

TECHNICAL CODE

SHORT RANGE DEVICES - SPECIFICATIONS (THIRD REVISION)

Developed by



Registered by



Registered date:

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MCMC MTSFB TC TXXX:2025

Development of technical codes

The Communications and Multimedia Act 1998 (Laws of Malaysia Act 588) ('the Act') provides for a Technical Standards Forum designated under Section 184 of the Act or the Malaysian Communications and Multimedia Commission ('the Commission') to prepare a technical code. The technical code prepared pursuant to Section 185 of the Act shall consist of, at least, the requirements for network interoperability and the promotion of safety of network facilities.

Section 96 of the Act also provides for the Commission to determine a technical code in accordance with Section 55 of the Act if the technical code is not developed under an applicable provision of the Act and it is unlikely to be developed by the Technical Standards Forum within a reasonable time.

In exercise of the power conferred by Section 184 of the Act, the Commission has designated the Malaysian Technical Standards Forum Bhd ('MTSFB') as a Technical Standards Forum which is obligated, among others, to prepare the technical code under Section 185 of the Act.

A technical code prepared in accordance with Section 185 shall not be effective until it is registered by the Commission pursuant to Section 95 of the Act.

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Committee representation

This technical code was developed by Communications Terminal Working Group of the Malaysian Technical Standards Forum Bhd (MTSFB), which consists of representatives from the following organisations:

International Islamic University Malaysia

ITS Testing Services (M) Sdn Bhd

Maxis Broadband Sdn Bhd

SIRIM Berhad

Smart Tech Asia Pacific Sdn Bhd

Terengganu Telecommunications Sdn Bhd

TM Technology Services Sdn Bhd

Wideminds Pte Ltd

YTL Communications Sdn Bhd

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Foreword

This technical code for the Short Range Devices (SRD) - Specifications ('Technical Code') was developed pursuant to Section 185 of the Communications and Multimedia Act 1998 (Laws of Malaysia Act 588) by the Communications Terminal Working Group of the Malaysian Technical Standards Forum Bhd (MTSFB).

This Technical Code was developed for the purpose of certifying communications equipment under the Communications and Multimedia (Technical Standards) Regulations 2000.

Major modifications in this revision are as follows:

- a) additional requirements and amendments of frequency bands, Radio Frequency (RF) output power, transmitter and receiver spurious emission limit for new generation of SRD devices based on industry requirements e.g. Industrial Scientific and Medical (ISM), Radio Frequency Identification (RFID), wireless power, security devices, alarm system, wireless microphones, inductive devices, Ultra-Wideband (UWB) communication devices, UWB automotive radar devices, UWB radar imaging devices and active medical implant devices.
- b) Exclusion of Electrical safety and electromagnetic compatibility (EMC) requirements which is addressed in the MCMC MTSFB TC (Communications Equipment - Baseline requirements).

The SRD shall comply with all requirements within this Technical Code and MCMC MTSFB TC (Communications Equipment - Baseline requirements).

This Technical Code shall replace the MCMC MTSFB TC T007:2020, *Specification for Short Range Devices (SRD) (Second Revision)*. The latter shall be deemed to be invalid to the extent of any conflict with this Technical Code.

This Technical Code shall continue to be valid and effective from the date of its registration until it is replaced or revoked.

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SHORT RANGE DEVICES - SPECIFICATIONS

1. Scope

This Technical Code defines the technical requirements for Short Range Devices (SRDs) operating in the frequencies as defined in the relevant Standard Radio System Plans (SRSPs) and the latest Class Assignments issued by MCMC.

The SRDs may be fixed, mobile or portable stations that are fitted with an antenna connector or an integral antenna. The applications include various generic short range, inductive applications, active medical implant devices, alarm system, inductive devices, Industrial Scientific and Medical (ISM), Radio Frequency Identification (RFID), security devices, Ultra-Wideband (UWB) communication devices, UWB automotive radar devices, UWB radar imaging devices, wireless microphones and wireless power.

The SRDs may employ different types of modulation and power requirement which may include data, video, voice and inductive applications.

2. Normative references

The following normative references are indispensable for the application of this Technical Code. For dated references, only the edition cited applies. For undated references, the latest edition of the normative references (including any amendments) applies.

Refer to Annex A.

