INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

NOTICE 146 OF 2018

PURSUANT TO SECTION 4 (1) OF THE ELECTRONIC COMMUNICATIONS ACT 2005, (ACT NO. 36 OF 2005)

HEREBY ISSUES A NOTICE REGARDING THE FINAL RADIO FREQUENCY SPECTRUM ASSIGNMENT PLAN FOR THE FREQUENCY BAND 138 MHz TO 143.6 MHz.

1. The Independent Communications Authority of South Africa ("the Authority"), hereby publishes **final Radio Frequency Spectrum Assignment Plan for the frequency band 138 MHz to 143.6 MHz**.

2. This Radio Frequency Spectrum Assignment Plan supersedes any previous spectrum assignment arrangements for the same spectrum location.

RUBBEN MOHLALOGA
COUNCILLOR

Radio Frequency Spectrum Assignment Plan

Rules for Services operating in the Frequency Band 138 MHz to 143.6 MHz

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1. Glossary

In this Radio Frequency Spectrum Assignment Plan, terms used shall have the same meaning as in the Electronic Communications Act 2005 (no. 36 of 2005); unless the context indicates otherwise:

"Act"	means the Electronic Communications Act, 2005 (Act No. 36 of 2005) as amended
"BTX"	means Base Transceiver
"DF"	means Dual Frequency
"DM RS"	means Demodulation Reference Signal
"ISM"	means Industrial Scientific Medical
"ITU"	means the International Telecommunication Union;
"ITU-R"	means the International Telecommunication Union Radiocommunication Sector
"MTX"	means Mobile Transceiver
"NRFP"	means the National Radio Frequency Plan 2013 for South Africa
"PPDR"	means Public Protection and Disaster Relief as defined in ITU-R Report M.2033.
"RFSAP"	means Radio Frequency Spectrum Assignment Plan
"SF"	means Single Frequency

2. Purpose

A Radio Frequency Spectrum Assignment Plan (RFSAP) provides information on the requirements attached to the use of a frequency band in line with the allocation and other information in the National Radio Frequency Plan (NRFP). This information includes technical characteristics of radio systems, frequency channelling, coordination and details on required migration of existing users of the band and the expected method of assignment.

This Radio Frequency Spectrum Assignment Plan states the requirements for the utilization of the frequency band 138 MHz to 143.6 MHz for single frequency alarms, and other single frequency and dual frequency links as well as remote control industrial apparatus.

Single frequency alarms are used in various types of alarm systems (which are typically used to warn people of an event such as an intrusion, forced entry or a fire.

The Single frequency and dual frequency links are typically used in private and communal radio repeaters which boost and retransmit weak radio signal across a wider area.

The intention of this RFSAP is to:

Maintain Mobile 1 MTX 138-140.5 paired with BTX 141.5 – 144 MHz

Maintain SF Alarms in 140.5 – 141 MHz and allocate 141-141.5 to SF Alarms.

Migrate out SF Mobile from 141 – 141.5.

Encourage remote controlled industrial apparatus to migrate out of the 141 – 142 MHz band into a band dedicated for ISM.

3. General

Technical characteristics of equipment used in single frequency alarms, and other single frequency and dual frequency links as well as remote control industrial apparatus shall conform to all applicable South African standards, international standards, International Telecommunications Union (ITU) and its radio regulations as agreed and adopted by South Africa.

All installations must comply with safety rules as specified in applicable standards.

The equipment used shall be certified under South African law and regulations.

The allocation of this frequency band and the information in this Radio Frequency Spectrum Assignment Plan (RFSAP) are subject to review.

Use of this band will be for dual frequency alarms and other single frequency and dual frequency links as well as remote control industrial apparatus.

Various types of alarms are catered for by different types of systems and services whose typical technical and operational characteristics are described in the documents listed below:

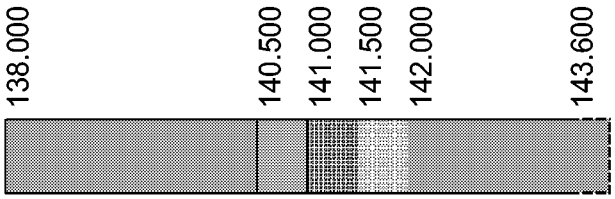
ITU-T L-Series (L.21)

International Electrotechnical Commission (IEC) International Standard 60839 (Alarm Systems)

4. Channelling Plan

The frequency band 138 – 143.6 MHz provides a total bandwidth of 5.6 MHz for alarms and other single and dual frequency links.

