation is permitted.

f) Within the frequency band 3.1–4.8 GHz, equipment for conducting LDC mitigation technology is allowed to operate with a maximum mean power spectral density (EIRP) of -41.3 dBm/MHz and a maximum peak power (IERP) for power density at 0 dBm/MHz defined in 50 MHz. LDC mitigation technology and its limit values are defined in Clauses 4.5.3.1, 4.5.3.2, and 4.5.3.3 of ETSI Standard EN 302 065-1 V2.1.1. Alternative mitigation technology may be used, if it ensures at least an equivalent level of performance and spectrum protection that meets the corresponding essential requirements of Directive 2014/53/EU and complies with the technical requirements of this Decision. Note (e) applies when the LDC is completed.

g) Within the 3.1–4.8 GHz and 8.5–9 GHz frequency bands, equipment to implement DDA mitigation techniques is permitted to operate with a maximum mean power spectral density (EIRP) of -41.3 dBm/MHz and a maximum peak power (EIRP) of 0 dBm defined in 50 MHz. DAA mitigation technology and its limit values are defined in Clauses 4.5.1.1, 4.5.1.2, and 4.5.1.3 of ETSI Standard EN 302 065-1 V2.1.1. Alternative mitigation technology may be used, if it ensures at least an equivalent level of performance and spectrum protection that meets the corresponding essential requirements of Directive 2014/53/EU and complies with the technical requirements of this Decision. Note (e) applies when the DAA is completed.

~~The exemption does not apply to radio transmitters used outdoors, if the radio transmitter is connected to a fixed system, fixed infrastructure, or a fixed outdoor antenna.~~

Section 13 9–59.750 kHz: Inductive transmission radio transmitters.[10]
Maximum field strength: 72 dBµA/m at 10 metres distance.

Section 14 9–148 kHz: Radio transmitters for radio determination only for closed NMR sensors.[11]
Maximum field strength: 46 dBµA/m at a distance of 10 m at a reference of 100 Hz outside the NMR device. The magnetic field strength descends 10 dB/decade above 100 Hz.

Section 15 9–315 kHz: Radio transmitters for medical implants.[12]
Maximum field strength: 30 dBµA/m at 10 metres distance.
Transmission cycle: ≤ 10 %

Section 16 59.750–60.250 kHz: Inductive transmission radio transmitters.[13]
Maximum field strength: 42 dBµA/m at 10 metres distance.

Section 17 60.250–74.750 kHz: Inductive transmission radio transmitters.[14]
Maximum field strength: 72 dBµA/m at 10 metres distance.

Section 18 74.750–75.250 kHz: Inductive transmission radio transmitters.[15]
Maximum field strength: 42 dBµA/m at 10 metres distance.

Section 19 75.250–77.250 kHz: Inductive transmission radio transmitters.[16]
Maximum field strength: 72 dBµA/m at 10 metres distance.

Section 20 77.250–77.750 kHz: Inductive transmission radio transmitters.[17]
Maximum field strength: 42 dBµA/m at 10 metres distance.

Section 21 77.750–90.0 kHz: Inductive transmission radio transmitters.[18]
Maximum field strength: 72 dBµA/m at 10 metres distance.

Section 22 90.0–119.0 kHz: Inductive transmission radio transmitters.[19]
Maximum field strength: 42 dBµA/m at 10 metres distance.

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[10] See Commission Implementing Decision (2024/340/EU) of 22 January 2024 on harmonised conditions of use of radio spectrum for mobile communication services on board vessels (MCV services) in the Union and repealing Decision 2010/166/EU.
[11] See note 10.
[12] See note 10.
[13] See note 10.
[14] See note 10.
[15] See note 10.
[16] See note 10.
[17] See note 10.
[18] See note 10.
[19] See note 10.

Section 23 119.0–128.6 kHz: Inductive transmission radio transmitters.[20]
Maximum field strength: 66 dBµA/m at 10 metres distance.

Section 24 128.6–129.6 kHz: Inductive transmission radio transmitters.[21]
Maximum field strength: 42 dBµA/m at 10 metres distance.

Section 25 129.6–135.0 kHz: Inductive transmission radio transmitters.[22]
Maximum field strength: 66 dBµA/m at 10 metres distance.

Section 26 135.0–140.0 kHz: Inductive transmission radio transmitters.[23]
Maximum field strength: 42 dBµA/m at 10 metres distance.

Section 27 135.7–137.8 kHz: Radio transmitters for amateur radio communication.
Maximum power: 1 W ERP

The technical properties of amateur radio transmitters are to be adjusted so that they do not disrupt or interfere with the use of other radio equipment.

Those who use amateur radio transmitters are to have an amateur radio certificate. To obtain an amateur radio certificate, proficiency is required in accordance with Annex 6 to CEPT Recommendation T/R 61-02 'Harmonised Amateur Radio Examination Certificate', Vilnius 2004, Version 5, February 2016.[24] An exemption from the amateur radio certificate requirement applies to those who, within a fixed time frame, are undergoing training to obtain such a certificate and those who temporarily use an amateur radio transmitter in a demonstration, provided that the use of the radio transmitter is supervised by a holder of an amateur radio certificate.

All holders of an amateur radio certificate are to have their own call sign. This was previously indicated on the radio amateur licence; now, it is on the certificate. The call signs of the receiving and transmitting stations are to be broadcast at the beginning and end of each radio contact. The call signals shall also be repeated at short intervals during ongoing radio contact. During the training and demonstration occasions referenced in the above paragraph, the call sign to be used is that which belongs to the amateur radio certificate holder who supervises the use of the radio transmitter. In such occasions, the call sign that belongs to the amateur radio association or institution that organises the training or demonstration may also be used if representatives of the association or institution supervise the use of the radio transmitter.

An automatic amateur radio transmitter such as a radio beacon, repeater, or positioning transmitter should always be identifiable by a regularly transmitted call signal via Morse code, a voice message, etc. The call sign shall indicate who is responsible for the automatic transmitter. Those who start or use an automatic amateur radio transmitter shall have their own amateur radio certificate and use their own call sign. Such take-off and use may also be carried out by a person not holding an amateur radio certificate if it takes place under the supervision of an amateur radio certificate holder and the latter's call signal is used.

Section 28 140.0–148.5 kHz: Inductive transmission radio transmitters.[25]
Maximum field strength: 37.7 dBµA/m at 10 metres distance.

Section 29 148 kHz–5.0 MHz: Radio transmitters for radio determination only for closed NMR sensors.[26]
Maximum field strength: -15 dBµA/m at a distance of 10 m outside the NMR device.

Section 30 148.5 kHz–5.0 MHz: Inductive transmission radio transmitters.[27]
Maximum field strength: -15 dBµA/m at a distance of 10 m in each 10 kHz band.
Total field strength may not exceed -5 dBµA/m at a distance of 10 m if the system uses bandwidths larger than 10 KHz.

Section 31 315 kHz–600 kHz: Radio transmitters for medical implants.
Maximum field strength: -5 dBµA/m at 10 m and DC ≤ 10 %.

Section 32 400–600 kHz: Radio transmitters for RFID.[28]
Maximum field strength: -8 dBµA/m at 10 metres distance. For channelisation greater than 30 kHz, the total field strength is -5 dBµA/m at 10 m distance.

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[20] See note 10.
[21] See note 10.
[22] See note 10.
[23] See note 10.
[24] CEPT Recommendation T/R 61-02.
[25] See note 10.
[26] See note 10.
[27] See note 10.
[28] See note 10.

Section 33 442.2–450 kHz: Radio transmitter for unspecified short-range device. Applies only to radio transmitters for person detection and collision detection systems.[29]
Maximum field strength: 7 dBµA/m at 10 metres distance.
Channel spacing: ≥ 150 Hz

Section 34 456.9–457.1 kHz: Radio transmitters for locating persons and valuable objects buried under landslides, avalanches or similar.[30]
Maximum field strength: 7 dBµA/m at 10 metres distance.

Section 35 472–479 kHz: Radio transmitters for amateur radio communication.
Maximum power: 1 W EIRP
The third to sixth paragraphs of Section 27 shall also apply.

Section 36 516–8,516 kHz: Radio transmitters in telematics equipment, permanently installed on a railway, which is used for data transfer to railway vehicles.
The radio transmitter may only be used when a locomotive or equivalent is at the same location as the transmitter.
Maximum field strength: 7 dBµA/m at 10 metres distance.

Section 37 984–7,484 kHz: Radio transmitters for transport/traffic telematics equipment for Eurobalise transmissions in the vicinity of railway vehicles.[31]
Maximum field strength: 9 dBµA/m at 10 metres distance.
Transmission cycle ≤ 1 %

Section 38 1,810–1,850 kHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 39 1,850–1,900 kHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 10 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 40 1,900–1,950 kHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 100 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 41 1,950–2,000 kHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 10 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 42 3.155–3.400 MHz: Inductive transmission radio transmitters.[32]
Maximum field strength: 13.5 dBµA/m at 10 metres distance.

Section 43 3.5–3.8 MHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 44 5–30 MHz: Inductive transmission radio transmitters.[33]
Maximum field strength: -20 dBµA/m at a distance of 10 m in each kHz band.
Total field strength may not exceed -5 dBµA/m at a distance of 10 m if the system uses bandwidths larger than 10 KHz.

Section 45 5–30 MHz: Radio transmitters for radio determination only for closed NMR sensors.[34]
Maximum field strength: -5 dBµA/m at a distance of 10 m outside the NMR device.

Section 46 5.3515–5.3665 MHz: Radio transmitters for amateur radio communication.
Maximum power: 15 W EIRP
The third to sixth paragraphs of Section 27 shall also apply.

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[29] See note 10.
[30] See note 10.
[31] See note 10.
[32] See note 10.
[33] See note 10.
[34] See note 10.

Section 47 6.765–6.795 MHz: Inductive transmission radio transmitters.[35]
Maximum field strength: 42 dBµA/m at 10 metres distance.

Section 48 7.0–7.2 MHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 49 7,0–7,2 MHz: Amateur radio transmitters with a Swedish entry-level certificate.
Maximum power applied to the antenna system: 25 W PEP
The technical properties of entry-level amateur radio transmitters shall be adjusted so that they do not disrupt or interfere with the use of other radio equipment. A Swedish entry-level certificate may only be used with radio equipment bearing the CE marking.
A user of an amateur radio transmitter under the entry-level certificate exemption shall have an amateur radio entry-level certificate. In order to obtain such a certificate, knowledge is required in accordance with ECC Report 89.
Holders of an amateur radio transmitter entry-level certificate shall have their own call signal, as shown in the entry-level certificate. The call signals of the receiving and transmitting stations are to be broadcast at the beginning and end of each radio contact. The call signals shall also be repeated at short intervals during ongoing radio contact.
Entry-level certificates for amateur radio transmitters do not entitle the use of automatic amateur radio transmitters or remote control of amateur radio transmitters.

Section 50 7.3–23 MHz: Radio transmitters for transport/traffic telematics equipment for Euroloop transmissions in the vicinity of railway vehicles.[36]
Maximum field strength: -7 dBµA/m at 10 metres distance.
Antenna restrictions that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 51 7.4–8.8 MHz: Inductive transmission radio transmitters.[37]
Maximum field strength: 9 dBµA/m at 10 metres distance.

Section 52 10.10–10.15 MHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 150 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 53 10.2–11.0 MHz: Inductive transmission radio transmitters.[38]
Maximum field strength: 9 dBµA/m at 10 metres distance.

Section 54 13.553–13.567 MHz: Radio transmitters for medical implants (ULP-AID);
Maximum field strength: -7 dBµA/m at 10 m distance and DC ≤ 10 %, in each 10 kHz channelisation.

Section 55 13.553–13.567 MHz: Radio transmitters for unspecified areas of application.[39]
Maximum power: 10 mW ERP

Section 56 13.553–13.567 MHz: Inductive transmission radio transmitters.[40]
Maximum field strength: 42 dBµA/m at 10 metres distance.

Section 57 13.553–13.567 MHz: Radio transmitters for RFID.[41]
Maximum field strength: 60 dBµA/m at 10 metres distance.
The transmission mask and antenna requirements for all combined frequency segments must provide at least equivalent performance to the techniques described in harmonised standards adopted under Directive 2014/53/EU.

Section 58 14.00–14.35 MHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 59 14.00-14.35 MHz: Amateur radio transmitters with a Swedish entry-level certificate.
Maximum power applied to the antenna system: 25 W PEP

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[35] See note 10.
[36] See note 10.
[37] See note 10.
[38] See note 10.
[39] See note 10.
[40] See note 10.
[41] See note 10.

Otherwise, what is stated in the third to sixth paragraphs of Section 49 applies.

Section 60 18.068–18.168 MHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 61 21.00–21.45 MHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 62 21.00-21.45 MHz: Amateur radio transmitters with a Swedish entry-level certificate.
Maximum power applied to the antenna system: 25 W PEP
Otherwise, what is stated in the third to sixth paragraphs of Section 49 applies.

Section 63 24.89–24.99 MHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 64 26.82–26.83 MHz: Radio transmitters for radio control and telemetry.
Carrier frequency: 26.825 MHz
Maximum power: 100 mW ERP.
Channelisation: 10 kHz

Section 65 26.85–26.86 MHz: Radio transmitters for alarm transmission.
Carrier frequency: 26.855 MHz
Maximum power: 100 mW ERP.
Channelisation: 10 kHz

Section 66 26.86–26.94 MHz: Radio transmitters for radio control and telemetry.
Carrier frequencies in MHz:

26.865	26.885	26.935

Maximum power: 100 mW ERP.
Channelisation: 10 kHz

Section 67 26.957–27.283 MHz: Radio transmitters for unspecified areas of application. [42]
Maximum power: 10 mW ERP, which equals 42 dBA/m at a distance of 10 metres.

Section 68 26.96–26.99 MHz: Radio transmitters for CB radio.
Carrier frequencies in MHz:

26.965	26.975	26.985

Maximum power: For frequency or phase modulation 4 W ERP. For double page amplitude modulation 4 W RMS ERP. On simple side band and suppressed carrier 12 W PEP ERP.
Channelisation: 10 kHz

Section 69 26.99–27.00 MHz: Radio transmitters for unspecified areas of application.[43]
Maximum power: 100 mW ERP.
Transmission cycle: ≤ 0.1 %. The duty cycle limits do not apply to equipment for model control devices.

