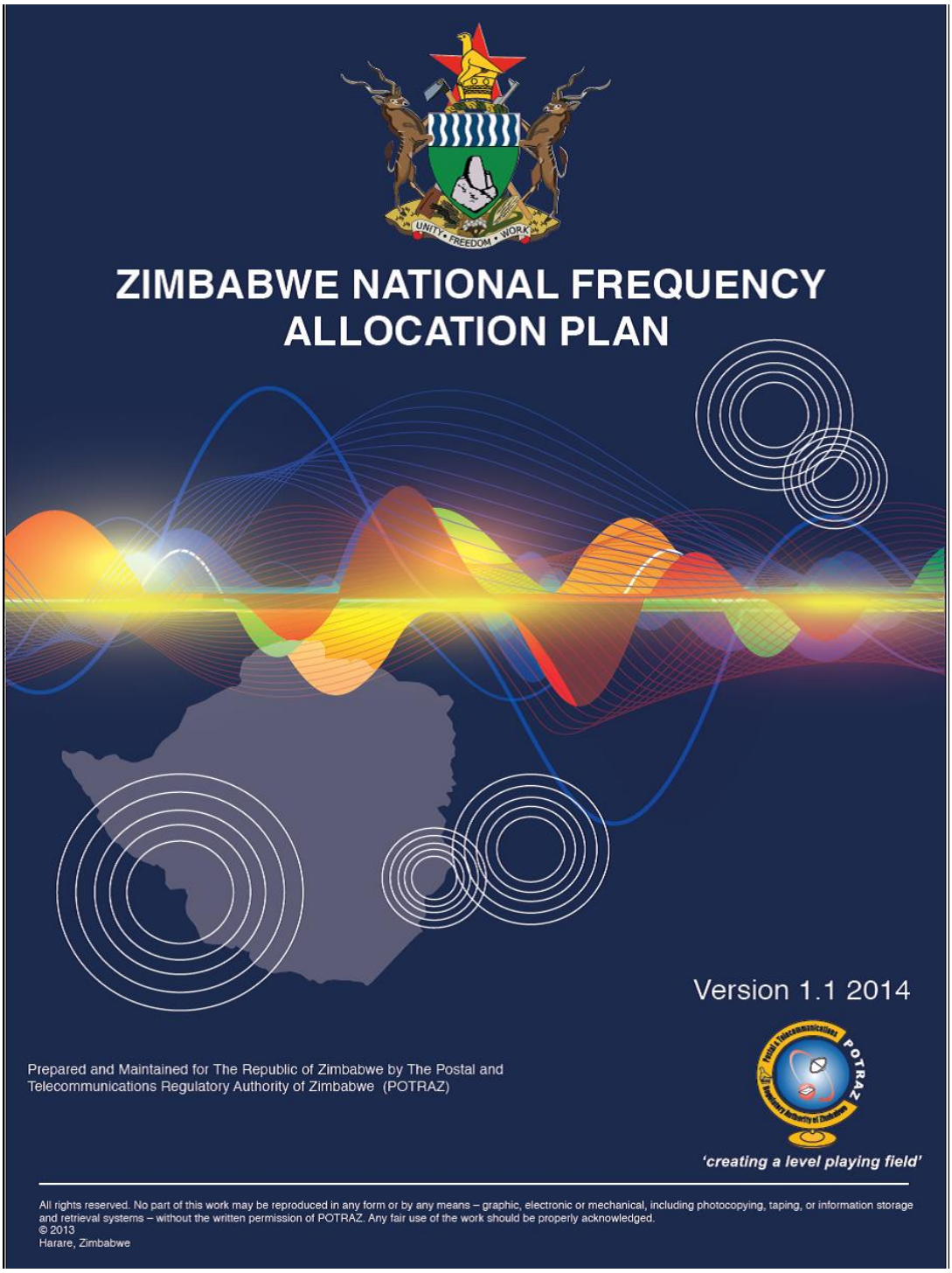

ZIMBABWE NATIONAL FREQUENCY ALLOCATION PLAN

Version 1.1 2014

Prepared and Maintained for The Republic of Zimbabwe by The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ)

'creating a level playing field'

Harare, Zimbabwe

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Preliminary

This document was prepared in order to give guidance on how spectrum is used in Zimbabwe, but is not in itself a full record of actual utilisation. Organisations, entities or indivisuals using the document should take note that Allocation of Radio Frequency Spectrum in Zimbabwe is done by POTRAZ in accordance with provisons of the Postal and Telecommunications Act [Chapter 12:05 of 2000].

The Spectrum Plan divides the spectrum in Zimbabwe into a number of frequency bands and specifies the general purposes for which the bands may be used. This process is referred to as the allocation of frequency bands to radiocommunication services.
Any indication within this Zimbabwe National Frequency Allocation Plan (ZNFAP) that a band is used for a certain purpose, does not confer a right to prospective users to be granted a licence to use any spectrum in any such bands.

Any enquiries about the Spectrum Plan should be addressed to:

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CHAPTER 1

INTRODUCTION

The radio frequency spectrum (hereinafter referred to as Specrtum) is a subset of the electromagnetic waves lying between the frequencies from 9 kilohertz (kHz - thousands of cycles per second) to 3000 gigahertz (GHz - billions of cycles per second). Spectrum is a finite resource which is shared by various radiocommunication services for a variety of services and applications that include public telecommucation services, aeronautical/maritime safety communications, radars, seismic surveys, satellite communications, earth exploration, meteorology and natural calamities forecasting, security and defense applications, among other essential services.

The Postal and Telecommunication Regulatory Authority of Zimbabwe (POTRAZ) administers the use of Spectrum by all services, applications and systems in Zimbabwe in accordance with the Postal and Telecommunications Act [Chapter 12:05of 2000].

This document presents the Zimbabwe National Frequency Allocation Plan (ZNFAP). The Plan divides the spectrum range (8.3KHz – 3000GHz) into a number of frequency bands and specifies the general purposes for which, and conditions under which, the bands may be used in Zimbabwe.
This process is referred to as the allocation of frequency bands to radiocommunication services. Any indication within this Zimbabwe National Frequency Allocation Plan (ZNFAP) that a band is used for a certain purpose, does not confer a right to prospective users to be granted a licence to use any spectrum in any such bands.
Zimbabwe is a member of ITU, and SADC, therefore as much as possible, allocations in the ZNFAP are aligned to the allocations in the ITU Radio Regulations and SADC Frequency Allocation Plan. Notwithstanding the above, some differences do exist. This is because variations have been incorporated, where necessary, to reflect Zimbabwean domestic requirements.

In coming up with the ZNFAP, consultations were conducted with a view to receive and where necessary incorporate value additions and general inputs from the consultative process

This Spectrum Plan has effect from the date it is gazetted and continues for such time

until revised, varied or revoked. The usage of Radio spectrum is continuously evolving in line with technological changes. The ITU meets every three to four years, at a World Radiocommunication Conference (WRC), to review the Radio Regulations . Accordingly the ZNFAP shall be reviewed periodically, in particular, after every WRC.

CHAPTER 2

ACCESS TO SPECTRUM

Channeling Plans

Channeling Plans may be prepared by POTRAZ to provide information on the requirements for the efficient use of allocated frequency bands. The main use of Channeling Plans is to facilitate the design and specification of radio systems and equipment and in the evaluation of technical applications for new radio facilities or modification to radio systems. The channeling plans will differ according to the type of radio systems across different frequency bands.

The Authority may amend the channelling plans specified if it finds that the channelling plan do not suit its intended purpose or there have been related changes nationally or internationally .

Assignments

Frequency assignments provide for compatible operation between existing and proposed radio systems. On the other hand, in view of the great and ever growing public demand, frequency assignment procedures should strive to ensure the permissible level of interference among radiocommunication services, among stations within each service, as well as efficient utilization of the radio frequency spectrum. In Zimbabwe, the assignment or allotment of frequencies shall be done in accordance with the ZNFAP.

Unless otherwise stipulated, all persons and entities, including Government Agencies intending to use the spectrum shall apply for spectrum assignments from POTRAZ. In the case of Broadcasting Services, such applications shall be made to the Broadcasting Authority of Zimbabwe. To apply for a frequency assignment , a user will prepare and submit a relevant application form.

No provision of this ZNFAP prevents the use by a station in distress, or by a station providing assistance to it, of any means of radiocommunication at its disposal to attract attention, make known the condition and location of the station in distress, and obtain or provide assistance.

CHAPTER 3
ABBREVIATIONS, TERMS AND DEFINITIONS

Introduction

3.1 The terms and definitions set out herein are derived from ITU and the Zimbabwe Postal and Telecommunications Act [Chapter 12:05].

General terms

3.2 *administration:* Any governmental department or service responsible for discharging the obligations undertaken in the Constitution of the International Telecommunication Union, in the Convention of the International Telecommunication Union and in the Administrative Regulations .

3.3 *telecommunication:* Any transmission, *emission* or reception of signs, signals, writings, images and sounds or intelligence of any nature by wire, *radio*, optical or other electromagnetic systems .

3.4 *radio:* A general term applied to the use of *radio waves*.

3.5 *radio waves* or *hertzian waves:* Electromagnetic waves of frequencies arbitrarily lower than 3000 GHz, propagated in space without artificial guide.

3.6 *Radio Frequency Spectrum (RF Spectrum)* – Any radio waves or group of radio waves that falls between 8.3 kHz and 3000 GHz

3.7 *radiocommunication: Telecommunication* by means of *radio waves* .

3.8 *terrestrial radiocommunication:* Any *radiocommunication* other than *space radiocommunication or radio astronomy.*

3.9 *space radiocommunication:* Any *radiocommunication* involving the use of one or more *space stations* or the use of one or more *reflecting satellites* or other objects in space.

3.10 *radiodetermination:* 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*.

3.11 *radionavigation: Radiodetermination* used for the purposes of navigation, including obstruction warning.

3.12 *radiolocation*: *Radiodetermination* used for purposes other than those of *radionavigation*.

3.13 *radio direction-finding: Radiodetermination* using the reception of *radio waves* for the purpose of determining the direction of a *station* or object.

3.14 *radio astronomy:* Astronomy based on the reception of *radio waves* of cosmic origin.

3.15 *Coordinated Universal Time (UTC):* Time scale, based on the second (SI), as defined in ~~Recommendation~~ Resolution 655 (WRC-15) ~~ITU-R TF.460-6~~. (WRC-~~15~~03)

For most practical purposes associated with the Radio Regulations, UTC is equivalent to mean solar time at the prime meridian (0° longitude), formerly expressed in GMT.

3.16 *industrial, scientific and medical (ISM) applications* (of radio frequency energy)*:* Operation of equipment or appliances designed to generate and use locally radio frequency energy for industrial, scientific, medical, domestic or similar purposes, excluding applications in the field of *telecommunications*.

3.17 *The Authority* – The Postal and Telecommunications Regulatory Authority of Zimbabwe (POTRAZ)

3.18 Terrestrial Flight Telephone System(TFTS) : An airborne telephone service that enables telephone calls to be made from aircraft to ground terminals and user end instruments via ground, land, or terrestrial stations rather than via satellites.

3.19 *Zimbabwe National Frequency Allocation Plan (ZNFAP):* Refers to this document together with its annexures, attachments and appendices.

Specific terms related to frequency management

3.20 *allocation* (of a frequency band)*:* Entry in the Table of Frequency Allocations of a given frequency band for the purpose of its use by one or more terrestrial or space *radiocommunication services* or the *radio astronomy service* under specified conditions. This term shall also be applied to the frequency band concerned.

3.21 *allotment* (of a radio frequency or radio frequency channel)*:* Entry of a designated frequency channel in an agreed plan, adopted by a competent conference, for use by one or more *administrations* for a terrestrial or space *radiocommunication service* in one or more identified countries or geographical areas and under specified conditions.

3.22 *assignment* (of a radio frequency or radio frequency channel)*:* Authorization given by The Authority for a radio *station* to use a radio frequency or radio frequency channel under specified conditions.

Radio services

3.23 *radiocommunication service:* A service as defined in this Section involving the transmission, *emission* and/or reception of *radio waves* for specific *telecommunication* purposes.

In this ZNFAP, unless otherwise stated, any radiocommunication service relates to *terrestrial radiocommunication*.

3.24 *fixed service: A radiocommunication service* between specified fixed points.

3.25 *fixed-satellite service:* A *radiocommunication service* between *earth stations* at given positions, when one or more *satellites* are used; the given position may be a specified fixed point or any fixed point within specified areas; in some cases this service includes satellite-

to-satellite links, which may also be operated in the *inter-satellite service*; the fixed-satellite service may also include *feeder links* for other *space radiocommunication services*.

3.26 *inter-satellite service:* A *radiocommunication service* providing links between artificial *satellites*.

3.27 *space operation service:* A *radiocommunication service* concerned exclusively with the operation of *spacecraft*, in particular *space tracking*, *space telemetry* and *space telecommand*.

These functions will normally be provided within the service in which the *space station* is operating.

3.28 *mobile service:* A *radiocommunication service* between *mobile* and *land stations*, or between *mobile stations* .

3.29 *mobile-satellite service:* A *radiocommunication service:*

– between *mobile earth stations* and one or more *space stations*, or between *space stations* used by this service; or

– between *mobile earth stations* by means of one or more *space stations*.

This service may also include *feeder links* necessary for its operation.

3.30 *land mobile service:* A *mobile service* between *base stations* and *land mobile stations*, or between *land mobile stations*.

3.31 *land mobile-satellite service:* A *mobile-satellite service* in which *mobile earth stations* are located on land.

3.32 *maritime mobile service:* A *mobile service* between *coast stations* and *ship stations*, or between *ship stations*, or between associated *on-board communication stations*; *survival*

craft stations and *emergency position-indicating radiobeacon stations* may also participate in this service.

3.33 *maritime mobile-satellite service:* A *mobile-satellite service* in which *mobile earth stations* are located on board ships; *survival craft stations* and *emergency position-indicating radiobeacon stations* may also participate in this service.

3.34 *port operations service:* A *maritime mobile service* in or near a port, between *coast stations* and *ship stations*, or between *ship stations*, in which messages are restricted to those relating to the operational handling, the movement and the safety of ships and, in emergency, to the safety of persons.

Messages which are of a *public correspondence* nature shall be excluded from this service.

3.35 *ship movement service:* A *safety service* in the *maritime mobile service* other than a *port operations service*, between *coast stations* and *ship stations*, or between *ship stations*, in which messages are restricted to those relating to the movement of ships.

Messages which are of a *public correspondence* nature shall be excluded from this service.

3.36 *aeronautical mobile service:* A *mobile service* between *aeronautical stations* and *aircraft stations*, or between *aircraft stations*, in which *survival craft stations* may participate; *emergency position-indicating radiobeacon stations* may also participate in this service on designated distress and emergency frequencies.

3.37 *aeronautical mobile (R)* service:* An *aeronautical mobile service* reserved for communications relating to safety and regularity of flight, primarily along national or international civil air routes.

3.38 *aeronautical mobile (OR)** service:* An *aeronautical mobile service* intended for communications, including those relating to flight coordination, primarily outside national or international civil air routes.

3.39 *aeronautical mobile-satellite service:* A *mobile-satellite service* in which *mobile earth stations* are located on board aircraft; *survival craft stations* and *emergency position-indicating radiobeacon stations* may also participate in this service.

3.40 *aeronautical mobile-satellite (R)*[*] *service:* An *aeronautical mobile-satellite service* reserved for communications relating to safety and regularity of flights, primarily along national or international civil air routes.

3.41 *aeronautical mobile-satellite (OR)*[**] *service:* An *aeronautical mobile-satellite service* intended for communications, including those relating to flight coordination, primarily outside national and international civil air routes.

3.42 *broadcasting service:* A *radiocommunication service* in which the transmissions are intended for direct reception by the general public. This service may include sound transmissions, *television* transmissions or other types of transmission .

3.43 *broadcasting-satellite service:* A *radiocommunication service* in which signals transmitted or retransmitted by *space stations* are intended for direct reception by the general public.

In the broadcasting-satellite service, the term "direct reception" shall encompass both *individual reception* and *community reception*.

3.44 *radiodetermination service:* A *radiocommunication service* for the purpose of *radiodetermination*.

3.45 *radiodetermination-satellite service: A radiocommunication service* for the purpose of *radiodetermination* involving the use of one or more *space stations*.

This service may also include *feeder links* necessary for its own operation.

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[*] (R): route.

[**] (OR): off-route.

3.46 *radionavigation service:* A *radiodetermination service* for the purpose of *radionavigation*.

3.47 *radionavigation-satellite service:* A *radiodetermination-satellite service* used for the purpose of *radionavigation*.

This service may also include *feeder links* necessary for its operation.

3.48 *maritime radionavigation service:* A *radionavigation service* intended for the benefit and for the safe operation of ships.

3.49 *maritime radionavigation-satellite service:* A *radionavigation-satellite service* in which *earth stations* are located on board ships.

3.50 *aeronautical radionavigation service:* A *radionavigation service* intended for the benefit and for the safe operation of aircraft.

3.51 *aeronautical radionavigation-satellite service:* A *radionavigation-satellite service* in which *earth stations* are located on board aircraft.

3.52 *radiolocation service:* A *radiodetermination service* for the purpose of *radiolocation*.

3.53 *radiolocation-satellite service:* A *radiodetermination-satellite service* used for the purpose of *radiolocation.*

This service may also include the *feeder links* necessary for its operation.

3.54 *meteorological aids service:* A *radiocommunication service* used for meteorological, including hydrological, observations and exploration.

3.55 *Earth exploration-satellite service:* A *radiocommunication service* between *earth stations* and one or more *space stations*, which may include links between *space stations*, in which:

- information relating to the characteristics of the Earth and its natural phenomena, including data relating to the state of the environment, is obtained from *active sensors* or *passive sensors* on Earth *satellites*;
- similar information is collected from airborne or Earth-based platforms;
- such information may be distributed to *earth stations* within the system concerned;
- platform interrogation may be included.

This service may also include *feeder links* necessary for its operation.

3.56 *meteorological-satellite service:* An *earth exploration-satellite service* for meteorological purposes.

3.57 *standard frequency and time signal service:* A *radiocommunication service* for scientific, technical and other purposes, providing the transmission of specified frequencies, time signals, or both, of stated high precision, intended for general reception.

3.58 *standard frequency and time signal-satellite service:* A *radiocommunication service* using *space stations* on earth *satellites* for the same purposes as those of the *standard frequency and time signal service*.

This service may also include *feeder links* necessary for its operation.

3.59 *space research service:* A *radiocommunication service* in which *spacecraft* or other objects in space are used for scientific or technological research purposes.

3.60 *amateur service:* A *radiocommunication service* for the purpose of self-training, intercommunication and technical investigations carried out by amateurs, that is, by duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest.

3.61 *amateur-satellite service:* A *radiocommunication service* using *space stations* on earth *satellites* for the same purposes as those of the *amateur service*.

3.62 *radio astronomy service:* A service involving the use of *radio astronomy*.

3.63 *safety service:* Any *radiocommunication service* used permanently or temporarily for the safeguarding of human life and property.

3.64 *special service:* A *radiocommunication service*, not otherwise defined in this Section, carried on exclusively for specific needs of general utility, and not open to *public correspondence*.

Radio stations and systems

3.65 *station:* One or more transmitters or receivers or a combination of transmitters and receivers, including the accessory equipment, necessary at one location for carrying on a *radiocommunication service*, or the *radio astronomy service*.

Each station shall be classified by the service in which it operates permanently or temporarily.

3.66 *terrestrial station:* A *station* effecting *terrestrial radiocommunication*.

In these Regulations, unless otherwise stated, any *station* is a terrestrial station.

3.67 *earth station:* A *station* located either on the Earth's surface or within the major portion of the Earth's atmosphere and intended for communication:

– with one or more *space stations*; or

– with one or more *stations* of the same kind by means of one or more reflecting *satellites* or other objects in space.

3.68 *space station:* A *station* located on an object which is beyond, is intended to go beyond, or has been beyond, the major portion of the Earth's atmosphere.

3.69 *survival craft station:* A *mobile station* in the *maritime mobile service* or the *aeronautical mobile service* intended solely for survival purposes and located on any lifeboat, life-raft or other survival equipment.

3.70 *fixed station:* A *station* in the *fixed service*.

3.71 *high altitude platform station:* A *station* located on an object at an altitude of 20 to 50 km and at a specified, nominal, fixed point relative to the Earth.

3.72 *mobile station:* A *station* in the *mobile service* intended to be used while in motion or during halts at unspecified points.

3.73 *mobile earth station:* An *earth station* in the *mobile-satellite service* intended to be used while in motion or during halts at unspecified points.

3.74 *land station:* A *station* in the *mobile service* not intended to be used while in motion.

3.75 *land earth station:* An *earth station* in the *fixed-satellite service* or, in some cases, in the *mobile-satellite service,* located at a specified fixed point or within a specified area on land to provide a *feeder link* for the *mobile-satellite service*.

3.76 *base station:* A *land station* in the *land mobile service*.

3.77 *base earth station:* An *earth station* in the *fixed-satellite service* or, in some cases, in the *land mobile-satellite service*, located at a specified fixed point or within a specified area on land to provide a *feeder link* for the *land mobile-satellite service*.

3.78 *land mobile station:* A *mobile station* in the *land mobile service* capable of surface movement within the geographical limits of a country or continent.

3.79 *land mobile earth station:* A *mobile earth station* in the *land mobile-satellite service* capable of surface movement within the geographical limits of a country or continent.

3.80 *coast station:* A *land station* in the *maritime mobile service*.

3.81 *coast earth station:* An *earth station* in the *fixed-satellite service* or, in some cases, in the *maritime mobile-satellite service*, located at a specified fixed point on land to provide a *feeder link* for the *maritime mobile-satellite service*.

3.82 *ship station:* A *mobile station* in the *maritime mobile service* located on board a vessel which is not permanently moored, other than a *survival craft station*.

3.83 *ship earth station:* A *mobile earth station* in the *maritime mobile-satellite service* located on board ship.

3.84 *on-board communication station:* A low-powered *mobile station* in the *maritime mobile service* intended for use for internal communications on board a ship, or between a ship and its lifeboats and life-rafts during lifeboat drills or operations, or for communication within a group of vessels being towed or pushed, as well as for line handling and mooring instructions.

3.85 *port station:* A *coast station* in the *port operations service*.

3.86 *aeronautical station:* A *land station* in the *aeronautical mobile service*.

In certain instances, an aeronautical station may be located, for example, on board ship or on a platform at sea.

3.87 *aeronautical earth station:* An *earth station* in the *fixed-satellite service*, or, in some cases, in the *aeronautical mobile-satellite service*, located at a specified fixed point on land to provide a *feeder link* for the *aeronautical mobile-satellite service*.

3.88 *aircraft station:* A *mobile station* in the *aeronautical mobile service*, other than a *survival craft station*, located on board an aircraft.

3.89 *aircraft earth station:* A *mobile earth station* in the *aeronautical mobile-satellite service* located on board an aircraft.

3.90 *broadcasting station:* A *station* in the *broadcasting service*.

3.91 meteorological aids land station: A station in the meteorological aids service not intended to be used while in motion. (WRC-15)

3.92 meteorological aids land station: A station in the meteorological aids service intended to be used while in motion or during halts at unspecified points. (WRC-15)

~~3.91~~3.93 *radiodetermination station:* A *station* in the *radiodetermination service*.

~~3.92~~3.94 *radionavigation mobile station:* A *station* in the *radionavigation service* intended to be used while in motion or during halts at unspecified points.

~~3.93~~3.95 *radionavigation land station:* A *station* in the *radionavigation service* not intended to be used while in motion.

~~3.94~~3.96 *radiolocation mobile station:* A *station* in the *radiolocation service* intended to be used while in motion or during halts at unspecified points.

~~3.95~~3.97 *radiolocation land station:* A *station* in the *radiolocation service* not intended to be used while in motion.

~~3.96~~3.98 *radio direction-finding station:* A *radiodetermination station* using *radio direction-finding*.

~~3.97~~3.99 *radiobeacon station:* A *station* in the *radionavigation service*, the *emissions* of which are intended to enable a *mobile station* to determine its bearing or direction in relation to the radiobeacon station.

~~3.98~~3.100 *emergency position-indicating radiobeacon station:* A *station* in the *mobile service*, the *emissions* of which are intended to facilitate search and rescue operations.

~~3.99~~3.101 *satellite emergency position-indicating radiobeacon:* An *earth station* in the *mobile-satellite service*, the *emissions* of which are intended to facilitate search and rescue operations.

~~3.100~~3.102 *standard frequency and time signal station:* A *station* in the *standard frequency and time signal service*.

~~3.101~~3.103 *amateur station:* A *station* in the *amateur service*.

~~3.102~~3.104 *radio astronomy station:* A *station* in the *radio astronomy service*.

~~3.103~~3.105 *experimental station:* A *station* utilizing *radio waves* in experiments with a view to the development of science or technique.

This definition does not include *amateur stations.*

~~3.104~~3.106 *ship's emergency transmitter:* A ship's transmitter to be used exclusively on a distress frequency for distress, urgency or safety purposes.

~~3.105~~3.107 *radar:* A *radiodetermination* system based on the comparison of reference signals with radio signals reflected, or retransmitted, from the position to be determined.

~~3.106~~3.108 *primary radar:* A *radiodetermination* system based on the comparison of reference signals with radio signals reflected from the position to be determined.

~~3.107~~3.109 *secondary radar:* A *radiodetermination* system based on the comparison of reference signals with radio signals retransmitted from the position to be determined.

~~3.108~~3.110 *radar beacon (racon):* A transmitter-receiver associated with a fixed navigational mark which, when triggered by a *radar*, automatically returns a distinctive signal which can appear on the display of the triggering *radar*, providing range, bearing and identification information.

~~3.109~~3.111 *instrument landing system (ILS):* A *radionavigation* system which provides aircraft with horizontal and vertical guidance just before and during landing and, at certain fixed points, indicates the distance to the reference point of landing.

~~3.110~~3.112 *instrument landing system localizer:* A system of horizontal guidance embodied in the *instrument landing system* which indicates the horizontal deviation of the aircraft from its optimum path of descent along the axis of the runway.

~~3.111~~3.113 *instrument landing system glide path:* A system of vertical guidance embodied in the *instrument landing system* which indicates the vertical deviation of the aircraft from its optimum path of descent.

~~3.112~~3.114 *marker beacon:* A transmitter in the *aeronautical radionavigation service* which radiates vertically a distinctive pattern for providing position information to aircraft.

~~3.113~~3.115 *radio altimeter: Radionavigation* equipment, on board an aircraft or *spacecraft*, used to determine the height of the aircraft or the *spacecraft* above the Earth's surface or another surface.

~~3.114~~3.116 *radiosonde:* An automatic radio transmitter in the *meteorological aids service* usually carried on an aircraft, free balloon, kite or parachute, and which transmits meteorological data.

~~3.115~~3.117 *adaptive system:* A *radiocommunication* system which varies its radio characteristics according to channel quality.

~~3.116~~3.118 *space system:* Any group of cooperating *earth stations* and/or *space stations* employing *space radiocommunication* for specific purposes.

~~3.117~~3.119 *satellite system:* A *space system* using one or more artificial earth *satellites*.

~~3.118~~3.120 *satellite network:* A *satellite system* or a part of a *satellite system*, consisting of only one *satellite* and the cooperating *earth stations*.

~~3.119~~3.121 *satellite link:* A radio link between a transmitting *earth station* and a receiving *earth station* through one *satellite*.

A satellite link comprises one up-link and one down-link.

~~3.120~~3.122 *multi-satellite link:* A radio link between a transmitting *earth station* and a receiving *earth station* through two or more *satellites*, without any intermediate *earth station*.

A multi-satellite link comprises one up-link, one or more satellite-to-satellite links and one down-link.

~~3.121~~3.123 *feeder link:* A radio link from an *earth station* at a given location to a *space station*, or vice versa, conveying information for a *space radiocommunication service* other than for the *fixed-satellite service*. The given location may be at a specified fixed point, or at any fixed point within specified areas.

Operational terms

~~3.122~~3.124 *public correspondence:* Any *telecommunication* which the offices and *stations* should, by reason of their being at the disposal of the public, accept for transmission .

~~3.123~~3.125 *telegraphy*[1]*:* A form of *telecommunication* in which the transmitted information is intended to be recorded on arrival as a graphic document; the transmitted information may sometimes be presented in an alternative form or may be stored for subsequent use

~~3.124~~3.126 *telegram:* Written matter intended to be transmitted by *telegraphy* for delivery to the addressee. This term also includes *radiotelegrams* unless otherwise specified .

In this definition the term *telegraphy* has the same general meaning as defined in the Convention.

~~3.125~~3.127 *radiotelegram:* A *telegram*, originating in or intended for a *mobile station* or a *mobile earth station* transmitted on all or part of its route over the *radiocommunication* channels of the *mobile service* or of the *mobile-satellite service*.

~~3.126~~3.128 *radiotelex call:* A telex call, originating in or intended for a *mobile station* or a *mobile earth station*, transmitted on all or part of its route over the *radiocommunication* channels of the *mobile service* or the *mobile-satellite service*.

~~3.127~~3.129 *frequency-shift telegraphy: Telegraphy* by frequency modulation in which the telegraph signal shifts the frequency of the carrier between predetermined values.

~~3.128~~3.130 *facsimile:* A form of *telegraphy* for the transmission of fixed images, with or without half-tones, with a view to their reproduction in a permanent form.

~~3.129~~3.131 *telephony:* A form of *telecommunication* primarily intended for the exchange of information in the form of speech

~~3.130~~3.132 *radiotelephone call:* A telephone call, originating in or intended for a *mobile station* or a *mobile earth station*, transmitted on all or part of its route over the *radiocommunication* channels of the *mobile service* or of the *mobile-satellite service*.

[1] **3.123** A graphic document records information in a permanent form and is capable of being filed and consulted; it may take the form of written or printed matter or of a fixed image.

~~3.131~~3.133 *simplex operation:* Operating method in which transmission is made possible alternately in each direction of a *telecommunication* channel, for example, by means of manual control[2].

~~3.132~~3.134 *duplex operation:* Operating method in which transmission is possible simultaneously in both directions of a *telecommunication* channel[2].

~~3.133~~3.135 *semi-duplex operation:* A method which is *simplex operation* at one end of the circuit and *duplex operation* at the other.[2]

~~3.134~~3.136 *television:* A form of *telecommunication* for the transmission of transient images of fixed or moving objects.

~~3.135~~3.137 *individual reception* (in the broadcasting-satellite service)*:* The reception of *emissions* from a *space station* in the *broadcasting-satellite service* by simple domestic installations and in particular those possessing small antennas.

~~3.136~~3.138 *community reception* (in the broadcasting-satellite service)*:* The reception of *emissions* from a *space station* in the *broadcasting-satellite service* by receiving equipment, which in some cases may be complex and have antennas larger than those used for *individual reception*, and intended for use:

- by a group of the general public at one location; or
- through a distribution system covering a limited area.

~~3.137~~3.139 *telemetry:* The use of *telecommunication* for automatically indicating or recording measurements at a distance from the measuring instrument.

~~3.138~~3.140 *radiotelemetry: Telemetry* by means of *radio waves*.

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[2] **3.131**, **3.132** and **3.133** In general, duplex operation and *semi-duplex* operation require two frequencies in *radiocommunication*; *simplex* operation may use either one or two.

~~3.139~~3.141 *space telemetry:* The use of *telemetry* for the transmission from a *space station* of results of measurements made in a *spacecraft*, including those relating to the functioning of the *spacecraft*.

~~3.140~~3.142 *telecommand:* The use of *telecommunication* for the transmission of signals to initiate, modify or terminate functions of equipment at a distance.

~~3.141~~3.143 *space telecommand:* The use of *radiocommunication* for the transmission of signals to a *space station* to initiate, modify or terminate functions of equipment on an associated space object, including the *space station*.

~~3.142~~3.144 *space tracking:* Determination of the *orbit*, velocity or instantaneous position of an object in space by means of *radiodetermination*, excluding *primary radar*, for the purpose of following the movement of the object.

Characteristics of emissions and radio equipment

~~3.143~~3.145 *radiation:* The outward flow of energy from any source in the form of *radio waves*.

~~3.144~~3.146 *emission: Radiation* produced, or the production of *radiation*, by a radio transmitting *station*.

For example, the energy radiated by the local oscillator of a radio receiver would not be an emission but a *radiation*.

~~3.145~~3.147 *class of emission:* The set of characteristics of an *emission*, designated by standard symbols, e.g. type of modulation of the main carrier, modulating signal, type of information to be transmitted, and also, if appropriate, any additional signal characteristics.

~~3.146~~3.148 *single-sideband emission:* An amplitude modulated *emission* with one sideband only.

~~3.147~~3.149 *full carrier single-sideband emission*: A *single-sideband emission* without reduction of the carrier.

~~3.148~~3.150 *reduced carrier single-sideband emission:* A *single-sideband emission* in which the degree of carrier suppression enables the carrier to be reconstituted and to be used for demodulation.

~~3.149~~3.151 *suppressed carrier single-sideband emission:* A *single-sideband emission* in which the carrier is virtually suppressed and not intended to be used for demodulation.

~~3.150~~3.152 *out-of-band emission**: *Emission* on a frequency or frequencies immediately outside the *necessary bandwidth* which results from the modulation process, but excluding *spurious emissions*.

~~3.151~~3.153 *spurious emission**: *Emission* on a frequency or frequencies which are outside the *necessary bandwidth* and the level of which may be reduced without affecting the corresponding transmission of information. Spurious emissions include harmonic *emissions*, parasitic *emissions*, intermodulation products and frequency conversion products, but exclude *out-of-band emissions*.

~~3.152~~3.154 *unwanted emissions**: Consist of *spurious emissions* and *out-of-band emissions*.

~~3.153~~3.155 *out-of-band domain* (of an emission)*:* The frequency range, immediately outside the *necessary bandwidth* but excluding the *spurious domain*, in which *out-of-band emissions* generally predominate. *Out-of-band emissions*, defined based on their source, occur in the out-of-band domain and, to a lesser extent, in the *spurious domain*. *Spurious emissions* likewise may occur in the out-of-band domain as well as in the *spurious domain*. (WRC-03)

~~3.154~~3.156 *spurious domain* (of an emission): The frequency range beyond the *out-of-band domain* in which *spurious emissions* generally predominate. (WRC-03)

~~3.155~~3.157 *assigned frequency band:* The frequency band within which the *emission* of a *station* is authorized; the width of the band equals the *necessary bandwidth* plus twice the absolute value of the *frequency tolerance*. Where *space stations* are concerned, the assigned frequency band includes twice the maximum Doppler shift that may occur in relation to any point of the Earth's surface.

