



Republic of the Philippines
Department of Transportation and Communications
NATIONAL TELECOMMUNICATIONS COMMISSION
BIR Road, East Triangle, Diliman, Quezon City

MEMORANDUM CIRCULAR

NO. 03-05-2007

SUBJECT : FREQUENCY BANDS FOR THE USE AND OPERATION OF SHORT RANGE DEVICES (SRDs)

Whereas, the radio spectrum allocation and assignment are subject to review by the National Telecommunications Commission pursuant to RA 7925, Rule 600 of MC 8-9-95 (Implementing Rules and Regulations of RA 7925), Executive Order 546 series of 1979, and Act 3846 as amended. Also, said review is in the interest of public service and to keep pace with the development in wireless technology to ensure wider access to limited radio spectrum and the use of cost effective technology;

Whereas, there is an increasing demand for and use of low powered short range devices (SRD), for a wide variety of applications used worldwide, either as an independent device, or as an integral part of other systems, and carried and used across national borders;

Whereas, the operational requirements of the radio parameters for SRD devices vary, and as such said devices cannot claim protection against interference from other radio services;

Wherefore, the Commission hereby issues the following rules and regulations for the allocation of frequencies for, and the use and operation of, Short Range Devices (SRDs):

1. DEFINITION OF TERMS

- 1.1 Alarms** refer to the use of radio communication system for indicating an alarm condition at a distant location
- 1.2 Commission** refers to the National Telecommunications Commission
- 1.3 Equipment for detecting movement and equipment for alert** are low power radar systems for radio determination purposes
- 1.4 HIPERLANs (High Performance Radio Local Area Networks)** are radio systems based on local area networking solutions that require higher data rates and greater bandwidth for new multimedia applications spectrum requirements. They are intended for connectivity between traditional business products such as PCs, laptops, workstations, servers, printers and other networking equipment as well as digital consumer electronic equipment in the wireless home network environment.

- 1.5 Inductive application systems** are communication systems based on magnetic fields generally at low RF frequencies. Inductive applications include: car immobilizers, car access systems or car detectors, animal identification, alarm systems, item management and logistic systems, cable detection, waste management, personal identification, wireless voice links, access control, proximity sensors, anti-theft systems including RF anti-theft induction systems, data transfer to handheld devices, automatic article identification, wireless control systems and automatic road tolling.
- 1.6 Radio determination** refers to the determination of the position, velocity and/or other characteristics of an object, or the obtaining of information relating to these parameters, by means of the propagation properties of radio waves.
- 1.7 Radio microphones** also referred to as wireless microphones or cordless microphones, are small, low power (50 mW or less) unidirectional transmitters designed to be worn on the body, or hand held, for the transmission of sound over short distances for personal use.
- 1.8 RLANs** are radio systems for the purpose of replacing physical cables to connect data networks within a building, providing a more flexible and economical approach to the installation, reconfiguration and use of such networks within the business and industrial environments.
- 1.9 RTTTs (Road Transport and Traffic Telematics)**, also referred to as dedicated short-range communications for transport information and control systems (TICS), are systems providing data communication between two or more road vehicles and between road vehicles and the road infrastructure for various information-based travel and transport applications, including automatic toll-collection, route and parking guidance, collision avoidance and similar applications.
- 1.10 Short Range Devices (SRDs)** are radio transmitters that have low capability of causing interference to other radio equipment. In general, such devices are permitted to operate on a non-interference or no protection from interference basis. SRDs offer a low risk of interference with other radio services, because their transmitted power and range are low.
- 1.11 Telecommand** refers to the use of radio communication devices for the transmission of signals to initiate, modify or terminate functions of equipment at a distance.
- 1.12 Telemetry** refers to the use of radio communication for indicating or recording data at a distance.
- 1.13 Ultra Low Power Active Medical Implant Communication Systems (MICS)** are part of a MICS for use with implanted medical devices, like pacemakers, implantable defibrillators, nerve stimulators, and other types of implanted devices. The MICS uses

UHF transceiver modules for radiofrequency communication between an external device referred to as a programmer/controller and a medical implant placed within a human body.

- 1.14 Wireless audio applications** are systems that include the following: cordless loudspeakers, cordless headphones, cordless headphones for portable use, i.e. portable compact disc players, cassette decks or radio receivers carried on a person, cordless headphones for use in a vehicle, concerts or other stage productions

2. OPERATING PARAMETERS

The limits of technical parameter herein prescribed should not be exceeded by any function of the equipment or by any means.