Section 70 26.99–27.00 MHz: Radio transmitters for wireless baby monitor systems.
Carrier frequency: 26.995 MHz
Maximum power: 10 mW
Channelisation: 10 kHz

Section 71 27.00–27.04 MHz: Radio transmitters for CB radio.
Carrier frequencies in MHz:

27.005	27.015	27.025	27.035

Maximum power: For frequency or phase modulation 4 W ERP. For double page amplitude modulation 4 W RMS ERP. On simple side band and suppressed carrier 12 W PEP ERP.
Channelisation: 10 kHz

Section 72 27.04–27.05 MHz: Radio transmitters for unspecified areas of application.[44]
Maximum power: 100 mW ERP.
Transmission cycle: ≤ 0.1 %. The duty cycle limits do not apply to equipment for model control devices.

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[42] See note 10.
[43] See note 10.
[44] See note 10.

Section 73 27.04–27.05 MHz: Radio transmitters for wireless baby monitor systems.
Carrier frequency: 27.045 MHz
Maximum power: 10 mW
Channelisation: 10 kHz

Section 74 27.05–27.09 MHz: Radio transmitters for CB radio.
Carrier frequencies in MHz:

27.055	27.065	27.075	27.085

Maximum power: For frequency or phase modulation 4 W ERP. For double page amplitude modulation 4 W RMS ERP. On simple side band and suppressed carrier 12 W PEP ERP.
Channelisation: 10 kHz

Section 75 27.09–27.10 MHz: Radio transmitters for unspecified areas of application.[45]
Maximum power: 100 mW ERP.
Transmission cycle: ≤ 0.1 %. The duty cycle limits do not apply to equipment for model control devices.

Section 76 27.09–27.10 MHz: Radio transmitters for wireless baby monitor systems.
Carrier frequency: 27.095 MHz
Maximum power: 10 mW
Channelisation: 10 kHz

Section 77 27.10–27.14 MHz: Radio transmitters for CB radio.
Carrier frequencies in MHz:

27.105	27.115	27.125	27.135

Maximum power: For frequency or phase modulation 4 W ERP. For double page amplitude modulation 4 W RMS ERP. On simple side band and suppressed carrier 12 W PEP ERP.
Channelisation: 10 kHz

Section 78 27.14–27.15 MHz: Radio transmitters for unspecified areas of application.[46]
Maximum power: 100 mW ERP.
Transmission cycle: ≤ 0.1 %. The duty cycle limits do not apply to equipment for model control devices.

Section 79 27.14–27.15 MHz: Radio transmitters for wireless baby monitor systems.
Carrier frequency: 27.145 MHz
Maximum power: 10 mW
Channelisation: 10 kHz

Section 80 27.15–27.19 MHz: Radio transmitters for CB radio.
Carrier frequencies in MHz:

27.155	27.165	27.175	27.185

Maximum power: For frequency or phase modulation 4 W ERP. For double page amplitude modulation 4 W RMS ERP. On simple side band and suppressed carrier 12 W PEP ERP.
Channelisation: 10 kHz

Section 81 27.19–27.20 MHz: Radio transmitters for unspecified areas of application.[47]
Maximum power: 100 mW ERP.
Transmission cycle: ≤ 0.1 %. The duty cycle limits do not apply to equipment for model control devices.

Section 82 27.19–27.20 MHz: Radio transmitters for wireless baby monitor systems.
Carrier frequency: 27.195 MHz
Maximum power: 10 mW
Channelisation: 10 kHz

Section 83 27.20–27.41 MHz: Radio transmitters for CB radio.
Carrier frequencies in MHz:

27.205	27.245	27.285	27.325	27.365	27.405
27.215	27.255	27.295	27.335	27.375	
27.225	27.265	27.305	27.345	27.385	
27.235	27.275	27.315	27.355	27.395	

Maximum power: For frequency or phase modulation 4 W ERP. For double page amplitude modulation 4 W RMS ERP. On simple side band and suppressed carrier 12 W PEP ERP.

[45] See note 10.
[46] See note 10.
[47] See note 10.

Channelisation: 10 kHz

Section 84 28.0–29.7 MHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 85 28.0-29.7 MHz: Amateur radio transmitters with a Swedish entry-level certificate.
Maximum power applied to the antenna system: 25 W PEP
Otherwise, what is stated in the third to sixth paragraphs of Section 49 applies.

Section 86 30.0–37.5 MHz: Radio transmitters for medical implants.[48]
Maximum power: 1 mW ERP
Transmission cycle: ≤ 10 %

Section 87 30.0–130.0 MHz: Radio transmitters for radio determination only for closed NMR sensors.[49]
Maximum power: -36 dBm ERP outside the Nuclear Magnetic Resonance (NMR) device.

Section 88 30.015–30.025 MHz: Radio transmitters for radio control of traffic lights.
Carrier frequency: 30.02 MHz
Maximum power: 100 mW ERP.
Channelisation 10 kHz

Section 89 30.265–30.355 MHz: Radio transmitters for radio control and telemetry.
Maximum power: 100 mW ERP.
Channelisation: 10 kHz

Section 90 30.925–31.375 MHz: Radio transmitters for land mobile communications.
Carrier frequencies in MHz:

30.930	31.050	31.120	31.190	31.260	31.330
30.940	31.060	31.130	31.200	31.270	31.340
30.950	31.070	31.140	31.210	31.280	31.350
30.960	31.080	31.150	31.220	31.290	31.360
30.970	31.090	31.160	31.230	31.300	31.370
31.030	31.100	31.170	31.240	31.310	
31.040	31.110	31.180	31.250	31.320	

Maximum power: 5 W ERP
Channelisation: 10 kHz
Transmission cycle: ≤ 10 %

Section 91 34.995–35.275 MHz: Radio transmitters for model airplane radio control.
Maximum power: 100 mW ERP.
Channelisation: 10 kHz

Section 92 39.525–39.550 MHz: Radio transmitters for telemetry and remote control within electricity, gas, heating, cooling, and water distribution.
Carrier frequency: 39.5375 MHz
Maximum power: 5 W ERP
Duty cycle: ≤ 20 %
Channelisation: 25 kHz
The antenna height may not exceed 10 metres above ground level.

Section 93 40.450–40.575: Radio transmitters for telemetry and remote control within electricity, gas, heating, cooling, and water distribution.
Carrier frequencies in MHz:

40.4625	40.5375	40.5625

Maximum power: 5 W ERP
Duty cycle: ≤ 20 %
Channelisation: 25 kHz
The antenna height may not exceed 10 metres above ground level.

Section 94 40.66–40.70 MHz: Radio transmitters for unspecified areas of application.[50]
Maximum power: 10 mW ERP

[48] See note 10.
[49] See note 10.
[50] See note 10.

Section 95 40.66–40.80 MHz: Radio transmitters for radio control and telemetry.
Maximum power: 100 mW ERP.
Channelisation: 10 kHz

Section 96 41.0–43.6 MHz: Radio transmitters for sound transmission.
Maximum power: 10 mW ERP
Channelisation: Up to 200 kHz

Section 97 50.0–52.0 MHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP

Section 98 50–52 MHz: Amateur radio transmitters with a Swedish entry-level certificate.
Maximum power applied to the antenna system: 25 W PEP
Otherwise, what is stated in the third to sixth paragraphs of Section 49 applies.

Section 99 69.0–69.2 MHz: Radio transmitters for land mobile communications.
Carrier frequencies in MHz:

69.0125	69.0375	69.0625	69.0875
69.1125	69.1375	69.1625	69.1875

Maximum power: 25 W ERP
Duty cycle: <10 %
Channel range: 25 kHz
On the 69.0125 MHz carrier frequency, only mobile transmitters may be used in Västra Götaland and Halland Counties.

Section 100 69.600–69.725 MHz: Mobile radio transmitters.
Maximum power: 5.0 W ERP
Transmission cycle: ≤ 10 %
Channel range: 12.5 kHz
Carrier frequencies in MHz:

69.60625	69.63125	69.65625	69.68125	69.70625
69.61875	69.64375	69.66875	69.69375	69.71875

Section 101 87.5–108.0 MHz: Radio transmitters for sound transmission.[51]
Maximum power: 50 nW ERP
Channelisation: Up to 200 kHz

Section 102 144–146 MHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 103 144–146 MHz: Amateur radio transmitters with a Swedish entry-level certificate.
Maximum power applied to the antenna system: 25 W ERP
Otherwise, what is stated in the third to sixth paragraphs of Section 49 applies.

Section 104 148.00–150.05 MHz: Radio transmitters for satellite terminals.
Satellite terminals shall be included in the notified satellite network with which communication occurs.

Section 105 151.52–151.53 MHz: Radio transmitters for direction finding and position transfer regarding people and animals.
Carrier frequency: 151.525 MHz
Maximum power: 100 mW ERP.
Channelisation:10 kHz
These frequencies work best within the following counties: Stockholm, Uppsala, Södermanland, Östergötland, Gotland, Värmland, Örebro, Västmanland, Dalarna, and Gävleborg.

Section 106 151.545–151.555 MHz: Radio transmitters for direction finding and position transfer regarding people and animals.
Carrier frequency: 151.55 MHz
Maximum power: 100 mW ERP.
Channelisation: 10 kHz

[51] See note 10.

Section 107 152.0075–152.2675 MHz: Radio transmitters for direction finding and position transfer regarding animals.

Carrier frequencies in MHz:

152.0125	152.0625	152.1125	152.1625	152.2125
152.0375	152.0875	152.1375	152.1875	152.2625

Maximum power: 100 mW ERP.

Channelisation: 10 kHz

Section 108 155.3875–155.5375 MHz: Mobile radio transmitters for agriculture, forestry and hunting;

Carrier frequencies in MHz:

155.400	155.425	155.450	155.475	155.500	155.525

Maximum power: 5 W ERP

Channelisation: 25 kHz

The frequencies 155.400, 155.425, 155.450, and 155.475 MHz may not be used in Swedish internal waters and Swedish territorial waters.

Section 109 155.9875–156.0125 MHz: Portable radio transmitters for land mobile communications.

Carrier frequency: 156.000 MHz

Maximum power: 5 W ERP

Channelisation: 25 kHz

Section 110 169.375–169.400 MHz: Radio transmitters for unspecified areas of application.

Carrier frequency: 169.3875 MHz

Maximum power: 500 mW ERP

Channelisation: 25 kHz

Section 111 169.400–169.475 MHz: Radio transmitters for unspecified areas of application.[52]

Maximum power: 500 mW ERP

Channelisation: Up to 50 kHz

Duty cycle: ≤ 1 %, for measuring equipment up to 10 %

Section 112 169.400–169.475 MHz: Radio transmitters for hearing aids.[53]

Maximum power: 500 mW ERP

~~Channelisation: Up to 50 kHz~~

Section 113 169.4000–169.4875 MHz: Radio transmitters for unspecified areas of application.[54]

Maximum power: 10 mW ERP

Transmission cycle: ≤ 0.1 %

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 114 169.4875–169.5875 MHz: Radio transmitters for hearing aids.[55]

Maximum power: 500 mW ERP

~~Channelisation: Up to 50 kHz~~

Section 115 169.4875–169.5875 MHz: Radio transmitters for unspecified areas of application.[56]

Maximum power: 10 mW ERP

Duty cycle: ≤ 0.001 % A duty cycle of ≤ 0.1 % may be used between 00.00 and 06.00 a.m.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 116 169.5875–169.8125 MHz: Radio transmitters for unspecified areas of application.[57]

Maximum power: 10 mW ERP

Transmission cycle: ≤ 0.1 %

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

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[52] See note 10.
[53] See note 10.
[54] See note 10.
[55] See note 10.
[56] See note 10.
[57] See note 10.

Section 117 173.965–216 MHz: Radio transmitters for assistive listening devices.[58]

Maximum power: 10 mW ERP

~~Channelisation: maximum 50 kHz.~~

The equipment shall be capable of covering the entire frequency range on a tuning range basis.

A threshold value of 35 dBµV/m is required to ensure the protection of a DAB receiver located 1.5 metres from an assistive listening device and the DAB signal strength shall be measured around the area of operation of the assistive listening device. Under all circumstances, assistive listening devices shall be used at least 300 kHz from a DAB channel that is used.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

DAB (Digital Audio Broadcasting) refers to technology for terrestrial digital sound broadcasting.

Section 118 401–406 MHz: Radio transmitters for medical implants.[59]

1. 401–402 MHz and 405–406 MHz

Maximum power: 25 µ W ERP

Channelisation:~~25 kHz~~ Max 100 kHz

Radio transmitters may combine several adjacent channels for increased bandwidth up to 100 kHz.

Techniques for spectrum access and mitigation techniques that provide at least equivalent performance to the techniques described in harmonised standards adopted pursuant to Directive 2014/53/EU shall be used; alternatively, a duty cycle of ≤ 0.1 % may be used. Use is available for systems designed to provide communication between implantable active medical devices and/or body-borne devices and other devices outside the human body used to transmit non-time-critical physiological information from patients other than digital voice transmission.

2. 402–405 MHz

Maximum power: 25 µ W ERP

Channelisation:~~25 kHz~~ Max 300 kHz

Radio transmitters can combine several adjacent channels for increased bandwidth if harmful interference does not occur on other services.

Section 119 406.0–406.1 MHz: Radio transmitters intended for emergency alarms to a satellite system.

The exemption also applies to radio transmitters for positioning systems in the frequency band of 121.45–121.55 MHz, if the transmitter is included in the same installation as a transmitter that is exempt according to the first paragraph.

Section 120 429.4375–429.4625 MHz: Radio transmitters for alarm transmission.

Carrier frequency: 429.45 MHz

Maximum power: 500 mW ERP

Channelisation: 25 kHz

Section 121 430–440 MHz: Radio transmitter for collecting medical data.[60]

Maximum power density: -50 dBm/100 kHz ERP in power density, which, however, may not exceed a total power of -40 dBm/10 MHz (both limit values refer to measurements outside the patient's body). The exception applies only to ULP WMCE applications (Ultra-Low Power Wireless Medical Capsule Endoscopy).

Section 122 432–438 MHz: Radio transmitters for amateur radio communication.

Maximum power applied to the antenna system: 200 W PEP

The third to sixth paragraphs of Section 27 shall also apply.

Section 123 433.05–434.79 MHz: Radio transmitters for unspecified areas of application.[61]

Maximum power: 15 mW ERP

Section 124 439.6875–439.9875 MHz: Radio transmitters for radio control and telemetry.