3. Abbreviation

For the purposes of this Technical Code, the following abbreviation applies.

AFA	Adaptive Frequency Agility
CCTV	Closed-Circuit Television
DFS	Dynamic Frequency Selection
EIRP	Effective Isotropic Radiated Power
EMC	Electromagnetic Compatibility
ERP	Effective Radiated Power
ISM	Industrial, Scientific and Medical
LBT	Listen Before Talk
LPLDC	Low Power Low Duty Cycle
RF	Radio Frequency
RFID	Radio Frequency Identification Device
RLAN	Radio Local Area Network
SAR	Specific Absorption Rate
SRC	Short Range Communication
SRD	Short Range Devices
SRSP	Standard Radio System Plan

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TPC	Transmit Power Control
UWB	Ultra-wideband

4. Baseline requirements

The SRDs shall be designed to meet the following basic requirements:

- a) The SRDs shall not cause interference with other authorised radiocommunication services and be able to tolerate any interference caused by other radiocommunication services, electrical or electronic equipment.
- b) The SRDs shall not be constructed with any external or readily accessible control which permits the adjustments of its operation in a manner that is inconsistent with this Technical Code.
- c) The SRDs default setting shall be within the frequency range stipulated in SRSPs and Class Assignment.

The baseline requirements for product marking, electrical safety and health, power supply, Electromagnetic Compatibility (EMC), and Specific Absorption Rate (SAR) shall adhere to the requirements outlined in MCMC MTSFB TC XXX.

5. Radio Frequency (RF)

The SRDs shall be designed to operate within the specified frequency bands and comply with the maximum field strength or Radio Frequency (RF) output power and transmitter and receiver spurious emissions given in Table 1. It shall fulfill the relevant requirements of this Technical Code on all the permitted frequencies which it is intended to operate.

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Table 1. Technical requirements for short range devices

No.	Operating frequency	Type of equipment	Maximum output power	Transmitter and receiver spurious emission	Test reference	Remarks
1.	3 kHz - 195 kHz	Security device	50 mW (EIRP)	ETSI EN 300 330	ETSI EN 300 330	
2.	9 kHz - 90 kHz	Inductive device	≤ 72 dB μ A/m at 10 m	ETSI EN 300 330/ ETSI EN 303 417	ETSI EN 300 330/ ETSI EN 303 417	
3.	9 kHz - 315 kHz	Active medical implant device	≤ 30 dB μ A/m at 10 m	ETSI EN 302 195	ETSI EN 302 195	
4.	90 kHz - 119 kHz	Inductive device	≤ 42 dB μ A/m at 10 m	ETSI EN 300 330/ ETSI EN 303 417	ETSI EN 300 330/ ETSI EN 303 417	
5.	119 kHz - 135 kHz	Inductive device	≤ 66 dB μ A/m at 10 m	ETSI EN 300 330/ ETSI EN 303 417	ETSI EN 300 330/ ETSI EN 303 417	
6.	135 kHz - 140 kHz	Inductive device	≤ 42 dB μ A/m at 10 m	ETSI EN 300 330/ ETSI EN 303 417	ETSI EN 300 330/ ETSI EN 303 417	
7.	140 kHz - 148.5 kHz	Inductive device	≤ 37.7 dB μ A/m at 10 m	ETSI EN 300 330/ ETSI EN 303 417	ETSI EN 300 330/ ETSI EN 303 417	
8.	148.5 kHz - 30 MHz	Inductive device	$\leq - 5$ dB μ A/m at 10 m	ETSI EN 300 330/ ETSI EN 303 417	ETSI EN 300 330/ ETSI EN 303 417	
9.	315 kHz - 400 kHz	Inductive device	$\leq - 5$ dB μ A/m at 10 m	ETSI EN 300 330	ETSI EN 300 330	
10.	400 kHz - 600 kHz	Inductive device	$\leq - 8$ dB μ A/m at 10 m	ETSI EN 300 330	ETSI EN 300 330	
11.	984 kHz - 7 484 kHz	Inductive device	≤ 9 dB μ A/m at 10 m	ETSI EN 300 330	ETSI EN 300 330	
12.	3 155 kHz - 3 400 kHz	Short Range Communication (SRC) device	≤ 13.5 dB μ A/m at 10 m	ETSI EN 300 330	ETSI EN 300 330	
		Inductive device	≤ 13.5 dB μ A/m at 10 m	ETSI EN 300 330	ETSI EN 300 330	

