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**AIDS HELPLINE: 0800-123-22 Prevention is the cure**

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## GENERAL NOTICE

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### NOTICE 891 OF 2001



### INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

#### NOTICE IN RESPECT OF AN ENQUIRY ON SHORT RANGE RADIO DEVICES IN SOUTH AFRICA

Notice is hereby given that the Independent Communications Authority of South Africa (ICASA) intends to conduct an enquiry under Section 27 of the Telecommunications Act, 1996 (Act 103 of 1996) on short-range radio devices. The relevant topics on which the review is contemplated are published herewith.

Interested persons are hereby invited to submit written comments on or representations with regard to the discussion document, to be received by no later than 01 June 2001 by post or hand delivery, preferably with a soft copy on Microsoft Word 97 or higher, for the attention of:

*Mr. Mandla Mchunu, ICASA, Private Bag X10002, Sandton, 2146, Block A,  
Pin Mill Farm, 164 Katherine Street, Sandton*

*E-mail. [mchum@satra.gov.za](mailto:mchum@satra.gov.za)*

*Tel: 011-321 8245 Fax: 011-321 8564.*

All representations and documents lodged with ICASA pursuant to this notice shall be open for public inspection by interested parties during the normal office hours of ICASA.

Persons submitting representations, which includes to their belief confidential information, should request confidentiality on that information, which should be bound separately, and provide their reasons for requesting confidentiality. ICASA may, on receiving such requests, grant confidentiality and determine that such documents shall not be open for public inspection. If a request for confidentiality is refused, the person making the request will be allowed to withdraw the document in question.

Persons making written representations are invited to indicate whether they would like an opportunity to make oral representations.

**MANDLA LANGA**  
**CHAIRPERSON**  
**ICASA**

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## **Enquiry into the Use of Short-range Radio Devices (SRD) in South Africa**

### **1 Background**

This document is published to facilitate an enquiry in terms of Section 27 of the Telecommunications Act. The purpose is to seek views from interested parties on the use of Short-range Radio Devices (SRD) in South Africa. The ultimate intention is to prescribe regulations in terms of Section 30(9)(a) of the Telecommunications Act for short-range radio devices which shall not require a licence for possession or use.

### **2 Discussion**

#### **2.1 What is an SRD?**

For the purposes of this enquiry the term SRD is intended to cover radio transmitters, which provide either uni-directional or bi-directional communication and which have low capability of causing interference to other radio equipment. Low-power transmitters are used virtually everywhere. Cordless phones, baby monitors, garage door openers, wireless home security systems, keyless automobile entry systems and hundreds of other types of common electronic equipment rely on such transmitters to function. SRD's normally operate on a non-protected, non-interference basis.

#### **2.2 Exemption from Licensing**

The potential of some SRD's to cause interference to other radio users is minimal, provided that they operate under the correct technical conditions. The Government Gazette No. 16820, Notice 1790 of 17 November 1995, has a list of some radio apparatus exempted from licensing. In reducing unnecessary burdens on business, the Authority might consider removing the need for some devices to be licensed. Exemption from licensing does not mean that there is no requirement for type approval.

<p><b>Q1</b> What other factors should the Authority consider on exemption of equipment from licensing.</p>
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### **2.3 Operating Parameters**

SRD's in general operate in shared bands and are not permitted to cause harmful interference to other radio services. SRD's cannot claim protection from other radio services. The technical parameter limits should not be exceeded by any function of the equipment.

**Q2 Please comment on these arrangements.**

### **2.4 Radio Frequency Bands**

The Authority seeks views on types and applications of SRD's that need to be considered for South African use and to be classified as such.

**Q3 Kindly comment on the above and in your response please include applicable radio frequency bands.**

### **2.5 Schedule of SRD's.**

The Authority has attached a schedule of SRD's for your comments. The Table is not exhaustive.