Carrier frequencies in MHz:

439.700	439.750	439.800	439.850	439.900	439.950
439.725	439.775	439.825	439.875	439.925	439.975

Maximum power: 500 mW ERP

Channelisation: 25 kHz

The frequency band can also be used as a channel.

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[58] See note 10.
[59] See note 10.
[60] See note 10.
[61] See note 10.

Section 125 443.9875–444.4125 MHz: Radio transmitters for telemetry and remote control within electricity, gas, heating, cooling, and water distribution.

Carrier frequencies in MHz:

444.00	444.05	444.40

Maximum power: 100 mW ERP for antenna heights that exceed 10 metres above ground level. 500 mW ERP for lower antenna heights.

Transmission cycle: ≤ 20 %

Channelisation: 25 kHz

The maximum permitted field strength at the frequency of 444.00 Mhz at the borders with Norway and Finland is 25 dBµV/m and is 17 dBµV/m at the frequencies of 444.05 and 444.40 Mhz.

Section 126 444.5875–444.9875 MHz: Radio transmitters for land mobile communications.

Carrier frequencies in MHz:

Channel bandwidth: 25kHz	**Channel bandwidth: 12.5 kHz**	**Channel bandwidth: 6.25 kHz**
444.600	444.59375	444.590625
		444.596875
	444.60625	444.603125
		444.609375
444.650	444.64375	444.640625
		444.646875
	444.65625	444.653125
		444.659375
444.675	444.66875	444.665625
		444.671875
	444.68125	444.678125
		444.684375
444.800	444.79375	444.790625
		444.796875
	444.80625	444.803125
		444.809375
444.825	444.81875	444.815625
		444.821875
	444.83125	444.828125
		444.834375
444.850	444.84375	444.840625
		444.846875
	444.85625	444.853125
		444.859375
444.875	444.86875	444.865625
		444.871875
	444.88125	444.878125
		444.884375
444.925	444.91875	444.915625
		444.921875
	444.93125	444.928125
		444.934375
444.975	444.96875	444.965625
		444.971875
	444.98125	444.978125
		444.984375

Maximum power: 2 W ERP

Transmission cycle: ≤ 10 %

Section 127 446.0–446.2 MHz: Radio transmitters for PMR446 equipment.[62]

Maximum power: 500 mW ERP

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

PMR446 equipment is hand-held (no base station or repeater use) equipment that uses integrated antennas only in order to maximise sharing and minimise interference. PMR446 equipment is used in peer-to-peer communication over short distances and shall not be used either as part of infrastructure networks or as repeaters.

Section 128 713–733 MHz: Terminals connected to terrestrial electronic communications networks.[63]

Mobile or nomadic terminals: maximum mean power 23 dBm TRP

Fixed or installed terminals: maximum mean power 23 dBm EIRP

In the case of fixed or installed terminals with a directional antenna, the power limit of 23 dBm EIRP may be exceeded, under the conditions specified in the fifth and sixth paragraphs.

Terminals with a directional antenna may not have an impact on terrestrial television reception in the frequency band of 470–694 MHz in households where there are persons who have their registered residence at the address concerned. 'Impact' means that the field strength from the terminal, within its frequency block (dBµV/m/5 MHz), exceeds the field strength from the television transmitter within the concerned television channel (dBµV/m/8 MHz) by more than 41 dB when measured at 10 metres above ground level at the impacted household.

Such impact as described in the above paragraph is only considered to exist if the television reception satisfies the following: The measured field strength at 10 metres above ground level from the television transmitter exceeds 44 + 20 log10(fMHz/500) dBµV/m/8 MHz, where fMHz is the centre frequency in MHz for the television channel concerned.

In this provision, 'directional antenna' means a passive directional antenna with a maximum input power of 23 dBm.

Section 129 821.5–826 MHz radio transmitters for wireless audio PMSE equipment.

For body-borne radio equipment: maximum output power 100 mW EIRP

Maximum power 20 mW for other audio PMSE transmissions.

Section 130 823–832 MHz: Radio transmitters for sound transmission.

1. 823–826 MHz

Bandwidth: ≤ 200 KHz

Maximum power for handheld device: 10 mW ERP

Maximum power for a body-borne device: 50 mW ERP

2. 826–832 MHz

Bandwidth: ≤ 200 kHz

Maximum power: 50 mW ERP

Section 131 823–832 MHz: Radio transmitters for wireless audio PMSE equipment.[64]

1. 823–826 MHz

Maximum power for a hand-held device: 13 dBm (20 mW) EIRP

Maximum power for a body-borne device: 20 dBm (100 mW) EIRP

2. 826–832 MHz

Maximum power: 20 dBm (100 mW) EIRP

'Wireless audio PMSE equipment' means radio equipment used for transmission of analogue or digital audio signals between a limited number of transmitters and receivers, such as wireless microphones, in-ear monitor systems, or wireless microphone and in-ear communication and which is used mainly for the production of television or radio programmes or private or public social or cultural events.

Section 132 832–862 MHz: Terminals connected to terrestrial electronic communications networks.[65]

Mobile or nomadic terminals: maximum mean power 23 dBm TRP

Fixed or installed terminals: maximum mean power 23 dBm EIRP

In the case of fixed or installed terminals with a directional antenna, the power limit of 23 dBm EIRP may be exceeded, under the conditions specified in the fifth and sixth paragraphs.

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[62] See note 10.

[63] See Commission Implementing Decision (EU) 2016/687 of 28 April 2016 on the harmonisation of the 694–790 MHz frequency band for terrestrial systems capable of providing wireless broadband electronic communications services and for flexible national use in the Union.

[64] See Commission Implementing Decision 2014/641/EU of 1 September 2014 on harmonised technical conditions of radio spectrum use by wireless audio programme making and special events equipment in the Union.

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

Terminals with a directional antenna may not have an impact on terrestrial television reception in the frequency band of 470–694 MHz in households where there are persons who have their registered residence at the address concerned. 'Impact' means that the field strength from the terminal, within its frequency block (dBµV/m/5 MHz), exceeds the field strength from the television transmitter within the concerned television channel (dBµV/m/8 MHz) by more than 47 dB when measured at 10 metres above ground level at the impacted household.

Such impact as described in the above paragraph is only considered to exist if the television reception satisfies the following: The measured field strength at 10 metres above ground level from the television transmitter exceeds 44 + 20 log10 (fMHz/500) dBµV/m/8 MHz, where fMHz is the centre frequency in MHz for the television channel concerned.

In this provision, 'directional antenna' means a passive directional antenna with a maximum input power of 23 dBm.

Section 133 862–863 MHz: Radio transmitters for unspecified areas of application.[66]

Maximum power: 25 mW e.r.p.

Bandwidth: ≤ 350 kHz

Transmission cycle: ≤ 0.1 %.

Section 134 863–865 MHz: Radio transmitters for wireless audio transmission and multimedia streaming.[67]

Maximum power: 10 mW ERP

Section 135 863–865 MHz: Radio transmitters for unspecified areas of application.[68]

Maximum power: 25 mW ERP

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used. alternatively, a duty cycle of ≤ 0.1 % may be used.

Section 136 863–868 MHz: Radio transmitters for short-range devices for broadband in data networks.[69]

Maximum power: 25 mW e.r.p.

Bandwidth: 600 kHz to ≤ 1 MHz.

Duty cycle: ≤ 10 % for network termination points;

Transmission cycle: ≤ 2.8 % in other cases.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 137 865–868 MHz: Radio transmitters for unspecified areas of application.[70]

Maximum power: 25 mW ERP

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used. alternatively, a duty cycle of ≤ 1 % may be used.

Section 138 865–868 MHz: RFID radio transmitters that were placed on the market before 1 January 2018.[71]

1. 865–865.6 MHz

Maximum power: 100 mW ERP.

2. 865.6–867.6 MHz

Maximum power: 2 W ERP

3. 867.6–868 MHz

Maximum power: 500 mW ERP

Channelisation: Up to 200 kHz

Radio transmitters can use all frequency bands.

Section 139 865–868 MHz: Radio transmitters for RFID.[72]

Maximum power: 2 W ERP

The transmission from the RFID readers is limited to four channels with centre frequencies 865.7 MHz, 866.3 MHz, 866.9 MHz and 867.5 MHz. The maximum bandwidth per channel is 200 kHz.

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[66] See note 10.

[67] See note 10.

[68] See note 10.

[69] See note 10.

[70] See note 10.

[71] See Commission Decision 2006/804/EC of 23 November 2006 on harmonisation of the radio spectrum for radio frequency identification (RFID) devices operating in the ultra high frequency (UHF) band.

[72] See note 10.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 140 865–868 MHz: Radio transmitters for data networks.[73]

Maximum power: 500 mW ERP

Duty cycle: ≤ 10 % for network termination points;

Duty cycle: ≤ 2.5 % in other cases.

The broadcast is limited to four channels in the frequency ranges 865.6–865.8 MHz, 866.2–866.4 MHz, 866.8–867.0 MHz and 867.4–867.6 MHz.

The maximum bandwidth per channel is 200 KHz.

Adaptive power control (APC) is required, alternatively, other mitigation technique with at least an equivalent level of spectrum compatibility.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 141 868.0–868.6 MHz: Radio transmitters for unspecified areas of application.[74]

Maximum power: 25 mW ERP

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used. alternatively, a duty cycle of ≤ 1 % may be used.

Section 142 868.6–868.7 MHz: Radio transmitters for alarm transmission.[75]

Maximum power: 10 mW ERP

Channelisation: 25 kHz

Duty cycle: ≤ 1.0 %

The frequency band can also be used as a channel.

Section 143 868.7–869.2 MHz: Radio transmitters for unspecified areas of application.[76]

Maximum power: 25 mW ERP

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used. alternatively, a duty cycle limit of ≤ 0.1 % may also be used.

Section 144 869.20–869.25 MHz: Radio transmitters for medical alert devices.[77]

Maximum power: 10 mW ERP

Channelisation: 25 kHz

Transmission cycle: ≤ 0.1 %

Section 145 869.25–869.40 MHz: Radio transmitters for alarm transmission.[78]

Maximum power: 10 mW ERP

Channelisation: 25 kHz

Transmission cycle: ≤ 0.1 % applies to the frequency band of 869.25–869.3 MHz and ≤ 1.0 % to the frequency band of 869.3–869.4 MHz.

Section 146 869.40–869.65 MHz: Radio transmitters for unspecified areas of application.[79]

Maximum power: 500 mW ERP

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used. alternatively, a duty cycle limit of ≤ 10 % may also be used.

Section 147 869.65–869.70 MHz: Radio transmitters for alarm transmission.[80]

Maximum power: 25 mW ERP

Channelisation: 25 kHz

Transmission cycle: ≤ 10 %

Section 148 869.7–870.0 MHz: Radio transmitters for unspecified areas of application.[81]

Maximum power: 5 mW ERP

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[73] See note 10.
[74] See note 10.
[75] See note 10.
[76] See note 10.
[77] See note 10.
[78] See note 10.
[79] See note 10.
[80] See note 10.
[81] See note 10.

~~The technical characteristics of any voice applications used shall be adapted so that they do not disrupt or interfere with the use of other radio installations.~~

~~The exemption does not apply to audio and video applications.~~

Section 149 869.7–870.0 MHz: Radio transmitters for unspecified areas of application.[82]

Maximum power: 25 mW ERP

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used. alternatively, a duty cycle limit of ≤ 1 % may be used.

Section 150 870.5375–870.6625 MHz: Radio transmitters for telemetry and remote control within electricity, gas, heating, cooling, and water industry.

Carrier frequencies in MHz:

870.55	870.60	870.65

Maximum power: 100 mW ERP for antenna heights that exceed 10 metres above ground level. 500 mW ERP for lower antenna heights.

Transmission cycle: ≤ 20 %

Channelisation: 25 kHz

Section 151 880–915 MHz: Terminals connected to terrestrial electronic communications networks. Mobile, nomadic, fixed and installed terminals: maximum average power 25 dBm TRP

Section 152 880–915 MHz: Radio transmitters for the use of GSM communications where transmission is from the terminal to the base station on board vessels registered in Sweden and where the terminal is connected to and controlled by the base station of the vessel in the 960–925 MHz frequency band.[83]

The exemption also applies to such radio transmitters for GSM communications on foreign-registered vessels, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 153 925–960 MHz: Radio transmitters for GSM communications within the Swedish territorial sea that transmit from the base station to the terminal on board vessels registered in Sweden.[84]

Radio transmitters shall not be used closer to the baseline than two nautical miles according to the United Nations Convention on the Law of the Sea.

Between two and twelve nautical miles from the baseline, vessel base stations may only transmit signals through antennas that are placed inside the vessel.

The vessel base station shall ensure that the output power of GSM terminals on board the vessel does not exceed 5 dBm.

Outdoors on the vessel, the radiated power from the vessel base station may not exceed -80 dBm/200 KHz with a measured antenna gain of 0 dBi.

The communications system shall avoid harmful interference by using the following mitigation factors or other methods that provide equivalent protection.

- Between two and three nautical miles from the baseline, the receiver's sensitivity and disconnection threshold for the mobile terminal used on board the vessel shall be equal to or greater than -70 dBm/200 kHz.
- Between three and twelve nautical miles from the baseline, the receiver's sensitivity and disconnection threshold for the mobile terminal used on board the vessel shall be equal to or greater than -75 dBm/200 kHz.
- Discontinuous transmission shall be activated in the system's uplink direction.
- The vessel base station's timing advance value shall be set as low as possible.

The exemption also applies to such radio transmitters for GSM communications on foreign-registered vessels, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 154 1,240–1,300 MHz: Radio transmitters for amateur radio communication.

Maximum power applied to the antenna system: 200 W PEP

The third to sixth paragraphs of Section 27 shall also apply.

Section 155 1,610–1,626.5 MHz: Radio transmitters for satellite terminals in satellite systems that operate without a downlink at 1,613.8–1,626.5 MHz (such as GlobalStar).

Satellite terminals shall be included in the notified satellite network with which communication occurs.

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[82] See note 10.

[83] Commission Implementing Decision (2024/340/EU) of 22 January 2024 on harmonised conditions for the use of radio spectrum for mobile communication services on board vessels in the Union, repealing Decision 2010/166/EU.

[84] See note 83.

The radio astronomical observations at the Onsala Space Observatory shall not cause harmful interference in the 1,610.6–1,613.8 MHz frequency band.

Section 156 1,613.8–1,626.5 MHz: Radio transmitters for satellite terminals.

