

TECHNICAL CODE

SPECIFICATION FOR SHORT RANGE DEVICES (SRD)

First Revision

Developed by



Registered by



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MCMC MTSFB TC T007:2014

DEVELOPMENT OF TECHNICAL CODES

The Communications and Multimedia Act 1998 ('the Act') provides for 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 requirement 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

Wireless Terminal Working Group under the Malaysian Technical Standards Forum Bhd (MTSFB) which developed this Technical Code consists of representatives from the following organisations:

Maxis Communications Berhad
MIMOS Berhad
Nokia (M) Sdn Bhd
SIRIM QAS International Sdn Bhd
Telekom Malaysia Berhad

FOREWORD

This technical code for the Specification for Short Range Devices (SRD) ('this Technical Code') was developed pursuant to section 185 of the Act 588 by the Malaysian Technical Standards Forum Berhad (MTSFB) via its Wireless Terminal Working Group.

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

This Technical Code is the first revision of SKMM WTS SRD Rev. 1.01:2007, Technical Specification for Short Range Device.

This Technical Code cancels and replaces SKMM WTS SRD Rev. 1.01:2007.

This Technical Code shall continue to be valid and effective until reviewed or cancelled.

SPECIFICATION FOR SHORT RANGE DEVICES (SRD)

1. Scope

This Technical Code defines the technical requirements for SRD transmitters and receivers operating in the frequencies as defined in the relevant Standard Radio System Plans (SRSPs) and the Class Assignments issued by MCMC.

SRD may be fixed, mobile or portable stations that come with a radio frequency output connector and dedicated antenna or an integral antenna. Its applications include (but not limited to) short range communication (SRC), remote control, security, wireless microphone, wireless local area network (WLAN), industrial, scientific and medical (ISM), radio frequency identification (RFID) and wireless CCTV. The devices may employ different types of modulation and power requirement which may include data, video and voice application.

2. Normative references

The normative references in Annex A 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.

The devices shall be tested for compliance with the applicable technical requirements stipulated in Clause 4 and Table 1 of this Technical Code. The test methods and conditions mentioned in Table 1 shall be applicable to the device under test.

3. Abbreviation

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

AC	Alternating Current
CCTV	Closed-circuit Television
DC	Direct Current
EIRP	Effective Isotropic Radiated Power
ERP	Effective Radiated Power
ETSI	European Telecommunications Standards Institute
FCC	Federal Communications Commission
IEC	International Electrotechnical Commission
ISM	Industrial, Scientific and Medical
RFID	Radio Frequency Identification Device
RLAN	Radio Local Area Network
SRSP	Standard Radio System Plan
SRD	Short Range Devices

SRC	Short Range Communication
WLAN	Wireless Local Area Network

4. Requirements

4.1 General requirements

SRD shall be designed to meet the following basic requirements:

- a) The device shall not cause interference with other authorised radio-communication services, and be able to tolerate any interference caused by other radio-communication services, electrical or electronic equipment.
- b) The device 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.

4.1.1 Power supply requirements

The equipment may be AC or DC powered. For AC powered equipment, the operating voltage shall be 240 V +5 %, -10 % and frequency 50 Hz \pm 1 % in according to MS 406 or 230 V \pm 10 % and frequency 50 Hz \pm 1 % in according to MS IEC 60038 whichever is current.

Where external power supply is used, e.g. AC adaptor, it shall not affect the capability of the equipment to meet this Technical Code. Adaptor must be pre-approved by the relevant regulatory body before it can be used with the equipment.

4.1.2 Power supply cord and mains plug requirements

The equipment shall be fitted with a suitable and appropriate approved power supply cord and mains plug. Both are regulated products and must be pre-approved by the relevant regulatory body before it can be used with the equipment.

The power supply cord shall be certified in according to:

- a) MS 140; or
- b) BS 6500; or
- c) IEC 60227-5; or
- d) IEC 60245-4.

The main plug shall be certified in according to:

- a) 13 A fused plugs: MS 589: Part 1 or BS 1363: Part 1; or
- b) 2.5 A, 250 V, flat non-rewirable two-pole plugs: MS 1578 or BS EN 50075.