**Q4 Please make further input of other SRD's that you think should be considered.**

## ANNEX 1

### Schedule of some SRD's to be considered for licence-free operation.<sup>1</sup>

Frequencies or Frequency Band	Maximum EIRP <sup>2</sup>	Channel Bandwidth	Examples of Apparatus
1600 - 1610KHz	1W		Baby Alarms, Wireless Record Players
26.96 - 27.28MHz	1W		Wireless Microphones
26.995; 27.0454; 27.095; 27.145 and 27.195MHz	5W		Devices used for controlling models, toys; garage doors, cameras ; projectors etc
36.65 - 36.75MHz	100mW		Wireless Microphones
40.65 - 40.70MHz	100mW		Wireless Microphones

<sup>1</sup> This list is not exhaustive.

<sup>2</sup> EIRP stands for Effective Isotropic radiated Power which means the total radiated power relative to the isotropic antenna. This is effectively the measured average output power of the final radio frequency stage immediately preceding the antenna plus the loss in the antenna cable (if any) plus the gain of the antenna (if any) relative to an isotropic antenna.



<b>Frequencies or Frequency Band</b>	<b>Maximum EIRP<sup>2</sup></b>	<b>Channel Bandwidth</b>	<b>Examples of Apparatus</b>
53 - 54MHz	5W		Devices used for controlling models
53 - 54MHz	100mW		Wireless Microphones
54.4500; 54.4625; 54.4750; 54.4875; 54.500; 54.5125; 54.5250; 54.5375; 54.5500; 60.0250; 60.0375; 60.0500; 60.0625; 60.0750; 60.0875; 60.1000; 60.1125 and 60.1250MHz	5W		Devices used exclusively for controlling models
34.995 -35.225MHz	100mW		Devices used exclusively for controlling model aircraft.
60.1375 - 60.3750MHz	5W		Devices used exclusively for controlling model aircraft.
402 - 406MHz	100mW		Doppler shift movement detectors, wireless microphones ,garage door openers, motor car alarm systems

Frequencies or Frequency Band	Maximum EIRP <sup>2</sup>	Channel Bandwidth	Examples of Apparatus
433.050 - 434.790MHz (centre frequency 433.920MHz)	100mW		Remote control motor car locking systems, crane control, remote control electricity meter readers
463.975; 464.125; 464.175; 464.325 and 464.375MHz	500mW	12.5KHz	Low Power Mobile Radios.
868.4	10mW		Remote control motor car locking systems.
915MHz +0.0015%	3W		Anti-theft systems
1215 - 1225MHz	100mW		Doppler shift movement detectors
10.025 - 10.700GHz	100mW		Doppler shift movement detectors, devices used for measuring vehicle speed and surface of land
13.4 - 14GHz	5mW		Microwave fences.
5795 - 5815MHz	2W		Road Transport and Traffic Telematics

<b>Frequencies or Frequency Band</b>	<b>Maximum EIRP<sup>2</sup></b>	<b>Channel Bandwidth</b>	<b>Examples of Apparatus</b>
76 -77GHz	55dBm		On board vehicle radar
173.35; 173.4; 173.465; 173.545; 173.64MHz	2mW		Hearing aids for the handicapped.
36.61 -36.79MHz 37.01 - 37.19MHz	10 $\mu$ W		Wireless Audio Applications(e.g. Cordless Headphones or cordless speakers)
2400 -24835MHz There is something missing here	10mW	20MHz	Close circuit television

## **Annex 2**

### **Examples and definitions of Short Range Radio Devices.**

Due to the many different applications provided by these devices, no description can be exhaustive, however, the following categories are amongst those regarded as low power, short range devices.

#### **2.1 Inductive Applications.**

Inductive loop systems are communication systems based on magnetic fields generally at low RF frequencies.

The regulations for inductive systems are different in various countries. In some countries this equipment is not considered as radio equipment, and neither type approval nor limits for the magnetic field are set. In other countries inductive equipment is considered as radio equipment and there are various national or international type approval standards.

Inductive applications include for example car immobilisers, 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.