Maximum power: 30 dBm EIRP

Duty cycle: ≤ 1 %

The satellite terminal shall be included in the notified satellite network with which communication occurs and be so designed that reasonable freedom from interference is ensured for other uses in the frequency band.

Section 157 1,621.35–1,626.5 MHz: Radio transmitters for satellite terminals in satellite systems that operate with a downlink at 1,613.8–1,626.5 MHz (such as IRIDIUM).

Satellite terminals shall be included in the notified satellite network with which communication occurs.

The radio astronomical observations at the Onsala Space Observatory shall not cause harmful interference in the 1,610.6–1,613.8 MHz frequency band.

Section 158 1,626.5–1,645.5 MHz: Radio transmitters for satellite terminals.

Satellite terminals shall be included in the notified satellite network with which communication occurs.

Section 159 1,646.5–1,660.5 MHz: Radio transmitters for satellite terminals.

Satellite terminals shall be included in the notified satellite network with which communication occurs.

Section 160 1,710–1,785 MHz: Radio transmitters for the use of GSM, LTE for FDD communications and 5G/NR non-AAS where transmission occurs from the terminal to the base station on board aircraft registered in Sweden and where the terminal is connected to and controlled by the base station on the aircraft in the 1,805–1,880 MHz frequency band.[85]

The exemption also applies to such radio transmitters on foreign-registered aircraft, if the registration state of the aircraft has issued a licence, or equivalent, to use radio transmitters.

Section 161 1,710–1,785 MHz: Radio transmitters for the use of GSM communications where transmission is from the terminal to the base station on board vessels registered in Sweden and where the terminal is connected to and controlled by the base station of the vessel in the 1,805–1,880 MHz frequency band.[86]

The exemption also applies to such radio transmitters for GSM communications on foreign-registered vessels, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 162 1,710–1,785 MHz: Radio transmitters for the use of LTE communications where transmission is from the terminal to the base station on board vessels registered in Sweden and where the terminal is connected to and controlled by the base station of the vessel in the 1,805-1,880 MHz frequency band.[87]

The exemption also applies to such radio transmitters for LTE communications on foreign-registered vessels, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 163 1,710–1,785 MHz: Radio transmitters for the use of 5G/NR non-AAS where transmission is from the terminal to the base station on board vessels registered in Sweden and where the terminal is connected to and controlled by the base station of the vessel in the 1,805–1,880 MHz frequency band.[88]

The exemption also applies to such radio transmitters for the use of 5G/NR non-AAS on foreign-registered vessels, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 164 1,780.0–1,785.0 MHz with centre frequency 1,782.6 MHz: Radio transmitters for the use of indoor UMTS communications where transmission is from the terminal to the base station and where the terminal is connected to and controlled by the base station indoors in the 1,875.0–1,880.0 MHz frequency band.[89]

Maximum power: 23 dBm EIRP.

Radio transmitters shall meet the requirements described in specific harmonised standards for the current uplink connection technology for UMTS with the centre frequency 1 782.6 MHz.

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[85] Commission Decision (2008/294/EC) of 7 April 2008 on harmonised conditions of spectrum use for the operation of mobile communications services on aircraft (MCA services) in the Community, as amended by Commission Implementing Decision (EU) 2022/2324.

[86] See note 83.

[87] See note 83.

[88] See note 83.

[89] See Commission Implementing Decision EU 2022/173 of 7 February 2022 on the harmonisation of the 900 MHz and 1800 MHz frequency bands for terrestrial systems capable of providing electronic communications services in the Union and repealing Decision 2009/766/EC.

Section 165 1,780.1–1,785.0 MHz: Radio transmitters for the use of LTE communications indoors where transmission is from the terminal to the base station and where the terminal is connected to and controlled by the base station indoors in the 1,875.1-1,880.0 MHz frequency band.[90]

Maximum power: 23 dBm EIRP

LTE with a channel width of 1.4 MHz: Centre frequency in the range of 1,780.8–1,784.3 MHz.

LTE with a channel width of 3.0 MHz: Centre frequency in the range of 1,781.6–1,783.5 MHz.

Radio transmitters shall meet the requirements described in specific harmonised standards for uplink connections in LTE communication with the lower and upper ends of the signal's spectrum in the 1,780.1–1,785.0 MHz band.

LTE also includes LTE-MTC and LTE-eMTC.

Section 166 1,780.1–1,785.0 MHz: Radio transmitters for the use of indoor WiMAX communications where transmission is from the terminal to the base station and where the terminal is connected to and controlled by the base station indoors in the 1,875.1-1,880.0 MHz frequency band.[91]

Maximum power: 23 dBm EIRP.

Radio transmitters shall meet the requirements described in specific harmonised standards for uplink connections in WiMAX with the lower and upper ends of the signal's spectrum in the 1 780.1–1 785.0 MHz band.

Section 167 1,780.3–1,784.9 MHz: Radio transmitters for the use of GSM communications or Narrowband IoT indoors transmitting from the terminal to the base station and where the terminal is connected to and controlled by the base station indoors in the 1,875.3–1,879.9 MHz frequency band.[92]

Maximum power: 23 dBm EIRP.

Radio transmitters shall meet the requirements described in specific harmonised standards for uplink connections in GSM communications with the centre frequency in the 1 780.4–1 784.8 MHz range.

The GSM also includes EC-GSM IoT.

Section 168 1,785–1,804.8 MHz: radio transmitters for body-borne PMSE radio equipment. Maximum output power 50 mW EIRP. For other PMSE equipment, the highest power is 20 mW.

Section 169 1,805–1,880 MHz: Radio transmitters for the use of GSM and LTE for FDD communications and 5G NR/non-AAS on board aircraft registered in Sweden where the transmission takes place from the base station to the terminal.[93]

1. *General terms*
   The radio transmitter may only be used when the aircraft's height exceeds 3 000 metres above the ground. The exemption also applies to radio transmitters on foreign-registered aircraft if the registration state of the aircraft has issued a licence, or equivalent, to use radio transmitters.

2. *Measures to prevent mobile terminals from connecting to terrestrial networks*

(a) until 1 January 2026, it is necessary to prevent mobile terminals receiving signals within the frequency bands and systems listed in Table 2 from connecting to mobile UMTS networks on the ground
— by including a network control unit (NCU) in the MCA system, which enhances the background level of the mobile reception frequencies inside the cabin; and/or
— by shielding the airframe of the aircraft to further weaken the signal to or from the hull.

Table 1	
Frequency band [MHz]	**Systems on the ground**
925–960	UMTS
2,110–2,170	UMTS

After this date, MCA operators may decide to continue using the NCU for the frequency bands and systems specified in Table 1;

(b) In addition to the provisions of point (a), MCA operators may decide to use the NCU for terrestrial systems providing electronic communications services in those frequency bands which are listed in Table 2.

[90] See note 89.
[91] See note 89.
[92] See note 89.
[93] See note 83.

Table 2
Frequency band [MHz]
460–470
791–821
925–960
1,508–1,880
2,110–2,170
2,620–2,690
2,570–2,620

3. Technical parameters:

a) Equivalent isotropically radiated power limits (EIRP) outside the aircraft, from the network control unit (NCU)/aircraft base station (BS)

Table 3				
Height over land (m)	**Maximum EIRP outside the aircraft in dBm/(channel bandwidth)**			
	NCU [1]	**Aircraft GSM and LTE base station**	**Aircraft 5G NR non-AAS base station**	**Aircraft UMTS base station and NCU**
	Band: 900 MHz	**Band: 1,800 MHz**	**Band: 1,800 MHz**	**Band: 1,800 MHz**
	Channel bandwidth = 3.84 MHz	**Channel bandwidth = 200 kHz (2)**	**Channel bandwidth = 5 MHz (3)**	**Channel bandwidth = 3.84 MHz**
3000	- 6.2	-13.0	10	1.0
4000	-3.7	-10.5	13	3.5
5000	-1.7	-8.5	15	5.4
6000	-0.1	-6.9	16	7.0
7000	1.2	-5.6	18	8.3
8000	2.3	-4.4	19	9.5

(1) The base station of the aircraft is not operated at 900 MHz, however, an NCU is needed to prevent terminals using other MCA channels from connecting to the 900 MHz UMTS terrestrial networks.

(2) For channel bandwidths other than 200 kHz, a correction, calculated using the formula 10 × log10 (channel bandwidth/200 kHz) dB, shall be added to the EIRP values.

(3) For channel bandwidths other than 5 MHz, a correction, calculated using the formula 10 × log10 (channel bandwidth/5 MHz) dB, shall be added to the EIRP values.

b) EIRP limits outside the aircraft, resulting from the mobile terminal operating on board

Table 4				
Height above ground (metres)	**Maximum EIRP outside the aircraft from a GSM mobile terminal in dBm/200 kHz**	**Maximum EIRP outside the aircraft from a LTE mobile terminal in dBm/5 MHz**	**Maximum EIRP outside the aircraft from an LTE and 5G NR mobile terminal in dBm/5 MHz (2) (3) (4)**	**Maximum EIRP outside the aircraft from a UMTS mobile terminal in dBm/3.84 MHz**
	GSM 1,800 MHz	**LTE 1,800 MHz**	**LTE and 5G NR 1,800 MHz**	**UMTS 2,100 MHz**
3,000	-3.3	1.7	0	3.1
4,000	-1.1	3.9	2	5.6
5,000	0.5	5	4	7
6,000	1.8	5	6	7
7,000	2.9	5	7	7
8,000	3.8	5	8	7

(1) These conditions shall apply to the operation of MCA systems installed until 31 December 2022.

(2) These conditions shall apply to the operation of MCA systems installed after 31 December 2022.
(3) For channel bandwidths other than 5 MHz, a correction, calculated using the formula 10 × log10 (channel bandwidth/5 MHz) dB, shall be added to the EIRP values. (4) EIRP is specified per channel regardless of channel bandwidth used, as multiple mobile terminals may be operated.

c) EIRP limits outside the aircraft, resulting from the Network Control Unit, in other relevant frequency bands

When MCA operators decide to use a Network Control Unit to prevent mobile terminals from connecting to non-UMTS mobile networks on the ground within those frequency bands that are listed in Table 3, the maximum values indicated in Table 6 apply for the total EIRP outside the aircraft, resulting from the Network Control Unit, together with the values mentioned in Table 4.

Table 5

	Maximum EIRP outside the aircraft from the network control unit/aircraft's base station/aircraft's NodeB			
Height above ground (metres)	**460–470 MHz**	**791–821 MHz**	**1,805–1,880 MHz**	**2,570–2,690 MHz**
	dBm/1.25 MHz	**dBm/10 MHz**	**dBm/200 kHz**	**dBm/4.75 MHz**
3,000	-17.0	-0.87	-13.0	1.9
4,000	-14.5	1.63	-10.5	4.4
5,000	-12.6	3.57	-8.5	6.3
6,000	-11.0	5.15	-6.9	7.9
7,000	-9.6	6.49	-5.6	9.3
8,000	-8.5	7.65	-4.4	10.4

Operational requirements
(1) The minimum permissible height above ground for any transmission from an MCA system on aircraft in operation must be 3,000 metres.
(2) While an aircraft base station is in operation, it must limit the transmit capacity of all GSM mobile terminals transmitting in the 1,800 MHz band to a nominal value of 0 dBm/200 kHz; this applies to all stages of communication, including the establishment of the connection.
(3) While an aircraft base station is in operation, it must limit the transmit capacity of all LTE mobile terminals transmitting in the 1,800 MHz band to a nominal value of 5 dBm/5 MHz; This applies to all stages of communication.
(4) While an aircraft base station is in operation, it must limit the transmit capacity of all UMTS mobile terminals transmitting in the 2,100 MHz band to a nominal value of -6 dBm/3.84 MHz; this applies to all stages of communication and the maximum number of users should not exceed 20.
(5) While operating, an aircraft base station must limit the transmit capacity of all 5G NR mobile terminals transmitting in the 1,800 MHz band to a nominal value of 5 dBm/channel; this applies to all stages of communication, including the establishment of the connection.

Section 170 1,805–1,880 MHz: Radio transmitters for GSM communications within the Swedish territorial sea that transmit from the base station to the terminal on board vessels registered in Sweden.[94]

Radio transmitters shall not be used closer to the baseline than two nautical miles according to the United Nations Convention on the Law of the Sea.

Between two and twelve nautical miles from the baseline, vessel base stations may only transmit signals through antennae that are placed inside the vessel.

The vessel base station shall ensure that the maximum radiated power of GSM terminals on board the vessel does not exceed 0 dBm.

Outdoors on the vessel, the radiated power from the vessel base station may not exceed -80 dBm/200 kHz with a measured antenna gain of 0 dBi.

The communications system shall avoid harmful interference by using the following mitigation factors or other methods that provide equivalent protection.

- Between two and three nautical miles from the baseline, the receiver's sensitivity and disconnection threshold for the mobile terminal used on board the vessel shall be equal to or greater than -70 dBm/200 kHz.
- Between three and twelve nautical miles from the baseline, the receiver's sensitivity and disconnection threshold for the mobile terminal used on board the vessel shall be equal to or greater than -75 dBm/200 kHz.
- Discontinuous transmission shall be activated in the system's uplink direction.
- The vessel base station's timing advance value shall be set as low as possible.

[94] See note 83.

The exemption also applies to such radio transmitters for GSM communications on foreign-registered vessels, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 171 1,805–1,880 MHz: Radio transmitters for LTE communications within the Swedish territorial sea that transmit from the base station to the terminal on board vessels registered in Sweden.[95]

Radio transmitters shall not be used closer to the baseline than four nautical miles according to the United Nations Convention on the Law of the Sea.

Between four and twelve nautical miles from the baseline, vessel base stations may only transmit signals through antennas that are placed inside the vessel.

Only a bandwidth of up to 5 MHz (duplex) may be used in the frequency band.

The vessel base station shall ensure that the maximum radiated power of LTE terminals on board the vessel does not exceed 0 dBm.

Vessel base station transmissions on deck may not exceed -98 dBm/5 MHz.

The communications system shall avoid harmful interference by using the following mitigation factors or other methods that provide equivalent protection.

- Between four and twelve nautical miles from the baseline, the quality criterion (minimum necessary received signal level in the cell) for the mobile terminal used on board the vessel shall be equal to or higher than -83 dBm/5 MHz.
- The Public Land Mobile Network selection timer shall be set to 10 minutes.
- The Radio Resource Control (RRC) user inactivity release timer shall be set to 2 seconds.
- The timing advance value of the vessel base station shall be set according to a cell range for the MCV distributed antenna system equal to 400 metres.
- The centre frequency used by MCV operators shall not coincide with the land-based network centre frequencies.

