Communications Regulatory Authority
State of Qatar

هيئة تنظيم الاتصالات
دولة قطر

Public Consultation

Class License for Short Range Devices (SRD)

Version No. (4)

Deadline to submit response: 11 March 2021

CRA-SM-CON-001-21

Communications Regulatory Authority
State of Qatar

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Document History

Version	Date of Issue
Version 1 (Superseded)	May 30, 2010
Version 2 (Superseded)	September 21, 2014
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Dated DD of MM 2021

For the Communications Regulatory Authority (CRA)
Signed by

Mohammed Ali Al-Mannai
President of the Communications Regulatory Authority

Communications Regulatory Authority
State of Qatar
هيئة تنظيم الاتصالات
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Part I - Instructions for Responses

Introduction

The Communications Regulatory Authority "**CRA**" is the responsible authority for establishing an effective approval regime for telecommunications equipment in the State of Qatar in accordance with Decree Law No. (34) of 2006 on the promulgation of the Telecommunications Law as amended by the Law No. (17) of 2017, the Executive By-Law for the Telecommunications Law.

Objective of the Public Consultation

The purpose of this public consultation is to provide an opportunity for interested parties/stakeholders to present their views and comments on this document "Class License for Short Range Devices – Version No. (4)". CRA presents in this document the updates to the annexures to cope with the rapid developments in the telecom standardizations. This new version of the document will be updated and published after the approval from competent authorities and reflect consideration of submissions from interested parties/stakeholders.

Consultation Procedures

All concerned and interested parties are invited to provide their views and comments on the contents in this document. General views and comments on the overall Consultation Document "CD" are also welcome. The CRA requests that, to the extent possible, submissions are supported by relevant evidence. Responses should include comments with regards to any proposed approach outlined in this CD by the CRA.

If a respondent is in disagreement with any proposed approach by the CRA, the respondent is requested to provide, in its response:

a) The reasons for disagreement.

b) Its alternative proposal in a clear and concise manner.

c) All assumptions, relevant justifications and references of all data sources behind its alternative proposal.

Any submissions received in response to this CD will be carefully considered by the CRA. Nothing included in this CD is final or binding. However, the CRA is under no obligation to adopt or implement any comments or proposals submitted.

Comments should be submitted by email to (type.approval@cra.gov.qa) before the date stated on the front cover. The subject reference in the email should be stated as "Consultation on Class License for Short Range Devices – Version No. (4)". It is not necessary to provide a hard copy in addition to the soft copy sent by email. The deadline for all respondents to submit their comment is indicated on the cover page of this CD.

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Publication of Comments

In the interests of transparency and public accountability, the CRA may publish the submissions to this consultation on its website at (www.cra.gov.qa). All submissions will be processed and treated as non-confidential unless confidential treatment of all or parts of a response has been requested.

In order to claim confidentiality for information in submissions that stakeholders regard as business secrets or otherwise confidential, stakeholders must provide a non-confidential version of such documents in which the information considered confidential is blackened out. This "blackened out" portion/s should be contained in square brackets. From the non-confidential version, it has to be clear where information has been deleted. To understand where redactions have been made, stakeholders must add indications such as "business secret", "confidential" or "confidential information".

A comprehensive justification must be provided for each and every part of the submission required to be treated as confidential. Furthermore, confidentiality cannot be claimed for the entire or whole sections of the document, as it is normally possible to protect confidential information with limited redactions.

While the CRA will endeavor to respect the wishes of respondents, in all instances the decision to publish responses in full, in part or not at all remains at the sole discretion of the CRA. By making submissions to the CRA in this consultation, respondents will be deemed to have waived all copyright that may apply to intellectual property contained therein.

Communications Regulatory Authority
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Part II – Class License for Short Range Devices
Version No. (4)

1. Introduction

The Communications Regulatory Authority "CRA" is the responsible authority for establishing an effective approval regime for telecommunications equipment. As such, CRA is responsible for determining the technical standards and specifications for the telecommunications equipment or their types and the approval requirements and procedures that must be applied to such standards and specifications in accordance with the Decree Law No. (34) of 2006 on the promulgation of the Telecommunications Law as amended by the Law No. (17) of 2017, the Executive By-Law for the Telecommunications Law and other related laws.

CRA has already issued the Type Approval Policy for Radio and Telecom Terminal Equipment (RTTE) as well as the Guidelines for RTTE and published it on its website.

2. Relevant Legal Provisions

2.1 Article (10) of the Telecommunications Law No. (34) of 2006 states that CRA shall define the conditions under which Individual and Class licenses shall be issued.