Channel Arrangements:



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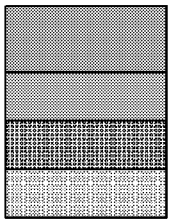

Mobile 1 MTX and BTX
Single Frequency Alarms
Single Frequency Mobile and Remote Control Industrial Apparatus
Mobile 1 BTX and Remote Control Industrial Apparatus

5. Requirements for usage of radio frequency spectrum

This chapter covers the minimum key characteristics considered necessary in order to make the best use of the available frequencies.

The use of the band is limited for single frequency alarms, and other single frequency and dual frequency links as well as remote control industrial apparatus.

Only systems using digital technologies that promote spectral efficiency will be issued with an assignment. Capacity-enhancing digital techniques are being rapidly developed and such techniques that promote efficient use of spectrum, without reducing quality of service are encouraged.

In some cases, a radio system conforming to the requirements of this RFSAP may require modifications if harmful interference is caused to other radio stations or systems.

The allocation of spectrum and shared services within these bands are found in the National Radio Frequency Plan (NRFP) and an extract of NRFP is shown in **Appendix A**

Maximum radiated power:

Base Station transmissions should not exceed 44.8 dBm/5MHz EIRP.

Mobile Station transmissions should not exceed 38.8 dBm EIRP.

On a case to case basis, higher EIRP may be permitted if acceptable technical justification is provided.

In some cases, a radio system conforming to the requirements of this RFSAP may require modifications if major interference is caused to other radio stations or systems.

6. Implementation

This Radio Frequency Assignment Plan comes into effect on the date of publication.

No new assignment for dual frequency alarms and other single frequency and dual frequency links shall be approved unless they comply with this RFSAP.

7. Co-ordination Requirements

Co-ordination is performed by the Authority during the process of assignment.

In the event of any interference, the affected parties may refer the matter to the Authority for a resolution. The Authority will decide the necessary modifications and schedule of modifications to resolve the dispute. The Authority will be guided by the interference resolution process as shown in **Appendix B.**

.Assignment holders shall take full advantage of interference mitigation techniques such as antenna discrimination, tilt, polarization, frequency discrimination, shielding/blocking (introduce diffraction loss), site selection, and/or power control to facilitate the coordination of systems.

8. Assignment

Standard Approach:

The assignment of frequency will take place according to the Standard Application Procedures in the Radio Frequency Spectrum Regulations 2015.

9. Revocation

Existing radio frequency spectrum licences for SF Mobile will be revoked on 31st March 2018.

10. Radio Frequency Migration

Specific Procedure:

Existing licensees to conform to the requirements of this RFSAP by the effective date.

SF Mobile to migrate out of the 141 – 141.5 MHz band by 31 March 2018.

Remote controlled Industrial apparatus are encouraged to move to an ISM band if they experience harmful interference.

APPENDIX A - National Radio Frequency Plan

ITU Region 1 allocation and footnotes	**South African Allocation and footnotes**	**Typical Applications**	**Comments**
138-143.6 MHz AERONAUTICAL MOBILE (OR)	**138-143.6 MHz**		
	FIXED	Single Frequency Alarms (140.5-141 MHz)	
	MOBILE	Mobile 1 MTX(138-140.5 MHz)	PAIRED with 141.5-144 MHz
		Mobile 1 BTX (141.5-144 MHz)	PAIRED with 130-140.5 MHz
		Remote control industrial apparatus (141-142 MHz)	Radio Frequency Spectrum Regulations (Annex B) (GG No. 34172, 31 March 2015)
5.210 5.211 5.212 5.214	5.212		

APPENDIX B - Interference Resolution Process

When requesting coordination the relevant characteristics of the base station and the code or PCI group number should be forwarded to the Administration affected. All of the following characteristics should be included:

a) carrier frequency [MHz]

b) name of transmitter station

c) country of location of transmitter station

d) geographical coordinates [latitude, longitude]

e) effective antenna height [m]

f) antenna polarisation

g) antenna azimuth [deg]

h) antenna gain [dBi]

i) effective radiated power [dBW]

j) expected coverage zone or radius [km]

k) date of entry into service [month, year].

l) code group number used

m) antenna tilt [deg]

The Administration affected shall evaluate the request for coordination and shall within 30 days notify the result of the evaluation to the Administration requesting coordination. If in the course of the coordination procedure the Administration affected requires additional information, it may request such information.

If in the course of the coordination procedure, an Administration may request additional information.

If no reply is received by the Administration requesting coordination within 30 days, it may send a reminder to the Administration affected. An Administration not having responded within 30 days following communication of the reminder shall be deemed to have given its consent and the code co-ordination may be put into use with the characteristics given in the request for coordination.

The periods mentioned above may be extended by common consent.