The exemption also applies to such radio transmitters for LTE communications on foreign-registered vessels, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 172 1,805–1,880 MHz: Radio transmitters for the use of 5G NR non-AAS within the Swedish territorial sea, where the transmission takes place from the base station to the terminal on board vessels registered in Sweden.[96]

Radio transmitters shall not be used closer to the baseline than four nautical miles according to the United Nations Convention on the Law of the Sea.

Between two and twelve nautical miles from the baseline, vessel base stations may only transmit signals through antennas that are placed inside the vessel.

The vessel base station shall ensure that the maximum radiated power of 5G NR non-AAS terminals on board the vessel does not exceed 0 dBm.

Outdoors on the vessel, the radiating power from the vessel base station may be equal to or lower than -120 dBm/5 MHz (equivalent to -120 dBm/15 kHz).

The communications system shall avoid harmful interference by using the following mitigation factors or other methods that provide equivalent protection.

- Between four and twelve nautical miles from the baseline, the quality criterion (minimum necessary received signal level in the cell) for the mobile terminal used on board the vessel shall be equal to or higher than -83 dBm/5 MHz.
- The Public Land Mobile Network selection timer shall be set to 10 minutes.
- The Radio Resource Control (RRC) user inactivity release timer shall be set to 2 seconds.
- The timing advance value of the vessel base station shall be set according to a cell range for the MCV distributed antenna system equal to 400 metres.
- The centre frequency used by MCV operators shall not coincide with the land-based network centre frequencies.

The exemption also applies to such radio transmitters for the use of 5G NR non-AAS on vessels registered abroad, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 173 1,875.0–1,880.0 MHz with centre frequency 1,877.6 MHz: Radio transmitters for indoor UMTS communications that transmit from the base station to the terminal.[97]

Maximum power: 20 dBm EIRP

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[95] See note 83.
[96] See note 83.
[97] See note 89.

Radio transmitters shall meet the requirements described in specific harmonised standards for downlink connection for UMTS with the centre frequency of 1,877.6 MHz.

Section 174 1,875.1–1,880.0 MHz: Radio transmitters for indoor LTE communications that transmit from the base station to the terminal.[98]

Maximum power: 20 dBm EIRP

LTE with channel bandwidth of 1.4 MHz: Centre frequency in the range of 1,875.8–1,879.3 MHz.

LTE with channel bandwidth of 3 MHz: Centre frequency in the range of 1,876.6–1,878.5 MHz.

Radio transmitters shall meet the requirements described in specific harmonised standards for downlink connections in LTE with the lower and upper ends of the signal's spectrum in the 1,875.1–1,880.0 MHz band.

LTE also includes LTE-MTC and LTE-eMTC.

Section 175 1,875.1–1,880.0 MHz: Radio transmitters for indoor WiMAX communications that transmit from the base station to the terminal.[99]

Maximum power: 20 dBm EIRP

Radio transmitters shall meet the requirements described in specific harmonised standards for downlink connections in WiMAX with the lower and upper ends of the signal's spectrum in the 1,875.1–1,880.0 MHz band.

Section 176 1,875.3–1,879.9 MHz: Radio transmitters for indoor GSM communications or Narrowband IoT that transmit from the base station to the terminal.[100]

Maximum power: 20 dBm EIRP

Radio transmitters shall meet the requirements described in specific harmonised standards for downlink connection for GSM with centre frequency in the range of 1,875.4–1,879.8 MHz.

The GSM also includes EC-GSM IoT.

Section 177 1,880–1,900 MHz: Radio transmitters complying with a DECT system.

Section 178 1,920–1,980 MHz: Terminals connected to terrestrial electronic communications networks. Mobile or nomadic terminals: maximum mean power 24 dBm TRP Fixed or installed terminals: maximum mean power 24 dBm EIRP

Section 179 1,920–1,980 MHz: Radio transmitters for the use of UMTS FDD communications where transmission takes place from the terminal to the base station on board aircraft registered in Sweden and where the radio transmitter is connected to and controlled by the base station on the aircraft in the 2,110–2,170 MHz frequency band.[101]

The exemption also applies to such radio transmitters on foreign-registered aircraft if the registration state of the aircraft has issued a licence, or equivalent, to use radio transmitters.

Section 180 1,920–1,980 MHz: Radio transmitters for the use of UMTS communications within the Swedish territorial sea where transmission is from the terminal to the base station on board vessels registered in Sweden and where the terminal is connected to and controlled by the base station of the vessel in the 2,110–2,170 MHz frequency band.[102]

The exemption also applies to such radio transmitters for UMTS communications on foreign-registered vessels, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 181 1,980–2,010 MHz: Radio transmitters for non-airborne satellite terminals.[103]

Satellite terminals shall be included in the notified satellite network with which communication occurs. The notified network, which includes the terminals, shall provide mobile satellite services in accordance with Decision No 626/2008/EC of the European Parliament and of the Council.

Section 182 1980 - 2010 MHz: Radio transmitters for airborne satellite terminals.[104]

Radio transmitters that communicate with the satellite may only be used when the flight altitude exceeds 3,000 metres above ground level. Radio transmitters that communicate with the satellite network's complementary ground-based stations used at fixed locations may only be used when the flight altitude exceeds 1,000 metres above ground level and with a maximum of 40 dBm EIRP.

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[98] See note 89.
[99] See note 89.
[100] See note 89.
[101] See note 83.
[102] See note 83.
[103] See Commission Decision 2007/98/EC of 14 February 2007 on the harmonised use of radio spectrum in the 2 GHz frequency band for the implementation of systems providing mobile satellite services.
[104] See note 103.

Satellite terminals shall be included in the notified satellite network with which communication occurs. The notified network, which includes the terminals, shall provide mobile satellite services in accordance with Decision No 626/2008/EC of the European Parliament and of the Council.

Section 183 2,110–2,170 MHz: Radio transmitters for UMTS FDD communications on board aircraft registered in Sweden that transmit from the base station to the terminal.[105]

1. General terms

The radio transmitter may only be used when the aircraft's height exceeds 3 000 metres above the ground. The exemption also applies to radio transmitters on foreign-registered aircraft if the registration state of the aircraft has issued a licence, or equivalent, to use radio transmitters.

2. Use of NodeB

The aircraft NodeB, while in operation, must limit the transmit power of all UMTS terminals that transmit in the 2,100 MHz band to a nominal value of -6 dBm/3.84 MHz. This applies to all stages of communication. The maximum number of users may not exceed 20.
Outside the aircraft, the EIRP power from NodeB may not exceed the values in Table 1.

Table 1

Height above ground (metres)	Maximum system EIRP outside the aircraft in dBm/channel		
	Network control unit (NCU)	Aircraft's NodeB	Aircraft's NodeB and network control unit
	Band: 900 MHz	Band: 1,800 MHz	Band: 2,100 MHz
	Channel bandwidth = 3.84 MHz	Channel bandwidth = 200 kHz	Channel bandwidth = 3.84 MHz
3,000	-6.2	-13.0	1.0
4,000	-3.7	-10.5	3.5
5,000	-1.7	-8.5	5.4
6,000	-0.1	-6.9	7.0
7,000	1.2	-5.6	8.3
8,000	2.3	-4.4	9.5

3. Use of terminals

During the portion of a flight in which mobile communication services on aircraft (MCA services) may be used, the terminals that receive signals in the frequency bands of 925–960 MHz and 2 110–2 170 MHz must be prevented from connecting to terrestrial UMTS mobile networks. This can be achieved by installation of a network control unit that increases the noise level in the mobile receiving frequencies inside the cabin and/or a sufficient shielding to further weaken the signal to or from the airframe.
The values in Table 2 below may not be exceeded.

Table 2

Height above ground (metres)	Maximum EIRP outside the aircraft from a UMTS mobile terminal in dBm/3.84 MHz
	UMTS 2 100 MHz
3,000	3.1
4,000	5.6
5,000	7
6,000	7
7,000	7
8,000	7

MCA operators may decide to use an NCU, which increases the noise level of the mobile reception frequencies inside the cabin, including in the frequency bands specified in Table 3.

Table 3

Frequency band [MHz]	Systems on the ground
460–470	LTE

[105] See note 83.

791–821	LTE
1,805–1,880	GSM, LTE
2,570–2,620	LTE
2,620–2,690	LTE

When an MCA operator decides to use a network control unit in the frequency bands specified in Table 3, the maximum values specified in Table 4 shall be applied to the EIRP outside of the aircraft from the network control unit/aircraft's base station/aircraft's NodeB, together with the values specified in Table 1.

Table 4

	Maximum EIRP outside the aircraft from the network control unit/aircraft's base station/aircraft's Node B			
Height above ground (metres)	**460–470 MHz**	**791–821 MHz**	**1,805–1,880 MHz**	**2,570–2,690 MHz**
	dBm/1.25 MHz	**dBm/10 MHz**	**dBm/200 kHz**	**dBm/4.75 MHz**
3,000	-17.0	-0.87	-13.0	1.9
4,000	-14.5	1.63	-10.5	4.4
5,000	-12.6	3.57	-8.5	6.3
6,000	-11.0	5.15	-6.9	7.9
7,000	-9.6	6.49	-5.6	9.3
8,000	-8.5	7.65	-4.4	10.4

Section 184 2,110–2,170 MHz: Radio transmitters for UMTS communications within the Swedish territorial sea that transmit from the base station to the terminal on board vessels registered in Sweden.[106]

Radio transmitters shall not be used closer to the baseline than two nautical miles according to the United Nations Convention on the Law of the Sea.

Between two and twelve nautical miles from the baseline, vessel base stations may only transmit signals through antennas that are placed inside the vessel.

Only a bandwidth of up to 5 MHz (duplex) may be used.

The vessel base station shall ensure that the output power of UMTS terminals on board the vessel does not exceed 0 dBm/5 MHz.

Vessel base station transmissions on deck may not exceed -102 dBm/5 MHz (Common Pilot Channel).

The communications system shall avoid harmful interference by using the following mitigation factors or other methods that provide equivalent protection.

- Between two and twelve nautical miles from the baseline, the quality criterion (minimum necessary received signal level in the cell) for the mobile terminal used on board the vessel shall be equal to or higher than -87 dBm/5 MHz.
- The Public Land Mobile Network selection timer shall be set to 10 minutes.
- The Radio Resource Control (RRC) user inactivity release timer shall be set to 2 seconds.
- The timing advance value of the vessel base station shall be set according to a cell range for the MCV distributed antenna system equal to 600 metres.
- The centre frequency used by MCV operators shall not coincide with the land-based network centre frequency.
- The exemption also applies to such radio transmitters for UMTS communications on foreign-registered vessels, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 185 2,400–2,450 MHz: Radio transmitters for amateur radio communication.

Maximum power applied to the antenna system: 100 mW PEP.

The third to sixth paragraphs of Section 27 shall also apply.

Section 186 2,400.0–2,483.5 MHz: Radio transmitters for unspecified areas of application.[107]

Maximum power: 25 mW EIRP.

Section 187 2,400.0–2,483.5 MHz: Radio transmitters for radio determination.[108]

Maximum power: 25 mW EIRP.

[106] See note 83.
[107] See note 10.
[108] See note 10.

Section 188 2,400.0–2,483.5 MHz: Radio transmitters for data transfer.[109]

Maximum power: 100 mW EIRP

The power density when frequency hopping modulation is used shall be a maximum of 100 mW/100 KHz EIRP and for other types of modulation it shall not exceed 10 mW/MHz EIRP.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 189 2,446–2,454 MHz: Radio transmitters for RFID.[110]

Maximum power: 500 mW EIRP

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 190 2,483.5–2,500.0 MHz: Radio transmitters for Medical Body Area Network (MBAN) systems.[111]

1. MBAN systems for indoor applications in healthcare facilities.
   Maximum power: 1 mW EIRP
   Bandwidth: ≤ 3 MHz.
   Transmission cycle: ≤ 10 %
2. MBAN systems for indoor applications in patients' homes.
   Maximum power: 10 mW EIRP
   Bandwidth: ≤ 3 MHz.
   Duty cycle: ≤ 2 %

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

A Medical Body Area Network System (MBANS) in this context is a system that is used for medical data acquisition and intended to be used in healthcare facilities or patients' homes. They are low power radio systems used for the transmission of non-voice data to and from medical devices for the purposes of monitoring, diagnosing, and treating patients as prescribed by duly authorised healthcare professionals and are defined in the context of medical applications only.

Section 191 2,483.5–2,500.0 MHz: Radio transmitters for medical implants.[112]

Maximum power: 10 mW EIRP

Channel spacing: 1 MHz. The whole frequency band may also be used dynamically as a channel for high-speed data transfer.

Transmission cycle: ≤ 10 %

Peripheral master units may only be used indoors.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 192 2,500–2,570 MHz: Radio transmitters for the use of LTE communications where transmission is from the terminal to the base station on board vessels registered in Sweden and where the terminal is connected to and controlled by the base station of the vessel in the 2,620–2,690 MHz frequency band.[113]

The exemption also applies to such radio transmitters for LTE communications on foreign-registered vessels, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 193 2,500–2,570 MHz: Radio transmitters for the use of 5G/NR non-AAS where transmission is from the terminal to the base station on board vessels registered in Sweden and where the terminal is connected to and controlled by the base station of the vessel in the 2,620–2,690 MHz frequency band.[114]

The exemption also applies to such radio transmitters for the use of 5G/NR non-AAS on vessels registered abroad, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 194 2,500–2,620 MHz: Terminals connected to terrestrial electronic communications networks. Mobile or nomadic terminals: maximum mean power 31 dBm TRP Fixed or installed terminals: maximum mean power 35 dBm EIRP

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[109] See note 10.
[110] See note 10.
[111] See note 10.
[112] See note 10.
[113] See note 83.
[114] See note 83.

Section 195 2,620–2,690 MHz: Radio transmitters for LTE communications within the Swedish territorial sea that transmit from the base station to the terminal on board vessels registered in Sweden.[115]

Radio transmitters shall not be used closer to the baseline than four nautical miles according to the United Nations Convention on the Law of the Sea.

Between four and twelve nautical miles from the baseline, vessel base stations may only transmit signals through antennas that are placed inside the vessel.

Only a bandwidth of up to 5 MHz (duplex) may be used in the frequency band.

