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CONTENTS • INHOUD

<i>No.</i>	<i>Page No.</i>	<i>Gazette No.</i>
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GENERAL NOTICE

Independent Communications Authority of South Africa

General Notice

713	Electronic Communications Act (36/2005): Regulations in terms of sections 4 (1), 30 (2) (a) (b), 31 (6), 32 (1) (b) and 35 (1) read with section 6 (2) (e)	3	31127
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GENERAL NOTICE

NOTICE 713 OF 2008



INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

REGULATIONS IN TERMS OF SECTIONS 4 (1), 30 (2) (a) (b), 31(6), 32(1) (b) AND 35(1) READ WITH SECTION 6(2) (e) OF THE ELECTRONIC COMMUNICATIONS ACT FOR SPECTRUM RE-ALLOCATION TO CATER FOR RADIO FREQUENCY IDENTIFICATION (RFID) SYSTEMS.

PARIS MASHILE
CHAIRPERSON
ICASA

SCHEDULE

1. Definitions

Unless otherwise defined herein, all words and phrases shall have the meaning ascribed to them in the Electronic Communications Act, 2005 (Act No. 36 of 2005) and related legislation as may be amended from time to time.

“**Act**” means the Electronic Communications Act, 2005 (No. 36 of 2005);

“**ICASA Act**”, Act No.3 of 2006;

“**Duty cycle**” is defined as the ratio, expressed as a percentage, of the maximum transmitter “on” time on one carrier frequency, relative to a one-hour period unless otherwise mentioned in the relevant specification;

“**Emergency Alert System**” (“**EAS**”) is a warning system that responds to any disturbance of that field caused by an intrusion or movement within the field by other devices, objects or persons;

“**Inductive Loop Systems**” means radio apparatus which operate by producing a controlled magnetic field within which a predetermined recognisable signal is formed. Examples include shop anti-theft tagging systems, car immobiliser keys and door access tokens;

“**Listen Before Talk protocol**” (**LBT**) or sometimes called Listen Before Transmit is a technique used in radiocommunications whereby a radio transmitter first sense its radio environment before it starts a transmission. LBT is 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;

“**Non specific SRD**” are low power transmitters that have a preset duty cycle ($0.1\% \leq \text{duty cycle} < 100\%$). They are mass-market products and normally operate on unlicensed regimes;

“**Radio Frequency Identification**” (**RFID**) a wireless system that uses radio frequency communication to automatically identify, track and manage objects, people or animals. It consist of two main components viz, tag and a reader which are tuned to the same frequency;

“**Reader**” a gadget that can decode exact specifications (text, id code, protocol etc) within its radius of operation. It is normally fixed. The readers can either be modulated or non-modulated;

“**Real Time Location Systems**” (**RTLS**) sometimes called Real Time Locating Systems are used to track and identify the location of objects in real time using tags attached to or embedded in objects and devices (readers) that receive the wireless signals from these tags to determine their location;

“**Short Range Device**” (**SRD**) are low power transmitters for many types of applications such as alarms, local communications, door openers, medical implants, radio identification applications. They are usually mass –market products. They normally operate under unlicensed regimes;

“**Tag**” small chip with an embedded intelligence and the ability to energize a reader within its radius of operation. It can either be passive or battery assisted. It is mobile.

2. PURPOSE OF THESE REGULATIONS

These regulations are applicable to the identified RFID frequency bands. They set out the operational rules of various specified bands.

3. RADIO FREQUENCY SPECTRUM LICENCE EXEMPTIONS

- (a) The use or possession of the radio apparatus listed in Column B below, in accordance all specifications listed in Columns, A, C, D and E of the Table below shall not require a radio frequency spectrum licence:

TABLE

Column A Frequency Bands K=kHz M=MHz G=GHz	Column B Type of Device	Column C Maximum Radiated Power or Field Strength Limits & Channel spacing	Column D Relevant Standard	Column E Additional Requirements
59.75-60.25K	Inductive Loop System including RFID	42 dB μ A/m @ 10 m No restrictions on duty cycle. No channel spacing	EN 300 330 EN 301 489-1,3 EN 60950 ISO / IEC 18047-2	CEPT/ERC/REC 70-03 ASK, FSK & PSK
70-119K	Inductive Loop System including RFID	42 dB μ A/m @ 10m No channel spacing	EN 300 330 EN 301 489-1,3 EN 60950 ISO / IEC 18047-2	CEPT/ERC/REC 70-03 ASK, FSK & PSK
119-135K	Inductive Loop System including RFID	72 dB μ A/m @ 10m	EN 300 330 EN 301 489-1,3 EN 60950 ISO / IEC 18047-2	CEPT/ERC/REC 70-03 ASK, FSK & PSK
13.553 – 13.567M	Inductive Loop System including RFID.	42 dB μ A/m @ 10m	EN 300 330 EN 301 489-1,3 EN 60950 ISO / IEC 18047-3	CEPT/ERC/REC 70-03 ASK, FSK & PSK
13.553 – 13.567M	RFID and EAS Systems only	60 dB μ A/m @ 10m	EN 300 330 EN 301 489-1,3 EN 60950	CEPT/ERC/REC 70-03