~~3.156~~3.158 *assigned frequency:* The centre of the frequency band assigned to a *station*.

~~3.157~~3.159 *characteristic frequency:* A frequency which can be easily identified and measured in a given *emission*.

A carrier frequency may, for example, be designated as the characteristic frequency.

~~3.158~~3.160 *reference frequency:* A frequency having a fixed and specified position with respect to the *assigned frequency*. The displacement of this frequency with respect to the *assigned frequency* has the same absolute value and sign that the displacement of the *characteristic frequency* has with respect to the centre of the frequency band occupied by the *emission*.

~~3.159~~3.161 *frequency tolerance:* The maximum permissible departure by the centre frequency of the frequency band occupied by an *emission* from the *assigned frequency* or, by the *characteristic frequency* of an *emission* from the *reference frequency*.

The frequency tolerance is expressed in parts in 10^6 or in hertz.

~~3.160~~3.162 *necessary bandwidth:* For a given *class of emission*, the width of the frequency band which is just sufficient to ensure the transmission of information at the rate and with the quality required under specified conditions.

~~3.161~~3.163 *occupied bandwidth:* The width of a frequency band such that, below the lower and above the upper frequency limits, the *mean powers* emitted are each equal to a specified percentage $\beta/2$ of the total *mean power* of a given *emission*.

Unless otherwise specified in an ITU-R Recommendation for the appropriate *class of emission*, the value of $\beta/2$ should be taken as 0.5%.

~~3.162~~3.164 *right-hand* (clockwise) *polarized wave:* An elliptically- or circularly-polarized wave, in which the electric field vector, observed in any fixed plane, normal to the direction of propagation, whilst looking in the direction of propagation, rotates with time in a right-hand or clockwise direction.

~~3.163~~3.165 *left-hand* (anticlockwise) *polarized wave:* An elliptically- or circularly-polarized wave, in which the electric field vector, observed in any fixed plane, normal to the direction of propagation, whilst looking in the direction of propagation, rotates with time in a left-hand or anticlockwise direction.

~~3.164~~3.166 *power:* Whenever the power of a radio transmitter, etc. is referred to it shall be expressed in one of the following forms, according to the class of *emission*, using the arbitrary symbols indicated:

– *peak envelope power* (*P*X or *p*X);
– *mean power* (*P*Y or *p*Y);
– *carrier power* (*P*Z or *p*Z).

For different *classes of emission*, the relationships between *peak envelope power*, *mean power* and *carrier power*, under the conditions of normal operation and of no modulation, are contained in ITU-R Recommendations which may be used as a guide.

For use in formulae, the symbol *p* denotes power expressed in watts and the symbol *P* denotes power expressed in decibels relative to a reference level.

~~3.165~~3.167 *peak envelope power* (of a radio transmitter)*:* The average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle at the crest of the modulation envelope taken under normal operating conditions.

~~3.166~~3.168 *mean power* (of a radio transmitter)*:* The average power supplied to the antenna transmission line by a transmitter during an interval of time sufficiently long compared with the lowest frequency encountered in the modulation taken under normal operating conditions.

~~3.167~~3.169 *carrier power* (of a radio transmitter)*:* The average power supplied to the antenna transmission line by a transmitter during one radio frequency cycle taken under the condition of no modulation.

~~3.168~~3.170 *gain of an antenna:* The ratio, usually expressed in decibels, of the power required at the input of a loss-free reference antenna to the power supplied to the input of the given antenna to produce, in a given direction, the same field strength or the same power flux-density at the same distance. When not specified otherwise, the gain refers to the direction of maximum *radiation.* The gain may be considered for a specified polarization.

Depending on the choice of the reference antenna a distinction is made between:

a) absolute or isotropic gain (G_i), when the reference antenna is an isotropic antenna isolated in space;

b) gain relative to a half-wave dipole (G_d), when the reference antenna is a half-wave dipole isolated in space whose equatorial plane contains the given direction;

c) gain relative to a short vertical antenna (G_v), when the reference antenna is a linear conductor, much shorter than one quarter of the wavelength, normal to the surface of a perfectly conducting plane which contains the given direction.

~~3.169~~3.171 *equivalent isotropically radiated power (e.i.r.p.):* The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna *(absolute or isotropic gain).*

~~3.170~~3.172 *effective radiated power (e.r.p.)* (in a given direction)*:* The product of the power supplied to the antenna and its *gain relative to a half-wave dipole* in a given direction.

~~3.171~~3.173 *effective monopole radiated power (e.m.r.p.)* (in a given direction)*:* The product of the power supplied to the antenna and its *gain relative to a short vertical antenna* in a given direction.

~~3.172~~3.174 *tropospheric scatter:* The propagation of *radio waves* by scattering as a result of irregularities or discontinuities in the physical properties of the troposphere.

~~3.173~~3.175 *ionospheric scatter:* The propagation of *radio waves* by scattering as a result of irregularities or discontinuities in the ionization of the ionosphere.

Frequency sharing

~~3.174~~3.176 *interference:* The effect of unwanted energy due to one or a combination of *emissions*, *radiations*, or inductions upon reception in a *radiocommunication* system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy.

~~3.175~~3.177 *permissible interference*[3]*:* Observed or predicted *interference* which complies with quantitative *interference* and sharing criteria contained in this ZNFAP or in ITU-R Recommendations.

~~3.176~~3.178 *accepted interference*[3]*: Interference* at a higher level than that defined as *permissible interference* and which has been agreed upon between two or more *administrations* without prejudice to other *administrations*.

~~3.177~~3.179 *harmful interference: Interference* which endangers the functioning of a *radionavigation service* or of other *safety services* or seriously degrades, obstructs, or repeatedly interrupts a *radiocommunication service* operating in accordance with the Zimbabwe Postal and Telecommunications Act [Chapter 12:05].

~~3.178~~3.180 *protection ratio* (R.F.)*:* The minimum value of the wanted-to-unwanted signal ratio, usually expressed in decibels, at the receiver input, determined under specified conditions such that a specified reception quality of the wanted signal is achieved at the receiver output.

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[3] **3.175** and **3.176** The terms "permissible interference" and "accepted interference" are used in the coordination of frequency assignments between *administrations*.

~~3.179~~3.181 *coordination area:* When determining the need for coordination, the area surrounding an *earth station* sharing the same frequency band with *terrestrial stations*, or surrounding a transmitting *earth station* sharing the same bidirectionally allocated frequency band with receiving *earth stations*, beyond which the level of *permissible interference* will not be exceeded and coordination is therefore not required. (WRC-2000)

~~3.180~~3.182 *coordination contour:* The line enclosing the *coordination area*.

~~3.181~~3.183 *coordination distance:* When determining the need for coordination, the distance on a given azimuth from an *earth station* sharing the same frequency band with *terrestrial stations*, or from a transmitting *earth station* sharing the same bidirectionally allocated frequency band with receiving *earth stations*, beyond which the level of *permissible interference* will not be exceeded and coordination is therefore not required. (WRC-2000)

~~3.182~~3.184 *equivalent satellite link noise temperature:* The noise temperature referred to the output of the receiving antenna of the *earth station* corresponding to the radio frequency noise power which produces the total observed noise at the output of the *satellite link* excluding noise due to *interference* coming from *satellite links* using other *satellites* and from terrestrial systems.

~~3.183~~3.185 *effective boresight area* (of a steerable satellite beam)*:* An area on the surface of the Earth within which the boresight of a *steerable satellite beam* is intended to be pointed.

There may be more than one unconnected effective boresight area to which a single *steerable satellite beam* is intended to be pointed.

~~3.184~~3.186 *effective antenna gain contour* (of a steerable satellite beam)*:* An envelope of antenna gain contours resulting from moving the boresight of a *steerable satellite beam* along the limits of the *effective boresight area*.

Technical terms relating to space

~~3.185~~3.187 *deep space:* Space at distances from the Earth equal to, or greater than, 2×10^6 km.

~~3.186~~3.188 *spacecraft:* A man-made vehicle which is intended to go beyond the major portion of the Earth's atmosphere.

~~3.187~~3.189 *satellite:* A body which revolves around another body of preponderant mass and which has a motion primarily and permanently determined by the force of attraction of that other body.

~~3.188~~3.190 *active satellite:* A *satellite* carrying a *station* intended to transmit or retransmit *radiocommunication* signals.

~~3.189~~3.191 *reflecting satellite:* A *satellite* intended to reflect *radiocommunication* signals.

~~3.190~~3.192 *active sensor:* A measuring instrument in the *earth exploration-satellite service* or in the *space research service* by means of which information is obtained by transmission and reception of *radio waves*.

~~3.191~~3.193 *passive sensor:* A measuring instrument in the *earth exploration-satellite service* or in the *space research service* by means of which information is obtained by reception of *radio waves* of natural origin.

~~3.192~~3.194 *orbit:* The path, relative to a specified frame of reference, described by the centre of mass of a *satellite* or other object in space subjected primarily to natural forces, mainly the force of gravity.

~~3.193~~3.195 *inclination of an orbit* (of an earth satellite): The angle determined by the plane containing the *orbit* and the plane of the Earth's equator measured in degrees between 0º and 180º and in counter-clockwise direction from the Earth's equatorial plane at the ascending node of the *orbit*. (WRC-2000)

~~3.194~~3.196 *period* (of a satellite)*:* The time elapsing between two consecutive passages of a *satellite* through a characteristic point on its *orbit*.

~~3.195~~3.197 *altitude of the apogee* or *of the perigee:* The altitude of the apogee or perigee above a specified reference surface serving to represent the surface of the Earth.

~~3.196~~3.198 *geosynchronous satellite:* An earth *satellite* whose period of revolution is equal to the period of rotation of the Earth about its axis.

~~3.197~~3.199 *geostationary satellite:* A *geosynchronous satellite* whose circular and direct *orbit* lies in the plane of the Earth's equator and which thus remains fixed relative to the Earth; by extension, a *geosynchronous satellite* which remains approximately fixed relative to the Earth. (WRC-03)

~~3.198~~3.200 *geostationary-satellite orbit:* The *orbit* of a *geosynchronous satellite* whose circular and direct *orbit* lies in the plane of the Earth's equator.

~~3.199~~3.201 *steerable satellite beam:* A *satellite* antenna beam that can be re-pointed.

CHAPTER 4

Frequency and wavelength bands

The radio frequency spectrum shall be subdivided into nine frequency bands, which shall be designated by progressive whole numbers in accordance with the following table. As the unit of frequency is the hertz (Hz), frequencies shall be expressed:

- in kilohertz (kHz), up to and including 3 000 kHz;
- in megahertz (MHz), above 3 MHz, up to and including 3 000 MHz;
- in gigahertz (GHz), above 3 GHz, up to and including 3 000 GHz.

However, where adherence to these provisions would introduce serious difficulties, for example in connection with the notification and registration of frequencies, the lists of frequencies and related matters, reasonable departures may be made. (WRC-15)

Band number	**Symbols**	**Frequency range (lower limit exclusive, upper limit inclusive)**	**Corresponding metric subdivision**
4	VLF	3 to 30 kHz	Myriametric waves
5	LF	30 to 300 kHz	Kilometric waves
6	MF	300 to 3 000 kHz	Hectometric waves
7	HF	3 to 30 MHz	Decametric waves
8	VHF	30 to 300 MHz	Metric waves
9	UHF	300 to 3 000 MHz	Decimetric waves
10	SHF	3 to 30 GHz	Centimetric waves
11	EHF	30 to 300 GHz	Millimetric waves
12	THF	300 to 3 000 GHz	Decimillimetric waves

NOTE 1: "Band N" (N = band number) extends from 0.3×10^N Hz to 3×10^N Hz.

NOTE 2: Prefix: k = kilo (10^3), M = mega (10^6), G = giga (10^9).

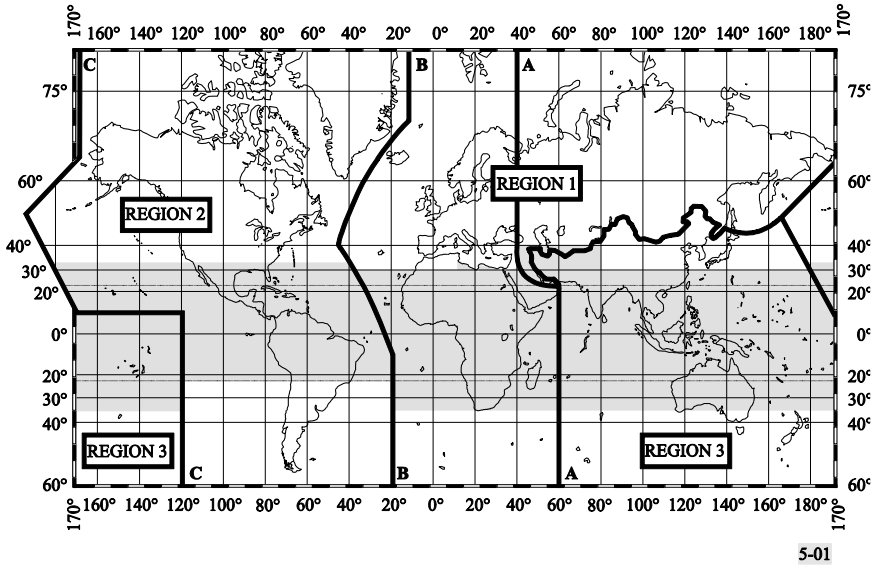
CHAPTER 5

ITU REGIONS AND AREAS

5.1 For the allocation of frequencies the world has been divided into three Regions[4] as shown on the following map and described in Nos. **5.3** to **5.9**:

5.2

Map with region one highlighted (Coloured Picture)



5.3 *Region 1:* Region 1 includes the area limited on the east by line A (lines A, B and C are defined below) and on the west by line B, excluding any of the territory of the Islamic Republic of Iran which lies between these limits. It also includes the whole of the territory of Armenia, Azerbaijan, the Russian Federation, Georgia, Kazakhstan, Mongolia,

[4] **5.1** It should be noted that where the words "regions" or "regional" are without a capital "R" in these Regulations, they do not relate to the three Regions here defined for purposes of frequency allocation.

Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey and Ukraine and the area to the north of Russian Federation which lies between lines A and C.

5.4 *Region 2:* Region 2 includes the area limited on the east by line B and on the west by line C.

5.5 *Region 3:* Region 3 includes the area limited on the east by line C and on the west by line A, except any of the territory of Armenia, Azerbaijan, the Russian Federation, Georgia, Kazakhstan, Mongolia, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan, Turkey and Ukraine and the area to the north of Russian Federation. It also includes that part of the territory of the Islamic Republic of Iran lying outside of those limits.

5.6 The lines A, B and C are defined as follows:

5.7 *Line A:* Line A extends from the North Pole along meridian 40° East of Greenwich to parallel 40° North; thence by great circle arc to the intersection of meridian 60° East and the Tropic of Cancer; thence along the meridian 60° East to the South Pole.

5.8 *Line B:* Line B extends from the North Pole along meridian 10° West of Greenwich to its intersection with parallel 72° North; thence by great circle arc to the intersection of meridian 50° West and parallel 40° North; thence by great circle arc to the intersection of meridian 20° West and parallel 10° South; thence along meridian 20° West to the South Pole.

5.9 *Line C:* Line C extends from the North Pole by great circle arc to the intersection of parallel 65° 30′ North with the international boundary in Bering Strait; thence by great circle arc to the intersection of meridian 165° East of Greenwich and parallel 50° North; thence by great circle arc to the intersection of meridian 170° West and parallel 10° North; thence along parallel 10° North to its intersection with meridian 120° West; thence along meridian 120° West to the South Pole.

5.10 For the purposes of this ZNFAP, the term "African Broadcasting Area" means:

a) African countries, parts of countries, territories and groups of territories situated between the parallels 40° South and 30° North;

b) islands in the Indian Ocean west of meridian 60° East of Greenwich, situated between the parallel 40° South and the great circle arc joining the points 45° East, 11° 30′ North and 60° East, 15° North;

c) islands in the Atlantic Ocean east of line B defined in No. **5.8** of these Regulations, situated between the parallels 40° South and 30° North.

1) The "Tropical Zone" (see map in No. **5.2**) is defined as:

a) the whole of that area in Region 2 between the Tropics of Cancer and Capricorn;

b) the whole of that area in Regions 1 and 3 contained between the parallels 30° North and 35° South with the addition of:

i) The area contained between the meridians 40° East and 80° East of Greenwich and the parallels 30° North and 40° North;

ii) that part of Libya north of parallel 30° North.

CHAPTER 6

NATIONAL FREQUENCY ALLOCATION TABLE

Categories of services and allocations

Primary and secondary services

6.1 Where, in a box of the Frequency Allocation Table , a band is indicated as allocated to more than one service, such services are listed in the following order:

a) services the names of which are printed in “capitals” (example: FIXED); these are called “primary” services;

b) services the names of which are printed in “normal characters” (example: Mobile); these are called “secondary” services

6.2 Additional remarks shall be printed in normal characters (example: MOBILE except aeronautical mobile).

6.3 Stations of a secondary service:

a) shall not cause harmful interference to stations of primary services to which frequencies are already assigned or to which frequencies may be assigned at a later date;

b) cannot claim protection from harmful interference from stations of a primary service to which frequencies are already assigned or may be assigned at a later date;

c) can claim protection, however, from harmful interference from stations of the same or other secondary service(s) to which frequencies may be assigned at a later date.

6.4 Where a band is indicated in a footnote of the Table as allocated to a service “on a secondary basis” in an area smaller than a Region, or in Zimbabwe , this is a secondary service

6.5 Where a band is indicated in a footnote of the Table as allocated to a service "on a primary basis", in an area smaller than a Region, or in Zimbabwe, this is a primary service only in that area.

6.6 Where a band is indicated in a footnote of the Table as "also allocated" to a service in an area smaller than a Region, or in a particular country, this is an "additional" allocation, i.e. an allocation which is added in this area or in this country to the service or services which are indicated in the Table

6.7 If the footnote does not include any restriction on the service or services concerned apart from the restriction to operate only in a particular area or country, stations of this service or these services shall have equality of right to operate with stations of the other primary service or services indicated in the Table.

6.8 If restrictions are imposed on an additional allocation in addition to the restriction to operate only in a particular area or country, this is indicated in the footnote of the Table.

6.9 Where a band is indicated in a footnote of the Table as "allocated" to one or more services in an area smaller than a Region, or in a particular country, this is an "alternative" allocation, i.e. an allocation which replaces, in this area or in this country, the allocation indicated in the Table

6.10 If the footnote does not include any restriction on stations of the service or services concerned, apart from the restriction to operate only in a particular area or country, these stations of such a service or services shall have an equality of right to operate with stations of the primary service or services, indicated in the Table, to which the band is allocated in other areas or countries.

6.11 If restrictions are imposed on stations of a service to which an alternative allocation is made, in addition to the restriction to operate only in a particular country or area, this is indicated in the footnote.

6.12 Where it is indicated in this ZNFAP that a service or stations in a service may operate in a specific frequency band subject to not causing harmful interference to another service or to another station in the same service, this means also that the service which is subject to not causing harmful interference cannot claim protection from harmful interference caused by the other service or other station in the same service.

6.13 Where it is indicated in this ZNFAP that a service or stations in a service may operate in a specific frequency band subject to not claiming protection from another service or from another station in the same service, this means also that the service which is subject to not claiming protection shall not cause harmful interference to the other service or other station in the same service.

6.14 Except if otherwise specified in a footnote, the term “fixed service”, does not include systems using ionospheric scatter propagation.

Description of the National Frequency Allocation Table

6.15 The heading of the Table includes five columns. The first column of the table indicates the frequency band for a particular allocation. The second , third and fourth colums are allocation to radio services in ITU Region 1, SADC and Zimbabwe respectively. The fifth column indicates the main utilization in Zimbabwe.

6.16 In the case where there is a parenthetical addition to an allocation in the Table, that service allocation is restricted to the type of operation so indicated.

6.17 The footnote references which appear in the Table below the allocated service or services apply to more than one of the allocated services, or to the whole of the allocation concerned.

6.18 The footnote references which appear to the right of the name of a service are applicable only to that particular service.

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
Below 8.3	Below 8.3 kHz (Not allocated) 5.53 5.54	(Not allocated) 5.53 5.54	Below 8.3 kHz (Not allocated) 5.53 5.54	
8.3- 9	METEOROLOGICAL AIDS 5.54A 5.54B 5.54C	METEOROLOGICAL AIDS 5.54A	METEOROLOGICAL AIDS 5.54A	METEOROLOGICAL AIDS
9-11.3	METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	METEOROLOGICAL AIDS 5.54A RADIONAVIGATION	METEOROLOGICAL AIDS
11.3-14	RADIONAVIGATION	RADIONAVIGATION	RADIONAVIGATION	RADIONAVIGATION
14-19.95	FIXED MARITIME MOBILE 5.57 5.55 5.56	FIXED MARITIME MOBILE 5.57 5.56	FIXED 5.56	STANDARD FREQUENCY AND TIME SIGNAL
19.95-20.05	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (20 kHz)	STANDARD FREQUENCY AND TIME SIGNAL SRDs – inductive short-range radiocommunications (9 kHz-135 kHz).
20.05-70	FIXED MARITIME MOBILE 5.57 5.56	FIXED MARITIME MOBILE 5.57 5.56	FIXED 5.56	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz)
70-72	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) NAVIGATIONAL AIDS

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
72-84	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 5.56	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.60 5.56	FIXED RADIONAVIGATION 5.60 5.56	STANDARD FREQUENCY AND TIME SIGNAL SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) NAVIGATIONAL AIDS
84-86	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) NAVIGATIONAL AIDS
86-90	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.56	FIXED MARITIME MOBILE 5.57 RADIONAVIGATION 5.56	FIXED RADIONAVIGATION 5.56	STANDARD FREQUENCY AND TIME SIGNAL SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) NAVIGATIONAL AIDS
90-110	RADIONAVIGATION 5.62 Fixed 5.64	RADIONAVIGATION 5.62 Fixed 5.64	RADIONAVIGATION 5.62 Fixed 5.64	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) NAVIGATIONAL AIDS
110-112	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.64	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) NAVIGATIONAL AIDS
112-115	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) NAVIGATIONAL AIDS

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
115-117.6	RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64	RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64	RADIONAVIGATION 5.60 Fixed Maritime mobile 5.64	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) NAVIGATIONAL AIDS
117.6-126	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXEDMARITIME MOBILE RADIONAVIGATION 5.60 5.64	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) NAVIGATIONAL AIDS
126-129	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	RADIONAVIGATION 5.60	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) NAVIGATIONAL AIDS
129-130	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	FIXED MARITIME MOBILE RADIONAVIGATION 5.60 5.64	SRDs – inductive short-range radiocommunications (9 kHz-135 kHz) NAVIGATIONAL AIDS

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
130-135.7	FIXED MARITIME MOBILE 5.64	FIXED MARITIME MOBILE 5.64	FIXED MARITIME MOBILE 5.64	MSS IMT per Res. 225 SRDs – inductive short-range radiocommunications (9 kHz-135 kHz)
135.7-137.8	FIXED MARITIME MOBILE Amateur 5.67A 5.64	FIXED MARITIME MOBILE Amateur 5.67A 5.64	FIXED MARITIME MOBILE Amateur 5.67A 5.64	AMATEUR
137.8-148.5	FIXED MARITIME MOBILE 5.64	FIXED MARITIME MOBILE 5.64	FIXED 5.64	FIXED
148.5-200	BROADCASTING 5.68	BROADCASTING 5.68	BROADCASTING	BROADCASTING
200 – 255		AERONAUTICAL RADIONAVIGATION SERVICE 5.70	AERONAUTICAL RADIONAVIGATION SERVICE 5.70	AERONAUTICAL RADIONAVIGATION SERVICE
255-283.5	AERONAUTICAL RADIONAVIGATION 5.70	AERONAUTICAL RADIONAVIGATION 5.70	AERONAUTICAL RADIONAVIGATION 5.70	AERONAUTICAL RADIONAVIGATION SERVICE
283.5-315	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 5.74	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 5.74	AERONAUTICAL RADIONAVIGATION MARITIME RADIONAVIGATION (radiobeacons) 5.73 5.74	AERONAUTICAL RADIONAVIGATION

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
315-325	AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radiobeacons) 5.73	AERONAUTICAL RADIONAVIGATION Maritime radionavigation (radiobeacons) 5.73	AERONAUTICAL RADIONAVIGATION (radiobeacons) 5.73	AERONAUTICAL RADIONAVIGATION
325-405	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION
405-415	RADIONAVIGATION 5.76	RADIONAVIGATION 5.76	RADIONAVIGATION 5.76	RADIONAVIGATION
415-435	MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION	MARITIME MOBILE 5.79 AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION
435-472	MARITIME MOBILE 5.79 Aeronautical radionavigation 5.77 5.82	MARITIME MOBILE 5.79 Aeronautical radionavigation -5.82	AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION
472-479	MARITIME MOBILE 5.79 Amateur 5.80A Aeronautical radionavigation 5.77 5.80 5.80B 5.82	MARITIME MOBILE 5.79 Amateur 5.80A Aeronautical radionavigation 5.77 5.80 -5.82 5.80B	MARITIME MOBILE 5.79 Amateur 5.80A Aeronautical radionavigation	Aeronautical Radionavigation
479-495	MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.77 5.82	MARITIME MOBILE 5.79 5.79A Aeronautical radionavigation 5.82	MARITIME MOBILE 5.79 Aeronautical radionavigation	Aeronautical Radionavigation
495-505	MARITIME MOBILE	MARITIME MOBILE	MARITIME MOBILE	

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
505-526.5	MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	MARITIME MOBILE 5.79 5.79A 5.84 AERONAUTICAL RADIONAVIGATION	MARITIME MOBILE 5.79 5.84 AERONAUTICAL RADIONAVIGATION	AERONAUTICAL RADIONAVIGATION
526.5-1 606.5	BROADCASTING 5.87 5.87A	BROADCASTING 5.87	BROADCASTING	BROADCASTING
1 606.5-1 625	FIXED MARITIME MOBILE 5.90 LAND MOBILE	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	FIXED MARITIME MOBILE LAND MOBILE 5.92	FIXED LAND MOBILE
1 625-1 635	RADIOLOCATION 5.93	RADIOLOCATION 5.93	RADIOLOCATION	RADIOLOCATION
1 635-1 800	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	FIXED MARITIME MOBILE 5.90 LAND MOBILE 5.92	FIXED MARITIME MOBILE LAND MOBILE 5.92	LAND MOBILE
1 800-1 810	RADIOLOCATION 5.93	RADIOLOCATION 5.93	RADIOLOCATION	RADIOLOCATION
1 810-1 850	AMATEUR 5.98 5.99 5.100	AMATEUR 5.98 5.100	AMATEUR	AMATEUR
1 850-2 000	FIXED MOBILE except aeronautical mobile 5.92 5.96 5.103	FIXED MOBILE except aeronautical mobile 5.92 5.103	FIXED MOBILE except aeronautical mobile 5.92 5.103	FIXED LAND MOBILE

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
2 000-2 025	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED LAND MOBILE
2 025-2 045	FIXED MOBILE except aeronautical mobile (R) Meteorological aids 5.104 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) Meteorological aids 5.104 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED LAND MOBILE
2 045-2 160	FIXED MARITIME MOBILE LAND MOBILE 5.92	FIXED MARITIME MOBILE LAND MOBILE 5.92	FIXED MARITIME MOBILE LAND MOBILE 5.92	FIXED LAND MOBILE
2 160-2 170	RADIOLOCATION 5.93 5.107	RADIOLOCATION 5.93 5.107	RADIOLOCATION	RADIOLOCATION
2 170-2 173.5	MARITIME MOBILE	MARITIME MOBILE	MARITIME MOBILE	

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
2 173.5-2 190.5	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	MOBILE (distress and calling) 5.108 5.109 5.110 5.111	2 182 kHz is an international distress and calling frequency for radiotelephony. 2 187.5 kHz – DSC for distress and calling; Article 31 applies. 2 174.5 kHz – international distress frequency for NBDP telegraphy; Article 31 applies.
2 190.5-2 194	MARITIME MOBILE	MARITIME MOBILE	MARITIME MOBILE	
2 194-2 300	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.112	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED LAND MOBILE
2 300-2 498	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.103	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.103	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.103	FIXED LAND MOBILE
2 498-2 501	STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (2 500 kHz)	STANDARD FREQUENCY AND TIME SIGNAL

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
2 501-2 502	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL Space Research	STANDARD FREQUENCY AND TIME SIGNAL
2 502-2 625	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103 5.114	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED LAND MOBILE
2 625-2 650	MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	MARITIME MOBILE MARITIME RADIONAVIGATION 5.92	RADIONAVIGATION 5.92	RADIONAVIGATION
2 650-2 850	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED MOBILE except aeronautical mobile (R) 5.92 5.103	FIXED LAND MOBILE
2 850-3 025	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 3 023 kHz may be used under the MMS for search and rescue operations (see Article 31)
3 025-3 155	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
3 155-3 200	FIXED MOBILE except aeronautical mobile (R) 5.116 5.117	FIXED MOBILE except aeronautical mobile (R) 5.116	FIXED MOBILE except aeronautical mobile (R) 5.116	FIXED AND MOBILE SRDs: Wireless hearing Aids
3 200-3 230	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	FIXED MOBILE except aeronautical mobile (R) BROADCASTING 5.113 5.116	FIXED LAND MOBILE
3 230-3 400	FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116 5.118	FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116	FIXED MOBILE except aeronautical mobile BROADCASTING 5.113 5.116	FIXED LAND MOBILE
3 400-3 500	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE(R)	AERONAUTICAL MOBILE (R)
3 500-3 800	AMATEUR FIXED MOBILE except aeronautical mobile 5.92	AMATEUR FIXED MOBILE except aeronautical mobile 5.92	AMATEUR FIXED MOBILE except aeronautical mobile 5.92	AMATEUR LAND MOBILE
3 800-3 900	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
3 900-3 950	AERONAUTICAL MOBILE (OR) 5.123	AERONAUTICAL MOBILE (OR) BROADCASTING 5.123	AERONAUTICAL MOBILE (OR) BROADCASTING 5.123	AERONAUTICAL MOBILE (OR)
3 950-4 000	FIXED BROADCASTING	FIXED BROADCASTING	FIXED BROADCASTING	FIXED
4 000-4 063	FIXED MARITIME MOBILE 5.127 5.126	FIXED MARITIME MOBILE 5.127	FIXED MARITIME MOBILE 5.127	FIXED
4 063-4 438	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128	MARITIME MOBILE 5.79A 5.109 5.110 5.130 5.131 5.132 5.128	FIXED MARITIME MOBILE 5.109 5.110 5.130 5.131 5.132 5.128	FIXED in accordance with 5.128
4 438-4 488	FIXED MOBILE except aeronautical mobile (R) Radiolocation 5.132A 5.132B	FIXED MOBILE except aeronautical mobile (R) Radiolocation 5.132A 5.132B	FIXED MOBILE except aeronautical mobile (R) Radiolocation 5.132A	FIXED Radiolocation
4 488-4 650	FIXED MOBILE except aeronautical mobile (R)	FIXED MOBILE except aeronautical mobile (R)	FIXED MOBILE except aeronautical mobile (R)	FIXED
4 650-4 700	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
4 700-4 750	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
4 750-4 850	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE BROADCASTING 5.113	AERONAUTICAL MOBILE (OR) LAND MOBILE SOUND BROADCASTING
4 850-4 995	FIXED LAND MOBILE BROADCASTING 5.113	FIXED LAND MOBILE BROADCASTING 5.113	FIXED LAND MOBILE BROADCASTING 5.113	LAND MOBILE SOUND BROADCASTING
4 995-5 003	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (5 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL
5 003-5 005	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL
5 005-5 060	FIXED BROADCASTING 5.113	FIXED BROADCASTING 5.113	FIXED BROADCASTING 5.113	FIXED
5 060-5 250	FIXED Mobile except aeronautical mobile 5.133	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	SADC harmonised HF frequencies for cross-border mobile communications; Refer to SADC Annex G.
5 250-5 275	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	FIXED MOBILE except aeronautical mobile	SADC harmonised HF frequencies for cross-border mobile communications; Refer to SADC Annex G.
5 275 ~~5 450~~ 5351.5	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	MOBILE

5 351.5 – 5 366.5	FIXED MOBILE except aeronautical mobile Amateur 5.133B	~~5 351.5 5 366.5 kHz~~ FIXED MOBILE except aeronautical mobile Amateur 5.133B	~~5 351.5 5 366.5 kHz~~ FIXED MOBILE except aeronautical mobile Amateur 5.133B	
5 366.5 -5 450	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	
~~**5 450 – 5 480**~~	~~FIXED~~ ~~AERONAUTICAL MOBILE~~ ~~(OR)~~ ~~LAND MOBILE~~	~~FIXED~~ ~~AERONAUTICAL MOBILE~~ ~~(OR)~~ ~~LAND MOBILE~~	~~FIXED~~ ~~AERONAUTICAL MOBILE~~ ~~(OR)~~ ~~LAND MOBILE~~	
Frequency band (KHz)	**ALLOCATION TO RADIO SERVICES**			**ZWE Main Utilisation**
	ITU Region 1	**SADC**	**Zimbabwe**	
5 450-5 480 ~~**5450 5480**~~	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	FIXED AERONAUTICAL MOBILE (OR) LAND MOBILE	AERONAUTICAL MOBILE (OR) LAND MOBILE
5 480-5 680	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 5.111 5.115	AERONAUTICAL MOBILE (R) 5 680 kHz may be used under the MMS for search and rescue operations (see Article 31).
5 680-5 730	AERONAUTICAL MOBILE (OR) 5.111 5.115	AERONAUTICAL MOBILE (OR) 5.111 5.115	AERONAUTICAL MOBILE (OR) 5.111 5.115	5 680 kHz may be used under the MMS for search and rescue operations (see Article 31).
5 730-5 900	FIXED LAND MOBILE	FIXED LAND MOBILE	FIXED LAND MOBILE	LAND MOBILE