2.2 Article (15) of the Telecommunications Law No. (34) of 2006 states that no person shall operate any radio-communications equipment or make any use of radio frequencies, without a Radio Spectrum License or a Radio Frequency Authorization from the Communications Regulatory Authority " CRA ".

2.3 Article (9), (10), (11), 12) and (14) of the Executive Telecommunications By-Law No. (1) of 2009, establishes the framework to be followed by CRA when defining the terms and conditions of a Class License.

2.4 In accordance with Article (31) of the Executive Telecommunications By-Law No. (1) of 2009, CRA shall establish the terms and conditions of all Licenses and shall monitor compliance by Licensees with the terms and conditions of their Licenses, and CRA may take any measures and procedures in this regard. CRA may establish the criteria through Radio Spectrum Regulations in order to determine what radio spectrum should be available for common use and this may be awarded by means of a Class License.

2.5 Under the Emiri Decree no. 42 of 2014, and specifically Article (4.4) and Article (14), CRA is mandated to manage and regulate spectrum usage.

3. Grant of License

3.1 CRA hereby grants this Class License pursuant to the above-mentioned articles of the Telecommunications Law. This Class License enables any person to possess, use, operate, install and use Short Range Device(s) (hereinafter referred to as "SRD") without that person having to apply for this Class license. Such person is hereinafter referred to as the "Licensee".

3.2 The Licensee is hereby authorized to import and operate SRDs within the State of Qatar and use the frequency(s) or the frequency band(s) assigned in Annexure (2) of this Class License on a non-exclusive basis provided that the Licensee operates in the authorized frequency bands and transmits the corresponding output power levels as stated in Annexure (2) of this Class and provided that type approval is obtained from CRA in accordance with section (6) of this License.

3.3 The Licensee shall, in addition to complying with the terms and conditions of this Class License and its annexures, comply with the provisions of the Telecommunications Law, relevant legislation and any regulations decisions, orders, rules, instructions and notices issued by CRA (hereinafter, collectively referred to as the "Applicable Regulatory Framework").

3.4 This Class License provides the minimum technical and regulatory requirements and operating specifications of SRD across different types of applications. Annexure (2) contains the list of various types of applications for SRDs, the applicable frequencies, Field Strength / RF Output Power, test reference and other related information which the Licensee must comply with in order to import and/or use SRDs.

4. Definitions

The words and expressions in this License shall have the meanings ascribed to them in the Telecommunications Law, the Applicable Regulatory Framework and this Class License, including the definitions set out in Annexure (1).

5. Operation of the Short Range Devices

5.1 The Licensee is hereby authorized to use and operate SRDs provided that the Licensee operates such devices within the authorized frequency bands or frequencies within the corresponding output power levels stipulated in Annexure (2) of this Class License.

5.2 The use of any SRDs above the maximum power is not allowed. However, if the Licensee wishes to use any of the SRDs above the permitted maximum limit, the Licensee must follow a separate license application procedure and must obtain the required spectrum license from CRA pursuant to

CRA's regulations as published on its official website at this following link:

http://www.cra.gov.qa/en/regulatory/spectrum-management/spectrum-licensing/guidelines

5.3 Use of SRD as stipulated in Annexure (2) is intended to operate in unprotected and shared frequency bands. The Licensee shall ensure that its operation shall not cause interference with other authorized radio-communications services and must tolerate any interference caused by other radio-communication services, electrical or electronic equipment.

5.4 The SRD shall not be constructed with any external or readily accessible control that permits the adjustment of its operation in a manner inconsistent with this Class License, in particular Annexure (2) of it.

5.5 CRA may amend or update Annexure (2) of this Class License in order to respond to any new developments in the market or technology advancements. The Licensee shall comply with any new amendments introduced to Annexure (2) as published on CRA's official website from time to time at this following link:

http://www.cra.gov.qa/en/about-us

6. Radio Spectrum

6.1 The Licensee is hereby authorized to use the specified radio frequencies set out in Annexure (2) subject to the terms and conditions of this Class License, its annexures and the Applicable Regulatory Framework. This Class License does not grant the Licensee any ownership interest or property rights in the radio frequencies.

6.2 CRA may amend or cancel spectrum allocations or assignments, in accordance with the Applicable Regulatory Framework or the National Frequency Allocation Plan of Qatar (NFAP).

6.3 In accordance with Article (17) of the Telecommunications Law, the Licensee shall not misuse the licensed radio spectrum nor use it for an unauthorized purpose.

7. Type Approval

7.1 The SRD(s) prior to being imported for marketing or sold in the State of Qatar shall be Type Approved by CRA in accordance with the "Type Approval Policy for Radio Equipment and Telecommunications Terminal Equipment" and the "Type Approval Guidelines for Radio Equipment and Telecommunications Terminal Equipment" published on CRA's official website.