Notes:

1. Effective Radiated Power (ERP) refers to radiation of a half wave tuned dipole, which is used for frequencies below 1 GHz.
2. Effective Isotropic Radiated Power (EIRP) is a product of the power supplied to the antenna and the maximum antenna gain, relative to an isotropic antenna, and is used for frequencies above 1 GHz. There is a of 2.15 dB between EIRP and ERP [EIRP (dBm) = ERP (dBm) + 2.15].

Table 1. Technical requirements for short range devices (continued)

No.	Operating frequency	Type of equipment	Maximum RF output power	Transmitter and receiver spurious emission	Test reference	Remarks
13.	6 765 kHz - 6 795 kHz	SRC device	≤ 100 mW (EIRP)	ETSI EN 300 330	ETSI EN 300 330	
		ISM device	≤ 500 mW (EIRP)	ETSI EN 300 330	ETSI EN 300 330	
		Inductive device	≤ 42 dB μ A/m at 10 m	ETSI EN 300 330/ ETSI EN 303 417	ETSI EN 300 330/ ETSI EN 303 417	
14.	7 400 kHz - 8 800 kHz	Inductive device	≤ 9 dB μ A/m at 10 m	ETSI EN 300 330	ETSI EN 300 330	
15.	10 200 kHz - 11 000 kHz	SRC device	≤ 10 mW (EIRP)	ETSI EN 300 330	ETSI EN 300 330	
		Inductive device	≤ 9 dB μ A/m at 10 m	ETSI EN 300 330	ETSI EN 300 330	
16.	13 553 kHz - 13 567 kHz	SRC device	≤ 100 mW (EIRP)	ETSI EN 300 330/ ETSI EN 302 291-1	ETSI EN 300 330/ ETSI EN 302 291-1	
		RFID	≤ 100 mW (EIRP)	ETSI EN 300 330/ ETSI EN 302 291-1	ETSI EN 300 330/ ETSI EN 302 291-1	
		ISM device	≤ 500 mW (EIRP)	ETSI EN 300 330	ETSI EN 300 330	
		Inductive device	≤ 42 dB μ A/m at 10 m	ETSI EN 300 330	ETSI EN 300 330	
17.	26.957 MHz - 27.283 MHz	SRC device	≤ 100 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
		ISM device	≤ 500 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
		Inductive device	≤ 42 dB μ A/m at 10 m	ETSI EN 300 330	ETSI EN 300 330	
18.	26.957 28 MHz - 27.282 72 MHz	Wireless microphone device	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
Notes:						
1. ERP refers to radiation of a half wave tuned dipole, which is used for frequencies below 1 GHz.						
2. EIRP is a product of the power supplied to the antenna and the maximum antenna gain, relative to an isotropic antenna, and is used for frequencies above 1 GHz. There is a of 2.15 dB between EIRP and ERP [EIRP (dBm) = ERP (dBm) + 2.15].						

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Table 1. Technical requirements for short range devices (continued)

No.	Operating frequency	Type of equipment	Maximum RF output power	Transmitter and receiver spurious emission	Test reference	Remarks
19.	26.965 MHz - 27.275 MHz	Remote controlled device	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
20.	40 MHz	Remote controlled device	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
21.	40.435 MHz - 40.925 MHz	Wireless microphone device	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
22.	40.66 MHz - 40.70 MHz	ISM device	≤ 500 mW (EIRP)	ETSI EN 300 220-1/ FCC Part 15	ETSI EN 300 220-1/ FCC Part 15	
		SRC device	≤ 1 W (EIRP)	ETSI EN 300 220-1/ FCC Part 15	ETSI EN 300 220-1/ FCC Part 15	
23.	46.61 Mhz - 46.97 Mhz	Cordless telephone	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
24.	47 MHz	Remote controlled device	≤ 50 mW (EIRP)	ETSI EN 300 220-1/ ETSI EN 301 357	ETSI EN 300 220-1/ ETSI EN 301 357	
25.	49 MHz	Remote controlled device	≤ 50 mW (EIRP)	ETSI EN 300 220-1/ ETSI EN 301 357	ETSI EN 300 220-1/ ETSI EN 301 357	
		Inductive device	≤ 18.02 dBμA/m at 10 m	ETSI EN 300 220-1/ ETSI EN 301 357	ETSI EN 300 220-1/ ETSI EN 301 357	
26.	49.61 Mhz - 49.97 Mhz	Cordless telephone	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
27.	87.5 MHz - 108 MHz	SRC device	≤ 50 nW (ERP)	ETSI EN 300 220-1/ ETSI EN 301 357	ETSI EN 300 220-1/ ETSI EN 301 357	
		Wireless microphone device	≤ 50 nW (EIRP)	ETSI EN 300 220-1/ ETSI EN 301 357	ETSI EN 300 220-1/ ETSI EN 301 357	
28.	174 MHz - 230 MHz	Wireless microphone device	≤ 50 mW (EIRP)	ETSI EN 300 220-1/ ETSI EN 300 422-1/ FCC Part 15	ETSI EN 300 220-1/ ETSI EN 300 422-1/ FCC Part 15	