5 900-5 950 kHz	BROADCASTING 5.134 5.136	BROADCASTING 5.134 5.136	BROADCASTING 5.134 FIXED LAND MOBILE 5.136	HF SOUND BROADCASTING FIXED in accordance with 5.136
5 950-6 200	BROADCASTING	BROADCASTING	BROADCASTING	HF SOUND BROADCASTING

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
6 200-6 525	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	MARITIME MOBILE 5.109 5.110 5.130 5.132 5.137	MARITIME MOBILE 5.109 5.110 5.130 5.132 FIXED 5.137	MARITIME MOBILE FIXED in accordance with 5.137 6312 kHz and 6215 kHz – DSC for distress and calling; Article 31 applies 6268 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. 6314 kHz – maritime safety information (MSI); App.17 applies
6 525-6 685	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
6 685-6 765	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
6 765-7 000	FIXED MOBILE except aeronautical mobile (R) 5.138 5.139	FIXED MOBILE except aeronautical mobile (R) 5.138	FIXED MOBILE except aeronautical mobile (R) 5.138	LAND MOBILE SRD applications (6 765-6 795 kHz) The band 6765-6795 kHz is designated for ISM applications
7 000-7 100	AMATEUR AMATEUR-SATELLITE 5.140 5.141 5.141A	AMATEUR AMATEUR-SATELLITE 5.140 5.141	AMATEUR AMATEUR-SATELLITE	AMATEUR
7 100-7 200	AMATEUR 5.141A 5.141B 5.142	AMATEUR 5.141B 5.142	AMATEUR	AMATEUR
7 200-7 300	BROADCASTING	BROADCASTING	BROADCASTING	HF SOUND BROADCASTING

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
7 300-7 400	BROADCASTING 5.134 5.143 5.143A 5.143B 5.143C 5.143D	BROADCASTING 5.134 5.143 5.143B	BROADCASTING 5.134 FIXED LAND MOBILE 5.143 5.143B	HF SOUND BROADCASTING FIXED AND LAND MOBILE in accordance with 5.143, 5.143B
7 400-7 450	BROADCASTING 5.143B 5.143C	BROADCASTING 5.143B	BROADCASTING FIXED LAND MOBILE 5.143B	HF SOUND BROADCASTING FIXED AND LAND MOBILE in accordance with 5.143B
7 450-8 100	FIXED MOBILE except aeronautical mobile (R) 5.144	FIXED MOBILE except aeronautical mobile (R)	FIXED MOBILE except aeronautical mobile (R)	SADC harmonised HF frequencies for cross-border mobile communications; see SADC Annex G.
8 100-8 195	FIXED MARITIME MOBILE	FIXED MARITIME MOBILE	FIXED MOBILE except aeronautical mobile	FIXED MOBILE
8 195-8 815	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	MARITIME MOBILE 5.109 5.110 5.132 5.145 5.111	8 414.5 KHz and 8376.5 KHz are International Distress Frequency 8416.5 KHz is for transmission of maritme safety information
8 815-8 965	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R) Appendix 27 Allotment plan applies

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
8 965-9 040	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR) Appendix 26 Allotment plan applies
9 040-9 305	FIXED	FIXED	FIXED	FIXED
9 305 – 9355	FIXED Radiolocation 5.145 A 5.145 B	FIXED Radiolocation 5.145A 5.145B	FIXED Radiolocation 5.145 A	FIXED
9355-9 400	FIXED	FIXED	FIXED	FIXED
9 400-9 500	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	BROADCASTING 5.134 FIXED 5.146	HF SOUND BROADCASTING FIXED in accordance with 5.146
9 500-9 900	BROADCASTING 5.147	BROADCASTING 5.147	BROADCASTING FIXED 5.147	HF SOUND BROADCASTING FIXED in accordance with 5.147
9 900-9 995	FIXED	FIXED	FIXED	FIXED
9 995-10 003	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (10 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
10 003-10 005	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL
10 005-10 100	AERONAUTICAL MOBILE (R) 5.111	AERONAUTICAL MOBILE (R) 5.111	AERONAUTICAL MOBILE (R) 5.111	AERONAUTICAL MOBILE (R)
10 100-10 150	FIXED Amateur	FIXED Amateur	FIXED Amateur	FIXED AMATEUR
10 150-11 175	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	FIXED SADC harmonised HF frequencies for cross-border mobile communications; refer to SADC Annex G.
11 175-11 275	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
11 275-11 400	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
11 400-11 600	FIXED	FIXED	FIXED	FIXED
11 600-11 650	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	BROADCASTING 5.134 FIXED 5.146	HF SOUND BROADCASTING FIXED in accordance with 5.146
11 650-12 050	BROADCASTING 5.147	BROADCASTING 5.147	BROADCASTING FIXED 5.147	HF SOUND BROADCASTING FIXED in accordance with 5.147

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
12 050-12 100	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	BROADCASTING 5.134 FIXED 5.146	HF SOUND BROADCASTING FIXED in accordance with 5.146
12 100-12 230	FIXED	FIXED	FIXED	FIXED
12 230-13 200	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 12 577 kHz – DSC for distress and calling; Article 31 applies 12 520 kHz – international distress frequency for NBDP telegraphy; Article 31 applies. 12 579 kHz – maritime safety information (MSI); App.17 applies.
13 200-13 260	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
13 260-13 360	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)
13 360-13 410	FIXED RADIO ASTRONOMY 5.149	FIXED RADIO ASTRONOMY 5.149	FIXED RADIO ASTRONOMY 5.149	FIXED RADIO ASTRONOMY
13 410-13 450	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	FIXED LAND MOBILE

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
13 450-13 550	FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132 A 5.149 A	FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132A	FIXED Mobile except aeronautical mobile (R) Radiolocation 5.132 A	FIXED MOBILE
13 550-13 570	FIXED Mobile except aeronautical mobile (R) 5.150	FIXED Mobile except aeronautical mobile (R) 5.150	FIXED Mobile except aeronautical mobile (R) 5.150	FIXED MOBILE The band 13 553-13 567 kHz is designated for ISM applications SRD applications (13 553-13 567kHz)
13 570-13 600	BROADCASTING 5.134 5.151	BROADCASTING 5.134 5.151	BROADCASTING 5.134 FIXED Mobile except aeronautical mobile (R) 5.151	HF SOUND BROADCASTING FIXED and Mobile in accordance with 5.151
13 600-13 800	BROADCASTING	BROADCASTING	BROADCASTING	HF SOUND BROADCASTING
13 800-13 870	BROADCASTING 5.134 5.151	BROADCASTING 5.134 5.151	BROADCASTING 5.134 FIXED Mobile except aeronautical mobile (R) 5.151	HF SOUND BROADCASTING FIXED and Mobile in accordance with 5.151
13 870-14 000	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	FIXED LAND MOBILE
14 000-14 250	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
14 250-14 350	AMATEUR 5.152	AMATEUR	AMATEUR	AMATEUR
14 350-14 990	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	FIXED SADC harmonised HF frequencies for cross-border mobile communications; refer to SADC Annex G.
14 990-15 005	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (15 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL
15 005-15 010	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL
15 010-15 100	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
15 100-15 600	BROADCASTING	BROADCASTING	BROADCASTING	HF SOUND BROADCASTING
15 600-15 800	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	BROADCASTING 5.134 FIXED 5.146	HF SOUND BROADCASTING FIXED in accordance with 5.146
15 800-16 100	FIXED 5.153	FIXED 5.153	FIXED	FIXED

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
16 100-16 200	FIXED Radiolocation 5.145A 5.145B	FIXED Radiolocation 5.145A 5.145B	FIXED Radiolocation 5.145A	FIXED
16 200-16 360	FIXED	FIXED	FIXED	FIXED
16 360-17 410	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 5.109 5.110 5.132 5.145	MARITIME MOBILE 16 806.5 KHz International Frequency for transmission of Maritime safety information 16 804.5 KHz and 16 695 KHz are International distress frequencies
17 410-17 480	FIXED	FIXED	FIXED	FIXED
17 480-17 550	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	BROADCASTING 5.134 FIXED 5.146	HF SOUND BROADCASTING FIXED in accordancewith 5.146
17 550-17 900	BROADCASTING	BROADCASTING	BROADCASTING	HF SOUND BROADCASTING
17 900-17 970	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
17 970-18 030	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR)
18 030-18 052	FIXED	FIXED	FIXED	FIXED
18 052-18 068	FIXED Space research	FIXED Space research	FIXED Space research	FIXED
18 068-18 168	AMATEUR AMATEUR-SATELLITE 5.154	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR
18 168-18 780	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	FIXED Mobile except aeronautical mobile	FIXED
18 780-18 900	MARITIME MOBILE	MARITIME MOBILE	MARITIME MOBILE	MARITIME
18 900-19 020	BROADCASTING 5.134 5.146	BROADCASTING 5.134 5.146	BROADCASTING 5.134 FIXED 5.146	FIXED in accordance with 5.146
19 020-19 680	FIXED	FIXED	FIXED	FIXED
19 680-19 800	MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	MARITIME 19 680.5 KHz is international frequency for transmission of maritime safety information
19 800-19 990	FIXED	FIXED	FIXED	FIXED

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
19 990-19 995	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL Space research 5.111	STANDARD FREQUENCY AND TIME SIGNAL
19 995-20 010	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL (20 000 kHz) 5.111	STANDARD FREQUENCY AND TIME SIGNAL
20 010-21 000	FIXED Mobile	FIXED Mobile	FIXED Mobile	PMR
21 000-21 450	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR
21 450-21 850	BROADCASTING	BROADCASTING	BROADCASTING	HF SOUND BROADCASTING
21 850-21 870	FIXED 5.155A 5.155	FIXED	FIXED	FIXED
21 870-21 924	FIXED 5.155B	FIXED 5.155B	FIXED 5.155B	FIXED services in support of aircraft safety systems
21 924-22 000	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL MOBILE (R)	AERONAUTICAL(R)
22 000-22 855	MARITIME MOBILE 5.132 5.156	MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	MARITIME 22 376 KHz is international frequency for transmission of maritime safety information
22 855-23 000	FIXED 5.156	FIXED	FIXED	FIXED

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
23 000-23 200	FIXED Mobile except aeronautical mobile (R) 5.156	FIXED Mobile except aeronautical mobile (R)	FIXED Mobile except aeronautical mobile (R)	PMR
23 200-23 350	FIXED 5.156A AERONAUTICAL MOBILE (OR)	FIXED 5.156A AERONAUTICAL MOBILE (OR)	FIXED 5.156A AERONAUTICAL MOBILE (OR)	AERONAUTICAL MOBILE (OR) FIXED services in support of aircraft safety systems
23 350-24 000	FIXED MOBILE except aeronautical mobile 5.157	FIXED MOBILE except aeronautical mobile 5.157	FIXED MOBILE except aeronautical mobile	FIXED MOBILE
24 000-24 450	FIXED LAND MOBILE	FIXED LAND MOBILE	FIXED LAND MOBILE	PMR
24 450-24600	FIXED LAND MOBILE Radiolacation 5.132A 5.158	FIXED LAND MOBILE Radiolacation 5.132A	FIXED LAND MOBILE Radiolacation 5.132A	PMR RADIOLOCATION
24 600-24890	FIXED LAND MOBILE	FIXED LAND MOBILE	FIXED LAND MOBILE	PMR
24 890-24 990	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR
24 990-25 005	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL (25 000 kHz)	STANDARD FREQUENCY AND TIME SIGNAL
25 005-25 010	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL Space research	STANDARD FREQUENCY AND TIME SIGNAL
25 010-25 070	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	PMR

Frequency band (KHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
25 070-25 210	MARITIME MOBILE	MARITIME MOBILE	MARITIME MOBILE	MARITIME
25 210-25 550	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	PMR
25 550-25 670	RADIO ASTRONOMY 5.149	RADIO ASTRONOMY 5.149	RADIO ASTRONOMY 5.149	RADIO ASTRONOMY
25 670-26 100	BROADCASTING	BROADCASTING	BROADCASTING	
26 100-26 175	MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	MARITIME MOBILE 5.132	MARITIME 26 100.5KHz is international frequency for transmission of maritime safety information
26 175-26 200	FIXED MOBILE except aeronautical mobile	MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	PMR
26 200-26 350	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A 5.133A	FIXED MOBILE except aeronautical mobile Radiolocation 5.132A	PMR Radiolocation
26 350-27 500	FIXED MOBILE except aeronautical mobile 5.150	FIXED MOBILE except aeronautical Mobile 5.150 SADC1	FIXED MOBILE except aeronautical mobile 5.150	PMR ISM, Aeronautical Model Control and SRD Applications (26 957-27 283 KHz) Citizen Band (CB) Radio (26.96-27.410 MHz)

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
27.5-28	METEOROLOGICAL AIDS FIXED MOBILE	METEOROLOGICAL AIDS FIXED MOBILE	METEOROLOGICAL AIDS FIXED MOBILE	PMR METEOROLOGICAL AIDS
28-29.7	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR
29.7-30.005	FIXED MOBILE	FIXED MOBILE SADC2	FIXED MOBILE	PMR
30.005-30.01	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH	PMR
30.01-37.5	FIXED MOBILE	MOBILE	MOBILE	PMR
37.5-38.25	FIXED MOBILE Radio astronomy 5.149	MOBILE Radio astronomy 5.149	MOBILE Radio astronomy 5.149	PMR Radio Astronomy
38.25-39	FIXED MOBILE	MOBILE	FIXED MOBILE	PMR
39-39.5	FIXED MOBILE Radiolocation 5.132A 5.159	FIXED MOBILE Radiolocation 5.132A 5.159	FIXED MOBILE Radiolocation 5.132A	PMR Radiolocation

39.5-39.986	FIXED MOBILE	MOBILE	FIXED MOBILE	PMR

Frequency band (MHz)	**ALLOCATION TO RADIO SERVICES**			**ZWE Main Utilisation**
	ITU Region 1	**SADC**	**Zimbabwe**	
39.986-40.02	FIXED MOBILE Space research	MOBILE	FIXED MOBILE	PMR
40.02-40.98	FIXED MOBILE 5.150	MOBILE 5.150 SADC3	FIXED MOBILE 5.150	PMR ISM Applications (40.66-40.70 MHz)
40.98-41.015	FIXED MOBILE Space research 5.160 5.161	MOBILE Space research 5.160	FIXED MOBILE Space research	PMR
41.015-42	FIXED MOBILE 5.160 5.161 5.161A	MOBILE 5.160 5.161 5.161A	MOBILE	PMR
42-42.5	FIXED MOBILE Radiolocation 5.132A 5.160 5.161B	FIXED MOBILE Radiolocation 5.132A 5.160 5.161A	FIXED MOBILE Radiolocation 5.132A	PMR Radiolocation
42.5-44	FIXED MOBILE 5.160 5.161 5.161A	FIXED MOBILE 5.160 5.161 5.161A	FIXED MOBILE	PMR

44-47	FIXED MOBILE 5.162 5.162A	FIXED MOBILE	FIXED MOBILE	PMR Cordless Telephony (46.61-46.97 MHz)

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
47-50	BROADCASTING 5.162A 5.163 5.164 5.165 5.169 5.171	LAND MOBILE 5.164 5.165	LAND MOBILE	PMR CT0 Cordless Telephony MTx (49.67-49.97 MHz)
50-54	BROADCASTING 5.162A 5.163 5.164 5.165 5.169 5.171	AMATEUR 5.164 5.165 5.169	AMATEUR 5.169	AMATEUR
54-68	BROADCASTING 5.162A 5.163 5.164 5.165 5.169 5.171	MOBILE except aeronautical mobile 5.164 5.165 5.171	FIXED MOBILE except aeronautical mobile 5.171	FIXED AND MOBILE in accordance with 5.171
68-74.8	FIXED MOBILE except aeronautical mobile 5.149 5.175 5.177 5.179	MOBILE except aeronautical mobile 5.149 SADC4	MOBILE except aeronautical mobile 5.149	PMR and/or PAMR
74.8-75.2	AERONAUTICAL RADIONAVIGATION 5.180 5.181	AERONAUTICAL RADIONAVIGATION 5.180	AERONAUTICAL RADIONAVIGATION 5.180	AERONAUTICAL RADIONAVIGATION Instrument Landing System (ILS) Marker beacons (75 MHz)
75.2-87.5	FIXED MOBILE except aeronautical mobile 5.175 5.179 5.187	MOBILE except aeronautical mobile	FIXED MOBILE except aeronautical mobile	PMR and/or PAMR
87.5-100	BROADCASTING 5.190	BROADCASTING	BROADCASTING	FM SOUND BROADCASTING
100-108	BROADCASTING 5.192 5.194	BROADCASTING	BROADCASTING	FM SOUND BROADCASTING

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
108-117.975	AERONAUTICAL RADIONAVIGATION 5.197 5.197A	AERONAUTICAL RADIONAVIGATION 5.197A	AERONAUTICAL RADIONAVIGATION 5.197A	AERONAUTICAL RADIONAVIGATION
117.975-137	AERONAUTICAL MOBILE (R) 5.111 5.200 5.201 5.202	AERONAUTICAL MOBILE (R) 5.111 5.200 5.201	AERONAUTICAL MOBILE (R) 5.111 5.200	AERONAUTICAL MOBILE (R) 121.5 MHz is aeronautical Ermegency Frequency
137-137.025	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Mobile except aeronautical mobile (R) 5.208	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Mobile except aeronautical mobile (R)	
137.025-137.175	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 Mobile except aeronautical mobile (R) 5.208	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Mobile-satellite (space-to-Earth) 5.208 5.208A 5.208B 5.209 Mobile except aeronautical mobile (R)	

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
137.175-137.825	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Mobile except aeronautical mobile (R) 5.208	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) Mobile except aeronautical mobile (R)	NOAA meteorology satellite (137.500-137.620 MHz)
137.825-138	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 Mobile except aeronautical mobile (R) 5.204 5.205 5.206 5.207 5.208	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.209 Mobile except aeronautical mobile (R) 5.208	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Mobile-satellite (space-to-Earth) 5.208 5.208A 5.208B 5.209 Mobile except aeronautical mobile (R)	
138-143.6	AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	MOBILE 5.211 5.212 5.214 SADC5	FIXED MOBILE 5.212	PMR and / or PAMR
143.6-143.65	AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth) 5.211 5.212 5.214	MOBILE 5.211 5.212 5.214	FIXED MOBILE 5.212	PMR and/or PAMR
143.65-144	AERONAUTICAL MOBILE (OR) 5.210 5.211 5.212 5.214	MOBILE 5.211 5.212 5.214	FIXED MOBILE 5.212	PMR and/or PAMR

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
144-146	AMATEUR AMATEUR-SATELLITE 5.216	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR
146-148	FIXED MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	FIXED MOBILE except aeronautical mobile (R)	PMR
148-149.9	FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221	MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221 SADC6	MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 5.209 5.218 5.219 5.221	MOBILE MOBILE -SATELLITE (Little LEO)
149.9-150.05	MOBILE-SATELLITE (Earth-to-space) 5.209 5.2204~~A~~ ~~RADIONAVIGATION-SATELLITE 5.224B~~ ~~5.220 5.222 5.223~~	MOBILE-SATELLITE (Earth-to-space) 5.209 5.2204~~A~~ ~~RADIONAVIGATION-SATELLITE 5.224B~~ ~~5.220 5.222 5.223~~	MOBILE-SATELLITE (Earth-to-space) 5.209 5.224~~A~~ ~~RADIONAVIGATION-SATELLITE 5.224B~~ ~~5.220 5.222 5.223~~	MOBILE SATELLITE (Little LEO)
150.05-153	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149	PMR AND/OR PAMR PAGING RADIO ASTRONOMY
153-154	FIXED MOBILE except aeronautical mobile (R) Meteorological Aids	MOBILE except aeronautical mobile (R)	MOBILE except aeronautical mobile (R)	PMR and/or PAMR
154-156.4875	FIXED MOBILE except aeronautical mobile (R) 5.225A 5.226	~~MOBILE except aeronautical mobile (R)~~ ~~5.226~~ ~~5.225A~~1 MOBILE except aeronautical mobile (R)	~~MOBILE except aeronautical mobile (R)~~~ MOBILE except aeronautical mobile (R)	PMR and/or PAMR

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
156.4875-156.5625	MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	MARITIME MOBILE (distress and calling via DSC) 5.111 5.226 5.227	FIXED MOBILE except aeronautical 5.227 MARITIME MOBILE (distress and calling via DSC) 5.111 5.226	FIXED LAND MOBILE in accordance with 5.227 MARITIME MOBILE distress, safety and calling frequency 156.525 MHz for maritime mobile VHF radiotelephone service using DSC.
156.5625-156.7625	FIXED MOBILE except aeronautical mobile (R) 5.226	MOBILE except aeronautical mobile (R) 5.226	FIXED MOBILE except aeronautical mobile (R) 5.226	FIXED LAND MOBILE MARITIME MOBILE
156.7625-156.7875	MARITIME MOBILE Mobile satellite (Earth-to-space) 5.111 5.226 5.228	MARITIME MOBILE (distress and calling) 5.111 5.226	MOBILE except aeronautical MARITIME MOBILE Mobile satellite (Earth-to-space) 5.226 5.228	MOBILE MARITIME Satellite Maritime Mobile Search and Rescue at 156.7875
156.7875-156.8125	MARITIME MOBILE (distress and calling) 5.111 5.226	MARITIME MOBILE (distress and calling) 5.111 5.226	MARITIME MOBILE (distress and calling) MOBILE except aeronautical 5.111 5.226	PMR International distress, safety and calling frequency at 156.8 MHz for the maritime mobile VHF radiotelephone service.
156.8125-156.8375	MARITIME MOBILE Mobile satellite (Earth-to-space) 5.111 5.226 5.228	MARITIME MOBILE Mobile satellite (Earth-to-space) 5.111 5.226 5.228	MARITIME MOBILE MOBILE except aeronautical Mobile satellite (Earth-to-space) 5.226 5.228	MOBILE MARITIME MOBILE Satellite
156.8375-161.~~962593725~~	FIXED MOBILE except aetronautical mobile 5.226	MOBILE except aeronautical mobile 5.226 5.227A SADC7	MOBILE except aeronautical mobile 5.226	PMR

161.9375-161.9625	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	MOBILE except aeronautical mobile 5.226	

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
161.9625-161.9875	FIXED MOBILE except aeronautical mobile Mobile-Satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B	FIXED MOBILE except aeronautical mobile Mobile-Satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B	FIXED MOBILE except aeronautical mobile Mobile-Satellite (Earth-to-space) 5.228F 5.226 5.228A	PMR in accordance with 5.226 Aircraft based search and rescue in accordance with 5.228A
161.9875-162.0125	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226 5.229	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226 5.229	FIXED MOBILE except aeronautical mobile Maritime mobile-satellite (Earth-to-space) 5.228AA 5.226	PMR in accordance with 5.226
162.0125-162.0375	FIXED MOBILE except aeronautical mobile Mobile-Satellite (Earth-to-space) 5.228F 5.226 5.228A 5.228B 5.229	FIXED MOBILE except aeronautical mobile Mobile-Satellite (Earth-to-space)5.228F 5.226 5.228A 5.228B 5.229	FIXED MOBILE except aeronautical mobile Mobile-Satellite (Earth-to-space) 5.228F 5.226 5.228A	PMR in accordance with 5.226
162.0375- 174	FIXED MOBILE except aeronautical mobile 5.226 5.229	FIXED MOBILE except aeronautical mobile 5.226 5.229	FIXED MOBILE except aeronautical mobile 5.226	PMR in accordance with 5.226 Radio Aids for the deaf
174-223	BROADCASTING 5.235 5.237 5.243	BROADCASTING 5.237	BROADCASTING	TV Broadcasting (174-214 MHz) *Planned for T-DAB (214-230 MHz)*
223-230	BROADCASTING Fixed Mobile 5.243 5.246 5.247	BROADCASTING	BROADCASTING	BROADCASTING TV Broadcasting (174-214 MHz) T-DAB (214-230 MHz)
230-235	FIXED MOBILE 5.247 5.251 5.252	BROADCASTING 5.252 SADC8	BROADCASTING 5.252	BROADCASTING

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
235-238	FIXED MOBILE 5.111 5.252 5.254 5.256 5.256A	BROADCASTING 5.252 5.254 SADC9	BROADCASTING 5.252 5.254	BROADCASTING
238 - 246		MOBILE 5.111 5.254 5.256 SADC9	MOBILE 5.111 5.254 5.256 5.256A, SADC9, and 5.252	International aircraft Distress Frequency (243 MHz) 243.05-246.00 MHz Low-power devices
246 - 254		BROADCASTING 5.252 5.254 SADC9	BROADCASTING 5.252 5.254	BROADCASTING
254 -267		MOBILE 5.254 SADC9	MOBILE 5.254	
267-272	FIXED MOBILE Space operation (space-to-Earth) 5.254 5.257	FIXED MOBILE 5.254 5.257	FIXED MOBILE 5.254 5.257	FIXED MOBILE
272-273	SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	SPACE OPERATION (space-to-Earth) FIXED MOBILE 5.254	FIXED MOBILE
273-312	FIXED MOBILE 5.254	FIXED MOBILE 5.254	FIXED MOBILE 5.254	FIXED MOBILE
312-315	FIXED MOBILE Mobile-satellite (Earth-to-space) 5.254 5.255	FIXED MOBILE 5.254 5.255	FIXED MOBILE 5.254 5.255	FIXED MOBILE

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
315-322	FIXED MOBILE 5.254	FIXED MOBILE 5.254	FIXED MOBILE 5.254	FIXED MOBILE
322-328.6	FIXED MOBILE RADIO ASTRONOMY 5.149	FIXED MOBILE RADIO ASTRONOMY 5.149	FIXED MOBILE RADIO ASTRONOMY 5.149	FIXED MOBILE RADIO ASTRONOMY
328.6-335.4	AERONAUTICAL RADIONAVIGATION 5.258 5.259	AERONAUTICAL RADIONAVIGATION 5.258	AERONAUTICAL RADIONAVIGATION 5.258	AERONAUTICAL RADIONAVIGATION
335.4-336	FIXED MOBILE 5.254	FIXED MOBILE 5.254	FIXED MOBILE 5.254	PMR and/or PAMR
336-346				FIXED WIRELESS ACCESS PTP/PTMP Rural System; paired with 356-366 MHz
346-356				PMR and/or PAMR
356-366				FIXED WIRELESS ACCESS PTP/PTMP Rural System; paired with 336-346 MHz
366-380				PMR and/or PAMR
380-387				PPDR. Paired with 390-397 MHz. To be used mainly for digital systems.

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
387-390	FIXED MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255	MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255 SADC10	MOBILE Mobile-satellite (space-to-Earth) 5.208A 5.208B 5.254 5.255	PMR and/or PAMR Paired with 397.0-399.0 MHz. To be used mainly for digital systems.
390-397	FIXED MOBILE 5.254	MOBILE 5.254	FIXED MOBILE 5.254	PPDR Paired with 380.0-387.0 MHz. To be used mainly for digital systems.
397-399.9				PMR and/or PAMR Paired with 387.0-390.0 MHz. To be used mainly for digital systems
399.9-400.05	MOBILE-SATELLITE (Earth-to-space) 5.209 5.22~~04A~~ ~~RADIONAVIGATION-SATELLITE 5.222 5.224B 5.260~~ ~~5.220~~	MOBILE-SATELLITE (Earth-to-space) 5.209 5.22~~04A~~ ~~RADIONAVIGATION-SATELLITE 5.222 5.224B 5.260~~ ~~5.220~~	MOBILE-SATELLITE (Earth-to-space) 5.209 5.22~~04A~~ ~~RADIONAVIGATION-SATELLITE 5.222 5.224B 5.260~~ ~~5.220~~	
400.05-400.15	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261 5.262	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261 5.262	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) 5.261 5.262	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE
400.15-401	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) 5.263 Space operation (space-to-Earth) 5.262 5.264	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) 5.263 5.262 5.264	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208A 5.208B 5.209 SPACE RESEARCH (space-to-Earth) 5.263 5.262 5.264	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth)

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
401-402	METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space)	METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS METEOROLOGICAL SATELLITE
402-403	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space)	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	METEOROLOGICAL AIDS METEOROLOGICAL SATELLITE No Information SRDs – ultra low power active medical implants
403-406	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile **5.265**	METEOROLOGICAL AIDS	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile 5.265	METEOROLOGICAL AIDS
406-406.1	MOBILE-SATELLITE (Earth-to-space) 5.265 5.266 5.267 ~~5. 5.265~~	MOBILE-SATELLITE (Earth-to-space) 5.265 5.266 5.267 ~~5.265~~	MOBILE-SATELLITE (Earth-to-space) 5.265 5.266 5.267 ~~5.265~~	
406.1-410	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.265	MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.265	MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.265	LAND MOBILE
410-420	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) 5.268	MOBILE except aeronautical mobile SADC11	MOBILE except aeronautical mobile	LAND MOBILE

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
420-430	FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271	MOBILE except aeronautical mobile SADC11	MOBILE except aeronautical mobile	LAND MOBILE Planned for PPDR by SADC
430-432	AMATEUR RADIOLOCATION 5.271 5.272 5.273 5.274 5.275 5.276 5.277	AMATEUR RADIOLOCATION 5.276 5.277 SADC11	AMATEUR RADIOLOCATION	AMATEUR RADIOLOCATION
432-438	AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138 5.271 5.272 5.276 5.277 5.280 5.281 5.282	AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138 5.276 5.277 5.282 SADC11	AMATEUR RADIOLOCATION Earth exploration-satellite (active) 5.279A 5.138	AMATEUR Amateur-satellite (435-438 MHz) ISM AND SRD (433.0-434.79 MHz)
438-440	AMATEUR RADIOLOCATION 5.271 5.273 5.274 5.275 5.276 5.277 5.283	AMATEUR RADIOLOCATION 5.276 5.277	AMATEUR RADIOLOCATION	AMATEUR RADIOLOCATION
440-450	FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271 5.284 5.285 5.286	FIXED MOBILE except aeronautical mobile 5.286	FIXED MOBILE except aeronautical mobile 5.286	PMR Planned for PPDR by SADC FIXED (Telemetry, dual frequency alarm system) MOBILE
450-455	FIXED MOBILE 5.286AA 5.209 5.271 5.286 5.286A 5.286B 5.286C 5.286D 5.286E	FIXED MOBILE 5.286AA 5.286 5.286A	MOBILE 5.286AA 5.286 5.286A	PMR IMT BAND

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
455-456	FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	FIXED MOBILE 5.286AA 5.209 5.286A	MOBILE 5.286AA 5.209 5.286A	PMR IMT BAND
456-459	FIXED MOBILE 5.286AA 5.271 -5.287 5.288	FIXED MOBILE 5.286AA 5.287	MOBILE 5.286AA 5.287	PMR IMT BAND
459-460	FIXED MOBILE 5.286AA 5.209 5.271 5.286A 5.286B 5.286C 5.286E	FIXED MOBILE 5.286AA 5.209 5.286A	MOBILE 5.286AA 5.209 5.286A	PMR IMT BAND
460-470	FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.288 5.289 5.290	FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.289	MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.289	IMT BAND MOBILE

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
470~~614~~ – 694	BROADCASTING 5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.311A 5.312	BROADCASTING ~~Mobile 5.296 – 5.311A~~ 5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.311A 5.312	BROADCASTING ~~Mobile 5.296 – 5.311A~~ 5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.311A 5.312	BROADCASTING
694-790	MOBILE except aeronautical mobile 5.312A 5.317A BROADCASTING 5.300 5.311A 5.312	BROADCASTING 5.312 A 5.311A9 5.312 MOBILE except aeronautical mobile 5.312A SADC12 5.311A	~~BROADCASTING.~~ MOBILE except aeronautical mobile 5.312A SADC12 5.311A	~~*Zimbabwe plans to implement IMT in this band immediately after WRC 15.*~~ **IMT**
790-862	FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING 5.312 ~~5.314 5.315 5.316 5.316A~~ 5.319	~~BROADCASTING~~ FIXED MOBILE except aeronautical mobile 5.316B 5.317A ~~5.314 5.315 5.316 5.316A~~ SADC13	MOBILE except aeronautical mobile 5.316B ~~, 5.316A~~ 5.317A	CDMA in accordance with ITU-R M.1036-4 A1 Channelling Plan. IMT systems operated in accordance with ITU-R M. 1036-4 A3 channelling plan are also planned for the band

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
862-890	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.319 5.323	MOBILE except aeronautical mobile ~~5~~5.317A 5.322 SADC14	MOBILE except aeronautical mobile 5.317A 5.322 SADC14	CDMA (Currently 826 – 890 MHz but will move to end at 880MHz by December 2013) Planned to be used for IMT 880 – 890 MHz reserved for EGSM
890-942	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 Radiolocation 5.323	MOBILE except aeronautical mobile 5.317A	MOBILE except aeronautical mobile 5.317A	GSM
942-960	FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322 5.323	MOBILE except aeronautical mobile 5.317A 5.322	MOBILE except aeronautical mobile 5.317A 5.322	GSM
960-1 164	AERONAUTICAL RADIONAVIGATION 5.328 5.328AA AERONAUTICAL MOBILE (R) 5.327A	AERONAUTICAL RADIONAVIGATION 5.328 5.328AA AERONAUTICAL MOBILE (R) 5.327A	AERONAUTICAL RADIONAVIGATION 5.328 5.328AA AERONAUTICAL MOBILE (R) 5.327A	AERONAUTICAL RADIONAVIGATION AERONAUTICAL MOBILE (R)
1 164-1 215	AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A	AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A	AERONAUTICAL RADIONAVIGATION 5.328 RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.328A	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
1 215-1 240	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.330 5.331 5.332	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) 5.332	RADIOLOCATION RADIONAVIGATION -SATELLITE
1 240-1 300	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.330 5.331 5.332 5.335 5.335A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.330 5.331 5.282 5.332 5.335A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.329 5.329A SPACE RESEARCH (active) Amateur 5.282 5.332 5.335A	RADIOLOCATION RADIONAVIGATION -SATELLITE AMATEUR
1 300-1 350	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION RADIONAVIGATION-SATELLITE (Earth-to-space) 5.149 5.337A	AERONAUTICAL RADIONAVIGATIO N RADIOLOCATION RADIONAVIGATION -SATELLITE