7.2 The Licensee shall not manufacture or import for the purposes of marketing, sell or distribute SRDs that are not type approved by CRA.

7.3 In accordance with the preceding paragraphs (6.1) and (6.2), the Licensee shall ensure that the SRDs are type approved in accordance with the list of approved telecoms equipment by CRA published on CRA's official website.

7.4 If the SRD in question is not stated in the list of approved equipment by CRA, then that person must apply, request and obtain type approval certificate from CRA.

7.5 Companies or persons wishing to sell or import SRDs for marketing purposes or commercially deal with the SRDs must register with CRA and obtain from it an "Application to obtain Import Authorization for Radio and Telecom Terminals RTTE" and must renew their registration annually in accordance with the procedures published on CRA's official website at this link:

http://www.cra.gov.qa/en/regulatory/import-equipment/import-authorization-license

After obtaining the type approval along with the Import Authorization from CRA, the Licensee may import and/or sell the devices in the State of Qatar.

7.6 The SRD(s) may be imported or used by any person without seeking type approval if is to be used for private use only and provided that it is in accordance with the standards adopted by CRA.

8. Safety Measures and Standards

The Licensee shall implement any measures prescribed by the Applicable Regulatory Framework and other safety measures regarding the installation, operation and usage of all SRDs as stipulated in the above-mentioned "Type Approval Policy for Radio Equipment and Telecommunications Terminal Equipment" and the "Type Approval Guidelines for Radio Equipment and Telecommunications Terminal Equipment".

9. License Term

This License shall remain in force provided that the Licensee complies with the terms and conditions of this Class License and the Applicable Regulatory Framework.

10. License Fees

10.1 There are no License fee associated with this Class License.

10.2 The Licensee shall remain responsible for all costs, expenses or any other financial commitments arising out of this Class License and/or use of the SRDs in accordance with the Applicable Regulatory Framework.

11. Other Compliance Obligations of the Licensee

11.1 The Licensee shall, at all times, comply with the terms and conditions stated herein and the Applicable Regulatory Framework, including any amendments thereto that may be adopted by CRA from time to time.

11.2 The Class Licensee shall comply with any requirements stipulated under the laws of the State of Qatar including the regulations and decisions issued by the relevant authorities in accordance with the applicable laws.

11.3 The Licensee shall obtain any other necessary approvals as may be required by other competent authorities in the State of Qatar in accordance with the applicable laws of the State of Qatar.

12. Breach of License

12.1 The Licensee shall be subject to penalties as provided for in the Applicable Regulatory Framework if the Licensee fails to comply with the terms and conditions set out herein. Any Failure will result in CRA taking enforcement action against the Licensee in accordance with the Applicable Regulatory Framework including initiating criminal proceedings in accordance with Articles (66), (67), (68) and (70) of the Telecommunications Law.

12.2 Without prejudice to any other enforcement powers of CRA or specific penalties set out in the Applicable Regulatory Framework, the Licensee can lose its right to own, import and operate SRDs if the Licensee commits repeated violations of this Class license terms and/or the Applicable Regulatory Framework.

13. Security Requirements

The Licensee shall comply with the requirements of the authorized agencies of the State of Qatar relating to national security and with the directions of governmental bodies in cases of public emergencies, and it shall implement the orders and instructions issued by CRA pertaining to same.

14. Access to Premises

The employees of CRA who are vested with powers of judicial seizure in accordance with Article (63) of the Telecommunications Law shall seize and prove crimes committed in violation of the rules of the Telecommunications Law.

In this respect, the Licensee shall allow them to enter and inspect, in accordance with the law, the related premises, have access to records and documents and inspect equipment and SRD(s) or any other related things and request data or clarifications as they deem necessary.

15. Request of Information

In accordance with Chapter (13) of the Executive Telecommunications By-Law, CRA may require the Licensee to provide to it information necessary for exercising its powers, and the Licensee shall provide the information to CRA on request and in the form, manner and time specified by CRA.

16. Modification and Amendment

CRA, based upon its discretion, may modify, by deletion or addition, any terms and conditions this Class License. The amendments shall be published on the official website of CRA. The Licensee is under the obligation to comply with any such amendments.

17. Assignment of License

In accordance with the provisions of the Applicable Regulatory Framework, the Licensee may not assign or otherwise transfer this Class License to another person without the prior written approval of the CRA.

18. Governing Law and Language of License

This Class License is rendered in the Arabic language. The License shall be governed by and interpreted in accordance with the laws of the State of Qatar.