Notes:

- ERP refers to radiation of a half wave tuned dipole, which is used for frequencies below 1 GHz.
- EIRP is a product of the power supplied to the antenna and the maximum antenna gain, relative to an isotropic antenna, and is used for frequencies above 1 GHz. There is a of 2.15 dB between EIRP and ERP [EIRP (dBm) = ERP (dBm) + 2.15].

Table 1. Technical requirements for short range devices (continued)

No.	Operating frequency	Type of equipment	Maximum RF output power	Transmitter and receiver spurious emission	Test reference	Remarks
29.	228.006 3 MHz - 228.993 7 MHz	Security device	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
30.	303 MHz - 320 MHz	Security device	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
		Remote controlled device	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
31.	400 MHz - 402 MHz	Security device	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
32.	401 MHz - 402 MHz	Active medical implant device	≤ 25 μ W (ERP)	ETSI EN 302 537	ETSI EN 302 537	≤ 25 μ W (ERP) for devices with Adaptive Frequency Agility (AFA) and Listen Before Talk (LBT)
		Active medical implant device	≤ 250 nW (ERP)	ETSI EN 302 537	ETSI EN 302 537	
33.	402 MHz - 405 MHz	Active medical implant device	≤ 25 μ W (ERP)	ETSI EN 301 839-1	ETSI EN 301 839-1	
34.	405 MHz - 406 MHz	Active medical implant device	≤ 25 μ W (ERP)	ETSI EN 302 537	ETSI EN 302 537	≤ 25 μ W (ERP) for devices with AFA and LBT
		Active medical implant device	≤ 250 nW (ERP)	ETSI EN 302 537	ETSI EN 302 537	≤ 250 nW (ERP) for devices using Low Power Low Duty Cycle (LPLDC)
35.	433 MHz - 435 MHz	Security device	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
		Remote controlled device	≤ 50 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
		SRC device	≤ 100 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	
		RFID	≤ 100 mW (EIRP)	ETSI EN 300 220-1	ETSI EN 300 220-1	

Notes:

- ERP refers to radiation of a half wave tuned dipole, which is used for frequencies below 1 GHz.
- EIRP is a product of the power supplied to the antenna and the maximum antenna gain, relative to an isotropic antenna, and is used for frequencies above 1 GHz. There is a of 2.15 dB between EIRP and ERP [EIRP (dBm) = ERP (dBm) + 2.15].

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Table 1. Technical requirements for short range devices (continued)