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
1 350-1 400	FIXED MOBILE RADIOLOCATION 5.149 5.338 5.338A 5.339	FIXED RADIOLOCATION 5.149 5.338A 5.339	FIXED RADIOLOCATION 5.149 5.338A 5.339	FIXED RADIOLOCATION 1 350-1 375 MHz Fixed links (duplex) Rec. ITU-R F.1242 the band 1350 to 1375 MHz paired with 1492 to 1517 MHz CEPT T/R 13-01 refers. 1 375-1 400 MHz Fixed links (duplex) Paired with 1427-1452 MHz; CEPT T/R 13-01 refers.
1 400 -1 427	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	
1 427-1 429	SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341A 5.341B 5.341C 5.338A 5.341	SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341A 5.341B 5.341C 5.338A 5.341	SPACE OPERATION (Earth-to-space) FIXED MOBILE except aeronautical mobile 5.341A 5.341B 5.341C 5.338A 5.341	FIXED (1427.0 – 1452.0 pw 1375.0 – 1452.0) ITU-R F. 1242 refers
1 429-1 452	FIXED MOBILE except aeronautical mobile 5.341A 5.338A 5.341 5.342	FIXED MOBILE except aeronautical mobile 5.341A 5.338A 5.341	FIXED MOBILE except aeronautical mobile 5.341A 5.338A 5.341	FIXED (1427.0 – 1452.0 pw 1375.0 – 1452.0) ITU-R F.1242 refers

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
1 452-~~1 467.5~~1492	FIXED MOBILE except aeronautical mobile 5.346 BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.342 5.345	MOBILE except aeronautical mobile 5.346 BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.345	FIXED MOBILE except aeronautical mobile 5.346 BROADCASTING BROADCASTING-SATELLITE 5.208B 5.341 5.345	FIXED LAND MOBILE BROADCASTING *(future use by T-DAB)*
~~**14 67.7 – 1 492**~~				BROADCASTING SATELLITE *(future use by S-DAB*
1 492-1 518	FIXED MOBILE except aeronautical mobile 5.341A 5.341 5.342	FIXED MOBILE except aeronautical mobile 5.341A 5.341 SADC15	FIXED MOBILE except aeronautical mobile ADD 5.341A 5.341	FIXED (1492.0 -1517.0 pw 1350 – 1375.0) ITU-R F.1242 refers
1 518 – 1 525	FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A 5.341 5.342	FIXED MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.348B 5.351A 5.341	FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) 5.348 5.348A 5.351A 5.341	The band 1518-1559 MHz is identified for satellite component of IMT; Res.225 applies.
1 525 – 1 530	SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A Earth exploration-satellite Mobile except aeronautical mobile 5.349 5.341 5.342 5.350 5.351 5.352A 5.354	SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.354 5.352A	SPACE OPERATION (space-to-Earth) FIXED MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A Earth exploration-satellite Mobile except aeronautical mobile 5.341 5.351 5.354	

Commented [TK1]: Check WRC-15 Allocations

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
1 530 – 1 535	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile 5.341 5.342 5.351 5.354	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A 5.341 5.351 5.354	SPACE OPERATION (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.353A Earth exploration-satellite Fixed Mobile except aeronautical mobile 5.341 5.351 5.354	MOBILE-SATELLITE (space-to-Earth)
1 535 – 1 559	MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.353A 5.354 5.355 5.356 5.357 5.357A 5.359 5.362A	MOBILE-SATELLITE (space-to-Earth) 5.208B 5.351A 5.341 5.351 5.353A 5.354 5.356 5.357 5.357A 5.359	MOBILE-SATELLITE (space-to-Earth) 5.208B 5.341 5.351 5.353A 5.354 5.356 5.357 5.357A	MOBILE-SATELLITE (space-to-Earth)
1 559 – 1 610	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.208B 5.328B 5.329A 5.341 ~~5.362B 5.362C~~	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.208B 5.328B 5.329A 5.341 ~~5.362B~~	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.208B 5.328B 5.329A 5.341	GPS (1563.42-1587.42 MHz)
1 610.0 – 1 610.6	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.355 5.359 5.364 5.366 -5.367 5.368 5.369 -5.371	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION 5.341 5.364 5.366 5.367 5.368 5.369 5.371 5.372	MSS 1610 – 1626.5 Band also indentified for Satellite component of IMT (Res 225)
1 610.6 – 1 613.8	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.355 5.359 5.364 5.366 5.367 5.368 5.369 -5.371 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.359 5.364 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY AERONAUTICAL RADIONAVIGATION 5.149 5.341 5.364 5.366 5.367 5.368 5.369 -5.371 5.372	Identified for satellite component of IMT; Res.225 applies. Global MSS. Paired with 2484.1-2487.3 MHz for some systems

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
1 613.8 – 1 626.5	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) 5.208B 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) 5.208B 5.341 5.355 5.359 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	MOBILE-SATELLITE (Earth-to-space) 5.351A AERONAUTICAL RADIONAVIGATION Mobile-satellite (space-to-Earth) 5.208B 5.341 5.364 5.365 5.366 5.367 5.368 5.369 5.371 5.372	The band for satellite component of IMT; Res.225 Paired with 1593-1594 MHz for aeronautical public correspondence
1 626.5 – 1 660.0	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.355 5.357A 5.359 5.362A 5.374 5.375 5.376	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.357A 5.359 5.374 5.375 5.376	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.341 5.351 5.353A 5.354 5.357A 5.374 5.375 5.376	The bands is identified for satellite component of IMT; Res.225
1 660.0 – 1 660.5	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.362A 5.376A	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.376A	MOBILE-SATELLITE (Earth-to-space) 5.351A RADIO ASTRONOMY 5.149 5.341 5.351 5.354 5.376A	MOBILE-SATELLITE (Earth-to-space)
1 660.5 – 1 668	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.341 5.379A	RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379A	
1 668 – 1 668.4	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379 5.379A	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive)	MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.341 5.379A	

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
1 668.4 – 1 670	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E	METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.379C RADIO ASTRONOMY 5.149 5.341 5.379D 5.379E	MSS IMT per Res. 225
1 670 – 1 675	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.341 5.379D 5.379E 5.380A	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.341 5.379D 5.379E 5.380A	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.379B 5.341 5.379D 5.379E 5.380A	MSS IMT per Res. 225 Terrestrial Flight Telephone System (TFTS) pw 1800.0 – 1805.0
1 675 – 1 690	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.341	
1 690 – 1 700	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341 5.382	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 5.289 5.341	

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
1 700 – 1 710	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.289 5.341	
1 710 – 1 930	FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.386 5.387 5.388	FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.388	FIXED MOBILE 5.384A 5.388A 5.388B 5.149 5.341 5.385 5.388	GSM 1800 1710 – 1785 pw 1805 - 1880 1800 – 1805 TFTS DL 1 880-1 900 MHz FWA/ DECT Cordless telephone 1 900-1 920 MHz FWA IMT (terrestrial)
1 930 – 1 970	FIXED MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388B 5.388	1 920 – 1 980 pw 2 110 – 2170 IMT (3G core band)
1 970 – 1 980	FIXED MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388B 5.388	
1 980 – 2 010	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B 5.389F	MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A 5.389B	MOBILE MOBILE-SATELLITE (Earth-to-space) 5.351A 5.388 5.389A	
2 010 – 2 025	FIXED MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388B 5.388	

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
2 025 – 2 110	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392	SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (Earth-to-space) (space-to-space) 5.392	FIXED MOBILE
2 110 – 2 120	FIXED MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388	MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388	MOBILE 5.388A 5.388B SPACE RESEARCH (deep space) (Earth-to-space) 5.388	IMT (3G core) 2 110 – 2 170 pw 1 920 – 1 980
2 120 – 2 160	FIXED MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388B 5.388	
2 160 – 2 170	FIXED MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388B 5.388	MOBILE 5.388A 5.388B 5.388	
2 170 – 2 200	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F	MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A 5.389F	MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A 5.388 5.389A	

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
2 200 – 2 290	SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392	SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392	SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) FIXED MOBILE 5.391 SPACE RESEARCH (space-to-Earth) (space-to-space) 5.392	FIXED pw 2025.0 – 2110.0 ITU-R F.1098 applies
2 290-2 300	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	FIXED LAND MOBILE
2 300-2 450	FIXED MOBILE 5.384A Amateur Radiolocation 5.150 5.282 5.395	FIXED MOBILE 5.384A Amateur Radiolocation 5.150 5.282	FIXED MOBILE 5.384A Amateur Radiolocation 5.150 5.282	2 300 – 2 400MHz LAND MOBILE IMT - TDD ISM (2 400 – 2500 MHz) SRD and Aeronautical Model Control Applications (2 400 – 2 483.5 MHz)
2 450-2 483.5	FIXED MOBILE Radiolocation 5.150	FIXED MOBILE Radiolocation 5.150	FIXED MOBILE Radiolocation 5.150	
2 483.5-2 500	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIODETERMINATION SATELLITE (space-to-Earth) 5.398 Radiolocation 5.398A 5.150- 5.399 5.402 5.401	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIODETERMINATION SATELLITE (space-to-Earth) 5.398 Radiolocation 5.398A 5.150 5.399 5.402 5.401	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 5.351A RADIODETERMINATION SATELLITE (space-to-Earth) 5.398 Radiolocation 5.150 5.402 5.401	MSS ISM (2 400 – 2500 MHz)

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
2 500 – 2 520	FIXED 5.410 MOBILE except aeronautical mobile 5.384A 5.412	FIXED MOBILE except aeronautical mobile 5.384A	FIXED MOBILE except aeronautical mobile 5.384A	LAND MOBILE IMT (TDD & FDD) in accordance with ITU-R M. 1036-4 refer to 5.384A
2 520 – 2 655	FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.413 5.416 5.339 5.412 ~~5.417C 5.417D~~ 5.418B 5.418C	FIXED MOBILE except aeronautical mobile 5.384A 5.339	FIXED MOBILE except aeronautical mobile 5.384A 5.339	
2 655 – 2 670	FIXED 5.410 MOBILE except aeronautical mobile 5.384A BROADCASTING-SATELLITE 5.208B 5.413 5.416 Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	FIXED MOBILE except aeronautical mobile 5.384A 5.149 5.412	FIXED MOBILE except aeronautical mobile 5.384A 5.149	
2 670 – 2 690	FIXED 5.410 MOBILE except aeronautical mobile 5.384A Earth exploration-satellite (passive) Radio astronomy Space research (passive) 5.149 5.412	FIXED MOBILE except aeronautical mobile 5.384A 5.149 5.412	FIXED MOBILE except aeronautical mobile 5.384A 5.149	

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
2 690 – 2 700	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.422	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.422	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
2 700 – 2 900	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424	AERONAUTICAL RADIONAVIGATION 5.337 5.423	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423	AIRPORT SURVEILANCE RADARS
2 900 – 3 100	RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	RADIOLOCATION 5.424A RADIONAVIGATION 5.426 5.425 5.427	RADIONAVIGATION Radar
3 100 – 3 300	RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.149 5.428	RADIOLOCATION 5.149	RADIOLOCATION Earth exploration-satellite (active) Space research (active 5.149	RADIOLOCATION
3 300 – 3 400	RADIOLOCATION 5.149 5.429 5.430 5.429B 5.429A	RADIOLOCATION 5.149 5.429B 5.429A	RADIOLOCATION 5.149 5.429B 5.429A	RADIOLOCATION
3 400 – 3 600	FIXED FIXED-SATELLITE (space-to-Earth) Mobile 5.430A Radiolocation 5.431	FIXED MOBILE except aeronautical mobile 5.430A ~~SADC16~~ Radiolocation 5.431	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.430A Radiolocation	BFWA in accordance with CEPT plan 14- 03 Band also identified for IMT
3 600 – 4 200	FIXED FIXED-SATELLITE (space-to-Earth) Mobile	FIXED FIXED-SATELLITE (space-to-Earth) ~~SADC17~~	FIXED FIXED-SATELLITE (space-to-Earth)	FIXED (PTP) (Fixed-satellite (S-to-E) (BFWA) (3600-3800 MHz)

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
4 200 – 4 400	AERONAUTICAL MOBILE (R) 5.437 AERONAUTICAL RADIONAVIGATION 5.438 5.439 5.440 5.437	AERONAUTICAL MOBILE (R) 5.437 AERONAUTICAL RADIONAVIGATION 5.438 5.440 5.437	AERONAUTICAL MOBILE (R) 5.437 AERONAUTICAL RADIONAVIGATION 5.438 5.440 5.437	RADIO ALTIMETERS ONBOARD AIRCRAFT
4 400 – 4 500	FIXED MOBILE 5.440A	FIXED MOBILE	FIXED MOBILE	
4 500 – 4 800	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE 5.440A	FIXED FIXED-SATELLITE (space-Earth) 5.441 MOBILE	FIXED FIXED-SATELLITE (space-Earth) 5.441 MOBILE	
4 800 – 4 990	FIXED MOBILE 5.440A 5.442 Radio astronomy 5.149 5.339 5.443	FIXED MOBILE 5.440A 5.442 Radio Astronomy 5.149 5.339	FIXED MOBILE 5.442 Radio Astronomy Space Research (passive) 5.339 Earth Exprolation Satellite 5.339 5.149	
4 990 – 5 000	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149	FIXED MOBILE except Aeronautical Mobile RADIO ASTRONOMY Space Research (passive) 5.149	FIXED MOBILE except Aeronautical Mobile RADIO ASTRONOMY Space Research (passive) 5.149	
5 000 – 5 010	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (Earth-to-space)	

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
5 010 – 5 030	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B	AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) 5.328B 5.443B	
5 030 – 5 091	AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	AERONAUTICAL MOBILE (R) 5.443C AERONAUTICAL MOBILE-SATELLITE (R) 5.443D AERONAUTICAL RADIONAVIGATION 5.444	
5 091-5 150	AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444 5.444A FIXED-SATELLITE (Earth-to-space) 5.444A	AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444 5.444A FIXED-SATELLITE (Earth-to-space) 5.444A	AERONAUTICAL MOBILE 5.444B AERONAUTICAL MOBILE-SATELLITE (R) 5.443AA AERONAUTICAL RADIONAVIGATION 5.444 5.444A FIXED-SATELLITE (Earth-to-space) 5.444A	
5 150-5 250	AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.446 5.446C 5.447B 5.447C	AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.446 5.446C 5.447B 5.447C	AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.446 5.447B 5.447C	RLAN in accordance with Res 229 (WRC12)

5 250-5 255	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.447F 5.447E 5.448 5.448A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.447F 5.448A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.447D MOBILE except aeronautical mobile 5.446A 5.447F 5.448A	RLAN in accordance with Res 229 (WRC12
Frequency band (MHz)	**ALLOCATION TO RADIO SERVICES**			**ZWE Main Utilisation**
	ITU Region 1	**SADC**	**Zimbabwe**	
5 255-5 350	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILEexcept aeronautical mobile 5.446A 5.447F 5.448A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILEexcept aeronautical mobile 5.446A 5.447F 5.448A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) MOBILE except aeronautical mobile 5.446A 5.447F 5.448A	RLAN in accordance with Res 229 (WRC12
5 350 – 5 460	EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	EARTH EXPLORATION-SATELLITE (active) 5.448B SPACE RESEARCH (active) 5.448C AERONAUTICAL RADIONAVIGATION 5.449 RADIOLOCATION 5.448D	Ground based and airborne weather Radar
5 460 – 5 470	RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.448D 5.448B	RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.448D 5.448B	RADIONAVIGATION 5.449 EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.448D 5.448B	

5 470 – 5 570	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.450B 5.448B 5.450 5.451	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.450B 5.448B	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.450B 5.448B	RLAN

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
5 570 – 5 650	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.450 5.451 5.452	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.452	MARITIME RADIONAVIGATION MOBILE except aeronautical mobile 5.446A 5.450A RADIOLOCATION 5.450B 5.452	RLAN GROUND-BASED METEOROLOGICAL RADARS (5600-5650 MHz)
5 650 – 5 725	RADIOLOCATION MOBILE except aeronautical mobile 5.446A 5.450A Amateur Space research (deep space) 5.282 5.451 5.453 5.454 5.455	RADIOLOCATION MOBILE except aeronautical mobile 5.446A 5.450A Amateur Space Research (deep space) 5.282 5.453 SADC18	RADIOLOCATION MOBILE except aeronautical mobile 5.446A 5.450A Amateur Space Research (deep space) 5.282 SADC18	RLAN
5 725 – 5 830	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur 5.150 5.451 5.453 5.455 5.456	RADIOLOCATION Amateur 5.150 5.453 SADC18	RADIOLOCATION Amateur 5.150	BFWA (5725-5850 MHz) ISM (5725-5875 MHz) RTTT (Road Transport and Traffic Telematics) (5795-5815 MHz) SRD applications (5 725-5 875 MHz) SRD - Transport and information control systems (5 805-5 815 MHz)
5 830 – 5 850	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-satellite (space-to-Earth) 5.150 5.451 5.453 5.455 5.456	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-Satellite (space-Earth) 5.150 5.453 SADC18	FIXED-SATELLITE (Earth-to-space) RADIOLOCATION Amateur Amateur-Satellite (space-Earth) 5.150	BFWA (5725-5850 MHz) ISM (5725-5875 MHz)

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
5 850-5 925	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.150	FIXED FIXED-SATELLITE (Earth-to-space) 5.150	FIXED FIXED-SATELLITE (Earth-to-space) 5.150	MICROWAVE LINKS FIXED-SATELLITE
5 925-6 700	FIXED 5.457 FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B MOBILE 5.457C 5.149 5.440 5.458	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.149 5.440 5.458	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.149 5.440	MICROWAVE LINKS FIXED-SATELLITE
6 700-7 075	FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.458 5.458A 5.458B 5.458C	FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 5.458 5.458A 5.458B 5.458C	FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 5.458A 5.458B 5.458C	MICROWAVE LINKS
7 075-7 145	FIXED MOBILE 5.458 5.459	FIXED 5.458 5.460	FIXED 5.460	MICROWAVE LINKS
7 145-7190~~7 235~~	FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458 -5.459	FIXED SPACE RESEARCH (Earth-to-space) 5.460 5.458 5.459	FIXED SPACE RESEARCH (Earth-to-space) 5.460	MICROWAVE LINKS
7190 -7235	EARTH EXPLORATION SATELLITE (Earth-to-Space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458 5.459	EARTH EXPLORATION SATELLITE (Earth-to-Space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458 5.459	EARTH EXPLORATION SATELLITE (Earth-to-Space) 5.460A 5.460B FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458 5.459	Fixed links - Lower 7 GHz (7110-7425 MHz) Channelling plan for L7 band in accordance with ITU-R Rec. F.385 Annex 3.

7 235-7 250	EARTH EXPLORATION SATELLITE (Earth-to-Space) 5.460A FIXED MOBILE 5.458	EARTH EXPLORATION SATELLITE (Earth-to-Space) 5.460A FIXED 5.458	EARTH EXPLORATION SATELLITE (Earth-to-Space) 5.460A FIXED	Fixed links - Lower 7 GHz (7110-7425 MHz)~~MICROWAVE LINKS~~

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
7 250-7 300 MHz	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 5.461	FIXED 5.461	FIXED 5.461	MICROWAVE LINKS
7 300-7 ~~450~~375	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461	FIXED 5.461	FIXED 5.461	MICROWAVE LINKS
7375 – 7450	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE SATELLITE (Space-to-Earth) 5.461AA 5.461AB 5.461A	FIXED 5.461 MARITIME MOBILE SATELLITE (Space-to-Earth) 5.461AA 5.461AB 5.461A	FIXED 5.461	Fixed links - Lower 7 GHz (7110-7425 MHz) and Upper 7 GHz (7425-7750 MHz)
7 450-7 550	FIXED FIXED-SATELLITE (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 5.461A MARITIME MOBILE SATELLITE (Space-to-Earth) 5.461AA 5.461AB	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461A MARITIME MOBILE SATELLITE (Space-to-Earth) 5.461AA 5.461AB	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461A	MICROWAVE LINKS METEOROLOGICAL-SATELLITE Fixed links - Upper 7 GHz (7425-7750 MHz)
7 550-7 750	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MARITIME MOBILE SATELLITE (Space-to-Earth) 5.461AA 5.461AB	FIXED MARITIME MOBILE SATELLITE (Space-to-Earth) 5.461AA 5.461AB	FIXED	MICROWAVE LINKS
7 750-7 900	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B MOBILE except aeronautical mobile	FIXED Meteorological -SATELLITE (space-to-Earth) 5.461B	FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) 5.461B MOBILE except aeronautical mobile	MICROWAVE LINKS METEOROLOGICAL-SATELLITE

7 900-8 025	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.461	FIXED 5.461	FIXED 5.461	MICROWAVE LINKS
8 025-8 175	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED 5.462A	MICROWAVE LINKS
Frequency band (MHz)	**ALLOCATION TO RADIO SERVICES**			**ZWE Main Utilisation**
	ITU Region 1	**SADC**	**Zimbabwe**	
8 175-8 215	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED 5.462A	MICROWAVE LINKS
8 215-8 400	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED FIXED-SATELLITE (Earth-to-space) MOBILE 5.463 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED 5.462A	EARTH EXPLORATION-SATELLITE (space-to-Earth) FIXED 5.462A	MICROWAVE LINKS
8 400-8 500	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465 5.466	FIXED	FIXED	MICROWAVE LINKS
8 500-8 550	RADIOLOCATION 5.468 5.469	RADIOLOCATION 5.468	RADIOLOCATION	

8 550-8 650	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469 5.469A	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.468 5.469A	EARTH EXPLORATION SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.469A	
8 650-8 750	RADIOLOCATION 5.468 5.469	RADIOLOCATION 5.468	RADIOLOCATION	

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
8 750-8 850	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470 5.471	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470	RADIOLOCATION AERONAUTICAL RADIONAVIGATION 5.470	RADARS. AERONAUTICAL RADIONAVIGATION e.g. precision airfield approach radars
8 850-9 000	RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473	RADIOLOCATION MARITIME RADIONAVIGATION 5.472	RADIOLOCATION MARITIME RADIONAVIGATION 5.472	RADARS. AERONAUTICAL RADIONAVIGATION e.g. precision airfield approach radars
9 000-9 200	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION 5.471 5.473A	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION 5.473A	AERONAUTICAL RADIONAVIGATION 5.337 RADIOLOCATION 5.473A	RADARS. Aeronautical radionavigation e.g. precision airfield approach radars
9 200-9 300	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.473 5.474 5.474D	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.474 5.474D	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION MARITIME RADIONAVIGATION 5.472 5.474	RADARS. Aeronautical radionavigation e.g. precision airfield approach radars
9 300-9 500	RADIONAVIGATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.427 5.474 5.475 5.475A 5.475B 5.476A	RADIONAVIGATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.427 5.474 5.475 5.475A 5.475B 5.476A	RADIONAVIGATION EARTH EXPLORATION-SATELLITE (active) SPACE RESEARCH (active) RADIOLOCATION 5.427 5.474 5.475 5.475A 5.475B 5.476A	RADARS. Aeronautical radionavigation e.g. precision airfield approach radars

9 500-9 800	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) 5.476A	RADARS. Aeronautical radionavigation e.g. precision airfield approach radars

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
9 800-9 900	RADIOLOCATION Earth exploration-satellite (active) Space research (active) Fixed 5.477 5.478 5.478A 5.478B	RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.478A 5.478B	RADIOLOCATION Earth exploration-satellite (active) Space research (active) 5.478A 5.478B	
9 900-10 000	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION Fixed 5.477 5.478 5.479 5.474D	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION 5.479	EARTH EXPLORATION-SATELLITE (active) 5.474A 5.474B 5.474C RADIOLOCATION 5.479	RADARS. Aeronautical radionavigation e.g. precision airfield approach radars
10 000 – 10 400	EARTH EXPLORATION SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.479 5.474D	EARTH EXPLORATION SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.479 5.474D	EARTH EXPLORATION SATELLITE (active) 5.474A 5.474B 5.474C FIXED MOBILE RADIOLOCATION Amateur 5.479 5.474D	
10 4000-10 450	FIXED MOBILE RADIOLOCATION Amateur 5.479	FIXED RADIOLOCATION ~~5.479~~ Amateur 5.479	FIXED MOBILE RADIOLOCATION Amateur 5.479	BFWA – 10.5 GHz (10.15-10.30 GHz) Amateur
10 450-10 500	RADIOLOCATION Amateur Amateur-satellite 5.481	RADIOLOCATION Amateur Amateur-Satellite 5.481	RADIOLOCATION Amateur Amateur-Satellite	RADIOLOCATION Amateur

10 500 – 10550	FIXED MOBILE Radiolocation	FIXED	FIXED MOBILE Radiolocation	BFWA (10.50-10.65 GHz)
10 550 – 10 600	FIXED MOBILE except aeronautical mobile Radiolocation	FIXED	FIXED MOBILE except aeronautical mobile Radiolocation	BFWA (10.50-10.65 GHz)

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
10 600 – 10 680	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482 5.482A	EARTH EXPLORATION-SATELLITE (passive) FIXED RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.482 5.482A	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 5.482 5.482A	BFWA (10.50-10.65 GHz)
10 680 – 10 700	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.483	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
10 700 -10 950	10.7 – 10.95 GHz FIXED FIXED SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	10.7 – 10.95 GHz FIXED FIXED SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	10.7 – 10.95 GHz FIXED FIXED SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	
10 950 - 11200	FIXED FIXED SATELLITE (space-to-Earth) 5484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.484 MOBILE except aeronautical mobile	
11 200 - 11450	FIXED FIXED SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	FIXED FIXED SATELLITE (space-to-Earth) 5.441 (Earth-to-space) 5.484 MOBILE except aeronautical mobile	

11450~~10 700~~ – 11 700	FIXED FIXED-SATELLITE (space-to-Earth) ~~5.441~~ 5.484A (Earth-to-space) 5.484 5.484B MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) ~~5.441~~ 5.484A (Earth-to-space) 5.484 5.484B MOBILE except aeronautical mobile	FIXED FIXED-SATELLITE (space-to-Earth) ~~5.441~~ 5.484A (Earth-to-space) 5.484 5.484B	MICROWAVE LINKS 11 GHz (10.7-11.7 GHz) Fixed-satellite downlinks (PTP/VSAT/SNG)
11 700 – 12 500	FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487 5.487A	BROADCASTING-SATELLITE 5.492 5.487 5.487A	FIXED MOBILE except aeronautical mobile BROADCASTING BROADCASTING-SATELLITE 5.492 5.487 5.487A	
12 500 – 12 750	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.494 5.495 5.496	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space) 5.494 5.495	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B (Earth-to-space)	FSS uplinks (VSAT/SNG) (12.5-12.75 GHz)

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
12 750 – 13 250	FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space research (deep space) (space-to-Earth)	FIXED FIXED-SATELLITE (Earth-to-space) 5.441	FIXED FIXED-SATELLITE (Earth-to-space) 5.441 MOBILE Space research (deep space) (space-to-Earth)	MICROWAVE LINKS - 13 GHz (12.75-13.25 GHz)
13 250 – 13 400	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A 5.499	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A	AIRBORNE DOPPLER RADAR
13 400 - 13650	EARTH EXPLORATION – SATELLITE (active) FIXED SATELLITE (space-to-Earth) 5.499A 5.499B RADIOLOCATION SPACE RESEARCH 5.499C 5.499D Standard frequency and time signal satellite (Earth-to-space) 5.499 5.500 5.501 5.501B 5.499E	EARTH EXPLORATION –SATELLITE (active) FIXED SATELLITE (space-to-Earth) 5.499A 5.499B RADIOLOCATION SPACE RESEARCH 5.499C 5.499D Standard frequency and time signal satellite (Earth-to-space) 5.499 5.500 5.501 5.501B 5.499E	EARTH EXPLORATION –SATELLITE (active) FIXED SATELLITE (space-to-Earth) 5.499A 5.499B RADIOLOCATION SPACE RESEARCH 5.499C 5.499D Standard frequency and time signal satellite (Earth-to-space) 5.499 5.500 5.501 5.501B 5.499E	
13 ~~400~~650 – 13 750	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.499 5.500 5.501 5.501B	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A 5.500 5.501B	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH 5.501A Standard frequency and time signal-satellite (Earth-to-space) 5.501B	RADIOLOCATION

13 750 – 14 000	FIXED-SATELLITE (Earth-to-space) 5.484A RADIOLOCATION Earth exploration-satellite Standard frequency and time signal-satellite (Earth-to-space) Space research 5.499 5.500 5.501 5.502 5.503	FIXED-SATELLITE (Earth-to-space) 5.484A RADIOLOCATION 5.500 5.502 5.503	FIXED-SATELLITE (Earth-to-space) 5.484A RADIOLOCATION Earth exploration-satellite Standard frequency and time signal-satellite (Earth-to-space) Space research 5.502 5.503	FSS UPLINKS (PTP/VSAT/SNG) (13.75-14.5 GHz) RADIOLOCATION

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
14 000 – 14 250	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A Space research 5.504A 5.505	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B Mobile-Satellite (Earth-to-space) 5.504B 5.504C 5.506A 5.504A 5.505	FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.504C 5.506A Space research 5.504A 5.505	FSS UPLINKS (PTP/VSAT/SNG) (13.75-14.5 GHz)
14 250 – 14 300	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A Space research 5.504A 5.505 5.508	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B Mobile-Satellite (Earth-to-space) 5.504B 5.506A 5.508A 5.504A 5.505	FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 RADIONAVIGATION 5.504 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.508A Space research 5.504A 5.505	FSS UPLINKS (PTP/VSAT/SNG) (13.75-14.5 GHz)
14 300 – 14 400	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B 5.A15 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Radionavigation-satellite 5.504A	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B Mobile-Satellite (Earth-to-space) 5.504B 5.506A 5.509A 5.504A	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Radionavigation-satellite 5.504A	FSS UPLINKS (PTP/VSAT/SNG) (13.75-14.5 GHz)The band 14.0-14.5 GHz may also be used for AES (aircraft-to-space station).
14 400 – 14 470	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Space research (space-to-Earth) 5.504A	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B Mobile-Satellite (Earth-to-space) 5.504B 5.506A 5.509A 5.504A	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Space research (space-to-Earth) 5.504A	The band 14.0-14.5 GHz may also be used for AES (aircraft-to-space station).