ANNEXURE (1) – Definitions

The following terms and expressions shall have the meanings assigned to each of them:

Active Medical Implant Applications: Are part of a medical implant communication systems (MICS) for use with implanted medical devices, like pacemakers, implantable defibrillators, nerve stimulators, and other types of implanted devices. The MICS uses transceiver modules for radiofrequency communication between an external device referred to as a programmer/controller and a medical implant placed within a human or animal body.

Adaptive Frequency Agility (AFA): Is the capability of an equipment to dynamically change the temporary operational channel within its available frequencies for proper operation.

Alarms: The use of radiocommunication for indicating an alarm condition at a distant location.

Applicable Regulatory Framework: The Telecommunications Law and its By-Law and any other rules and regulations, decisions, orders, policies, guidelines, rules, instructions or notices issued by CRA as well as this license terms and conditions and the relevant laws of the State of Qatar.

Class License: The License granted in accordance with the provisions of the Telecommunications Law for a certain class of persons and/or activities without that person having to apply for the License.

Clear Channel Assessment (CCA): Is a procedure of sensing the operating channel to determine whether it is occupied by a transmission or not.

Detect-And-Avoid (DAA): Is an interference mitigation technique designed for UWB devices to protect active radio communication services operating on the same bands.

Duty Cycle: Is defined as the ratio, expressed as a percentage, of the maximum transmitter “on” time monitored over one hour, relative to a one-hour period.

Effective Isotropic Radiated Power (e.i.r.p.): The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna (absolute or isotropic gain).

Effective Radiated Power (e.r.p.): The product of the power supplied to the antenna and the antenna and its gain relative to a half-dipole in a given direction.

Frequency Band: A portion of the radio spectrum, which starts at a particular frequency and ends at another particular frequency.

Harmful Interference: Means interference which impairs the functioning of a radio communications or which materially degrades or obstructs or repeatedly interrupts radio communication.

Inductive Applications: Inductive loop systems are communication systems based on magnetic fields generally at low RF frequencies. Inductive applications include for example car immobilizers, car access systems or car detectors, animal identification, alarm systems, item management and logistic systems, cable detection, waste management, personal identification, wireless voice links, access control, proximity sensors, anti-theft systems including RF anti-theft induction systems, data transfer to handheld devices, automatic article identification, wireless control systems and automatic road tolling.

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

Listen-before-Talk (LBT): Is a mechanism by which an equipment applies Clear Channel Assessment (CCA) before transmission.

Low Duty Cycle (LDC): Is an interference mitigation technique designed for UWB devices to protect active radio communication services operating on the same bands.

Maximum Mean e.i.r.p Spectral Density: The maximum average value of the product of the transmitted power spectral density and the gain of the omnidirectional or sectoral antenna in the direction of the system.

Maximum Transmit Power: The maximum power at the transmitter output for a single traffic channel.

Mean Power: The average power supplied to the antenna transmission line by a transmitter during an interval of time sufficiently long compared with the lowest frequency encountered in the modulation taken under normal operating conditions.

Medical Body Area Network (MBANS): Are short-range low-power wireless networks, consisting of a plurality of body-worn sensor devices and/or actuator devices and a hub device placed on/around the human body.

Model Control: Model control covers the application of radio model control equipment, which is solely for the purpose of controlling the movement of the model (toy), in the air, on land or over or under the water surface.

National Spectrum Plan: The plan established for allocation and use of radio spectrum by the concerned entities.

Non-Specific Short Range Devices: Covers all kinds of radio devices, regardless of the application or the purpose, which fulfil the technical conditions as specified for a given frequency band. Typical uses include telemetry, telecommand, alarms, data transmissions in general and other similar applications.

Person: A natural or juridical person of any type or form.

Radio Determination Applications: Are equipment that determine the position, velocity and/or other characteristics of an object, or that obtain information relating to these parameters, by means of the propagation properties of radio waves.

Radio Frequency Identification (RFID) Applications: Are equipment that carry data in suitable transponders, generally known as tags, and retrieve data, by hand- or machine-readable means, at a suitable time and place to satisfy specific application needs.

Radio Microphones: Radio microphones (also referred to as wireless microphones or cordless microphones) are small, low power (50 mW or less) unidirectional transmitters designed to be worn on the body, or hand-held, for the transmission of sound over short distances for personal use. The receivers are more tailored to specific uses and may range in size from small hand units to rack mounted modules as part of a multichannel system.

Radio Spectrum: Radio frequencies capable of being used in radio communications in accordance with the publications of the International Telecommunications Union.

Short Range Devices (SRD): The term SRD is intended to cover the radio transmitters which provide either uni-directional or bi-directional communications, which have low capability of causing interference to other radio equipment. SRDs are used with either integral, dedicated or external antennas, and all modes of modulation are permitted subject to relevant standards. Applications include, but not exhaustively, tele-command, alarms data communication, meter reading, asset tracking, aids for hearing, movement detection and alert, remote controls and inductive systems.