The vessel base station shall ensure that the maximum radiated power of LTE terminals on board the vessel does not exceed 0 dBm.

Vessel base station transmissions on deck may not exceed -98 dBm/5 MHz.

The communications system shall avoid harmful interference by using the following mitigation factors or other methods that provide equivalent protection.

- Between four and twelve nautical miles from the baseline, the quality criterion (minimum necessary received signal level in the cell) for the mobile terminal used on board the vessel shall be equal to or higher than -83 dBm/5 MHz.
- The Public Land Mobile Network selection timer shall be set to 10 minutes.
- The Radio Resource Control (RRC) user inactivity release timer shall be set to 2 seconds.
- The timing advance value of the vessel base station shall be set according to a cell range for the MCV distributed antenna system equal to 400 metres.
- The centre frequency used by MCV operators shall not coincide with the land-based network centre frequencies.

The exemption also applies to such radio transmitters for LTE communications on foreign-registered vessels, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 196 2,620–2,690 MHz: Radio transmitters for the use of 5G/NR non-AAS within the Swedish territorial sea, where the transmission takes place from the base station to the terminal on board vessels registered in Sweden.[116]

Radio transmitters shall not be used closer to the baseline than four nautical miles according to the United Nations Convention on the Law of the Sea.

Between two and twelve nautical miles from the baseline, vessel base stations may only transmit signals through antennas that are placed inside the vessel.

The vessel base station shall ensure that the maximum radiated power of 5G/NR non-AAS terminals on board the vessel does not exceed 0 dBm.

Outdoors on the vessel, the radiating power from the vessel base station may be equal to or lower than -120 dBm/5 MHz (equivalent to -120 dBm/15 kHz).

The communications system shall avoid harmful interference by using the following mitigation factors or other methods that provide equivalent protection.

- Between four and twelve nautical miles from the baseline, the quality criterion (minimum necessary received signal level in the cell) for the mobile terminal used on board the vessel shall be equal to or higher than -83 dBm/5 MHz.
- The Public Land Mobile Network selection timer shall be set to 10 minutes.
- The Radio Resource Control (RRC) user inactivity release timer shall be set to 2 seconds.
- The timing advance value of the vessel base station shall be set according to a cell range for the MCV distributed antenna system equal to 400 metres.
- The centre frequency used by MCV operators shall not coincide with the land-based network centre frequencies.

The exemption also applies to such radio transmitters for the use of 5G NR non-AAS on vessels registered abroad, if the registration state of the vessel has issued a licence or equivalent, under the same conditions as above, to use radio transmitters.

Section 197 2.9 GHz–3.1 GHz: Radio transmitters for navigation radar on vessels.
Highest pulse power: 5 MW EIRP

Section 198 4.5 - 7.0 GHz: Radio transmitters for level measurement in closed vessels or spaces.[117]

Radiation outside the vessel or space may not exceed -41.3 dBm/MHz.

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[115] See note 83.
[116] See note 83.
[117] See note 10.

Section 199 5.15–5.25 GHz: Radio transmitters for data transmission indoors, inside road vehicles, trains and aircraft.[118]

Outdoor use is permitted if the device is not connected to a fixed antenna installed outdoors or to a vehicle. Use in Unmanned Aircraft Systems (UAS) is limited to the frequency range of 5,170 to 5,250 MHz.

Maximum radiated mean power: 200 MW EIRP. For installations in road vehicles, or in trains where the wagon attenuation of the signal on average is less than 12 dB, a maximum of 40 mW EIRP applies. Maximal mean EIRP. Maximal mean density: 10 mW/MHz EIRP in all 1-MHz bands.

Section 200 5.25–5.35 GHz: Radio transmitters for data transfers indoors.[119]

Use of equipment installed in road vehicles, trains or aircraft[120]is not allowed.

Maximum radiated mean power: 200 mW EIRP

Maximum mean power density: 10 mW/MHz EIRP in all 1-MHz bands.

The TPC (Transmitter Power Control) mitigation technique with an average mitigation factor of at least 3 dB of the system's maximum permitted output power shall be used for radio transmitters in the 5.25–5.35 GHz frequency band. If the TPC mitigation technique is not used, the maximum mean radiated power and the corresponding mean density limits shall be reduced by 3 dB.

Dynamic frequency selection with an even distribution over all channels shall be used for compatibility with radio determination in accordance with the relevant harmonised standard, or other technology that provides equivalent protection.

Section 201 5.47–5.65 GHz: Radio transmitters for navigation radar on vessels.

Highest pulse power: 5 MW EIRP

Section 202 5.470–5.725 GHz: Radio transmitters for data transfer.[121]

Installations in trains or aircraft[122] are not allowed. Use in road vehicles is allowed if the equipment is slave units where the transmission is checked by a Master device with DFS functionality.

Maximum radiated mean power: 1 W EIRP. For vehicle installations a maximum of 200 mW EIRP.

Maximum mean power density: 50 mW/MHz in all 1-MHz bands.

The mitigation technique TPC (Transmitter Power Control) with an average mitigation factor of at least 3 dB of the system's maximum permitted output power shall be used. If the TPC mitigation technique is not used, the maximum mean radiated power and the corresponding mean EIRP density limits shall be reduced by 3 dB.

Dynamic frequency selection with an even distribution over all channels shall be used for compatibility with radio determination in accordance with the relevant harmonised standard, or other technology that provides equivalent protection.

Section 203 5.65–5.85 GHz: Radio transmitters for amateur radio communication.

Maximum power applied to the antenna system: 200 W PEP

The third to sixth paragraphs of Section 27 shall also apply.

Section 204 5.725–5.875 GHz: Radio transmitters for unspecified areas of application.[123]

Maximum power: 25 mW EIRP.

Section 205 5.795–5.815 GHz: Radio transmitters for road and vehicle telemetry.[124]

Maximum power: 2 W EIRP

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 206 5.855–5.875 GHz: Radio transmitters for non-safety applications of intelligent road transport systems.[125]

Maximum average power density: 23 dBm/MHz EIRP.

Maximum total average transmitting power: 33 dBm EIRP

TPC capable of reducing the total power from 33 dBm by 3 dBm EIRP shall be used.

~~Minimum power control interval: 30 dB.~~

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[118] See Commission Implementing Decision (EU) 2022/179 of 8 February 2022 on the harmonised use of radio spectrum in the 5 GHz frequency band for the implementation of wireless access systems including radio local area networks and repealing Decision 2005/513/EC, as worded by Commission Implementing Decision (EU) 2022/2307.

[119] See note 118.

[120] The operation of WAS/RLAN installations in large aircraft (excluding multi-engine helicopters), except in the 5,600–5,650 MHz frequency band, is permitted until 31 December 2028. Maximum average EIRP for this use is 100 mW EIRP.

[121] See note 118.

[122] See note 120.

[123] See note 10.

[124] See note 10.

[125] See note 10.

The exemption applies only to vehicle-to-vehicle, vehicle-to-infrastructure and infrastructure-to-vehicle communication systems.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 207 5.875–5.925 GHz: Radio transmitters for safety-related applications in intelligent road transport systems.[126]

Frequency band: 5.875–5.905 and 5.905–5.925 GHz

Maximum average power density: 23 dBm/MHz EIRP.

Maximum total average transmitting power: 33 dBm EIRP

TPC capable of reducing the total power from 33 dBm by 3 dBm EIRP shall be used.

~~Minimum power control interval: 30 dB.~~

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 208 5.945–6.425 GHz: Radio transmitters for indoor data transmission intended for LPI (Low Power Indoor) equipment.[127] The exemption also applies in trains with metal-coated windows or similar structures of materials with comparable attenuation characteristics, and aircraft.

Maximum radiated mean power within the frequency band: 23 dBm EIRP. The mean radiated power in this case means the mean radiated power during a transmission burst corresponding to the highest power, if power control is used.

Maximum mean EIRP density within the frequency band: 10 dBm/MHz EIRP

Maximum mean EIRP density outside the frequency band below 5.935 GHz: -22 dBm/MHz EIRP

The equipment shall have the following characteristics.

- An LPI access point or access bridge shall be powered by wired connection and shall have an integral antenna. It shall not be battery-operated.
- An LPI client device that is connected to an LPI access point or another LPI client device and may, or may not, be battery-powered.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 209 5.945–6.425 GHz: Radio transmitters for data transmission intended for VLP (very low power) portable equipment.[128] Use on Unmanned Aircraft Systems (UAS) is not permitted.

Maximum radiated mean power within the frequency band: 14 dBm EIRP. The mean radiated power in this case means the mean radiated power during a transmission burst corresponding to the highest power, if power control is used.

Maximum mean EIRP density within the frequency band: 1 dBm/MHz EIRP

Maximum mean EIRP density outside the frequency band below 5.935 GHz: -45 dBm/MHz EIRP

For narrowband use, a maximum mean EIRP frequency within the frequency band of 10 dBm/MHz EIRP and the requirement for narrowband devices to use a frequency hopping mechanism based on at least 15 hopping channels apply. Narrowband refers in this case to channel bandwidths below 20 MHz.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 210 6.0 - 8.5 GHz: Radio transmitters for level measurement.[129]

Maximum power: 7 dBm/50 MHz peak EIRP density and -33 dBm/MHz mean EIRP density.

Techniques for adaptive power control and antenna requirements as well as equivalent techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

The radio astronomical observations at Onsala Space Observatory shall not be exposed to harmful interference.

Section 211 8.5 - 10.6 GHz: Radio transmitters for level measurement in closed vessels or spaces.[130]

Radiation outside the vessel or space may not exceed -41.3 dBm/MHz.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

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[126] See Commission Implementing Decision (EU) 2020/1426 of 7 October 2020 on the harmonised use of radio spectrum in the 5,875–5,935 MHz frequency band for safety-related applications of intelligent transport systems (ITS) and repealing Decision 2008/671 EC.

[127] See Commission Implementing Decision (EU) 2021/1067 of 17 June 2021 on the harmonised use of radio spectrum in the 5,945–6,425 MHz frequency band for the implementation of wireless access systems including radio local area networks (WAS/RLANs).

[128] See note 127.

[129] See note 10.

[130] See note 10.

Section 212 9.225–9.500 GHz: Radio transmitters for navigation radar on vessels.
Highest pulse power: 5 MW EIRP

Section 213 10.0–10.5 GHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 214 10.25–10.28 GHz Radio transmitters for radio determination.
Maximum power: 500 mW EIRP
If the antenna gain is greater than 20 dBi, the power may not exceed 5 W EIRP.

Section 215 10.35–10.38 GHz: Radio transmitters for radio determination.
Maximum power: 500 mW EIRP
If the antenna gain is greater than 20 dBi, the power may not exceed 5 W EIRP.

Section 216 10.51–10.58 GHz: Radio transmitters for radio determination.
Maximum power: 500 mW EIRP
If the antenna gain is greater than 20 dBi, the power may not exceed 5 W EIRP.

Section 217 13.4–14.0 GHz: Radio transmitters for radio determination.
Maximum power: 25 mW EIRP.

Section 218 14.0–14.5 GHz: Radio transmitters for satellite terminals on land.
Maximum power: 60 dBW EIRP.
The following power restrictions apply in the vicinity of aerodromes.

Maximum power EIRP (dBW)	Shortest distance from the airport area (metres)
< 34	0
34–50	500
50–55.3	1,800
55.3–57	2,300
57–60	3,500

Satellite terminals shall be included in the reported satellite network with which communication occurs.

Section 219 14.0–14.5 GHz: Radio transmitters for satellite terminals on vessels.
Maximum power: 50 dBW EIRP
The antenna diameter shall be greater than 0.6 metres.
Satellite terminals shall be included in the notified satellite network with which communication occurs.

Section 220 14.0–14.5 GHz: Radio transmitters for satellite terminals on aircraft (AES).
Maximum power: 50 dBW EIRP
Satellite terminals shall be included in the notified satellite network with which communication occurs.

Section 221 17.1–17.3 GHz: Radio transmitters for data transfer.
Maximum power: 100 mW EIRP

Section 222 17.1–17.3 GHz: Radio transmitters for radio determination.[131]
Maximum power: 26 dBm EIRP
The exemption applies only in terrestrial systems.
Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 223 21.65–24.25 GHz: Radio transmitters for automotive short-range radar equipment.[132]
The exemption applies to original equipment, or replacement equipment, of a vehicle put into service or placed on the market in the Community before 30 June 2013. After that date, the band shall no longer be available for automotive short-range radar on-board equipment, except in the case of original or replacement equipment, in a vehicle registered, put into service or placed on the market in the Community before that date.
The highest average power density is 41.3 dBm/MHz EIRP with an upper limit of 0 dBm/50 MHz EIRP except for frequencies under 22 GHz, where the highest average power density should not exceed 61,3 dBm/MHz EIRP.

[131] See note 10.
[132] See Commission Implementing Decision of 29 July 2011 amending Decision 2005/50/EC on the harmonisation of the 24 GHz range radio spectrum band for the time-limited use by automotive short-range radar equipment in the Community.

The 24.05–24.25 GHz frequency band can be used for narrow band transmission with an unmodulated carrier, which may have a maximum power of 20 dBm EIRP and a transmission cycle < 10% for maximum transmission powers greater than -10 dBm EIRP.

Transmissions in the 23.6–24 GHz frequency band that have a radiation angle of 30° or more over the horizontal plane shall be reduced by at least 25 dB in cases of radio transmitters in vehicles that were placed on the market before 2010. For vehicles placed on the market thereafter, the attenuation shall be 30 dB.

The exemption does not apply within a 12 km radius of the Onsala Radio Astronomical Observatory (57°23′45″ N 11°55′35″ E). For vehicles that have been brought into operation in the EU after 30 June 2007, the radio transmitter shall automatically be deactivated within a radius of 12 km from Onsala Radio Astronomical Observatory.

The radio transmitter shall only be in operation when the vehicle is in use.

Section 224 24.00–24.25 GHz: Radio transmitters for unspecified areas of application.[133]

Maximum power: 100 mW EIRP

Section 225 24.00–24.25 GHz: Radio transmitters for radio determination.

Maximum power: 100 mW EIRP

Section 226 24.00–24.25 GHz: Radio transmitters for amateur radio communication.

Maximum power applied to the antenna system: 200 W PEP

The third to sixth paragraphs of Section 27 shall also apply.

Section 227 24.05–24.075 GHz: Radio transmitters for transport/traffic telematics equipment.

