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# Radio Spectrum Guidelines

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## Short-range Devices (SRD)

November 2024

## Document History

| Release                 | Date                     |
|-------------------------|--------------------------|
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## 1 Scope

This document provides the regulatory guidelines and technical limitations for using Short-range Device equipment including: frequency ranges, maximum permissible power levels, channel spacing or modulation/maximum occupied bandwidth and duty cycle.

The term "Short-range Device" (SRD) is the terminology globally known for the radio equipment, which have low capability of causing interference to other radio equipment. SRDs use either integral (i.e., no external antenna socket), dedicated (i.e., type approved with the equipment) or external antennas, and all modes of modulation can be permitted subject to relevant standards. SRDs are not considered applications of particular "Radio Service" under Article 1 of the ITU Radio Regulations.

## 2 Definitions

The terms, words and expressions used in this document have the defined meaning clarified in the Telecommunications Regulatory Law No. (10) of 2003. In addition, this document provides terms and phrases that are defined as follows:

**The State:** The Arab Republic of Egypt, including its geographical borders, territorial waters and airspace.

**NTRA:** National authority regulating the telecommunication sector established pursuant to the provisions of the Egyptian telecommunication law no. (10) of 2003.

**Radio:** A general term applied to the use of radio waves.

**Simplex operation:** Operating method in which transmission is made possible alternately in each direction of a telecommunication channel, for example, by means of manual control.

**Duplex operation:** Operating method in which transmission is possible simultaneously in both directions of a telecommunication channel.

**Harmful interference:** The effect of unwanted energy due to one or a combination of emissions, radiations, or inductions upon reception in a radiocommunication system, manifested by any performance degradation, misinterpretation, or loss of information by another radio device which could be extracted in the absence of such unwanted energy.

**Short-range Devices (SRD):** Fixed, portable and mobile wireless devices that operate in single or two-way wireless communication mode (Simplex and duplex) with low overall output Radio emission capabilities that do not cause harmful interference. SRDs are used in

applications such as remote control, meter reading, hearing aids, motion detectors, alarms and other applications.

**Duty Cycle:** The fraction of one period in which a signal or system is active. Duty cycle is commonly expressed as a percentage or a ratio. A period is the time it takes for a signal to complete an on-and-off cycle. It may be fixed or variable and depends on how the device works, either automatically or manually.

**Adaptive Frequency Agility (AFA):** The equipment's ability to dynamically change the temporary operating channel within its available frequencies for proper operation.

**Listen Before Talk (LBT):** A technique used in radiocommunications whereby a radio transmitter first senses its radio channels before it starts a transmission. LBT can be used by a radio device to find a network the device is allowed to operate on or to find a free radio channel to operate on.

**Detect and Avoid (DAA):** A mechanism that allows the equipment to adapt to their environment through the radio frequencies used by other equipment to avoid affecting them.

### 3 Legal Considerations

- 3.1 The guidelines contained in this document are issued by NTRA according to articles of the Telecommunications Regulatory law No. (10) of 2003 and subsequent ministerial decisions.
- 3.2 The operator of any wireless device classified under the category of Short-range Devices (SRD) shall also comply with the provisions of the Telecommunications Regulatory Law No. (10) of 2003 and any other laws, regulations and decisions issued by other relevant state authorities.
- 3.3 The operator of any wireless device classified under the category of Short-range Devices (SRD), may need to obtain approvals that are deemed necessary from the other concerned state authorities.
- 3.4 Adherence to the guidelines contained in this document does not entail any ownership rights or any special rights related to the frequency spectrum used for the operation of any wireless device classified under the category of Short-range Devices (SRD).
- 3.5 Any operator of wireless devices that are classified under the category of Short-range Devices (SRD) violates the operational rules and technical controls contained in **Annex (1)** and **Annex (2)**, would be subject to the penalties stated in the provisions of Telecommunications Regulatory Law No. (10) of 2003.

- 3.6 NTRA has the right to modify any of the guidelines contained in this document, specially operational rules and technical controls contained in **Annex (1) & Annex (2)**.