Frequency band (MHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
14 470 – 14 500	FIXED FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B MOBILE except aeronautical mobile Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Radio astronomy 5.149 5.504A	FIXED-SATELLITE (Earth-to-space) 5.457A 5.457B 5.484A 5.506 5.506B Mobile-Satellite (Earth-to-space) 5.504B 5.506A 5.509A 5.149 5.504A	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.506 Mobile-satellite (Earth-to-space) 5.504B 5.506A 5.509A Radio astronomy 5.149 5.504A	FSS UPLINKS (PTP/VSAT/SNG) (13.75-14.5 GHz) The band 14.0-14.5 GHz may also be used for AES (aircraft-to-space station).
14 500 – 14 750~~800~~	FIXED FIXED-SATELLITE (Earth-to-space) 5.510 5.509B 5.509C 5.509D 5.509E 5.509F MOBILE Space research 5.509G	FIXED FIXED-SATELLITE (Earth-to-space) 5.510 ~~5.509B 5.509C 5.509D 5.509E 5.509F~~ Space research 5.509G	FIXED FIXED-SATELLITE (Earth-to-space) 5.510 ~~5.509B 5.509C 5.509D 5.509E 5.509F~~ MOBILE Space research 5.509G	MICROWAVE LINKS ITU-R Rec. F.636. The band 14.5-14.8 GHz is part of the APP30A Plan (Feeder Links for BSS) for some SADC countries. Refer to Annex B.
14750 – 14 800	FIXED FIXED-SATELLITE (Earth-to-space) 5.510 MOBILE Space research 5.509G	FIXED FIXED-SATELLITE (Earth-to-space) 5.510 MOBILE Space research 5.509G	FIXED FIXED-SATELLITE (Earth-to-space) 5.510 MOBILE Space research 5.509G	
14 800 – 15 350	FIXED MOBILE Space research 5.339	FIXED 5.339	FIXED MOBILE Space research 5.339	MICROWAVE LINKS
15 350 – 15 400	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.511	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	

15 400 – 15 430	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511D	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511D	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511D	AERONAUTICAL RADIONAVIGATION

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
15.43 – 15.63	RADIOLOCATION 5.511E 5.511F FIXED-SATELLITE (Earth-to-space) 5.511A AERONAUTICAL RADIONAVIGATION 5.511C	FIXED-SATELLITE (Earth-to-space) 5.511A RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511C	RADIOLOCATION 5.511E 5.511F FIXED-SATELLITE (Earth-to-space) 5.511A AERONAUTICAL RADIONAVIGATION 5.511C	AERONAUTICAL RADIONAVIGATION
15.63 – 15.7	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511D	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511D	RADIOLOCATION 5.511E 5.511F AERONAUTICAL RADIONAVIGATION 5.511D	AERONAUTICAL RADIONAVIGATION
15.7 – 16.6	RADIOLOCATION 5.512 5.513	RADIOLOCATION 5.512	RADIOLOCATION	RADIOLOCATION
16.6 – 17.1	RADIOLOCATION Space research (deep space) (Earth-to-space) 5.512 5.513	RADIOLOCATION Space Research (deep space)(Earth-to-space) 5.512	RADIOLOCATION Space Research (deep space)(Earth-to-space)	RADIOLOCATION
17.1 – 17.2	RADIOLOCATION 5.512 5.513	RADIOLOCATION 5.512	RADIOLOCATION	RADIOLOCATION
17.2 – 17.3	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.512 5.513 5.513A	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.512 5.513A	EARTH EXPLORATION- SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.513A	RADIOLOCATION

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
17.3 – 17.7	FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B Radiolocation 5.514	FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A5.516B Radiolocation 5.514	FIXED-SATELLITE (Earth-to-space) 5.516 (space-to-Earth) 5.516A 5.516B Radiolocation	The band 17.3-17.7GHz is part of APP 30A plan feeder links for BSS
17.7 – 18.1	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.516 MOBILE	FIXED	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A (Earth-to-space) 5.516	MICROWAVE LINKS
18.1 – 18.4	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B (Earth-to-space) 5.520 MOBILE 5.519 5.521	FIXED 5.519	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B (Earth-to-space) 5.520	MICROWAVE LINKS
18.4 – 18 .6	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B MOBILE	FIXED	FIXED FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B	MICROWAVE LINKS
18.6 – 18.8	EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) 5.522B MOBILE except aeronautical mobile Space research (passive) 5.522A 5.522C	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.522A	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.522A	MICROWAVE LINKS

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
18.8 – 19.3	FIXED FIXED-SATELLITE (space-to-Earth) 5.523A MOBILE	FIXED	FIXED FIXED-SATELLITE (space-to-Earth) 5.523A	MICROWAVE LINKS
19.3 – 19.7	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.523B 5.523C 5.523D 5.523E MOBILE	FIXED	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 5.523B 5.523C 5.523D 5.523E	MICROWAVE LINKS
19.7 – 20.1	FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.484B 5.527A Mobile-satellite (space-to-Earth) 5.524	FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B 5.484B 5.527A Mobile-Satellite (space-to-Earth) 5.524	FIXED-SATELLITE (space-to-Earth) 5.484A 5.484B 5.527A Mobile-Satellite (space-to-Earth)	FSS AND MSS
20.1 – 20.2	FIXED-SATELLITE (space-to-Earth) 5.484A 5.516B MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528	FIXED-SATELLITE (space-to-Earth) 5.484A MOBILE-SATELLITE (space-to-Earth) 5.524 5.525 5.526 5.527 5.528	**20.1-20.2 GHz** FIXED-SATELLITE (space-to-Earth) 5.484A MOBILE-SATELLITE (space-to-Earth) 5.525 5.526 5.527 5.528	FSS AND MSS
20.2 – 21.2	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard frequency and time signal-satellite (space-to-Earth) 5.524	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard Frequency and Time Signal-Satellite (space-to-Earth) 5.524	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) Standard Frequency and Time Signal-Satellite (space-to-Earth)	FSS AND MSS

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
21.2 – 21.4	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) FIXED SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) FIXED SPACE RESEARCH (passive)	
21.4 - 22.0	FIXED MOBILE BROADCASTING-SATELLITE 5.208B 5.530A 5.530B 5.530C 5.530D	FIXED BROADCASTING-SATELLITE 5.208B 5.530A 5.530B 5.530C 5.530D	FIXED BROADCASTING-SATELLITE 5.208B 5.530A 5.530B 5.530C 5.530D	
22.0 – 22.21	FIXED MOBILE except aeronautical mobile 5.149	FIXED 5.149	FIXED 5.149	MICROWAVE LINKS
22.21 – 22.5	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) 5.149 5.532	FIXED 5.149 5.532	FIXED 5.149 5.532	MICROWAVE LINKS
22.5 – 22.55	FIXED MOBILE	FIXED	FIXED	
22.55 – 23.15	FIXED INTER-SATELLITE 5.338A MOBILE SPACE RESEARCH (Earth-to-space) 5.532A 5.149	FIXED INTER-SATELLITE 5.338A SPACE RESEARCH (Earth-to-space) 5.532A 5.149	FIXED INTER-SATELLITE 5.338A SPACE RESEARCH (Earth-to-space) 5.532A 5.149	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
23.15 – 23.55	FIXED INTER-SATELLITE 5.338A MOBILE	FIXED INTER-SATELLITE 5.338A MOBILE SADC19	FIXED INTER-SATELLITE 5.338A	
23.55 – 23.6	FIXED MOBILE	FIXED	FIXED	FIXED
23.6 – 24.0	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
24 – 24.05	AMATEUR AMATEUR-SATELLITE 5.150	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR
24.05 – 24.25	RADIOLOCATION Amateur Earth exploration-satellite (active) 5.150	RADIOLOCATION Amateur Earth Exploration-Satellite (active) 5.150	RADIOLOCATION Amateur Earth Exploration-Satellite (active) 5.150	RADIOLOCATION
24.25 – 24.45	FIXED	FIXED	FIXED	FIXED
24.45 – 24.65	FIXED INTER-SATELLITE	FIXED	FIXED	FIXED
24.65 – 24.75	FIXED FIXED-SATELLITE (Earth-to-space) -5.532B INTER-SATELLITE	FIXED FIXED-SATELLITE (Earth-to-space) -5.532B INTER-SATELLITE	FIXED FIXED-SATELLITE (Earth-to-space) -5.532B INTER-SATELLITE	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
24.75 – 25.25	FIXED FIXED SATELLITE (Earth-to-space) 5.532B	FIXED FIXED SATELLITE (Earth-to-space) 5.532B	FIXED FIXED SATELLITE (Earth-to-space) 5.532B	
25.25 – 25.5	FIXED INTER-SATELLITE 5.536 MOBILE Standard frequency and time signal-satellite (Earth-to-space)	FIXED	FIXED	
25.5 – 27.0	EARTH EXPLORATION-SATELLITE (space-to Earth) 5.536B FIXED INTER-SATELLITE 5.536 MOBILE SPACE RESEARCH (space-to-Earth) 5.536C Standard frequency and time signal-satellite (Earth-to-space) 5.536A	EARTH EXPLORATION-SATELLITE (space-to-Earth) 5.536B FIXED SPACE RESEARCH (space-to-Earth) 5.536C 5.536A	EARTH EXPLORATION-SATELLITE (space-to-Earth) 5.536B FIXED SPACE RESEARCH (space-to-Earth) 5.536C 5.536A	
27 – 27.5	FIXED INTER-SATELLITE 5.536 MOBILE	FIXED INTER-SATELLITE 5.536 MOBILE	FIXED INTER-SATELLITE 5.536 MOBILE	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
27.5 – 28.5	FIXED 5.537A FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 MOBILE 5.538 5.540	FIXED 5.537A FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 5.538 5.540	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 5.538 5.540	
28.5 – 29.1	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.523A 5.539 MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.523A 5.539 5.540	FIXED FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.523A 5.539 5.540	
29.1 – 29.5	FIXED FIXED-SATELLITE (Earth-to-space) 5.523C 5.523E 5.535A 5.539 5.541A MOBILE Earth exploration-satellite (Earth-to-space) 5.541 5.540	FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.523C 5.523E 5.535A 5.539 5.541A 5.540	FIXED FIXED-SATELLITE (Earth-to-space) 5.516B 5.523C 5.523E 5.535A 5.539 5.541A 5.540	
29.5 – 29.9	FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 5.484B 5.527A Earth exploration-satellite (Earth-to-space) 5.541 Mobile-satellite (Earth-to-space) 5.540 5.542	FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 5.484B 5.527A Earth Exploration-Satellite (Earth-to-space) 5.541 Mobile-Satellite (Earth-to-space) 5.540	FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 5.484B 5.527A Earth Exploration-Satellite (Earth-to-space) 5.541 Mobile-Satellite (Earth-to-space) 5.540	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
29.9 – 30	FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 MOBILE-SATELLITE (Earth-to-space) Earth exploration-satellite (Earth-to-space) 5.541 5.543 5.525 5.526 5.527 5.538 5.540 5.542	FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 MOBILE-SATELLITE (Earth-to-Space) Earth Exploration-Satellite (Earth-to-space) 5.541 5.543 5.525 5.526 5.527 5.538 5.540	FIXED-SATELLITE (Earth-to-space) 5.484A 5.516B 5.539 MOBILE-SATELLITE (Earth-to-Space) Earth Exploration-Satellite (Earth-to-space) 5.541 5.543 5.525 5.526 5.527 5.538 5.540	
30 – 31	FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space) Standard frequency and time signal-satellite (space-to-Earth) 5.542	FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space) Standard Frequency and Time Signal-Satellite (space-to-Earth)	FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE-SATELLITE (Earth-to-space) Standard Frequency and Time Signal-Satellite (space-to-Earth)	
31 – 31.3	FIXED 5.338A 5.543A MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research 5.544 5.545 5.149	FIXED 5.338A5.543A MOBILE Standard Frequency and Time Signal-Satellite (space-to-Earth) Space Research 5.544 5.149	FIXED 5.338A 5.543A MOBILE Standard Frequency and Time Signal-Satellite (space-to-Earth) Space Research 5.544 5.149	
31.3 – 31.5	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
31.5 – 31.8	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except aeronautical mobile 5.149 5.546	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except Aeronautical Mobile 5.149 5.546	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) Fixed Mobile except Aeronautical Mobile 5.149 5.546	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
31.8 – 32	.FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547B 5.548	FIXED 5.547A 5.547 5.548	FIXED 5.547A 5.547 5.548	
32 – 32.3	FIXED 5.547A RADIONAVIGATION SPACE RESEARCH (deep space) (space-to-Earth) 5.547 5.547C 5.548	FIXED 5.547A 5.547 5.548	FIXED 5.547A 5.547 5.548	
32.3 – 33	FIXED 5.547A INTER-SATELLITE RADIONAVIGATION 5.547 5.547D 5.548	FIXED 5.547A 5.547 5.548	FIXED 5.547A 5.547 5.548	
33 – 33.4	FIXED 5.547A RADIONAVIGATION 5.547 5.547E	FIXED 5.547A 5.547	FIXED 5.547A 5.547	
33.4 – 34.2	RADIOLOCATION 5.549	RADIOLOCATION 5.549	RADIOLOCATION	
34.2 – 34.7	RADIOLOCATION SPACE RESEARCH (deep space) (Earth-to-space) 5.549	RADIOLOCATION SPACE RESEARCH (deep space)(Earth-to-space) 5.549	RADIOLOCATION SPACE RESEARCH (deep space)(Earth-to-space)	
34.7 – 35.2	RADIOLOCATION Space research -5.550 5.549	RADIOLOCATION Space Research 5.549	RADIOLOCATION Space Research	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
35.2 – 35.5	METEOROLOGICAL AIDS RADIOLOCATION 5.549	METEOROLOGICAL AIDS RADIOLOCATION 5.549	METEOROLOGICAL AIDS RADIOLOCATION	
35.5 – 36	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549 5.549A	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) 5.549A	
36 – 37	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 5.550A	
37 – 37.5	FIXED MOBILE Except Aeronautical SPACE RESEARCH (space-to-Earth) 5.547	FIXED 5.547	FIXED MOBILE Except Aeronautical SPACE RESEARCH (space-to-Earth) 5.547	FIXED
37.5 – 38	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Except Aeronautical SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	FIXED 5.547	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Except Aeronautical SPACE RESEARCH (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	FIXED

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
38 – 39.5	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Earth exploration-satellite (space-to-Earth) 5.547	FIXED 5.547	FIXED 5.547	FIXED
39.5 – 40	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) Earth exploration-satellite (space-to-Earth) 5.547	
40 – 40.5	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth)	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth)	EARTH EXPLORATION-SATELLITE (Earth-to-space) FIXED FIXED-SATELLITE (space-to-Earth) 5.516B MOBILE MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (Earth-to-space) Earth exploration-satellite (space-to-Earth)	
40.5 – 41	FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE Mobile 5.547	FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE 5.547	FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE 5.547	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
41 – 42.5	FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE Mobile 5.547 5.551F 5.551H 5.551I	FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE 5.547 5.551H 5.551I	FIXED FIXED-SATELLITE (space-to-Earth) BROADCASTING BROADCASTING-SATELLITE 5.547 5.551H 5.551I	
42.5 – 43.5	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except aeronautical mobile RADIO ASTRONOMY 5.149 5.547 5.551H	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except Aeronautical Mobile RADIO ASTRONOMY 5.149 5.547	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE except Aeronautical Mobile RADIO ASTRONOMY 5.149 5.547	
43.5 – 47	MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	MOBILE 5.553 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	
47 – 47.2	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	AMATEUR AMATEUR-SATELLITE	
47.2 – 47.5	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.552A	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.552A	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.552A	
47.5 – 47.9	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A MOBILE	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
47.9 – 48.2	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.552A	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.552A	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.552A	
48.2 – 48.54	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	
48.54 – 49.44	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.149 5.340 5.555	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.340 5.555	FIXED FIXED-SATELLITE (Earth-to-space) 5.552 MOBILE 5.340 5.555	
49.44 – 50.2	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	
50.2 – 50.4	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	
50.4 – 51.4	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE Mobile-satellite (Earth-to-space)	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE Mobile-Satellite (Earth-to-space)	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A MOBILE Mobile-Satellite (Earth-to-space)	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
51.4 – 52.6	FIXED 5.338A MOBILE 5.547 5.556	FIXED MOBILE 5.547 5.556	FIXED MOBILE 5.547 5.556	
52.6 – 54.25	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340 5.556	
54.25 – 55.78	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive) 5.556B	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.556A SPACE RESEARCH (passive)	
55.78 – 56.9	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION-SATELLITE (passive) FIXED 5.557A INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	
56.9 – 57	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.558A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
57 – 58.2	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547 5.557	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 SPACE RESEARCH (passive) 5.547	
58.2 – 59	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.547 5.556	
59 – 59.3	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	EARTH EXPLORATION-SATELLITE (passive) FIXED INTER-SATELLITE 5.556A MOBILE 5.558 RADIOLOCATION 5.559 SPACE RESEARCH (passive)	
59.3 – 64	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	FIXED INTER-SATELLITE MOBILE 5.558 RADIOLOCATION 5.559 5.138	
64 – 65	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	FIXED INTER-SATELLITE MOBILE except aeronautical mobile 5.547 5.556	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
65 – 66	EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	EARTH EXPLORATION-SATELLITE FIXED INTER-SATELLITE MOBILE except aeronautical mobile SPACE RESEARCH 5.547	
66 – 71	INTER-SATELLITE MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	INTER-SATELLITE MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	INTER-SATELLITE MOBILE 5.553 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.554	
71 – 74	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	
74 – 76	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space research (space-to-Earth) 5.561	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space Research (space-to-Earth) 5.561	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE BROADCASTING BROADCASTING-SATELLITE Space Research (space-to-Earth) 5.561	
76 – 77.5	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space Research (space-to-Earth) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space Research (space-to-Earth) 5.149	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
77.5 – 78	AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149	AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149	AMATEUR AMATEUR-SATELLITE RADIOLOCATION 5.559B Radio astronomy Space research (space-to-Earth) 5.149	
78 – 79	RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560	RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560	RADIOLOCATION Amateur Amateur-satellite Radio astronomy Space research (space-to-Earth) 5.149 5.560	
79 – 81	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite Space research (space-to-Earth) 5.149	
81 – 84	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space research (space-to-Earth) 5.149 5.561A 5.338A	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space Research (space-to-Earth) 5.149 5.561A 5.338A	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY Space Research (space-to-Earth) 5.149 5.561A 5.338A	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
84 – 86	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) 5.561B MOBILE RADIO ASTRONOMY 5.149 5.338A	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.338A	FIXED 5.338A FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.338A	
86 – 92	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
92 – 94	FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149 5.338A	FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149 5.338A	FIXED 5.338A MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149 5.338A	
94 – 94.1	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Radio astronomy 5.562 5.562A	
94.1 – 95	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
95 – 100	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	
100-102	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	
102-105	FIXED MOBILE RADIO ASTRONOMY 5.149 5.341		FIXED MOBILE RADIO ASTRONOMY 5.149 5.341	
105-109.5	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341		FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	
109.5-111.8	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 -		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	
111.8-114.25	FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341		FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
114.25-116	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341	.
116-119.98	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341		EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.341	
119.98-122.25	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138 5.341		EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562C SPACE RESEARCH (passive) 5.138 5.341	
122.25-123	FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138		FIXED INTER-SATELLITE MOBILE 5.558 Amateur 5.138	
123-130	FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.562D 5.149 5.554		FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) RADIONAVIGATION RADIONAVIGATION-SATELLITE Radio astronomy 5.149 5.554	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
130-134	EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A		EARTH EXPLORATION-SATELLITE (active) 5.562E FIXED INTER-SATELLITE MOBILE 5.558 RADIO ASTRONOMY 5.149 5.562A	
134-136	AMATEUR AMATEUR-SATELLITE Radio astronomy		AMATEUR AMATEUR-SATELLITE Radio astronomy	
136-141	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.149		RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.149	
141-148.5	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149		FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
148.5-151.5	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
151.5-155.5	FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149		FIXED MOBILE RADIO ASTRONOMY RADIOLOCATION 5.149	
155.5-158.5	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.562F 5.562G		EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.562F 5.562G	
158.5-164	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)		FIXED FIXED-SATELLITE (space-to-Earth) MOBILE MOBILE-SATELLITE (space-to-Earth)	
164-167	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
167-174.5	FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149 5.562D		FIXED FIXED-SATELLITE (space-to-Earth) INTER-SATELLITE MOBILE 5.558 5.149	
174.5-174.8	FIXED INTER-SATELLITE MOBILE 5.558		FIXED INTER-SATELLITE MOBILE 5.558	
174.8-182	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)		EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	
182-185	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
185-190	EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)		EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
190-191.8	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340		EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	
191.8-200	FIXED INTER-SATELLITE MOBILE 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554		FIXED INTER-SATELLITE MOBILE 5.558 MOBILE-SATELLITE RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.341 5.554	
200-209	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.341 5.563A	
209-217	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.341		FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.341	
217-226	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY SPACE RESEARCH (passive) 5.562B 5.149 5.341		EARTH EXPLORATION-SATELLITE (passive) INTER-SATELLITE 5.562H SPACE RESEARCH (passive)	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	SADC	Zimbabwe	
226-231.5	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340	
231.5-232	FIXED MOBILE Radiolocation		FIXED MOBILE Radiolocation	
232-235	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation		FIXED FIXED-SATELLITE (space-to-Earth) MOBILE Radiolocation	
235-238	EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B		EARTH EXPLORATION-SATELLITE (passive) FIXED-SATELLITE (space-to-Earth) SPACE RESEARCH (passive) 5.563A 5.563B	
238-240	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE		FIXED FIXED-SATELLITE (space-to-Earth) MOBILE RADIOLOCATION RADIONAVIGATION RADIONAVIGATION-SATELLITE	
240-241	FIXED MOBILE RADIOLOCATION		FIXED MOBILE RADIOLOCATION	

Frequency band (GHz)	ALLOCATION TO RADIO SERVICES			ZWE Main Utilisation
	ITU Region 1	**SADC**	**Zimbabwe**	
241-248	RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.138 5.149		RADIO ASTRONOMY RADIOLOCATION Amateur Amateur-satellite 5.138 5.149	
248-250	AMATEUR AMATEUR-SATELLITE Radio astronomy 5.149		AMATEUR AMATEUR-SATELLITE Radio astronomy 5.149	
250-252	EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563A		EARTH EXPLORATION-SATELLITE (passive) RADIO ASTRONOMY SPACE RESEARCH (passive) 5.340 5.563A	
252-265	FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554		FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) RADIO ASTRONOMY RADIONAVIGATION RADIONAVIGATION-SATELLITE 5.149 5.554	
265-275	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A		FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A	
265-275	FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A		FIXED FIXED-SATELLITE (Earth-to-space) MOBILE RADIO ASTRONOMY 5.149 5.563A	
275-3 000	(Not allocated) 5.565		(Not allocated) 5.565	

ANNEX 1

KEY FOOTNOTES

5.53 Administrations authorizing the use of frequencies below 8.3 kHz shall ensure that no harmful interference is caused to services to which the bands above 8.3 kHz are allocated. (WRC-12)

5.54 Administrations conducting scientific research using frequencies below 8.3 kHz are urged to advise other administrations that may be concerned in order that such research may be afforded all practicable protection from harmful interference. (WRC-12)

5.54A Use of the 8.3-11.3 kHz frequency band by stations in the meteorological aids service is limited to passive use only. In the band 9-11.3 kHz, meteorological aids stations shall not claim protection from stations of the radionavigation service submitted for notification to the Bureau prior to 1 January 2013. For sharing between stations of the meteorological aids service and stations in the radionavigation service submitted for notification after this date, the most recent version of Recommendation ITU-R RS.1881 should be applied. (WRC-12)

5.56 The stations of services to which the bands 14-19.95 kHz and 20.05-70 kHz and in Region 1 also the bands 72-84 kHz and 86-90 kHz are allocated may transmit standard frequency and time signals. Such stations shall be afforded protection from harmful interference. In Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Turkmenistan, the frequencies 25 kHz and 50 kHz will be used for this purpose under the same conditions. (WRC-12)

5.60 In the bands 70-90 kHz (70-86 kHz in Region 1) and 110-130 kHz (112-130 kHz in Region 1), pulsed radionavigation systems may be used on condition that they do not cause harmful interference to other services to which these bands are allocated.

5.62 Administrations which operate stations in the radionavigation service in the band 90-110 kHz are urged to coordinate technical and operating characteristics in such a way as to avoid harmful interference to the services provided by these stations.

5.64 Only classes A1A or F1B, A2C, A3C, F1C or F3C emissions are authorized for stations of the fixed service in the bands allocated to this service between 90 kHz and 160 kHz (148.5 kHz in Region 1) and for stations of the maritime mobile service in the bands allocated to this service between 110 kHz and 160 kHz (148.5 kHz in Region 1). Exceptionally, class J2B or J7B emissions are also authorized in the bands between 110 kHz and 160 kHz (148.5 kHz in Region 1) for stations of the maritime mobile service.

5.67A Stations in the amateur service using frequencies in the band 135.7-137.8 kHz shall not exceed a maximum radiated power of 1 W (e.i.r.p.) and shall not cause harmful interference to stations of the radionavigation service operating in countries listed in No. **5.67**. (WRC-07)

5.70 *Alternative allocation:* in Angola, Botswana, Burundi, the Central African Rep., Congo (Rep. of the), Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Namibia, Nigeria, Oman, the Dem. Rep. of the Congo, South Africa, Swaziland, Tanzania, Chad, Zambia and Zimbabwe, the band 200-283.5 kHz is allocated to the aeronautical radionavigation service on a primary basis. (WRC-12)

5.73 The band 285-325 kHz (283.5-325 kHz in Region 1) in the maritime radionavigation service may be used to transmit supplementary navigational information using narrow-band techniques, on condition that no harmful interference is caused to radiobeacon stations operating in the radionavigation service. (WRC-97)

5.74 *Additional Allocation:* in Region 1, the frequency band 285.3-285.7 kHz is also allocated to the maritime radionavigation service (other than radiobeacons) on a primary basis.

5.76 The frequency 410 kHz is designated for radio direction-finding in the maritime radionavigation service. The other radionavigation services to which the band 405-415 kHz is allocated shall not cause harmful interference to radio direction-finding in the band 406.5-413.5 kHz.

5.92 Some countries of Region 1 use radiodetermination systems in the bands 1 606.5-1 625 kHz, 1 635-1 800 kHz, 1 850-2 160 kHz, 2 194-2 300 kHz, 2 502-2 850 kHz and 3 500-3 800 kHz, subject to agreement obtained under No. **9.21**. The radiated mean power of these stations shall not exceed 50 W.

5.103 In Region 1, in making assignments to stations in the fixed and mobile services in the bands 1 850-2 045 kHz, 2 194-2 498 kHz, 2 502-2 625 kHz and 2 650-2 850 kHz, administrations should bear in mind the special requirements of the maritime mobile service

5.108 The carrier frequency 2 182 kHz is an international distress and calling frequency for radiotelephony. The conditions for the use of the band 2 173.5-2 190.5 kHz are prescribed in Articles **31** and **52**. (WRC-07)

5.109 The frequencies 2 187.5 kHz, 4 207.5 kHz, 6 312 kHz, 8 414.5 kHz, 12 577 kHz and 16 804.5 kHz are international distress frequencies for digital selective calling. The conditions for the use of these frequencies are prescribed in Article **31**.

5.110 The frequencies 2 174.5 kHz, 4 177.5 kHz, 6 268 kHz, 8 376.5 kHz, 12 520 kHz and 16 695 kHz are international distress frequencies for narrow-band direct-printing telegraphy. The conditions for the use of these frequencies are prescribed in Article **31**.

5.111 The carrier frequencies 2 182 kHz, 3 023 kHz, 5 680 kHz, 8 364 kHz and the frequencies 121.5 MHz, 156.525 MHz, 156.8 MHz and 243 MHz may also be used, in accordance with the procedures in force for terrestrial radiocommunication services, for search and rescue operations concerning manned space vehicles. The conditions for the use of the frequencies are prescribed in Article **31**.

The same applies to the frequencies 10 003 kHz, 14 993 kHz and 19 993 kHz, but in each of these cases emissions should be confined in a band of ± 3 kHz about the frequency. (WRC-07)

5.113 For the conditions for the use of the bands 2 300-2 495 kHz (2 498 kHz in Region 1), 3 200-3 400 kHz, 4 750-4 995 kHz and 5 005-5 060 kHz by the broadcasting service, see Nos. **5.16** to **5.20**, **5.21** and **23.3** to **23.10**.

5.115 The carrier (reference) frequencies 3 023 kHz and 5 680 kHz may also be used, in accordance with Article **31**, by stations of the maritime mobile service engaged in coordinated search and rescue operations. (WRC-07)

5.116 Administrations are urged to authorize the use of the band 3 155-3 195 kHz to provide a common worldwide channel for low power wireless hearing aids. Additional channels for these devices may be assigned by administrations in the bands between 3 155 kHz and 3 400 kHz to suit local needs.

It should be noted that frequencies in the range 3 000 kHz to 4 000 kHz are suitable for hearing aid devices which are designed to operate over short distances within the induction field.

5.123 *Additional allocation:* in Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the band 3 900-3 950 kHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. **9.21**.

5.127 The use of the band 4 000-4 063 kHz by the maritime mobile service is limited to ship stations using radiotelephony (see No. **52.220** and Appendix **17**).

5.128 Frequencies in the bands 4 063-4 123 kHz and 4 130-4 438 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W, on condition that harmful interference is not caused to the maritime mobile service. In addition, in Afghanistan, Argentina, Armenia, Azerbaijan, Belarus, Botswana, Burkina Faso, the Central African Rep., China, the Russian Federation, Georgia, India, Kazakhstan, Mali, Niger, Pakistan, Kyrgyzstan, Tajikistan, Chad, Turkmenistan and Ukraine, in the bands 4 063-4 123 kHz, 4 130-4 133 kHz and 4 408-4 438 kHz, stations in the fixed service, with a mean power not exceeding 1 kW, can be operated on condition that they are situated at least 600 km from the coast and that harmful interference is not caused to the maritime mobile service. (WRC-12)

5.130 The conditions for the use of the carrier frequencies 4 125 kHz and 6 215 kHz are prescribed in Articles **31** and **52**. (WRC-07)

5.131 The frequency 4 209.5 kHz is used exclusively for the transmission by coast stations of meteorological and navigational warnings and urgent information to ships by means of narrow-band direct-printing techniques. (WRC-97)

5.132 The frequencies 4 210 kHz, 6 314 kHz, 8 416.5 kHz, 12 579 kHz, 16 806.5 kHz, 19 680.5 kHz, 22 376 kHz and 26 100.5 kHz are the international frequencies for the transmission of maritime safety information (MSI) (see Appendix **17**).

5.132A Stations in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the fixed or mobile services. Applications of the radiolocation service are limited to oceanographic radars operating in accordance with Resolution **612 (Rev.WRC-12)**. (WRC-12)

5.**133B** Stations in the amateur service using the frequency band 5 351.5-5 366.5 kHz shall not exceed a maximum radiated power of 15 W (e.i.r.p.). However, in Region 2 in Mexico, stations in the amateur service using the frequency band 5 351.5-5 366.5 kHz shall not exceed a maximum radiated power of 20 W (e.i.r.p.). In the following Region 2 countries: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Dominica, El Salvador, Ecuador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Nicaragua, Panama, Paraguay, Peru, Saint Lucia, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela, as well as the overseas territories of the Netherlands in Region 2, stations in the amateur service using the frequency band 5 351.5-5 366.5 kHz shall not exceed a maximum radiated power of 25 W (e.i.r.p.). (WRC-15)

5.134 The use of the bands 5 900-5 950 kHz, 7 300-7 350 kHz, 9 400-9 500 kHz, 11 600-11 650 kHz, 12 050-12 100 kHz, 13 570-13 600 kHz, 13 800-13 870 kHz, 15 600-15 800 kHz, 17 480-17 550 kHz and 18 900-19 020 kHz by the broadcasting service is subject to the application of the procedure of Article **12**. Administrations are encouraged to use these bands to facilitate the introduction of digitally modulated emissions in accordance with the provisions of Resolution **517 (Rev.WRC-07)**. (WRC-07)

5.136 *Additional allocation:* frequencies in the band 5 900-5 950 kHz may be used by stations in the following services, communicating only within the boundary of the country in which they are located: fixed service (in all three Regions), land mobile service (in Region 1), mobile except aeronautical mobile (R) service (in Regions 2 and 3), on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)

5.137 On condition that harmful interference is not caused to the maritime mobile service, the bands 6 200-6 213.5 kHz and 6 220.5-6 525 kHz may be used exceptionally by stations in the fixed service, communicating only within the boundary of the country in which they are located, with a mean power not exceeding 50 W. At the time of notification of these frequencies, the attention of the Bureau will be drawn to the above conditions.

5.138 The following bands:

6 765-6 795 kHz	(centre frequency 6 780 kHz),
433.05-434.79 MHz	(centre frequency 433.92 MHz) in Region 1 except in the countries mentioned in No. **5.280**,
61-61.5 GHz	(centre frequency 61.25 GHz),
122-123 GHz	(centre frequency 122.5 GHz), and
244-246 GHz	(centre frequency 245 GHz)

are designated for industrial, scientific and medical (ISM) applications. The use of these frequency bands for ISM applications shall be subject to special authorization by the administration concerned, in agreement with other administrations whose radiocommunication services might be affected. In applying this provision, administrations shall have due regard to the latest relevant ITU-R Recommendations.

5.143 *Additional allocation:* frequencies in the band 7 300-7 350 kHz may be used by stations in the fixed service and in the land mobile service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies for these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)

5.143B In Region 1, frequencies in the band 7 350-7 450 kHz may be used by stations in the fixed and land mobile services communicating only within the boundary of the country in which they are located on condition that harmful interference is not caused to the broadcasting service. The total radiated power of each station shall not exceed 24 dBW. (WRC-12)

5.145 The conditions for the use of the carrier frequencies 8 291 kHz, 12 290 kHz and 16 420 kHz are prescribed in Articles **31** and **52**. (WRC-07)

5.145A Stations in the radiolocation service shall not cause harmful interference to, or claim protection from, stations operating in the fixed service. Applications of the radiolocation service are limited to oceanographic radars operating in accordance with Resolution **612 (Rev.WRC-12)**. (WRC-12)

5.146 *Additional allocation:* frequencies in the bands 9 400-9 500 kHz, 11 600-11 650 kHz, 12 050-12 100 kHz, 15 600-15 800 kHz, 17 480-17 550 kHz and 18 900-19 020 kHz may be used by stations in the fixed service, communicating only within the boundary of the country in which they are located, on condition that harmful interference is not caused to the broadcasting service. When using frequencies in the fixed service, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)

5.147 On condition that harmful interference is not caused to the broadcasting service, frequencies in the bands 9 775-9 900 kHz, 11 650-11 700 kHz and 11 975-12 050 kHz may be used by stations in the fixed service communicating only within the boundary of the country in which they are located, each station using a total radiated power not exceeding 24 dBW.

5.149 In making assignments to stations of other services to which the bands:

13 360-13 410 kHz,	4 950-4 990 MHz,	102-109.5 GHz,
25 550-25 670 kHz,	4 990-5 000 MHz,	111.8-114.25 GHz,
37.5-38.25 MHz,	6 650-6 675.2 MHz,	128.33-128.59 GHz,
73-74.6 MHz in Regions 1 and 3,	10.6-10.68 GHz,	129.23-129.49 GHz,
150.05-153 MHz in Region 1,	14.47-14.5 GHz,	130-134 GHz,
322-328.6 MHz,	22.01-22.21 GHz,	136-148.5 GHz,

406.1-410 MHz,	22.21-22.5 GHz,	151.5-158.5 GHz,
608-614 MHz in Regions 1 and 3,	22.81-22.86 GHz,	168.59-168.93 GHz,
1 330-1 400 MHz,	23.07-23.12 GHz,	171.11-171.45 GHz,
1 610.6-1 613.8 MHz,	31.2-31.3 GHz,	172.31-172.65 GHz,
1 660-1 670 MHz,	31.5-31.8 GHz in Regions 1 and 3,	173.52-173.85 GHz,
1 718.8-1 722.2 MHz,	36.43-36.5 GHz,	195.75-196.15 GHz,
2 655-2 690 MHz,	42.5-43.5 GHz,	209-226 GHz,
3 260-3 267 MHz,	48.94-49.04 GHz,	241-250 GHz,
3 332-3 339 MHz,	76-86 GHz,	252-275 GHz
3 345.8-3 352.5 MHz,	92-94 GHz,	
4 825-4 835 MHz,	94.1-100 GHz,	

are allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from spaceborne or airborne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. **4.5** and **4.6** and Article **29**). (WRC-07)

5.150 The following bands:

13 553-13 567 kHz	(centre frequency 13 560 kHz),
26 957-27 283 kHz	(centre frequency 27 120 kHz),
40.66-40.70 MHz	(centre frequency 40.68 MHz),
902-928 MHz	in Region 2 (centre frequency 915 MHz),
2 400-2 500 MHz	(centre frequency 2 450 MHz),
5 725-5 875 MHz	(centre frequency 5 800 MHz), and
24-24.25 GHz	(centre frequency 24.125 GHz)

are also designated for industrial, scientific and medical (ISM) applications. Radiocommunication services operating within these bands should accept harmful interference which may be caused by these applications. ISM equipment operating in these bands is subject to the provisions of No. **15.13**.

5.151 *Additional allocation:* frequencies in the bands 13 570-13 600 kHz and 13 800-13 870 kHz may be used by stations in the fixed service and in the mobile except aeronautical mobile (R) service, communicating only within the boundary of the country in which they are located, on the condition that harmful interference is not caused to the broadcasting service. When using frequencies in these services, administrations are urged to use the minimum power required and to take account of the seasonal use of frequencies by the broadcasting service published in accordance with the Radio Regulations. (WRC-07)

5.155B The band 21 870-21 924 kHz is used by the fixed service for provision of services related to aircraft flight safety.

5.169 *Alternative allocation:* in Botswana, Lesotho, Malawi, Namibia, the Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland, Zambia and Zimbabwe, the band 50-54 MHz is allocated to the amateur service on a primary basis. In Senegal, the band 50-51 MHz is allocated to the amateur service on a primary basis. (WRC-12)

5.171 *Additional allocation:* in Botswana, Lesotho, Malawi, Mali, Namibia, Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland, Zambia and Zimbabwe, the band 54-68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-12)

5.180 The frequency 75 MHz is assigned to marker beacons. Administrations shall refrain from assigning frequencies close to the limits of the guardband to stations of other services which, because of their power or geographical position, might cause harmful interference or otherwise place a constraint on marker beacons.