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4.1.3 Marking requirements

The equipment shall be marked with the following information:

- a) supplier/manufacturer's name or identification mark;
- b) supplier/manufacturer's model or type reference; and
- c) other markings as required by the relevant standards.

The markings shall be legible, indelible and readily visible. All information on the marking shall be either in "Bahasa Melayu" or English Language.

4.2 Technical requirements

The SRD shall be designed to operate within the specified frequency bands and comply with the maximum Field Strength/RF Output Power and Transmitter & 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

Table 1: Technical requirements for Short Range Devices (SRD)

Authorized Frequency Bands / Frequencies		Max. Field Strength / RF Output Power	Transmitter & Receiver Spurious Emissions	Test Reference	SRD Applications	Remarks
1.	3 kHz - 195 kHz	50 mW (EIRP)	MS 300 330-1	MS 300 330-1	Security device	
2.	3155 kHz - 3400 kHz	13.5 dB μ A/m at 10 m			SRC device	
3.	6765 kHz - 6795 kHz	100 mW (EIRP)			SRC device	
		500 mW (EIRP)	ISM device			
4.	9 kHz - 315 kHz	30 dB μ A/m at 10 m	EN 302 195	EN 302 195	Active medical implant device	
5.	10200 kHz - 11000 kHz	10 mW (EIRP)	MS 300 330-1	MS 300 330-1	SRC device	
6.	13553 kHz - 13567 kHz	100 mW (EIRP)			SRC device & RFID	
		500 mW (EIRP)	ISM device			
7.	26.957 MHz - 27.283 MHz	100 mW (EIRP)	MS 300 220-1	MS 300 220-1	SRC device	
		500 mW (EIRP)			ISM device	
8.	26.95728 MHz - 27.28272 MHz	50 mW (ERP)			Wireless microphone device	
9.	26.965 MHz - 27.275 MHz	50 mW (ERP)	MS 300 220-1	MS 300 220-1	Remote controlled device	
10.	40 MHz				Wireless microphone device	
11.	40.435 MHz - 40.925 MHz					
12.	40.66 MHz - 40.7 MHz	500 mW (ERP)	MS 300 220-1/ FCC Part 15	MS 300 220-1/ FCC Part 15	ISM device	
		1 W (ERP)			SRC device	

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Table 1: Technical requirements for Short Range Devices (SRD) (continued)

Authorized Frequency Bands / Frequencies		Max. Field Strength / RF Output Power	Transmitter & Receiver Spurious Emissions	Test Reference	SRD Applications	Remarks
13.	47 MHz	50 mW (EIRP)	MS 300 220-1/ EN 301 357	MS 300 220-1/ EN 301 357	Remote controlled device	
14.	49 MHz					
15.	87.5 MHz - 108 MHz	50 nW (ERP)	MS 300 220-1/ FCC Part 15	MS 300 220-1/ FCC Part 15	Wireless microphone device	
		50 mW (EIRP)				
16.	182.025 MHz - 182.975 MHz	50 mW (EIRP)	MS 300 220-1/ FCC Part 15	MS 300 220-1/ FCC Part 15	Wireless microphone device	
17.	183.025 MHz - 183.475 MHz					
18.	217.025 MHz - 217.975 MHz		MS 300 220-1	MS 300 220-1		
19.	218.025 MHz - 218.475 MHz					
20.	228.0063 MHz - 228.9937 MHz	50 mW (EIRP)	MS 300 220-1	MS 300 220-1	Security device	
21.	303 MHz - 320 MHz				Security device	
					Remote controlled device	
					Security device	
22.	400 MHz - 402 MHz	25 µW (EIRP)	EN 301 839-1	EN 301 839-1	Active medical implant device	
24.	433 MHz - 435 MHz	50 mW (ERP)	MS 300 220-1	MS 300 220-1	Security device and remote controlled device	
		100 mW (ERP)	MS 300 220-1	MS 300 220-1	SRC device	
		100 mW (EIRP)			RFID	
25.	510 MHz - 798 MHz	50 mW (ERP)	MS 300 220-1	MS 300 220-1	Wireless microphone device	

Table 1: Technical requirements for Short Range Devices (SRD) (*continued*)