## 4 Scope of Implementation

The guidelines contained in this document:

- 4.1 indicate the regulatory measures and technical conditions for the use of wireless devices that are classified as Short-range Devices (SRD) within the Arab Republic of Egypt;
- 4.2 are meant be implemented in conjunction with other guidelines issued by NTRA for the use of the frequency spectrum, including:
- 4.2.1 National Frequency Allocations Table,
- 4.2.2 Other Radio Spectrum guidelines;
- 4.3 allow the generic use of wireless devices that are classified as Short-range Devices (SRD) and operate in full compliance with the technical controls stipulated in **Annex (2)** governing the frequency bands usage and the total output power / magnetic field strength emitting from these devices.

## 5 Operation of Short-range Devices

- 5.1 The operation of wireless devices that are classified under the category of Short-range Devices (SRD) is allowed without licensing provided that their operational technical specifications are conforming with **Annex (1) & Annex (2)**.
- 5.2 The use of the frequency bands stipulated in **Annex (2)** by any Short-range Device according to the guidelines contained in this document is shared with other Short-range Devices on a non-interference non-protected basis, i.e. SRDs:
- 5.2.1 shall not cause harmful interference to existing or planned usage of spectrum in accordance with the provisions of the Telecommunications Regulatory Law No. (10) of 2003;
- 5.2.2 cannot claim protection from harmful interference from existing or planned usage of spectrum in accordance with the provisions of the Telecommunications Regulatory Law No. (10) of 2003.

- 5.3 The operator of any wireless device classified under the category of Short-range Devices (SRD) is obliged to ensure that this device does not violate the operational rules and the technical controls stipulated in **Annex (1) & Annex (2)**, and the operator is obliged to ensure that the total output power / magnetic field strength of that device does not exceed the maximum limits stipulated in **Annex (2)**.
- 5.4 The operator of any wireless device classified under the category of Short-range Devices (SRD) is obliged to stop the operation of this equipment if it causes harmful interference to any wireless devices or other systems that are not subject to the guidelines contained in this document. The SRD operator will not resume operation of that equipment until removing the causes of the harmful interference that has occurred and until ensuring that this interference does not occur again.

## 6 Registration and Type Approval

Entities operating under the state's jurisdiction that wish to manufacture or to import wireless devices that are classified under the category of Short-range Devices for the purpose of selling SRD equipment in the Egyptian market shall submit requests to register the items of these equipment types with NTRA through the [E-services](#) portal prior to manufacturing or importing the devices, including the technical specifications certificates from the country of origin and certificates of passing technical compliance tests from accredited laboratories.

## 7 Fees

Short-range Devices (SRDs) operating in conformity with the guidelines contained in this document are generally exempted from the equipment usage fees and from the frequency spectrum fees.

## Annex (1)

### Operational rules for using Short-range Devices (SRD)

- 1) Only SRD transmitters with integral or dedicated antennas are allowed, external antennas are not allowed.
- 2) Short-range Devices (SRD) are with communication distance typically around 50 meters<sup>1</sup>.
- 3) The mitigation requirements stipulated in **Annex (2)** shall be implemented according to the type of use.
- 4) The total output power / magnetic field strength of any operating SRD shall not exceed the limits stipulated in **Annex (2)**.

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<sup>1</sup> This limit may not be applicable in some cases as stipulated in **Annex (2)**