Every effort should be made to improve further the characteristics of airborne receivers and to limit the power of transmitting stations close to the limits 74.8 MHz and 75.2 MHz.

5.197A *Additional allocation:* the band 108-117.975 MHz is also allocated on a primary basis to the aeronautical mobile (R) service, limited to systems operating in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **413 (Rev.WRC-07)**[*]. The use of the band 108-112 MHz by the aeronautical mobile (R) service shall be limited to systems composed of ground-based transmitters and associated receivers that provide navigational information in support of air navigation functions in accordance with recognized international aeronautical standards. (WRC-07)

5.200 In the band 117.975-137 MHz, the frequency 121.5 MHz is the aeronautical emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime mobile service may communicate on these frequencies under the conditions laid down in Article **31** for distress and safety purposes with stations of the aeronautical mobile service. (WRC-07)

5.208 The use of the band 137-138 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. (WRC-97)

5.208A In making assignments to space stations in the mobile-satellite service in the bands 137-138 MHz, 387-390 MHz and 400.15-401 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the bands 150.05-153 MHz, 322-328.6 MHz, 406.1-410 MHz and 608-614 MHz from harmful interference from unwanted emissions. The threshold levels of interference detrimental to the radio astronomy service are shown in the relevant ITU-R Recommendation. (WRC-07)

5.208B[*]

In the frequency bands:

137-138 MHz,

387-390 MHz,

400.15-401 MHz,

1 452-1 492 MHz,

1 525-1 610 MHz,

1 613.8-1 626.5 MHz,

2 655-2 690 MHz,

21.4-22 GHz,

Resolution 739 (Rev.WRC-15) applies. (WRC-15)~~In the bands:~~

~~137-138 MHz,~~
~~387-390 MHz,~~
~~400.15-401 MHz,~~
~~1 452-1 492 MHz,~~
~~1 525-1 610 MHz,~~

[*] *Note by the Secretariat:* This Resolution was revised by WRC-12.

[*] This provision was previously numbered as No. **5.347A**. It was renumbered to preserve the sequential order.

~~1 613.8-1 626.5 MHz,~~

5.209 The use of the bands 137-138 MHz, 148-150.05 MHz, 399.9-400.05 MHz, 400.15-401 MHz, 454-456 MHz and 459-460 MHz by the mobile-satellite service is limited to non-geostationary-satellite systems. (WRC-97)

5.212 *Alternative allocation:* in Angola, Botswana, Cameroon, the Central African Rep., Congo (Rep. of the), Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Lesotho, Liberia, Libya, Malawi, Mozambique, Namibia, Niger, Oman, Uganda, Syrian Arab Republic, the Dem. Rep. of the Congo, Rwanda, Sierra Leone, South Africa, Swaziland, Chad, Togo, Zambia and Zimbabwe, the band 138-144 MHz is allocated to the fixed and mobile services on a primary basis. (WRC-12)

5.218 *Additional allocation:* the band 148-149.9 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. **9.21**. The bandwidth of any individual transmission shall not exceed ± 25 kHz.

5.219 The use of the band 148-149.9 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. The mobile-satellite service shall not constrain the development and use of the fixed, mobile and space operation services in the band 148-149.9 MHz.

5.220

The use of the frequency bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service is subject to coordination under No. 9.11A. (WRC-15)~~The use of the bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. The mobile-satellite service shall not constrain the development and use of the radionavigation-satellite service in the bands 149.9-150.05 MHz and 399.9-400.05 MHz.~~ (WRC-97)

5.221

Stations of the mobile-satellite service in the frequency band 148-149.9 MHz shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations in the following countries: Albania, Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Benin, Bosnia and Herzegovina, Botswana, Brunei Darussalam, Bulgaria, Cameroon, China, Cyprus, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Croatia, Cuba, Denmark, Djibouti, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Ethiopia, the Russian Federation, Finland, France, Gabon, Georgia, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, Iran (Islamic Republic of), Ireland, Iceland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, The Former Yugoslav Republic of Macedonia, Lesotho, Latvia, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, Malaysia, Mali, Malta, Mauritania, Moldova, Mongolia, Montenegro, Mozambique, Namibia, Norway, New Zealand, Oman, Uganda, Uzbekistan, Pakistan, Panama, Papua New Guinea, Paraguay, the Netherlands, the Philippines, Poland, Portugal, Qatar, the Syrian Arab Republic, Kyrgyzstan, Dem. People's Rep. of Korea, Slovakia, Romania, the United Kingdom, Senegal, Serbia, Sierra Leone, Singapore, Slovenia, Sudan, Sri Lanka, South Africa, Sweden, Switzerland, Swaziland, Tanzania, Chad, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Viet Nam, Yemen, Zambia and Zimbabwe. (WRC-15)~~Stations of the mobile-satellite service in the band 148-149.9 MHz shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations in the following countries: Albania, Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Benin, Bosnia and~~

~~[illegible]~~

5.222 ~~Emissions of the radionavigation satellite service in the bands 149.9-150.05 MHz and 399.9-400.05 MHz may also be used by receiving earth stations of the space research service.~~

5.223 ~~Recognizing that the use of the band 149.9-150.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation satellite service, administrations are urged not to authorize such use in application of No. **4.4**.~~

5.224A ~~The use of the bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile satellite service (Earth-to-space) is limited to the land mobile satellite service (Earth-to-space) until 1 January 2015.~~ ~~(WRC-97)~~

5.224B ~~The allocation of the bands 149.9-150.05 MHz and 399.9-400.05 MHz to the radionavigation satellite service shall be effective until 1 January 2015.~~ ~~(WRC-97)~~

5.226 The frequency 156.525 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service using digital selective calling (DSC). The conditions for the use of this frequency and the band 156.4875-156.5625 MHz are contained in Articles **31** and **52**, and in Appendix **18**.

The frequency 156.8 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service. The conditions for the use of this frequency and the band 156.7625-156.8375 MHz are contained in Article **31** and Appendix **18**.

In the bands 156-156.4875 MHz, 156.5625-156.7625 MHz, 156.8375-157.45 MHz, 160.6-160.975 MHz and 161.475-162.05 MHz, each administration shall give priority to the maritime mobile service on only such frequencies as are assigned to stations of the maritime mobile service by the administration (see Articles **31** and **52**, and Appendix **18**).

Any use of frequencies in these bands by stations of other services to which they are allocated should be avoided in areas where such use might cause harmful interference to the maritime mobile VHF radiocommunication service.

However, the frequencies 156.8 MHz and 156.525 MHz and the frequency bands in which priority is given to the maritime mobile service may be used for radiocommunications on inland waterways subject to agreement between interested and affected administrations and taking into account current frequency usage and existing agreements. (WRC-07)

5.227 *Additional allocation:* the bands 156.4875-156.5125 MHz and 156.5375-156.5625 MHz are also allocated to the fixed and land mobile services on a primary basis. The use of these bands by the fixed and land mobile services shall not cause harmful interference to nor claim protection from the maritime mobile VHF radiocommunication service. (WRC-07)

5.228AA The use of the frequency bands 161.9375-161.9625 MHz and 161.9875-162.0125 MHz by the maritime mobile-satellite (Earth-to-space) service is limited to the systems which operate in accordance with Appendix 18. (WRC-15)

5.254 The bands 235-322 MHz and 335.4-399.9 MHz may be used by the mobile-satellite service, subject to agreement obtained under No. **9.21**, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table of Frequency Allocations except for the additional allocation made in footnote No. **5.256A**. (WRC-03)

5.255 The bands 312-315 MHz (Earth-to-space) and 387-390 MHz (space-to-Earth) in the mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to coordination under No. **9.11A**.

5.257 The band 267-272 MHz may be used by administrations for space telemetry in their countries on a primary basis, subject to agreement obtained under No. **9.21**.

5.258 The use of the band 328.6-335.4 MHz by the aeronautical radionavigation service is limited to Instrument Landing Systems (glide path).

~~**5.260** Recognizing that the use of the band 399.9-400.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation satellite service, administrations are urged not to authorize such use in application of No. **4.4**.~~

5.261 Emissions shall be confined in a band of ± 25 kHz about the standard frequency 400.1 MHz.

5.262 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Botswana, Colombia, Cuba, Egypt, the United Arab Emirates, Ecuador, the Russian Federation, Georgia, Hungary, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kazakhstan, Kuwait, Liberia, Malaysia, Moldova, Oman, Uzbekistan, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, Kyrgyzstan, Singapore, Somalia, Tajikistan, Chad, Turkmenistan and Ukraine, the band 400.05-401 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-12)

5.263 The band 400.15-401 MHz is also allocated to the space research service in the space-to-space direction for communications with manned space vehicles. In this application, the space research service will not be regarded as a safety service.

5.264 The use of the band 400.15-401 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. The power flux-density limit indicated in Annex 1 of Appendix **5** shall apply until such time as a competent world radiocommunication conference revises it.

5.265 In the frequency band 403-410 MHz, Resolution 205 (Rev.WRC-15) applies. (WRC-15)

5.266 The use of the band 406-406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radiobeacons (see also Article **31**). (WRC-07)

5.267 Any emission capable of causing harmful interference to the authorized uses of the band 406-406.1 MHz is prohibited.

The use of the frequency band 432-438 MHz by sensors in the Earth exploration-satellite service (active) shall be in accordance with Recommendation ITU-R RS.1260-1. Additionally, the Earth exploration-satellite service (active) in the frequency band 432-438 MHz shall not cause harmful interference to the aeronautical radionavigation service in China. The provisions of this footnote in no way diminish the obligation of the Earth exploration-satellite service (Earth-to-space) and the space research service (Earth-to-space), subject to agreement obtained under No. **9.21**.

5.286A The use of the bands 454-456 MHz and 459-460 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. (WRC-97)

5.286AA

The frequency band 450-470 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). See Resolution 224 (Rev.WRC-15). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-15) ~~The band 450-470 MHz is identified for use by administrations wishing to implement International Mobile Telecommunications (IMT). See Resolution **224 (Rev.WRC-07)***. This identification does not preclude the use of this band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-07)~~

5.287

Use of the frequency bands 457.5125-457.5875 MHz and 467.5125-467.5875 MHz by the maritime mobile service is limited to on-board communication stations. The characteristics of the equipment and the channelling arrangement shall be in accordance with Recommendation ITU-R M.1174-3. The use of these frequency bands in

meteorological-satellite service, may also be used in the bands 460-470 MHz and 1 690-1 710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the Table.

5.289 Earth exploration-satellite service applications, other than the meteorological-satellite service, may also be used in the bands 460-470 MHz and 1 690-1 710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the Table.

5.296

Additional allocation: in Albania, Germany, Angola, Saudi Arabia, Austria, Bahrain, Belgium, Benin, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Burundi, Cameroon, Vatican, Congo (Rep. of the), Côte d'Ivoire, Croatia, Denmark, Djibouti, Egypt, United Arab Emirates, Spain, Estonia, Finland, France, Gabon, Georgia, Ghana, Hungary, Iraq, Ireland, Iceland, Israel, Italy, Jordan, Kenya, Kuwait, Lesotho, Latvia, The Former Yugoslav Republic of Macedonia, Lebanon, Libya, Liechtenstein, Lithuania, Luxembourg, Malawi, Mali, Malta, Morocco, Mauritius, Mauritania, Moldova, Monaco, Mozambique, Namibia, Niger, Nigeria, Norway, Oman, Uganda, the Netherlands, Poland, Portugal, Qatar, the Syrian Arab Republic, Slovakia, the Czech Republic, the United Kingdom, Rwanda, San Marino, Serbia, Sudan, South Africa, Sweden, Switzerland, Swaziland, Tanzania, Chad, Togo, Tunisia, Turkey, Ukraine, Zambia and Zimbabwe, the frequency band 470-694 MHz is also allocated on a secondary basis to the land mobile service, intended for applications ancillary to broadcasting and programme-making. Stations of the land mobile service in the countries listed in this footnote shall not cause harmful interference to existing or planned stations operating in accordance with the Table in countries other than those listed in this footnote. (WRC-15)~~*Additional allocation:* in Albania, Germany, Saudi Arabia, Austria, Bahrain, Belgium, Benin, Bosnia and Herzegovina, Burkina Faso, Cameroon, Congo (Rep. of the), Côte d'Ivoire, Croatia, Denmark, Djibouti, Egypt, United Arab Emirates, Spain, Estonia, Finland, France, Gabon, Ghana, Iraq, Ireland, Iceland, Israel, Italy, Jordan, Kuwait, Latvia, The Former Yugoslav Republic of Macedonia, Libya, Liechtenstein, Lithuania, Luxembourg, Mali, Malta, Morocco, Moldova, Monaco, Niger, Norway, Oman, the Netherlands, Poland, Portugal, Qatar, the Syrian Arab Republic, Slovakia, the Czech Republic, the United Kingdom, Sudan, Sweden, Switzerland, Swaziland, Chad, Togo, Tunisia and Turkey, the band 470-790 MHz, and in Angola, Botswana, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Nigeria, South Africa, Tanzania, Zambia and Zimbabwe, the band 470-698 MHz are also allocated on a secondary basis to the land mobile service, intended for applications ancillary to broadcasting. Stations of the land mobile service in the countries listed in this footnote shall not cause harmful interference to existing or planned stations operating in accordance with the Table in countries other than those listed in this footnote.~~ ~~(WRC-12)~~

5.304 *Additional allocation:* in the African Broadcasting Area (see Nos. **5.10** to **5.13**), the band 606-614 MHz is also allocated to the radio astronomy service on a primary basis.

5.311A For the frequency band 620-790 MHz, see also Resolution **549 (WRC-07)**. (WRC-07)

5.312A

In Region 1, the use of the frequency band 694-790 MHz by the mobile, except aeronautical mobile, service is subject to the provisions of Resolution 760 (WRC-15). See also Resolution 224 (Rev.WRC-15). (WRC-15)~~In Region 1, the use of the band 694-790 MHz by the mobile, except aeronautical mobile, service is subject to the provisions of Resolution **232 (WRC-12)**. See also Resolution **224 (Rev.WRC-12)**.~~ ~~(WRC-12)~~

~~**5.316A** *Additional allocation:* in Spain, France, Gabon and Malta, the band 790-830 MHz, in Albania, Angola, Bahrain, Benin, Botswana, Burundi, Congo (Rep. of the), Egypt, United Arab Emirates, Estonia, Gambia, Ghana, Guinea, Guinea Bissau, Hungary, Iraq, Kuwait, Lesotho, Latvia, Lebanon, Lithuania, Luxembourg, Malawi, Morocco,~~

In Region 1, the allocation to the mobile, except aeronautical mobile, service in the frequency band 790-862 MHz is subject to agreement obtained under No. 9.21 with respect to the aeronautical radionavigation service in countries mentioned in No. 5.312. For countries party to the GE06 Agreement, the use of stations of the mobile service is also subject to the successful application of the procedures of that Agreement. Resolutions 224 (Rev.WRC-15) and 749 (Rev.WRC-15) shall apply, as appropriate. (WRC-15) ~~In Region 1, the allocation to the mobile, except aeronautical mobile, service on a primary basis in the frequency band 790-862 MHz shall come into effect from 17 June 2015 and shall be subject to agreement obtained under No. **9.21** with respect to the aeronautical radionavigation service in countries mentioned in No. **5.312**. For countries party to the GE06 Agreement, the use of stations of the mobile service is also subject to the successful application of the procedures of that Agreement. Resolutions **224 (Rev.WRC-12)** and **749 (Rev.WRC-12)** shall apply, as appropriate.~~ (WRC-12)

5.327A

The use of the frequency band 960-1 164 MHz by the aeronautical mobile (R) service is limited to systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution 417 (Rev.WRC-15). (WRC-15) ~~The use of the frequency band 960-1 164 MHz by the aeronautical mobile (R) service is limited to systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **417 (Rev.WRC-12)**.~~ (WRC-12)

5.328AA The frequency band 1 087.7-1 092.3 MHz is also allocated to the aeronautical mobile-satellite (R) service (Earth-to-space) on a primary basis, limited to the space station reception of Automatic Dependent Surveillance-Broadcast (ADS-B) emissions from aircraft transmitters that operate in accordance with recognized international aeronautical standards. Stations operating in the aeronautical mobile-satellite (R) service shall not claim protection from stations operating in the aeronautical radionavigation service. Resolution 425 (WRC-15) shall apply. (WRC-15)

5.329 Use of the radionavigation-satellite service in the band 1 215-1 300 MHz shall be subject to the condition that no harmful interference is caused to, and no protection is claimed from, the radionavigation service authorized under No. **5.331**. Furthermore, the use of the radionavigation-satellite service in the band 1 215-1 300 MHz shall be subject to the condition that no harmful interference is caused to the radiolocation service. No. **5.43** shall not apply in respect of the radiolocation service. Resolution **608 (WRC-03)** shall apply. (WRC-03)

5.328B The use of the bands 1 164-1 300 MHz, 1 559-1 610 MHz and 5 010-5 030 MHz by systems and networks in the radionavigation-satellite service for which complete coordination or notification information, as appropriate, is received by the Radiocommunication Bureau after 1 January 2005 is subject to the application of the provisions of Nos. **9.12**, **9.12A** and **9.13**. Resolution **610 (WRC-03)** shall also apply; however, in the case of radionavigation-satellite service (space-to-space) networks and systems, Resolution 610 (WRC-03) shall only apply to transmitting space stations. In accordance with No. **5.329A**, for systems and networks in the radionavigation-satellite service (space-to-space) in the bands 1 215-1 300 MHz and 1 559-1 610 MHz, the provisions of Nos. **9.7**, **9.12**, **9.12A** and **9.13** shall only apply with respect to other systems and networks in the radionavigation-satellite service (space-to-space). (WRC-07)

5.329A Use of systems in the radionavigation-satellite service (space-to-space) operating in the bands 1 215-1 300 MHz and 1 559-1 610 MHz is not intended to provide safety service applications, and shall not impose any additional constraints on radionavigation-satellite service (space-to-Earth) systems or on other services operating in accordance with the Table of Frequency Allocations. (WRC-07)

5.332 In the band 1 215-1 260 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service, the radionavigation-satellite service and other services allocated on a primary basis. (WRC-2000)

5.335A In the band 1 260-1 300 MHz, active spaceborne sensors in the Earth exploration-satellite and space research services shall not cause harmful interference to, claim protection from, or otherwise impose constraints on operation or development of the radiolocation service and other services allocated by footnotes on a primary basis. (WRC-2000)

5.337 The use of the bands 1 300-1 350 MHz, 2 700-2 900 MHz and 9 000-9 200 MHz by the aeronautical radionavigation service is restricted to ground-based radars and to associated airborne transponders which transmit only on frequencies in these bands and only when actuated by radars operating in the same band.

5.338A

In the frequency bands 1 350-1 400 MHz, 1 427-1 452 MHz, 22.55-23.55 GHz, 30-31.3 GHz,

49.7-50.2 GHz, 50.4-50.9 GHz, 51.4-52.6 GHz, 81-86 GHz and 92-94 GHz, Resolution 750 (Rev.WRC-15)

applies. (WRC-15) ~~In the bands 1 350-1 400 MHz, 1 427-1 452 MHz, 22.55-23.55 GHz, 30-31.3 GHz, 49.7-50.2 GHz, 50.4-50.9 GHz, 51.4-52.6 GHz, 81-86 GHz and 92-94 GHz, Resolution 750 (Rev.WRC-12) applies.~~ (WRC-12)

5.339 The bands 1 370-1 400 MHz, 2 640-2 655 MHz, 4 950-4 990 MHz and 15.20-15.35 GHz are also allocated to the space research (passive) and Earth exploration-satellite (passive) services on a secondary basis.

5.340 All emissions are prohibited in the following bands:

1 400-1 427 MHz,	
2 690-2 700 MHz,	except those provided for by No. **5.422**,
10.68-10.7 GHz,	except those provided for by No. **5.483**,
15.35-15.4 GHz,	except those provided for by No. **5.511**,
23.6-24 GHz,	
31.3-31.5 GHz,	
31.5-31.8 GHz,	in Region 2,
48.94-49.04 GHz,	from airborne stations
50.2-50.4 GHz[1],	
52.6-54.25 GHz,	

[1] **5.340** The allocation to the Earth exploration-satellite service (passive) and the space research service (passive) in the band 50.2-50.4 GHz should not impose undue constraints on the use of the adjacent bands by the primary allocated services in those bands. (WRC-97)

86-92 GHz,
100-102 GHz,
109.5-111.8 GHz,
114.25-116 GHz,
148.5-151.5 GHz,
164-167 GHz,
182-185 GHz,
190-191.8 GHz,
200-209 GHz,
226-231.5 GHz,
250-252 GHz. (WRC-03)

5.341

In Region 1, the frequency bands 1 427-1 452 MHz and 1 492-1 518 MHz are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution 223 (Rev.WRC-15). This identification does not preclude the use of these frequency bands by any other application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of IMT stations is subject to agreement obtained under No. 9.21 with respect to the aeronautical mobile service used for aeronautical telemetry in accordance with No. 5.342. (WRC-15)~~In the bands 1 400-1 727 MHz, 101 120 GHz and 197 220 GHz, passive research is being conducted by some countries in a programme for the search for intentional emissions of extraterrestrial origin~~.

5.345 Use of the band 1 452-1 492 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution **528 (WARC-92)***.

5.346 In Algeria, Angola, Saudi Arabia, Bahrain, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Congo (Rep. of the), Côte d'Ivoire, Djibouti, Egypt, United Arab Emirates, Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Kenya, Kuwait, Lesotho, Lebanon, Liberia, Madagascar, Malawi, Mali, Morocco, Mauritius, Mauritania, Mozambique, Namibia, Niger, Nigeria, Oman, Uganda, Palestine*, Qatar, Dem. Rep. of the Congo, Rwanda,

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* *Note by the Secretariat:* This Resolution was revised by WRC-03.

Senegal, Seychelles, Sudan, South Sudan, South Africa, Swaziland, Tanzania, Chad, Togo, Tunisia, Zambia, and Zimbabwe, the frequency band 1 452-1 492 MHz is identified for use by administrations listed above wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution 223 (Rev.WRC-15). This identification does not preclude the use of this frequency band by any other application of the services to which it is allocated and does not establish priority in the Radio Regulations. The use of this frequency band for the implementation of IMT is subject to agreement obtained under No. 9.21 with respect to the aeronautical mobile service used for aeronautical telemetry in accordance with No. 5.342. See also Resolution 761 (WRC-15). (WRC-15)

5.348 The use of the band 1 518-1 525 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. In the band 1 518-1 525 MHz stations in the mobile-satellite service shall not claim protection from the stations in the fixed service. No. **5.43A** does not apply. (WRC-03)

5.348A In the band 1 518-1 525 MHz, the coordination threshold in terms of the power flux-density levels at the surface of the Earth in application of No. **9.11A** for space stations in the mobile-satellite (space-to-Earth) service, with respect to the land mobile service use for specialized mobile radios or used in conjunction with public switched telecommunication networks (PSTN) operating within the territory of Japan, shall be –150 dB(W/m^2) in any 4 kHz band for all angles of arrival, instead of those given in Table 5-2 of Appendix **5**. In the band 1 518-1 525 MHz stations in the mobile-satellite service shall not claim protection from stations in the mobile service in the territory of Japan. No. **5.43A** does not apply. (WRC-03)

5.348B In the band 1 518-1 525 MHz, stations in the mobile-satellite service shall not claim protection from aeronautical mobile telemetry stations in the mobile service in the territory of the United States (see Nos. **5.343** and **5.344**) and in the countries listed in No. **5.342**. No. **5.43A** does not apply. (WRC-03)

5.351A For the use of the bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660.5 MHz, 1 668-1 675 MHz, 1 980-2 010 MHz, 2 170-2 200 MHz, 2 483.5-2 520 MHz and 2 670-2 690 MHz by the mobile-satellite service, see Resolutions **212 (Rev.WRC-07)** and **225 (Rev.WRC-07)**[*]. (WRC-07)

5.353A In applying the procedures of Section II of Article **9** to the mobile-satellite service in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz, priority shall be given to accommodating the spectrum requirements for distress, urgency and safety communications of the Global Maritime Distress and Safety System (GMDSS). Maritime mobile-satellite distress, urgency and safety communications shall have priority access and immediate availability over all other mobile satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, distress, urgency and safety communications of the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution **222 (WRC-2000)**[*] shall apply.) (WRC-2000)

5.354 The use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite services is subject to coordination under No. **9.11A**.

5.356 The use of the band 1 544-1 545 MHz by the mobile-satellite service (space-to-Earth) is limited to distress and safety communications (see Article **31**).

5.357 Transmissions in the band 1 545-1 555 MHz from terrestrial aeronautical stations directly to aircraft stations, or between aircraft stations, in the aeronautical mobile (R) service are also authorized when such transmissions are used to extend or supplement the satellite-to-aircraft links.

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[*] *Note by the Secretariat:* This Resolution was revised by WRC-12.

[*] *Note by the Secretariat:* This Resolution was revised by WRC-07 and WRC-12.

5.357A In applying the procedures of Section II of Article **9** to the mobile-satellite service in the frequency bands 1 545-1 555 MHz and 1 646.5-1 656.5 MHz, priority shall be given to accommodating the spectrum requirements of the aeronautical mobile-satellite (R) service providing transmission of messages with priority 1 to 6 in Article **44**. Aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article **44** shall have priority access and immediate availability, by pre-emption if necessary, over all other mobile-satellite communications operating within a network. Mobile-satellite systems shall not cause unacceptable interference to, or claim protection from, aeronautical mobile-satellite (R) service communications with priority 1 to 6 in Article **44**. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services. (The provisions of Resolution **222 (Rev.WRC-12)** shall apply.) (WRC-12)

5.364 The use of the band 1 610-1 626.5 MHz by the mobile-satellite service (Earth-to-space) and by the radiodetermination-satellite service (Earth-to-space) is subject to coordination under No. **9.11A**. A mobile earth station operating in either of the services in this band shall not produce a peak e.i.r.p. density in excess of –15 dB(W/4 kHz) in the part of the band used by systems operating in accordance with the provisions of No. **5.366** (to which No. **4.10** applies), unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, the mean e.i.r.p. density of a mobile earth station shall not exceed –3 dB(W/4 kHz). Stations of the mobile-satellite service shall not claim protection from stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. **5.366** and stations in the fixed service operating in accordance with the provisions of No. **5.359**. Administrations responsible for the coordination of mobile-satellite networks shall make all practicable efforts to ensure protection of stations operating in accordance with the provisions of No. **5.366**.

5.365 The use of the band 1 613.8-1 626.5 MHz by the mobile-satellite service (space-to-Earth) is subject to coordination under No. **9.11A**.

5.366 The band 1 610-1 626.5 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities. Such satellite use is subject to agreement obtained under No. **9.21**.

5.367 *Additional allocation*: The frequency band 1 610-1 626.5 MHz is also allocated to the aeronautical mobile-satellite (R) service on a primary basis, subject to agreement obtained under No. **9.21**. (WRC-12)

5.368 With respect to the radiodetermination-satellite and mobile-satellite services the provisions of No. **4.10** do not apply in the band 1 610-1 626.5 MHz, with the exception of the aeronautical radionavigation-satellite service.

5.369 *Different category of service:* in Angola, Australia, China, Eritrea, Ethiopia, India, Iran (Islamic Republic of), Israel, Lebanon, Liberia, Madagascar, Mali, Pakistan, Papua New Guinea, Syrian Arab Republic, the Dem. Rep. of the Congo, Sudan, South Sudan, Togo and Zambia, the allocation of the band 1 610-1 626.5 MHz to the radiodetermination-satellite service (Earth-to-space) is on a primary basis (see No. **5.33**), subject to agreement obtained under No. **9.21** from countries not listed in this provision. (WRC-12)

5.371 *Additional allocation:* in Region 1, the band 1 610-1 626.5 MHz (Earth-to-space) is also allocated to the radiodetermination-satellite service on a secondary basis, subject to agreement obtained under No. **9.21**. (WRC-12)

5.372 Harmful interference shall not be caused to stations of the radio astronomy service using the band 1 610.6-1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite services (No. **29.13** applies).

5.374 Mobile earth stations in the mobile-satellite service operating in the bands 1 631.5-1 634.5 MHz and 1 656.5-1 660 MHz shall not cause harmful interference to stations in the fixed service operating in the countries listed in No. **5.359**. (WRC-97)

5.375 The use of the band 1 645.5-1 646.5 MHz by the mobile-satellite service (Earth-to-space) and for inter-satellite links is limited to distress and safety communications (see Article **31**).

5.376 Transmissions in the band 1 646.5-1 656.5 MHz from aircraft stations in the aeronautical mobile (R) service directly to terrestrial aeronautical stations, or between aircraft stations, are also authorized when such transmissions are used to extend or supplement the aircraft-to-satellite links.

5.376A Mobile earth stations operating in the band 1 660-1 660.5 MHz shall not cause harmful interference to stations in the radio astronomy service. (WRC-97)

5.379A Administrations are urged to give all practicable protection in the band 1 660.5-1 668.4 MHz for future research in radio astronomy, particularly by eliminating air-to-ground transmissions in the meteorological aids service in the band 1 664.4-1 668.4 MHz as soon as practicable.

5.379B The use of the band 1 668-1 675 MHz by the mobile-satellite service is subject to coordination under No. **9.11A**. In the band 1 668-1 668.4 MHz, Resolution **904 (WRC-07)** shall apply. (WRC-07)

5.379C In order to protect the radio astronomy service in the band 1 668-1 670 MHz, the aggregate power flux-density values produced by mobile earth stations in a network of the mobile-satellite service operating in this band shall not exceed –181 dB(W/m^2) in 10 MHz and –194 dB(W/m^2) in any 20 kHz at any radio astronomy station recorded in the Master International Frequency Register, for more than 2% of integration periods of 2 000 s. (WRC-03)

5.379D For sharing of the band 1 668.4-1 675 MHz between the mobile-satellite service and the fixed and mobile services, Resolution **744 (Rev.WRC-07)** shall apply. (WRC-07)

5.379E In the band 1 668.4-1 675 MHz, stations in the mobile-satellite service shall not cause harmful interference to stations in the meteorological aids service in China, Iran (Islamic Republic of), Japan and Uzbekistan. In the band 1 668.4-1 675 MHz, administrations are urged not to implement new systems in the meteorological aids service and are encouraged to migrate existing meteorological aids service operations to other bands as soon as practicable. (WRC-03)

5.380A In the band 1 670-1 675 MHz, stations in the mobile-satellite service shall not cause harmful interference to, nor constrain the development of, existing earth stations in the meteorological-satellite service notified before 1 January 2004. Any new assignment to these earth stations in this band shall also be protected from harmful interference from stations in the mobile-satellite service. (WRC-07)

5.384A

The frequency bands 1 710-1 885 MHz, 2 300-2 400 MHz and 2 500-2 690 MHz, or portions thereof, are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution 223 (Rev.WRC-15). This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-15) ~~The bands, or portions of the bands, 1 710-1 885 MHz, 2 300-2 400 MHz and 2 500-2 690 MHz, are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-07)***. This identification does not preclude the use of these bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-07)~~

5.385 *Additional allocation:* the band 1 718.8-1 722.2 MHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations. (WRC-2000)

5.388

The frequency bands 1 885-2 025 MHz and 2 110-2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement International Mobile Telecommunications (IMT). Such use does not preclude the use of these frequency bands by other services to which they are allocated. The frequency bands should be made available for IMT in accordance with Resolution 212 (Rev.WRC-15) (see also Resolution 223

~~* *Note by the Secretariat:* This Resolution was revised by WRC-12.~~

5.388A In Regions 1 and 3, the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz and, in Region 2, the bands 1 885-1 980 MHz and 2 110-2 160 MHz may be used by high altitude platform stations as base stations to provide International Mobile Telecommunications (IMT), in accordance with Resolution **221 (Rev.WRC-07)**. Their use by IMT applications using high altitude platform stations as base stations does not preclude the use of these bands by any station in the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-12)

5.388B In Algeria, Saudi Arabia, Bahrain, Benin, Burkina Faso, Cameroon, Comoros, Côte d'Ivoire, China, Cuba, Djibouti, Egypt, United Arab Emirates, Eritrea, Ethiopia, Gabon, Ghana, India, Iran (Islamic Republic of), Israel, Jordan, Kenya, Kuwait, Libya, Mali, Morocco, Mauritania, Nigeria, Oman, Uganda, Pakistan, Qatar, the Syrian Arab Republic, Senegal, Singapore, Sudan, South Sudan, Tanzania, Chad, Togo, Tunisia, Yemen, Zambia and Zimbabwe, for the purpose of protecting fixed and mobile services, including IMT mobile stations, in their territories from co-channel interference, a high altitude platform station (HAPS) operating as an IMT base station in neighbouring countries, in the bands referred to in No. **5.388A**, shall not exceed a co-channel power flux-density of −127 dB(W/(m^2 · MHz)) at the Earth's surface outside a country's borders unless explicit agreement of the affected administration is provided at the time of the notification of HAPS. (WRC-12)

5.389A The use of the bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service is subject to coordination under No. **9.11A** and to the provisions of Resolution **716 (Rev.WRC-2000)***. (WRC-07)

5.391

In making assignments to the mobile service in the frequency bands 2 025-2 110 MHz and 2 200-2 290 MHz, administrations shall not introduce high-density mobile systems, as described in Recommendation ITU-R SA.1154-0, and shall take that Recommendation into account for the introduction of any other type of mobile system. (WRC-15)~~In making assignments to the mobile service in the bands 2 025-2 110 MHz and 2 200-2 290 MHz, administrations shall not introduce high-density mobile systems, as described in Recommendation ITU-R SA.1154, and shall take that Recommendation into account for the introduction of any other type of mobile system.~~ (WRC-97)

5.398 In respect of the radiodetermination-satellite service in the band 2 483.5-2 500 MHz, the provisions of No. **4.10** do not apply.