Column A	Column B	Column C	Column D	Column E
Frequency Bands K=kHz M=MHz G=GHz	Type of Device	Maximum Radiated Power or Field Strength Limits & Channel spacing	Relevant Standard	Additional Requirements
433.05 – 434.79M	Non specific SRD including RFID	1mW erp 100% duty cycle No channel spacing	EN 300 220 EN 301 489-1,3 EN 60950 ISO / IEC 18047-7	CEPT/ERC/REC 70-03 ASK, FSK, PSK & FHSS
433.05 – 434.79M	Non specific SRD including RFID	10mW erp Duty cycle < 10% No channel spacing	EN 300 220 EN 301 489-1,3 EN 60950 ISO / IEC 18047-7	CEPT/ERC/REC 70-03 ASK, FSK, PSK & FHSS
865 – 868M	RFID	Channels 1,2 & 3 100mW erp 200kHz channel spacing	EN 302-208-2 EN 301-489-1,3 EN 60950 ISO / IEC 18047-6	CEPT/ERC/REC 70-03 Listen Before Talk (LBT) is mandatory. FHSS or other spread spectrum techniques shall not be used.
865 – 868M	RFID	Channels 4, 7, 10 & 13. 2Watts erp 200kHz channel spacing	EN 302-208-2 EN 301-489-1,3 EN 60950 ISO / IEC 18047-6	CEPT/ERC/REC 70-03 LBT not required. FHSS or other spread spectrum techniques shall not be used.
865 – 868M	RFID	Channels 5,6,8,9,11,12,14 & 15 500mW erp 200kHz channel spacing.	EN 302-208-2 EN 301-489-1,3 EN 60950 ISO / IEC 18047-6	CEPT/ERC/REC 70-03 Listen Before Talk (LBT) is mandatory. FHSS or other spread spectrum techniques shall not be used.
869.4 – 869.65M	Non-specific SRD & RFID	25 kHz channel spacing; 500mW erp ≤ 10% duty cycle or LBT	EN 300 220-1 EN 301 489-1,3 EN 60950	CEPT/ERC/REC 70-03
915.1 – 915.2M	Real Time Location System (RTLS)	25mW erp	EN 300 086 EN 301 489-1,5 EN 60950	

Column A	Column B	Column C	Column D	Column E
Frequency Bands K=kHz M=MHz G=GHz	Type of Device	Maximum Radiated Power or Field Strength Limits & Channel spacing	Relevant Standard	Additional Requirements
915.2 - 915.4M	Passive Tags	100mW 10 x 20 kHz wide channels	Current installations to migrate within two years from date of publication. To serve as Guard Band in future.	
915.4 - 919.0M	Modulating RFID Systems (FHSS)	4 Watts eirp	FCC CFR 47 PART 15.247 CISPR 16 EN 60950	200 kHz Channel Spacing
919.0 - 919.2M	Tag Backscatter Guard Band			
919.2 - 921.0M	Non Modulating Backscatter RFID Systems	4 Watts eirp; CW only @ 920 MHz (± 1.5 kHz frequency stability)	Spectral Masks as in EN 302 208-2 EN 301 489-1,3 EN 60950	
2400 - 2483.5M	RFID	500mW eirp no duty cycle 4 W eirp <15% duty cycle	EN 300 440 EN 301 489-1,3 EN 60950 ISO / IEC 18047-4	CEPT/ERC/REC 70-03

- (b) The use and possession of all radio apparatus exempt in terms of sub-clause (a) must comply with the following:
- (i) All radio apparatus must be type-approved by the Authority in accordance with section 35 of the Act.
 - (ii) The frequencies, transmitting power and external high-gain antenna of the radio apparatus must not be altered without a new type approval certificate being issued by the Authority.
 - (iii) The antenna of the radio apparatus must not be higher above average ground level than the lowest point of the place where the radio apparatus operates effectively. The radio apparatus must be operated within and must not exceed the technical parameters set

out in each of the applicable columns C and D of the Table with respect to:

the frequency band; maximum radiated power or field strength limits and channel spacing; relevant standard; and duty cycles and antennas to be used as contained in column E.

- iv) The radio apparatus must not cause interference to any person issued a radio frequency spectrum licence by the Authority.
- (v) The licensed radio frequency spectrum holder can report to ICASA if he suspects that harmful interference are emanating from RFID system.
- (vi) The user of radio apparatus in licence-exempt frequency spectrum operates on a non-interference and no-protection basis .

4. OFFENCES AND PENALTIES

- (a) A person, who is not a licensee in terms of the Electronic Communications Act no 36 of 2005, who intentionally or negligently contravenes or fails to comply with these regulations is guilty of an offence and is, on conviction by a court, subject to a fine not exceeding R20 000.
- (b) A licensee in terms of the Electronic Communications Act, no 36 of 2005, who has been found by the Complaints and Compliance Committee to have intentionally or negligently contravened or failed to have complied with these regulations may, on the recommendation of the Complaints and Compliance Committee, be subjected to a sanction in terms of section 17E (2) of the ICASA Act No. 3 of 2006 and, if a fine is imposed by the Council, to a fine not exceeding R20 000.

5. SHORT TITLE AND COMMENCEMENT

This regulation will be known as **Spectrum Re-allocation for Radio Frequency Identification (RFID) Systems** Regulations and it will come into force upon publication thereof in the Government Gazette.

6. AMENDMENT AND REPEAL OF THE REGULATION

The Authority may amend or repeal this regulation by notice in the Government Gazette
