
Radio Spectrum Guidelines

Short-range Devices (SRD)

June 2021

Document History

Release	Date
1.0	December 2020
1.1 (Active)	June 2021

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 meters¹.
- 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)**.

¹ 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	$\leq 10\%$ 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 (Note 2)	EN 300 220
863 – 865 MHz	10 mW e.r.p.	50 or 300 kHz	$\leq 0.1\%$ duty cycle	EN 300 220
863 – 870 MHz (Note 3)	25 mW e.r.p.	50 kHz	≤ 0.1 % duty cycle (Note 1)	EN 300 220
865 – 868 MHz	25 mW e.r.p.	Not specified	$\leq 1\%$ duty cycle or LBT+AFA	EN 300 220
868 – 868.6 MHz	25 mW e.r.p.	50 kHz	$\leq 0.1\%$ duty cycle	EN 300 220
868.7 – 869.2 MHz	25 mW e.r.p.	50 kHz	$\leq 0.1\%$ duty cycle	EN 300 220
869.4 – 869.65 MHz	25 mW e.r.p.	50 kHz	$\leq 0.1\%$ duty cycle	EN 300 220
869.7 – 870 MHz	25 mW e.r.p.	50 kHz	$\leq 0.1\%$ duty cycle	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
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 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 dBμA/m at 10m	Not specified	≤ 10 % duty cycle	EN 302 195
315 – 600 kHz	-5 dBμA/m at 10 m	Not specified	≤ 10 % duty cycle	EN 302 536
12.5 – 20 MHz	-7 dBμA/m at 10 m	Not specified	≤ 10 % duty cycle	EN 302 536
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

Table 2 – Mandatory requirements for Active Medical Implants and their associated peripherals 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
402 – 405 MHz	25 μ W e.r.p.	\leq 25 kHz	LBT+AFA	EN 301 839
405 – 406 MHz	25 μ W e.r.p.	\leq 25 kHz	LBT+AFA	EN 302 537

Table 3 – Mandatory requirements for Alarms Including social alarms for security and safety				Information
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	\leq 0.1 % duty cycle	EN 300 220
433.9 MHz	10 mW	25 kHz	\leq 0.1 % duty cycle	-
868.6 – 868.7 MHz	10 mW e.r.p.	25 kHz	\leq 1.0 % duty cycle	EN 300 220
869.2 – 869.3 MHz	10 mW e.r.p.	25 kHz	\leq 0.1 % duty cycle	EN 300 220
869.3 – 869.4 MHz	10 mW e.r.p.	25 kHz	\leq 1 % duty cycle	EN 300 220
869.65 – 869.7 MHz	10mW e.r.p.	25 kHz	\leq 10 % duty cycle	EN 300 220

Table 4 – Mandatory requirements for Wideband Data Transmission Systems Including Wireless LAN (Wi-Fi and Multiple GIGABIT wireless systems)				Information
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

Table 4 – Mandatory requirements for Wideband Data Transmission Systems Including Wireless LAN (Wi-Fi and Multiple GIGABIT wireless systems)				Information
Frequency band	Power / Magnetic Field	Maximum occupied bandwidth	Mitigation requirements	Reference standard
57 – 66 GHz	40 dBm e.i.r.p.	Not specified	LBT is mandatory	EN 302 567

Table 5 – Mandatory requirements for Data Acquisition Including emergency detection of buried victims and valuable items and meter Reading				Information
Frequency band	Power / Magnetic Field	Maximum occupied bandwidth	Mitigation requirements	Reference standard
456.9 – 457.1 kHz	7 dBμA/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.	≤ 50 kHz	≤ 10% duty cycle	EN 300 220

Table 6 – Mandatory requirements for Cordless Telephones Including cordless telephone using DECT standard and cordless short-range telephones				Information
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) 250 mW e.i.r.p. (base)	20 kHz	No requirement	EN 301 406

Table 7 – Mandatory requirements for Inductive Applications

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

Information

Frequency band	Power / Magnetic Field	Maximum occupied bandwidth	Mitigation requirements	Reference standard
9 – 90 kHz	72 dB μ A/m at 10m	Not specified	No requirement	EN 303 447 EN 303 454 EN 300 330
90 – 119 kHz	42 dB μ A/m at 10m	Not specified	No requirement	EN 303 447 EN 303 454 EN 300 330
119 – 135 kHz	66 dB μ A/m at 10m	(Note 5)	No requirement	EN 303 447 EN 303 454 EN 300 330
135 – 140 kHz	42 dB μ A/m at 10m	Not specified	No requirement	EN 303 447 EN 303 454 EN 300 330
140 – 148.5 kHz	37.7 dB μ A/m at 10m	Not specified	No requirement	EN 303 447 EN 303 454 EN 300 330
400 – 600 kHz	-8 dB μ A/m at 10 m	10 kHz	No requirement	EN 300 330
3.155 – 3.4 MHz	13.5 dB μ A/m at 10 m	Not specified	No requirement	EN 300 330
5 to 30 MHz	-20 dB μ A/m at 10 m	Not specified	No requirement	EN 300 330
6.765 – 6.795 MHz	42 dB μ A/m at 10 m	Not specified	No requirement	EN 300 330
7.48 – 8.8 MHz	9 dB μ A/m at 10 m	Not specified	No requirement	EN 300 330
13.553 – 13.567 MHz	42 dB μ A/m at 10 m	Not specified	No requirement	EN 300 330

Table 7 – Mandatory requirements for Inductive Applications

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

Information

Frequency band	Power / Magnetic Field	Maximum occupied bandwidth	Mitigation requirements	Reference standard
26.957 – 27.283 MHz	42 dBμA/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.

Table 8 – Mandatory requirements for Model Control

Including wireless control devices

Information

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 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. outside the enclosed test 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
8.5 – 10.6 GHz	-41.3 dBm/MHz e.i.r.p. outside the enclosed test tank structure	Not specified	No requirement	EN 302 372
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. outside the enclosed test tank structure	Not specified	No requirement	EN 302 372
57 – 64 GHz	-41.3 dBm/MHz e.i.r.p. outside the enclosed test tank structure	Not specified	No requirement	EN 302 372
75 – 85 GHz	-41.3 dBm/MHz e.i.r.p. outside the enclosed test tank structure	Not specified	No requirement	EN 302 372

Table 10 – Mandatory requirements for Road Transport and Traffic Telematics (RTTT) 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	EN 301 091

Note 6 Distance range shall be declared by the manufacturer.

Note 7 Distance range may be up to 250 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 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 (Note 10)	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

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.