Type of SRD	Frequency Band	Power (maximum)	Remarks
Ultra Low Power Active MICS	9 -315 KHz	30 dBuA/m at 10 m	*individual transmitters may combine adjacent channels for increased bandwidth up to 300 KHz.
	402 – 405 MHz *	25 uW erp	
Biomedical Devices	40.66 – 40.70 MHz	1000 uV/m at 3m	
Alarms	868.6 – 868.7 MHz	10 mW erp	
	869.2 – 869.25 MHz	10 mW erp	
	869.25 – 869.3 MHz	10 mW erp	
	869.65 – 869.7 MHz	25 mW erp	
Equipment For Detecting Movement and Alert	2400 – 2483.5 MHz	25 mW eirp	
	9200 – 9500 MHz	25 mW eirp	
	9500 – 9975 MHz	25 mW eirp	
	13.4 – 14.0 GHz	25 mW eirp	
HIPERLANs and RLANS	2400– 2483.5 MHz	100 mW eirp	
	5150 – 5350 MHz	200 mW eirp	
	5470 – 5850 MHz	250 mW eirp	
	17.1 – 17.3 GHz	100 mW eirp	
Inductive Applications	9 – 59.750 KHz	72 dBuA/m at 10 m	
	59.750 – 60.250 KHz	42 dBuA/m at 10 m	
	60.250 – 70 KHz	69 dBuA/m at 10 m	
	70 – 119 KHz	42 dBuA/m at 10 m	
	119 – 135 KHz	66 dBuA/m at 10 m	
	135 – 140 KHz	42 dBuA/m at 10 m	
	140 – 148.5 KHz	37.7 dBuA/m at 10 m	
	3155 – 3400 KHz	13.5 dBuA /m at 10 m	
	6765 – 6795 KHz	42 dBuA/m at 10 m	
7400 – 8800 KHz	9 dBuA/m at 10 m		

	13.553 – 13.567 MHz	42 dBuA/m at 10 m	
	26.957 – 27.283 MHz	42 dBuA/m at 10 m	
	10.2 – 11 MHz	9 dBuA/m at 10 m	
Non-specific Short Range Devices, Telemetry, Telecommand, Alarms, Data In General and Other Similar Applications.	6765 – 6795 KHz	42 dBuA/m at 10 m	
	13.553 – 13.567 MHz	42 dBuA/m at 10 m	
	26.957 – 27.283 MHz	10 mW erp /42 dBuA/m at 10 m	
	40.660 -40.700 MHz	10 mW erp	
	138.2–138.45 MHz	10 mW erp	
	315 MHz	10 mW erp	
	433.050– 434.790 MHz	10 mW erp	
	868.000 – 868.600 MHz	25 mW erp	
	868.700 – 869.200 MHz	25 mW erp	
	869.3 - 869.4 MHz	25 mW erp	
	869.700 – 870.000 MHz	5 mW erp	
	2400 – 2483.5 MHz	10 mW eirp	
	5725 – 5875 MHz	25 mW eirp	
	24.00 – 24.25 GHz	100 mW eirp	
	61.0 – 61.5 GHz	100 mW eirp	
	122 – 123 GHz	100 mW eirp	
244 – 246 GHz	100 mW eirp		
Road Transport and Traffic Telematics	5795 – 5805 MHz *	2 W eirp	*Individual license required
	63 – 64 GHz *	8 Weirp	
	76 – 77 GHz	55 dBm peak	
Wireless Audio Applications	72.0 – 73.0 MHz *	80 mV/m at 3 m (field strength)	* for auditory assistance device only. In case of analogue systems, the maximum occupied bandwidth should not exceed 300 KHz
	75.4 – 76.0 MHz *	80 mV/m at 3 m (field strength)	
	863 – 865 MHz	10 mW erp	
	864.8 – 865.0 MHz	10 mW erp	
Wireless Microphones	29.7 – 47.0 MHz	10 mW erp	50 mW restricted to for body worn microphones
	173.965 – 174.015 MHz	2 mW erp	
	174 – 216 MHz	10 mW erp/50 mW erp	
	470 – 862 MHz	10 mW erp/50 mW erp	
	863 – 865 MHz	10 mW erp	
	1785 – 1800 MHz	10 mW eirp/50 mW eirp	
Wireless Video Transmitter	630 – 710 MHz	76 dBuV/m at 3 m 5 – 8 MHz	
	2400–2483.5 MHz (Narrowband)	100 mW eirp	

3. CHANNEL SPACING

Channel spacing for SRDs are defined according to the needs of the different applications.