## Annex (2)

### Technical controls allowed for Short-range Devices (SRD)

| Table 1 – Mandatory requirements for Non-specific Short-range Devices |                        |                            |  | Information        |
|---|------------------------|----------------------------|--|--------------------|
| Frequency band  | Power / Magnetic Field | Maximum occupied bandwidth | Mitigation requirements                              | Reference standard |
| 26.995 – 27 MHz   | 10 mW e.r.p.           | 10 kHz                     | ≤ 0.1 % duty cycle                                   | EN 300 220         |
| 27.04 – 27.050 MHz  | 10 mW e.r.p.           | 10 kHz                     | ≤ 0.1 % duty cycle                                   | EN 300 220         |
| 27.14 – 27.150 MHz  | 10 mW e.r.p.           | 10 kHz                     | ≤ 0.1 % duty cycle                                   | EN 300 220         |
| 27.19 – 27.195 MHz  | 10 mW e.r.p.           | 10 kHz                     | ≤ 0.1 % duty cycle                                   | EN 300 220         |
| 40.66 – 40.7 MHz  | 10 mW e.r.p.           | 10 kHz                     | No requirement                                       | EN 300 220         |
| 49.82 – 49.98 MHz   | 10 mW e.i.r.p.         | 10 kHz                     | -  | -                  |
| 169.4 – 169.475 MHz   | 500 mW e.r.p.          | 50 kHz                     | < 1% duty cycle                                      | EN 300 220         |
| 169.4 – 169.8125 MHz  | 10 mW e.r.p.           | 12.5 kHz                   | ≤ 0.1 % duty cycle                                   | EN 300 220         |
| 433.05 – 434.79 MHz   | 10 mW e.r.p.           | Not specified              | ≤ 10% duty cycle                                     | EN 300 220         |
| 433.05 – 434.79 MHz   | 1 mW e.r.p.            | 25 kHz                     | No requirement                                       | EN 300 220         |
| 434.04 – 434.79 MHz   | 10 mW e.r.p.           | ≤ 25 kHz                   | No requirement ( <b>Note 2</b> )                     | EN 300 220         |
| 863 – 870 MHz ( <b>Note 3</b> )                                       | 25 mW e.r.p.           | Not specified              | ≤ 0.1 % duty cycle or LBT + AFA<br>( <b>Note 1</b> ) | EN 300 220         |
| 865 – 868 MHz   | 25 mW e.r.p.           | Not specified              | ≤ 1% duty cycle or LBT+AFA                           | EN 300 220         |
| 868 – 868.6 MHz   | 25 mW e.r.p.           | Not specified              | ≤ 1% duty cycle or LBT + AFA                         | EN 300 220         |
| 868.7 – 869.2 MHz   | 25 mW e.r.p.           | Not specified              | ≤ 0.1% duty cycle or LBT + AFA                       | EN 300 220         |
| 869.4 – 869.65 MHz  | 25 mW e.r.p.           | Not specified              | ≤ 10% duty cycle or LBT + AFA                        | EN 300 220         |
| 869.7 – 870 MHz   | 25 mW e.r.p.           | Not specified              | ≤ 1% duty cycle or LBT + AFA                         | EN 300 220         |



| Table 1 – Mandatory requirements for Non-specific Short-range Devices |                          |                            |                         | Information        |
|---|--------------------------|----------------------------|-------------------------|--------------------|
| Frequency band  | Power / Magnetic Field   | Maximum occupied bandwidth | Mitigation requirements | Reference standard |
| 2400 – 2483.5 MHz   | 10 mW e.i.r.p.           | Not specified              | No requirement          | EN 300 440         |
| 5725 – 5825 MHz   | 25 mW e.i.r.p.           | 30 kHz                     | No requirement          | EN 300 440         |
| 6000 – 8500 MHz   | -41.3 dBm/MHz            | > 50 MHz                   | No requirement          | EN 302 065         |
| 24 – 24.25 GHz  | 25 mW e.i.r.p.           | Not specified              | No requirement          | EN 300 440         |
| 57 – 64 GHz   | 100 mW e.i.r.p. (Note 4) | Not specified              | No requirement          | EN 305 550         |
| 61 – 61.5 GHz   | 100 mW e.i.r.p.          | Not specified              | No requirement          | EN 305 550         |

**Note 1** The duty cycle applies to the entire transmission (not to each hop channel).

**Note 2** Voice applications are allowed with a maximum bandwidth of 25 kHz, with a spectrum access technique such as LBT or equivalent and a maximum transmit period of 1 minute for each transmission. Other audio/video applications are excluded.