5.401

In Angola, Australia, Bangladesh, China, Eritrea, Ethiopia, India, Iran (Islamic Republic of), Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Syrian Arab Republic, Dem. Rep. of the Congo, Sudan, Swaziland, Togo and Zambia, the frequency band 2 483.5-2 500 MHz was already allocated on a primary basis to the radiodetermination-satellite service before WRC-12, subject to agreement obtained under No. 9.21 from countries not listed in this provision. Systems in the radiodetermination-satellite service for which complete coordination information has been received by the Radiocommunication Bureau before 18 February 2012 will retain their regulatory status, as of the date of receipt of the coordination request information. (WRC-15)~~In Angola, Australia, Bangladesh, Burundi, China, Eritrea, Ethiopia, India, Iran (Islamic Republic of), Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Syrian Arab Republic, Dem. Rep. of the Congo, Sudan, Swaziland, Togo and Zambia, the band 2 483.5-2 500 MHz was already allocated on a primary basis to the radiodetermination satellite service before WRC-12, subject to agreement obtained under No. **9.21** from countries not listed in this provision. Systems in the radiodetermination satellite service for which complete coordination information has been received by the Radiocommunication Bureau before 18 February 2012 will retain their regulatory status, as of the date of receipt of the coordination request information.~~ (WRC-12)

5.423 In the band 2 700-2 900 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the aeronautical radionavigation service.

5.424A In the band 2 900-3 100 MHz, stations in the radiolocation service shall not cause harmful interference to, nor claim protection from, radar systems in the radionavigation service. (WRC-03)

5.425 In the band 2 900-3 100 MHz, the use of the shipborne interrogator-transponder (SIT) system shall be confined to the sub-band 2 930 -2 950 MHz.

5.426 The use of the band 2 900-3 100 MHz by the aeronautical radionavigation service is limited to ground-based radars.

5.427 In the bands 2 900-3 100 MHz and 9 300-9 500 MHz, the response from radar transponders shall not be capable of being confused with the response from radar beacons (racons) and shall not cause interference to ship or aeronautical radars in the radionavigation service, having regard, however, to No. **4.9**.

5.429A Additional allocation: in Angola, Benin, Botswana, Burkina Faso, Burundi, Ghana, Guinea, Guinea-Bissau, Lesotho, Liberia, Malawi, Mauritania, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sudan, South Sudan, South Africa, Swaziland, Tanzania, Chad, Togo, Zambia and Zimbabwe, the frequency band 3 300-3 400 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis. Stations in the mobile service operating in the frequency band 3 300-3 400 MHz shall not cause harmful interference to, or claim protection from, stations operating in the radiolocation service. (WRC-15)

5.429B In the following countries of Region 1 south of 30° parallel north: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Congo (Rep. of the), Côte d'Ivoire, Egypt, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Malawi, Mauritania, Mozambique, Namibia, Niger, Nigeria, Uganda, the Dem. Rep. of the Congo, Rwanda, Sudan, South Sudan, South Africa, Swaziland, Tanzania, Chad, Togo, Zambia and Zimbabwe, the frequency band 3 300-3 400 MHz is identified for the implementation of International Mobile Telecommunications (IMT). The use of this frequency band shall be in accordance with Resolution 223 (Rev.WRC-15). The use of the frequency band 3 300-3 400 MHz by IMT stations in the mobile service shall not cause harmful interference to, or claim protection from, systems in the radiolocation service, and administrations wishing to implement IMT shall obtain the agreement of neighbouring countries to protect operations within the radiolocation service. This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. (WRC-15)

5.430A

The allocation of the frequency band 3 400-3 600 MHz to the mobile, except aeronautical mobile, service is subject to agreement obtained under No. 9.21. This frequency band is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this frequency band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. The provisions of Nos. 9.17

and 9.18 shall also apply in the coordination phase. Before an administration brings into use a (base or mobile) station of the mobile service in this frequency band, it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed −154.5 dB(W/(m2 □ 4 kHz)) for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station) and with the assistance of the Bureau if so requested. In case of disagreement, calculation and verification of the pfd shall be made by the Bureau, taking into account the information referred to above. Stations of the mobile service in the frequency band 3 400-3 600 MHz shall not claim more protection from space stations than that provided in Table 21-4 of the Radio Regulations (Edition of 2004). (WRC-*15)*~~*Different category of service:* in Albania, Algeria, Germany, Andorra, Saudi Arabia, Austria, Azerbaijan, Bahrain, Belgium, Benin, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Cameroon, Cyprus, Vatican, Congo (Rep. of the), Côte d'Ivoire, Croatia, Denmark, Egypt, Spain, Estonia, Finland, France and French overseas departments and communities in Region 1, Gabon, Georgia, Greece, Guinea, Hungary, Ireland, Iceland, Israel, Italy, Jordan, Kuwait, Lesotho, Latvia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Lithuania, Malawi, Mali, Malta, Morocco, Mauritania, Moldova, Monaco, Mongolia, Montenegro, Mozambique, Namibia, Niger, Norway, Oman, Netherlands, Poland, Portugal, Qatar, the Syrian Arab Republic, the Dem. Rep. of the Congo, Slovakia, Czech Rep., Romania, United Kingdom, San Marino, Senegal, Serbia, Sierra Leone, Slovenia, South Africa, Sweden, Switzerland, Swaziland, Chad, Togo, Tunisia, Turkey, Ukraine, Zambia and Zimbabwe, the band 3 400-3 600 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis subject to agreement obtained under No. **9.21** with other administrations and is identified for International Mobile Telecommunications (IMT). This identification does not preclude the use of this band by any application of the services to which it is allocated and does not establish priority in the Radio Regulations. At the stage of coordination the provisions of Nos. **9.17** and **9.18** also apply. Before an administration brings into use a (base or mobile) station of the mobile service in this band, it shall ensure that the power flux-density (pfd) produced at 3 m above ground does not exceed −154.5 dB(W/(m^2 4 kHz)) for more than 20% of time at the border of the territory of any other administration. This limit may be exceeded on the territory of any country whose administration has so agreed. In order to ensure that the pfd limit at the border of the territory of any other administration is met, the calculations and verification shall be made, taking into account all relevant information, with the mutual agreement of both administrations (the administration responsible for the terrestrial station and the administration responsible for the earth station), with the assistance of the Bureau if so~~ exclusively for wireless avionics intra-communication systems that operate in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution 424 (WRC-15). (WRC-15)

5.437 Passive sensing in the Earth exploration-satellite and space research services may be authorized in the frequency band 4 200-4 400 MHz on a secondary basis. (WRC-15)

5.438

Use of the frequency band 4 200-4 400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground. (WRC-15) ~~Use of the band 4 200-4 400 MHz by the aeronautical radionavigation service is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground.~~

~~However, passive sensing in the Earth exploration-satellite and space research services may be authorized in this band on a secondary basis (no protection is provided by the radio altimeters).~~

5.440 The standard frequency and time signal-satellite service may be authorized to use the frequency 4 202 MHz for space-to-Earth transmissions and the frequency 6 427 MHz for Earth-to-space transmissions. Such transmissions shall be confined within the limits of ± 2 MHz of these frequencies, subject to agreement obtained under No. **9.21**.

5.441 The use of the bands 4 500-4 800 MHz (space-to-Earth), 6 725-7 025 MHz (Earth-to-space) by the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Appendix **30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)

5.442 In the bands 4 825-4 835 MHz and 4 950-4 990 MHz, the allocation to the mobile service is restricted to the mobile, except aeronautical mobile, service. In Region 2 (except Brazil, Cuba, Guatemala, Paraguay, Uruguay and Venezuela), and in Australia, the band 4 825-4 835 MHz is also allocated to the aeronautical mobile service, limited to aeronautical mobile telemetry for flight testing by aircraft stations. Such use shall be in accordance with Resolution **416 (WRC-07)** and shall not cause harmful interference to the fixed service. (WRC-07)

5.443AA In the frequency bands 5 000-5 030 MHz and 5 091-5 150 MHz, the aeronautical mobile-satellite (R) service is subject to agreement obtained under No. **9.21**. The use of these bands by the aeronautical mobile-satellite (R) service is limited to internationally standardized aeronautical systems. (WRC-12)

5.443B

In order not to cause harmful interference to the microwave landing system operating above 5 030 MHz, the aggregate power flux-density produced at the Earth's surface in the frequency band 5 030-5 150 MHz by all the space stations within any radionavigation-satellite service system (space-to-Earth) operating in the frequency band 5 010-5 030 MHz shall not exceed −124.5 dB(W/m2) in a 150 kHz band. In order not to cause harmful interference to the radio astronomy service in the frequency band 4 990-5 000 MHz, radionavigation-satellite service systems operating in the frequency band 5 010-5 030 MHz shall comply with the limits in the frequency band 4 990-5 000 MHz defined in Resolution 741 (Rev.WRC-15). (WRC-15)~~In order not to cause harmful interference to the microwave landing system operating above 5 030 MHz, the aggregate power flux-density produced at the Earth's surface in the band 5 030-5 150 MHz by all the space stations within any radionavigation-satellite service system (space-to-Earth) operating in the band 5 010-5 030 MHz shall not exceed −124.5 dB(W/m^2) in a 150 kHz band. In order not to cause harmful interference to the radio astronomy service in the band 4 990-5 000 MHz, radionavigation-satellite service systems operating in the band 5 010-5 030 MHz shall comply with the limits in the band 4 990-5 000 MHz defined in Resolution **741 (Rev.WRC-12)**.~~ (WRC-12)

5.443C The use of the frequency band 5 030-5 091 MHz by the aeronautical mobile (R) service is limited to internationally standardized aeronautical systems. Unwanted emissions from the aeronautical mobile (R) service in the frequency band 5 030-5 091 MHz shall be limited to protect RNSS system downlinks in the adjacent 5 010-5 030 MHz band. Until such time that an appropriate value is established in a relevant ITU-R Recommendation, the e.i.r.p. density limit of −75 dBW/MHz in the frequency band 5 010-5 030 MHz for any AM(R)S station unwanted emission should be used. (WRC-12)

5.443D In the frequency band 5 030-5 091 MHz, the aeronautical mobile-satellite (R) service is subject to coordination under No. **9.11A**. The use of this frequency band by the aeronautical mobile-satellite (R) service is limited to internationally standardized aeronautical systems. (WRC-12)

5.444

The frequency band 5 030-5 150 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. In the frequency band 5 030-5 091 MHz, the requirements of this system shall have priority over other uses of this frequency band. For the use of the frequency band 5 091-5 150 MHz, No. 5.444A and Resolution 114 (Rev.WRC-15) apply. (WRC-15)

~~The frequency band 5 030-5 150 MHz is to be used for the operation of the international standard system (microwave landing system) for precision approach and landing. In the frequency band 5 030-5 091 MHz, the requirements of this system shall have priority over other uses of this band. For the use of the frequency band 5 091-5 150 MHz, No. **5.444A** and Resolution **114 (Rev.WRC-12)** apply.~~ (WRC-12)

The use of the allocation to the fixed-satellite service (Earth-to-space) in the frequency band 5 091-5 150 MHz is limited to feeder links of non-geostationary satellite systems in the mobile-satellite service and is subject to coordination under No. 9.11A. The use of the frequency band 5 091-5 150 MHz by feeder links of non-geostationary satellite systems in the mobile-satellite service shall be subject to application of Resolution 114 (Rev.WRC-15). Moreover, to ensure that the aeronautical radionavigation service is protected from harmful interference, coordination is required for feeder-link earth stations of the non-geostationary satellite systems in the mobile-satellite service which are separated by less than 450 km from the territory of an administration operating ground stations in the aeronautical radionavigation service (WRC-15) ~~*Additional allocation: in the countries listed in No. 5.369, the frequency band 5 091-5 150 MHz is also allocated to the fixed-satellite service (Earth-to-space) on a primary basis. This allocation is for feeder links for non-geostationary mobile-satellite service systems and is subject to No. 9.11A*~~

The use of the frequency band 5 091-5 150 MHz by the aeronautical mobile service is limited to:

– systems operating in the aeronautical mobile (R) service and in accordance with international aeronautical standards, limited to surface applications at airports. Such use shall be in accordance with Resolution 748 (Rev.WRC-15);

– aeronautical telemetry transmissions from aircraft stations (see No. 1.83) in accordance with Resolution 418 (Rev.WRC-15). (WRC-15) ~~The use of the frequency band 5 091-5 150 MHz by the aeronautical mobile service is limited to:~~

Additional allocation: in the countries listed in No. 5.369, the frequency band 5 150-5 216 MHz is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis, subject to agreement obtained under No. 9.21. In Region 2 (except in Mexico), the frequency band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a primary basis. In Regions 1 and 3, except those countries listed in No. 5.369 and Bangladesh, the frequency band is also allocated to the radiodetermination-satellite service (space-to-Earth) on a secondary basis. The use by the radiodetermination-satellite service is limited to feeder links in conjunction with the radiodeterminationsatellite service operating in the frequency bands 1 610-1 626.5 MHz and/or 2 483.5-2 500 MHz. The total power fluxdensity at the Earth's surface shall in no case exceed −159 dB(W/m2) in any 4 kHz band for all angles of

5.446A The use of the bands 5 150-5 350 MHz and 5 470-5 725 MHz by the stations in the mobile, except aeronautical mobile, service shall be in accordance with Resolution **229 (Rev.WRC-12)**. (WRC-12)

5.446B In the band 5 150-5 250 MHz, stations in the mobile service shall not claim protection from earth stations in the fixed-satellite service. No. **5.43A** does not apply to the mobile service with respect to fixed-satellite service earth stations. (WRC-03)

5.447 *Additional allocation:* in Côte d'Ivoire, Egypt, Israel, Lebanon, the Syrian Arab Republic and Tunisia, the band 5 150-5 250 MHz is also allocated to the mobile service, on a primary basis, subject to agreement obtained under No. **9.21**. In this case, the provisions of Resolution **229 (Rev.WRC-12)** do not apply. (WRC-12)

5.447A The allocation to the fixed-satellite service (Earth-to-space) in the band 5 150-5 250 MHz is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to coordination under No. **9.11A**.

5.447B *Additional allocation*: the band 5 150-5 216 MHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. This allocation is limited to feeder links of non-geostationary-satellite systems in the mobile-satellite service and is subject to provisions of No. **9.11A**. The power flux-density at the Earth's surface produced by space stations of the fixed-satellite service operating in the space-to-Earth direction in the band 5 150-5 216 MHz shall in no case exceed –164 dB(W/m^2) in any 4 kHz band for all angles of arrival.

5.447C Administrations responsible for fixed-satellite service networks in the band 5 150-5 250 MHz operated under Nos. **5.447A** and **5.447B** shall coordinate on an equal basis in accordance with No. **9.11A** with administrations responsible for non-geostationary-satellite networks operated under No. **5.446** and brought into use prior to 17 November 1995. Satellite networks operated under No. **5.446** brought into use after 17 November 1995 shall not claim protection from, and shall not cause harmful interference to, stations of the fixed-satellite service operated under Nos. **5.447A** and **5.447B**.

5.447D The allocation of the band 5 250-5 255 MHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis. (WRC-97)

5.447F

In the frequency band 5 250-5 350 MHz, stations in the mobile service shall not claim protection from the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active). These services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendations ITU-R M.1638-0 and ITU-R RS.1632-0. (WRC-15)~~In the band 5 250-5 350 MHz, stations in the mobile service shall not claim protection from the radiolocation service, the Earth exploration-satellite service (active) and the space research service (active). These services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendations ITU-R M.1638 and ITU-R RS.1632.~~ ~~(WRC-03)~~

5.448A The Earth exploration-satellite (active) and space research (active) services in the frequency band 5 250-5 350 MHz shall not claim protection from the radiolocation service. No. **5.43A** does not apply. (WRC-03)

5.448B The Earth exploration-satellite service (active) operating in the band 5 350-5 570 MHz and space research service (active) operating in the band 5 460-5 570 MHz shall not cause harmful interference to the aeronautical radionavigation service in the band 5 350-5 460 MHz, the radionavigation service in the band 5 460-5 470 MHz and the maritime radionavigation service in the band 5 470-5 570 MHz. (WRC-03)

5.448C The space research service (active) operating in the band 5 350-5 460 MHz shall not cause harmful interference to nor claim protection from other services to which this band is allocated. (WRC-03)

5.448D In the frequency band 5 350-5 470 MHz, stations in the radiolocation service shall not cause harmful interference to, nor claim protection from, radar systems in the aeronautical radionavigation service operating in accordance with No. **5.449**. (WRC-03)

5.449 The use of the band 5 350-5 470 MHz by the aeronautical radionavigation service is limited to airborne radars and associated airborne beacons.

5.450A

In the frequency band 5 470-5 725 MHz, stations in the mobile service shall not claim protection from radiodetermination services. Radiodetermination services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendation ITU-R M.1638-0. (WRC-15)~~In the band 5 470-5 725 MHz, stations in the mobile service shall not claim protection from radiodetermination services. Radiodetermination services shall not impose on the mobile service more stringent protection criteria, based on system characteristics and interference criteria, than those stated in Recommendation ITU-R M.1638.~~ (WRC-03)

5.450B In the frequency band 5 470-5 650 MHz, stations in the radiolocation service, except ground-based radars used for meteorological purposes in the band 5 600-5 650 MHz, shall not cause harmful interference to, nor claim protection from, radar systems in the maritime radionavigation service. (WRC-03)

5.452 Between 5 600 MHz and 5 650 MHz, ground-based radars used for meteorological purposes are authorized to operate on a basis of equality with stations of the maritime radionavigation service.

5.458B The space-to-Earth allocation to the fixed-satellite service in the band 6 700-7 075 MHz is limited to feeder links for non-geostationary satellite systems of the mobile-satellite service and is subject to coordination under No. **9.11A**. The use of the band 6 700-7 075 MHz (space-to-Earth) by feeder links for non-geostationary satellite systems in the mobile-satellite service is not subject to No. **22.2**.

~~**5.458C** Administrations making submissions in the band 7 025-7 075 MHz (Earth-to-space) for geostationary satellite systems in the fixed-satellite service after 17 November 1995 shall consult on the basis of relevant ITU-R Recommendations with the administrations that have notified and brought into use non-geostationary satellite systems in this frequency band before 18 November 1995 upon request of the latter administrations. This consultation shall be with a view to facilitating shared operation of both geostationary satellite systems in the fixed-satellite service and non-geostationary satellite systems in this band.~~**MOD 5.459**

5.460

No emissions from space research service (Earth-to-space) systems intended for deep space shall be effected in the frequency band 7 190-7 235 MHz. Geostationary satellites in the space research service operating in the frequency band 7 190-7 235 MHz shall not claim protection from existing and future stations of the fixed and mobile services and No. 5.43A does not apply. (WRC-15)~~The use of the band 7 145-7 190 MHz by the space research service (Earth-to-space) is restricted to deep space; no emissions to deep space shall be effected in the band 7 190-7 235 MHz. Geostationary satellites in the space research service operating in the band 7 190-7 235 MHz shall not claim protection from existing and future stations of the fixed and mobile services and No. **5.43A** does not apply.~~ (WRC-03)

5.460A The use of the frequency band 7 190-7 250 MHz (Earth-to-space) by the Earth exploration-satellite service shall be limited to tracking, telemetry and command for the operation of spacecraft. Space stations operating in the Earth exploration-satellite service (Earth-to-space) in the frequency band 7 190-7 250 MHz shall not claim protection from existing and future stations in the fixed and mobile services, and No. 5.43A does not apply. No. 9.17 applies. Additionally,

to ensure protection of the existing and future deployment of fixed and mobile services, the location of earth stations supporting spacecraft in the Earth exploration-satellite service in non-geostationary orbits or geostationary orbit shall maintain a separation distance of at least 10 km and 50 km, respectively, from the respective border(s) of neighbouring countries, unless a shorter distance is otherwise agreed between the corresponding administrations. (WRC-15)

5.**460B** Space stations on the geostationary orbit operating in the Earth exploration-satellite service (Earth-to-space) in the frequency band 7 190-7 235 MHz shall not claim protection from existing and future stations of the space research service, and No. 5.43A does not apply. (WRC-15)

5.461 *Additional allocation:* the bands 7 250-7 375 MHz (space-to-Earth) and 7 900-8 025 MHz (Earth-to-space) are also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. **9.21**.

5.461A The use of the band 7 450-7 550 MHz by the meteorological-satellite service (space-to-Earth) is limited to geostationary-satellite systems. Non-geostationary meteorological-satellite systems in this band notified before 30 November 1997 may continue to operate on a primary basis until the end of their lifetime. (WRC-97)

5.461B The use of the band 7 750-7 900 MHz by the meteorological-satellite service (space-to-Earth) is limited to non-geostationary satellite systems. (WRC-12)

5.462A In Regions 1 and 3 (except for Japan), in the band 8 025-8 400 MHz, the Earth exploration-satellite service using geostationary satellites shall not produce a power flux-density in excess of the following values for angles of arrival (θ), without the consent of the affected administration:

-135 dB(W/m^2) in a 1 MHz band	for $0° \le \theta < 5°$
$-135 + 0.5\,(\theta - 5)$ dB(W/m^2) in a 1 MHz band	for $5° \le \theta < 5°$
-125 dB(W/m^2) in a 1 MHz band	for $25° \le \theta \le 90°$ (WRC-12)

5.469A In the band 8 550-8 650 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radiolocation service. (WRC-97)

5.470 The use of the band 8 750-8 850 MHz by the aeronautical radionavigation service is limited to airborne Doppler navigation aids on a centre frequency of 8 800 MHz.

5.472 In the bands 8 850-9 000 MHz and 9 200-9 225 MHz, the maritime radionavigation service is limited to shore-based radars.

5.473A In the band 9 000-9 200 MHz, stations operating in the radiolocation service shall not cause harmful interference to, nor claim protection from, systems identified in No. **5.337** operating in the aeronautical radionavigation service, or radar systems in the maritime radionavigation service operating in this band on a primary basis in the countries listed in No. **5.471**. (WRC-07)

5.474 In the band 9 200-9 500 MHz, search and rescue transponders (SART) may be used, having due regard to the appropriate ITU-R Recommendation (see also Article **31**).

5.474B Stations operating in the Earth exploration-satellite (active) service shall comply with Recommendation ITU-R RS.2066-0. (WRC-15)

5.474C Stations operating in the Earth exploration-satellite (active) service shall comply with Recommendation ITU-R RS.2065-0. (WRC-15)

5.474D Stations in the Earth exploration-satellite service (active) shall not cause harmful interference to, or claim

protection from, stations of the maritime radionavigation and radiolocation services in the frequency band 9 200-9 300 MHz, the radionavigation and radiolocation services in the frequency band 9 900-10 000 MHz and the radiolocation service in the frequency band 10.0-10.4 GHz. (WRC-15)

5.475 The use of the band 9 300-9 500 MHz by the aeronautical radionavigation service is limited to airborne weather radars and ground-based radars. In addition, ground-based radar beacons in the aeronautical radionavigation service are permitted in the band 9 300-9 320 MHz on condition that harmful interference is not caused to the maritime radionavigation service. (WRC-07)

5.475A The use of the band 9 300-9 500 MHz by the Earth exploration-satellite service (active) and the space research service (active) is limited to systems requiring necessary bandwidth greater than 300 MHz that cannot be fully accommodated within the 9 500-9 800 MHz band. (WRC-07)

5.475B In the band 9 300-9 500 MHz, stations operating in the radiolocation service shall not cause harmful interference to, nor claim protection from, radars operating in the radionavigation service in conformity with the Radio Regulations. Ground-based radars used for meteorological purposes have priority over other radiolocation uses. (WRC-07)

5.476A In the band 9 300-9 800 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, nor claim protection from, stations of the radionavigation and radiolocation services. (WRC-07)

5.478A The use of the band 9 800-9 900 MHz by the Earth exploration-satellite service (active) and the space research service (active) is limited to systems requiring necessary bandwidth greater than 500 MHz that cannot be fully accommodated within the 9 300-9 800 MHz band. (WRC-07)

5.478B In the band 9 800-9 900 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, nor claim protection from stations of the fixed service to which this band is allocated on a secondary basis. (WRC-07)

5.479 The band 9 975-10 025 MHz is also allocated to the meteorological-satellite service on a secondary basis for use by weather radars.

5.482 In the band 10.6-10.68 GHz, the power delivered to the antenna of stations of the fixed and mobile, except aeronautical mobile, services shall not exceed −3 dBW. This limit may be exceeded, subject to agreement obtained under No. **9.21**. However, in Algeria, Saudi Arabia, Armenia, Azerbaijan, Bahrain, Bangladesh, Belarus, Egypt, United Arab Emirates, Georgia, India, Indonesia, Iran (Islamic Republic of), Iraq, Jordan, Kazakhstan, Kuwait, Lebanon, Libya, Morocco, Mauritania, Moldova, Nigeria, Oman, Uzbekistan, Pakistan, Philippines, Qatar, Syrian Arab Republic, Kyrgyzstan, Singapore, Tajikistan, Tunisia, Turkmenistan and Viet Nam, this restriction on the fixed and mobile, except aeronautical mobile, services is not applicable. (WRC-07)

5.482A For sharing of the band 10.6-10.68 GHz between the Earth exploration-satellite (passive) service and the fixed and mobile, except aeronautical mobile, services, Resolution **751 (WRC-07)** applies. (WRC-07)

5.484 In Region 1, the use of the band 10.7-11.7 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

5.484B Resolution 155 (WRC-15) shall apply. (WRC-15)

5.484A The use of the bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 13.75-14.5 GHz (Earth-to-space), 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz (Earth-to-space) by a non-geostationary-satellite system in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)

5.487 In the band 11.7-12.5 GHz in Regions 1 and 3, the fixed, fixed-satellite, mobile, except aeronautical mobile, and broadcasting services, in accordance with their respective allocations, shall not cause harmful interference to, or claim protection from, broadcasting-satellite stations operating in accordance with the Regions 1 and 3 Plan in Appendix **30**. (WRC-03)

5.487A *Additional allocation:* in Region 1, the band 11.7-12.5 GHz, in Region 2, the band 12.2-12.7 GHz and, in Region 3, the band 11.7-12.2 GHz, are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis, limited to non-geostationary systems and subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the broadcasting-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-03)

5.492 Assignments to stations of the broadcasting-satellite service which are in conformity with the appropriate regional Plan or included in the Regions 1 and 3 List in Appendix **30** may also be used for transmissions in the fixed-satellite service (space-to-Earth), provided that such transmissions do not cause more interference, or require more protection from interference, than the broadcasting-satellite service transmissions operating in conformity with the Plan or the List, as appropriate. (WRC-2000)

5.497 The use of the band 13.25-13.4 GHz by the aeronautical radionavigation service is limited to Doppler navigation aids.

5.498A The Earth exploration-satellite (active) and space research (active) services operating in the band 13.25-13.4 GHz shall not cause harmful interference to, or constrain the use and development of, the aeronautical radionavigation service. (WRC-97)

5.499A The use of the frequency band 13.4-13.65 GHz by the fixed-satellite service (space-to-Earth) is limited to geostationary-satellite systems and is subject to agreement obtained under No. 9.21 with respect to satellite systems operating in the space research service (space-to-space) to relay data from space stations in the geostationary-satellite orbit to associated space stations in non-geostationary satellite orbits for which advance publication information has been received by the Bureau by 27 November 2015. (WRC-15)

5.499B Administrations shall not preclude the deployment and operation of transmitting earth stations in the standard frequency and time signal-satellite service (Earth-to-space) allocated on a secondary basis in the frequency band 13.4-13.65 GHz due to the primary allocation to FSS (space-to-Earth). (WRC-15)

5.499C The allocation of the frequency band 13.4-13.65 GHz to the space research service on a primary basis is limited to:

– satellite systems operating in the space research service (space-to-space) to relay data from space stations in the geostationary-satellite orbit to associated space stations in non-geostationary satellite orbits for which advance publication information has been received by the Bureau by 27 November 2015,

– active spaceborne sensors,

– satellite systems operating in the space research service (space-to-Earth) to relay data from space stations in the geostationary-satellite orbit to associated earth stations.

Other uses of the frequency band by the space research service are on a secondary basis. (WRC-15)

and/or the space research service (space-to-space) shall not cause harmful interference to, nor claim protection from, stations in the fixed, mobile, radiolocation and Earth exploration-satellite (active) services. (WRC-15)

5.499E In the frequency band 13.4-13.65 GHz, geostationary-satellite networks in the fixed-satellite service (spaceto-Earth) shall not claim protection from space stations in the Earth exploration-satellite service (active) operating in accordance with these Regulations, and No. 5.43A does not apply. The provisions of No. 22.2 do not apply to the Earth exploration-satellite service (active) with respect to the fixed-satellite service (space-to-Earth) in this frequency band. (WRC-15)

MOD

5.501A

The allocation of the frequency band 13.65-13.75 GHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the frequency band by the space research service are on a secondary basis. (WRC-15) ~~The allocation of the band 13.4-13.75 GHz to the space research service on a primary basis is limited to active spaceborne sensors. Other uses of the band by the space research service are on a secondary basis.~~ (WRC-97)

5.502 In the band 13.75-14 GHz, an earth station of a geostationary fixed-satellite service network shall have a minimum antenna diameter of 1.2 m and an earth station of a non-geostationary fixed-satellite service system shall have a minimum antenna diameter of 4.5 m. In addition, the e.i.r.p., averaged over one second, radiated by a station in the radiolocation or radionavigation services shall not exceed 59 dBW for elevation angles above 2° and 65 dBW at lower angles. Before an administration brings into use an earth station in a geostationary-satellite network in the fixed-satellite service in this band with an antenna diameter smaller than 4.5 m, it shall ensure that the power flux-density produced by this earth station does not exceed:

– –115 dB(W/(m^2 · 10 MHz)) for more than 1% of the time produced at 36 m above sea level at the low water mark, as officially recognized by the coastal State;

– –115 dB(W/(m^2 · 10 MHz)) for more than 1% of the time produced 3 m above ground at the border of the territory of an administration deploying or planning to deploy land mobile radars in this band, unless prior agreement has been obtained.

For earth stations within the fixed-satellite service having an antenna diameter greater than or equal to 4.5 m, the e.i.r.p. of any emission should be at least 68 dBW and should not exceed 85 dBW. (WRC-03)

5.503 In the band 13.75-14 GHz, geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 shall operate on an equal basis with stations in the fixed-satellite service; after that date, new geostationary space stations in the space research service will operate on a secondary basis. Until those geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 cease to operate in this band:

– in the band 13.77-13.78 GHz, the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in geostationary-satellite orbit shall not exceed:

i) 4.7*D* + 28 dB(W/40 kHz), where *D* is the fixed-satellite service earth station antenna diameter (m) for antenna diameters equal to or greater than 1.2 m and less than 4.5 m;

ii) 49.2 + 20 log(*D*/4.5) dB(W/40 kHz), where *D* is the fixed-satellite service earth station antenna diameter (m) for antenna diameters equal to or greater than 4.5 m and less than 31.9 m;

iii) 66.2 dB(W/40 kHz) for any fixed-satellite service earth station for antenna diameters (m) equal to or greater than 31.9 m;

iv) 56.2 dB(W/4 kHz) for narrow-band (less than 40 kHz of necessary bandwidth) fixed-satellite service earth station emissions from any fixed-satellite service earth station having an antenna diameter of 4.5 m or greater;

– the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in non-geostationary-satellite orbit shall not exceed 51 dBW in the 6 MHz band from 13.772 to 13.778 GHz.

Automatic power control may be used to increase the e.i.r.p. density in these frequency ranges to compensate for rain attenuation, to the extent that the power flux-density at the fixed-satellite service space station does not exceed the value resulting from use by an earth station of an e.i.r.p. meeting the above limits in clear-sky conditions. (WRC-03)

5.504 The use of the band 14-14.3 GHz by the radionavigation service shall be such as to provide sufficient protection to space stations of the fixed-satellite service.