No.	Operating frequency	Type of equipment	Maximum RF output power	Transmitter and receiver spurious emission	Test reference	Remarks
36.	470 MHz - 694 MHz	Wireless microphone device	≤ 50 mW (EIRP)	ETSI EN 300 220-1/ ETSI EN 300 422-1	ETSI EN 300 220-1/ ETSI EN 300 422-1	
37.	916 MHz - 919 MHz	SRC device	≤ 25 mW (EIRP)	ETSI EN 300 220-1/ FCC Part 15	ETSI EN 300 220-1/ FCC Part 15	Duty cycle < 1% or frequency hopping or LBT
38.	919 MHz - 923 MHz	SRC device	≤ 500 mW (EIRP)	ETSI EN 300 220-1/ FCC Part 15	ETSI EN 300 220-1/ FCC Part 15	
		RFID	≤ 2 W (ERP)	ETSI EN 300 220-1/ ETSI EN 302 208-1/ FCC Part 15	ETSI EN 300 220-1/ ETSI EN 302 208-1/ FCC Part 15	RFID interrogator below 2 W (ERP) is subject to Class Assignment and up to 4 W (ERP) is subject to an Apparatus Assignment as per MCMC SRSP-530 RFID.
		RFID	≤ 4 W (ERP)	ETSI EN 300 220-1/ ETSI EN 302 208-1/ FCC Part 15	ETSI EN 300 220-1/ ETSI EN 302 208-1/ FCC Part 15	
39.	923 MHz - 924 MHz	SRC device	≤ 500 mW EIRP	ETSI EN 300 220-1/ FCC Part 15	ETSI EN 300 220-1/ FCC Part 15	≤ 500 mW (EIRP) with duty cycle < 1 % or frequency hopping or LBT
40.	1 880 MHz - 1 900 MHz	SRC device	≤ 250 mW (EIRP)	ETSI EN 300 440	ETSI EN 300 440	
		Cordless Telephone	≤ 250 mW (EIRP)	ETSI EN 300 176/ ETSI EN 301 406	ETSI EN 300 176/ ETSI EN 301 406	
41.	2 400 MHz - 2 483.5 MHz	Cordless Telephone	≤ 100 mW (EIRP)	ETSI EN 300 440	ETSI EN 300 440	
<p>Notes:</p> <ol style="list-style-type: none"> ERP refers to radiation of a half wave tuned dipole, which is used for frequencies below 1 GHz. EIRP is a product of the power supplied to the antenna and the maximum antenna gain, relative to an isotropic antenna, and is used for frequencies above 1 GHz. There is a of 2.15 dB between EIRP and ERP [EIRP (dBm) = ERP (dBm) + 2.15]. 						

Table 1. Technical requirements for short range devices (continued)

No.	Operating frequency	Type of equipment	Maximum RF output power	Transmitter and receiver spurious emission	Test reference	Remarks
42.	2 400 MHz - 2 500 MHz	SRC device	≤ 500 mW (EIRP)	ETSI EN 300 440	ETSI EN 300 440	
		RFID	≤ 500 mW (EIRP)	ETSI EN 300 440	ETSI EN 300 440	
		Closed-Circuit Television (CCTV) access device	≤ 1W (EIRP)	ETSI EN 300 440	ETSI EN 300 440	
		Wireless microphone	≤ 50 mW (EIRP)	ETSI EN 300 440	ETSI EN 300 440	
		ISM device Radio Local Area Network (RLAN)	≤ 500 mW (EIRP)	ETSI EN 300 328/ FCC Part 15 §15.247	ETSI EN 300 328/ FCC Part 15 §15.247	
		SRC device	≤ 500 mW (EIRP)	ETSI EN 300 328/ FCC Part 15 §15.247	ETSI EN 300 328/ FCC Part 15 §15.247	
43.	3 100 MHz - 3 400 MHz	UWB communication device	- 36 dBm (EIRP)	ETSI EN 302 065	ETSI EN 303 883	To fulfil the conditions as per Class Assignment for UWB.
44.	3 700 MHz - 3 800 MHz	UWB communication device	- 40 dBm (EIRP)	ETSI EN 302 065	ETSI EN 303 883	To fulfil the conditions as per Class Assignment for UWB.
45.	3 800 MHz - 6 000 MHz	UWB communication device	- 30 dBm (EIRP)	ETSI EN 302 065	ETSI EN 303 883	To fulfil the conditions as per Class Assignment for UWB.
46.	4 940 MHz - 4 990 MHz	CCTV access device	≤ 1 W (EIRP)	ETSI EN 300 440	ETSI EN 300 440	For government use only. Subject to an Apparatus Assignment as per Class Assignment for CCTV hub station.
Notes:						
1. ERP refers to radiation of a half wave tuned dipole, which is used for frequencies below 1 GHz.						
2. EIRP is a product of the power supplied to the antenna and the maximum antenna gain, relative to an isotropic antenna, and is used for frequencies above 1 GHz. There is a of 2.15 dB between EIRP and ERP [EIRP (dBm) = ERP (dBm) + 2.15].						