Maximum power: 100 mW EIRP

Section 228 24.05–26.5 GHz: Radio transmitters for level measurement.[134]

Maximum power: 26 dBm/50 MHz peak EIRP density and -14 dBm/MHz mean EIRP density.

Techniques for adaptive power control and antenna requirements as well as equivalent techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

The radio astronomical observations of the Onsala Space Observatory must not be adversely affected.

Section 229 24.05 - 27.00 GHz: Radio transmitters for level measurement in closed vessels or spaces.[135]

Radiation outside the vessel or space may not exceed -41.3 dBm/MHz.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 230 24.075–24.15 GHz: Radio transmitters for transport/traffic telematics equipment intended for terrestrial vehicle radar.[136]

Maximum power: 100 mW EIRP

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used. Dwell time limits and frequency modulation range apply as specified in harmonised standards.

Section 231 24.075–24.15 GHz: Radio transmitters for transport/traffic telematics equipment.[137]

Maximum power: 0.1 mW EIRP

Section 232 24.15–24.25 GHz: Radio transmitters for transport/traffic telematics equipment.[138]

Maximum power: 100 mW EIRP

Section 233 24.25–26.65 GHz: Radio transmitters for automotive short-range radar equipment.[139]

The exemption applies to original equipment, or replacement equipment, of a vehicle put into service or placed on the market in the Community before 1 January 2018. After that date, the band shall no longer be available for automotive short-range radar on-board equipment, except in the case of original or replacement equipment, in a vehicle registered, put into service or placed on the market in the Community before that date. The 1 January 2018 date will, however, be extended by 4 years for automotive short-range radar equipment for which an application for type approval has been submitted in accordance with Article 6.6 of Directive 2007/46/EC of the European Parliament and of the Council and granted before 1 January 2018.

Maximum mean power density is -41.3 dBm/MHz EIRP with an upper limit of 0 dBm/50 MHz EIRP.

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[133] See note 10.
[134] See note 10.
[135] See note 10.
[136] See note 10.
[137] See note 10.
[138] See note 10.
[139] See note 132.

The exemption does not apply within a 12 km radius of the Onsala Radio Astronomical Observatory (57°23’45’’ N 11°55’35’’ E). For vehicles that have been brought into operation in the EU after 30 June 2007, the radio transmitter shall automatically be deactivated within a radius of 12 km from Onsala Radio Astronomical Observatory.

The radio transmitter shall only be in operation when the vehicle is in use.

Section 234 29.5–30.0 GHz: Radio transmitters for satellite communications.

Maximum power: 60 dBW EIRP.

The following power restrictions apply in the vicinity of aerodromes.

Maximum power EIRP (dBW)	Shortest distance from the airport area
< 34	0
34–50	500
50–55.3	1,800
55.3–57	2,300
57–60	3,500

Satellite terminals shall be included in the notified satellite network with which communication occurs.

Section 235 47.0–47.2 GHz: Radio transmitters for amateur radio communication.

Maximum power applied to the antenna system: 200 W PEP

The third to sixth paragraphs of Section 27 shall also apply.

Section 236 57 - 64 GHz: Radio transmitters for unspecified areas of application.[140]

Maximum radiated power: 100 mW EIRP

Maximum transmit power: 10 dBm

~~Maximum EIRP power spectral density: 13 dBm/MHz.~~

Section 237 57 - 64 GHz: Radio transmitters for level measurement in closed vessels or spaces.[141]

Radiation outside the vessel or space may not exceed -41.3 dBm/MHz.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 238 57 - 64 GHz: Radio transmitters for level measurement.[142]

Maximum power: 35 dBm/50 MHz peak EIRP density and -2 dBm/MHz mean EIRP density.

Techniques for automatic power control and antenna requirements as well as equivalent techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

The radio astronomical observations of the Onsala Space Observatory must not be adversely affected.

Section 239 57–66 GHz: Fixed radio transmitter.

Maximum power: 25 dBW EIRP

Antenna gain shall be at least 30 dBi in the 63–64 GHz frequency range.

Section 240 57 - 71 GHz: Radio transmitters for data transfer.[143]

Maximum power: 40 dBm EIRP

Maximum power density: 23 dBm/MHz EIRP.

The exemption does not apply to fixed installations outdoors.

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 241 57 - 71 GHz: Radio transmitters for data transfer.[144]

Maximum power: 40 dBm EIRP

Maximum power density: 23 dBm/MHz EIRP and a maximum transmit power of 27 dBm at the antenna port(s).

Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

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[140] See note 10.
[141] See note 10.
[142] See note 10.
[143] See note 10.
[144] See note 10.

Section 242 57 - 71 GHz: Radio transmitters for data transfer.[145]
Maximum power: 55 dBm EIRP
Maximum power density: 38 dBm/MHz EIRP
Transmitting antenna amplification: ≥ 30 dBi
The exemption applies only to fixed outdoor applications.
Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 243 61.0–61.5 GHz: Radio transmitters for unspecified areas of application.[146]
Maximum power: 100 mW EIRP

Section 244 63.72–65.88 GHz: Radio transmitters for vehicle-to-vehicle, vehicle-to-infrastructure and infrastructure-to-vehicle communication systems.
Maximum power: 40 dBm EIRP

Section 245 69.8–79.9 GHz: Radio transmitters for security scanners used indoors. Maximum output power 7 dBm EIRP

Section 246 76–77 GHz: Terrestrial synthetic aperture radar radio transmitters, HD-GBSAR.
Maximum power: 48 dBm EIRP
Maximum power density: 18 dBm/MHz EIRP
In the adjacent frequency bands 71–76 GHz and 81–86 GHz, the power density shall not exceed -22 dBm/10MHz.
Transmission shall not take place within 50 m (free visibility) of road traffic radars in the frequency range of 76–77 GHz.
The equipment shall not cause interference with radio astronomy use in the 77–76 GHz frequency range in the area around the Onsala Observatory.[147]
The equipment shall have a function that interrupts transmission if the equipment detects a signal from a vehicle radar within the frequency range of 76–77 GHz.[148]

Section 247 76,5–80,5 GHz: Radio transmitters for security scanners used indoors.
Maximum peak power 19 dBm EIRP
The out-of-band power shall be at least 23 dB lower than the maximum permissible peak power.

Section 248 75 - 85 GHz: Radio transmitters for level measurement in closed vessels or spaces.[149]
Radiation outside the vessel or space may not exceed -41.3 dBm/MHz.
Techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.

Section 249 75 - 85 GHz: Radio transmitters for level measurement.[150]
Maximum power: 34 dBm/50 MHz peak EIRP density and -3 dBm/MHz mean EIRP density.
Techniques for automatic power control and antenna requirements as well as equivalent techniques to access spectrum and mitigate interference that provide at least equivalent performance to the techniques described in the harmonised standards adopted under Directive 2014/53/EU shall be used.
The radio astronomical observations of the Onsala Space Observatory must not be adversely affected.

Section 250 75.5–81.0 GHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
The third to sixth paragraphs of Section 27 shall also apply.

Section 251 76–77 GHz: Radar transmitters for radar functions in vehicles or road traffic installations.
Maximum average power: 100 W EIRP
Maximum peak power: 316 W EIRP

Section 252 76–77 GHz: Radio transmitters for ground-based on-board and infrastructure systems.[151]
Maximum average power: 55 dBm peak EIRP density and 50 dBm mean EIRP density as well as 23.5 dBm mean EIRP density for pulse radar.

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[145] See note 10.
[146] See note 10.
[147] See ECC DEC (21) 02 Annex 1.
[148] See note 147.
[149] See note 10.
[150] See note 10.
[151] See note 10.

Section 253 76–77 GHz: Radio transmitters for obstacle detection systems for rotorcraft.[152]
Maximum power: 30 dBm peak EIRP density and 3 dBm/MHz mean power spectral density.
Transmission cycle: ≤ 56 % /s.
The following restrictions apply around the Onsala Radio Astronomical Observatory.

Distance from Onsala	**Helicopter altitude[153]**	**Remarks**	
0–10 km	-	The radar may not be used within this area	
10–25 km	< 50 m AGL		
25–35 km	< 100 m AGL		
35–55 km	< 300 m AGL		
> 55 km	No restrictions		

Section 254 77–81 GHz: Vehicle-mounted radio transmitters for radar functions.[154]
Maximum mean power density is -3 dBm/MHz EIRP with an upper limit of 55 dBm EIRP.
The maximum mean power density that is generated by a radio transmitter may not exceed --9 dBm/MHz EIRP on a vehicle exterior.

Section 255 122–122.25 GHz: Radio transmitters for unspecified areas of application.[155]
Maximum power density 10 dBm EIRP/250 MHz
Maximum power density over 30° height: -48 dBm/MHz

Section 256 122.25–123.00 GHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
Otherwise, what is stated in the third to sixth paragraphs of Section 27 applies.

Section 257 122.25–123.00 GHz: Radio transmitters for unspecified areas of application.[156]
Maximum power: 100 mW EIRP

Section 258 134–141 GHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
Otherwise, what is stated in the third to sixth paragraphs of Section 27 applies.

Section 259 241–250 GHz: Radio transmitters for amateur radio communication.
Maximum power applied to the antenna system: 200 W PEP
Otherwise, what is stated in the third to sixth paragraphs of Section 27 applies.

Section 260 244–246 GHz: Radio transmitters for unspecified areas of application.
Maximum power: 100 mW EIRP

[152] See note 10.
[153] The altitude is specified as meters above ground level (AGL). However, if the helicopter is out over open sea, it instead means metres above mean sea level (MSL).
[154] See Commission Decision 2004/545/EC of 8 July 2004 on the harmonisation of radio spectrum in the 79 GHz range for the use of automotive short-range radar equipment in the Community.
[155] See note 10.
[156] See note 10.

These regulations shall enter into force on 15 januari 2025. These regulations repeal Regulations of the Swedish Post and Telecom Agency (PTSFS 2022:19) on licence obligation exemptions for the use of certain radio transmitters.

On behalf of the Swedish Post and Telecom Authority

DAN SJÖBLOM

Karolina Asp

List of provisions regarding licence obligation exemptions, grouped by areas of application

Application Frequency band Provision

Amateur radio communications

	135.7	–	137.8	kHz	Chapter 3, Section 27
	472	–	479	kHz	Chapter 3, Section 35
	1,810	–	1,850	kHz	Chapter 3, Section 38
	1,850	–	1,900	kHz	Chapter 3, Section 39
	1,900	–	1,950	kHz	Chapter 3, Section 39
	1,950	–	2,000	kHz	Chapter 3, Section 40
	3.5	–	3.8	MHz	Chapter 3, Section 43
	5.3515	–	5.3665	MHz	Chapter 3, Section 46
	7	–	7.2	MHz	Chapter 3, Section 48
	10.10	–	10.15	MHz	Chapter 3, Section 52
	14	–	14.35	MHz	Chapter 3, Section 58
	18.068	–	18.168	MHz	Chapter 3, Section 60
	21	–	21.45	MHz	Chapter 3, Section 61
	24.89	–	24.99	MHz	Chapter 3, Section 63
	28	–	29.7	MHz	Chapter 3, Section 84
	50	–	52	MHz	Chapter 3, Section 97
	144	–	146	MHz	Chapter 3, Section 102
	432	–	438	MHz	Chapter 3, Section 122
	1,240	–	1,300	MHz	Chapter 3, Section 154
	2,400	–	2,450	MHz	Chapter 3, Section 185
	5.65	–	5.85	GHz	Chapter 3, Section 203
	10	–	10.5	GHz	Chapter 3, Section 213
	24.00	–	24.25	GHz	Chapter 3, Section 208
	47.0	–	47.2	GHz	Chapter 3, Section 235
	75.5	–	81.0	GHz	Chapter 3, Section 250
	122.25	–	123.00	GHz	Chapter 3, Section 256
	134	–	141	GHz	Chapter 3, Section 258
	241	–	250	GHz	Chapter 3, Section 259

Application Frequency band Provision

Entry-level certificate

Amateur radio communications

	7	–	7.2	MHz	Chapter 3, Section 49
	14	–	14.35	MHz	Chapter 3, Section 59
	21	–	21.45	MHz	Chapter 3, Section 62
	28	–	29.7	MHz	Chapter 3, Section 85
	50	–	52	MHz	Chapter 3, Section 97
	144	–	146	MHz	Chapter 3, Section 103

Data networks

	863	–	868	MHz	Chapter 3, Section 136
	865	–	868	MHz	Chapter 3, Section 140

Data transmission

	2,400	–	2,483.5	MHz	Chapter 3, Section 188
	5.15	–	5.25	GHz	Chapter 3, Section 199
	5.25		5.35	GHz	Chapter 3, Section 200
	5.470	–	5.725	GHz	Chapter 3, Section 202
	5.945	–	6.425	GHz	Chapter 3, Section 208
	5.945	–	6.425	GHz	Chapter 3, Section 209
	17.1	–	17.3	GHz	Chapter 3, Section 221
	57	–	71	GHz	Chapter 3, Section 240
	57	–	71	GHz	Chapter 3, Section 241
	57	–	71	GHz	Chapter 3, Section 242

DECT System

	1,880	–	1,900	MHz	Chapter 3, Section 177

Fixed radio transmitters

	57	–	66	GHz	Chapter 3, Section 239

Vehicle-mounted transmitters for radar functions

	21.65	–	24.25	GHz	Chapter 3, Section 223
	24.25	–	26.65	GHz	Chapter 3, Section 233
	76	–	77	GHz	Chapter 3, Section 251
	77	–	81	GHz	Chapter 3, Section 255

