

**SKMM WTS SRD**  
**Rev. 1.01:2007**

**TECHNICAL SPECIFICATION  
FOR  
SHORT RANGE DEVICES (SRD)**



Suruhanjaya Komunikasi dan Multimedia Malaysia  
Off Pesiaran Multimedia, 63000 Cyberjaya, Selangor Darul Ehsan, Malaysia

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## **FOREWORD**

This Technical Specification was developed under the authority of the Malaysian Communications and Multimedia Commission (SKMM) under the Communications and Multimedia Act 1998 (CMA 98) and the relevant provisions on technical regulation of Part VII of the CMA 98. It is based on recognised International Standards documents.

This Technical Specification specifies the specification to conform for approval of telecommunications device.

### **NOTICE**

**This Specification is subject to review and revision**

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## **TECHNICAL SPECIFICATION FOR SHORT RANGE DEVICES (SRD)**

### **1. Scope**

**1.1** This specification defines the minimum technical requirements for SRD transmitters and receivers operating in frequencies as defined in Issuance of Class Assignment and Standard Radio System Plan (SRSP).

**1.2** SRD may be fixed, mobile or portable stations that come with a radio frequency output connector and dedicated antenna or an integral antenna. Applications include Short Range Communication (SRC) device, remote control device, security device, wireless microphone device, wireless local area network (WLAN), Industrial, Scientific and Medical (ISM) device and radio frequency identification device (RFID). These devices may employ different types of modulation and may have speech application.

### **2. Normative references**

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

**2.2** The devices shall be tested for compliance with the applicable technical requirements stipulated in Clause 4 and Table 1 of this Technical Specification. The test methods and conditions given in one or more of the following references may be applicable to the device under test (refer to Table 1 for guidance).

See Annex A

### **3. Abbreviations**

AC	Alternating Current
DC	Direct Current
EIRP	Effective Isotropic Radiated Power
ETSI	European Telecommunications Standards Institute
FCC	Federal Communications Commission
IEC	International Electrotechnical Commission

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ISM	Industrial, Scientific and Medical
RFID	Radio Frequency Identification Device
SKMM	Malaysian Communications and Multimedia Commission
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 is intended for operating in unprotected and shared frequency bands. Its operation 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 Specification.

#### **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 % as according to MS 406 or 230 V  $\pm$  10 % and frequency 50 Hz  $\pm$  1 % as 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 specification. 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 as 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 as 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.

#### **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 comply with the maximum Effective Isotropic Radiated Power (EIRP) and Transmitter & Receiver Spurious Emissions given in Table 1, operating in its intended frequency band or frequencies. It shall fulfil the relevant requirements of this Technical Specification on all the permitted frequencies which it is intended to operate.



**Table 1. Technical Requirements for Short Range Devices (SRD)**

	<b>Authorized Frequency Bands/Frequencies</b>	<b>Maximum EIRP</b>	<b>Transmitter &amp; Receiver Spurious Emissions</b>	<b>Test Reference</b>	<b>SRD Applications</b>	<b>Remarks</b>
1.	3.0000 kHz to 195.0000 kHz	50 mWatt	EN 300-330-1	EN 300-330-1	Security device	
2.	6765.0000 kHz to 6795.0000 kHz	100 mWatt	FCC Part 15 /	FCC Part 15 /	SRC device	
		500 mWatt	EN 300-330-1	EN 300-330-1	ISM	
3.	13.5530 MHz to 13.5670 MHz	100 mWatt	FCC Part 15 /	FCC Part 15 /	SRC device	
		500 mWatt	EN 300 330-1	EN 300 330-1	ISM	
4.	26.9570 MHz to 27.2830 MHz	100 mWatt	FCC Part 15 /	FCC Part 15 /	SRC device	
		500 mWatt	EN 300 220-1	EN 300 220-1	ISM	
5.	26.95728 MHz to 27.28272 MHz	50 mWatt	FCC Part 15 /	FCC Part 15 /	Wireless microphone device	
6.	26.9650 MHz to 27.2750 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Remote control device	
7.	40.0000 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Remote control device	
8.	40.4350 MHz to 40.9250 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Wireless microphone device	