4. ANTENNA REQUIREMENTS

Three types of transmitter antennas can be used for short-range radio communication transmitters:

- 4.1 integral (no external antenna socket);
- 4.2 dedicated (type-approved with the equipment);
- 4.3 external (equipment type approved without antenna).

Short-range radio communication transmitters must be designed to ensure that no type of antenna can be used except those that have been type-approved or accepted by the Commission and must conform to the appropriate emission level. This means that short-range radio communication transmitters must have permanently attached or detachable antennas with a unique connector. A unique connector is one that is not of a standard type found in electronic supply stores or not normally used for RF connection purposes. Manufacturers are allowed to design transmitters in such a way that the user can replace a broken antenna with an identical one.

5. TYPE APPROVAL/ACCEPTANCE, REGISTRATION AND LICENSING

- 5.1 Only type approved/accepted SRDs shall be allowed for use in the country.
- 5.2 Hiperlans and RLANs shall be covered by the provisions of MC 09-09-2003
- 5.3 RTTTs shall be covered by appropriate permits and licenses required under existing rules and regulations.
- 5.4 SRDs except mentioned above shall be subject to one time registration prior to use and shall bear NTC registration number issued by the Commission for proper identification. The Commission shall device a standard numbering scheme for the registration of SRDs.
- 5.5 Only duly accredited radio dealers/manufacturers shall buy, sell and carry on stocks SRDs that are legally imported, type-approved/accepted and registered with the Commission, and the same shall be included in their Sales and Stocks Report. However, any individual/entity intending to use, purchase, import SRDs may be allowed provided that the equipment are type-approved/accepted and shall be registered with the Commission.

- 5.6 Duly accredited radio dealers/manufacturers shall register with the Commission all imported SRDs not later than Five (5) days upon release from the Bureau of Customs.
- 5.7 A report of registered SRDs shall be submitted by the Regional Offices to the RRLD along with monthly regional licensing report.
- 5.8 RRLD shall allocate registration numbers to all Regional Offices and shall be subject to replenishment upon request and submission of the list of assigned registration numbers in a standard format.

6 FEES AND CHARGES

- 6.1 SRDs except RTTTS shall be covered by a certificate of registration to be issued upon one-time payment of PHP 50.00 per unit.

7 TRANSITORY PROVISION

- 7.1 SRDs purchased and/or operated prior to the effectivity of this circular shall be registered and licensed (for RTTTS) after type approval/acceptance within ninety (90) days from the effectivity of this circular.

8 ADMINISTRATIVE SANCTIONS:


- 8.1 Violations of any provisions of this circular shall be dealt with in accordance with law.
- 8.2 The following fines shall be imposed:
 - 8.2.1 Sale or Possession of unregistered SRDs, PHP 5,000.00 per unit or with forfeiture of equipment
 - 8.2.2 Selling of SRDs not covered by Permit Fee, PHP 2,500.00 for the first offense, PHP 5,000.00 for the second offense, PHP 7,500.00 for the third offense, and so on.
 - 8.2.3 Illegal acquisition of SRDs, PHP 5,000.00 per unit and/or with forfeiture of equipment
 - 8.2.4 Sale of illegally acquired SRDs, PHP 5,000.00 per unit or with forfeiture of the equipment.
 - 8.2.5 Non-registration of imported SRDs within Five (5) days from released from the Bureau of Customs, PHP 1,000.00 per unit.
 - 8.2.6 Selling of SRDs by non-NTC accredited radio dealers/manufacturers, PHP 5,000.00 per reader, PHP 1,000.00 per 1,000 tags.
 - 8.2.7 Operating SRDs without valid registration, PHP 5,000.00 per reader

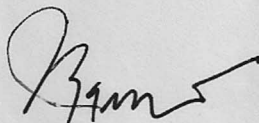
- 9 The use and operation of SRDs shall be on an unprotected and non-interference basis i.e. operators cannot claim protection against interference and are not permitted to cause harmful interference to other radio services to which the bands are also allocated. It shall not constrain the operation of other radio services to which the band is also allocated.
- 10 The regulatory compliance validation of this Circular shall be conducted by the RRLD to ensure the strict implementation of the provisions of this memorandum.

Any circular, memorandum or order or parts thereof inconsistent herewith are deemed amended, revised or repealed.

This circular shall take effect fifteen (15) days after publication in a newspaper of general circulation and three (3) certified copies provided the UP Law Center.

Quezon City, Philippines, 07 May 2007.


ABRAHAM R. ABESAMIS
Commissioner


JORGE V. SARMIENTO
Deputy Commissioner


JAIME W. FORTES, JR.
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Jcl/srd