**Note 3** Frequency bands for alarms are excluded.

**Note 4** Maximum transmitter output power of 10 dBm.

| Table 2 – Mandatory requirements for Active Medical Implants and their associated peripherals<br>Including Ultra Low Power Active Medical Implants (ULP-AMI), Ultra Low Power Animal Implantable Devices (ULP-AID), Ultra Low Power Medical Data Service (MEDS) |                         |                            |                         | Information        |
|---|-------------------------|----------------------------|-------------------------|--------------------|
| Frequency band  | Power / Magnetic Field  | Maximum occupied bandwidth | Mitigation requirements | Reference standard |
| 9 – 315 kHz   | 30 dB $\mu$ A/m at 10m  | Not specified              | $\leq$ 10 % duty cycle  | EN 302 195         |
| 315 – 600 kHz   | -5 dB $\mu$ A/m at 10 m | Not specified              | $\leq$ 10 % duty cycle  | EN 302 536         |
| 12.5 – 20 MHz   | -7 dB $\mu$ A/m at 10 m | Not specified              | $\leq$ 10 % duty cycle  | EN 302 536         |

| <b>Table 2 – Mandatory requirements for Active Medical Implants and their associated peripherals</b><br>Including Ultra Low Power Active Medical Implants (ULP- AMI), Ultra Low Power Animal Implantable Devices (ULP- AID), Ultra Low Power Medical Data Service (MEDS) |                        |                            |                         | <b>Information</b> |
|--|------------------------|----------------------------|-------------------------|--------------------|
| Frequency band   | Power / Magnetic Field | Maximum occupied bandwidth | Mitigation requirements | Reference standard |
| 30 – 37.5 MHz  | 1 mW e.r.p.            | Not specified              | ≤ 10 % duty cycle       | EN 302 510         |
| 401 – 402 MHz  | 25 μW e.r.p.           | ≤ 25 kHz                   | LBT+AFA                 | EN 302 537         |
| 402 – 405 MHz  | 25 μW e.r.p.           | ≤ 25 kHz                   | LBT+AFA                 | EN 301 839         |
| 405 – 406 MHz  | 25 μW e.r.p.           | ≤ 25 kHz                   | LBT+AFA                 | EN 302 537         |

| <b>Table 3 – Mandatory requirements for Alarms</b><br>Including social alarms for security and safety |                        |                            |                         | <b>Information</b> |
|---|------------------------|----------------------------|-------------------------|--------------------|
| Frequency band  | Power / Magnetic Field | Maximum occupied bandwidth | Mitigation requirements | Reference standard |
| 169.475 – 169.6 MHz   | 10 mW e.r.p.           | 12.5 kHz                   | ≤ 0.1 % duty cycle      | EN 300 220         |
| 433.9 MHz   | 10 mW                  | 25 kHz                     | ≤ 0.1 % duty cycle      | -                  |
| 868.6 – 868.7 MHz   | 10 mW e.r.p.           | 25 kHz                     | ≤ 1.0 % duty cycle      | EN 300 220         |
| 869.2 – 869.3 MHz   | 10 mW e.r.p.           | 25 kHz                     | ≤ 0.1 % duty cycle      | EN 300 220         |
| 869.3 – 869.4 MHz   | 10 mW e.r.p.           | 25 kHz                     | ≤ 1 % duty cycle        | EN 300 220         |
| 869.65 – 869.7 MHz  | 10mW e.r.p.            | 25 kHz                     | ≤ 10 % duty cycle       | EN 300 220         |

| <b>Table 4 – Mandatory requirements for Wideband Data Transmission Systems</b><br>Including Wireless LAN (Wi-Fi and Multiple GIGABIT wireless systems for Indoor applications only) |                        |                            |                                | <b>Information</b> |
|---|------------------------|----------------------------|--------------------------------|--------------------|
| Frequency band  | Power / Magnetic Field | Maximum occupied bandwidth | Mitigation requirements        | Reference standard |
| 2400 – 2483.5 MHz   | 100 mW e.i.r.p.        | Not specified              | LBT and DAA                    | EN 300 328         |
| 5150 – 5350 MHz   | 200 mW e.i.r.p.        | Not specified              | DFS and TPC in 5250 – 5350 MHz | EN 301 893         |
| 5925 – 6425 MHz   | 250 mW e.i.r.p.        | Not specified              | No requirement                 | EN 303 687         |
| 57 – 66 GHz   | 40 dBm e.i.r.p.        | Not specified              | LBT is mandatory               | EN 302 567         |