Telecommand: The use of radiocommunication for the transmission of signals to initiate, modify or terminate functions of equipment at a distance.

Telecommunications Executive By-Law: The Executive Telecommunications By-Law No. (1) of 2009.

Telecommunications Law: Telecommunications Law of the State of Qatar No. (34) of 2006, as amended by Law 17 of 2017.

Telemetry: The use of radiocommunication for indicating or recording data at a distance.

Transport and Traffic Telematics: Are defined as systems providing data communication between two or more road vehicles and between road vehicles and the road infrastructure for various information-based travel and transport applications, including automatic toll-collection, route and parking guidance, collision avoidance, communication from and to users as well as radar system installations.

Type Approval: Approval is the procedure by which RTTE is authorized by CRA to be imported into or to be used in Qatar and involves verification of the equipment's compliance with the applicable standards and requirements.

Wireless Audio Applications: Applications for wireless audio systems include cordless loudspeakers, cordless headphones, cordless headphones for portable use, i.e. portable compact disc players, cassette decks or radio receivers carried on a person, cordless headphones for use in a vehicle, for example for use with a radio or mobile telephone, etc., in-ear monitoring, for use in concerts or other stage productions

ANNEXURE (2) – Technical Requirements for Short Range Devices (SRD)

1. Short Range Devices (SRDs)

SHORT RANGE DEVICES					
Applicable Sub section of Framework	Typical Application Type	Authorized Frequency Bands/ Frequencies (Channel Spacing)	Maximum Strength/ RF Output Power	Harmonized Standard Reference	Remarks (Emission Type, Duty Cycle, other restrictions
Non-specific Short Range Devices	ISM	6765 - 6795 kHz	42 dBµA/m at 10m	EN 300 330	
		13.553 - 13.567 MHz	e.r.p10 mW		
		26.957 - 27.283 MHz	e.r.p 10mW	EN 300 220 EN 300 330	
		26990 - 27000 kHz	e.r.p100 mW	EN 300 220	≤ 0.1 % duty cycle
		27040 - 27050 kHz	e.r.p100 mW		≤ 0.1 % duty cycle
		27090 - 27100 kHz	e.r.p100 mW		≤ 0.1 % duty cycle
		27140 - 27150 kHz	e.r.p100 mW		≤ 0.1 % duty cycle
		27190 - 27200 kHz	e.r.p 100 mW		≤ 0.1 % duty cycle
		40.66 - 40.7 MHz	e.r.p 10mW		
	Non-specific Short Range Devices	862 - 863 MHz	e.r.p 25 mW	EN 300 220	Duty cycle ≤ 0.1% Channel spacing ≤ 25kHz
		863 - 865 MHz	e.r.p 25 mW		Duty cycle ≤ 0.1% or BT+AFA

		865 - 868 MHz	e.r.p 25 mW		Duty cycle ≤ 1% or LBT+AFA
		868 - 868.6 MHz	e.r.p 25mW		Duty cycle ≤ 1% or LBT+AFA
		868.7 - 869.2 MHz	e.r.p 25mW		Duty cycle ≤ 0.1% or BT+AFA
		869.4 - 869.65 MHz	e.r.p 500mW		Duty cycle ≤10% or LBT+AFA
		869.7 - 870 MHz	e.r.p 5mW or e.r.p 25mW		No requirement for e.r.p of 5mW; Duty cycle ≤ 1% or LBT+AFA for e.r.p of 25mW
	M2M Applications	863 - 870 MHz	e.r.p 25mW		Duty cycle ≤ 0.1% or LBT+AFA
		870 - 874.4 MHz	e.r.p 25mW		Duty Cycle ≤ 1%; Channel spacing ≤ 600 kHz
		870 - 876 MHz	e.r.p 25mW		Duty Cycle ≤ 0.1%; Channel spacing of 200 kHz
		915 - 919.4 MHz	e.r.p 25 mW		Duty Cycle ≤ 1%; Channel spacing of 600 kHz
	Non-specific Short Range Devices	433.05 - 434.79 MHz	e.r.p. 10mW		Duty cycle ≤ 10%
	Non-specific Short Range Devices	5725 - 5875 MHz	e.i.r.p 25mW	EN 300 440	
Non-specific Short Range Devices	ISM & Bluetooth	2400 - 2483.5 MHz	e.i.r.p 10mW	EN 300 440	Indoor use only
			e.i.r.p 100mW	EN 300 328	
Non-specific Short Range Devices	Non-specific Short Range Devices	24 - 24.25 GHz	e.i.r.p 100mW	EN 300 440	
		57 - 64 GHz	e.i.r.p 100mW /output power 10 mW	EN 305 550	
		61 - 61.5 GHz	e.i.r.p 100mW		
		122 - 122.25 GHz	10 dBm/250 MHz e.i.r.p. -48 dBm/MHz at >30° elevation		These limits should be measured with rms detector and an averaging time of 1 ms or less.