GSM, UMTS, LTE and WiMAX communications

For vessels GSM	880	–	915	MHz	Chapter 3, Section 152
For vessels GSM	925	–	960	MHz	Chapter 3, Section 153
For aircraft GSM, LTE and 5G/NR non-AAS	1,710	–	1,785	MHz	Chapter 3, Section 160
For vessels GSM	1,710	–	1,785	MHz	Chapter 3, Section 161
For vessels LTE	1,710	–	1,785	MHz	Chapter 3, Section 162
For vessels 5G/NR non-AAS	1,710	–	1,785	MHz	Chapter 3, Section 163
Indoor UMTS	1,780.0	–	1,785.0	MHz	Chapter 3, Section 164
Indoor LTE	1,780.1	–	1,785.0	MHz	Chapter 3, Section 165
Indoor WiMAX	1,780.1	–	1,785.0	MHz	Chapter 3, Section 166
Indoor GSM	1,780.3	–	1,784.9	MHz	Chapter 3, Section 167
For aircraft GSM, LTE and 5G/NR non-AAS	1,805	–	1,880	MHz	Chapter 3, Section 169
For vessels GSM	1,805	–	1,880	MHz	Chapter 3, Section 170
For vessels LTE	1,805	–	1,880	MHz	Chapter 3, Section 171
For vessels 5G/NR non-AAS	1,805		1,880	MHz	Chapter 3, Section 171
Indoor UMTS	1,875.0	–	1,880.0	MHz	Chapter 3, Section 172
Indoor LTE	1,875.0	–	1,880.0	MHz	Chapter 3, Section 174
Indoor WiMAX	1,875.1	–	1,880.0	MHz	Chapter 3, Section 175
Indoor GSM	1,875.3	–	1,879.9	MHz	Chapter 3, Section 176
For aircraft UMTS	1,920	–	1,980	MHz	Chapter 3, Section 178
For vessels UMTS	1,920	–	1,980	MHz	Chapter 3, Section 179
For aircraft UMTS	2,110	–	2,170	MHz	Chapter 3, Section 183
For vessels UMTS	2,110	–	2,170	MHz	Chapter 3, Section 184
For vessels LTE	2,500	–	2,570	MHz	Chapter 3, Section 192
For vessels 5G/NR non-AAS	2,500	–	2,570	MHz	Chapter 3, Section 193
For vessels LTE	2,620	–	2,690	MHz	Chapter 3, Section 195
For vessels 5G/NR non-AAS	2,620	–	2,690	MHz	Chapter 3, Section 196

Inductive transmission

	9.0	–	59.750	kHz	Chapter 3, Section 13
	59.750	–	60.250	kHz	Chapter 3, Section 16
	60.250	–	74.750	kHz	Chapter 3, Section 17
	74.750	–	75.250	kHz	Chapter 3, Section 18
	75.250	–	75.750	kHz	Chapter 3, Section 19
	75.750	–	77.250	kHz	Chapter 3, Section 20
	77.250	–	77.750	kHz	Chapter 3, Section 21
	77.750	–	90.0	kHz	Chapter 3, Section 22
	90.0	–	119.0	kHz	Chapter 3, Section 23
	119.0	–	128.6	kHz	Chapter 3, Section 24
	128.6	–	129.6	kHz	Chapter 3, Section 25
	129.6	–	135.0	kHz	Chapter 3, Section 26
	135.0	–	140.0	kHz	Chapter 3, Section 27
	140.0	–	148.5	kHz	Chapter 3, Section 28
	148.5	–	5,000	kHz	Chapter 3, Section 30
	3.155	–	3.4000	MHz	Chapter 3, Section 46
	5	–	30	MHz	Chapter 3, Section 44
	6.765	–	6.795	MHz	Chapter 3, Section 47
	7.4	–	8.8	MHz	Chapter 3, Section 51
	10.2	–	11.0	MHz	Chapter 3, Section 53
	13.553	–	13.567	MHz	Chapter 3, Section 56

Intelligent road transport systems

For non-safety related applications	5.855	–	5.875	GHz	Chapter 3, Section 206
For safety-related applications	5.875	–	5.925	GHz	Chapter 3, Section 207

Assistive listening devices

	169.4000	–	169.475	MHz	Chapter 3, Section 112
	169.4875	–	169.5875	MHz	Chapter 3, Section 114
	173.965	–	216	MHz	Chapter 3, Section 117
	821.5		826	MHz	Chapter 3, Section 129
	1,785		1804.8	MHz	Chapter 3, Section 168

Land mobile radio

	30.925	–	31.375	MHz	Chapter 3, Section 90
	69.0	–	69.2	MHz	Chapter 3, Section 99
For mobile radio transmitters	69.600	–	69.725	MHz	Chapter 3, Section 100
For agriculture, forestry and hunting	155.3875	–	155.5375	MHz	Chapter 3, Section 108
For portable radio transmitters	155.9875	–	156.0125	MHz	Chapter 3, Section 109
	444.5875	–	444.9875	MHz	Chapter 3, Section 126
For PMR446 equipment	446.0	–	446.2	MHz	Chapter 3, Section 127

Alarm transmission

	26.85	–	26.86	MHz	Chapter 3, Section 65
	429.4375	–	429.4625	MHz	Chapter 3, Section 120
	868.6	–	868.7	MHz	Chapter 3, Section 142
	869.25	–	869.40	MHz	Chapter 3, Section 145
	869.65	–	869.70	MHz	Chapter 3, Section 147

Locating people and valuable objects

	456.9	–	457.1	kHz	Chapter 3, Section 34

Sound transmission

	41.0	–	43.6	MHz	Chapter 3, Section 96
	87.5	–	108.0	MHz	Chapter 3, Section 101
	823	–	832	MHz	Chapter 3, Section 130
For wireless audio PMSE equipment	823	–	832	MHz	Chapter 3, Section 131
	863	–	865	MHz	Chapter 3, Section 134

Maritime and aviation communications

For vessels					Chapter 3, Section 3
For aircraft					Chapter 3, Section 4

Medical implants

	9	–	315	kHz	Chapter 3, Section 15
	315	–	600	kHz	Chapter 3, Section 31
	13.553	–	13.567	MHz	Chapter 3, Section 54
	30	–	37.5	MHz	Chapter 3, Section 86
	401	–	406	MHz	Chapter 3, Section 118
	430	–	440	MHz	Chapter 3, Section 121
	2,483.5	–	2,500.0	MHz	Chapter 3, Section 191

MBAN systems

	2,483.5	–	2,500.0	MHz	Chapter 3, Section 190

Navigation radar on vessels

	2.9	–	3.1	GHz	Chapter 3, Section 197
	5.47	–	5.65	GHz	Chapter 3, Section 201
	9.225	–	9.500	GHz	Chapter 3, Section 212

Level measuring

Closed receptacles or spaces	4.5	–	7	GHz	Chapter 3, Section 198
	6.0	–	8.5	GHz	Chapter 3, Section 210
Closed receptacles or spaces	8.5	–	10.6	GHz	Chapter 3, Section 211
	24.05	–	26.5	GHz	Chapter 3, Section 228
Closed receptacles or spaces	24.05	–	27.00	GHz	Chapter 3, Section 229
Closed receptacles or spaces	57	–	64	GHz	Chapter 3, Section 237
	57	–	64	GHz	Chapter 3, Section 238

Closed receptacles or spaces	75	–	85	GHz	Chapter 3, Section 248
	75	–	85	GHz	Chapter 3, Section 249

Emergency alarms – vessels and aircraft

	406.0	–	406.1	MHz	Chapter 3, Section 119

Unspecified short-range devices

	442.2	–	450	kHz	Chapter 3, Section 33

Unspecified areas of application

	13.553	–	13.567	MHz	Chapter 3, Section 55
	26.957	–	27.283	MHz	Chapter 3, Section 67
	26.99	–	27.00	MHz	Chapter 3, Section 69
	27.04	–	27.05	MHz	Chapter 3, Section 72
	27.09	–	27.10	MHz	Chapter 3, Section 75
	27.14	–	27.15	MHz	Chapter 3, Section 78
	27.19	–	27.20	MHz	Chapter 3, Section 81
	40.66	–	40.70	MHz	Chapter 3, Section 94
	169.375	–	169.400	MHz	Chapter 3, Section 110
	169.400	–	169.475	MHz	Chapter 3, Section 111
	169.4000	–	169.4875	MHz	Chapter 3, Section 113
	169.4875	–	169.5875	MHz	Chapter 3, Section 115
	169.5875	–	169.8125	MHz	Chapter 3, Section 116
	433.05	–	434.79	MHz	Chapter 3, Section 123
	862	–	863	MHz	Chapter 3, Section 133
	863	–	865	MHz	Chapter 3, Section 135
	865	–	868	MHz	Chapter 3, Section 137
	868.0	–	868.6	MHz	Chapter 3, Section 141
	868.7	–	869.2	MHz	Chapter 3, Section 143
	869.40	–	869.65	MHz	Chapter 3, Section 146
	869.7	–	870.0	MHz	Chapter 3, Section 148
	869.7	–	870.0	MHz	Chapter 3, Section 149
	2,400	–	2,483.5	MHz	Chapter 3, Section 186
	5.725	–	5.875	GHz	Chapter 3, Section 204
	24	–	24.25	GHz	Chapter 3, Section 224
	57	–	64	GHz	Chapter 3, Section 236
	61.0	–	61.5	GHz	Chapter 3, Section 243
	122	–	122.25	GHz	Chapter 3, Section 256
	122.25	–	123.00	GHz	Chapter 3, Section 258
	244	–	246	GHz	Chapter 3, Section 261

Commercial Broadcast (CB) radio

	26.96	–	26.99	MHz	Chapter 3, Section 68
	27	–	27.04	MHz	Chapter 3, Section 71
	27.05	–	27.09	MHz	Chapter 3, Section 74
	27.10	–	27.14	MHz	Chapter 3, Section 77
	27.15	–	27.19	MHz	Chapter 3, Section 80
	27.20	–	27.41	MHz	Chapter 3, Section 83

Radar in vehicles and road traffic installations

	63.72	–	65.88	GHz	Chapter 3, Section 244
	76	–	77	GHz	Chapter 3, Section 251
	76	–	77	GHz	Chapter 3, Section 252

Radio detection

Closed NMR applications only	9	–	148	kHz	Chapter 3, Section 14
Closed NMR applications only	148	–	5000	kHz	Chapter 3, Section 29
Closed NMR applications only	5.0	–	30	MHz	Chapter 3, Section 45
Closed NMR applications only	30	–	130	MHz	Chapter 3, Section 87
	2,400	–	2,483.5	MHz	Chapter 3, Section 187
	10.25	–	10.28	GHz	Chapter 3, Section 214
	10.35	–	10.38	GHz	Chapter 3, Section 215
	10.51	–	10.58	GHz	Chapter 3, Section 216
	13.4	–	14.0	GHz	Chapter 3, Section 217
	17.1	–	17.3	GHz	Chapter 3, Section 222
	24.00	–	24.25	GHz	Chapter 3, Section 225
	69.8	–	79.9	GHz	Chapter 3, Section 245
	76	–	77	GHz	Chapter 3, Section 246
	76.5	–	80.5	GHz	Chapter 3, Section 247

direction finding and position transfer

For humans and animals	151.52	–	151.53	MHz	Chapter 3, Section 105
For humans and animals	151.545	–	151.555	MHz	Chapter 3, § 106
For animals	152.0075	–	152.2675	MHz	Chapter 3, Section 107

Radio control and telemetry

	26.82	–	26.83	MHz	Chapter 3, Section 64
	26.86	–	26.94	MHz	Chapter 3, Section 66
For radio control of traffic lights	30.015	–	30.025	MHz	Chapter 3, Section 88
	30.265	–	30.355	MHz	Chapter 3, Section 89
For radio control of model airplanes	34.995	–	35.275	MHz	Chapter 3, Section 91
	40.66	–	40.80	MHz	Chapter 3, Section 95
	439.6875	–	439.9875	MHz	Chapter 3, Section 124

RFID:

	400	–	600	kHz	Chapter 3, Section 32
	13.553	–	13.567	MHz	Chapter 3, Section 57
	865	–	868	MHz	Chapter 3, Section 138
	865	–	868	MHz	Chapter 3, Section 139
	2,446	–	2,454	MHz	Chapter 3, Section 189

Rescue equipment

					Chapter 3, Section 5

Satellite terminals

	148.00	–	150.05	MHz	Chapter 3, Section 104
	1,610.0	–	1,626.5	MHz	Chapter 3, Section 155
	1,613.8	–	1,626.5	MHz	Chapter 3, Section 156
	1,621.35	–	1,626.50	MHz	Chapter 3, Section 157
	1,626.5	–	1,645.5	MHz	Chapter 3, Section 158
	1,646.5	–	1,660.5	MHz	Chapter 3, Section 159
Non-airborne	1,980	–	2,010	MHz	Chapter 3, Section 181
Airborne	1,980	–	2,010	MHz	Chapter 3, Section 182
On land	14.0	–	14.5	GHz	Chapter 3, Section 218
For vessels	14.0	–	14.5	GHz	Chapter 3, Section 219
For aircraft	14.0	–	14.5	GHz	Chapter 3, Section 220
	29.5	–	30.0	GHz	Chapter 3, Section 234

Telemetry and remote control within electricity, gas, heating, cooling, and water distribution

	39.525	–	39.550	MHz	Chapter 3, Section 92
	40.450	–	40.575	MHz	Chapter 3, Section 93
	443.9875	–	444.4125	MHz	Chapter 3, Section 125
	870.5375	–	870.6625	MHz	Chapter 3, Section 150

Terminals in terrestrial electronic communications networks

					Chapter 3, Section 2
	713	–	733	MHz	Chapter 3, Section 128
	832	–	862	MHz	Chapter 3, Section 132
	880	–	915	MHz	Chapter 3, Section 152
	1,920	–	1,980	MHz	Chapter 3, Section 180
	2,500	–	2,620	MHz	Chapter 3, Section 194

Transport and Traffic Telematics (TTT) equipment

For equipment permanently installed on a railway	516	–	8,516	kHz	Chapter 3, Section 36
For Eurobalise	984	–	7,484	kHz	Chapter 3, Section 37
For Euroloop	7.3	–	23.0	MHz	Chapter 3, Section 50
Road and vehicle telemetry	5.795	–	5.815	GHz	Chapter 3, Section 205
	24.05	–	24.075	GHz	Chapter 3, Section 227
Ground-based vehicle radar	24.075	–	24.15	GHz	Chapter 3, Section 230
	24.075	–	24.15	GHz	Chapter 3, Section 231
	24.15	–	24.25	GHz	Chapter 3, Section 232

Medical alert devices

	869.20	–	869.25	MHz	Chapter 3, Section 144

Wireless babysitting systems

	26.99	–	27	MHz	Chapter 3, Section 70
	27.04	–	27.05	MHz	Chapter 3, Section 73
	27.09	–	27.10	MHz	Chapter 3, Section 76
	27.14	–	27.15	MHz	Chapter 3, Section 79
	27.19	–	27.20	MHz	Chapter 3, Section 82

UWB

Generic use					Chapter 3, Section 6
For tracking and tracing					Chapter 3, Section 7
For motor vehicles and railway vehicles					Chapter 3, Section 8
For aircraft					Chapter 3, Section 9
For material recognition contact-based					Chapter 3, Section 10
For material recognition not contact-based					Chapter 3, Section 11