5.504A In the band 14-14.5 GHz, aircraft earth stations in the secondary aeronautical mobile-satellite service may also communicate with space stations in the fixed-satellite service. The provisions of Nos. **5.29**, **5.30** and **5.31** apply. (WRC-03)

5.504B

Aircraft earth stations operating in the aeronautical mobile-satellite service in the frequency band 14-14.5 GHz shall comply with the provisions of Annex 1, Part C of Recommendation ITU-R M.1643-0, with respect to any radio astronomy station performing observations in the 14.47-14.5 GHz frequency band located on the territory of Spain, France, India, Italy, the United Kingdom and South Africa. (WRC-15)~~Aircraft earth stations operating in the aeronautical mobile-satellite service in the band 14-14.5 GHz shall comply with the provisions of Annex 1, Part C of Recommendation ITU-R M.1643, with respect to any radio astronomy station performing observations in the 14.47-14.5 GHz band located on the territory of Spain, France, India, Italy, the United Kingdom and South Africa.~~ (WRC-03)

5.504C

In the frequency band 14-14.25 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Bahrain, Botswana, Côte d'Ivoire, Egypt, Guinea, India, Iran (Islamic Republic of), Kuwait, Nigeria, Oman, the Syrian Arab Republic and Tunisia by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITU-R M.1643-0, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. 5.29. (WRC-15)~~In the band 14-14.25 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Botswana, Côte d'Ivoire, Egypt, Guinea, India, Iran (Islamic Republic of), Kuwait, Nigeria, Oman, the Syrian Arab~~

~~Republic of), Italy, Kuwait, Morocco, Nigeria, Oman, the Syrian Arab Republic, the United Kingdom, Sri Lanka, Tunisia and Viet Nam by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITU-R M.1643-0, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. 5.29. (WRC-15)~~

Additional allocation: in Algeria, Saudi Arabia, Bahrain, Botswana, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Djibouti, Egypt, the United Arab Emirates, Gabon, Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Oman, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, South Sudan, Swaziland, Chad, Viet Nam and Yemen, the frequency band 14-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC-15)~~*Additional allocation:* in Algeria, Angola, Saudi Arabia, Bahrain, Botswana, Brunei Darussalam, Cameroon, China, Congo (Rep. of the), Korea (Rep. of), Djibouti, Egypt, the United Arab Emirates, Gabon, Guinea, India, Indonesia, Iran (Islamic Republic of), Iraq, Israel, Japan, Jordan, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Oman, the Philippines, Qatar, the Syrian Arab Republic, the Dem. People's Rep. of Korea, Singapore, Somalia, Sudan, South Sudan, Swaziland, Tanzania, Chad, Viet Nam and Yemen, the band 14-14.3 GHz is also allocated to the fixed service on a primary basis. (WRC-12)~~

5.506A In the band 14-14.5 GHz, ship earth stations with an e.i.r.p. greater than 21 dBW shall operate under the same conditions as earth stations located on board vessels, as provided in Resolution **902 (WRC-03)**. This footnote shall not apply to ship earth stations for which the complete Appendix **4** information has been received by the Bureau prior to 5 July 2003. (WRC-03)

5.508A

In the frequency band 14.25-14.3 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Bahrain, Botswana, China, Côte d'Ivoire, Egypt, France, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait, Nigeria, Oman, the Syrian Arab Republic, the United Kingdom and Tunisia by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITU-R M.1643-0, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. 5.29. (WRC-15)~~In the band 14.25-14.3 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Botswana, China, Côte d'Ivoire, Egypt, France, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait, Nigeria, Oman, the Syrian Arab Republic, the United Kingdom and Tunisia by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITU-R M.1643-0, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. 5.29. (WRC-15)~~

5.509A

In the frequency band 14.3-14.5 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Bahrain, Botswana, Cameroon, China, Côte d'Ivoire, Egypt, France, Gabon, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait, Morocco, Nigeria, Oman, the Syrian Arab Republic, the United Kingdom, Sri Lanka, Tunisia and Viet Nam by any aircraft earth station in the aeronautical mobile-satellite service shall not exceed the limits given in Annex 1, Part B of Recommendation ITU-R M.1643-0, unless otherwise specifically agreed by the affected administration(s). The provisions of this footnote in no way derogate the obligations of the aeronautical mobile-satellite service to operate as a secondary service in accordance with No. 5.29. (WRC-15)~~In the band 14.3-14.5 GHz, the power flux-density produced on the territory of the countries of Saudi Arabia, Botswana, Cameroon, China, Côte d'Ivoire, Egypt, France, Gabon, Guinea, India, Iran (Islamic Republic of), Italy, Kuwait,~~

5.509B The use of the frequency bands 14.5-14.75 GHz in countries listed in Resolution 163 (WRC-15) and 14.5-14.8 GHz in countries listed in Resolution 164 (WRC-15) by the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service is limited to geostationary-satellites. (WRC-15)

5.509C For the use of the frequency bands 14.5-14.75 GHz in countries listed in Resolution 163 (WRC-15) and 14.5-14.8 GHz in countries listed in Resolution 164 (WRC-15) by the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service, the fixed-satellite service earth stations shall have a minimum antenna diameter of 6 m and a maximum power spectral density of −44.5 dBW/Hz at the input of the antenna. The earth stations shall be notified at known locations on land. (WRC-15)

5.509D Before an administration brings into use an earth station in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service in the frequency bands 14.5-14.75 GHz (in countries listed in Resolution 163 (WRC-15)) and 14.5-14.8 GHz (in countries listed in Resolution 164 (WRC-15)), it shall ensure that the power flux-density produced by this earth station does not exceed −151.5 dB(W/(m2 · 4 kHz)) produced at all altitudes from 0 m to 19 000 m above sea level at 22 km seaward from all coasts, defined as the low-water mark, as officially recognized by each coastal State. (WRC-15)

5.509E In the frequency bands 14.50-14.75 GHz in countries listed in Resolution 163 (WRC-15) and 14.50-14.8 GHz in countries listed in Resolution 164 (WRC-15), the location of earth stations in the fixed-satellite service (Earth-to-space) not for feeder links for the broadcasting-satellite service shall maintain a separation distance of at least 500 km from the border(s) of other countries unless shorter distances are explicitly agreed by those administrations. No. 9.17 does not apply. When applying this provision, administrations should consider the relevant parts of these Regulations and the latest relevant ITU-R Recommendations. (WRC-15)

5.509F In the frequency bands 14.50-14.75 GHz in countries listed in Resolution 163 (WRC-15) and 14.50-14.8 GHz in countries listed in Resolution 164 (WRC-15), earth stations in the fixed-satellite service (Earth-tospace) not for feeder links for the broadcasting-satellite service shall not constrain the future deployment of the fixed and mobile services. (WRC-15)

5.509G The frequency band 14.5-14.8 GHz is also allocated to the space research service on a primary basis. However, such use is limited to the satellite systems operating in the space research service (Earth-to-space) to relay data

to space stations in the geostationary-satellite orbit from associated earth stations. Stations in the space research service shall not cause harmful interference to, or claim protection from, stations in the fixed and mobile services and in the fixedsatellite service limited to feeder links for the broadcasting-satellite service and associated space operations functions using the guardbands under Appendix 30A and feeder links for the broadcasting-satellite service in Region 2. Other uses of this frequency band by the space research service are on a secondary basis. (WRC-15)

5.510

Except for use in accordance with Resolution 163 (WRC-15) and Resolution 164 (WRC-15), the use of the frequency band 14.5-14.8 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. This use is reserved for countries outside Europe. Uses other than feeder links for the broadcasting-satellite service are not authorized in Regions 1 and 2 in the frequency band 14.75-14.8 GHz. (WRC-15) ~~The use of the band 14.5-14.8 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. This use is reserved for countries outside Europe.~~

5.511A

Use of the frequency band 15.43-15.63 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. 9.11A. (WRC-15) ~~The band 15.43-15.63 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a primary basis. Use of the band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth and Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. **9.11A**. The use of the frequency band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth) is limited~~

Stations operating in the aeronautical radionavigation service shall limit the effective e.i.r.p. in accordance with Recommendation ITU-R S.1340-0. The minimum coordination distance required to protect the aeronautical radionavigation stations (No. 4.10 applies) from harmful interference from feeder-link earth stations and the maximum e.i.r.p. transmitted towards the local horizontal plane by a feeder-link earth station shall be in accordance with Recommendation ITU-R S.1340-0. (WRC-15) ~~Stations operating in the aeronautical radionavigation service shall limit the effective e.i.r.p. in accordance with Recommendation ITU-R S.1340. The minimum coordination distance required to protect the aeronautical radionavigation stations (No. **4.10** applies) from harmful interference from feeder-link earth stations and the maximum e.i.r.p. transmitted towards the local horizontal plane by a feeder-link earth station shall be in accordance with Recommendation ITU-R S.1340.~~ ~~(WRC-97)~~

5.511F In order to protect the radio astronomy service in the frequency band 15.35-15.4 GHz, radiolocation stations operating in the frequency band 15.4-15.7 GHz shall not exceed the power flux-density level of −156 dB(W/m^2) in a 50 MHz bandwidth in the frequency band 15.35-15.4 GHz, at any radio astronomy observatory site for more than 2 per cent of the time. (WRC-12)

5.513A Spaceborne active sensors operating in the band 17.2-17.3 GHz shall not cause harmful interference to, or constrain the development of, the radiolocation and other services allocated on a primary basis. (WRC-97)

5.516 The use of the band 17.3-18.1 GHz by geostationary-satellite systems in the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. The use of the band 17.3-17.8 GHz in Region 2 by systems in the fixed-satellite service (Earth-to-space) is limited to geostationary satellites. For the use of the band 17.3-17.8 GHz in Region 2 by feeder links for the broadcasting-satellite service in the band 12.2-12.7 GHz, see Article **11**. The use of the bands 17.3-18.1 GHz

(Earth-to-space) in Regions 1 and 3 and 17.8-18.1 GHz (Earth-to-space) in Region 2 by non-geostationary-satellite systems in the fixed-satellite service is subject to application of the provisions of No. **9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination or notification information, as appropriate, for the geostationary-satellite networks, and No. **5.43A** does not apply. Non-geostationary-satellite systems in the fixed-satellite service in the above bands shall be operated in such a way that any unacceptable interference that may occur during their operation shall be rapidly eliminated. (WRC-2000)

5.516A In the band 17.3-17.7 GHz, earth stations of the fixed-satellite service (space-to-Earth) in Region 1 shall not claim protection from the broadcasting-satellite service feeder-link earth stations operating under Appendix **30A**, nor put any limitations or restrictions on the locations of the broadcasting-satellite service feeder-link earth stations anywhere within the service area of the feeder link. (WRC-03)

5.516B The following bands are identified for use by high-density applications in the fixed-satellite service:

17.3-17.7 GHz	(space-to-Earth) in Region 1,
18.3-19.3 GHz	(space-to-Earth) in Region 2,
19.7-20.2 GHz	(space-to-Earth) in all Regions,
39.5-40 GHz	(space-to-Earth) in Region 1,
40-40.5 GHz	(space-to-Earth) in all Regions,
40.5-42 GHz	(space-to-Earth) in Region 2,
47.5-47.9 GHz	(space-to-Earth) in Region 1,
48.2-48.54 GHz	(space-to-Earth) in Region 1,
49.44-50.2 GHz	(space-to-Earth) in Region 1,
and	
27.5-27.82 GHz	(Earth-to-space) in Region 1,
28.35-28.45 GHz	(Earth-to-space) in Region 2,
28.45-28.94 GHz	(Earth-to-space) in all Regions,
28.94-29.1 GHz	(Earth-to-space) in Region 2 and 3,
29.25-29.46 GHz	(Earth-to-space) in Region 2,
29.46-30 GHz	(Earth-to-space) in all Regions,
48.2-50.2 GHz	(Earth-to-space) in Region 2.

This identification does not preclude the use of these bands by other fixed-satellite service applications or by other services to which these bands are allocated on a co-primary basis and does not establish priority in these Radio Regulations among users of the bands. Administrations should take this into account when considering regulatory provisions in relation to these bands. See Resolution **143 (WRC-03)**[*]. (WRC-03)

5.519 *Additional allocation:* the bands 18-18.3 GHz in Region 2 and 18.1-18.4 GHz in Regions 1 and 3 are also allocated to the meteorological-satellite service (space-to-Earth) on a primary basis. Their use is limited to geostationary satellites. (WRC-07)

5.522A The emissions of the fixed service and the fixed-satellite service in the band 18.6-18.8 GHz are limited to the values given in Nos. **21.5A** and **21.16.2**, respectively. (WRC-2000)

5.523A The use of the bands 18.8-19.3 GHz (space-to-Earth) and 28.6-29.1 GHz (Earth-to-space) by geostationary and non-geostationary fixed-satellite service networks is subject to the application of the provisions of No. **9.11A** and No. **22.2** does not apply. Administrations having geostationary-satellite networks under coordination prior to 18 November 1995 shall cooperate to the maximum extent possible to coordinate pursuant to No. **9.11A** with non-geostationary-satellite networks for which notification information has been received by the Bureau prior to that date, with a view to reaching results acceptable to all the parties concerned. Non-geostationary-satellite networks shall not cause unacceptable interference to geostationary fixed-satellite service networks for which complete Appendix **4** notification information is considered as having been received by the Bureau prior to 18 November 1995. (WRC-97)

5.523B The use of the band 19.3-19.6 GHz (Earth-to-space) by the fixed-satellite service is limited to feeder links for non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. **9.11A**, and No. **22.2** does not apply.

5.523C No. **22.2** shall continue to apply in the bands 19.3-19.6 GHz and 29.1-29.4 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix **4** coordination information, or notification information, is considered as having been received by the Bureau prior to 18 November 1995. (WRC-97)

5.523D The use of the band 19.3-19.7 GHz (space-to-Earth) by geostationary fixed-satellite service systems and by feeder links for non-geostationary-satellite systems in the mobile-satellite service is subject to the application of the provisions of No. **9.11A**, but not subject to the provisions of No. **22.2**. The use of this band for other non-geostationary fixed-satellite service systems, or for the cases indicated in Nos. **5.523C** and **5.523E**, is not subject to the provisions of No. **9.11A** and shall continue to be subject to Articles **9** (except No. **9.11A**) and **11** procedures, and to the provisions of No. **22.2**. (WRC-97)

5.523E No. **22.2** shall continue to apply in the bands 19.6-19.7 GHz and 29.4-29.5 GHz, between feeder links of non-geostationary mobile-satellite service networks and those fixed-satellite service networks for which complete Appendix **4** coordination information, or notification information, is considered as having been received by the Bureau by 21 November 1997. (WRC-97)

5.525 In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7-20.2 GHz and 29.5-30 GHz.

5.526 In the bands 19.7-20.2 GHz and 29.5-30 GHz in Region 2, and in the bands 20.1-20.2 GHz and 29.9-30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.

5.527 In the bands 19.7-20.2 GHz and 29.5-30 GHz, the provisions of No. **4.10** do not apply with respect to the mobile-satellite service.

5.527A The operation of earth stations in motion communicating with the FSS is subject to Resolution 156 (WRC-15). (WRC-15)

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[*] *Note by the Secretariat:* This Resolution was revised by WRC-07.

Administrations operating systems in the mobile-satellite service in the band 19.7-20.1 GHz in Region 2 and in the band 20.1-20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. **5.524**.

5.528 The allocation to the mobile-satellite service is intended for use by networks which use narrow spot-beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7-20.1 GHz in Region 2 and in the band 20.1-20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. **5.524**.

5.530A

Unless otherwise agreed between the administrations concerned, any station in the fixed or mobile services of an administration shall not produce a power flux-density in excess of −120.4 dB(W/(m2 · MHz)) at 3 m above the ground of any point of the territory of any other administration in Regions 1 and 3 for more than 20% of the time. In conducting the calculations, administrations should use the most recent version of Recommendation ITU-R P.452 (see also the most recent version of Recommendation ITU-R BO.1898). (WRC-15) ~~Unless otherwise agreed between the administrations concerned, any station in the fixed or mobile services of an administration shall not produce a power flux-density in excess of −120.4 dB(W/(m^2 · MHz)) at 3 m above the ground of any point of the territory of any other administration in Regions 1 and 3 for more than 20% of the time. In conducting the calculations, administrations should use the most recent version of Recommendation ITU-R P.452 (see Recommendation ITU-R BO.1898).~~ (WRC-12)

5.530B In the band 21.4-22 GHz, in order to facilitate the development of the broadcasting-satellite service, administrations in Regions 1 and 3 are encouraged not to deploy stations in the mobile service and are encouraged to limit the deployment of stations in the fixed service to point-to-point links. (WRC-12)

~~**5.530C** The use of the band 21.4-22 GHz is subject to the provisions of Resolution **755 (WRC-12)**.~~ (WRC-12)

5.530D See Resolution **555 (WRC-12)**. (WRC-12)

5.532 The use of the band 22.21-22.5 GHz by the Earth exploration-satellite (passive) and space research (passive) services shall not impose constraints upon the fixed and mobile, except aeronautical mobile, services.

5.532A The location of earth stations in the space research service shall maintain a separation distance of at least 54 km from the respective border(s) of neighbouring countries to protect the existing and future deployment of fixed and mobile services unless a shorter distance is otherwise agreed between the corresponding administrations. Nos. **9.17** and **9.18** do not apply. (WRC-12)

5.532B Use of the band 24.65-25.25 GHz in Region 1 and the band 24.65-24.75 GHz in Region 3 by the fixed-satellite service (Earth-to-space) is limited to earth stations using a minimum antenna diameter of 4.5 m. (WRC-12)

5.535A The use of the band 29.1-29.5 GHz (Earth-to-space) by the fixed-satellite service is limited to geostationary-satellite systems and feeder links to non-geostationary-satellite systems in the mobile-satellite service. Such use is subject to the application of the provisions of No. **9.11A**, but not subject to the provisions of No. **22.2**, except as indicated in Nos. **5.523C** and **5.523E** where such use is not subject to the provisions of No. **9.11A** and shall continue to be subject to Articles **9** (except No. **9.11A**) and **11** procedures, and to the provisions of No. **22.2**. (WRC-97)

5.536 Use of the 25.25-27.5 GHz band by the inter-satellite service is limited to space research and Earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space.

5.536A Administrations operating earth stations in the Earth exploration-satellite service or the space research service shall not claim protection from stations in the fixed and mobile services operated by other administrations. In addition, earth stations in the Earth exploration-satellite service or in the space research service should be operated taking into account the most recent version of Recommendation ITU-R SA.1862. (WRC-12)

5.536B

In Saudi Arabia, Austria, Bahrain, Belgium, Brazil, China, Korea (Rep. of), Denmark, Egypt, United Arab Emirates, Estonia, Finland, Hungary, India, Iran (Islamic Republic of), Ireland, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Lithuania, Moldova, Norway, Oman, Uganda, Pakistan, the Philippines, Poland, Portugal, the Syrian Arab Republic, Dem. People's Rep. of Korea, Slovakia, the Czech Rep., Romania, the United Kingdom, Singapore, Sweden, Tanzania, Turkey, Viet Nam and Zimbabwe, earth stations operating in the Earth exploration-satellite service in the frequency band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services. (WRC-15)~~In Saudi Arabia, Austria, Belgium, Brazil, Bulgaria, China, Korea (Rep. of), Denmark, Egypt, United Arab Emirates, Estonia, Finland, Hungary, India, Iran (Islamic Republic of), Ireland, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Liechtenstein, Lithuania, Moldova, Norway, Oman, Uganda, Pakistan, the Philippines, Poland, Portugal, the Syrian Arab Republic, Dem. People's Rep. of Korea, Slovakia, the Czech Rep., Romania, the United Kingdom, Singapore, Sweden, Switzerland, Tanzania, Turkey, Viet Nam, Zimbabwe, earth stations operating in the Earth exploration-satellite service in the frequency band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services.~~

5.536C In Algeria, Saudi Arabia, Bahrain, Botswana, Brazil, Cameroon, Comoros, Cuba, Djibouti, Egypt, United Arab Emirates, Estonia, Finland, Iran (Islamic Republic of), Israel, Jordan, Kenya, Kuwait, Lithuania, Malaysia, Morocco, Nigeria, Oman, Qatar, Syrian Arab Republic, Somalia, Sudan, South Sudan, Tanzania, Tunisia, Uruguay, Zambia and Zimbabwe, earth stations operating in the space research service in the band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services. (WRC-12)

5.538 *Additional allocation:* the bands 27.500-27.501 GHz and 29.999-30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for up-link power control. Such space-to-Earth transmissions shall not exceed an equivalent isotropically radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit. (WRC-07)

5.539 The band 27.5-30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.

5.540 *Additional allocation:* the band 27.501-29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up-link power control.

5.541 In the band 28.5-30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.

5.541A Feeder links of non-geostationary networks in the mobile-satellite service and geostationary networks in the fixed-satellite service operating in the band 29.1-29.5 GHz (Earth-to-space) shall employ uplink adaptive power control or other methods of fade compensation, such that the earth station transmissions shall be conducted at the power level required to meet the desired link performance while reducing the level of mutual interference between both networks. These methods shall apply to networks for which Appendix **4** coordination information is considered as having been received by the Bureau after 17 May 1996 and until they are changed by a future competent world radiocommunication conference. Administrations submitting Appendix **4** information for coordination before this date are encouraged to utilize these techniques to the extent practicable. (WRC-2000)

5.543 The band 29.95-30 GHz may be used for space-to-space links in the Earth exploration-satellite service for telemetry, tracking, and control purposes, on a secondary basis.

5.543A In Bhutan, Cameroon, Korea (Rep. of), the Russian Federation, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Kazakhstan, Malaysia, Maldives, Mongolia, Myanmar, Uzbekistan, Pakistan, the Philippines, Kyrgyzstan, the Dem. People's Rep. of Korea, Sudan, Sri Lanka, Thailand and Viet Nam, the allocation to the fixed service in the band 31-31.3 GHz may also be used by systems using high altitude platform stations (HAPS) in the ground-to-HAPS direction. The use of the band 31-31.3 GHz by systems using HAPS is limited to the territory of the countries listed above and shall not cause harmful interference to, nor claim protection from, other types of fixed-service systems, systems in the mobile service and systems operated under No. **5.545**. Furthermore, the development of these services shall not be

constrained by HAPS. Systems using HAPS in the band 31-31.3 GHz shall not cause harmful interference to the radio astronomy service having a primary allocation in the band 31.3-31.8 GHz, taking into account the protection criterion as given in Recommendation ITU-R RA.769. In order to ensure the protection of satellite passive services, the level of unwanted power density into a HAPS ground station antenna in the band 31.3-31.8 GHz shall be limited to −106 dB(W/MHz) under clear-sky conditions, and may be increased up to −100 dB(W/MHz) under rainy conditions to mitigate fading due to rain, provided the effective impact on the passive satellite does not exceed the impact under clear-sky conditions. See Resolution **145 (Rev.WRC-12)**. (WRC-12)

5.544 In the band 31-31.3 GHz the power flux-density limits specified in Article **21**, Table **21-4** shall apply to the space research service.

5.546 *Different category of service:* in Saudi Arabia, Armenia, Azerbaijan, Belarus, Egypt, the United Arab Emirates, Spain, Estonia, the Russian Federation, Georgia, Hungary, Iran (Islamic Republic of), Israel, Jordan, Lebanon, Moldova, Mongolia, Oman, Uzbekistan, Poland, the Syrian Arab Republic, Kyrgyzstan, Romania, the United Kingdom, South Africa, Tajikistan, Turkmenistan and Turkey, the allocation of the band 31.5-31.8 GHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. **5.33**). (WRC-12)

5.547 The bands 31.8-33.4 GHz, 37-40 GHz, 40.5-43.5 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are available for high-density applications in the fixed service (see Resolution **75 (WRC-2000)**[*]). Administrations should take this into account when considering regulatory provisions in relation to these bands. Because of the potential deployment of high-density applications in the fixed-satellite service in the bands 39.5-40 GHz and 40.5-42 GHz (see No. **5.516B**), administrations should further take into account potential constraints to high-density applications in the fixed service, as appropriate. (WRC-07)

5.547A Administrations should take practical measures to minimize the potential interference between stations in the fixed service and airborne stations in the radionavigation service in the 31.8-33.4 GHz band, taking into account the operational needs of the airborne radar systems. (WRC-2000)

5.548 In designing systems for the inter-satellite service in the band 32.3-33 GHz, for the radionavigation service in the band 32-33 GHz, and for the space research service (deep space) in the band 31.8-32.3 GHz, administrations shall take all necessary measures to prevent harmful interference between these services, bearing in mind the safety aspects of the radionavigation service (see Recommendation **707**). (WRC-03)

5.549A In the band 35.5-36.0 GHz, the mean power flux-density at the Earth's surface, generated by any spaceborne sensor in the Earth exploration-satellite service (active) or space research service (active), for any angle greater than 0.8° from the beam centre shall not exceed −73.3 dB(W/m^2) in this band. (WRC-03)

5.550A For sharing of the band 36-37 GHz between the Earth exploration-satellite (passive) service and the fixed and mobile services, Resolution **752 (WRC-07)** shall apply. (WRC-07)

5.551H The equivalent power flux-density (epfd) produced in the band 42.5-43.5 GHz by all space stations in any non-geostationary-satellite system in the fixed-satellite service (space-to-Earth), or in the broadcasting-satellite service operating in the 42-42.5 GHz band, shall not exceed the following values at the site of any radio astronomy station for more than 2% of the time:

−230 dB(W/m^2) in 1 GHz and –246 dB(W/m^2) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a single-dish telescope; and

−209 dB(W/m^2) in any 500 kHz of the 42.5-43.5 GHz band at the site of any radio astronomy station registered as a very long baseline interferometry station.

These epfd values shall be evaluated using the methodology given in Recommendation ITU-R S.1586-1 and the reference antenna pattern and the maximum gain of an antenna in the radio astronomy service given in Recommendation ITU-R RA.1631 and shall apply over the whole sky and for elevation angles higher than the minimum operating angle θ_{min} of the radiotelescope (for which a default value of 5° should be adopted in the absence of notified information).

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[*] *Note by the Secretariat:* This Resolution was revised by WRC-12.

These values shall apply at any radio astronomy station that either:

– was in operation prior to 5 July 2003 and has been notified to the Bureau before 4 January 2004; or

– was notified before the date of receipt of the complete Appendix **4** information for coordination or notification, as appropriate, for the space station to which the limits apply.

Other radio astronomy stations notified after these dates may seek an agreement with administrations that have authorized the space stations. In Region 2, Resolution **743 (WRC-03)** shall apply. The limits in this footnote may be exceeded at the site of a radio astronomy station of any country whose administration so agreed. (WRC-07)

5.551I

The equivalent power flux-density (epfd) produced in the frequency band 42.5-43.5 GHz by all space stations in any non-geostationary-satellite system in the fixed-satellite service (space-to-Earth), or in the broadcastingsatellite service operating in the frequency band 42-42.5 GHz, shall not exceed the following values at the site of any radio astronomy station for more than 2% of the time:

−230 dB(W/m2) in 1 GHz and −246 dB(W/m2) in any 500 kHz of the frequency band 42.5-43.5 GHz at the site of any radio astronomy station registered as a single-dish telescope; and

−209 dB(W/m2) in any 500 kHz of the frequency band 42.5-43.5 GHz at the site of any radio astronomy station registered as a very long baseline interferometry station These epfd values shall be evaluated using the methodology given in Recommendation ITU-R S.1586-1 and the reference antenna pattern and the maximum gain of an antenna in the radio astronomy service given in Recommendation ITU-R RA.1631-0 and shall apply over the whole sky and for elevation angles higher than the minimum operating angle θmin of the radiotelescope (for which a default value of 5° should be adopted in the absence of notified information).

These values shall apply at any radio astronomy station that either:

– was in operation prior to 5 July 2003 and has been notified to the Bureau before 4 January 2004; or

– was notified before the date of receipt of the complete Appendix 4 information for coordination or notification, as appropriate, for the space station to which the limits apply.

Other radio astronomy stations notified after these dates may seek an agreement with administrations that have authorized the space stations. In Region 2, Resolution 743 (WRC-03) shall apply. The limits in this footnote may be exceeded at the site of a radio astronomy station of any country whose administration so agreed. (WRC-15)

~~The power flux-density in the band 42.5-43.5 GHz produced by any geostationary space station in the fixed satellite service (space-to-Earth), or the broadcasting satellite service operating in the 42-42.5 GHz band, shall not exceed the following values at the site of any radio astronomy station:~~

5.552A The allocation to the fixed service in the bands 47.2-47.5 GHz and 47.9-48.2 GHz is designated for use by high altitude platform stations. The use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz is subject to the provisions of Resolution **122 (Rev.WRC-07)**. (WRC-07)

5.553 In the bands 43.5-47 GHz and 66-71 GHz, stations in the land mobile service may be operated subject to not causing harmful interference to the space radiocommunication services to which these bands are allocated (see No. **5.43**). (WRC-2000)

5.554 In the bands 43.5-47 GHz, 66-71 GHz, 95-100 GHz, 123-130 GHz, 191.8-200 GHz and 252-265 GHz, satellite links connecting land stations at specified fixed points are also authorized when used in conjunction with the mobile-satellite service or the radionavigation-satellite service. (WRC-2000)

5.554A The use of the bands 47.5-47.9 GHz, 48.2-48.54 GHz and 49.44-50.2 GHz by the fixed-satellite service (space-to-Earth) is limited to geostationary satellites. (WRC-03)

5.555 *Additional allocation:* the band 48.94-49.04 GHz is also allocated to the radio astronomy service on a primary basis. (WRC-2000)

5.555B The power flux-density in the band 48.94-49.04 GHz produced by any geostationary space station in the fixed-satellite service (space-to-Earth) operating in the bands 48.2-48.54 GHz and 49.44-50.2 GHz shall not exceed –151.8 dB(W/m^2) in any 500 kHz band at the site of any radio astronomy station. (WRC-03)

5.556 In the bands 51.4-54.25 GHz, 58.2-59 GHz and 64-65 GHz, radio astronomy observations may be carried out under national arrangements. (WRC-2000)

5.556A Use of the bands 54.25-56.9 GHz, 57-58.2 GHz and 59-59.3 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, shall not exceed –147 dB(W/(m^2 · 100 MHz)) for all angles of arrival. (WRC-97)

5.557A In the band 55.78-56.26 GHz, in order to protect stations in the Earth exploration-satellite service (passive), the maximum power density delivered by a transmitter to the antenna of a fixed service station is limited to –26 dB(W/MHz). (WRC-2000)

5.558 In the bands 55.78-58.2 GHz, 59-64 GHz, 66-71 GHz, 122.25-123 GHz, 130-134 GHz, 167-174.8 GHz and 191.8-200 GHz, stations in the aeronautical mobile service may be operated subject to not causing harmful interference to the inter-satellite service (see No. **5.43**). (WRC-2000)

5.558A Use of the band 56.9-57 GHz by inter-satellite systems is limited to links between satellites in geostationary-satellite orbit and to transmissions from non-geostationary satellites in high-Earth orbit to those in low-Earth orbit. For links between satellites in the geostationary-satellite orbit, the single entry power flux-density at all altitudes from 0 km to 1 000 km above the Earth's surface, for all conditions and for all methods of modulation, shall not exceed –147 dB(W/(m^2 · 100 MHz)) for all angles of arrival. (WRC-97)

5.559 In the band 59-64 GHz, airborne radars in the radiolocation service may be operated subject to not causing harmful interference to the inter-satellite service (see No. **5.43**). (WRC-2000)

5.559B The use of the frequency band 77.5-78 GHz by the radiolocation service shall be limited to short-range radar for ground-based applications, including automotive radars. The technical characteristics of these radars are provided in the most recent version of Recommendation ITU-R M.2057. The provisions of No. 4.10 do not apply. (WRC-15)

5.560 In the band 78-79 GHz radars located on space stations may be operated on a primary basis in the Earth exploration-satellite service and in the space research service.

5.561 In the band 74-76 GHz, stations in the fixed, mobile and broadcasting services shall not cause harmful interference to stations of the fixed-satellite service or stations of the broadcasting-satellite service operating in accordance with the decisions of the appropriate frequency assignment planning conference for the broadcasting-satellite service. (WRC-2000)

5.561A The 81-81.5 GHz band is also allocated to the amateur and amateur-satellite services on a secondary basis. (WRC-2000)

5.562 The use of the band 94-94.1 GHz by the Earth exploration-satellite (active) and space research (active) services is limited to spaceborne cloud radars. (WRC-97)

5.562A In the bands 94-94.1 GHz and 130-134 GHz, transmissions from space stations of the Earth exploration-satellite service (active) that are directed into the main beam of a radio astronomy antenna have the potential to damage some radio astronomy receivers. Space agencies operating the transmitters and the radio astronomy stations concerned should mutually plan their operations so as to avoid such occurrences to the maximum extent possible. (WRC-2000)

5.562B In the bands 105-109.5 GHz, 111.8-114.25 GHz, 155.5-158.5 GHz and 217-226 GHz, the use of this allocation is limited to space-based radio astronomy only. (WRC-2000)

5.562E The allocation to the Earth exploration-satellite service (active) is limited to the band 133.5-134 GHz. (WRC-2000)

5.562F In the band 155.5-158.5 GHz, the allocation to the Earth exploration-satellite (passive) and space research (passive) services shall terminate on 1 January 2018. (WRC-2000)

5.562G The date of entry into force of the allocation to the fixed and mobile services in the band 155.5-158.5 GHz shall be 1 January 2018. (WRC-2000)

5.562H Use of the bands 174.8-182 GHz and 185-190 GHz by the inter-satellite service is limited to satellites in the geostationary-satellite orbit. The single-entry power flux-density produced by a station in the inter-satellite service, for all conditions and for all methods of modulation, at all altitudes from 0 to 1 000 km above the Earth's surface and in the vicinity of all geostationary orbital positions occupied by passive sensors, shall not exceed -144 dB(W/(m^2 · MHz)) for all angles of arrival. (WRC-2000)

5.563A In the bands 200-209 GHz, 235-238 GHz, 250-252 GHz and 265-275 GHz, ground-based passive atmospheric sensing is carried out to monitor atmospheric constituents. (WRC-2000)

5.565 The following frequency bands in the range 275-1 000 GHz are identified for use by administrations for passive service applications:

– radio astronomy service: 275-323 GHz, 327-371 GHz, 388-424 GHz, 426-442 GHz, 453-510 GHz, 623-711 GHz, 795-909 GHz and 926-945 GHz;

– Earth exploration-satellite service (passive) and space research service (passive): 275-286 GHz, 296-306 GHz, 313-356 GHz, 361-365 GHz, 369-392 GHz, 397-399 GHz, 409-411 GHz,
416-434 GHz, 439-467 GHz, 477-502 GHz, 523-527 GHz, 538-581 GHz, 611-630 GHz,
634-654 GHz, 657-692 GHz, 713-718 GHz, 729-733 GHz, 750-754 GHz, 771-776 GHz,
823-846 GHz, 850-854 GHz, 857-862 GHz, 866-882 GHz, 905-928 GHz, 951-956 GHz,
968-973 GHz and 985-990 GHz.

The use of the range 275-1 000 GHz by the passive services does not preclude use of this range by active services. Administrations wishing to make frequencies in the 275-1 000 GHz range available for active service applications are urged to take all practicable steps to protect these passive services from harmful interference until the date when the Table of Frequency Allocations is established in the above-mentioned 275-1 000 GHz frequency range.

All frequencies in the range 1 000-3 000 GHz may be used by both active and passive services. (WRC-12)

SADC12 WRC 12 allocated the band to Mobile except aeronautical mobile on a co-primary basis with Broadcasting (WRC-12 Res 232 refers). The band was also identified for IMT. The mobile allocation is effective from 2015, immediately after WRC 15 and shall be subject to technical and regulatory conditions to be stipulated by WRC 15. SADC plans to implement IMT in the band immediately after WRC 15

ANNEX 2

IMPORTANT CONTACTS

Postal And Telecommunications Regulatory Authority Of Zimbabwe(Potraz)

Spectrum Management Department
30 The Chase Emerald Business Park, Mt Pleasant,
Harare
Phone: +263 – 4- 333032
Facsimile: +263 -4 - 333041
E-mail: the.regulator@potraz.gov.zw
Website: http://www. potraz.gov.zw

Civil Aviation Authority Of Zimbabwe(CAAZ)

Air Navigation and Technical Services Division
Level 3, Harare International Airport
Harare
Phone: +263 – 4- 585073-83
E-mail: pr@caaz.co.zw
Website: http://www. caaz.co.zw

Broadcasting Authority Of Zimbabwe(BAZ)

Technical Department
1St Floor Media Centre, Rainbow Towers
Harare
Phone: +263 – 4- 797382-5
E-mail: baz@comone.co.zw

ANNEX 3 *(SADC Annex G)*

SADC HARMONISED HF CROSS-BORDER FREQUENCIES

The following thirteen (13) HF frequencies are harmonised in all SADC countries and is used for mobile communications (e.g. long haul trucks).

5170 kHz; 5330 kHz; 5365 kHz

7479 kHz; 7650 kHz; 7700 kHz

10 310 kHz; 10 440 kHz

11 140 kHz; 11 143.5 kHz

14 468 kHz; 14 590 kHz; 14 945 kHz