		122.25 - 123 GHz	e.i.r.p 100mW		
		244 - 246 GHz	e.i.r.p 100mW		
Non-specific Short Range Devices	DECT	1880 - 1900 MHz	e.i.r.p 250mW	EN 300 175 EN 301 406	The use of DECT phones are restricted within indoor residential premises. Integral antennas only.
	Cordless Phones	2.4 - 2.4835 GHz	e.i.r.p 10mW	EN 300 440	Indoor use only
Radio-determination applications	Movement Detection & Alert Systems	2400 – 2483.5 GHz	e.i.r.p 25mW	EN 300 440	
		10.5 - 10.6 GHz	e.i.r.p 500mW		
		13.4 - 14.0 GHz	e.i.r.p 25mW		
		24.05 - 24.25 GHz	e.i.r.p 100mW		
		57 - 64 GHz	e.i.r.p -41.3 dBm/MHz	EN 302 372	
		75 - 85 GHz			
Transport and Traffic Telematics	Vehicle Radar Systems	76 - 77 GHz	55 dBm peak e.i.r.p -50 dBm average power -23.5 dBm	EN 301 091	Either 50 dBm average power or an average power of 23.5 dBm for pulse radar only. Conditions apply to vehicle and infrastructure radar systems only.
		24.050 - 24.075 GHz	e.i.r.p 100mW	EN 302 85	
		24.075 - 24.150 GHz	e.i.r.p 0.1 mW		
		24.150 - 24.250 GHz	e.i.r.p 100mW		
	Automotive Short Range Radars	77 - 81 GHz	Peak limit of 55 dBm e.i.r.p	EN 302 264	
Inductive Applications	– Car Immobilizer	9 - 90 kHz	72 dBµA/m at 10m	EN 303 417 EN 303 447	In case of external antennas only loop coil antennas may be employed.
		90 - 119 kHz	42 dBµA/m at 10m		

	– Anti-theft systems – Navigation devices – Alarm systems – Data transfer to handhelds – Animal identification devices.	119-135 kHz	66 dBµA/m at 10m	EN 303 454 EN 300 330	
		135 -140 kHz	42 dBµA/m at 10m		
		140 - 148.5 kHz	37.7 dBµA/m at 10m		
		3155 - 3400 kHz	13.5 dBµA/m at 10m	EN 300 330	Security Devices. In case of external antennas only loop coil antennas may be employed.
		148.5 - 5000 kHz	-15 dBµA/m at 10 m	EN 303 417 EN 300 330 EN 302 536	In case of external antennas only loop coil antennas may be employed. The maximum magnetic field strength is specified in a bandwidth of 10 kHz. The maximum allowed total magnetic field strength is -5 dBµA/m at 10 m for systems operating at bandwidths larger than 10 kHz whilst keeping the density limit (-15 dBµA/m in a bandwidth of 10 kHz)
		5000 kHz - 30 MHz	-20 dBµA/m at 10 m	EN 300 330	In case of external antennas only loop coil antennas may be employed. The maximum magnetic field strength is specified in a bandwidth of 10 kHz. The maximum allowed total magnetic field strength is -5 dBµA/m at 10 m for systems operating at bandwidths larger than 10 kHz whilst keeping the density limit (-20 dBµA/m in a bandwidth of 10 kHz)

		6765 - 6795 kHz	42 dBµA/m at 10m	EN 300 330 EN 303 417	
		7400 - 8800 kHz	9 dBµA/m at 10m	EN 300 330	
		10200 - 11000 kHz	9 dBµA/m at 10m		
		13.553 - 13.567 MHz	42 dBµA/m at 10m		
		869.4 - 869.65 MHz	e.i.r.p 100mW	EN 300 220	For Falcon/ or bird tracking
		133 kHz	60 dBµA/m at 10m	EN 300 330	For Vehicular use.
		134 kHz	70 dBµA/m at 10m, e.r.p 10mW (10 dBm)	EN 300 330	For Vehicular use.
		433.05 - 434.79 MHz	e.r.p 10mW	EN 300 220	For Vehicular use. For Falcon/ or bird tracking
		1575.42 MHz	N/A	EN 303 413	GPS receivers
		315 MHz	e.i.r.p 10mW	EN 300 330	For Vehicular use.
Model Control	Applications of devices for controlling the movement of a model.	26990 - 27000 kHz 27040 - 27050 kHz 27090 - 27100 kHz 27140 - 27150 kHz 27190 - 27200 kHz	e.r.p 100mW	EN 300 220	Channel spacing of 10 kHz
		40.66 - 40.67 MHz 40.67 - 40.68 MHz 40.68 - 40.69 MHz 40.69 - 40.70 MHz			
		34.995 - 35.225 MHz			Only for flying models
Active Medical Implant and their associated	Wireless applications in	401 - 406 MHz	e.r.p 25µW	EN 301 839 EN 302 537	

