

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

NOTICE 785 OF 2017



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

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

1. The Independent Communications Authority of South Africa ("the Authority"), hereby publishes **Draft Radio Frequency Spectrum Assignment Plan for the frequency band 138 to 143.6 MHz for consultation** in terms of sections 2 (d), (e) and 4, read with sections 30, 31(4), and 33 of the Electronic Communications Act (Act No. 36 of 2005) and read with Regulation 3 of the Radio Frequency Spectrum Regulations 2015 and read with the Frequency Migration Plan 2013.
2. This Radio Frequency Spectrum Assignment Plan supersedes any previous spectrum assignment arrangements for the same spectrum location.
3. Interested persons are hereby invited to submit written representations, including an electronic version of the representation in Microsoft Word, of their views on the **Draft Radio Frequency Spectrum Assignment Plan for the frequency band 138 to 143.6 MHz** by no later than 16h00 on Friday 01 December 2017.
4. Written representations or enquiries may be directed to:

The Independent Communications Authority of South Africa (ICASA)

*Pinmill Farm Block A*

*164 Katherine Street*

*South Africa*

*or*

Private Bag XI0002

Sandton

2146

**Attention:**

Mr Manyapelo Richard Makgotlho

e-mail: [rmakgotlho@icasa.org.za](mailto:rmakgotlho@icasa.org.za)

5. All written representations submitted to the Authority pursuant to this notice shall be made available for inspection by interested persons from 15 December 2017 at the ICASA Library or website and copies of such representations and documents will be obtainable on payment of a fee.

Where persons making representations require that their representation, or part thereof, be treated confidentially, then an applications in terms of section 4D of the ICASA Act, 2000 (Act No. 13 of 2000) must be lodged with the Authority. Such an application must be submitted simultaneously with the representation on the draft regulations and plan. Respondents are requested to separate any confidential material into a clearly marked confidential annexure. If, however, the request for confidentiality is refused, the person making the request will be allowed to withdraw the representation or document in question.



**BOTLENYANA MOKHELE**  
**COUNCILLOR**



# Radio Frequency Spectrum Assignment Plan

Rules for Services operating in the  
Frequency Band  
138 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:

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

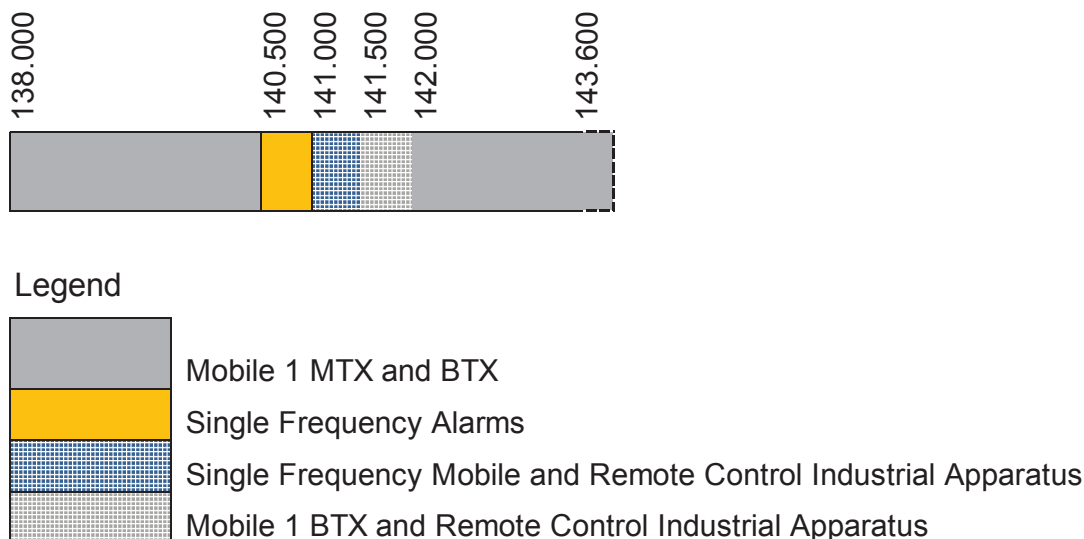
Various types of alarms are catered for by different types of systems and services whose typical technical and operational characteristics are described in the documents listed below:

- 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:



## 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**

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 31<sup>st</sup> March 2018.

## **10 Radio Frequency Migration**

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
<p data-bbox="201 540 394 666">138-143.6 MHz AERONAUTICAL MOBILE (OR)</p> <p data-bbox="201 1253 432 1321">5.210 5.211 5.212 5.214</p>	<p data-bbox="461 540 632 568">138-143.6 MHz</p> <p data-bbox="461 710 533 738">FIXED</p> <p data-bbox="461 880 555 908">MOBILE</p> <p data-bbox="461 1268 523 1295">5.212</p>	<p data-bbox="730 710 1026 778">Single Frequency Alarms (140.5-141 MHz)</p> <p data-bbox="730 863 1034 932">Mobile 1 MTX(138-140.5 MHz)</p> <p data-bbox="730 959 1034 1027">Mobile 1 BTX (141.5-144 MHz)</p> <p data-bbox="730 1112 1034 1181">Remote control industrial apparatus (141-142 MHz)</p>	<p data-bbox="1054 863 1385 891">PAIRED with 141.5-144 MHz</p> <p data-bbox="1054 959 1369 987">PAIRED with 130-140.5 MHz</p> <p data-bbox="1054 1112 1385 1221">Radio Frequency Spectrum Regulations (Annex B) (GG No. 34172, 31 March 2015)</p>

## 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.