Authorized Frequency Bands / Frequencies		Max. Field Strength / RF Output Power	Transmitter & Receiver Spurious Emissions	Test Reference	SRD Applications	Remarks
26.	868.1 MHz	50 mW (ERP)	MS 300 220-1	MS 300 220-1	Security device	
27.	869 MHz - 870 MHz	500 mW (ERP)			SRC device	
					Security device	
					RFID	
28.	919 MHz - 923 MHz	2 W (ERP) / 4 W (ERP)			RFID	RFID interrogator below 2W (ERP) is subject to Class Assignment (CA) and up to 4W (ERP) is subject to an Apparatus Assignment (AA) as per MCMC SRSP-530 RFID.
29.	1880 MHz - 1900 MHz	250 mW (EIRP)	EN 300 176	EN 300 176	SRC device	
30.	2400 MHz - 2500 MHz	500 mW (EIRP)	MS 300 440-1	MS 300 440-1	SRC device, RFID, CCTV access device and wireless microphone device	
			MS 300 328/ FCC Part 15 §15.209	MS 300 328/ FCC Part 15 §15.247	ISM and SRC device	
31.	4940 MHz - 4990 MHz	1 W (EIRP)	MS 300 440-1	MS 300 440-1	CCTV access device	For government use only
32.	5150 MHz - 5350 MHz	1 W (EIRP)	MS 300 440-1	MS 300 440-1	SRC device and CCTV access device	
		1 W (EIRP)	MS 301 893/ FCC Part 15 §15.407 (b)	MS 301 893/ FCC Part 15 §15.407	SRC device (RLAN)	SRC device operating under this provision shall implement DFS function in the frequency range 5.250 GHz – 5.350 GHz.

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Table 1: Technical requirements for Short Range Devices (SRD) (continued)

Authorized Frequency Bands / Frequencies		Max. Field Strength / RF Output Power	Transmitter & Receiver Spurious Emissions	Test Reference	SRD Applications	Remarks
33.	5470 MHz - 5650 MHz	1 W (EIRP)	MS 300 440-1	MS 300 440-1	SRC device	SRC device operating under this provision shall implement Dynamic Frequency Selection (DFS) & Transmit Power Control (TPC)
		1 W (EIRP)	MS 301 893	MS 301 893	SRC device (RLAN)	
34.	5650 MHz - 5725 MHz	1 W (EIRP)	EN 300 440-1	EN 300 440-1	CCTV access device	
35.	5725 MHz - 5875 MHz	500 mW (EIRP)	MS 300 440-1/ FCC Part 15 §15.209	MS 300 440-1/ FCC Part 15 § 15.247 or 15.407	ISM device	
		1 W (EIRP)			SRC device and CCTV access device	
36.	24 GHz - 24.25 GHz	500 mW (EIRP)	MS 300 440-1/ FCC Part 15 §15.209; §15.249 (d)	MS 300 440-1/ FCC Part 15	ISM device	
		1 W (EIRP)			SRC device	
37.	57 GHz - 64 GHz	10 W (EIRP)	EN 302 567	EN 302 567	SRC device	
38.	61 GHz - 61.5 GHz	500 mW (EIRP)	EN 305 550-1/ FCC Part 15	EN 305 550-1/ FCC Part 15	ISM device	
39.	76 GHz - 77 GHz	50 mW (ERP)	EN 305 550-1	EN 305 550-1	Security device	
		5 W (EIRP)	EN 301 091-1/ FCC Part 15 §15.253	EN 301 091-1/ FCC Part 15	Short range radio determination	
40.	122 GHz - 123 GHz	500 mW (EIRP)	EN 305 550-1	EN 305 550-1	ISM device	
		1 W (EIRP)			SRC device	
41.	244 GHz - 246 GHz	500 W (EIRP)	EN 305 550-1	EN 305 550-1	ISM device	
		1 W (EIRP)			SRC device	

Note: The Malaysian Standards cited in this table are adopted from ETSI standards which can be publicly accessed through the ETSI website located at <http://www.etsi.org>