| <b>Table 5 – Mandatory requirements for Data Acquisition</b><br>Including emergency detection of buried victims and valuable items and meter Reading |                        |   |                         | <b>Information</b> |
|--|------------------------|---|-------------------------|--------------------|
| Frequency band   | Power / Magnetic Field | Maximum occupied bandwidth                      | Mitigation requirements | Reference standard |
| 456.9 – 457.1 kHz  | 7 dB $\mu$ A/m at 10 m | Continuous wave (CW) at 457 kHz - no modulation | No requirement          | EN 300 718         |
| 169.4 – 169.475 MHz  | 500 mW e.r.p.          | $\leq$ 50 kHz                                   | $\leq$ 10% duty cycle   | EN 300 220         |

| <b>Table 6 – Mandatory requirements for Cordless Telephones</b><br>Including cordless telephone using DECT standard and cordless short-range telephones |  |                            |                         | <b>Information</b> |
|---|--|----------------------------|-------------------------|--------------------|
| Frequency band  | Power / Magnetic Field                             | Maximum occupied bandwidth | Mitigation requirements | Reference standard |
| 43.72 – 49.97 MHz   | 100 mW e.i.r.p.                                    | 20-60 kHz                  | No requirement          | -                  |
| 1880 – 1900 MHz   | 10 mW e.i.r.p. (handset)<br>250 mW e.i.r.p. (base) | 20 kHz                     | No requirement          | EN 301 406         |

| <b>Table 7 – Mandatory requirements for Inductive Applications</b>  |                           |                            |                         | <b>Information</b>                     |
|---|---------------------------|----------------------------|-------------------------|--|
| Including magnetic induction devices, Car immobilizers, waste management, radio frequency identification (RFID) applications, personal identification, access control, proximity sensors, anti-theft systems, location systems, NFC applications, wireless control systems, animal identification and cable detection |                           |                            |                         |  |
| Frequency band  | Power / Magnetic Field    | Maximum occupied bandwidth | Mitigation requirements | Reference standard                     |
| 9 – 90 kHz  | 72 dB $\mu$ A/m at 10m    | Not specified              | No requirement          | EN 303 447<br>EN 303 454<br>EN 300 330 |
| 90 – 119 kHz  | 42 dB $\mu$ A/m at 10m    | Not specified              | No requirement          | EN 303 447<br>EN 303 454<br>EN 300 330 |
| 119 – 135 kHz   | 66 dB $\mu$ A/m at 10m    | <b>(Note 5)</b>            | No requirement          | EN 303 447<br>EN 303 454<br>EN 300 330 |
| 135 – 140 kHz   | 42 dB $\mu$ A/m at 10m    | Not specified              | No requirement          | EN 303 447<br>EN 303 454<br>EN 300 330 |
| 140 – 148.5 kHz   | 37.7 dB $\mu$ A/m at 10m  | Not specified              | No requirement          | EN 303 447<br>EN 303 454<br>EN 300 330 |
| 148.5 – 5000 KHz  | -15 dB $\mu$ A/m at 10 m  | Not specified              | No requirement          | EN 300 330                             |
| 400 – 600 kHz   | -8 dB $\mu$ A/m at 10 m   | Not specified              | No requirement          | EN 300 330                             |
| 3.155 – 3.4 MHz   | 13.5 dB $\mu$ A/m at 10 m | Not specified              | No requirement          | EN 300 330                             |
| 5 to 30 MHz   | -20 dB $\mu$ A/m at 10 m  | Not specified              | No requirement          | EN 300 330                             |
| 6.765 – 6.795 MHz   | 42 dB $\mu$ A/m at 10 m   | Not specified              | No requirement          | EN 300 330                             |
| 7.48 – 8.8 MHz  | 9 dB $\mu$ A/m at 10 m    | Not specified              | No requirement          | EN 300 330                             |

| <b>Table 7 – Mandatory requirements for Inductive Applications</b>  |                         |                            |                         | <b>Information</b> |
|---|-------------------------|----------------------------|-------------------------|--------------------|
| Including magnetic induction devices, Car immobilizers, waste management, radio frequency identification (RFID) applications, personal identification, access control, proximity sensors, anti-theft systems, location systems, NFC applications, wireless control systems, animal identification and cable detection |                         |                            |                         |                    |
| Frequency band  | Power / Magnetic Field  | Maximum occupied bandwidth | Mitigation requirements | Reference standard |
| 13.553 – 13.567 MHz   | 42 dB $\mu$ A/m at 10 m | Not specified              | No requirement          | EN 300 330         |
| 26.957 – 27.283 MHz   | 42 dB $\mu$ A/m at 10 m | Not specified              | No requirement          | EN 300 330         |