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Table 1. Technical requirements for short range devices (continued)

No.	Operating frequency	Type of equipment	Maximum RF output power	Transmitter and receiver spurious emission	Test reference	Remarks
47.	5 150 MHz - 5 250 MHz	SRC device RLAN	≤ 200 mW (EIRP) (For indoor and outdoor use)	ETSI EN 301 893	ETSI EN 301 893	SRC device operating under this provision shall implement Dynamic Frequency Selection (DFS) function in the frequency range 5.250 GHz - 5.350 GHz.
		SRC device RLAN	≤ 1W (EIRP) (For indoor use)	ETSI EN 301 893	ETSI EN 301 893	
		CCTV access device	≤ 1 W (EIRP)	ETSI EN 301 893	ETSI EN 301 893	
48.	5 250 MHz - 5 350 MHz	SRC device RLAN	≤ 1 W (EIRP) (For indoor use)	ETSI EN 301 893/ FCC Part 15 §15.407	ETSI EN 301 893/ FCC Part 15 §15.407	SRC device operating under this provision shall implement DFS function in the frequency range 5.250 GHz - 5.350 GHz.
		CCTV access device	≤ 1 W (EIRP)	ETSI EN 301 893/ FCC Part 15 §15.407	ETSI EN 301 893/ FCC Part 15 §15.407	
49.	5 470 MHz - 5 650 MHz	SRC device	≤ 1 W (EIRP)	ETSI EN 300 440	ETSI EN 300 440	SRC device operating under this provision shall implement DFS and Transmit Power Control (TPC).
		SRC device RLAN	≤ 1 W (EIRP)	ETSI EN 301 893	ETSI EN 301 893	
50.	5 650 MHz - 5 725 MHz	CCTV access device	≤ 1 W (EIRP)	ETSI EN 300 440	ETSI EN 300 440	For government use only. Subject to an Apparatus Assignment as per Class Assignment for CCTV hub station.
<p>Notes:</p> <ol style="list-style-type: none"> ERP refers to radiation of a half wave tuned dipole, which is used for frequencies below 1 GHz. EIRP is a product of the power supplied to the antenna and the maximum antenna gain, relative to an isotropic antenna, and is used for frequencies above 1 GHz. There is a of 2.15 dB between EIRP and ERP [EIRP (dBm) = ERP (dBm) + 2.15]. 						

Table 1. Technical requirements for short range devices (continued)

No.	Operating frequency	Type of equipment	Maximum RF output power	Transmitter and receiver spurious emission	Test reference	Remarks
51.	5 725 MHz - 5 850 MHz	Wireless microphone	≤ 50 mW (EIRP)	ETSI EN 300 440	ETSI EN 300 440	
52.	5 725 MHz - 5 875 MHz	ISM device	≤ 500 mW (EIRP)	ETSI EN 300 440/ FCC Part 15 §15.247 or §15.209 or §15.407	ETSI EN 300 440/ FCC Part 15 §15.247 or §15.209 or §15.407	
		SRC device RLAN	≤ 1 W (EIRP)	ETSI EN 300 440/ FCC Part 15 §15.247 or §15.209 or §15.407	ETSI EN 300 440/ FCC Part 15 §15.247 or §15.209 or §15.407	
		CCTV access device	≤ 1 W (EIRP)	ETSI EN 300 440/ FCC Part 15 §15.247 or §15.209 or §15.407	ETSI EN 300 440/ FCC Part 15 §15.247 or §15.209 or §15.407	
53.	5 925 Mhz - 6 425 Mhz	RLAN	≤ 25 mW (EIRP) (For indoor and outdoor use)	ETSI EN 303 687	ETSI EN 303 687	
		RLAN	≤ 250 mW EIRP (For indoor use)	ETSI EN 303 687	ETSI EN 303 687	
54.	6 000 MHz - 8 500 MHz	UWB communication device	≤ 0 dBm (EIRP)	ETSI EN 302 065	ETSI EN 303 883	To fulfil the conditions as per Class Assignment for UWB.
		UWB road and rail devices	≤ -13.3 dBm (EIRP)	ETSI EN 302 065	ETSI EN 303 883	
55.	8 500 MHz - 10 600 MHz	UWB communication device	≤ -25 dBm (EIRP)	ETSI EN 302 065	ETSI EN 303 883	To fulfil the conditions as per Class Assignment for UWB.
Notes:						
1. ERP refers to radiation of a half wave tuned dipole, which is used for frequencies below 1 GHz.						
2. EIRP is a product of the power supplied to the antenna and the maximum antenna gain, relative to an isotropic antenna, and is used for frequencies above 1 GHz. There is a of 2.15 dB between EIRP and ERP [EIRP (dBm) = ERP (dBm) + 2.15].						