**Table 1. Technical Requirements for Short Range Devices (SRD) (continued)**

	<b>Authorized Frequency Bands/Frequencies</b>	<b>Maximum EIRP</b>	<b>Transmitter &amp; Receiver Spurious Emissions</b>	<b>Test Reference</b>	<b>SRD Applications</b>	<b>Remarks</b>
9.	40.6600 MHz to 40.7000 MHz	100 mWatt	FCC Part 15 / EN 300 220-1	FCC Part 15 / EN 300 220-1	SRC device	
		500 mWatt	FCC Part 15 / EN 300 220-1	FCC Part 15 / EN 300 220-1	ISM	
10.	47.0000 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Remote control device	
11.	49.0000 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Remote control device	
12.	87.5000 MHz to 108.0000 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Wireless microphone device	
13.	182.0250 MHz to 182.9750 MHz	50 mWatt	FCC Part 15 / EN 300 220-1	FCC Part 15 / EN 300 220-1	Wireless microphone device	
14.	183.0250 MHz to 183.4750 MHz	50 mWatt	FCC Part 15 / EN 300 220-1	FCC Part 15 / EN 300 220-1	Wireless microphone device	
15.	217.0250 MHz to 217.9750 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Wireless microphone device	
16.	218.0250 MHz to 218.4750 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Wireless microphone device	
17.	228.0063 MHz to 228.9937 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Security device	
18.	303.0000 MHz to 320.0000 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Remote control device, Security device	

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**Table 1. Technical Requirements for Short Range Devices (SRD) (continued)**

	<b>Authorized Frequency Bands/Frequencies</b>	<b>Maximum EIRP</b>	<b>Transmitter &amp; Receiver Spurious Emissions</b>	<b>Test Reference</b>	<b>SRD Applications</b>	<b>Remarks</b>
19.	400.0000 MHz to 402.0000 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Security device	
20.	433.0000 MHz to 435.0000 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Remote control device, Security device	
		100 mWatt	EN 300 220-1	EN 300 220-1	SRC device	
21.	510.0000 MHz to 798.0000 MHz	50 mWatt	EN 300 220-1	EN 300 220-1	Wireless microphone device	
22.	868.1000 MHz	50 mWatt	EN 300 220-1 / ETSI TR 101445	EN 300 220-1 / ETSI TR 101445	Security device	
23.	919.0000 MHz to 923.0000 MHz	2 Watt	FCC Part 15	FCC Part 15	RFID	SRSP 530
24.	2400.0000 MHz to 2500.0000 MHz	500 mWatt	EN 300 440-1	EN 300 440-1	SRC device	
			EN 300 328	EN 300 328	ISM	
25.	5150.0000 MHz to 5250.0000 MHz	1 Watt	EN 300 440-1	EN 300 440-1	SRC device, WLAN	SRSP 534
26.	5250.0000 MHz to 5350.0000 MHz	1 Watt	FCC Part 15	FCC Part 15	SRC device, WLAN	SRSP 534

**Table 1. Technical Requirements for Short Range Devices (SRD) (continued)**

	<b>Authorized Frequency Bands/Frequencies</b>	<b>Maximum EIRP</b>	<b>Transmitter &amp; Receiver Spurious Emissions</b>	<b>Test Reference</b>	<b>SRC Applications</b>	<b>Remarks</b>
27.	5725.0000 MHz to 5875.0000 MHz	500 mWatt	FCC Part 15 / EN 300 440-1	FCC Part 15 / EN 300 440-1	ISM	
		1 Watt	FCC Part 15	FCC Part 15	SRC device	
28.	24.0000 GHz to 24.2500 GHz	500 mWatt	FCC Part 15 / EN 300 440-1	FCC Part 15 / EN 300 440-1	ISM	
		1 Watt			SRC device	
29	61.0000 GHz to 61.5000 GHz	500 mWatt	FCC Part 15	FCC Part 15	ISM	
		1 Watt			SRC device	
30.	76.0000 GHz to 77.0000 GHz	50 mWatt	FCC Part 15 / EN 301 091	FCC Part 15 / EN 301 091	Security device	
31.	122.0000 GHz to 123.0000 GHz	500 mWatt			ISM	
		1 Watt			SRC device	
32.	244.0000 GHz to 246.0000 GHz	500 mWatt			ISM	
		1 Watt			SRC device	

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**Annex A**  
**(normative)**

**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 TR 101 445	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD) intended for operation in the 862 MHz to 870 MHz band; System Reference Document for Radio Frequency Identification (RFID) equipment
ETSI EN 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
ETSI EN 300 330-1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment in the frequency rang 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
ETSI EN 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
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 spread spectrum modulation techniques; Harmonised EN covering essential requirements under article 3.2 of the R&TTE Directives

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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
FCC Part 15	Radio Frequency Devices
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 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
P.U (B) 416	Communications and Multimedia Act; Notification of Issuance of Class Assignment
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