**Note 5** RFIDs operating in the frequency sub-band 119-135 kHz shall meet the spectrum mask given in EN 300 330. This will permit a simultaneous use of the various sub-bands within the range 90-148.5 kHz.

| <b>Table 8 – Mandatory requirements for Model Control</b> |                        |                            |                         | <b>Information</b> |
|---|------------------------|----------------------------|-------------------------|--------------------|
| Including wireless control devices                        |                        |                            |                         |                    |
| Frequency band  | Power / Magnetic Field | Maximum occupied bandwidth | Mitigation requirements | Reference standard |
| 26.96 – 27 MHz  | 100 mW e.r.p.          | 10 kHz                     | No requirement          | EN 300 220         |
| 27.040 – 27.050 MHz                                       | 100 mW e.r.p.          | 10 kHz                     | No requirement          | EN 300 220         |
| 27.090 – 27.100 MHz                                       | 100 mW e.r.p.          | 10 kHz                     | No requirement          | EN 300 220         |
| 27.140 – 27.150 MHz                                       | 100 mW e.r.p.          | 10 kHz                     | No requirement          | EN 300 220         |
| 27.190 – 27.200 MHz                                       | 100 mW e.r.p.          | 10 kHz                     | No requirement          | EN 300 220         |
| 34.945 – 35.305 MHz                                       | 100 mW e.r.p.          | 10 kHz                     | No requirement          | EN 300 220         |
| 40.66 – 41 MHz  | 100 mW e.r.p.          | 10 kHz                     | No requirement          | EN 300 220         |
| 40.7 – 44.66 MHz  | 10 mW e.r.p.           | 10 kHz                     | No requirement          | -                  |
| 173.2 – 173.35 MHz  | 1 mW e.r.p.            | 25 kHz                     | No requirement          | -                  |
| 417.9 – 418.1 MHz   | 0.25 mW e.r.p.         | Not specified              | No requirement          | -                  |
| 458.5 – 459.5 MHz   | 100 mW e.r.p.          | 25 kHz                     | No requirement          | -                  |

| Table 9 – Mandatory requirements for Radio Determination applications<br>Including tank level probing radar (TLPR) |   |                            |                         | Information        |
|--|---|----------------------------|-------------------------|--------------------|
| Frequency band   | Power / Magnetic Field  | Maximum occupied bandwidth | Mitigation requirements | Reference standard |
| 2.4 – 2.4835 GHz   | 25 mW e.i.r.p.  | Not specified              | No requirement          | EN 300 440         |
| 4.5 – 7 GHz  | -41.3 dBm/MHz e.i.r.p.<br>outside the enclosed test<br>tank structure | Not specified              | No requirement          | EN 302 372         |
| 8.5 – 10.6 GHz   | -41.3 dBm/MHz e.i.r.p.<br>outside the enclosed test<br>tank structure | Not specified              | No requirement          | EN 302 372         |
| 9.2 – 9.975 GHz  | 25 mW e.i.r.p.  | Not specified              | No requirement          | EN 300 440         |
| 10.5 – 10.6 GHz  | 500 mW e.i.r.p.   | Not specified              | No requirement          | EN 300 440         |
| 13.4 – 14 GHz  | 25 mW e.i.r.p.  | Not specified              | No requirement          | EN 300 440         |
| 24.05 – 24.25 GHz  | 25 mW e.i.r.p.  | Not specified              | No requirement          | EN 300 440         |
| 24.05 – 27 GHz   | -41.3 dBm/MHz e.i.r.p.<br>outside the enclosed test<br>tank structure | Not specified              | No requirement          | EN 302 372         |
| 57 – 64 GHz  | -41.3 dBm/MHz e.i.r.p.<br>outside the enclosed test<br>tank structure | Not specified              | No requirement          | EN 302 372         |
| 75 – 85 GHz  | -41.3 dBm/MHz e.i.r.p.<br>outside the enclosed test<br>tank structure | Not specified              | No requirement          | EN 302 372         |