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Table 1. Technical requirements for short range devices (continued)

No.	Operating frequency	Type of equipment	Maximum RF output power	Transmitter and receiver spurious emission	Test reference	Remarks
56.	21.65 GHz - 22 GHz	Automotive radar sensor	≤ 0 dBm (EIRP)	*ETSI EN 302 288	*ETSI EN 302 288	To fulfil the conditions as per Class Assignment for Automotive radar sensor. *Transmitter and receiver spurious emissions and test reference recommended by ERC Recommendation 70-03.
57.	22 GHz - 29.5 GHz	Automotive radar sensor	≤ 0 dBm (EIRP)	* ETSI EN 302 288	* ETSI EN 302 288	To fulfil the conditions as per Class Assignment for Automotive radar sensor. *Transmitter and receiver spurious emissions and test reference recommended by ERC Recommendation 70-03.
58.	24 GHz - 24.25 GHz	ISM device	≤ 500 mW (EIRP)	ETSI EN 300 440/ FCC Part 15	ETSI EN 300 440/ FCC Part 15	
		SRC device	≤ 1 W (EIRP)	ETSI EN 300 440/ FCC Part 15	ETSI EN 300 440/ FCC Part 15	
		Automotive radar sensor	≤ 30 dBm (EIRP)	ETSI EN 302 288/ ETSI EN 302 858	ETSI EN 302 288/ ETSI EN 302 858	
59.	57 GHz - 64 GHz	SRC device	≤ 10 W (EIRP)	ETSI EN 302 567	ETSI EN 302 567	
		SRC device	≤ 100 mW (EIRP)	ETSI EN 305 550-1	ETSI EN 305 550-1	
60.	61 GHz - 61.5 GHz	ISM device	≤ 500 mW (EIRP)	ETSI EN 305 550-1/ FCC Part 15	ETSI EN 305 550-1/ FCC Part 15	
<p>Notes:</p> <ol style="list-style-type: none"> ERP refers to radiation of a half wave tuned dipole, which is used for frequencies below 1 GHz. EIRP is a product of the power supplied to the antenna and the maximum antenna gain, relative to an isotropic antenna, and is used for frequencies above 1 GHz. There is a of 2.15 dB between EIRP and ERP [EIRP (dBm) = ERP (dBm) + 2.15]. 						

Table 1. Technical requirements for short range devices (concluded)

No.	Operating frequency	Type of equipment	Maximum RF output power	Transmitter and receiver spurious emission	Test reference	Remarks
61.	76 GHz - 77 GHz	Security device	≤ 50 mW (EIRP)	ETSI EN 305 550-1	ETSI EN 305 550-1	
		Automotive radar sensor	≤ 55 dBm (EIRP)	ETSI EN 301 091-1	ETSI EN 301 091-1	
62.	77 GHz - 81 GHz	Automotive radar sensor	≤ 55 dBm (EIRP)	ETSI EN 301 091-1	ETSI EN 301 091-1	
63.	122 GHz - 123 GHz	ISM device	≤ 500 mW (EIRP)	ETSI EN 305 550-1	ETSI EN 305 550-1	
		SRC device	≤ 1 W (EIRP)	ETSI EN 305 550-1	ETSI EN 305 550-1	
64.	244 GHz - 246 GHz	ISM device	≤ 500 W (EIRP)	ETSI EN 305 550-1	ETSI EN 305 550-1	
		SRC device	≤ 1 W (EIRP)	ETSI EN 305 550-1	ETSI EN 305 550-1	

Notes:

- ERP refers to radiation of a half wave tuned dipole, which is used for frequencies below 1 GHz.
- EIRP is a product of the power supplied to the antenna and the maximum antenna gain, relative to an isotropic antenna, and is used for frequencies above 1 GHz. There is a of 2.15 dB between EIRP and ERP [EIRP (dBm) = ERP (dBm) + 2.15].