#### **2.2 Model Control**

"Model Control" covers the application of radio model control equipment, which is solely for the purpose of controlling the movement of the model (toy), in the air, on land or over or under the water surface.

#### **2.3 Ultra Low Power Active Medical Implants**

Ultra Low Power Active Medical Implants are part of a Medical Implant Communication System (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 radio frequency



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

These communication systems are used in many ways, for example: device parameter adjustment (e.g. modification of the pacing parameters), transmission of stored information (e.g. electrocardiograms stored over time or recorded during medical event), and the real time transmission of monitored vital life signs for short periods.

MICS equipment is used only under the direction of a physician or other duly authorised medical professional. The duration of these links is limited to the short periods of time necessary for data retrieval and reprogramming of the medical implant related to patient welfare.

#### **2.4 Audio applications and Radio Microphones**

Applications for wireless audio systems include the following, cordless loudspeakers; cordless headphones; cordless headphones for portable use, for example portable CD, cassette or radio players carried on a person; cordless headphones for use in a vehicle, for example for use with a radio or mobile telephone etc.; in-ear monitoring, for use with concerts or other stage productions.

#### **2.5 Road Transport and Traffic Telematics (RTTT).**

Also referred to as Dedicated Short Range Communications for Transport Information and Control Systems (TICS).)

RTTT systems are defined as 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.

#### **2.6 Radio Local Area Networks, RLANs and HIPERLANs**

**RLAN** - Radio Local area networks were conceived in order to replace physical cables for the connection of data networks within a building, thus providing a more flexible and, possibly, a more economic approach to the installation, reconfiguration and use of such networks within the business and industrial environments.

These systems often take advantage of spread spectrum modulation or other redundant (i.e. error correction) transmission techniques, which enable them to operate satisfactorily in a noisy radio environment. In the lower microwave or in UHF

bands, satisfactory in-building propagation may be achieved but systems are limited to low data rates (up to 1 Mbit/s) because of spectrum availability.

**HIPERLAN** - HIPERLANs (High Performance Radio Local Area Networks) are radio systems based on local area networking solutions requiring higher data rates and consequently greater bandwidth to take into account spectrum requirements for new multimedia applications. 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. A system operating across borders of different properties or serving different entities, would not be permissible and would require the requisite licence.

To ensure compatibility with other radio applications in the 5 GHz band a number of restrictions and mandatory features are required.

## **2.7 Movement Detection**

The use of radio communication for the purpose of gaining information as to the presence of any moving objects.

## **2.8 Cordless telephones**

A system consisting of two transceivers, one a base station that connects to the public switched telephone network and the other a mobile handset unit that communicates directly with the base station. Transmissions from the mobile unit are received by the base station and then placed on the public switched telephone network. Information received from the switched telephone network is transmitted by the base station to the mobile unit.

## **2.9 Bluetooth or other similar technologies**

Bluetooth technology will enable users to connect a wide range of computing and telecommunications devices easily and simply, without the need to buy, carry, or connect cables. It delivers opportunities for rapid ad hoc connections, and the possibility of automatic, unconscious, connections between devices. It will virtually eliminate the need to purchase additional or proprietary cabling to connect individual devices.



## ANNEX 3

### Limitations.

#### 3.1 Frequency bands limitation

Short-range devices will not be permitted to use the bands for the following services:

- Radio astronomy service
- Aeronautical services
- Services operating on search, rescue and emergency
- Public radio communication services (Broadcasting, GSM, etc.)

#### 3.2 Antenna limitations

In order to prevent users to increase the device's transmitting Effective Radiated Power value through connecting to a high gain antenna so as to expand the device's effective working range, antenna of short-range devices must be integral or dedicated.

#### 3.3 Operational Limitation

- Short-range devices should be tested and type-approved before they are used.
- It is not permitted to change operating frequencies, to increase transmitting power and to add external high-gain antenna without authorization.
- The antenna should not be higher than the highest point of the place where it works effectively.
- Short-range devices do not require protection from other radio communication services.
- Short-range devices are not permitted to cause harmful interference to other radio communication services.

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