peripherals, and Medical Data Acquisition	Healthcare and Listening Devices	9 - 315 kHz	30 dBµA/m at 10m	EN 302 195	Duty cycle < 10%,
		30 - 37.5 MHz	e.r.p 1mW	EN 302 510	Duty cycle < 10%
		2483.5 - 2500 MHz	e.i.r.p 10mW	EN 301 559	LBT+AFA and ≤ 10% duty cycle.
		2483.5 - 2500 MHz	e.i.r.p 1mW	EN 303 203	MBANS, indoor only within healthcare facilities. LBT+AFA and ≤ 10% duty cycle.

2. Additional Applications of Radio communications Equipment

In the context of this document, additional applications of Radio-communications Equipment include the following:

1. Radio Microphone Applications including Assistive Listening Devices (ALD), Wireless Audio and Multimedia Streaming Systems
2. Radio Frequency Identification Applications.
3. Ultra-Wide Band Technology Applications.
4. Wireless Access Systems including Radio Local Area Networks (WAS/RLANs) Applications.

2.1 Radio Microphone Applications including Assistive Listening Devices (ALD), Wireless Audio and Multimedia Streaming Systems

- Radio microphone applications include small, low power transmitters designed to be worn on the body, or handheld, for the transmission of sound.
- The frequency ranges of operation and corresponding output power levels of radio microphone applications are as follows:

Typical Application Type	Applicable Sub-Section of Framework	Authorized Frequency Bands/ Frequencies (Channel Spacing)	Maximum Strength/ RF Output Power	Harmonized Standard Reference	Remarks (Emission Type, Duty Cycle, other restrictions
Wireless Microphone Systems	Band II low power FM transmitters	87.5-108 MHz	e.r.p.50 nW	EN 301 357 EN 300 422	Channel spacing 200 kHz
	Wireless audio applications	863 - 865 MHz	e.r.p 10mW		Wireless Audio & Multimedia Streaming ALDs
		1795 - 1800 MHz	e.i.r.p 20mW		
		174 – 216 MHz	50 mW e.r.p.	EN 300 422	Use of the bands is on a tuning range basis. Note that the use of these bands may be subject to an Individual License. Any e.r.p power higher than 50mW is subject to spectrum license as per the Spectrum Licensing Framework.
		470 - 694 MHz			
		823 - 826 MHz	20 mW e.i.r.p.		Channel spacing of 200 kHz The use of these bands may be subject to an Individual License.
			100mW e.i.r.p.		Restricted to body worn microphones/ Channel spacing of 200 kHz The use of these bands may be subject to an Individual License.
		826 - 832 MHz	100mW e.i.r.p.		Channel spacing of 200 kHz The use of these bands may be subject to an Individual License.

2.2 Radio Frequency Identification Applications

- Radio frequency Identification (RFID) Applications include but are not limited to automatic article identification, asset tracking, anti-theft systems, alarm systems and wireless control systems.
- The frequency ranges of operation and corresponding output power levels of RFID applications are as follows:

Typical Application Type	Applicable Sub-Section of Framework	Authorized Frequency Bands/ Frequencies (Channel Spacing)	Maximum Strength/ RF Output Power	Harmonized Standard Reference	Remarks (Emission Type, Duty Cycle, other restrictions
Radio Frequency Identification (RFID) Application	Asset Tracking Systems	400 - 600 kHz	-8 dBµA/m at 10m	EN 300 330	
		13.553 - 13.567 MHz	60 dBµA/m at 10m		
		865 - 865.6 MHz	100 mW e.r.p.	EN 302 208	Channel spacing ≤200 kHz
		865.6 - 867.6 MHz	2W e.r.p		
		867.6 - 868 MHz	500 mW e.r.p.		
		2446 - 2454 MHz	e.i.r.p 500mW	EN 300 440	

2.3 Ultra-Wide Band Technology Applications

- Ultra-Wide Band (UWB) Technology Applications include but are not limited to equipment used for communications, measurement, location, imaging, surveillance and medical systems.
- The technical requirements for the operation of UWB applications are not applicable to:
  - Devices and infrastructure used at a fixed outdoor location or connected to a fixed outdoor antenna.
  - Devices installed in flying models, aircraft and other aviation.
  - Devices installed in road and rail vehicles.
- The frequency ranges of operation and corresponding output power levels of UWB technology applications are as follows:

Typical Application Type	Applicable Sub-Section of Framework	Authorized Frequency Bands/ Frequencies (Channel Spacing)	Maximum Strength/ RF Output Power	Harmonized Standard Reference	Remarks (Emission Type, Duty Cycle, other restrictions
Ultra-Wide Band Technology	Wide Band Data Transmission Systems	Below 1.6 GHz	maximum mean e.i.r.p. spectral density of -90 dBm/MHz,	EN 302 500 EN 302 065	
		1.6 - 2.7 GHz	maximum mean e.i.r.p. spectral density of -85 dBm/MHz		
		2.7 - 3.4 GHz	maximum mean e.i.r.p. spectral density of -70 dBm/MHz		Within the band 3.1 - 4.8 GHz, devices implementing Low Duty Cycle (LDC) mitigation technique (as per Annex 2 of ECC/DEC/ (06)04 document) are permitted to operate with a maximum mean e.i.r.p. spectral density of -41.3 dBm/MHz and a maximum peak e.i.r.p. of 0 dBm defined in 50 MHz
		3.4 - 3.8 GHz	maximum mean e.i.r.p. spectral density of -80 dBm/MHz		
		3.8 - 4.2 GHz	maximum mean e.i.r.p. spectral density of -70 dBm/MHz		
		4.2 - 4.8 GHz	maximum mean e.i.r.p. spectral density of -70 dBm/MHz		

					Within the band 3.1 - 4.8 GHz range, devices using Detect And Avoid (as per Annex 3 of ECC/DEC/(06)04 document) are allowed to operate with a maximum mean e.i.r.p. spectral density of -41.3 dBm/MHz and a maximum peak e.i.r.p. of 0 dBm defined in 50 MHz
		4.8 - 6 GHz	maximum mean e.i.r.p. spectral density of -70 dBm/MHz		
		6 - 8.5 GHz	maximum mean e.i.r.p. spectral density of -41.3 dBm/MHz		
		8.5 - 10.6 GHz	maximum mean e.i.r.p. spectral density of -65 dBm/MHz		For 8.5 - 9 GHz range, devices using Detect And Avoid mitigation technique (as per Annex 3 of ECC/DEC/(06)04 document) are allowed to operate with a maximum mean e.i.r.p. spectral density of -41.3 dBm/MHz and a maximum peak e.i.r.p. of 0 dBm defined in 50 MHz
		Above 10.6 GHz	maximum mean e.i.r.p. spectral density of -85 dBm/MHz		

2.4 Wireless Access Systems including Radio Local Area Networks (WAS/RLANs) Applications

- The operation of Wireless Access Systems is restricted within indoor residential and business premises. Indoor use is intended to mean inside a permanent domestic or commercial building which will typically provide the necessary attenuation to facilitate sharing with other services.
- The frequency ranges of operation and corresponding output power levels of WAS/RLAN applications are as follows:

Applicable Sub-section of Framework	Typical Application Type	Authorized Frequency Bands/ Frequencies (Channel Spacing)	Maximum Strength/ RF Output Power	Harmonized Standard Reference	Remarks (Emission Type, Duty Cycle, other restrictions
Wireless Access Systems including Radio Local Area Networks	WAS/RLAN	2400 - 2483.5 MHz	e.i.r.p 100mW	EN 300 328	Indoor use only
		5150 - 5250 MHz	maximum e.i.r.p. 200mW (with & without TPC)	EN 301 893	Indoor use only
		5250 - 5350 MHz	maximum e.i.r.p. 200mW (with & without TPC)	EN 301 893	Indoor use only
		5470 - 5725 MHz	maximum e.i.r.p. 1000mW (with & without TPC)	EN 301 893	Indoor use only
		5725 - 5875 MHz	e.i.r.p. 25mW	EN 300 440	Indoor use only
	WAS/RLAN onboard vehicles	2400 - 2483.5 MHz	e.i.r.p. 100mW	EN 300 328	Onboard vehicles only (indoor)
		5150 - 5250 MHz	e.i.r.p. 25mW	EN 301 893	Onboard vehicles only (indoor)
		5725 - 5875 MHz	e.i.r.p. 25mW	EN 300 440	Onboard vehicles only (indoor)
	Multiple-Gigabit WAS/RLAN	57 - 71 GHz	maximum e.i.r.p 10W (40 dBm) (LBT or DAA)	EN 302 567	Indoor use only Fixed outdoor installations are not allowed