Annex A

Normative references

BS 1363: Part 1	13 A plugs, socket-outlets, adaptors and connection units – Part 1: Specification for rewirable and non-rewirable 13 A fused plugs
BS 6500	Electric cables. Flexible cords rated up to 300/500 V, for use with appliances and equipment intended for domestic, office and similar environments
BS EN 50075	Specification for flat non-wirable two-pole plugs 2.5 A 250 V, with cord, for the connection of Class II-equipment for household and similar purposes
ETSI EN 300 176	Digital Enhanced Cordless Telecommunications (DECT); Approval test specification;
ETSI EN 301 091	Electromagnetic compatibility and Radio spectrum Matters (ERM); Road Transport and Traffic Telematics (RTTT); Technical characteristics and test methods for radar equipment operating in the 76 GHz to 77 GHz band
ETSI EN 301 357	Electromagnetic compatibility and Radio spectrum Matters (ERM); Technical characteristics and test methods for analogue cordless wideband audio devices using integral antennas operating in the CEPT recommended 863 MHz to 865 MHz frequency range
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 302 195	Electromagnetic compatibility and Radio spectrum Matters (ERM); Radio equipment in the frequency range 9 kHz to 315 kHz for Ultra Low Power Active Medical Implants (ULP-AMI) and accessories; Part 1: Technical characteristics and test methods
ETSI EN 302 567	Broadband Radio Access Networks (BRAN); 60 GHz Multiple-Gigabit WAS/RLAN Systems; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive
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

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IEC 60245-4	Rubber insulated cables – Rated voltages up to and including 450/750 V – Part 4: Cords and flexible cables
IEC 60227-5	Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V – Part 5: Flexible cables (cords)
MS 300 220-1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio Equipment to be used in the 25 MHz to 1000 MHz frequency range with the power levels ranging up to 500 mW – Part 1: Technical characteristics and test method
MS 300 330-1	Electromagnetic compatibility and Radio spectrum Matters (ERM); 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 – Part 1: Technical characteristics and test methods
MS 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 spread spectrum modulation techniques; Harmonised EN covering essential requirements under article 3.2 of the R&TTE Directives
MS 300 440-1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range – Part 1: Technical characteristics and test methods
MS 301 893	Broadband Radio Access Networks (BRAN); 5 GHz high performance RLAN; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive
MS 140	Specification for insulated flexible cords and cables
MS 589: Part 1	Specification for 13 A plugs, socket outlets, adaptors and connection units – Part 1: Specification for rewirable and non-rewirable 13 A fused plugs
MS 1578	Specification for flat non-rewirable two-pole plugs, 2.5 A, 250 V, with cord, for the connection of class II-Equipment for household and similar purposes
MCMC SRSP - 534 WLAN	Requirements for wireless local area networks (WLAN) systems operating in the frequency band 5150 MHz to 5350 MHz
MCMC SRSP - 530 RFID	Requirement for Radio Frequency Identification Device operating in the frequency band from 919 MHz to 923 MHz
MS IEC 60038	IEC Standard voltages
MS IEC 60950-1	Information Technology equipment – Safety
MS IEC CISPR 22	Information Technology Equipment – Radio disturbance characteristics – Limits and methods of measurement

Annex B
(Informative)

Amendments

Amendments to SKMM WTS SRD Rev. 1.01:2007		
Page	Clause	Items Amended
Cover	-	The document has been renumbered as “MCMC MTSFB TC T007:2014”. The document has adopted new cover page.
i	-	Explanatory note on the development of Technical Codes has been included.
4	4.2 (Table 1)	The following frequencies have been included: (a) 3155 kHz – 3400 kHz (SRC device) (b) 9 kHz – 315 kHz (active medical implant device) (c) 10 200 kHz – 11 000 kHz (SRC device) (d) 40.435 MHz – 40.925 MHz (wireless microphone device) (e) 402 MHz – 405 MHz (active medical implant device) (f) 1880 MHz – 1900 MHz (SRC device) (g) 4940 MHz – 4990 MHz (CCTV access device for government use) (h) 5470 MHz – 5650 MHz (SRC device) (i) 5650 MHz – 5725 MHz (CCTV access device) (j) 57 GHz – 64 GHz (SRC device) References to ETSI standards have been replaced with their equivalent Malaysian Standards if available.
8	Annex A	The normative references have been updated.

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Acknowledgements

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