Annex A
(normative)

Normative references

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MCMC SRSP-530 RFID, *Requirements for Radio Frequency Identification Device RFID- Operating in Frequency Band 919 MHz to 923 MHz*

MCMC MTSFB TC TXX, *Communications Equipment - Baseline Requirements*

ETSI EN 300 176 (All parts), *Digital Enhanced Cordless Telecommunications (DECT); Test Specification*

ETSI EN 300 220-1, *Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz; Part 1: Technical characteristics and methods of measurement*

ETSI EN 300 328, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive*

ETSI EN 300 330, *Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9 kHz to 30 MHz; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU*

ETSI EN 300 422-1, *Wireless Microphones; Audio PMSE up to 3 GHz; Part 1: Class A Receivers; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU*

ETSI EN 300 440, *Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Harmonised Standard for access to radio spectrum*

ETSI EN 301 091-1, *Short Range Devices; Transport and Traffic Telematics (TTT); Radar equipment operating in the 76 GHz to 77 GHz range; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU; Part 1: Ground based vehicular radar*

ETSI EN 301 357, *Cordless audio devices in the range 25 MHz to 2 000 MHz; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU*

ETSI EN 301 406, *Digital Enhanced Cordless Telecommunications (DECT); Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU*

ETSI EN 301 839-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Ultra Low Power Active Medical Implants (ULP-AMI) and Peripherals (ULP-AMI-P) operating in the frequency range 402 MHz to 405 MHz; Part 1: Technical characteristics and test methods*

ETSI EN 301 893, *5 GHz RLAN; Harmonised standard covering the essential requirements of article 3.2 of Directive 2014/53/EU*

ETSI EN 302 065, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD) using Ultra Wide Band technology (UWB) for communications purposes; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive*

ETSI EN 302 195, *Short Range Devices (SRD); Ultra Low Power Active Medical Implants (ULP-AMI) and accessories (ULP-AMI-P) operating in the frequency range 9 kHz to 315 kHz Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU*

ETSI EN 302 208-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Radio Frequency Identification Equipment operating in the band 865 MHz to 868 MHz with power levels up to 2 W and in the band 915 MHz to 921 MHz with power levels up to 4 W; Part 1: Technical requirements and methods of measurement*

ETSI EN 302 288, *Short Range Devices; Transport and Traffic Telematics (TTT); Ultra-wideband radar equipment operating in the 24,25 GHz to 26,65 GHz range; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU*

ETSI EN 302 291-1, *Short Range Devices (SRD); Close Range Inductive Data Communication equipment operating at 13,56 MHz; Short Range Devices (SRD); Close Range Inductive Data Communication equipment operating at 13,56 MHz; Part 1: Technical characteristics and test methods*

ETSI EN 302 537, *Ultra Low Power Medical Data Service (MEDS) Systems operating in the frequency range 401 MHz to 402 MHz and 405 MHz to 406 MHz; Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU*

ETSI EN 302 567, *Multiple-Gigabit/s radio equipment operating in the 60 GHz band; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU*

ETSI EN 302 858, *Short Range Devices; Transport and Traffic Telematics (TTT); Radar equipment operating in the 24,05 GHz to 24,25 GHz or 24,05 GHz to 24,50 GHz range; Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU*

ETSI EN 303 417, *Wireless power transmission systems, using technologies other than radio frequency beam in the 19 - 21 kHz, 59 - 61 kHz, 79 - 90 kHz, 100 - 300 kHz, 6 765 - 6 795 kHz ranges; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU*

ETSI EN 303 687, *6 GHz WAS/RLAN; Harmonised Standard for access to radio spectrum*

ETSI EN 303 883, *Short Range Devices (SRD) using Ultra Wide Band (UWB); Measurement Techniques*

ETSI EN 305 550-1, *Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 40 GHz to 246 GHz frequency range; Part 1: Technical characteristics and test methods*

FCC Part 15, *Federal Communications Commission Part 15 - Radio Frequency Devices*

ERC Recommendation 70-03, *The use of Short Range Devices (SRD)*

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