| Table 10 – Mandatory requirements for Road Transport and Traffic Telematics (RTTT)<br>Including vehicle radar sensor. (Note 6) (Note 7) |                               |                            |                         | Information        |
|---|-------------------------------|----------------------------|-------------------------|--------------------|
| Frequency band  | Power / Magnetic Field        | Maximum occupied bandwidth | Mitigation requirements | Reference standard |
| 76 – 77 GHz   | 55 dBm peak e.i.r.p.          | Not specified              | No requirement (Note 6) | EN 301 091         |
| 77 – 81 GHz   | 55 dBm peak e.i.r.p. / 50 MHz | ≥ 50 MHz                   | No requirement (Note 7) | EN 302 264         |

**Note 6** Distance range shall be declared by the manufacturer, distance range may be up to 250 meters

**Note 7** Distance range shall be declared by the manufacturer, distance range may be up to 10 meters.

| Table 11 – Mandatory requirements for Radio Frequency Identification applications (RFID) |                        |                            |                         | Information        |
|--|------------------------|----------------------------|-------------------------|--------------------|
| Frequency band   | Power / Magnetic Field | Maximum occupied bandwidth | Mitigation requirements | Reference standard |
| 865 – 868 MHz  | 2 W e.r.p. (Note 8)    | ≤ 200 kHz                  | (Note 9)                | EN 302 208         |
| 2446 – 2454 MHz  | 25 mW e.i.r.p.         | Not specified              | No requirement          | EN 300 440         |

**Note 8** Interrogator transmissions in sub-band a) at 2 W e.r.p. are only permitted within the four channels centered at 865.7 MHz, 866.3 MHz, 866.9 MHz and 867.5 MHz; each with a maximum bandwidth of 200 kHz. RFID tags respond at a very low power level (-20 dBm e.r.p.) in a frequency range around the RFID interrogator channels.

**Note 9** The maximum period of continuous interrogator transmission on a channel shall not exceed 4s and the period between consecutive transmissions of an interrogator on the same channel shall be at least 100ms in order to ensure most efficient use of available channels for the general benefit of all users.

| Table 12 – Mandatory requirements for Radio Microphone applications<br>Including Hearing Impaired Aids, Radio microphones, low power FM transmitters and assistive listening devices (ALD) |                        |                            |                         | Information        |
|--|------------------------|----------------------------|-------------------------|--------------------|
| Frequency band   | Power / Magnetic Field | Maximum occupied bandwidth | Mitigation requirements | Reference standard |
| 29.7 – 47 MHz  | 10 mW e.r.p.           | ≤ 50 kHz                   | No requirement          | EN 300 422         |
| 87.5 – 108 MHz ( <b>Note 10</b> )  | 50 nW e.r.p.           | 200 kHz                    | No requirement          | EN 301 357         |
| 169.4 – 174 MHz  | 10 mW e.r.p.           | ≤ 50 kHz                   | No requirement          | EN 300 422         |
| 174 – 216 MHz  | 50 mW e.r.p.           | Not specified              | No requirement          | EN 300 422         |
| 470 – 610 MHz  | 50 mW e.r.p.           | Not specified              | No requirement          | EN 300 422         |
| 863 – 865 MHz  | 10 mW e.r.p.           | 50 or 300 kHz              | No requirement          | EN 301 357         |
| 1880 – 1900 MHz ( <b>Note 101</b> )  | 50 mW e.i.r.p.         | Not specified              | No requirement          | EN 301 406         |

**Note 10** The user interface of SRD shall permit as a minimum the selection of any and all possible frequencies within the 88.1 MHz to 107.9 MHz and as a maximum 87.6 MHz to 107.9 MHz. When audio signals are not present, apparatus must employ a transmission time-out facility. Pilot tones that ensure continuity of transmission are not permitted.

**Note 11** Restricted for indoor Microphone systems only.